CLIMIGRATION: CREATING A NATIONAL GOVERNANCE FRAMEWORK FOR CLIMATE-FORCED COMMUNITY RELOCATION

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ABSTRACT

Population displacement is the greatest human rights challenge created by the climate crisis. People are already losing the places they live and love because of extreme weather events and slow ongoing environmental change, such as sea level rise, and are having to make the extraordinarily difficult and painful decision about whether to stay or leave. Newtok, Alaska is one of the communities that decided more than two decades ago to leave. Tribal, state, and federal government and non-governmental agencies agree that a community-wide relocation is their best long-term adaptation strategy. Yet, despite the tremendous efforts of the Tribe and these agencies for the last 15 years, relocation has not occurred. The policy and practical challenges have been enormous. The U.S. government has written numerous well-documented reports highlighting these challenges yet continues to provide completely inadequate assistance to prevent the ongoing human rights violations which are being caused because people in Newtok are currently living in a humanitarian crisis. This article explains in detail these challenges and then proposes a path forward. The laws governing disaster relief and response, land use, and human settlements are anachronistic to the ways the climate crisis is making the places where people live and maintain livelihoods uninhabitable. The U.S. government urgently needs to create a relocation governance framework

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based in human rights protections. This article provides a template about how to create this framework.

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INTRODUCTION

A stable climate system has been critical to the development of permanent human settlements adjacent to shorelines. The Holocene, the geologic epoch in which humans have thrived and which began at the end of the last Ice Age approximately 11,500 years ago, is characterized by relative climatic stability and only limited temperature fluctuations.¹ Rising levels of greenhouse gas emissions, causing increasing land and ocean temperatures, now threaten that stability.² This climate-caused disruption of the biophysical environment requires a fundamental change in the way human settlements are conceived, including the location and design of the built environment.³

Worldwide, more than 600 million people (roughly 7.5% of the global population) live within 10 meters or less of sea level.⁴ Globally, most of the world's megacities are located near the coast.⁵ Several atoll nations, such as the Marshall Islands and Kiribati, are threatened with complete inundation, unable to support human settlements and livelihoods.⁶ The permanent loss of land and housing due to climate change and the consequent inability to return to original homes and lands will fundamentally alter people's lives. The majority of those displaced will

5. Barbara Neumann, Athanasios T. Vafeidis, Juliane Zimmermann, & Robert J. Nicholls, *Future Coastal Population Growth and Exposure to Sea-Level Rise and Coastal Flooding - A Global Assessment*, PLOS ONE, Mar. 11, 2015, at 2.

6. Matthew E. Hauer, Elizabeth Fussell, Valerie Mueller, Maxine Burkett, Maia Call, Kali Abel, Robert McLeman, & David Wrathall, *Sea-Level Rise and Human Migration*, 1 NATURE REV. EARTH & ENV'T, 28, 34–35 (2020).

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^{1.} Johan Rockström, Will Steffen, Kevin Noone, Åsa Persson, F. Stuart Chapin, III, Eric F. Lambin, Timothy M. Lenton, Marten Scheffer, Carl Folke, Hans Joachim Schellnhuber, Björn Nykvist, Cynthia A. de Wit, Terry Hughes, Sander van der Leeuw, Henning Rodhe, Sverker Sörlin, Peter K. Snyder, Robert Costanza, Uno Svedin, Malin Falkenmark, Louise Karlberg, Robert W. Corell, Victoria J. Fabry, James Hansen, Brian Walker, Diana Liverman, Katherine Richardson, Paul Crutzen, & Jonathan A. Foley, *A Safe Operating Space for Humanity*, 461 NATURE 472, 472 (2009); *see* Leonid Polyak, Richard B. Alley, John T. Andrews, Julie Brigham-Grette, Thomas M. Cronin, Dennis A. Darby, Arthur S. Dyke, Joan J. Fitzpatrick, Svend Funder, Marika Holland, Anne E. Jennings, Gifford H. Miller, Matt O'Regan, James Savelle, Mark Serreze, Kristen St. John, James W.C. White, & Eric Wolff, *History of Sea Ice in the Arctic*, 29 QUATERNARY SCI. REVS. 1757, 1769 (2010).

^{2.} Greenhouse gas emissions increased 1.7% globally in 2018 and then dropped by 4% in 2020 due to the COVID-19 pandemic. *See* Int'l Energy Agency [IEA], *Global Energy & CO2 Status Report 2019*, at 3, (Mar. 2019), https://www.iea.org/reports/global-energy-co2-status-report-2019 [https://perma.cc/F4KD-AR3W]; IEA, *Global Energy Review: CO2 Emissions in 2020*, (Mar. 2, 2021), https://www.iea.org/articles/global-energy-review-co2-emissions-in-2020 [https://perma.cc /EJ7T-V5S9]. Scientists predict that in 2021 greenhouse gas emissions will increase 4.9% from the previous year. Jeff Tollefson, *Carbon Emissions Rapidly Rebounded Following COVID Pandemic Dip*, NATURE (Nov. 4, 2021), https://www.nature.com/articles/d41586-021-03036-x [https://perma.cc /YFB9-SCJF].

^{3.} See generally Robin Bronen & F. Stuart Chapin, Adaptive Governance and Institutional Strategies for Climate-Induced Community Relocations in Alaska, 110 PROC. NAT'L ACAD. SCI. 9320 (2013).

^{4.} Robert J. Nicholls, Natasha Marinova, Jason A. Lowe, Sally Brown, Pier Vellinga, Diogo de Gusmão, Jochen Hinkel, & Richard S. J. Tol, *Sea-Level Rise and Its Possible Impacts in a 'Beyond 4 C World' in the Twenty-First Century*, 369 PHIL. TRANS. R. SOC. A 161, 162 (2011).

remain in their country of origin, yet the majority of countries have no institutional or government mechanism to facilitate this movement.⁷ Community relocation, a process whereby a community's residents relocate and housing and public infrastructure are reconstructed in another location, may be required to protect populations from the permanent disappearance of land caused by sea level rise and erosion.⁸ Relocation can also mean the rebuilding of livelihoods, as well as kinship and social connections. "Climigration" is a term that describes this type of population movement.⁹

Newtok and Quinhagak are Alaska Native federally-recognized Indigenous communities faced with rapidly accelerating changes to the environment, and they represent different parts of the continuum, from imminent and urgent need to relocate in Newtok, to Quinhagak, which is in a decision-making process assessing when and whether relocation needs to occur.¹⁰ A 2011 article analyzed Newtok's relocation and the statutory barriers that made its relocation impossibly difficult and complex.¹¹ Newtok's tribal government began evaluating sites for relocation in 1994.¹² In 2008, the U.S. Army Corps of Engineers (USACE) analyzed five alternative responses to the advancing erosion in Newtok, including "taking no action; staying in place with erosion and flood control; collocation; relocation funded and orchestrated solely by the USACE; and a collaborative relocation effort. The report found that a coordinated relocation effort was in the best interests of Newtok residents."13 Eleven years after this report was published and 25 years after evaluating relocation sites, in October 2019, approximately 140 residents (only one-third of the community) relocated, leaving two-thirds of the community in a dangerous location with no timeline for when they will also be able to move to their relocation site.¹⁴ In Quinhagak, the USACE determined that it was too

^{7.} See generally KANTA KUMARI RIGAUD, ALEX DE SHERBININ, BRYAN JONES, JONAS BERGMANN, VIVIANE CLEMENT, KAYLY OBER, JACOB SCHEWE, SUSANA ADAMO, BRENT MCCUSKER, SILKE HEUSER, & AMELIA MIDGLEY, GROUNDSWELL: PREPARING FOR INTERNAL CLIMATE MIGRATION xix, xxi (2018) (ebook); Tony Matthews & Ruth Potts, *Planning for Climigration: A Framework for Effective Action*, 148 CLIMATIC CHANGE 607, 611 (2018).

^{8.} See Abhas K. Jha, Jennifer Duyne Barenstein, Priscilla M. Phelps, Daniel Pittet, & Stephen Sena, Safer Homes, Stronger Communities A Handbook for Reconstructing after Natural Disasters 77–91, 174 (2010) (ebook).

^{9.} Robin Bronen, *Alaskan Communities' Rights and Resilience*, 31 FORCED MIGRATION REV., Oct. 2008, at 30, 31.

^{10.} Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, 73 Fed. Reg. 18,553, 18,557 (Apr. 4, 2008); KYUK, *For Quinhagak, Climate Change Means They May Have to Move*, KYUK (June 17, 2019), https://www.kyuk.org/economy /2019-06-17/for-quinhagak-climate-change-means-they-may-have-to-move [https://perma.cc /Q9FF-S465].

^{11.} See generally Robin Bronen, Climate-Induced Community Relocations: Creating an Adaptive Governance Framework Based in Human Rights Doctrine, 35 N.Y.U REV. L. & SOC. CHANGE 357–407 (2011).

^{12.} Id. at 383.

^{13.} *Id.* at 382.

^{14.} *Newtok Relocation News*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/NewtokPlanningGroup/RelocationNews.aspx [https://perma.cc/6DZS-ERAY] (last visited June 12, 2021).

expensive to protect the community's sewage lagoon and dredge its river channel so that the community could receive critical goods through barge transportation, both critical to enabling the community to remain in its current location.¹⁵ Yet funding is not easily available to implement each community's adaptation solutions.¹⁶

Their experience demonstrates that the laws governing managed retreat and hazard mitigation are ill-suited to deal with the ways extreme weather events, combined with slow-ongoing environmental change, are affecting the habitability of the places where people live. This Article analyzes the reasons current laws are inadequate to meet the challenges posed by climigration and proposes federal legislative solutions to create a federal climigration governance framework based in a respect for human rights. Congress needs to urgently enact legislation to create this governance structure so that climigration can be a planned, multi-year process that protects the human rights of those forced to leave their homes.

II.

CLIMATE CHANGE AND POPULATION DISPLACEMENT

Extreme weather events, combined with protracted biophysical change such as sea level rise and Arctic sea ice loss, are intensifying the vulnerability of the places where people live and work. Extreme weather events are increasing in intensity. The global occurrence of intense tropical cyclones, category 3 or higher, wind speeds of 50 m/s or higher, "has increased since 1979, and the proportion of category 4–5 storms, winds 58 m/s or higher, is projected to increase substantially under a warming climate."¹⁷ In 2020, seven tropical cyclones caused billions of dollars of damage when they inundated the United States along the Gulf Coast and in Florida.¹⁸

Sea levels—which have been relatively stable during the last four thousand years—are now rising at an accelerating rate, as evidenced by higher storm surges and the increased flooding of coastal communities during high tides when no storms are occurring.¹⁹ Polar region melting will significantly contribute to sea

^{15.} CITY OF QUINHAGAK & NATIVE VILL. OF KWINHAGAK MITIGATION PLANNING TEAM, DRAFT CITY OF QUINHAGAK AND NATIVE VILLAGE OF KWINHAGAK MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 66, 67 (2019) [hereinafter HAZARD MITIGATION PLAN UPDATE].

^{16.} *Id*.

^{17.} Thomas R. Knutson, Maya V. Chung, Gabriel Vecchi, Jingru Sun, Tsung-Lin Hsieh, & Adam J.P. Smith, *Climate Change Is Probably Increasing the Intensity of Tropical Cyclones*, SCIENCEBRIEF REV., Mar. 26, 2021, at 1, https://sciencebrief.org/uploads/reviews/ScienceBrief_Review CYCLONES Mar2021.pdf [https://perma.cc/T7JH-D4YX].

^{18.} U.S. Billion-Dollar Weather and Climate Disasters, NAT'L OCEANIC & ATMOSPHERIC ADMIN. – NAT'L CTR. FOR ENV'T INFO., https://www.ncdc.noaa.gov/billions/[https://perma.cc/295L-QTDB] (last visited June 12, 2021) (showing six storms that made landfall in the Gulf Coast and a seventh, Isaias, which hit Florida before ultimately landing on the East Coast) (choose "Summary Stats" tab and view the data for 2020 weather events).

^{19.} William V. Sweet & Joseph Park, From the Extreme to the Mean: Acceleration and Tipping Points of Coastal Inundation from Sea Level Rise, 2 EARTH'S FUTURE 579, 597 (2014).

level rise in the future.²⁰ Increased air and water temperatures are causing an unprecedented environmental transition in the Arctic: regions that have been frozen for millennia are predicted to melt in the decades ahead.²¹

Melting of the Greenland Ice Sheet is at its highest point since at least 1550 C.E., or possibly for five thousand years; it has increased "seven-fold from 34 billion tons per year between 1992 and 2001 to 247 billion tons per year between 2012 and 2016."²² If the Greenland Ice Sheet completely melts, sea levels may rise up to 7 meters (23 feet).²³ In Antarctica, "ice loss nearly quadrupled from 51 billion tons per year between 1992 and 2001 to 199 billion tons per year from 2012–2016."²⁴ A thawing Antarctica has the potential to raise the sea level by 58 meters (190 feet).²⁵ Despite considerable scientific advances in understanding ice sheet contributions to global mean sea-level rise, severe limitations remained in the predictive capability of ice sheet models in 2019.²⁶ Consequently, the potential contributions of ice sheets remain the largest source of uncertainty in projecting future sea level rise.²⁷ Most projections use the end of the twenty-first century to

22. Rebecca Lindsey, *Climate Change: Global Sea Level*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Jan. 25, 2021), https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level [https://perma.cc/3QMB-2P3K]; *see also* K.A. Graeter, E.C. Osterberg, D.G. Ferris, R.L. Hawley, H.P. Marshall, G. Lewis, T. Meehan, F. McCarthy, T. Overly, & S.D. Berkel, *Ice Core Records of West Greenland Melt and Climate Forcing*, 45 GEOPHYSICAL RSCH. LETTERS 3164, 3164–68 (2018).

23. Jessica Merzdorf, *Study Predicts More Long-Term Sea Level Rise from Greenland Ice*, NASA.GOV (June 20, 2019), https://climate.nasa.gov/news/2883/study-predicts-more-long-term-sea-level-rise-from-greenland-ice [https://perma.cc/8DUT-M6MH].

24. Lindsey, *supra* note 22.

26. Bamber, Oppenheimer, Kopp, Aspinall, & Cooke, supra note 20, at 11,195.

27. Id.

^{20.} Jonathan L. Bamber, Michael Oppenheimer, Robert E. Kopp, Willy P. Aspinall, & Roger M. Cooke, *Ice Sheet Contributions to Future Sea-Level Rise from Structured Expert Judgement*, 116 PROC. NAT'L ACAD. SCI. U.S. 11195, 11195 (2019) ("[T]he ice sheet influence . . . has overtaken mountain glaciers to become the largest barystatic (mass) contribution to SLR.").

^{21.} See Jianbin Huang, Xiangdong Zhang, Qiyi Zhang, Yanluan Lin, Mingju Hao, Yong Luo, Zongci Zhao, Yao Yao, Xin Chen, Lei Wang, Suping Nie, Yizhou Yin, Ying Xu, & Jiansong Zhang, Recently Amplified Arctic Warming Has Contributed to a Continual Global Warming Trend, 7 NATURE CLIMATE CHANGE 875, 876–77 (2017); 2019 Was the 2nd-Hottest Year on Record for Earth, Say NOAA, NASA, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Jan. 15, 2020), https://www.noaa.gov/news/2019-was-2nd-hottest-year-on-record-for-earth-say-noaa-nasa [https:// perma.cc/3RVQ-4FRR]; see also E. Osborne, J. Richter-Menge, & M. Jeffries, Arctic Report Card 2018 Executive Summary, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Dec. 3, 2018), https://arc-tic.noaa.gov/Report-Card/Report-Card-2018/ArtMID/7878/ArticleID/772/Executive-Summary [https://perma.cc/Y5U8-TYSX].

^{25.} P. Fretwell, H.D. Pritchard, D.G. Vaughan, J.L. Bamber, N.E. Barrand, R. Bell, C. Bianchi, R.G. Bingham, D.D. Blankenship, G. Casassa, G. Catania, D. Callens, H. Conway, A.J. Cook, H.F.J. Corr, D. Damaske, V. Damm, F. Ferraccioli, R. Forsberg, S. Fujita, Y. Gim, P. Gogineni, J.A. Griggs, R.C.A. Hindmarsh, P. Holmlund, J.W. Holt, R.W. Jacobel, A. Jenkins, W. Jokat, T. Jordan, E.C. King, J. Kohler, W. Krabill, M. Riger-Kusk, K.A. Langley, G. Leitchenkov, C. Leuschen, B.P. Luyendyk, K. Matsuoka, J. Mouginot, F.O. Nitsche, Y. Nogi, O.A. Nost, S.V. Popov, E. Rignot, D.M. Rippin, A. Rivera, J. Roberts, N. Ross, M.J. Siegert, A.M. Smith, D. Steinhage, M. Studinger, B. Sun, B.K. Tinto, B.C. Welch, D. Wilson, D.A. Young, C. Xiangbin, & A. Zirizzotti, *Bedmap2: Improved Ice Bed, Surface and Thickness Datasets for Antarctica*, 7 CRYOSPHERE 375, 376 (2013).

quantify the possibilities.²⁸ However, sea levels will not stop rising at the end of this century.²⁹

In the United States, nearly 40% of the population lives in low-elevation coastal communities that continue to experience growth and development.³⁰ Without protective measures, as many as 13 million people may face permanent inundation and displacement by the year 2100.³¹ East Coast cities in the United States, such as Miami, Florida and Charleston, South Carolina, are inundated with 'sunny day' flooding caused by high tides, not storm surges.³² This type of flooding disrupts and damages coastal infrastructure, including homes, important transportation links, and storm and wastewater systems.³³

Fiscally, federal and state government agencies are spending large amounts of money on disaster preparation and response, insurance payouts, and rebuilding damaged or destroyed infrastructure in order to protect human settlements in specific places.³⁴ A 2016 Government Accountability Office (GAO) report put the average annual total of federal disaster spending between 2005 and 2014 at \$277.6 billion, spread across 17 departments and agencies that play a role in response or

28. See, e.g., S. Jevrejeva, A. Grinsted, & J.C. Moore, Upper Limit for Sea Level Projections by 2100, 9 ENV'T. RSCH. LETT., Oct. 10, 2014, at 1; Martin Siegert, Richard B. Alley, Eric Rignot, John Englander, & Robert Corell, Twenty-First Century Sea-Level Rise Could Exceed IPCC Projections for Strong-Warming Futures, 3 ONE EARTH 691, 691 (2020).

29. Alejandra Borunda, *Sea Level Will Rise for Centuries. We Can Control How Much and How Fast.*, NAT'L GEOGRAPHIC (Nov. 4, 2019), https://www.nationalgeographic.com/science/article /paris-agreement-period-still-leads-to-sea-level-rise [https://perma.cc/3RYT-TE6P].

30. *Fast Facts Economics and Demographics*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. OFFICE COASTAL MGMT., https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html [https://perma.cc/LY47-628K] (last visited Sept. 5, 2021).

31. See Caleb Robinson, Bistra Dilkina, & Juan Moreno-Cruz, *Modeling Migration Patterns in the USA Under Sea Level Rise*, PLoS ONE, Jan. 22, 2020, at 1–2, https://journals.plos.org/plosone /article?id=10.1371/journal.pone.0227436 [https://perma.cc/26S4-9JC4].

32. Kevin Loria, *Cities Around the US Are Flooding at High Tide and on Sunny Days at Record High Rates—Here's What It's Like*, BUS. INSIDER, June 12, 2018, https://www.businessinsider.com/sea-level-rise-high-tides-sunny-day-flooding-coastal-cities-2018-4 [https://perma.cc/4YJU-E97Q].

33. See WILLIAM SWEET, GREGORY DUSEK, GREG CARBIN, JOHN MARRA, DOUG MARCY, & STEVEN SIMON, NAT'L OCEANIC & ATMOSPHERIC ADMIN., NOAA TECH. REP. NOS CO-OPS 092, 2019 STATE OF U.S. HIGH TIDE FLOODING WITH A 2020 OUTLOOK 2–3 (July 2020), https://tidesandcurrents.noaa.gov/publications/Techrpt_092_2019_State_of_US_High_Tide Flooding with a 2020 Outlook 30June2020.pdf [https://perma.cc/4KUG-M4BC].

34. See Sandra S. Nichols & Carl Bruch, New Frameworks for Managing Dynamic Coasts: Legal and Policy Tools for Adapting U.S. Coastal Zone Management to Climate Change, 10 SEA GRANT L. & POL'Y J. 19, 31 (2008) (explaining how states are appealing to the federal government to help with the increasing risks and costs of natural catastrophe preparation). See generally U.S. GOV'T ACCOUNTABILITY OFF., GAO-17-720, CLIMATE CHANGE INFORMATION ON POTENTIAL ECONOMIC EFFECTS COULD HELP GUIDE FEDERAL EFFORTS TO REDUCE FISCAL EXPOSURE (2017), https://www.gao.gov/products/gao-17-720 [https://perma.cc/Q4SB-EAN4] [hereinafter GAO-17-720] (noting that "extreme weather and fire events have cost the federal government over \$350 billion").

recovery.³⁵ Between 2006 and 2015, the United States Federal Emergency Management Agency's (FEMA) Public Assistance Grant Program, the largest source of federal disaster assistance to state and local governments, increased spending 212%, from an annual average of \$1.8 billion between 1996 and 2005 to \$5.5 billion per year from 2006 until 2015.³⁶ These dollar figures do not include the spending of other federal agencies for disaster response, recovery, and mitigation or FEMA's expenses for assistance to individuals and households.³⁷ Financial expenditures by federal and state government agencies in response to slow-ongoing environmental change, such as sea level rise and erosion, are also omitted because FEMA interprets the federal definition of "major disaster" to exclude these natural hazards.³⁸

The National Flood Insurance Program (NFIP), created in 1968 and administered by FEMA, provides low-cost insurance to homeowners.³⁹ Between 1978 and 2019, the NFIP paid \$22.2 billion to repair and rebuild more than 228,000 repetitive loss properties.⁴⁰ The NFIP paid \$5.5 billion between 1978 and 2015 to repair and rebuild more than 30,000 "severe repetitive loss properties.⁴¹ These homes and businesses have been rebuilt multiple times in the wake of floods or hurricanes.⁴² Severe repetitive loss properties are those which have flooded four or more times.⁴³ Continual rebuilding of severe repetitive loss properties accounts for part of the \$24.6 billion debt that the NFIP has accrued in recent years and is the reason the GAO placed the NFIP on its list of programs that pose a "high risk" to the nation's fiscal sustainability.⁴⁴ The cumulative impact of frequent extreme

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^{35.} U.S. GOV'T ACCOUNTABILITY OFF, GAO-16-797, FEDERAL DISASTER ASSISTANCE FEDERAL DEPARTMENTS AND AGENCIES OBLIGATED AT LEAST \$277.6 BILLION DURING FISCAL YEARS 2005 THROUGH 2014 (2016), https://www.gao.gov/products/gao-16-797 [https://perma.cc/5RF7-ZQWP] [hereinafter GAO-16-797].

^{36.} Ingrid Schroeder, *We Don't Know How Much We Spend on Disasters, and That Needs to Change*, PEW (Nov. 22, 2016), https://www.pewtrusts.org/en/about/news-room/opinion/2016/11 /22/we-dont-know-how-much-we-spend-on-disasters-and-that-needs-to-change [https://perma.cc /6MNG-BBGG]. *See generally* JARED T. BROWN & DANIEL J. RICHARDSON, CONG. RSCH. SERV., R43990, FEMA'S PUBLIC ASSISTANCE GRANT PROGRAM: BACKGROUND AND CONSIDERATIONS FOR CONGRESS (2015), https://fas.org/sgp/crs/homesec/R43990.pdf [https://perma.cc/G7KW-CRHN] (discussing FEMA's Public Assistance Grant Program, sources of program's costs and policy suggestions for Congress).

^{37.} Schroeder, *supra* note 36.

^{38.} See 42 U.S.C. § 5122(2) (defining "major disaster" to include "any natural catastrophe").

^{39.} ROB MOORE, NAT. RES. DEF. COUNCIL, SEEKING HIGHER GROUND: HOW TO BREAK THE CYCLE OF REPEATED FLOODING WITH CLIMATE-SMART FLOOD INSURANCE REFORMS 2 (2017), https://www.nrdc.org/sites/default/files/climate-smart-flood-insurance-ib.pdf [https://perma.cc/K5 PB-TQGB].

^{40.} See U.S. GOV'T ACCOUNTABILITY OFF., GAO-20-508, NATIONAL FLOOD INSURANCE PROGRAM: FISCAL EXPOSURE PERSISTS DESPITE PROPERTY ACQUISITIONS, 28–29 (2020), https://www.gao.gov/assets/gao-20-508.pdf [https://perma.cc/HU2E-LWGF] [hereinafter GAO-20-508].

^{41.} MOORE, *supra* note 39, at 2.

^{42.} *Id*.

^{43.} *Id.* at 8 n.2.

^{44.} See GAO-20-508, supra note 40, at 2.

weather events is challenging this framework and overwhelming the capacity of government institutions at local, regional, and national levels to prepare for and respond to these events.⁴⁵

In addition to providing resources to respond to disaster events, local, state, and federal governments are spending billions of dollars to implement technological adaptation solutions to protect coastal populations in their current locations. The construction of hard armoring, such as seawalls that maintain current shorelines and provide protection against storm surges, and the elevation of infrastructure to accommodate higher water levels can provide protection.⁴⁶ However, some coastal cities, such as Coral Gables, Florida, cannot be protected by seawalls because of their regional geology in which sea level rises through porous limestone and affects infrastructure from beneath the ground.⁴⁷ In addition, the costs associated with protecting coastal populations in the United States are projected to cost more than \$400 billion before 2040 and will require construction of more than 50,000 miles of coastal barriers in 22 states.⁴⁸ In Louisiana, the USACE completed a draft environmental impact statement in March 2021 to divert the Mississippi River, part of a \$50 billion plan to protect the Louisiana coast.⁴⁹ The global coastal topography and geology and the cost and scale of government solutions make it

See generally U.S. GOV'T ACCOUNTABILITY OFF., GAO-20-488, CLIMATE CHANGE: A 45. CLIMATE MIGRATION PILOT PROGRAM COULD ENHANCE THE NATION'S RESILIENCE AND REDUCE FEDERAL FISCAL EXPOSURE 38 (2020), https://www.gao.gov/assets/710/707961.pdf [https://perma .cc/ZQV6-4KSX] [hereinafter GAO-20-488]; Simon K. Allen, Vicente Barros, Ian Burton, Diarmid Campbell-Lendrum, Omar-Dario Cardona, Susan L. Cutter, O. Pauline Dube, Kristie L. Ebi, Christopher B. Field, John W. Handmer, Padma N. Lal, Allan Lavell, Katharine J. Mach, Michael D. Mastrandrea, Gordon A. McBean, Reinhard Mechler, Tom Mitchell, Neville Nicholls, Karen L. O'Brien, Taikan Oki, Michael Oppenheimer, Mark Pelling, Gian-Kasper Plattner, Roger S. Pulwarty, Sonia I. Seneviratne, Thomas F. Stocker, Maarten K. van Aalst, Carolina S. Vera, & Thomas J. Wilbanks, Summary for Policymakers, in MANAGING THE RISKS OF EXTREME EVENTS AND DISASTERS TO ADVANCE CLIMATE CHANGE ADAPTATION: A SPECIAL REPORT OF WORKING GROUPS I AND II OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Christopher B. Field, Vicente Barros, Thomas F. Stocker, Qin Dahe, David Jon Dokken, Kristie L. Ebi, Michael D. Mastrandrea, Katherine J. Mach, Gian-Kasper Plattner, Simon K. Allen, Melinda Tignor, & Pauline M. Midgley, eds., 2012), https://www.ipcc.ch/site/assets/uploads/2018/03/SREX Full Report-1.pdf [https:// perma.cc/7TDX-43JF].

^{46.} Bronen, *Climate-Induced Community Relocations, supra* note 11, at 37–38.

^{47.} See CORAL GABLES CITY COMM'N, LEGAL CONSIDERATIONS SURROUNDING ADAPTATION TO THE THREAT OF SEA LEVEL RISE 2 (2016), https://southeastfloridaclimatecompact.org/wp-content /uploads/2016/12/Legal-Considerations-Surrounding-Adaptation-to-the-Threat-of-Sea-Level-Rise.pdf [https://perma.cc/YL7N-FJZA].

^{48.} See SVERRE LEROY & RICHARD WILES, CTR. FOR CLIMATE INTEGRITY, HIGH TIDE TAX: THE PRICE TO PROTECT COASTAL COMMUNITIES FROM RISING SEAS 1 (2019), https://www.climate-costs2040.org/files/ClimateCosts2040 Report.pdf [https://perma.cc/CM5H-EMNF].

^{49.} See U.S. ARMY CORPS ENG'RS, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED MID-BARATARIA SEDIMENT DIVERSION PROJECT PLAQUEMINES PARISH, LOUISIANA (2021), https://www.mvn.usace.army.mil/Missions/Regulatory/Permits/Mid-Barataria-Sediment-Diversion-EIS/; J. Schwartz, *Big Step Forward for \$50 Billion Plan to Save Louisiana Coast*, N.Y. TIMES (Mar. 12, 2021), https://www.nytimes.com/2021/03/05/climate/louisiana-mississippi-river-diversion.html [https://perma.cc/WXZ8-TE6V].

highly unlikely that governments will be able to protect all coastal communities. Who will be protected and for how long?

A. ALASKA

In Alaska, the only Arctic state in the United States,⁵⁰ the combination of decreased arctic sea ice extent, thawing permafrost, and repeated extreme weather events threatens the lives and livelihoods of dozens of Alaska Native communities and is forcing entire communities to relocate. Less sea ice covers the Arctic Ocean today than at any time in recent geologic history (the last few thousand years).⁵¹ Without arctic sea ice, storms regularly inundate communities throughout the winter months, exacerbating permafrost thaw, erosion, flooding, and *usteq*, a Yupik word defined in Alaska's 2018 Hazard Mitigation Plan as "catastrophic land collapse."⁵²

Numerous reports have documented the dangers accelerating environmental change poses to Alaska Native communities.⁵³ In 2019, three entities working closely with the Denali Commission published the most recent report, a statewide environmental threat assessment of 187 Alaskan communities.⁵⁴ The report

52. See Robin Bronen, Denise Pollock, Jacquelyn Overbeck, DeAnne Stevens, Susan Natali, & Chris Maio, Usteq: Integrating Indigenous Knowledge and Social and Physical Sciences to Coproduce Knowledge and Support Community-Based Adaptation, 43 POLAR GEOGRAPHY 188, 204 (2019).

54. See UNIV. ALASKA FAIRBANKS INST. N. ENG'G & U.S. ARMY CORPS ENG'RS ALASKA DIST., STATEWIDE THREAT ASSESSMENT IDENTIFICATION OF THREATS FROM EROSION, FLOODING, AND THAWING PERMAFROST IN REMOTE ALASKA COMMUNITIES 1-2 (2019), https://www.denali.gov/wpcontent/uploads/2019/11/Statewide-Threat-Assessment-Final-Report-November-2019-1-2.pdf [https://perma.cc/C2LT-8QBR] [hereinafter Statewide Threat Assessment]. The Denali Commission is an independent federal agency introduced by Congress in 1998 and is "designed to provide critical utilities, infrastructure, and economic support throughout Alaska." DENALI COMM'N, *About Us*, https://www.denali.gov/ [https://perma.cc/69DP-FALS]. The Village Infrastructure Protection (VIP) program at the Denali Commission is leading the relocation effort. *See* DENALI COMM'N, *Village Infrastructure Program*, https://www.denali.gov/programs/village-infrastructure-protection/ [https://perma.cc/7QDE-E42H] (last visited Oct. 10, 2021).

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^{50.} *The United States*, ARCTIC COUNCIL, https://arctic-council.org/en/about/states/the-united-states/ [https://perma.cc/N2D7-9E9V] (last visited Sept. 24, 2021).

^{51.} See Leonid Polyak, Richard B. Alley, John T. Andrews, Julie Brigham-Grette, Thomas M. Cronin, Dennis A. Darby, Arthur S. Dyke, Joan J. Fitzpatrick, Svend Funder, Marika Holland, Anne E. Jennings, Gifford H. Miller, Matt O'Regan, James Savelle, Mark Serreze, Kristen St. John, James W.C. White, & Eric Wolff, *History of Sea Ice in the Arctic*, 29 QUATERNARY SCI. REVS. 1757, 1772 (2010). Ice shelves located on Ellesmere Island, Canada, stable for the last 5500 years, declined more than 90% during the 20th century and continue to melt. *Id*.

^{53.} See U.S. GOV'T ACCOUNTABILITY OFF., GAO-04-142, ALASKA NATIVE VILLAGES: MOST ARE AFFECTED BY FLOODING AND EROSION, BUT FEW QUALIFY FOR FEDERAL ASSISTANCE 1 (2003), https://www.gao.gov/assets/gao-04-142.pdf [https://perma.cc/Y8AQ-C37H] [hereinafter GAO-04-142] (analyzing erosion and flooding in nine Alaska Native villages and assessing their ability to acquire federal funding to address these environmental threats); see also U.S. GOV'T ACCOUNTABILITY OFF. GAO-09-551, ALASKA NATIVE VILLAGES: LIMITED PROGRESS HAS BEEN MADE ON RELOCATING VILLAGES THREATENED BY FLOODING AND EROSION 1 (2009), https://www.gao.gov/assets/gao-09-551.pdf [https://perma.cc/F7SC-EPHM] [hereinafter GAO-09-551] (describing FEMA's disaster relief and hazard mitigation efforts).

highlights the most vulnerable communities in Alaska and provides a critical update to the 2009 Government Accountability Report which found 31 imminently threatened communities with 12 seeking to possibly relocate.⁵⁵ While the Government Accountability Office and the Denali Commission identified communities at risk, few protective measures have been implemented in these communities and neither report identified risk reduction strategies or funding for adaptation.⁵⁶ Instead, in 2020 the GAO, highlighting the relocation barriers for several communities in the United States, including Newtok, recommended that the federal government create a climate migration pilot program to address the lack of federal leadership on this issue.⁵⁷

Both Newtok, ranked seventh in the Denali Commission report, and Quinhagak, ranked at 38th, are located in the geographically remote coastal Yu-kon-Kuskokwim Delta and are federally recognized indigenous tribes.⁵⁸

Small airplanes are primarily responsible for their year-round transportation and importation of goods to and from Quinhagak and Newtok.⁵⁹ There are no roads to facilitate travel to or from both villages.⁶⁰ "Subsistence hunting and gathering are central to [the] culture and survival" of both villages.⁶¹ "Village life revolves around these activities, with the resources obtained from the natural environment forming the basis for community cohesion, social identity, livelihoods, and cultural events."⁶²

The building of permanent infrastructure, including schools, housing and sewage, water, and electricity utilities led to a change from seasonal migration to establishment of permanent communities.⁶³ Thawing permafrost, erosion, and

62. *Id.*

^{55.} See Statewide Threat Assessment, supra note 54, at 1-2. No community was visited to evaluate local conditions and verify that the information gathered from public documentation accurately reflected the threats of erosion, flooding, and thawing permafrost to the communities. *Id.* The report represents a snapshot in time. There is currently no process to gather ongoing information about local level rates of erosion permafrost thaw and the impact of storm surges and flooding on the health and well-being of community residents as well as on the infrastructure in which they depend. *Id.*

^{56.} See id.

^{57.} See GAO-20-488, supra note 45, at 38 ("A well-designed climate migration pilot program based on best practices and that considers key factors could improve the federal institutional capability to assist states and communities with climate migration and limit federal fiscal exposure.").

^{58.} Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, 73 Fed. Reg. 18,553, 18,557 (Apr. 4, 2008); Statewide Threat Assessment, *supra* note 55, at 3-10 (showing combined risk map showing Newtok at seven and Quinhagak at 38 in the ranking of vulnerability and explaining the challenges of the combined ratings).

^{59.} HAZARD MITIGATION PLAN UPDATE, *supra* note 15, 6–7; Bronen, *Climate-Induced Community Relocations*, *supra* note 11, at 372–73.

^{60.} Bronen, Climate-Induced Community Relocations, supra note 11, at 373–74.

^{62.} See Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, supra note 52, at 193.

^{63.} ROBIN BRONEN & DENISE POLLOCK, NORWEGIAN REFUGEE COUNCIL AND ALASKA INST. FOR JUST., CLIMATE CHANGE DISPLACEMENT AND COMMUNITY RELOCATION: LESSONS FROM ALASKA 8 (2017), https://www.nrc.no/globalassets/pdf/reports/nrc-alaska_relocation-screen.pdf [https://perma.cc/WD74-ABB6].

usteq now exacerbate deterioration of this aging infrastructure.⁶⁴ Newtok urgently needs funding to finalize its community-wide relocation because it is predicted to become uninhabitable in the next few years.⁶⁵ Quinhagak is currently in a decision-making process assessing whether protection in place and the migration of infrastructure away from eroding coastlines and riverbanks is their best long-term adaptation strategy.⁶⁶ The community is one of 15 Alaska Native communities working with the Alaska Institute for Justice, a community-based non-profit organization, to create a replicable model of community-led relocation based in human rights doctrine.⁶⁷ The foundation of this work is to design and implement community-based environmental and social monitoring to dynamically assess how environmental change is impacting community health and well-being of community members.⁶⁸ This collaborative and multilevel documentation is critical for several reasons. First, by integrating community-based monitoring, government agencies can better provide predictive rates of local environmental change so that communities have the information they need to determine whether protection in place is possible. Second, understanding environmental risk and its impact on community health and well-being is critical in order for local governing entities and community residents to make adaptation decisions.⁶⁹

1. Quinhagak

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Quinhagak is bordered by Kuskokwim Bay in the Bering Sea, the Kanektok River, and many shallow lakes and streams.⁷⁰ The community is home to approximately 700 primarily Yup'ik residents and governed by a city and tribal government.⁷¹ Ancestors of community residents have resided at the same location since at least 1000 AD.⁷² Sixty thousand artefacts dating from the 17th century were

^{64.} Id. at 7; Statewide Threat Assessment, supra note 54, at 1-1.

^{65.} GAO-20-488, *supra* note 45, at 13–14.

^{66.} See Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, supra note 52, at 200.

^{67.} ROBIN BRONEN & DENISE POLLOCK, ALASKA INST. JUST., RIGHTS, RESILIENCE, AND COMMUNITY-LED RELOCATION: PERSPECTIVES FROM FIFTEEN ALASKA NATIVE COMMUNITIES 15 (2017), https://environmentalmigration.iom.int/sites/environmentalmigration/files/Rights%2C%20 Resilience%20and%20Community-led%20Relocation.pdf [https://perma.cc/X27Q-LV7V].

^{68.} BRONEN & POLLOCK, supra note 63, at 15.

^{69.} Bronen, Climate-Induced Community Relocations, supra note 11, at 30, 37.

^{70.} CITY OF QUINHAGAK HAZARD MITIGATION PLAN. TEAM, CITY OF QUINHAGAK HAZARD MITIGATION PLAN, 3-1 (2012), https://www.commerce.alaska.gov/web/Portals/4/pub/Quinhagak %20-%20Jan%202012.pdf [https://perma.cc/Q23M-YNG4].

^{71.} *Id.* at 3-2; POWTEC, LLC & TETRA TECH, QINHAGAK HAZARD IMPACT ASSESSMENT 9 (2012), https://www.commerce.alaska.gov/web/Portals/4/pub/Quinhagak%20HIA%20Main%20 Report_FINAL%20112112.pdf [https://perma.cc/RY5Q-GUFJ].

^{72.} *Quinhagak Community Storymap*, ALASKA DEP'T OF COMMERCE, CMTY., & ECON. DEV. – DIV. CMTY. & REG'L AFF. https://dcra-cdo-dcced.opendata.arcgis.com/datasets/0b35128d5 d1d4affa0cb4b36dd0f940a [https://perma.cc/4M49-CZVV] (last visited June 12, 2021) (follow "Culture and History" hyperlink); HAZARD MITIGATION PLAN UPDATE, *supra* note 15, at 46.

recently excavated so that they would not be permanently lost to the disappearing coastline.⁷³

Erosion, river flooding, coastal storm surges, thawing permafrost, and *usteq* threaten Quinhagak's residential dwellings, critical community infrastructure, and livelihoods. The USACE has determined that the entire community lies within the 100-year flood plain.⁷⁴ Flood hazards are high because the developed areas of Quinhagak are adjacent to the Kanektok River.⁷⁵ Because of its close proximity to the Bering Sea, Quinhagak is also exposed to storm surges.⁷⁶

2. The Inequitable Decisions Preventing Quinhagak from Receiving Protection

These hazards threaten critical infrastructure including Quinhagak's only functional dock, water treatment plant, health care clinic, and sewage lagoon.⁷⁷ Thawing permafrost is destabilizing the foundations of most buildings within the community, compromising their structural integrity.⁷⁸ Quinhagak needs more than \$3.2 million to address the impacts to their multipurpose facility, which houses the health care clinic and washeteria, before the foundation fails.⁷⁹

Both the community landfill and sewage lagoon are within 200 feet of the eroding shoreline and, if not protected, will release wastewater and solid waste when the perimeter is compromised.⁸⁰ Because of the importance of this critical infrastructure to the community, the Alaska Institute for Justice, working with the

76. Id. at 18-37.

^{73.} David Malakoff, *The Story of Nunalleq*, THE ARCHEOLOGICAL CONSERVANCY (May 15, 2018), https://www.archaeologicalconservancy.org/the-story-of-nunalleq/ [https://perma.cc/Q52H-UR3E]; A.R. Williams, *Alaska's Thaw Reveals—and Threatens—a Culture's Artefacts*, NAT'L GEOGRAPHIC (Apr. 2017), https://www.nationalgeographic.com/magazine/article/artifact-melt-alaska-archaeology-climate-change [https://perma.cc/MF2S-9H22]; Katie Basile, Jacqueline Cleve-land, & Teresa Cotsirilos, *Quinhagak's Nunalleq Dig Site Starts a New Chapter in Community-Based Archaeology*, KYUK (Aug. 21, 2018), https://www.kyuk.org/arts-culture/2018-08-21 /quinhagaks-nunalleq-dig-site-starts-a-new-chapter-in-community-based-archaeology [https://perma.cc/U657-XN5D].

^{74.} HAZARD MITIGATION PLAN UPDATE, *supra* note 15, at 54 (2019).

^{75.} *Id.* at 31.

^{77.} *Id.* at 26–32; CITY OF QUINHAGAK HAZARD MITIGATION PLANNING TEAM, *supra* note 70, at 5-11, 5-21; POWTEC, LLC & TETRA TECH, *supra* note 71, at 14–21.

^{78.} *Ice Is Infrastructure: Impacts of Permafrost Degradation,* CTR. ENV'T THREATENED COMTYS., https://alaskanativetribalhealthconsortium.createsend1.com/t/ViewEmail/j/E7DBD9F44 B03FE3F2540EF23F30FEDED/DAC2B03930E531D7948D468F162BC46E [https://perma.cc/YV 7C-L56R] (last visited Apr. 23, 2021).

^{79.} Id; HAZARD MITIGATION PLAN UPDATE, supra note 15, at 23, 48–50.

^{80.} RICHARD M. BUZARD, MARK M. TURNER, KATIE Y. MILLER, DONALD C. ANTROBUS, & JACQUELYN R. OVERBECK, ALASKA DEP'T NAT. RES., DIV. GEOLOGICAL & GEOPHYSICAL SURVS., NO. 2021-3, EROSION EXPOSURE ASSESSMENT–QUINHAGAK 2 (2021), https://dggs.alaska.gov/webpubs/dggs/ri/text/ri2021_003_Quinhagak.pdf [https://perma.cc/8SST-HAHC]; HAZARD MITIGATION PLAN UPDATE, *supra* note 15, at 23, 65 (estimating 200 feet of separation between the lagoon and the ocean and a rate of erosion, which was between nine and 15 feet per year prior to 2015, that has increased); CITY OF QUINHAGAK HAZARD MITIGATION PLANNING TEAM, *supra* note 70, at 6-12.

tribal and city governments, installed an *usteq* monitoring site fronting the sewage lagoon.⁸¹ The tribal government received funding from the Bureau of Indian Affairs (BIA) to develop a relocation strategy for the sewage lagoon in 2020 because the U.S. Army Corps of Engineers determined that shoreline protection was cost prohibitive.⁸² However, infrastructure relocation is limited by lakes, ponds, and streams that surround the village and restrict the available land for construction.⁸³

The community also faces a housing crisis. One-third of homes are unfit for human habitation due to significant subsidence resulting from permafrost thaw and subsequent infiltration of mold and rot.⁸⁴ Fifty homes were condemned in 2012, but people continue to live in them because of a lack of funding to construct new ones.⁸⁵ Only five have been redeveloped, with an additional two or three homes scheduled to be constructed by 2022.⁸⁶ Erosion also threatens fish camps.⁸⁷

In addition, vessels have great difficulty navigating the channels leading to the dock because of silt and large tidal action.⁸⁸ Fuel barges become stuck and are often damaged.⁸⁹ The U.S. Army Corps of Engineers decided it was cost prohibitive to dredge the river.⁹⁰ Air transportation is sometimes the only possible way to bring fuel to the community because of the dock's inaccessibility but is extremely costly for the community.⁹¹ Without access to the dock, tribal and city government leaders are concerned the community could cease to exist because of the expense of bringing in essential supplies.⁹²

The 2019 draft Hazard Mitigation Plan recommended monitoring rates of environmental change, such as sea level rise and erosion, in order to address the critical need for data to better predict rates of climate-induced environmental change and recommended that AIJ's community-based environmental monitoring continue.⁹³ Despite numerous reports documenting the unsafe condition of residents' homes and the environmental threats to critical community infrastructure, including a 2012 Local Hazard Mitigation Plan and Hazard Impact Assessment, minimal resources have been provided to address these issues.⁹⁴ The USACE costbenefit analysis is a significant obstacle to mitigating identified hazards and no other funding sources have been made available.⁹⁵ Accelerating environmental change now exacerbates the public health threat to the community.

^{81.} Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, supra note 52, at 193.

^{82.} HAZARD MITIGATION PLAN UPDATE, *supra* note 15, at 28–29.

^{83.} *Id.* at 53.

^{84.} Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, supra note 52, at 193.

^{85.} Id. at 8.

^{86.} Id.

^{87.} POWTEC, LLC & TETRA TECH, *supra* note 71, at 17.

^{88.} HAZARD MITIGATION PLAN UPDATE, supra note 15, at 67.

^{89.} Id. at 35; POWTEC, LLC & TETRA TECH, supra note 71, at 13, 25.

^{90.} HAZARD MITIGATION PLAN UPDATE, supra note 15, at 67.

^{91.} Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, supra note 52, at 193.

^{92.} HAZARD MITIGATION PLAN UPDATE, supra note 15, at 67.

^{93.} Id. at 62–69.

^{94.} Id.

^{95.} See id.

B. NEWTOK

Newtok is a Yup'ik community whose ancestors have lived on the Bering Sea coast for at least 2,000 years and are known as Qaluyaarmiut or "dip net people."⁹⁶ Located along the banks of the Ninglick River, Newtok faces increased temperatures, decreased arctic sea ice, thawing permafrost, storm surges, and flooding, which are causing *usteq*, moving the river closer to the village.⁹⁷ In 1950, the United States federal government forced the community to move to its current location.⁹⁸ At the time, more than one mile separated the river from the homes of tribal residents. Between 1954 and 2003, approximately three-quarters of a mile of tundra eroded in front of the village.⁹⁹

Six extreme weather events occurred between 2002 and 2017 and precipitated FEMA disaster declarations.¹⁰⁰ In December 2016, Newtok's tribal government requested that FEMA declare a disaster based on substantial infrastructure damage caused by the combination of storms, erosion, permafrost degradation, and flood-ing that had occurred since 2006 and was anticipated to continue.¹⁰¹ The tribal government also requested that President Obama issue a Presidential Disaster Declaration to allow the community to receive federal disaster relief funding.¹⁰²

99. SALLY RUSSELL COX, AN OVERVIEW OF EROSION, FLOODING, AND RELOCATION EFFORTS IN THE NATIVE VILLAGE OF NEWTOK 6 (2007), https://www.commerce.alaska.gov/web/portals/4/pub/Newtok%20Planning%20Group/Newtok Overview.pdf [https://perma.cc/PWY4-S5SE].

100. NEWTOK VILLAGE COUNCIL, NEWTOK TO MERTARVIK RELOCATION 2 (2017) https://www.congress.gov/116/meeting/house/108887/witnesses/HHRG-116-II24-Wstate-JordanJ-20190212-SD001.pdf [https://perma.cc/B2V5-QW87]; see also Bronen, Climate-Induced Community Relocations, supra note 11, at 376.

101. Rachel Waldholz, Alaskan Village, Citing Climate Change, Seeks Disaster Relief in Order to Relocate, NPR (Jan. 10, 2017), https://www.npr.org/2017/01/10/509176361/alaskan-villageciting-climate-change-seeks-disaster-relief-in-order-to-relocate [https://perma.cc/Q8VS-AAKX]; see also Sandy Recovery Improvement Act, Pub. L. No. 113-2, § 1110, 127 STAT. 4 (2013); Sandy Recovery Improvement Act of 2013, FEMA, https://www.fema.gov/disaster/sandy-recovery-improvement-act-2013 [https://perma.cc/LQ2D-3J3U] (July 6, 2021). The Sandy Recovery Improvement Act of 2013 amended the Stafford Act to allow federally recognized tribal governments the option to directly request a Presidential emergency or major disaster declaration, after first finding that the magnitude and impact of the damage is beyond the Tribe's capacity to respond. The Tribe also continues to have the option to request federal assistance through a state disaster declaration.

102. FEMA, PRELIMINARY DAMAGE ASSESSMENT REPORT (Jan. 18, 2017), https://www.fema.gov/sites/default/files/2020-03/PDAReportDenial-NewtokVillage.pdf [https://perma.cc/EH9Z-DQSX].

^{96.} Bronen, Climate-Induced Community Relocations, supra note 11, at 373.

^{97.} Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, *supra* note 52 at 192; GAO-20-488, *supra* note 45, at 13.

^{98.} Bronen, *Climate-Induced Community Relocations, supra* note 11, at 373–74 (2011). The community moved from Old Kealavik, which was across the Newtok River and approximately ten miles from the community's current location. Their ancestors moved seasonally among coastal and inland hunting and fishing camps. This migratory lifestyle changed during the late 19th and early 20th centuries primarily because the U.S. Department of the Interior's Bureau of Education began to develop a formal educational system for the Alaska Native community. The construction of schools along the western coast of Alaska and the requirement that Alaska Native children attend school caused the Alaska Native population to consolidate and settle. Barge accessibility to transport construction materials determined the location of the schools. *Id.*

President Obama, however, denied the request in a one-page letter, stating that "a major disaster declaration . . . is not appropriate to address this situation."¹⁰³ Two years later, 40 feet of land were lost during 10 days of storms in October 2018.¹⁰⁴ One home sat only 10 feet from the eroding riverbank, causing it to be abandoned.¹⁰⁵

With these October storms and as the rate of erosion grows, the consensus feeling within the community is worried; those closest to the erosion feel the anxiety most, as they witness the effects on a day-to-day basis... Nearly the entire community feels on edge. I know [I] have had a lot of sleepless nights.¹⁰⁶

1. Climate Impacts and Cost-Benefit Inequities

These environmental hazards have "significantly damaged or destroyed Newtok's public infrastructure, including the village dumpsite, barge ramp, sewage treatment facility, and fuel storage facilities."¹⁰⁷ The melting permafrost is also affecting the structural integrity of homes, which are also being flooded and inundated with mold.¹⁰⁸ A 2006 U.S. Army Corps of Engineers report determined that building protective seawalls was cost prohibitive and that it would be less expensive to relocate the community.¹⁰⁹ However, no funding for relocation was allocated as a consequence of this decision, even though the report found that the community would be at a complete loss within 10 to 15 years, by 2021.¹¹⁰

^{103.} *Id.*; see also Rachel Waldholz, *Obama Denies Newtok's Request for Disaster Declaration*, KTOO (January 18, 2017), https://www.ktoo.org/2017/01/18/obama-denies-newtoks-requestdisaster-declaration/ [https://perma.cc/QRB3-2UJP] (describing Newtok's application and FEMA's denial of it).

^{104.} Alaska Native Tribal Health Consortium, *Erosion Advances in Newtok*, NEWTOK RELOCATION Q. UPDATE, Jan. 2019, at 1, 1, https://www.commerce.alaska.gov/web/Portals/4/pub/Newtok%20Planning%20Group/Newtok_Relocation_Newsletter_2019-Jan_FINAL-2.pdf [https://perma.cc/8R5C-6TP9].

^{105.} Id.

^{106.} Isaac Stone Simonelli, *Newtok to Mertarvik*, ALASKA BUS. (Dec. 1, 2018) (second alteration in original), https://www.akbizmag.com/industry/construction/newtok-to-mertarvik/ [https://perma.cc/V5TW-5EYH].

^{107.} Bronen, *Climate-Induced Community Relocations, supra* note 11, at 377; *see also* U.S. ARMY CORPS OF ENG'RS, SECTION 117 PROJECT FACT SHEET 7–20 (2008), http://www.commerce.state.ak.us/dca/planning/pub/Newtok_Sec_117.pdf [hereinafter SECTION 117 PROJECT FACT SHEET] (evaluating the impact of erosion and storms on Newtok's infrastructure and examining alternatives to respond to the damage caused by these ecological events).

^{108.} GAO-20-488, *supra* note 45, at 13; *see also* COLD CLIMATE HOUS. RSCH. CTR., MERTARVIK MASTER HOUSING PLAN 13 (2017), http://cchrc.org/media/MertarvikHousingMaster-Plan.pdf [https://perma.cc/J35R-9NLM] (explaining the scope of the effect of environmental hazards on Newtok housing stock and detailing plans for new construction better-equipped to deal with erosion).

^{109.} See U.S. ARMY CORPS OF ENG'RS, ALASKA VILLAGE EROSION TECHNICAL ASSISTANCE PROGRAM 26–29 (2006), https://www.cakex.org/sites/default/files/documents/AVETA_Report.pdf [https://perma.cc/F42N-5V2U].

^{110.} Id. at Executive Summary.

Instead, capital investment in existing public infrastructure in Newtok has been almost non-existent because of the federal and state governments' reluctance to build new infrastructure in an existing floodplain and the community's decision to relocate.¹¹¹ The statutory restrictions of the National Flood Insurance Program prevented government agencies from investing in existing infrastructure in Newtok because of the current and expected future loss and damage to these facilities in areas prone to flooding.¹¹² New infrastructure could not be built because the hazard mitigation laws, written to protect people and infrastructure from flooding, require government agencies to defer construction in places susceptible to this environmental hazard.¹¹³ The result of these policies is that Newtok's seriously-deteriorated infrastructure cannot be upgraded-the entire community is prone to flooding, and there is no "alternate location within the community to address the infrastructure needs of the existing village."114 As a result, Newtok lacks an adequate sewage disposal system, leaving many residents to use "honey buckets" five-gallon buckets with plastic bag liners-instead of traditional plumbing and sewage systems.¹¹⁵ Thawing permafrost and erosion also prevent the community from building new homes to meet the needs of its population, causing a housing shortage which leaves people to live in overcrowded and substandard and unsafe housing.¹¹⁶

2. Climigration: Community Relocation Planning

To begin the relocation process, the Newtok tribal government first needed to identify a relocation site. In 1994, the Newtok tribal government began evaluating relocation sites to provide long-time safety for community residents.¹¹⁷ Newtok tribal members voted and overwhelmingly chose to relocate to land on Nelson Island located within the Yukon Delta National Wildlife Refuge and owned and

^{111.} See SECTION 117 PROJECT FACT SHEET, *supra* note 107, at 20 ("Opportunities for replacing these lost or compromised components of the community are hindered by the rapidly deteriorating physical conditions at the site and by public investment policies that preclude investments of new infrastructure at Newtok because it is subject to flooding and erosion.").

^{112.} Bronen, *Climate-Induced Community Relocations, supra* note 11, at 379–80; *see also* Administrative Order No. 175 (A.K. 1998), https://gov.alaska.gov/admin-orders/administrative-order-no-175/ [https://perma.cc/Y2SZ-TZB6] (requiring state-owned and state-financed construction projects to be sited and constructed in a manner that reduces the potential for flood and erosion damage); 42 U.S.C. § 4022(a)(1) (2019) (denying federal flood insurance coverage to public bodies that do not have adequate land use and control measures); ALASKA STAT. § 26.23.150 (2020) (requiring Alaska government to monitor and attempt to avoid dangers stemming from land use, such as flooding and land shifting); 44 C.F.R. § 60.3 (2020) (providing standards for flood plain management).

^{113. 42} U.S.C. § 4022(a)(1); Alaska Stat. § 26.23.150; 44 C.F.R. § 60.3.

^{114.} Bronen, Climate-Induced Community Relocations, supra note 11, at 380.

^{115.} Bronen, *Climate-Induced Community Relocations, supra* note 11, at 378–79; U.S. ARMY CORPS OF ENG'RS, ALASKA VILLAGE EROSION TECHNICAL ASSISTANCE PROGRAM, *supra* note 109, at 11–13.

^{116.} COLD CLIMATE HOUS. RSCH. CTR., supra note 108, at 9, 39.

^{117.} Bronen, Climate-Induced Community Relocations, supra note 11, at 383.

managed by the U.S. Fish and Wildlife Service.¹¹⁸ In 2003, Congress authorized the land exchange.¹¹⁹ The relocation site is approximately nine miles across the Ninglick River from Newtok and 40 miles from the nearest village on Nelson Is-land.¹²⁰ "No roads lead to or from the relocation site."¹²¹ Newtok residents named their relocation site "Mertarvik," a Yup'ik name that means "getting water from the spring."¹²²

3. Governance Framework for the Mertarvik Relocation

Once the relocation process began, a comprehensive governance structure needed to be implemented to orchestrate the collaboration of dozens of federal, state, and tribal government entities. The Newtok Village Council is currently the tribal governing body for approximately 315 tribal residents.¹²³ Two different collaborations among federal, state, and non-profit agencies worked with the tribal government to facilitate Newtok's relocation. The Newtok Planning Group has

120. Bronen, *Climate-Induced Community Relocations, supra* note 11, at 383–84 ("Tununak, Tooksook Bay, and Nightmute are the only three communities located on the island. The total population of these indigenous communities is approximately 1,065 residents. Seventy-seven percent of the island is uninhabited.").

121. Id.

122. See Alaskan Native Village and the Interior Department Land Exchange § 1358; Bronen, Climate-Induced Community Relocations, supra note 11, at 384.

123. The Newtok Traditional Council was the tribal governing entity that implemented the relocation process in 2006. The Newtok Village Council took over the relocation process in 2015. See Bronen, *Climate-Induced Community Relocations, supra* note 11, at 372; COLD CLIMATE HOUS. RSCH. CTR., *supra* note 108, at 13; DATA USA, *Newtok Alaska*, https://datausa.io/profile/geo/newtok-ak/ [https://perma.cc/K2BK-5VDL] (last visited Sept. 24, 2021) (providing the population of Newtok as of 2019); BETHEL COMTY. FOUND., *The Village—Newtok*, RELOCATE NEWTOK, https://relocatenewtok.org/about/ [https://perma.cc/PGV9-ABCJ] (last visited Sept. 24, 2021).

^{118.} *Id.* at 383–84. *See* ARCTIC SLOPE CONSULTING GRP., NEWTOK: BACKGROUND FOR RELOCATION REPORT 19–20 (2004) (reporting 92% support in relocation survey). Nelson Island is the fifteenth largest island in the United States. Alisa Mala, *Largest Islands in the United States*, WORLDATLAS (Feb. 16, 2021), https://www.worldatlas.com/articles/largest-islands-in-the-united-states.html [https://perma.cc/8YYZ-TUVF]; Bronen, *Climate-Induced Community Relocations, supra* note 11, at 383–85.

^{119.} See Alaskan Native Village and the Interior Department Land Exchange, Pub. L. No. 108-129, 117 Stat. 1358 (2003) (codified as amended at 16 U.S.C. § 668dd (2006)) (describing the procedure by which the Newtok community can exchange ownership of their current land with that of the proposed relocation site). The Newtok Native Corporation is now the landowner of the relocation site. See Bronen, Climate-Induced Community Relocations, supra note 11, at 385. The Council is "the sole governing authority working with state and federal government agencies to facilitate the community's relocation." Id. Legal control over the land is crucial for the relocation process. Id. See also COLD CLIMATE HOUS. RSCH. CTR., supra note 108, at 10, 84–85. In April 2017, NVC and Newtok Native Corporation (NNC) executed a "Real Property Master Site Control Agreement" which provides NVC access and site control of the Mertarvik site for construction efforts and allows NVC to license lands to contractors for engineering and construction activities. See DOWL, MERTARVIK RELOCATION PROJECT STATUS REPORT FOR STEERING COMMITTEE, ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV. 1 (May 11, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/DOWL Status Report 20170511.pdf (describing the Real Property Master Site Control Agreement) [https://perma.cc/YVP3-5RQH] [hereinafter DOWL Steering Committee Meeting, May 11, 2017].

been working on the community's relocation since 2006.¹²⁴ The Group consists of approximately 25 state, federal, and tribal governmental and nongovernmental agencies that are all voluntarily collaborating to facilitate Newtok's relocation.¹²⁵ The Alaska Department of Commerce, Community, and Economic Development (DCCED) is the lead coordinating Alaska state agency for comprehensive integrated planning initiatives like the Newtok Planning Group.¹²⁶ Additional members of the Newtok Planning Group include the Native Village of Newtok, represented by the Newtok Village Council and the Newtok Native Corporation, seven Alaska state agencies,¹²⁷ the Alaska Governor's Office, Lower Kuskokwim School District, nine federal agencies,¹²⁸ members of Alaska's Congressional delegation, and four regional nonprofit organizations.¹²⁹

The Mertarvik Steering Committee began meeting in 2016 after President Obama designated the Denali Commission the central coordinator of the federal effort to build climate resilience in Alaska.¹³⁰ The Denali Commission did not

127. See Bronen, *Climate-Induced Community Relocations, supra* note 11, at 386 n.2 ("The state agencies include Alaska Department of Commerce, Community, and Economic Development, Division of Community & Regional Affairs, which is coordinating the Newtok Planning Group; Alaska Department of Environmental Conservation Village Safe Water Program; Alaska Department of Transportation and Public Facilities; Alaska Department of Military and Veterans Affairs Division of Homeland Security and Emergency Management; Alaska Department of Natural Resources, Division of Coastal and Ocean Resources; Alaska Department of Education and Early Development; Alaska Department of Health and Social Services; Alaska Industrial Development and Export Authority; and Alaska Energy Authority.").

128. *Id.* at 386 n.245 ("Federal agencies include U.S. Army Corps of Engineers, Alaska District; U.S. Department of Commerce; U.S. Economic Development Administration; U.S. Department of Agriculture, Rural Development; Natural Resources Conservation Service; U.S. Department of Housing and Urban Development; U.S. Department of the Interior, Bureau of Indian Affairs; U.S Department of Transportation, Federal Aviation Administration; U.S. Environmental Protection Agency; and Denali Commission.").

129. *Id.* at 386 n.246 ("The four regional nonprofit organizations are Association of Village Council Presidents Regional Housing Authority, Coastal Villages Region Fund, Rural Alaska Community Action Program, and Yukon-Kuskokwim Health Corporation.").

130. GAO-20-488, *supra* note 45, at 16; Rachel Waldholz, *Obama Brought Attention to Threatened Arctic Villages, but Little Funding So Far,* ALASKA PUB. MEDIA (Dec. 19, 2016) https://www.alaskapublic.org/2016/12/19/obama-brought-attention-to-threatened-arctic-villagesbut-little-funding-so-far/ [https://perma.cc/PD36-SJGX]; Press Release, The White House Office of the Press Secretary, FACT SHEET: President Obama Announces New Investments to Combat Climate Change and Assist Remote Alaskan Communities (Sept. 2, 2015), https://obamawhitehouse.archives.gov/the-press-office/2015/09/02/fact-sheet-president-obama-announces-new-investments-combat-climate [https://perma.cc/VH9F-U45R]; *Mertarvik Relocation Project Steering Committee*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV., https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/NewtokPlanningGroup/MertarvikReloca-tionProjectSteeringCommittee.aspx [https://perma.cc/SLKW-XD3U].

^{124.} Bronen, Climate-Induced Community Relocations, supra note 11, at 385.

^{125.} Id.

^{126.} See Administrative Order No. 231 (A.K. 2006), https://gov.alaska.gov/admin-orders/administrative-order-no-231/ [https://perma.cc/B4ZK-WKT6] (directing, under a 2006 state disaster declaration by former Alaska Governor Murkowski, DCCED to "act as the state coordinating agency to coordinate with other state and federal agencies to propose long-term solutions to the ongoing erosion issues in . . . affected coastal communities in this state").

receive any new funding with this designation.¹³¹ Representatives for the Mertarvik Relocation Steering Committee include the Newtok Village Council, Newtok Native Corporation (NNC), the State of Alaska (Alaska Division of Community and Regional Affairs and Governor's office), the Denali Commission, the U.S. Bureau of Indian Affairs, and the U.S. Department of Housing and Urban Development.¹³² The Mertarvik Steering Committee develops strategies with the Newtok Planning Group to meet the community's immediate and long-term needs and focuses on building the necessary infrastructure to implement the community's relocation.¹³³ Working groups within the Mertarvik Steering Committee include a housing team and a construction team.¹³⁴ Three federal government agencies, the Denali Commission, Housing and Urban Development (HUD), and the Bureau of Indian Affairs (BIA), as well as the non-profit Association of Village Council Presidents Regional Housing Authority (AVCP-RHA), work with Newtok's tribal government to coordinate funding strategies for housing.¹³⁵

No state or federal statutes or regulations govern or guide the relocation work. The U.S. Army Corps of Engineers is the only federal government agency that has had statutory authority to create infrastructure for a community-wide relocation.¹³⁶ However, in 2006 the USACE *stated* they did not believe they had sufficient authority to facilitate the relocation.¹³⁷ The Denali Commission identified 60 programs, including discretionary grants, formula grants, technical assistance programs, and loan programs, across 10 federal government agencies that could support different components of a community relocation process, but none are designed to fund a community-wide relocation.¹³⁸

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^{131.} Waldholz, supra note 130.

^{132.} Mertarvik Relocation Project Steering Committee, supra note 130.

^{133.} *Id*; DOWL, *Mertarvik Relocation Project Steering Committee #5 Meeting*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV., (Jan. 12, 2016), https://www.commerce.alaska.gov/web/Portals/4/pub/Meeting_Notes_20161202.pdf [https://perma.cc/XA7V-CE55] [hereinafter *DOWL Steering Committee #5 Meeting, Jan. 12, 2016*].

^{134.} DOWL Steering Committee #5 Meeting, Jan. 12, 2016, supra note 133.

^{135.} About AVCP RHA, ASS'N VILL. COUNCIL PRESIDENTS REG'L HOUS. AUTH., https://www.avcphousing.org/about/ [https://perma.cc/YX6V-RCAJ].

^{136.} GAO-20-488, *supra* note 45, at 36–37.

^{137.} *Id.* at 4; U.S. ARMY CORPS OF ENG'RS, IMPLEMENTATION OF STUDIES AND PROJECTS UNDER 116 OF THE ENERGY AND WATER DEVELOPMENT AND RELATED AGENCIES APPROPRIATIONS ACT, 2010 PUBLIC LAW 111-85, (2010), https://www.poa.usace.army.mil/Portals/34/docs/civilworks /Section%20116%20Guidance%201%20June%2010.pdf [https://perma.cc/6GVJ-BLG2]; *DOWL Steering Committee #5 Meeting, Jan. 12, 2016, supra* note 133.

^{138.} DENALI COMM'N, CATALOGUE OF FED. PROGRAMS, COMMUNITY RESILIENCE IN ALASKAN COMMUNITIES (2018), https://www.denali.gov/wp-content/uploads/2018/10/Catalog-of-Federal-Programs-for-Alaskan-Communities-27Jul2018-Final.pdf [https://perma.cc/2G53-Y36F] (showing that discretionary programs are typically competitive while formula programs base funding allocations on program specific factors and other programs include loans and loan guarantees); GAO-20-488, *supra* note 45, at 16–17, 30–37.

4. Climigration: Community Relocation Implementation

In October 2019, 140 adults and children residing in 21 homes, approximately one-third of Newtok's population, moved to Mertarvik.¹³⁹ The relocation of these residents is the culmination of an intense multi-decade process occurring in two phases, and it demonstrates the urgent need to create a federal relocation governance framework.¹⁴⁰ The first phase took place between 2006 and 2016 and included the construction of barge landings to enable the transport of construction materials to the relocation site, seven homes, the Mertarvik Evacuation Center foundation, and a well and septic system.¹⁴¹ The second phase began in 2016 when the first Mertarvik Steering Committee meeting occurred.¹⁴²

5. Construction of Pioneer Infrastructure

The first phase's limited funding resources necessitated some repeated work in the second phase. For instance, previous versions of the Mertarvik community layout plan, which described the type and location of all infrastructure to be built in Mertarvik, were deemed inadequate.¹⁴³ Limited funding also significantly delayed the building of the pioneer infrastructure at the relocation site.¹⁴⁴ Construction of the Mertarvik Evacuation Center (MEC) has been a decade-long

143. See Bronen, Climate-Induced Community Relocations, supra note 11, at 389 ("Village Safe Water, the state agency dedicated to the design and construction of sanitation systems in rural Alaska, received funding in 2006 to focus exclusively on creating a water, sewer, and solid waste master plan in Mertarvik. Understanding the need to create a comprehensive relocation strategy, Village Safe Water also hoped this funding would provide time for other agencies 'to identify and secure funding' for the non-sanitation components of the relocation plan. Several months later, the Alaska Department of Commerce, Community, and Economic Development Division of Community & Regional Affairs received funding to supplement the VSW work by developing a comprehensive community layout plan to determine the specific location of homes and public infrastructure."); see also GAO-09-551, supra note 53, at 30 (noting that the "completion of a preliminary layout of water and sewer infrastructure by the Alaska Department of Environmental Conservation's Village Safe Water Program" was a sign of "significant progress").

^{139. &}quot;Newtok Village Council (NVC) selected these households with a housing policy, application and application scoring sheet," which included proximity to erosion and flooding, number of school age children, tribal affiliation, alternative housing availability, and critical job skills. *See* Alaska Native Tribal Health Consortium, *Move-in and Mertarvik Occupancy in Fall 2019*, NEWTOK RELOCATION Q. UPDATE, Sept. 2019, at 1, 1, https://www.commerce.alaska.gov/web/Portals/4/pub /Newtok%20Planning%20Group/Newtok_Relocation_Newsletter_2019-September_FINAL.pdf [https://perma.cc/8SGK-P4LH].

^{140.} Newtok Relocation News, supra note 14.

^{141.} COLD CLIMATE HOUS. RSCH. CTR., supra note 108, at 13.

^{142.} Newtok Relocation News, supra note 14; DOWL, Mertarvik Relocation Project Steering Committee #1 Meeting, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV.DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV. (Aug. 25, 2016), https://www.commerce.alaska.gov/web/Portals/4/pub/6-Mertarvik_Steering_Committe_Meeting_1 _Notes_final.pdf [https://perma.cc/VUD9-986A] [hereinafter DOWL Steering Committee #1 Meeting, Aug. 25, 2016].

^{144.} Bronen, Climate-Induced Community Relocations, supra note 11, at 388.

process.¹⁴⁵ In 2008, a USACE report recommended its construction, and the tribal government received funding for its design from the Alaska Climate Change Impact Mitigation Program.¹⁴⁶ Building the MEC was critical for implementing the community relocation, providing evacuation facilities, and supplying a multi-use assembly space for a pioneer school.¹⁴⁷ To make construction possible, Newtok's tribal government had to coordinate funding from the State of Alaska, the Denali Commission, USACE, and HUD and they also had to meet the 35% funding match that USACE funding required.¹⁴⁸

Finding funding for housing has been the greatest need and barrier for the relocation to Mertarvik. The current village of Newtok contains 78 houses, the majority of which are in poor or very poor condition.¹⁴⁹ A Mertarvik Housing Master Plan has determined that at least 105 homes need to be constructed at the relocation site.¹⁵⁰ The Mertarvik Steering Committee worked intensively with Newtok's tribal government to develop a housing finance strategy focused on

149. *Mertarvik Housing*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV., https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/NewtokPlanningGroup/MertarvikHousing.aspx [https://perma.cc/QD74-UX3S].

150. COLD CLIMATE HOUS. RSCH. CTR., *supra* note 108, at 9 (building sustainable homes which reflect the local culture, including adequate space for the storage of subsistence foods, is a primary focus); *see also DOWL Steering Committee Meeting, May 11, 2017, supra* note 119.

^{145.} *Mertarvik Evacuation Center*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV., https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement /NewtokPlanningGroup/MertarvikEvacuationCenter.aspx [https://perma.cc/E33H-YLXT] (last visited Oct. 10, 2021); COLD CLIMATE HOUS. RSCH. CTR., *supra* note 108, at 15. *See generally* U.S. ARMY CORPS ENG'RS, NEWTOK EVACUATION CENTER, MERTARVIK, NELSON ISLAND, ALASKA (2008), https://www.poa.usace.army.mil/Portals/34/docs/civilworks/reports/Newtok%20Evacuation %20Center%20EA%20&%20FONSI%20July%2008.pdf [https://perma.cc/O9X6-PCHP].

^{146.} Mertarvik Evacuation Center, supra note 145, at 1.

^{147.} DOWL, Mertarvik Relocation Project Steering Committee #9 Meeting, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 7–19 (June 22, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/Mertarvik_Sterring_Committee_Meeting_9_Notes.pdf [https://parma.gc//EG5_LP3E1[hereinafter_DOWL_Stearing_Committee #9 Meeting_12, 2017]]

[[]https://perma.cc/4EG5-LR3E] [hereinafter DOWL Steering Committee #9 Meeting, June 22, 2017]. 148. Id.; DOWL, Mertarvik Relocation Project Status Report for Steering Committee, DIV. CMTV. & PEC'L AFE ALASKA DEP'T COM CMTV & FOON DEV. 1 (Oct 4, 2017).

CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 1 (Oct. 4, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/DOWL_Status_Report_11.pdf [https://perma .cc/3PF6-KZ7N] [hereinafter *DOWL Steering Committee Meeting, Oct. 4, 2017*]. NVC received a HUD IT grant to fund electricity and plumbing for the MEC to support educational space that will be lost when the river rises to cover the school grounds in Newtok. NVC received state funding to cover costs to erect the shell and interior walls, but the funds were not sufficient to make the MEC functional for its intended use. *See also* DOWL, *Mertarvik Relocation Project Status Report for Steering Committee*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV., 1 (Aug. 9, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/2017%2008%2009 %20DOWL%20report%20to%20Steering%20Committee.pdf [https://perma.cc/S3GW-B5WA] [hereinafter *DOWL Steering Committee Meeting, Aug. 9, 2017*].

leveraging housing funds, but grant funding was extremely limited and could only be used for certain components of housing construction. ¹⁵¹

The house funding strategy exemplifies the complexity of navigating multiple programs, each with their own different eligibility criteria and timelines, and demonstrates the urgent need to create a completely different process. Two federal government agencies, HUD and BIA, and three different HUD grant programs, including the Indian Community Development Block Grant (ICDBG) Imminent Threat program, Native American Housing Assistance and Self Determination Act (NAHASDA) Title VI program, and the Indian Housing Block Grants (IHBG) program, funded the construction of 11 homes between 2006 and 2018, a mere fraction of the number of homes the community needs.¹⁵²

NAHASDA includes two programs: the IHBG, which is a formula-based grant program, and the Title VI Loan Guarantee program, which provides financing guarantees to Indian tribes for private market loans to develop affordable housing.¹⁵³ The IHBG formula is based on local needs and housing units under management by the Tribe or the Tribal Designated Housing Entity (TDHE).¹⁵⁴ Similar to the NAHASDA Title VI funds, the Housing Improvement Program (HIP) within the Bureau of Indian Affairs can provide category D funds, which are

^{151.} DOWL, Mertarvik Relocation Project Status Report for Steering Committee, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 2 (Oct. 27, 2016), https://www.commerce.alaska.gov/web/Portals/4/pub/Mertarvik_Steering_Committee_Meeting_3_Status_Report _20161027.pdf [https://perma.cc/7T4C-XE8E] [hereinafter DOWL Status Report, Oct. 27, 2016]; DOWL, Mertarvik Relocation Project Status Report for Steering Committee, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 2 (Feb. 9, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/DOWL_Status_Report_20170209.pdf [https://perma.cc /5QG3-DZ5M] [hereinafter DOWL Status Report, Feb. 9, 2017].

^{152.} Bureau of Indian Affairs (BIA) Housing Improvement Program (HIP) Homes funded the construction of the first three homes in 2007. In 2011, Newtok received grants for three additional homes from the Association of Village Council Presidents (AVCP) Regional Housing Authority through HUD's NAHASDA Program. Homes were built in 2012. The seventh home was built in 2016 and funded by a BIA HIP grant. In 2018, four homes were constructed through funding from a HUD Indian Community Development Block Grant Imminent Threat grant, the Indian Housing Development Block Grant Village Allocation Program, and NAHASDA Title VI funding. *See* DOWL, *Mertarvik Relocation Project Status Report for Steering Committee*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 12 (Jan. 10, 2016), https://www.commerce.alaska.gov/web/Portals/4/pub/Meeting_Notes_20161202.pdf [https://perma.cc/TM8B-332R] [hereinafter *DOWL Status Report, Jan. 10, 2016*]; COLD CLIMATE HOUS. RSCH. CTR., *supra* note 108, at 13; *Mertarvik Housing, supra* note 149.

^{153.} *NAHASDA*, U.S. DEP'T OF HOUS. & URB. DEV., https://www.hud.gov/program_offices /public_indian_housing/ih/codetalk/nahasda [https://perma.cc/2SL2-5NYL] (last visited June 12, 2021). Regulations governing the formula can be found at 24 C.F.R. § 1000, Subpart D.

^{154.} *IHBG Formula*, U.S. DEP'T HOUS. & URB. DEV., https://www.hud.gov/program_offices /public_indian_housing/ih/codetalk/onap/ihbgformula [https://perma.cc/ZTZ2-258V].

structured as loans and must be leveraged with other funding.¹⁵⁵ Newtok Village Council (NVC) has submitted 50 HIP applications.¹⁵⁶

The Indian Community Development Block Grant (ICDBG), which HUD administers, includes the ICDBG Imminent Threat grant program.¹⁵⁷ The program provides funding to address immediate negative impacts on the public health or safety of tribal residents.¹⁵⁸ However, the program only has a national set-aside of approximately \$4 million on a first come, first served basis until the amount set aside for this purpose is expended.¹⁵⁹ To access these funds, the NVC adopted a resolution naming the Association of Village Council Presidents-Regional Housing Authority (AVCP-RHA) as its community-based development organization, which is a requirement for administering ICDBG and Title VI funding.¹⁶⁰ These HUD programs provided funding for home construction, but without public utility infrastructure at the relocation site, Newtok needed a different revenue source to fund power, sewage, and water for each individual home.¹⁶¹

The FEMA-funded Hazard Mitigation Grant Program (HMGP), which helps communities implement risk reduction measures following Presidentially-Declared Disasters, provided additional housing funds when Newtok was included in

157. 24 C.F.R. § 1003.

158. *Id.*; *FY 2021 Community Development Block Grant Program for Indian Tribes and Alaska Native Villages*, U.S. DEP'T OF HOUS. & URB. DEV., https://www.hud.gov/program_offices /spm/gmomgmt/grantsinfo/fundingopps/fy21_cdbg [https://perma.cc/QC58-484S] (last visited Feb. 19, 2022).

160. DOWL Steering Committee #9 Meeting, June 22, 2017, supra note 147.

161. *Id.* (providing a small power plant and grid for the 'pioneer' homes is a major gap); Alaska Native Tribal Health Consortium, *Funding Successes*, NEWTOK RELOCATION Q. UPDATE, Jan. 2019, at 1, 1, https://www.commerce.alaska.gov/web/Portals/4/pub/Newtok%20Planning%20 Group/Newtok_Relocation_Newsletter_2019-Jan_FINAL-2.pdf [https://perma.cc/8R5C-6TP9] (describing how United Methodist Core of Relief provided funding to install Portable Alternative Sanitation Systems, which provide in home sewage and water storage and treatment to be used in Mertarvik's homes before piped water and sewer is supplied to the community).

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^{155. 25} C.F.R. § 256.11 (2015). Category D assistance is available to individual homeowners if you apply for financing from tribal, federal, or other sources of credit and have limited financial resources to meet the lender requirements for home ownership.

^{156. 25} C.F.R. § 256.12 (2015). Category D money is paid directly to AVCP for each home, then the funding is applied to each homeowner. Four Newtok residents qualified for the BIA HIP Category D loan buy-down program. The likely lead agency to manage these funds will be AVCP RHA. *See* DOWL, *Mertarvik Relocation Project Status Report for Steering Committee*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 1 (Mar. 9, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/DOWL_Status_Report_20170309.pdf [https://perma.cc /8ZD9-QRG2] [hereinafter *DOWL Status Report, Mar. 9, 2017*].

^{159.} U.S. DEP'T OF HOUS. & URB. DEV., FR-6500-N-23, PUBLIC AND INDIAN HOUSING — COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM FOR INDIAN TRIBES AND ALASKA NATIVE VILLAGES 4, 13 (2021), https://www.hud.gov/sites/dfiles/SPM/documents/FY21_CDBG_NOFO updated9.2.2021.pdf [https://perma.cc/7L43-PTVG]; *FY 2019 and 2020 Community Development Grant Program for Indian Tribes and Alaska Native Communities*, U.S. DEP'T OF HOUS. & URB. DEV., https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo/fundingopps/fy19fy20cdgp forindiantribesandalaskanativevillages [https://perma.cc/W9W3-Q3HE] (last visited June 12, 2021).

a presidentially-declared disaster in November 2013.¹⁶² Using these funds, the NVC initially decided to relocate homes instead of using the FEMA "buy-out" process through which FEMA purchases homes from individuals at fair market value, allowing the homeowners to apply the funds to new homes.¹⁶³ This decision was based on the results of its home structural survey and cost-benefit analysis, which concluded relocating homes would be more cost-effective, since FEMA demolishes the homes it acquires and removes the debris to certified land-fills.¹⁶⁴ In 2015, the Alaska Division of Homeland Security and Emergency Management (DHS&EM) and FEMA approved the first phase of the relocation of a dozen of the most threatened houses.¹⁶⁵ The process then stalled; FEMA statutory barriers made these funds inaccessible because the relocation site lacked utilities.¹⁶⁶

As a consequence, in September 2016, three years after the disaster declaration, NVC had to completely shift its work from the relocation of homes to a 'buyout' option for the Hazard Mitigation Grant Program.¹⁶⁷ NVC submitted a new FEMA application to apply for this funding, which required a new FEMA review process, including an environmental review.¹⁶⁸ Securing FEMA buy-out funding depended on NVC's identification of a financial institution to help leverage housing funds, but was in turn dependent on the receipt of other grant funds.¹⁶⁹ Due to the timing of the change in strategy, DHS&EM and FEMA notified NVC that the buy-out application was incomplete and was no longer a viable project.¹⁷⁰ Because the application was missing key elements and the DHS&EM ran out of time to fix the problems, the project could not be funded through the disaster under which it was originally declared and was moved to another funding cycle.¹⁷¹ Instead of returning the money to FEMA, DHS&EM redirected the funding to communities with complete applications.¹⁷² Newtok hoped to use this smaller sum of money to build in 2018.¹⁷³

^{162.} *Mertarvik Evacuation Center, supra* note 145; COLD CLIMATE HOUS. RSCH. CTR., *supra* note 108, at 87; Letter from Appeal, Jason A. Gazewood, Jason A. Weiner, & Michael J. Walleri to Adjutant Gen. B.G. Laurel Hummel, Comm'r, Alaska Dep't of Mil. & Veteran Aff. (Aug. 14, 2017) (on file with author) [hereinafter Gazewood, Weiner, & Walleri appeal].

^{163.} Gazewood, Weiner, & Walleri appeal, *supra* note 162, at 3.

^{164.} Id. at 4.

^{165.} Id. at 3.

^{166.} Id.; see also DOWL Status Report, Oct. 27, 2016, supra note 151; DOWL Steering Committee Meeting, Aug. 9, 2017, supra note 148.

^{167.} Gazewood, Weiner, & Walleri appeal, supra note 162, at 4.

^{168.} Id. at 4-11, Exhibit 1.

^{169.} DOWL Status Report, Feb. 9, 2017, supra note 151.

^{170.} Gazewood, Weiner, & Walleri appeal, supra note 162.

^{171.} See Rachel Waldholz, Newtok Says State Agency Blocked Access to Disaster Funding, ALASKA PUB. MEDIA (Oct. 20, 2017), https://www.alaskapublic.org/2017/10/20/newtok-says-state-agency-blocked-access-to-disaster-funding/ [https://perma.cc/W74U-TNJM].

^{172.} *Id.* ("[The DHS&EM] ruled that Newtok's application was incomplete. The division refused to submit the plan to FEMA, the Federal Emergency Management Agency. So the money Newtok was counting on will likely go to Butte and Sutton in the Mat-Su Borough, instead.").

^{173.} Id.

Instead, Newtok's house funding efforts received a major boost when Congress passed its 2018 budget and granted \$30 million to the Denali Commission, which decided that \$15 million would be dedicated to Newtok's relocation efforts.¹⁷⁴ The Denali Commission also appropriated \$1.5M in their FY18 work plan for funding housing.¹⁷⁵

Despite receiving this significant increase, Newtok's funding barriers persisted. NVC requested that the various agencies providing funding for housing transfer all their funding to a single centralized agency for procurement, contract management, and administration efficiencies.¹⁷⁶ The agencies were unable to do so, even though several federal grant programs encourage or require leveraging of funds.¹⁷⁷ HUD and AVCP-RHA determined they could not transfer their funds to the Denali Commission to leverage the \$15 million appropriation for singleagency administration because the HUD IT grant and AVCP Title VI funds had to be handled independently.¹⁷⁸ AVCP-RHA also determined they were uncomfortable administering BIA HIP funding.¹⁷⁹

In 2020, HUD announced more than \$655 million in Indian Housing Block Grants to Native American Tribes in 38 States.¹⁸⁰ Newtok received \$223,446,

^{174.} Id. FEMA has consistently declined to approve disaster declarations for erosion and other ongoing events. During a 2017 Congressional Hearing, Senator Murkowski challenged President Obama's decision not to declare a Presidential Disaster after the Newtok tribal government submitted two disaster tribal declarations based on the accelerating rates of erosion. See generally Emergency Management in Indian Country: Improving FEMA's Federal-Tribal Relationship with Tribes: Hearing before the U.S. Senate Comm. on Indian Affairs, 115th Cong. 33 (2017), https://www.indian.senate.gov/hearing/oversight-hearing-emergency-management-indian-country-improving-femas-federal-tribal [https://perma.cc/MJL7-G7H6] (click on the "Download Transcript" hyperlink and scroll to page 33). As a consequence, Senator Murkowski included a \$20 million appropriation to the Denali Commission to finally implement Newtok's relocation plan. See Consolidated Appropriations Act, Pub. L. No. 115-141, 132 Stat. 348, 531 (2018); Newtok Residents Begin Relocation to Mertarvik, DENALI COMM'N, https://www.denali.gov/newtok/ [https://perma.cc/MFQ4-T5LF].

^{175.} DOWL Steering Committee Meeting, Oct. 4, 2017, supra note 148 ("Denali Commission has appropriated \$1.5M in their FY18 work plan for house funding.").

^{176.} DOWL Status Report, Oct. 27, 2016, supra note 151; DOWL Steering Committee Meeting, Aug. 9, 2017, supra note 148.

^{177.} DOWL Status Report Oct. 27, 2016, supra note 151; DOWL Steering Committee Meeting, Aug. 9, 2017, supra note 148; see also, DOWL, Mertarvik Relocation Project Status Report for Steering Committee, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV., 1 (Nov. 28, 2016), https://www.commerce.alaska.gov/web/Portals/4/pub/Mertarvik_Steering_Committee _Meeting_4_Status_Report_20161202.pdf [https://perma.cc/6996-LLVP] [hereinafter DOWL Status Report, Nov. 28, 2016]. The BIA "encourages partnerships and leveraging with other complementary programs to increase basic benefits derived from the HIP." 25 CFR § 256.3.

^{178.} DOWL Status Report, Nov. 28, 2016, supra note 177.

^{179.} DOWL Steering Committee Meeting, May 11, 2017, supra note 119.

^{180.} Press Release, United States Department of Housing and Urban Development, Secretary Ben Carson Announces \$655 Million to Help Tribes Support More Affordable Housing (Feb. 18, 2020), https://www.hud.gov/press/press_releases_media_advisories/HUD_No_20_031 [https://perma.cc/22N6-NKXX].

approximately half of the cost to build one home in Newtok.¹⁸¹ By the end of 2020, the Mertarvik Steering Committee anticipated that half of Newtok's residents would have relocated to Mertarvik, but COVID-19 is delaying their ability to accomplish this goal,¹⁸² and as of September 2021, nine homes in Mertarvik remained unfinished and unoccupied because they were started in 2020 and nobody has moved from Newtok to Mertarvik since 2019.¹⁸³

6. When Will All Newtok Residents Reach Higher Ground?

Due to the complex statutory and funding barriers to relocating residents, there is no definitive timeline within which all community residents will relocate to safer, higher ground in Mertarvik. The limitations of existing federal and state statutes and regulations, such as the post-disaster recovery legislation and federal housing grant programs, have impeded the community's efforts throughout the relocation process.¹⁸⁴ For example, when a 2005 storm destroyed Newtok's barge landing and was declared a federal disaster, the subsequently available funds could not be used to build a new barge landing at Mertarvik, which is essential to transporting construction materials to the relocation site.¹⁸⁵ In 2017, statutory restrictions prevented the tribal government's access to FEMA funds for relocating homes. At the state level, environmentally threatened communities are not prioritized for capital projects because no mechanism exists to recognize the urgency of

^{181.} *Id.* Quinhagak (spelled Kwinhagak in the press release) received approximately \$481,000 of these funds. *Id.*; Greg Kim, *With Virus Funds, Newtok Will Build More Homes in Mertarvik*, ALASKA PUB. MEDIA (July 30, 2020), https://www.alaskapublic.org/2020/07/30/withboon-of-funding-newtok-faces-questions-of-how-to-best-get-remaining-residents-to-mertarvik/ [https://perma.cc/6EVK-GRD3].

^{182.} Alaska Native Tribal Health Consortium, 2020 Design and Construction Efforts: NEWTOK RELOCATION Q. UPDATE, Sept. 2019, at 4, https://www.commerce.alaska.gov/web/Portals /4/pub/Newtok%20Planning%20Group/Newtok_Relocation_Newsletter_2019-September_FINAL .pdf [https://perma.cc/L74U-2RBY]; Kim, With Virus Funds, supra note 181; Greg Kim, How COVID-19 is Continuing to Slow a Village's Relocation, ALASKA PUB. MEDIA (Sept. 7, 2021), https://www.kyuk.org/post/how-covid-19-continuing-slow-down-villages-relocation [https://perma.cc/377N-VSSB].

^{183.} Kim, How COVID-19, supra note 182.

^{184.} See IMMEDIATE ACTION WORKGROUP, ALASKA DEP'T ENVTL. CONSERVATION, RECOMMENDATIONS TO THE GOVERNOR'S SUBCABINET ON CLIMATE CHANGE 69 (2009), http://www.climatechange.alaska.gov/docs/iaw_finalrpt_12mar09.pdf [https://perma.cc/RV98-DS7F] [hereinafter IAW 2009 RECOMMENDATIONS] (noting that "state and federal disaster statutes require that all other possibilities be exhausted before relocation is considered").

^{185.} See IMMEDIATE ACTION WORKGROUP, ALASKA DEP'T ENVTL. CONSERVATION, MEETING SUMMARY 5 (Jan. 18, 2008), http://www.climatechange.alaska.gov/docs/iaw_18jan08_sum.pdf [https://perma.cc/M4H9-FEYY] [hereinafter IAW 2008 RECOMMENDATIONS] (showing that funds were only available "if directly related to life or safety"); Isaac Stone Simonelli, *Newtok to Mertarvik*, ALASKA BUS. (Dec. 1, 2018), https://www.akbizmag.com/industry/construction/newtok-to-mertarvik/ [https://perma.cc/V5TW-5EYH]; Bronen, *Climate-Induced Community Relocations*, *supra* note 11, at 378.

needs for funding.¹⁸⁶ Other federal government agencies, such as the United States Department of Agriculture (USDA) / Rural Utility Service (RUS), declined to provide funding for infrastructure development at the relocation site until people were living in Mertarvik.¹⁸⁷

Commenting on Newtok's funding challenges in 2008, the Alaska Sub Cabinet on Climate Change Immediate Action Working Group noted:

Funding sources are iffy and difficult to get a handle on who is going to fund and what the requirements of the project [are] and what [the] agencies' requirements are. Everyone has a different tracking system and so the site is being developed piecemeal.¹⁸⁸

These challenges, identified for well over a decade, have changed very little. Given the multi-disciplinary nature of the relocation effort, it has been critical for agency representatives to educate each other about the laws that govern their work and to identify and secure funding in phases. The delays and complications of applying for dozens of grants, each with different requirements, means that communities like Newtok remain in dangerous situations for years, unable to obtain the resources to move.¹⁸⁹ Communities are forced to time their awarded funding to enable the leveraging of resources; they face inequitable cost benefit analyses; they are unable to pool all funding resources to allow one agency to administer that pool; the match requirements, which require either in-kind or cash non-federal contributions, are onerous; federal appropriations are insufficient to support grant programs; and the federal grant programs themselves, like the FEMA buy-out

^{186.} The state's formula for deciding which schools receive construction grants prioritizes student population size and school building capacity but does not give much weight to erosion threat. *See* Associated Press, *Overcrowded Alaska Schools Take Priority over Erosion-Threatened Schools in State Funding, Superintendent Says*, ANCHORAGE DAILY NEWS (Feb. 20, 2020), https://www.adn.com/alaska-news/rural-alaska/2020/02/19/crowded-alaska-village-schools-take-priority-over-erosion-threatened-schools-in-state-funding-superintendent-says/ [https://perma.cc/25 JR-UZ9P].

^{187.} DOWL, *Mertarvik Relocation Project Steering Committee #11 Meeting*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV. (Oct. 18, 2017); https://www.commerce.alaska.gov/web/Portals/4/pub/Mertarvik_Steering_Committee_Meeting_11_Notes.pdf [https://perma.cc/BYT2-ZMHF].

^{188.} IAW 2008 RECOMMENDATIONS, supra note 185, at 7.

^{189.} For example, in November 2017, HUD reported that Newtok's ICDGB grant was unsuccessful. DOWL, *Mertarvik Relocation Project Steering Committee #12 Meeting Notes*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV. (Nov. 9, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/Mertarvik_Steering_Committee_Meeting_12_Notes.pdf [https://perma.cc/VXS2-B4FB]. Newtok's tribal government did not submit Alaska Housing Finance Corporation funding for teacher housing due to the need to create an education plan. *See* DOWL, *Mertarvik Relocation Project Status Report for Steering Committee*, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COM., CMTY., & ECON. DEV. (Dec. 14, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/DOWL_Status_Report_13.pdf [https://perma.cc/ERU5-ENTN].

program, are extremely limited.¹⁹⁰ Some funding challenges occur across multiple federal government agencies, such as the requirement to match funding.¹⁹¹

While the Newtok Planning Group and the Mertarvik Steering Committee have made significant progress toward Newtok's relocation, due in large part to their extreme creativity in their use of existing revenue sources, the policy and practical barriers have made the relocation process painstakingly slow. As a result, state and federal government agencies have repeatedly discussed the possibility of evacuating Newtok residents far from their community. In 2006, they discussed relocating residents to Anchorage and Fairbanks, the largest urban areas in Alaska, located hundreds of roadless miles to the east of Newtok.¹⁹² This conversation was repeated in 2017 when the Mertarvik Steering Committee discussed the possibility that Newtok residents would be displaced; the need to find a safe location, perhaps outside of their community, because of concerns about the viability of their school and airstrip; and the need to identify the point in time when this critical infrastructure would no longer be able to operate without environmental, health, and safety concerns.¹⁹³ This distant displacement continues to be a concerning possibility.

III.

NO MODELS EXIST TO CREATE A CLIMIGRATION GOVERNANCE FRAMEWORK BASED IN HUMAN RIGHTS

Climigration, the climate-forced relocation of communities, is an extraordinarily complex process, always a last resort adaptation strategy, and presents acute challenges to governance institutions. The only relocation governance models that exist are those based on government-mandated relocations, where the catalyst to relocate is often a government decision to implement a development project, such

^{190.} See GAO-20-488, supra note 45, at 29–37; AM. FLOOD COAL. & INST. FOR DIVERSITY & INCLUSION IN EMERGENCY MGMT., CONVERSATIONS WITH COMMUNITIES: CONSIDERATIONS FOR EQUITABLE FLOODING & DISASTER RECOVERY POLICY 5–11 (2021). See generally Gazewood, Weiner, & Walleri appeal, supra note 162 (describing the onerous and unsuccessful process of applying for HMGP funds for housing in Mertarvik).

^{191.} In-kind match funding for USACE projects, for instance, require that USACE must first approve the type of in-kind services and whether they are integral to a project. Delayed USACE decisions related to in-kind contributions mean that the expenditures that pre-date approval are not eligible as in-kind services creditable to the non-Federal sponsor, here the Newtok tribal government, cost share and potentially negates millions of dollars in expenditures of eligible funds. *See* DOWL, *Mertarvik Relocation Project Status Report, supra* note 151, at 2. *See* U.S. ARMY CORPS OF ENGINEERS, IN-KIND CONTRIBUTION CREDIT PROVISIONS OF SECTION 221(A)(4) OF THE FLOOD CONTROL ACT OF 1970, AS AMENDED (Dec. 2015), https://www.publications.usace.army.mil/Portals /76/Publications/EngineerRegulations/ER_1165-2-208.pdf [https://perma.cc/BC3R-ETMQ].

^{192.} Bronen, *Climate-Induced Community Relocations, supra* note 11, at 388.

^{193.} See DOWL Status Report, Mar. 9, 2017, supra note 156 (requesting, in the closing comments, a discussion on "temporary displacements"); Newtok Planning Group, Agenda and Handouts, DIV. CMTY. & REG'L AFF., ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV. (Apr. 13, 2017), https://www.commerce.alaska.gov/web/Portals/4/pub/NPG_Agenda_4.13.17_Handouts.pdf [https://perma.cc/4N5K-ATYN].

as dam construction, or for geopolitical purposes.¹⁹⁴ For example, in China the government forcibly relocated people in order to construct the Three Gorges dam.¹⁹⁵ In India, the Ministry of Rural Development adopted a National Rehabilitation and Resettlement Policy in 2007.¹⁹⁶ This type of governance framework cannot provide a template for climate-forced community relocations for two reasons.

First, in the context of climate change, environmental hazards are the factor determining when relocation needs to occur. An institutional framework needs to create a process to assess environmental hazards and determine when protection in place is no longer possible, requiring relocation to provide long-term protection. This threshold decision is at the center of implementing community-wide relocation. Currently, most environment-related relocations mandated by government agencies occur immediately before or after an extreme environmental event.¹⁹⁷ Relocation planning is truncated in these situations; people are either already displaced or about to be, and they are in need of emergency humanitarian aid. In addition, extreme weather events, which cause mass population displacement, may not be an appropriate basis for evaluating whether people should be relocated—at least not without empirical predictions of future events. This is because government decisions to create no-build zones in the aftermath of an extreme weather event can create a de facto relocation process to prevent future vulnerability.¹⁹⁸ Without scientific evidence to prove that future extreme weather events will threaten the lives and livelihoods of residents at the same location, ad hoc nobuild zones could be considered forcible evictions and human rights violations.¹⁹⁹

^{194.} Fiji developed national planned relocation guidelines in 2018 and relocation is extensively discussed in Vanuatu's 2018 National Policy on Climate Change and Disaster-Induced Displacement, but neither country has operationalized these guidelines. *See* ERICA BOWER & SANJULA WEERASINGHE, LEAVING PLACE, RESTORING HOME: ENHANCING THE EVIDENCE BASE ON PLANNED RELOCATION CASES IN THE CONTEXT OF HAZARDS, DISASTERS, AND CLIMATE CHANGE 39 (2021).

^{195.} Human Rights Watch, *The Three Gorges Dam in China, Forced Resettlement, Suppression of Dissent and Labor Rights Concerns*, 7 HUMAN RIGHTS WATCH, no. 2, Feb. 1995, at 3, https://www.hrw.org/legacy/summaries/s.china952.html [https://perma.cc/BX5R-SRLW].

^{196.} National Rehabilitation and Resettlement Policy, 2007, Gazette of India, pt. I sec. 1 (October 31, 2007), https://www.internal-displacement.org/sites/law-and-policy/files/india/nrrp2007.pdf [https://perma.cc/97P9-QX26].

^{197.} Elena Correa, *Resettlement as a Disaster Risk Reduction Measure: Case Studies, in* PREVENTIVE RESETTLEMENT OF POPULATIONS AT RISK OF DISASTER: EXPERIENCES FROM LATIN AMERICA 19–24 (Elena Correa ed., 2011); Jen Schwartz, *Surrendering to Rising Seas*, SCI. AM. (Aug. 1, 2018), https://www.scientificamerican.com/article/surrendering-to-rising-seas/ [https:// perma.cc/8JF4-DJRC] ("Buyouts, however, are not designed for adapting to climate change. Past beneficiaries were almost exclusively riverine communities in the U.S.'s rural interior—people who lived too close to the overflowing Mississippi and Red rivers, for instance, were relocated nearby. The government didn't even begin promoting buyouts as a form of disaster recovery until the 1990s, and since then, they have been conducted as one-off reactions to hurricanes.").

^{198.} See ALICE THOMAS, REFUGEES INT'L, PHILIPPINES: TYPHOON SURVIVORS FACE OBSTACLES TO RECOVERY 5 (2014) ("Lack of clarity on the implementation of the 'no-build zone' policy is leading to protracted displacement and prospective new cases of displaced families.").

^{199.} See generally id.

Moreover, in the aftermath of an extreme weather event, most people want to return home and will do so unless the land on which they lived no longer exists.²⁰⁰

Second, government-mandated relocations-including those undertaken in development projects—can be disastrous for the populations relocated, either because of a lack of opportunity to make the decision related to relocation, or because the free, prior, and informed consent decision-making process-language that has been used by multilateral funding institutions-has not been implemented in a meaningful way.²⁰¹ Government-mandated relocations, whether for geopolitical or development purposes, have been calamitous for relocated peoples in every region of the world. During the 1950s in Canada, the government forcibly relocated the Inuit from their homelands in northern Quebec to the High Arctic. The official rationale was welfare, but the thinly-veiled context was concern over sovereignty in the Artic Archipelago.²⁰² The relocation created enormous suffering, separating families and leaving those relocated without sufficient provisions needed to survive.²⁰³ On the African Continent, the Ethiopian example of forcible resettlement is a long and enduring one. Between 1979 and 1989, the Ethiopian government "villagized" 13 million people, rounding up disparate indigenous and rural peoples and forcing them into new settlement villages under the official rationale of security concerns and social engineering.²⁰⁴ The transition was a violent one to places with lesser resources and harsher conditions, and many of the new villages became sources of forced labor for government projects.²⁰⁵ It is estimated that between 1984 and 1986, 5.5% of those resettled perished from starvation and tropical diseases, and an additional 14% fled the settlements, including 50,000 who became refugees in Somalia.²⁰⁶ Every year approximately 20 million people are forcibly displaced to make way for development projects such as mines, oil and gas pipeurban renewal schemes, mega-dams, ports, and transportation lines,

^{200.} C. Raleigh & L. Jordan, *Climate Change and Migration: Emerging Patterns in the Developing World, in* Social DIMENSIONS OF CLIMATE CHANGE: EQUITY AND VULNERABILITY IN A WARMING WORLD, NEW FRONTIERS OF SOCIAL POLICY 112–16 (2010).

^{201.} WORLD BANK, INVOLUNTARY RESETTLEMENT SOURCEBOOK: PLANNING AND IMPLEMENTATION IN DEVELOPMENT PROJECTS xvii (2004); ANTHONY OLIVER-SMITH, DEVELOPMENT & DISPOSSESSION: THE CRISIS OF FORCED DISPLACEMENT AND RESETTLEMENT 3, 20 (2009); Robin Bronen, Julie Maldondo, Elizabeth Marino, & Preston Hardison, *Climate Change and Displacement*, *in* CHALLENGING THE PREVAILING PARADIGM OF DISPLACEMENT AND RESETTLEMENT 259 (Michael M. Cernea & Julie K. Maldonado, eds., 2018).

^{202.} FRANK J. TESTER & PETER KEITH KULCHYSKI, TAMMARNIIT (MISTAKES): INUIT RELOCATION IN THE EASTERN ARCTIC, 1939–63, at 102–35 (1994).

^{203.} ROYAL COMMISSION ON ABORIGINAL PEOPLES, THE HIGH ARCTIC RELOCATION: A REPORT ON THE 1953-55 RELOCATION 31–35 (Canada Communication Group 1994).

^{204.} HUMAN RIGHTS WATCH, "WAITING HERE FOR DEATH": DISPLACEMENT AND "VILLAGIZATION" IN ETHIOPIA'S GAMBELLA REGION 11–12 (2012).

^{205.} *Id.* at 12.

^{206.} Id.

infrastructure.²⁰⁷ The World Bank has been at the forefront of developing policies related to involuntary resettlement caused by development projects.²⁰⁸

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These policies have caused well-documented risks and human rights violations including homelessness; loss of livelihoods; food insecurity; psychological trauma; negative health impacts; increased morbidity and vulnerability, especially among women and children; economic impoverishment; and cultural and social disintegration.²⁰⁹ Despite causing tremendous harm to relocated populations, these policies have been adopted by numerous banks, aid agencies, and national governments.²¹⁰

During World War II, the U.S. government forcibly relocated hundreds of Alaska Natives living on the Aleutian Islands to protect them, in theory, from Japanese troops.²¹¹ Exposed to harsh climate and disease without adequate shelter, food, water, or infrastructure, approximately 10% of the relocated population died in the resettlement camps.²¹² Similarly, in 1956, Congress enacted the Indian Relocation Act to encourage American Indians to leave their traditional lands and reservations and to assimilate into the general population in urban areas.²¹³ These federal government actions are a part of a horrific legacy that has caused significant harm and must not be replicated when designing a national governance framework to respond to the urgent need to relocate populations because of the permanent submergence of the land upon which people live and work.

Yet government-mandated climate relocations are already occurring as a result of the federal government's decision not to fund solutions to protect communities in the places where they are currently located.²¹⁴ The federal government uses a cost-benefit analysis to determine which homes and communities receive

209. ANTHONY OLIVER-SMITH, supra note 201, at 21, 106–09, 226–36.

210. Michael M. Cernea & Julie K. Maldonado, *supra* note 207, at 1.

^{207.} See generally Michael M. Cernea & Julie K. Maldonado, *Challenging the Prevailing Paradigm of Displacement and Resettlement: Its Evolution, and Constructive Ways of Improving It, in Challenging The PREVAILING PARADIGM OF DISPLACEMENT AND RESETTLEMENT (Michael M. Cernea & Julie K. Maldonado, eds., 2018).*

^{208.} Michael Cernea, *The Risks and Reconstruction Model for Resettling Displaced Populations*, 25 WORLD DEV. 1569, 1579 (1997). *See generally* WORLD BANK, RISKS AND RECONSTRUCTION: EXPERIENCES OF RESETTLERS AND REFUGEES (Michael M. Cernea & Christopher McDowell eds., 2000), https://documents1.worldbank.org/curated/en/947311468739277702/pdf /multi-page.pdf [https://perma.cc/DJ6S-SQYJ].

^{211.} See Comm'n on Wartime Relocation and Internment of Civilians, Personal Justice Denied: Report of the Commission on Wartime Relocation and Internment of Civilians 318 (1982).

^{212.} Id. at 319; Marco Simons, The Emergence of a Norm Against Arbitrary Forced Relocation, 34 COLUM. HUM. RTS. L. REV. 95, 196 (2002); Christopher Cueva, The Aleut Evacuation – A Grave Injustice, 9 CONCORD R. (1998), reprinted in ALASKA HUMANS. F. (Oct. 1, 1998), http://www.akhistorycourse.org/americas-territory/the-aleut-evacuation-a-grave-injustice/ [https:// perma.cc/RA96-KC3D].

^{213.} Max Nesterak, *Uprooted, the 1950s Plan to Erase Indian Country*, APM REPS. (Nov. 1, 2019), https://www.apmreports.org/story/2019/11/01/uprooted-the-1950s-plan-to-erase-indian-country [https://perma.cc/BW93-PPW8].

^{214.} AM. FLOOD COAL. & INST. FOR DIVERSITY & INCLUSION IN EMERGENCY MANAGEMENT, *supra* note 190, at 5–6.

funding to protect their current location.²¹⁵ Protection in place is heavily weighted socioeconomically to those who have access to resources to advocate for this type of protection.²¹⁶ The cost-benefit analysis weighs the cost of the property values that are at risk of flooding against the cost of the project that would protect them, therefore favoring wealthy communities where homes and community infrastructure have high value.²¹⁷ In Alaska, this analysis is further skewed against Alaska Native communities residing in geographically remote areas of the state where transporting construction materials is extremely expensive and people are residing in communities with seriously deteriorated and aging infrastructure.²¹⁸ This foundational requirement to receive funding to protect communities in their original location continues the ongoing legacies of racism and colonialism that geographically segregated Black communities through redlining and forcibly removed Indigenous communities from their traditional lands.²¹⁹ To rectify these injustices, the cost-benefit equation must incorporate an analysis of how these historical legacies impact current values, as well as a more robust analysis related to noneconomic benefit and loss, such as cultural heritage and subsistence food harvesting.

In addition, the federal government is directly forcing households to relocate through the USACE's authority to withhold funds to address climate impact if local and state governments do not use eminent domain to remove homes in flood-risk areas.²²⁰

218. Naomi Klouda, *Federal Fund Injection Boosts Effort to Relocate Newtok*, ALASKA J. COM. (May 23, 2018), https://www.alaskajournal.com/2018-05-23/federal-fund-injection-boosts-effort-relocate-newtok [https://perma.cc/9TZ2-EUA4].

219. FEMA, GUIDE TO EXPANDING MITIGATION, MAKING THE CONNECTION TO EQUITY 1, 3 (2020) https://www.fema.gov/sites/default/files/2020-09/fema_region-2_guide-connecting-mitiga tion-equity_09-10-2020.pdf [https://perma.cc/QT4Z-8SHU] ("[R]edlining limited access to federally backed mortgages based on race until the passage of the Fair Housing Act of 1968.... Recent studies have also shown that within some urban areas, flooding losses have been concentrated in Black and low-income communities."); Bronen & Chapin, *supra* note 3, at 9321 (discussing the federal policy which forced Alaska Native communities to permanently settle in their current location because of its requirement that children attend schools). The schools were built in locations easily accessible by barges carrying construction materials. Prior to this forced settlement, Alaska Native tribes migrated between places where they were able to gather the foods on which they depend. These settlements are now environmentally vulnerable and causing several communities to choose to relocate.

220. Christopher Flavelle, *Trump Administration Pressures Cities to Evict Homeowners from Flood Zones*, N.Y. TIMES (Mar. 11, 2020), https://www.nytimes.com/2020/03/11/climate/government-land-eviction-floods.html [https://perma.cc/DSM9-5CYB].

^{215.} Id.

^{216.} Id.

^{217.} Id.; see also Kevin Sack & Jonathan Schwartz, Left to Louisiana's Tides, a Village Fights for Time, N.Y. TIMES (Feb. 24, 2018), https://www.nytimes.com/interactive/2018/02/24/us/jeanlafitte-floodwaters.html [https://perma.cc/J2DT-ZQRR]; Kelly McGee, A Place Worth Protecting: Rethinking Cost-Benefit Analysis Under FEMA's Flood Mitigation Program, 88 U. Chi. L. Rev. 1925, 1925 (2021).

IV.

CURRENT HAZARD MITIGATION AND MANAGED RETREAT PROGRAMS AND FUNDS ARE INADEQUATE

In the United States, disaster response and prevention, including hazard mitigation planning and flood insurance, rest on the concept of a relatively stable environment in which extreme weather events are infrequent, and their impact can be reduced through planning and preparedness.²²¹ The Stafford Act is the primary U.S. federal legislation governing FEMA's disaster response and hazard mitigation work.²²² The legislation authorizes the repairing of damaged or destroyed infrastructure in the place where the disaster occurred and reducing disaster risk.²²³ Similarly, the designation of flood plains, central to the national flood insurance program, is based on the concept of a "1 in 100-year" flood, or in other words, the extremely low chance that a flood will occur within any year.²²⁴ The metrics to assess risk are based on historical data analyses and the belief that looking into the past can predict the future within reasonable degrees of certainty.²²⁵

Federal buyout programs, also known as acquisition programs, which typically use a combination of state, federal, and sometimes local funds, are the primary mechanism for orchestrating retreat and encouraging residents to leave

222. Stafford Act, 42 U.S.C. §§ 5121–5208. See also the enabling regulations enacted by FEMA, 44 C.F.R. §§ 206.31–.48 (2009) (enabling regulations enacted by FEMA).

^{221.} CONG. RSCH. SERV., R42702, STAFFORD ACT DECLARATIONS 1953–2016: TRENDS, ANALYSES, AND IMPLICATIONS FOR CONGRESS 1–2 (2017), https://www.everycrsreport.com/files /20170828_R42702_5c578b70adb0586f36ed3817c42aef87ded9c746.pdf [https://perma.cc/QJQ5-3NHB]; Oliver Milman, Andrew Witherspoon, Rita Liu, & Andrew Chang, *The Climate Disaster Is Here*, GUARDIAN (Oct. 14, 2021), https://www.theguardian.com/environment/ng-interactive/2021 /oct/14/climate-change-happening-now-stats-graphs-maps-cop26 [https://perma.cc/N3H9-JBHH]; *Weather Related Disasters Increase over Past 50 Years Causing More Damages but Fewer Deaths*, WORLD METEOROLOGICAL ORG. (Aug. 31, 2021), https://public.wmo.int/en/media/press-release /weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer [https://perma.cc/9KHD-NAGE]; Maanvi Singh, *'Extraordinary Is No Longer Extraordinary': US Scientists on a Year of Climate Disasters*, GUARDIAN (Dec. 30, 2021), https://www.theguardian.com/us-news/2021 /dec/30/climate-crisis-emergency-climate-disaster? [https://perma.cc/F9RF-QXR9].

^{223.} Stafford Act, 42 U.S.C. §§ 5121–5208; Press Release, FEMA, Fact Sheet: FEMA's Public Assistance Process (June 7, 2018), https://www.fema.gov/press-release/20210318/fact-sheet-fe-mas-public-assistance-process [https://perma.cc/XZG5-579W].

^{224.} ASFPM FOUNDATION, REDUCING FLOOD LOSSES: IS THE 1% CHANCE (100-YEAR) FLOOD STANDARD SUFFICIENT? 2–6 (2004), https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/16 /nrcs143 009401.pdf [https://perma.cc/V4FW-SASN].

^{225.} Shawnee Cty., *Definitions of FEMA Flood Zone Designation*, SHAWNEE CTY. FLOOD MAP MODERNIZATION, https://snmapmod.snco.us/fmm/document/fema-flood-zone-definitions.pdf [https://perma.cc/M86Q-A3YJ]. Under 44 C.F.R. § 65.6(a)(3), FEMA cannot base revisions to flood elevation determinations on "future conditions" like climate change. FEMA can, however, provide information about future conditions in flood insurance rate maps at the request of a community. *Id.* The community can then use this information for future land use regulations. *Id.* FEMA is in the process of revising flood maps for New York. Once completed, these will be the only state flood maps that take sea level rise into account. *See* Madina Toure, *New York City in Talks with FEMA to Redraw Flood Zones to Match Climate Change*, OBSERVER (Jan. 9, 2018), https://observer.com/2018 /01/new-york-city-flood-zones-climate-change/ [https://perma.cc/BCG8-6EAN].

flood-prone homes.²²⁶ FEMA's pre-disaster mitigation grant program, hazard mitigation grant program, and flood mitigation assistance program are the primary funding sources for buyout processes.²²⁷ Some communities have also used funding from HUD's Community Development Block Grant program, which can be used before a disaster damages or destroys a home, for more federal dollars.²²⁸ Only 4% of buyouts that occurred between 1989 and 2018 took place because of coastal flooding.²²⁹ These programs require that property purchased through a buyout must be preserved in perpetuity as open space to improve floodplain functions.²³⁰ Approximately 43,000 homes were bought out between 1989 and 2017, a fraction of the number of homes that will be subject to inundation as sea levels rise and increase the storm surges and flooding associated with extreme weather events.²³¹

In New York and New Jersey, these funding sources have been used to design statewide buyout programs, while other flood-prone areas have implemented local buyout programs.²³² In statewide programs, high-risk areas are identified as eligible for buyouts and incentives in the form of additional payments are offered for participants who live in the highest risk areas.²³³ The acquisition programs normally occur on a household level, rather than a community-wide basis, protecting property rights by allowing individual property owners to make the decision to participate in the program voluntarily.²³⁴

^{226.} Anna Weber & Rob Moore, *Going Under: Long Wait Times for Post-Flood Buyouts Leave Homeowners Underwater*, NAT. RES. DEF. COUNCIL, Sept. 2019, at 5.

^{227.} See 42 U.S.C. § 5170c (setting forth the hazard mitigation grant program); 44 C.F.R. § 206.434 (defining projects eligible for assistance under hazard mitigation grant program); 42 U.S.C. § 5133 (establishing pre-disaster mitigation program); 42 U.S.C. § 4104c (detailing the flood mitigation insurance program); 44 C.F.R. § 78.1–79.1 (detailing the flood mitigation grant program).

^{228.} *Disaster Recovery Buyout Program*, HUD EXCHANGE, https://www.hudexchange.info/programs/cdbg-dr/disaster-recovery-buyout-program/#buyout-program-overview-considerationsand-strategies [https://perma.cc/TA85-XFPN] (last visited Sept. 25, 2021); 42 U.S.C. §§ 5301–21. HUD funds generally must be used for projects benefitting low- and moderate-income households.

^{229.} Weber & Moore, supra note 226, at 6.

^{230.} ENV'T LAW INST. & INST. FOR THE ENV'T, FLOODPLAIN BUYOUTS: AN ACTION GUIDE FOR LOCAL GOVERNMENTS ON HOW TO MAXIMIZE COMMUNITY BENEFITS, HABITAT CONNECTIVITY, AND RESILIENCE 16 (2017), https://www.eli.org/sites/default/files/eli-pubs/actionguide-web.pdf [https:// perma.cc/N6GH-GSCX].

^{231.} Katharine J. Mach, Caroline M. Kraan, Miyuki Hino, A. R. Siders, Erica M. Johnston, & Christopher B. Field, *Managed Retreat Through Voluntary Buyouts in Flood-Prone Properties*, 5 SCI. ADVANCES, Oct. 9, 2019, at 4.

^{232.} ROBERT FREUDENBERG, ELLIS CALVIN, LAURA TOLKOFF, & DARE BRAWLEY, BUY-IN FOR BUYOUTS: THE CASE FOR MANAGED RETREAT FROM FLOOD ZONES 7 (2016) (discussing the New York Rising program and New Jersey's Blue Acres program, as well as local programs in Milford and West Haven, Connecticut).

^{233.} Id. at 23–24 (summarizing program features).

^{234.} David A. Lewis, *The Relocation of Development from Coastal Hazards Through Publicly Funded Acquisition Programs: Examples and Lessons from the Gulf Coast* 5 SEA GRANT L. & POL'Y J. 98, 124 (2012).

A. Buyout Programs Are Ineffective and Inequitable

Buyout programs are one piece of a complex community-wide relocation puzzle and are, as currently conceived, completely inadequate to protect people from the accelerating environmental changes occurring along the U.S. coastline. Most of the scholarship related to climate-forced relocation is focused on the inadequacies of this program.²³⁵ Some of the shortcomings include the insufficient amount offered for homes as compared to the cost for new homes, the unavailability of alternate housing, the time it takes to work through the program and complete a buyout, and the difficulty of achieving community agreement to participate in the program.²³⁶ In addition, since buyout funding is primarily available in the aftermath of a disaster declaration, the buyout process takes an average of five years from the occurrence of a flood to completion of the program.²³⁷ Post-disaster buyouts are problematic because the planning and implementation of the program occurs after homes have already been damaged or destroyed and people already displaced. A five-year average timeline for program completion exacerbates the humanitarian crisis caused by the loss of housing.

B. Buy-Out Program Criteria Are Inequitable

Restrictions relating to appraisals, timelines, and home ownership make the program unrealistic for rural Alaskan communities. Grant amounts are based on the appraised pre-flood value of homes, which FEMA paid a median price of \$54,000, and do not provide sufficient funding to allow for the construction of a new home.²³⁸ Appraised values for existing homes are often far less than the cost of building a new home so that homeowners or tribes must find additional funding sources before homes can be completed.²³⁹ In some places, the value disparity these buyouts create has exacerbated existing socioeconomic inequities among homeowners.²⁴⁰

In the Kusilvak Census area, which includes Newtok, the median value of owner-occupied homes from 2015 to 2019 was \$71,500.²⁴¹ By contrast, the

240. Weber & Moore, supra note 226, at 8, 13-16.

^{235.} Weber & Moore, *supra* note 226, at 4 ("While every buyout project is different, one thing is clear: long wait times make buyouts less accessible, less equitable, and less effective for disaster mitigation and climate adaptation."); Mach, Kraan, Hino, Siders, Johnston, & Field, *supra* note 231, at 10–13; Kelsey Peterson, Emily Apadula, David Salvesen, Miyuki Hino, Rebecca Kihslinger, & Todd K. BenDor, *A Review of Funding Mechanisms for US Floodplain Buyouts*, 12 SUSTAINABILITY, Dec. 3, 2020, at 1–2.

^{236.} Weber & Moore, *supra* note 226, at 15–16.

^{237.} Id. at 7.

^{238.} Id. at 6.

^{239.} Lewis, supra note 234, at 132.

^{241.} *QuickFacts: Kusilvak Census Area, Alaska*, U.S. CENSUS BUREAU, https://www.census.gov/quickfacts/kusilvakcensusareaalaska [https://perma.cc/D5P4-9F3C] (last visited Oct. 10, 2021).

average cost to build a new home in the region is \$420,000 per unit.²⁴² Homeowners cannot realistically accept a buyout based on the appraised value of their existing homes because that amount is less than a quarter of the amount needed to build a new, livable home. While this problem is exacerbated in rural Alaska where building and shipping costs are high and homes are in poor condition, the problem exists in other areas of the country as well.²⁴³ Homes in floodplains are often worth less than comparable homes in safe locations, meaning that lower income homeowners are unable to purchase livable homes outside the floodplain when they are offered a buyout based on the value of their home.²⁴⁴

To make it possible for lower income homeowners and homeowners in rural Alaska to purchase or build safe homes through FEMA's home acquisition programs, FEMA should adjust the purchase price so that home prices for low income homeowners are based on the median cost of a safe, climate-resilient home of comparable size in a low-risk location.²⁴⁵ In areas like rural Alaska, where alternate housing is not available, this price should also include the costs of site preparation, utility hookups, and shipping building materials to the site.

Under FEMA regulations, the relocation or demolition of a home bought out with FEMA mitigation funds must be completed within 90 days of the settlement of the property transaction.²⁴⁶ This is not a realistic timeline for communities in Alaska because, in many cases, there is no alternate housing available for purchase and many homes are overcrowded.²⁴⁷ If the home cannot be moved, a new house must be built before the old one can be demolished. As demonstrated by Newtok's buyout process,²⁴⁸ when an entire community is trying to relocate, it may first be necessary to acquire the property, survey and subdivide the land, and provide for water and sewer hookups. The construction season is short and, for the many

^{242.} AGNEW BECK, YUKON-KUSKOKWIM REGION COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY 2018–2023 48 (2018), https://www.avcp.org/wp-content/uploads/2020/05/Y-K-CEDS-2018-2023_FINAL_7-31-18_no-Appendices.pdf [https://perma.cc/C69Z-6AA7].

^{243.} Id. at 48; see, e.g., Davida Finger, Stranded and Squandered: Lost on the Road Home, 7 SEATTLE J. SOC. JUST. 59 (2008) (describing the inequitable effects of Louisiana's post-Katrina rebuilding assistance programs on lower income homeowners); see also Zaz Hollander, They're in Their 90s. The Matanuska River is at Their Door, and They Don't Want Government Money, ANCHORAGE DAILY NEWS (July 1, 2019), https://www.adn.com/alaska-news/mat-su/2019/06/30 /theyre-in-their-90s-the-river-looms-and-they-dont-want-government-money/ [https://perma.cc/7B N2-A6ZA] (describing disparities in buyout prices in urban Alaska).

^{244.} Finger, *supra* note 243, at 59–61; ROBERT FREUDENBERG, ELLIS CALVIN, LAURA TOLKOFF, & DARE BRAWLEY, BUY-IN FOR BUYOUTS: THE CASE FOR MANAGED RETREAT FROM FLOOD ZONES 24 (2016) ("In some areas, homes outside of flood-prone areas are considerably more expensive than homes within the floodplain.").

^{245.} See Sherri Brokopp Binder, Alex Greer, & Charlene Baker, Home Buyout Programs: Recommendations for Policy & Practice 6 (2018).

^{246. 44} C.F.R. § 80.17(d).

^{247.} BECK, supra note 242, at 47–48.

^{248.} DOWL Status Report, Oct. 27, 2016, supra note 151, at 1. See generally Gazewood, Weiner, & Walleri appeal, supra note 162.

communities not on the road system, supplies must come in by barge, which can only happen during the summer, before waterways freeze.²⁴⁹

Finally, buyout programs provide no structure for community cohesion or the rebuilding of livelihoods. FEMA-funded buyouts have traditionally occurred on a household or block by block level.²⁵⁰ Buyout projects at the county level acquire a median number of 13 homes, adjusting the number depending on the extent of the flood.²⁵¹ In addition, buyout programs exclude renters and non-traditional types of home and land owners.²⁵²

C. The FEMA Building Resilient Infrastructure and Communities Fails to Rectify the Problems of the Buy-Out Program

FEMA's recently implemented Building Resilient Infrastructure and Communities (BRIC) program does not address these issues. BRIC is a new pre-disaster hazard mitigation program which prioritizes projects focused on public infrastructure, the mitigation of risk to lifelines, nature-based solutions, and adoption and enforcement of modern building codes. ²⁵³ While the program is focused on hazard mitigation and disaster prevention, the eligibility criteria continues to disadvantage small rural communities by requiring a cost-benefit analysis as well as a cost share requirement from non-federal sources.²⁵⁴ Although the cost share requirement is reduced to 10% for small and impoverished communities, it will make it difficult for Alaska Native tribes to be eligible to receive funding because they do not have a tax base from which to draw the non-federal cost share.

Clearly, the current federal government structure and government grant programs designed to respond to environmental hazards are not able to address the complexity, geographic scope, and scale of climate-forced relocation. While government agencies may be able to use land-use restrictions and acquisition programs as a way of managing coastal retreat, these tools only allow for incremental adaptation and are insufficient to respond to the complexity of mass population displacement and the need to rebuild livelihoods, homes, and community infrastructure in a new location.

Faced with the inadequate funding available to pay for relocating or protecting homes, some communities and individual property owners have turned to

^{249.} Bronen, Climate-Induced Community Relocations, supra note 11, at 374.

^{250.} Weber & Moore, *supra* note 226, at 5.

^{251.} Weber & Moore, *supra* note 226, at 6; Elizabeth Marino, *Adaptation Privilege and Voluntary Buyouts: Perspectives on Ethnocentrism in Sea Level Rise Relocation and Retreat Policies in the US*, 49 GLOBAL ENVTL. CHANGE 10, 10–13 (2018).

^{252.} FREUDENBERG, CALVIN, TOLKOFF, & BRAWLEY, *supra* note 244, at 15; Marino, *supra* note 251, at 12.

^{253.} The Disaster Recovery Reform Act, Section 1234, amended Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5721 et seq.

^{254. 42} U.S.C. § 5133(h); FEMA, BCA REFERENCE GUIDE 3-1 (2009), https://www.fema.gov/sites/default/files/2020-04/fema_bca_reference-guide.pdf [https://perma.cc/KK6J-T4XJ]; Benefit-Cost Analysis, FEMA, https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis [https://perma.cc/7JUV-7Z4T] (last visited Oct. 10, 2021).

litigation in the hope of compensation. These efforts have generally been unsuccessful. In 2012, the Native Village of Kivalina, a community located on a rapidlyeroding spit on the northwestern coast of Alaska, sued several fossil fuel companies under a federal common law theory of public nuisance, seeking compensation from the fossil fuel companies for their contributions to climate change and the resulting damages to their community.²⁵⁵ The Ninth Circuit dismissed the case, holding that the common law claim was displaced by the Clean Air Act.²⁵⁶ Despite this loss, municipalities in New York, California, Washington, Rhode Island, and Maryland have all sued fossil fuel companies, asserting state common law nuisance and trespass claims, to recover damages for costs incurred or expected from measures to protect and adapt to the effects of climate change.²⁵⁷ While some of the cases have been removed to federal court and dismissed on displacement grounds, the U.S. Supreme Court in May 2021 granted the fossil fuel companies' petition for writ of certiorari and vacated a Ninth Circuit decision, which upheld on appeal a district court remand order in the Northern District of California in the San Mateo and Santa Cruz cases, to state court for decision under state common law.²⁵⁸ The Court held that the Ninth Circuit should have reviewed other grounds for removal.

Actions by individual property owners have also been met with little success. In the aftermath of Hurricane Katrina, homeowners sued the United States government, arguing that the government's failure to properly maintain or modify the

258. *See* Order Granting Motions to Remand, Cty. of San Mateo v. Chevron Corp., No. 17cv-04929-VC (N.D. Cal. filed Mar. 3, 2018); Order Granting Motions to Remand, Cty. of Santa Cruz v. Chevron Corp., No. 18-cv-00450-VC (N.D. Cal. filed July 10, 2018).

^{255.} See generally Native Vill. Kivalina v. ExxonMobil Corp., 696 F.3d 849 (9th Cir. 2012); *Climate Justice in Kivalina*, CTR. ON RACE, POVERTY & ENV'T, https://crpe-ej.org/resources/legal /climate-justice-in-kivalina [https://perma.cc/F3EA-4QH9] (last visited Oct. 10, 2021); Native Village Kivalina v. ExxonMobil Corp, ENVTL. L. ALL.WORLDWIDE, https://elaw.org/native-village-kivalina-v-exxonmobil-corp [https://perma.cc/3RUU-R9WT] (last visited Jan. 6, 2022).

^{256.} Native Vill. Kivalina, 696 F.3d at 855-56.

^{257.} Columbia Law School's Sabin Center for Climate Change collected a number of relevant cases including the following: See generally City of N.Y. v. BP P.L.C., 325 F. Supp. 3d 466 (S.D.N.Y. 2018) (dismissing the case on the grounds that it is governed by federal law and therefore displaced under the Clean Air Act); Cty. San Mateo v. Chevron Corp., 294 F. Supp. 3d 934 (N.D. Cal. 2018) (order remanding cases to state court, now under appeal to the Ninth Circuit); Cty. of Santa Cruz v. Chevron Corp., No. 5:18-cv-00450 (N.D. Cal. filed Jan. 22, 2018) (remanded to state court along with County of San Mateo case and now under appeal to the Ninth Circuit); Order Granting Motions to Dismiss Amended Complaints, City of Oakland v. BP P.L.C., No. C 17-06011 (N.D. Cal., June 25, 2018) (removing case to federal court and dismissed on the merits as well as for lack of personal jurisdiction); Bd. of Cty. Commissioners of Boulder Cty. v. Suncor Energy (U.S.A.), Inc., No. 2018cv30349 (D. Ct. Boulder Cty. filed April 17, 2018) (removing case to the federal court for the district of Colorado, where briefing is underway on Boulder's motion to remand the case to state court); King Cty. v. BP P.L.C., No. 18-2-11859-0 (Wash. Super. Ct. filed May 9, 2018) (case was filed in state court and removed to the W.D. Wash in May; the defendants have now filed a motion to dismiss for lack of personal jurisdiction); Rhode Island v. Chevron Corp., PC-2018-4716 (R.I. Super. Ct. filed July 2, 2018) (case was filed in state court; defendants have removed it to federal court and there is now a schedule in place for briefing on plaintiffs' motion to remand); Mayor & City Council of Baltimore v. BP PLC, No. 24-C0180004219 (Md. Cir. Ct. filed July 20, 2018) (filed in state court, removed to federal court at the end of July).

Mississippi River-Gulf Outlet channel, which led to property damage, amounted to a government taking.²⁵⁹ The Court rejected this argument, holding that "[t]akings liability must be premised on affirmative government acts . . . [and t]he failure of the government properly to maintain [the channel] or to modify the channel cannot be the basis of takings liability."²⁶⁰ The decision is consistent with the decisions of other courts.²⁶¹ Given the challenges plaintiffs have encountered in these cases, litigation does not appear to offer a likely source of additional funding for individuals or communities seeking to adapt to or relocate because of the effects of climate change.

D. The Newly Created Tribal Communities Transition and Relocation Assistance is Inadequate to Meet the Relocation Needs of Alaska Native Communities

The newly enacted Infrastructure and Jobs Act includes an allocation of \$216 million for tribal climate resilience, adaptation and community relocation planning, design, and implementation projects.²⁶² While there are few details about the eligibility criteria that will be used to determine which tribal communities are eligible for funding, the amount of funding included in the appropriation is completely insufficient to address the relocation planning, design, and implementation projects for all the Alaska Native communities threatened by flooding, erosion, and *usteq*.²⁶³ Newtok alone needs an estimated \$85 million to complete its relocation process.²⁶⁴

^{259.} St. Bernard Par. Gov't v. United States, 887 F.3d 1354, 1355-56 (Fed. Cir. 2018).

^{260.} *Id.* at 1362. The Federal Circuit further suggests that government inaction could be the basis of a tort claim, but, as discussed in the following section, tort cases challenging similar government decisions have been unsuccessful because of governmental immunity.

^{261.} See John Lovett, Moving to Higher Ground: Protecting and Relocating Communities in Response to Climate Change, 42 VERMONT L. REV. 1, 28–31 (2018) (analyzing cases and concluding there is no taking without affirmative government action).

^{262.} Press Release, White House, FACT SHEET: President Biden's Infrastructure Law Advances Economic and Public Health Opportunities for Tribal Communities, WHITE HOUSE (Nov. 18, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/18/fact-sheet-president-bidens-bipartisan-infrastructure-law-advances-economic-and-public-health-opportunities-for-tribal-communities/ [https://perma.cc/E3LM-QVWN].

^{263.} Cecily Hilleary, *Alaska Natives: Infrastructure Act Funds a Drop in the Bucket*, VOICE OF AM., Dec. 15, 2021; https://www.voanews.com/a/alaska-natives-infrastructure-act-funds-a-dropin-the-bucket/6355886.html [https://perma.cc/QW9X-WQ4J]; Jenni Monet, *What's in It for the Region in the Infrastructure Bill?* NOME NUGGET (Dec. 9, 2021), http://www.nomenugget.com/news /what%E2%80%99s-it-region-infrastructure-bill [https://perma.cc/AZ2N-PD94].

^{264.} ALASKA NATIVE HEALTH CONSORTIUM, STATE OF ALASKA, & ALASKA CTR. FOR CLIMATE ASSESSMENT & POL'Y, UNMET NEEDS OF ENVIRONMENTALLY THREATENED ALASKA NATIVE VILLAGES: ASSESSMENT AND RECOMMENDATIONS 25 (2021) [hereinafter Assessment & Recommendations 2021]. This estimate excludes the cost of constructing the village's airport. *Id*.

CREATING A NATIONAL CLIMIGRATION FRAMEWORK

Congress needs to enact legislation to create a federal climigration governance framework to ensure that climigration is well-planned, sufficiently funded, and protective of the collective and individual human rights of those who must relocate. The creation of this framework is a critical first step. The United States government has recognized the need to create this governance framework, though it has failed to do so. In their December 2013 report, the Bicameral Task Force on Climate Change recommended:

that the Administration devote special attention to the problems of communities that decide they have little choice but to relocate in the face of the impacts of climate change. Because the relocation of entire communities due to climate change is such an unprecedented need, there is no institutional framework within the U.S. to relocate communities, and agencies lack technical, organizational, and financial means to do so.²⁶⁵

President Obama's Task Force on Climate Preparedness and Resilience echoed this recommendation in November 2014, affirming that the federal government should take a lead role establishing a relocation governance framework to respond to the complex challenges of climate-forced population displacement.²⁶⁶ As a result of this recommendation and the United States government's role as chair of the Arctic Council,²⁶⁷ President Obama's administration designated two entities to address this need. First, in a January 2015 executive order, President Obama established the Arctic Executive Steering Committee to coordinate federal Arctic policies with those of the state, local, and Alaska Native tribal governments.²⁶⁸ Secondly, the Community Resilience Working Group, a component of the Arctic Executive Steering Committee to the accelerating threat of coastal erosion and flooding impacting Alaska Native coastal communities.²⁶⁹ In September 2021, the Biden Administration reactivated the Arctic

^{265.} U.S. CONG. BICAMERAL TASK FORCE ON CLIMATE CHANGE, IMPLEMENTING THE PRESIDENT'S CLIMATE ACTION PLAN: U.S. DEPARTMENT OF THE INTERIOR 18 (2013), https://www.whitehouse.senate.gov/imo/media/doc/2013-12-19%20BTF%20DOI%20White%20 Paper.pdf [https://perma.cc/JD7W-4BSG].

^{266.} PRESIDENT'S STATE, LOCAL, & TRIBAL LEADERS TASK FORCE ON CLIMATE PREPAREDNESS & RESILIENCE, RECOMMENDATIONS TO THE PRESIDENT 30 (2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/task_force_report_0.pdf [https://perma.cc /98YG-YEWS].

^{267.} U.S. Chairmanship of the Arctic Council, U.S. DEP'T STATE, https://2009-2017.state.gov/e/oes/ocns/opa/arc/uschair/index.htm [https://perma.cc/743N-MMK2] (last visited Oct. 10, 2021).
268. Exec. Order No. 13,689, 80 Fed. Reg. 419,189 (Jan. 21, 2015).

^{269.} Climate Resilience in Alaskan Communities: Catalog of Federal Programs, NAT'L

OCEANIC & ATMOSPHERIC ADMIN., https://toolkit.climate.gov/tool/climate-resilience-alaskan-communities-catalog-federal-programs [https://perma.cc/M9W8-3ELU] (last visited July 24, 2021).

Steering Committee, but at this time it is unknown whether the previous work of the Steering Committee will continue.²⁷⁰

In addition, the White House Council on Environmental Quality (CEQ) created a working group to address similar issues outside of Arctic communities.²⁷¹ In order to systematize its work, CEQ developed principles of cooperation, roles, and responsibilities of twelve federal agencies and departments, outlined in a Memorandum of Understanding.²⁷² Unfortunately, the memorandum was not finalized before President Obama left office, and this work has not continued.²⁷³

President Obama also designated the Denali Commission the central coordinator of the federal effort to build climate resilience in Alaska, but the Commission lacked the authority to direct any other federal agency.²⁷⁴ In addition, the Denali Commission had insufficient funding to carry out relocations for the number of communities that urgently need assistance in Alaska.²⁷⁵ The Denali Commission's 2020 proposed work plan reallocated funding for this work, substantially limiting the Commission's effectiveness in fulfilling its total role.²⁷⁶

The GAO reviewed these efforts in a 2020 report, concluding that "unclear federal leadership is the key challenge to climate migration as a resilience strategy"²⁷⁷ and advocating for a climate migration pilot program.²⁷⁸ The report builds

^{270.} Press Release, White House, Biden-Harris Administration Brings Arctic Policy to the Forefront with Reactivated Steering Committee and New Slate of Research Commissioners (Sept. 24, 2021), WHITE HOUSE, https://www.whitehouse.gov/ostp/news-updates/2021/09/24/biden-harris-administration-brings-arctic-policy-to-the-forefront-with-reactivated-steering-committee-new-slate-of-research-commissioners/ [https://perma.cc/4PTZ-C9JF].

^{271.} Robin Bronen, *Rights, Resilience and Community-Led Relocation: Creating a National Governance Framework*, 45 HARBINGER 25, 31–32 (2021) ("While the Community Resilience Working Group was focused on Arctic communities, the White House Council on Environmental Quality (CEQ) also created a working group to address the issue of managed retreat and relocation occurring in other locations in the United States.").

^{272.} *Id.* at 31 n.30. The federal agencies and departments included Defense, Homeland Security, Agriculture, Energy, Health and Human Services, Interior, Corps of Engineers Civil Works, Housing and Urban Development, Commerce, Transportation, and Environmental Protection Agency.

^{273.} Id. at 31; see also Joel Clement, I'm a Scientist. I'm Blowing the Whistle on the Trump Administration., WASH. POST (July 19, 2017) https://www.washingtonpost.com/opinions/im-a-scientist-the-trump-administration-reassigned-me-for-speaking-up-about-climate-change/2017/07/19 /389b8dce-6b12-11e7-9c15-177740635e83_story.html [https://perma.cc/B7XX-4BL2]. In July 2017, the director of the Office of Policy Analysis at the US Interior Department filed a whistle blower complaint with the U.S. Office of Special Counsel claiming that his involuntary reassignment to the accounting department was due to his public presentations regarding the climate change dangers faced by Alaska Native communities. He resigned in October 2017. While he did not work at CEQ, he worked with CEQ to advance the Obama Administration's efforts to create a relocation institutional framework.

^{274.} Bronen, *Rights, Resilience and Community-Led Relocation, supra* note 271, at 31. 275. *Id.*

^{276.} *Id.* at 31–32; *Village Infrastructure Program, supra* note 54; DENALI COMM'N, VILLAGE INFRASTRUCTURE PROTECTION PROGRAM (March 2019), https://www.denali.gov/wp-content/up-loads/2019/03/VIP-fact-sheet-web.pdf [https://perma.cc/JQ6E-Z78F]; Denali Commission Draft Fiscal Year 2020 Work Plan, 84 Fed. Reg. 38,604 (Aug. 7, 2019).

^{277.} GAO-20-488, supra note 45, at 38.

^{278.} Id.

on several previous reports documenting the federal government's failure to respond to the needs of communities requiring relocation and the increasing federal fiscal exposure due to natural disasters.²⁷⁹ In June 2020, the U.S. House Select Committee on the Climate Crisis reaffirmed the need to create a governance framework and protect the human rights of those displaced:

Congress should direct the [Mitigation Framework Leadership Group] to create a federal relocation framework in collaboration with tribes, Indigenous communities, and Insular Areas that provides for the planned transition for communities seeking relocation assistance and protects access to traditional lands and waters for tribes and Indigenous communities, as well as rights to culture, health, safe drinking water, food, and adequate housing.²⁸⁰

In December 2020, the Alaska Federation of Natives issued a resolution that similarly highlighted the need for federal leadership and sought technical assistance and funding for Alaska Native environmentally threatened communities.²⁸¹

A. Define Environmentally-Threatened Communities

A federal governance framework needs to first define the type of community eligible for funding and technical assistance for relocation through the mechanisms of this framework. An environmentally-threatened community can be defined for the purposes of this Article by the following basic criteria:

- the community is permanently losing land as a result of sea level rise, usteq, flooding, erosion, storm surge, thawing permafrost, loss of sea ice, or a combination of natural hazards; and
- (2) these hazards present a risk, within the next 5 years:
 - a. to the life or safety of residents of the community;
 - b. of loss of critical infrastructure;
 - c. to public health; and

^{279.} Id. at 39-40.

^{280.} H. SELECT COMM. ON THE CLIMATE CRISIS, 116TH CONG., SOLVING THE CLIMATE CRISIS THE CONGRESSIONAL ACTION PLAN FOR A CLEAN ENERGY ECONOMY AND A HEALTHY, RESILIENT, AND JUST AMERICA 388 (2020), https://climatecrisis.house.gov/sites/climatecrisis.house.gov/files/Climate%20Crisis%20Action%20Plan.pdf [https://perma.cc/YUU3-4MGW].

^{281.} Alaska Federation of Natives, Resolution No. 20-20: Increased Coordination, Technical Assistance and Funding for Alaska Native Communities to Respond to Environmental Threats, at 44 (Dec. 8, 2020), https://secureservercdn.net/198.71.233.161/ekq.405.myftpupload.com/wp-content/uploads/2020/12/AFN2020ConventionResolutions.pdf [https://perma.cc/84DR-533E]. The Alaska Federation of Natives is the largest statewide Native organization in Alaska, and its membership includes 168 federally recognized tribes, 166 village corporations, eight regional corporations, and 12 regional nonprofit and tribal consortiums that contract and compact to run federal and state programs.

d. of loss of 10 percent or more of residential dwellings.²⁸²

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A series of responses are required to help environmentally-threatened communities deal with a rapidly changing environment: protection in place, migration of infrastructure, and community relocation. Protection in place refers to building seawalls and rock revetments to protect infrastructure and people in the places where they currently live.²⁸³ Managed retreat refers to the relocation of vulnerable infrastructure and people to a location close to the existing community.²⁸⁴ Community relocation is a long-term planning process that moves infrastructure and people to a new location.²⁸⁵ Once a community establishes that it is an environmentally-threatened community—that lives and infrastructure are imminently at risk—the community should be eligible to receive funding across the federal government system to prevent the traumatic loss of lives, homes, cultural resources, and infrastructure.

B. Federal Climigration Organizational Structure

The federal climigration governance framework should incorporate all available governance mechanisms to protect people in the places where they live. It should also create new mechanisms to implement a relocation process so that national, state, local, and tribal governments can dynamically shift their efforts if needed from protection-in-place to migration of some infrastructure and community relocation.²⁸⁶ A relocation governance framework must incorporate different

^{282.} These criteria are based on an Alaska Sub-Cabinet on Climate Change Immediate Action Workgroup analysis of the 2009 GAO list of imminently threatened Alaska Native communities and by an analysis by the Alaska Institute for Justice (AIJ) analyzing the environmental impacts to the 15 Alaska Native communities with which AIJ works. The Immediate Action Workgroup (IAW), part of the Alaska Climate Change Sub-Cabinet, issued two reports in March 2008 and April 2009 documenting the social and ecological threats to six communities facing relocation and recommended actions and policies to prevent loss of life and property in these communities. The IAW used the following criteria to determine that communities are in peril and need to relocate: 1) life /safety risk due to storm/flood event; 2) loss of critical infrastructure; 3) public health threats; and 4) loss of ten percent or more of private residences. *See* IMMEDIATE ACTION WORKGROUP, RECOMMENDATIONS TO THE GOVERNOR'S SUBCABINET ON CLIMATE CHANGE 84 (2009), http://www.climatechange.alaska.gov/docs/iaw_finalrpt_12mar09.pdf [https://perma.cc/8U38-

ML76] [hereinafter IAW 2009 RECOMMENDATIONS]; IMMEDIATE ACTION WORKGROUP, RECOMMENDATIONS TO THE GOVERNOR'S SUBCABINET ON CLIMATE CHANGE 1 (2008), http://www.climatechange.alaska.gov/docs/iaw_rpt_17apr08.pdf [https://perma.cc/B8CZ-5SJB] [hereinafter IAW 2008 RECOMMENDATIONS].

^{283.} See generally Bronen, Climate-Induced Community Relocations, supra note 69.

^{284.} *Id.* at 38; ALASKA NATIVE HEALTH CONSORTIUM, *supra* note 264, at 34; BUREAU INDIAN AFF. TRIBAL CLIMATE RESILIENCE PROGRAM, 2021 DOI CLIMATE LISTENING SESSION: DAY 1 OF RELOCATION, MANAGED RETREAT, AND PROTECT-IN-PLACE ISSUES IN ALASKA, 5 (Dec. 1, 2021) https://drive.google.com/file/d/1GJtj5XUUKyYqzXprCXu6ci4WTw9n1Cti/view [https://perma.cc /P8QK-VFR7] (unpublished presentation slides).

^{285.} Bronen, Climate-Induced Community Relocations, supra note 69, at 1.

^{286.} Bronen & Chapin, *supra* note 3, at 9320 ("In the United States there is currently no institutional framework or agency with the authority to relocate the entire public and private infrastructure of a community and rebuild livelihoods in a new location to protect them from climate change-induced hazards.").

planning horizons²⁸⁷ and outline the roles and responsibilities of federal agencies to enable them to dynamically respond to climate-induced environmental changes.

Federal government agencies focused on infrastructure, public health, and livelihoods need to work in concert to lead this organizational structure. These include USACE, responsible for building shoreline protection;²⁸⁸ FEMA, responsible for disaster relief and response;²⁸⁹ the Department of Health and Human Services Administration of Children and Families, responsible for social and economic development strategies;²⁹⁰ and the Department of Interior Bureau of Indian Affairs, which provides services to the 574 federally recognized Native American Tribes and Alaska Native Villages.²⁹¹ In this way, this article suggests that these federal government entities can work with environmentally threatened communities to assess whether protection in place is possible, and, if relocation is required, identify two federal agency co-chairs: one to focus on the construction of infrastructure and the second to prioritize the health, livelihoods, and well-being of community residents. These federal agencies must work with state, tribal, and local governing entities to construct infrastructure at the relocation site and provide resources and guidance to facilitate the movement of people.

C. Collaborative Governance

Community relocation is extraordinarily complex, requiring the movement of people and many different types of infrastructure, both public and private. Collaborative governance is a form of institutional design that allows for collective action and takes advantage of the expertise of a variety of governmental and non-governmental organizations to achieve a public policy goal.²⁹² In the context of community-led relocation, a multilevel interagency collaborative organizational structure is critical for accessing the combined capabilities of tribal, local, state, and federal government agencies. This interagency structure also must serve as a vehicle for coordinating the resources and technical assistance provided by state and federal agencies, non-profit organizations, and tribal and local governments. In a draft report discussing the unmet needs of environmentally threatened communities in Alaska, an 'all of government coordinating framework' was identified as

^{287.} In Coral Gables, the city identified three planning horizons: short-term (by 2030), (medium-term by 2060), and long-term (by 2100). CORAL GABLES CITY COMM'N, *supra* note 47, at 4.

^{288.} U.S. ARMY CORPS ENG'RS, DESIGN OF COASTAL REVETMENTS, SEAWALLS, AND BULKHEADS 1-1 (1995), https://www.publications.usace.army.mil/Portals/76/Publications/Engineer Manuals/EM 1110-2-1614.pdf [https://perma.cc/H5R2-855W].

^{289.} About Us, FEMA, https://www.fema.gov/about# [https://perma.cc/25QG-QQDG] (last visited Oct. 10, 2021).

^{290.} Programs & Services, U.S. DEP'T HEALTH & HUMAN SERVS., https://www.hhs.gov/pro-grams/index.html [https://perma.cc/VV9P-U59G] (last visited Oct. 10, 2021).

^{291.} About Us, U.S. DEP'T INTERIOR, BUREAU INDIAN AFF., https://www.bia.gov/about-us [https://perma.cc/98XM-YYEU] (last visited Jan. 17, 2021); ADMIN. FOR CHILDREN & FAMILIES, OFFICE OF PLANNING, RESEARCH AND EVALUATION, https://www.acf.hhs.gov/sites/default/files /documents/opre/factsheets_opre.pdf [https://perma.cc/FK2V-4P2X] (last visited Jan. 17, 2021).

^{292.} Chris Ansell & Alison Gash, *Collaborative Governance in Theory and Practice*, 18 J. PUB. ADMIN. RSCH. & THEORY 543, 543–44 (2008).

one of the seven key messages critical to the facilitation of a community-wide relocation.²⁹³ The report noted:

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Addressing environmental threats requires knowledge of all types of rural infrastructure development and coordination with the associated technical assistance organizations and funding agencies. Consequently, most small, remote communities do not yet have the capability and capacity to navigate the myriad objectives and limitations of the hundreds of programs and processes necessary to develop and implement solutions to environmental threats. For some communities, it can be like trying to assemble a 10,000-piece puzzle without a picture painted on it. Furthermore, efforts to support communities that have been attached to one administration or agency executive have been abandoned by the next. There is neither comprehensive, multi-agency collaboration to address environmental threats nor formal coordination between state and federal activities. Lack of federal leadership is the root cause of the limited progress made to date (GAO, 2020). To create efficiencies and support communities throughout all stages of addressing environmental threats, both a lead funding agency and an all-of-government coordination framework are needed.294

This federal collaborative governance framework needs to create the parameters for replication by state and local governing entities. At the state level, interagency government collaboration is critical to (1) create a statewide system to identify imperiled communities and relocation sites, (2) create the mechanisms to engage host communities and facilitate collaboration between them and communities seeking relocation, (3) coordinate interagency data gathering and analysis, and (4) develop funding strategies to ensure that communities seeking relocation are prioritized and that funding can be leveraged between different state, federal, and local revenue streams. Collaborative governance at the local level is also important to plan the phased relocation process, including the building or remodeling of infrastructure, the movement of people, and the abandonment of the original community location.

D. Protecting the Right to Self-Determination: Relocation Decision-Making

At all governance levels, this organizational structure needs to define two separate but interrelated components in order to create a dynamic continuum of responses to ongoing climate-induced environmental change.

The first part of this governance continuum needs to focus on the relocation decision-making process. This Article argues that this process is the most critical

^{293.} Assessment & Recommendations 2021, *supra* note 264, at 79; *see also* Julie Maldonado, Don Antrobus, Chantel Comardelle, Sally Russell Cox, Lesley Iaukea, Chas Jones, Philomena Keys, Haley Mullen, Max Neale, & Dalee Sambo Dorough, *Protection-in-Place & Community-Led Relocation, in* THE STATUS OF TRIBES AND CLIMATE CHANGE REPORT 247 (Dara Marks-Marino ed. 2021).

^{294.} Assessment & Recommendations 2021, *supra* note 264, at 9.

component of a relocation governance framework because relocation must always be a last resort adaptation strategy. The governance framework needs to standardize the relocation decision-making process so that community residents and their local governing entities understand the criteria needed to document that relocation is warranted and initiate the process. The process must answer the following questions: (1) who has the authority to decide that relocation is warranted; (2) what is the basis for making the decision; and (3) when does the decision need to be made to protect the life and well-being of community residents?

The governance framework also needs to outline the steps governmental and nongovernmental agencies must take to implement relocation. These steps could include: (1) the identification of social and environmental thresholds that demonstrate relocation is required to protect the lives and livelihoods of community residents; (2) environmental and social data required to document that these thresholds have been met and that relocation is the best long-term adaptation strategy; (3) the decision-making process to document that community residents and the local governing entity have voluntarily decided to relocate; (4) a relocation site selection process which includes community approval of the site chosen and engagement with the host community; and (5) the funding mechanisms for relocation.²⁹⁵

If relocation is determined to be the best long-term adaptation strategy, a lead federal agency with a statutory mandate and sufficient funding to facilitate a community-wide relocation needs to be designated.²⁹⁶

E. Protection in Place: Integrated Hazard Mitigation Planning

An effective relocation institutional framework must include funding for an integrated hazard mitigation and climate adaptation planning process. The process must incorporate community-based environmental monitoring to assess whether protection in place can provide a long-term adaptation strategy for environmentally threatened communities.

^{295.} See generally Bronen, Rights, Resilience and Community-Led Relocation, supra note 271.

^{296.} In Alaska, complying with the requirements under the National Environmental Policy Act (NEPA) for projects with a sufficient federal nexus is one of the critical roles for a lead federal agency and was another barrier that delayed Newtok's relocation. *See* GAO-09-551, *supra* note 53, at 31. NEPA requires an environmental assessment or environmental impact assessment (EIS), depending on the magnitude of the anticipated impact on the environment, to evaluate the likely environmental effects of proposed construction projects undertaken with federal money. *See* 42 U.S.C. § 4332(2)(C) (2006); 40 C.F.R. §§ 1508.9, 1508.11 (2009). If two or more federal agencies are involved in the same project or involved in a group of projects directly related to each other, NEPA regulations require that a lead agency supervise the preparation of the environmental assessment or EIS. These challenges were compounded by the lack of designated funding to complete the EIS. Although the Newtok Planning Group had extensive conversations related to NEPA compliance for several years, no federal agency stepped forward to complete the environmental assessment until President Obama's designated the Denali Commission to be a lead federal agency for the relocation effort. Bronen, *Climate-Induced Community Relocations, supra* note 11, at 390–91.

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The hazard mitigation planning process is a critical tool to evaluate risk and is a primary method a community can use to assess vulnerability.²⁹⁷ However, as currently configured, it is inadequate to assess whether relocation or protection in place can provide long-term protection from hazards. Hazard mitigation planning has traditionally relied on analysis of historical events to characterize risk.²⁹⁸ Climate change adaptation, on the other hand, not only considers the impacts of historic extreme weather events, but also examines the implication of slow-onset environmental changes and uses "long-term planning horizons," recognizing that climate-induced environmental change will continue to occur far into the future.²⁹⁹

Currently, however, communities are required to complete multiple plans for participation in a variety of federal government programs. Environmentally-threatened communities in Alaska, for example, may complete local or tribal hazard mitigation plans to participate in FEMA, plans through the National Flood Insurance Risk MAP program, tribal resilience plans through the BIA, and, perhaps, climate adaptation plans.³⁰⁰ In addition, the Alaska Division of Community and Regional Development houses several programs focused on responding to accelerating environmental change in Alaska including the Alaska Community Coastal Protection Program, Alaska Risk MAP Program, and Community Coastal Impact Program.³⁰¹

While these planning processes may serve valuable purposes, the purposes overlap and none of the plans are coupled with funding to carry out the mitigation

300. See generally HAZARD MITIGATION PLAN UPDATE, supra note 15; CITY OF QUINHAGAK HAZARD MITIGATION PLANNING TEAM, CITY OF QUINHAGAK HAZARD MITIGATION PLAN, supra note 70; POWTEC, LLC & TETRA TECH, QINHAGAK HAZARD IMPACT ASSESSMENT, supra note 71; Quinhagak Community Storymap, supra note 72; Alaska Risk MAP Program, ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV. – DIV. CMTY. & REG'L AFFS., https://www.commerce.alaska.gov /web/dcra/PlanningLandManagement/RiskMAP.aspx [https://perma.cc/69Z9-E6SS].

301. Community Resilience Programs, ALASKA DEP'T COMMERCE, CMTY., & ECON. DEV. – DIV. CMTY. & REG'L AFFS., https://www.commerce.alaska.gov/web/dcra/CommunityResilience andClimateAdaptationPrograms.aspx [https://perma.cc/S73J-JUHU] (last visited Feb. 19, 2022).

^{297.} See Bronen, Climate-Induced Community Relocations, supra note 11, at 369–71.

^{298.} MELISSA HIGBEE, ICLEI – LOC. GOV'TS FOR SUSTAINABILITY, INTEGRATING HAZARD MITIGATION AND CLIMATE ADAPTATION PLANNING: CASE STUDIES AND LESSONS LEARNED 7 (2014), https://icleiusa.org/wp-content/uploads/2015/08/Integrating-Hazard-Mitigation-and-Climate-Adaptation-Planning.pdf [https://perma.cc/3VDG-QC56].

^{299.} Id. FEMA provided general information on how to integrate climate change into hazard mitigation plans in its 2013 guidance document. See FEMA, LOCAL MITIGATION PLANNING HANDBOOK § 5—8 (2013), https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf [https://perma.cc/7TR2-ZMQ4] ("The planning team may decide to include a discussion of the impacts of climate change in the risk assessment. This is not required by Federal mitigation planning regulation, but can provide a better understanding of how risk may change in the future. Climate change in and of itself may not be a hazard, but it may change the characteristics of the hazards that currently affect the planning area. The planning team can include climate change as a separate section in the plan or within the descriptions of the existing hazards, such as severe storms, flooding, wildfire, and drought."). FEMA recognizes that climate adaptation planning can complement hazard mitigation planning. See id. ("Climate adaptation strategies, which are adjustments in natural or human systems to mitigate the impacts of a changing climate, may complement other hazard mitigation strategies.").

and adaptation measures they recommend.³⁰² The planning processes should be integrated to reduce the number of plans required through different programs and to instead focus on a single plan that results in concrete mitigation alternatives. This would provide communities with better information so that they can make decisions to protect their residents. In Quinhagak, engineering and feasibility studies conducted by the Denali Commission and U.S. Army Corps of Engineers have assessed the vulnerability of the sewage lagoon, the viability of dredging the Kanektok River, and the condition of homes.³⁰³ Yet no funding has been identified to mitigate these hazards.³⁰⁴

F. Community-based Environmental Monitoring

To make an integrated hazard mitigation and adaptation planning process more robust, this process should include funding for the community-based environmental monitoring typically recommended as part of mitigation plans. Community-led monitoring programs, which allow residents to capture the rate and severity of hazards such as flooding, erosion, and permafrost-thawing on an ongoing basis increase the accuracy and frequency of hazard updates.³⁰⁵ As communities collect data of the progressive nature of environmental changes, they can communicate it to governmental and technical experts who can assist the community in evaluating the best adaptation responses.³⁰⁶ In comments submitted to the U.S. Senate, the Native Village of Kwigillingok expressed the importance of community-based environmental monitoring.³⁰⁷

Kwigillingok: We need to have our own community members monitor climate impacts. We are the ones who have seen the environmental changes occurring since we have lived here over the span of many years or decades. Outsiders will come in and do assessments but they have no understanding of our cultural knowledge. Our hunters gather food from springtime until freeze-up. They are natural observers and we can train them to assist in climate change monitoring.

-Kwigillingok tribal member³⁰⁸

308. Id.

^{302.} See, e.g., Assessment & Recommendations 2021, supra note 264, at 7–9.

^{303.} Bronen, Climate-Induced Community Relocations, supra note 69, at 3-4.

^{304.} HAZARD MITIGATION PLAN UPDATE, *supra* note 15, at 66, 67.

^{305.} Bronen, *Climate-Induced Community Relocations, supra* note 69, at 2 (describing "monitoring and assessment done by three Alaska Native communities" including "documenting the effects of accelerating rates of erosion, . . . thawing permafrost, and repeated extreme weather events, on the health of community residents and on community infrastructure").

^{306.} Bronen, Pollock, Overbeck, Stevens, Natali, & Maio, supra note 52, at 199.

^{307.} Letter from Robin Bronen, Exec. Dir. Alaska Inst. for Just. to Brian Schatz, Chair Senate Special Comm. Climate Crisis & Chair Senate Indian Affs. Comm., Tom Udall, Vice Chair Senate Indian Affs. Comm., Members of the Senate Indian Affs. Comm. & Members of the Senate Special Comm. Climate Crisis 11 (Sept. 12, 2021) (on file with author) [hereinafter U.S. Senate Comments].

Through this process, environmental and social indicators of when a relocation process should begin can be identified and agreed upon by all levels of government. Socio-ecological indicators can also guide the design of adaptation strategies. These indicators could include: (1) repetitive loss of community infrastructure; (2) imminent danger to community residents from ongoing ecological changes and repeated extreme weather events; (3) no ability for community expansion; (4) predicted rates of environmental change (e.g., sea level rise and erosion) that will damage or destroy community lifelines and/or a substantial portion of the homes in the community; (5) repeated failure of hazard mitigation measures; (6) viability of access to transportation, potable water, communication systems, power, and waste disposal; and (7) decline in socio-economic indicators, including food security, loss of livelihood, and public health.³⁰⁹

Integrated Hazard Mitigation Planning must also include assessments about cultural, sacred, and historical sites. Tribes should be able to create their own methods to determine replacement costs and appropriate compensation for these cultural, sacred, or historical sites in the event of loss or damage. In addition to cemeteries, sacred and archaeological sites, and tribal buildings, hazard mitigation plans should recognize cultural sites, such as cabins, fish camps, and boats, where residents prepare, store, and teach the preparation of traditional foods.³¹⁰ The inclusion of this information in the hazard mitigation planning process, with methods created by Tribes to determine replacement costs, could provide the foundation for prospective cost-benefit analysis to streamline funding processes.

G. Funding

Environmentally-threatened communities face significant environmental risks to the life and safety of the residents of the community and to the integrity of the community's infrastructure. Little funding is available to assist homeowners in high hazard areas with the difficult, and emotionally challenging, process of selling an existing home and purchasing a new home.³¹¹ Buyouts, litigation, and

^{309.} These indicators are a compilation of the climate-induced social and ecological threats documented by five Alaskan coastal communities—Kivalina, Shishmaref, Newtok, Shaktoolik, and Unalakleet—facing relocation. IAW 2009 RECOMMENDATIONS, *supra* note 282, at 69; IAW 2008 RECOMMENDATIONS, *supra* note 282, at 47–51; Bronen, *Climate-Induced Community Relocations*, *supra* note 11, at 397–98.

^{310.} FEMA recommends a 200-page instruction guide to help determine loss and damages for historical properties and cultural resources. FEMA, FEMA 386-6, INTEGRATING HISTORIC PROPERTY AND CULTURAL RESOURCE CONSIDERATIONS INTO HAZARD MITIGATION PLANNING ii–iii (2005) ("This guide is designed for all practitioners involved in creating a hazard mitigation plan (e.g., planners and emergency managers).... This guide will be of value to citizens who love their communities and want to protect their historic and cultural assets. The guide will outline specific steps for how communities can harness their knowledge, talent, and energy to create a secure future for historic resources."). It is unreasonable to expect that tribal members involved in the hazard mitigation process have the time to read, comprehend, and apply the 386-6 guide. Tribes should be able to create their own methods to determine the value and replacement costs. *See* U.S. Senate Comments, *supra* note 307, at 10.

^{311.} Weber & Moore, supra note 226, at 16.

land use restrictions have all been used to assist homeowners or discourage future coastal development, but each approach is problematic.³¹²

The federal relocation governance framework needs to incorporate existing funding streams and grant programs while also creating new funding programs that can be accessed for planned community relocations. First, Congress needs to revise the eligibility criteria for federal funding from sources like FEMA and HUD.

1. Amend the Stafford Act

Disaster declarations are a primary vehicle through which FEMA and HUD provide funding and technical assistance.³¹³ The Stafford Act definition of the term "major disaster" and its interpretation must be amended. The current definition is "any natural catastrophe" that "causes *damage of sufficient severity and magnitude* to warrant major disaster assistance . . . to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby."³¹⁴ Slow, ongoing environmental change does not typically conform to the Stafford Act's definition.³¹⁵ This means that no level of government can access this critical funding and technical assistance to proactively respond to, and prevent severe damage from the hazards it creates.³¹⁶ The Stafford Act's rigid definition of disaster has prevented the tribal government from receiving critical resources to complete the relocation process that started more than 25 years ago and is one reason the majority of Newtok residents continue to live in a humanitarian crisis.³¹⁷

To incorporate slow environmental change, the Stafford Act disaster definition should be amended to state the following: A major disaster includes slow, ongoing environmental change, such as sea level rise and erosion, that is predicted to damage or destroy critical community infrastructure and threaten the lives of community residents within three years. Requiring a three-year time frame allows a local governing entity to begin a relocation process and protect people, and the infrastructure upon which they depend, proactively. Amending the

^{312.} Bronen, Climate-Induced Community Relocations, supra note 46, at 37-38.

^{313.} GAO-20-488, *supra* note 45, at 30–34.

^{314. 42} U.S.C. § 5122 (emphasis added).

^{315.} See id.

^{316.} HUD funding is limited to grantees recovering from qualifying disasters that occurred in 2015, 2016, and 2017. GAO-20-488, *supra* note 45, at 34. The 2020 GAO report affirmed this fact when it listed funding sources to respond to climate-forced displacement, such as the recently implemented FEMA Building Resilient Infrastructure and Community program and the Housing and Urban Development Community Development Block Grant mitigation program, which both require a disaster declaration to be eligible for the funding. *Id.* at 30–34. Notably, the GAO report did not include funding available to respond to slow-ongoing environmental change, which is an indication that there is limited available funding to respond to these environmental hazards. *Id.*

^{317.} *Id.* at 28 (stating that plans to relocate began in 1994); *id.* at 30–34; Assessment & Recommendations 2021, *supra* note 264, at 24–25.

Stafford Act definition of disaster would mean that a buyout program could be initiated prior to an environmental event that displaces people.

2. Collaborative Funding Structures

Congress needs to create a mechanism for the coordinated release of funding or the streamlining of different agency grant-making processes to make the acquisition of funding more efficient. Federal government agencies should be authorized to set aside funding specifically to provide technical and financial assistance for a community-wide relocation effort if it is determined to be the best long-term adaptation strategy for an environmentally-threatened community. Once these criteria are reached, the lead federal agency should be able to access these resources across the federal system so that the relocation effort is cost-efficient.

Federal housing, disaster relief, and other grant programs should include setasides or priorities for environmentally-threatened tribes in order to better meet their needs. They should also consider cultural resources, reduced match requirements, and fair award criteria.

Set asides or priorities for environmentally threatened tribes: Environmentally-threatened tribes are among the communities most dramatically affected by climate change. Tribes also have fewer economic and staffing resources to address these threats than urban population centers.³¹⁸ The need to address the threats is urgent, and federal grant programs should reflect that urgency by creating setasides for environmentally-threatened tribes to ensure that the communities that most need assistance have equitable access to funding.

<u>Reduced match requirements</u>: Federal cost-sharing requirements make grant programs inaccessible to Alaska Native tribes most in need of assistance.³¹⁹ Many Alaska Native communities are small and rural with low per capita income and no local tax base.³²⁰ Requiring a local match for large projects can make it infeasible for communities to obtain funding. Eliminating match requirements would make federal grant programs more equitable by ensuring that communities have access to funding based on the need for funding, not based on their ability to pay.³²¹

<u>Non-competitive funding: Change Cost-Benefit Analysis</u>: Competitive grant awards and cost-benefit analysis generally favor large populations in urban areas.³²² This type of analysis penalizes Alaska Native communities, where

^{318.} See Assessment & Recommendations 2021, supra note 264, at 16; AGNEW BECK, STRATEGIC MANAGEMENT PLAN: NEWTOK TO MERTARVIK 48 (2012), https://www.commerce.alaska .gov/web/Portals/4/pub/Mertarvik_Strategic_Management_Plan.pdf [https://perma.cc/5HAR-ST 6A].

^{319.} Assessment & Recommendations 2021, *supra* note 264, at 79 (2021); *see also* Maldonado, Antrobus, Comardelle, Cox, Iaukea, Jones, Keys, Mullen, Neale, & Dorough, *supra* note 293, at 247, 250–51.

^{320.} Assessment & Recommendations 2021, supra note 264, at 40.

^{321.} See Maldonado, Antrobus, Comardelle, Cox, Iaukea, Jones, Keys, Mullen, Neale, & Dorough, *supra* note 293, at 251.

^{322.} Id. at 250.

shipping and construction costs are high, populations are low, and local economic resources are minimal.³²³ When comparing the cost of preventing destructive floods against the value of the public infrastructure in rural Alaska Native villages, flood control mitigation projects are often denied because they are more expensive than the value of the public infrastructure.³²⁴ Cost-benefit analyses also fail to take into account the impact of losing properties or materials that provide cultural value to the community.³²⁵ If a fish camp is lost to a flooding event, the loss may be monetarily insignificant but substantial in terms of the resources needed to feed families throughout the wintertime or the space used to teach the next generation a critical skill. When a cost-benefit analysis is required for a grant, tribes should be permitted to include non-economic factors that reflect cultural resources and needs. The risk climate change and community relocations present to subsistence and community resilience is enormous. Although it is difficult to calculate values for these considerations, tribes should be permitted to include these calculations in cost-benefit analyses to better reflect what is at stake.

3. New Funding Program: Community Resilience and Relocation

A community should be eligible to apply for a three-phase grant process if it meets the definition of environmentally-threatened and seeks relocation as its best long-term adaptation strategy.

<u>Three-Phase Program</u>: The Community Resilience and Relocation grant program would involve three phases, but a community would only be required to submit one application at the beginning of the process, with each subsequent phase contingent on the results of the previous phase. This phased process would simplify the application process for communities with the most critical needs for mitigation assistance and relocation implementation. The community would have three years to complete each phase of the grant cycle and would be required to submit annual grant reports. Communities could request an extension of time for any grant phase.

<u>Phase 1: Resilience planning.</u> During this first phase of the grant program, the community would receive assistance and funding for community decision-making and strategic planning. The following activities would occur:

 Feasibility and engineering studies would assess whether protection in place or relocation is the best long-term adaptation strategy, and a cost-benefit analysis would consider the benefits and costs of mitigation actions for protecting a threatened community in-place in comparison to the costs and benefits of relocation. The analysis must

^{323.} See BECK, supra note 318, at 48.

^{324.} Assessment & Recommendations 2021, supra note 264, at 40.

^{325.} Improving Benefit-Cost Analyses for Rural Areas, HEADWATER ECONOMICS (Nov. 2021), https://headwaterseconomics.org/equity/improving-benefit-cost-analyses/#point1 [https://perma.cc /P5ZA-TF4Y]; ANNE N. JUNOD, CARLOS MARTIN, REBECCA MARX, & AMY ROGIN, EQUITABLE INVESTMENTS IN RESILIENCE v-vi (2021), https://www.urban.org/sites/default/files/publication /104302/equitable-investments-in-resilience.pdf [https://perma.cc/Y58W-JCUZ].

include values for noneconomic loss. ³²⁶ It must also assess the issues facing the community holistically so that communities can rely on its conclusions for future project grant applications instead of requiring a separate, complicated analysis for each project. Federal government agencies should convene a working group to develop appropriate guidelines for including these values in cost-benefit analysis and work with Alaska Native tribes and American Indian tribes, economists experienced in this area, and other stakeholders to develop guidelines that can be used.

- 2) If protection in place is the best long-term adaptation strategy, the feasibility study would identify the available funding and process to complete this work.
- 3) If the feasibility study and cost-benefit analysis both demonstrate that relocation is the best long-term adaptation strategy, a communitywide relocation vote needs to be organized to document that a majority of households want to relocate.
- 4) <u>Relocation Site Selection</u>. All levels of government need to identify and assess possible places where people can relocate prior to displacement. The governance framework can describe the criteria for this identification process to ensure federal funding is spent appropriately. It should assess whether the relocation site will be subjected to future environmental hazards, engage with the people already inhabiting the possible relocation site, and incorporate issues related to land ownership and title. To avoid conflict, host communities must be included in any relocation process to reach consent about being a relocation site, address issues identified by the host community, and develop infrastructure to meet the needs of both the host community and the relocated population.

^{326.} Assigning values for noneconomic loss is a difficult and sometimes sensitive process, but the Warsaw International Mechanism on Loss and Damage requires that these values be taken into account in addressing loss resulting from climate change. See Framework Convention on Climate Change, Non-Economic Losses in the Context of the Work Programme on Loss and Damage, U.N. Doc. FCCC/TP/2012/2, at 3-6 (Oct. 9, 2013) (technical paper); Olivia Serdeczny, Non-Economic Loss and Damage and the Warsaw International Mechanism, in CLIMATE RISK MANAGEMENT, POLICY, AND GOVERNANCE 206-07 (Reinhard Mechler, Laurens M. Bouwer, Thomas Schinko, Swenja Surminski, & JoAnne Linnerooth-Bayer eds., 2019). Various scholars have proposed methods for valuing cultural loss, and the United States Army Corps of Engineers has studied proposals for assigning value to subsistence that take into account not only the food element but also its cultural value. RESOURCE ECON, STEPHEN R. BRAUND & ASSOCIATES, DR. STEVE J. LANGDON, & TETRA TECH, INC., ECONOMIC VALUE OF SUBSISTENCE ACTIVITY: LITTLE DIOMEDE, ALASKA 2-1 (2011), https://www.poa.usace.army.mil/Portals/34/docs/civilworks/currentproj/AP-PXBSubsistenceFINAL012512.pdf?ver=2017-04-07-203156-967 [https://perma.cc/7EUQ-996V]. Federal government agencies such as FEMA allow non-tangible costs to be considered in the benefitcost analysis, but this analysis is complicated and creates a barrier that discourages many communities from applying for grants at all. Requiring communities to complete this analysis for each project, without assistance, is not realistic. See JUNOD, MARTIN, MARX, & ROGIN, supra note 325, at v-viii, 63.

- 5) Develop a strategic relocation plan. The governance framework needs to outline the documentation local and tribal governing entities must submit to the federal government to access funding and technical assistance for relocation planning and implementation. This documentation should include a strategic relocation planning and implementation report that addresses the following issues: (1) relocation site location; (2) infrastructure needed and the timing required to plan and implement construction of infrastructure at the relocation site; (3)the timing for the planned abandonment of infrastructure; and (4) demographic information documenting the livelihoods, age, health, and educational needs of community residents so that their needs will be met throughout the relocation process. If people are not able to continue their livelihood at the relocation site, a plan needs to be put into place to retrain them so that they will have a livelihood once relocated. This documentation should provide the roadmap to ensure that there is sufficient funding for all phases of the relocation so that it can proceed efficiently and cause the least harm possible.
- 6) If the community votes to relocate, the lead federal agency would also help with completing the environmental review for the entire relocation project. Completing the Environmental Assessment or Environmental Impact Statement at this phase would provide useful information to guide community decision-making and would allow future permitting decisions to tier to the overall analysis, saving time and money in the long run.

To be approved for funding for the second phase, the community would need to demonstrate the following: (1) that relocation of all or the majority of the community is the most cost-effective solution to protect life and safety, including the cost to culture and intangible non-economic benefits as described above; (2) that the community wants to stay together to preserve unique culture and lifestyle; and (3) that the local or tribal governing entity documents that the majority of the adults in the community voted to relocate.

<u>Phase 2: Pioneering the new site and protecting community lifelines</u>. In this phase, funding would support the acquisition, design, and surveying of the new site, as well as the protection or building of community lifelines like evacuation centers, drinking water access and sanitation, barge landings for supplies, health clinics, and access routes to subsistence resources. Funding could be used for necessary surveys and studies as well as for site preparation and infrastructure construction. This phase could also include relocating vulnerable homes or building new homes to replace vulnerable homes. Outside of Alaska, this phase would involve an assessment of the infrastructure of the host community to determine whether it is sufficient to meet the needs of the relocated population as well as the residents already living in the community.

<u>Phase 3: Building a resilient community</u>. In this phase, the community would build on the earlier phases and continue with developing the new site. This might include more homes, utilities, a school, transportation needs, tribal offices, a court, and other infrastructure.

H. Land Policies

Land use issues will necessarily arise when communities relocate and the land left behind has not yet been submerged. Creating regional land use policies to provide consistency between different jurisdictions within a contiguous ecosystem is critical.³²⁷ These policies should prohibit the development of land abandoned in relocation efforts as well as guidelines for post-disaster redevelopment that create criteria, prior to an extreme weather event, to identify whether recovery in a location should take place should such an event occur.³²⁸ Federal legislation should also ensure that people who rely on the environment for subsistence food harvesting maintain access to their traditional lands and waters during and after relocation. The buyout programs' "open space" requirement for the land remaining after a buyout occurs makes no provision for allowing former homeowners to return to their land to continue to engage in subsistence food gathering and other lifeway activities.³²⁹ Alaska Native communities must continue to have access to their traditional harvest areas, even if they are relocated through a buyout program.

VI.

CONCLUSION

Sea level is rising, and the land on which coastal communities are located is being regularly flooded. By 2035, approximately 170 coastal communities in the United States will be chronically inundated, defined as "flooding that occurs 26

^{327.} For example, "[t]he Southwest Florida Regional Resiliency Compact is an agreement between local governments in Southwest Florida to collaboratively identify, adapt to, and mitigate climate change impacts." *See Southwest Florida Regional Resiliency Compact*, AUDUBON FLA., https://fl.audubon.org/faq/southwest-florida-regional-resiliency-compact [https://perma.cc/QAH9-NM83] (last visited Feb. 13, 2021).

^{328.} See FEMA, PRE-DISASTER RECOVERY PLANNING GUIDE FOR LOCAL GOVERNMENTS 1–3, 16 (2017), https://www.fema.gov/sites/default/files/2020-07/pre-disaster-recovery-planning-guide-local-governments.pdf [https://perma.cc/Q6RD-TRR5] (providing advice for local governments to "prepare for recovery by developing pre-disaster recovery plans" that "allow a locality to more easily and effectively begin the recovery process immediately after a disaster"). As an example, FEMA offers states funding for voluntary buyouts to properties affected by flooding. See FEMA, FACT SHEET: ACQUISITION OF PROPERTY AFTER A FLOOD EVENT (Nov. 15, 2018), https://www.fema.gov/news-release/20200220/qingkuangshuomingshu-hongshuishijianhoudefang chanshougou [https://perma.cc/M5BM-QJ39]. Once purchased, the property is torn down and turned into open space. *Id.*

^{329.} See generally FEMA, PROPERTY ACQUISITION FOR OPEN SPACE, https://www.pema.pa.gov/Mitigation/Grants-Projects/Documents/FEMA-Property-Acquisitions-Open-Space-FAQ.pdf [https://perma.cc/3DYX-NSPA] (last visited Jan. 17, 2021).

times per year (on average, once every other week) or more."³³⁰ This flooding signals the possible disappearance of the land on which people live and maintain livelihoods.³³¹ Technological fixes, such as sea wall construction, may not be able to protect communities.³³² This will have enormous consequences for the location of human settlements. Currently, only a few communities in the United States have considered relocation as the best long-term adaptation strategy, but this will most certainly change as increased air and ocean temperatures radically alter our environment and make the places where people live and maintain livelihoods unsafe for human habitation. Relocation is an expensive, time-intensive process that has caused enormous harm to millions of people who have been forcibly relocated. Human rights must be the foundation of a relocation governance framework. The absence of legal authority and a statutorily defined, mandated, and funded relocation organizational structure have been significant barriers to Newtok's relocation and have exacerbated the multi-decade humanitarian crisis faced by the community. With no statutory guidance or authority to relocate the village, the Newtok Planning Group and Mertarvik Steering Committee have engaged in an ad hoc process that has strained the individual and collective capacity of governmental and nongovernmental agencies to respond to the complex public health crisis and created an urgent need for large amounts of funding at one time. All environmentally threatened Alaska Native communities, including Quinhagak, will face similar challenges without a governance framework. The need for a federal climigration governance framework is urgent.

^{330.} ERIKA SPANGER-SIEGFRIED, KRISTINA DAHL, ASTRID CALDAS, SHAUN UDVARDY, RACHEL CLETUS, PAMELA WORTH, & NICOLE HERNANDEZ HAMMER, UNION OF CONCERNED SCIENTISTS, WHEN RISING SEAS HIT HOME: HARD CHOICES AHEAD FOR HUNDREDS OF US COASTAL COMMUNITIES 1 (2017), https://https://www.ucsusa.org/sites/default/files/attach/2017/07/when-rising-seas-hit-home-full-report.pdf [https://perma.cc/7WCD-5MSY].

^{331.} *Id.* at 1–3. *See generally* James L. Davis & Nadya T. Vinogradova, *Causes of Accelerating Sea Level on the East Coast of North America*, 44 GEOPHYSICAL RSCH. LETTERS 5133, 5138– 39 (2017).

^{332.} JEFF GOODELL, THE WATER WILL COME: RISING SEAS, SINKING CITIES, AND THE REMAKING OF THE CIVILIZED WORLD 147 (2017) (discussing plans in New York City to build "a tenfoot-high steel-and-concrete-reinforced berm that will run about two miles . . . that someday may loop around the bottom of Lower Manhattan" and acknowledging that the problem with a wall is that it is impossible to "wall off the city's entire 520-mile coastline," which would necessitate decisions about "who gets to live behind the wall and who doesn't").