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ISSUE BRIEF

The United States' Climate Change Relocation Plan

What Needs to Happen Now

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Finding the front lines of climate change is not hard. As of May 2017, at least seventeen communities across the United States have already begun the process of relocating part or all of their infrastructure further inland due to climate change effects.[1] By 2100, at least 414 towns, villages, and cities across the United States will be flooded no matter how much humans decrease carbon emissions.[2] At a minimum, this amounts to 4.3 million Americans displaced from their homes—and that is according to conservative National Aeronautics and Space Administration sea level rise predictions. At the high end, over thirteen million people along US coastlines will be impacted by these rapid coastal shifts.[3]

The reality of internally displaced communities due to sea level rise, flooding, and extreme storm events in the United States has arrived, and is poised to get worse. However, the US federal government remains ill-prepared to deal with the immense and undeniable human security challenge at hand. At present, there is no dedicated funding, dedicated lead agency, or dedicated policy framework to guide communities in need of relocation. And only one of the seventeen communities engaged in climate-induced relocations, the Isle de Jean Charles in Louisiana, has received enough federal funding to move its town in full.[4] As argued in an earlier opinion piece in the *LA Times*, "federal programs for disaster assistance are limited and mostly unavailable to towns that require climate-induced relocation. Relief programs focus on sudden

1 Maxine Burkett, Robert R.M. Verchick, and David Flores, "Reaching Higher Ground," Center for Progressive Reform, http://progressivereform.org/articles/ReachingHigher-Ground_1703.pdf.

2 Benjamin H. Strauss, Scott Kulp, and Anders Levermann, "Carbon Choices Determine US Cities Committed to Futures Below Sea Level," *PNAS* 112, no. 44, 2015, http://www.pnas.org/content/112/44/13508.full.pdf.

3 Mathew E. Hauer, Jason M. Evans, and Deepak R. Mishra, "Millions Projected to Be at Risk from Sea-Level Rise in the Continental United States," *Nature Climate Change* 6, March 2016, https://www.nature.com/nclimate/journal/v6/n7/full/nclimate2961.html, 691-695.

4 Office of Community Development Disaster Recovery Unit, State of Louisiana, "LA Receives $92 Million from U.S. Dept. of Housing and Urban Development for Coastal Communities, Disaster Resilience," January 25, 2016, http://www.doa.la.gov/OCDDRU/NewsItems/Louisiana%20Receives%20NDRC%20Award.pdf.

natural disasters, like Hurricane Sandy, and on rebuilding in place rather than supporting the relocation of towns facing gradual inundation. Because of this gap, coastal communities across the country reliant on ad hoc federal and state grants … attempt to rebuild and relocate in bits and pieces, in the hope that the work will be done before an emergency evacuation is needed."[5]

While the current picture is bleak, some work has been done. During the Barack Obama administration, a number of steps were taken to provide adaptation-specific support. However, they fell short of having any lasting impact beyond his tenure.

During the first presidential visit to the Arctic in September 2015, Obama pledged $2 million to the Denali Commission, the independent federal agency mandated to facilitate climate-induced relocation in Alaska.[6] Nonetheless, the pledged sum covers less than 2 percent of the cost to relocate one Alaskan town, estimated at $100 to $200 million.[7] In the most recent White House budget proposal from President Donald Trump, the Denali Commission's entire budget is zeroed out.[8] An interagency working group on community-led managed retreat and voluntary relocation, established in December 2016 to develop a framework and action plan for the process, has also become defunct.[9]

Given President Trump's denial of climate change and dismantling of climate-related programming and funding, it is not realistic to believe that large-scale investment in federal policy and financial solutions for relocation will come to fruition in the next four to eight years. Therefore, the conversation needs to shift to focus on nongovernmental solutions to climate-induced relocation in the United States.

The issue brief to follow is one such effort to broaden the discussion by focusing on private, philanthropic, and nonprofit sector engagement in the relocation of American communities displaced by climate change. This paper provides a short introduction to the challenges and current state of climate-induced relocation in the United States and outlines one potential interim solution using the model of the Rockefeller Foundation's 100 Resilient Cities program.[10] This paper proposes a foundation-led effort to coordinate a program providing resources, expertise, support, and guidance to towns in need of managed retreat. Such a program could move communities forward in the absence of federal action on climate change by providing the resources to design, develop, and implement a relocation strategy with concrete milestones.

This paper will focus on three key logistical aspects, modeled after the 100 Resilient Cities program, that are needed to make the initiative successful: (1) financial and logistical guidance through a chief relocation officer to lead the city's resilience efforts; (2) access to expertise, solutions, service providers, and partners from the private, public, and nongovernmental sectors who can help develop and implement retreat strategies; and (3) a national network of member towns who can learn from and support each other.

Coastal communities across the United States already have the vision and localized knowledge to adapt to the unavoidable effects of climate change. What they do not have is time to waste on an inactive government. Broadening the relocation conversation to foundations, the private sector, and the United States' great volunteer base, where action can be taken in the next four or eight years, is essential to provide the financial support and technical tools needed to implement the communities' visions before it is too late.

5 Victoria Herrmann, "America's Climate Refugee Crisis Has Already Begun," *LA Times,* January 25, 2016, http://www.latimes.com/opinion/op-ed/la-oe-0125-herrmann-climate-refugees-20160125-story.html.

6 Office of the Press Secretary, White House of President Barack Obama, "Fact Sheet: President Obama Announces New Investments to Combat Climate Change and Assist Remote Alaskan Communities," September 02, 2015, https://obamawhitehouse.archives.gov/the-press-office/2015/09/02/fact-sheet-president-obama-announces-new-investments-combat-climate.

7 United States Government Accountability Office, *Alaska Native Villages: Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion*, June 2009, http://www.gao.gov/new.items/d09551.pdf.

8 Naomi Klouda, "Denali Commission Directed to Work on Shutdown Plan," *Alaska Journal of Commerce*, April 7, 2017, http://www.alaskajournal.com/2017-04-05/denali-commission-directed-work-shutdown-plan#.WVq_hNMrJAY.

9 Christopher Flavelle, "Obama's Final Push to Adapt to Climate Change," *Bloomberg View*, December 16, 2016, https://www.bloomberg.com/view/articles/2016-12-16/obama-s-final-push-to-adapt-to-climate-change.

10 For general information about the 100 Resilient Cities initiative, please see 100 Resilient Cities, http://www.100resilientcities.org/#/-_Yz5jJmg%2FMSd1PWI%3D/.

The Native Village of Shishmaref, viewed from the northeast side of Sarichef Island. *Photo credit*: Eli Keene.

The Current State of Climate-Induced Relocation in America

Sea level rise, shoreline erosion, and extreme weather events present some of the most serious socially, economically, and culturally disruptive consequences of climate change for the United States. Scenarios of sea level rise by the year 2100, associated with the collapse of polar ice sheets, range from a low of 0.3 meters to a high scenario of 3.0 meters.[11]

The level of sea rise depends on greenhouse gas emissions and future ocean and atmospheric heating. While the Paris Agreement was designed to put the world on a path to limit global warming at two degrees Celsius, this goal is "extremely difficult to meet under the terms of the accord."[12] Even when the voluntary pledges submitted by countries for curbing emissions under the Paris deal are combined, the world is on pace for three degrees or more of warming.[13] While this is unquestionably better than doing nothing, to truly put the world on a two-degree path, "wealthy nations would need to sharply accelerate their shift to a near-zero-carbon economy by 2050."[14] This would mean phasing out coal-fired power plants, transitioning to electric vehicles, and curbing methane emissions within mere decades. Following the Trump administration announcement that the United States will withdraw from its Paris commitments, it will be near impossible to limit global warming to the agreement's target by the end of this century.

As the map of the United States is redrawn to account for sea level rise the country can no longer avoid, the coastal land upon which communities have lived for

11 National Oceanic and Atmospheric Administration, *Technical Report NOS CO- OPS 083, Global and Regional Sea Level Rise Scenarios for the United States*, 2017, https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf.

12 Brad Plumer, "Meeting the Paris Climate Goals Was Always Hard. Without the U.S., It Is Far Harder," *The New York Times,* June 2, 2017, http://www.latimes.com/opinion/op-ed/la-oe-0125-herrmann-climate-refugees-20160125-story.html.

13 Ibid.

14 Ibid.

hundreds, at times thousands, of years is disappearing. In the continental United States, approximately 13.1 million people are at risk of inundation under a sea-level-rise scenario of 1.8 meters, with the southern United States representing nearly 70 percent of the entire projected at-risk population.[15] According to a 2009 Government Accountability Office report, in Alaska "climate change flooding and shoreline erosion already affects more than 180 villages, 31 of which are in 'imminent' danger of becoming uninhabitable."[16]

Seventeen communities in the United States have already chosen to relocate their towns, in part or in full, further inland. These include five communities in Washington State and Louisiana, and twelve coastal and river communities in Alaska.[17] All seventeen communities have voluntarily elected to do so to avoid the threat of imminent environmental displacement. Voluntary relocation, community buy-in, and a participatory retreat process are vital to the success of any relocation, in particular for these communities, which are primarily comprised of Native Americans and Alaska Natives. Forced dispossession and displacement of Native Americans and Alaska Natives from their lands has a long history in North America. Beginning with European exploration and colonization in the sixteenth century and continuing for five hundred years, over a billion acres of land have been taken from tribes under threat of violence, encroachment, and catastrophic epidemic, in addition to terrible assaults on tribes' cultural heritage, traditional knowledge, languages, and cohesion.

Relocation is one strategy, drawn out of a set of risk-management approaches, available to support communities exposed to sea level rise, erosion, and potential displacement. To explore nongovernmental support options for the seventeen communities listed above, it is first important to understand relocation as an adaptation strategy, the reasons for relocation compared with other adaptation strategies, and the state of current policy and funding that American communities are facing in 2017 as they attempt to retreat inland.

> "As the map of the United States is redrawn to account for sea level rise the country can no longer avoid, the coastal land upon which communities have lived for hundreds, at times thousands, of years is disappearing."

Colocation vs. Relocation as a Tool for Adapting to Climate Change[18]

The relocation this brief refers to is defined as the voluntary process whereby a community's housing, assets, and public infrastructure are strategically abandoned at the original site and rebuilt in another location that is out of the path of coastal hazards.[19] This new less-vulnerable location is independent of any already existing town or city and allows for resettling people as an intact community at an entirely new site. It is often seen as a strategy of last resort for environmental or climatic changes, and can be described as "transformational adaptation."[20]

Another option for communities facing inhabitability at their current site option is colocation, the moving of a displaced community into a nearby existing town or city. This option has largely been discussed in Alaska because of the high expenses associated with building a community on a new site off the road system

15 Hauer, Evans, and Mishra, "Millions Projected to Be at Risk from Sea-Level Rise in the Continental United States."

16 United States Government Accountability Office, *Alaska Native Villages: Limited Progress Has Been Made*.

17 Communities that have decided to relocate, in part or in full, include Isle de Jean Charles in Louisiana; La Push, Hoh Village, Queets Village, and Taholah Village in Washington State; and Newtok, Kivalina, Shaktoolik, Shishmaref, Allakaket, Huslia, Nulato, Teller, Golovin, Hughes, Koyukuk, and Unalakleet in Alaska.

18 For a more comprehensive overview of climate-induced relocation policy and comparison, please see the forthcoming article by Eli Keene, "Resources for Relocation: In Search of a Coherent Federal Policy on Resettling Climate-Vulnerable Communities" in *Texas Environmental Law Journal* 48-1.

19 Abhas K. Jha, Jennifer Duyne Barenstein, Priscilla M. Phelps, Daniel Pittet, and Stephen Sena, *Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters*, World Bank, 2010, https://openknowledge.worldbank.org/handle/10986/2409.

20 K. Lonsdale, P. Pringle, and B. Turner, *Transformative Adaptation: What It Is, Why It Matters & What Is Needed*, UK Climate Impacts Programme, University of Oxford, 2015, http://www.ukcip.org.uk/wp-content/PDFs/UKCIP-transformational-adaptation-final.pdf.

where materials must be barged or flown in. The major advantage of collocation to an already existing settlement versus community relocation to a new site is cost. A relocation requires the acquisition of land, the building of roads for construction, and designing and constructing new infrastructure. Collocation, on the other hand, is a matter of just expanding the existing housing stock and support infrastructure of an existing town. A 2004 Army Corps of Engineers study projected that relocating Shishmaref to the mainland would cost approximately $179 million, whereas collocating the community with Nome or Kotzebue would cost $93 million or $140 million, respectively.[21]

Challenges of Colocation

There are a number of non-financial costs associated with collocating a community, the sum of which has led the Army Corps of Engineers[22] to reject the option as a viable alternative to relocating Alaskan villages at present. When considering options for saving the Native Village of Newtok, the Army Corps of Engineers concluded, "Collocation would destroy the Newtok community identity," and noted that the lack of support for collocation would lead many in the community to consider it "forced."[23] The conclusion is justified. The recent history of resettling Indians and Alaska Natives demonstrates that collocation can result not only in cultural loss but also in discrimination, confinement to substandard living conditions, further economic marginalization, and social isolation. The lack of community approval for collocation makes it a somewhat unrealistic alternative to even attempt, at least where it has been discussed in Alaska. It is also possible that collocation could merely serve as a precursor to community dispersal. A study of Shishmaref, for example, found that while a portion of the community would likely stay in the recipient community, others would likely split up among other Native villages or migrate to Anchorage and other large cities.[24]

The social, psychological, and cultural-heritage loss and damage that come from severing a community's attachment to a place-based identity have been explored in research on development-induced displacement and resettlement and studies on qualitative population displacement driven by urban redevelopment and gentrification. In these cases, residents often face worse social and economic conditions following a resettlement that collocates them to another, already established community.[25] This worsening condition stems not only from the physical stress of being displaced from their homes, but also from the loss of community and social safety nets when relocation is focused on individuals rather than a cohesive, intact community.[26] When people are displaced, they are unlikely to establish new social support systems in their new locations, and when a community is dispersed or collocated to another settlement, those social networks are disrupted. These informal social support systems are important, particularly for low-income communities. They allow neighbors to check in on elderly residents, and community members to share social resources.

Concern over these social losses is reflected in a number of forms within climate-threatened communities. In Shishmaref, for example, residents expressed concern that collocating to Nome would cause the "village family" to collapse into nuclear families, meaning obligations like childcare and care for the elderly would cease to be a village concern and fall on individual parents or state facilities.[27] The maintenance of social bonds was cited by the Isle de Jean Charles community as a primary reason that relocation should be tackled at the community level, as opposed to at the level of individual residents.[28] Similarly, community relocation may help address the risks of loss of common resources and food insecurity in certain

21 Tetra Tech, Inc., *Shishmaref Partnership: Shishmaref Relocation and Collocation Study, Preliminary Costs of Alternatives*, US Army Corps of Engineers, Alaska District, December 2004, https://www.commerce.alaska.gov/web/Portals/4/pub/USACE_relocation%20plan_shishmaref.pdf.

22 Army Corps of Engineers, "Section 117 Project Fact Sheet," Storm Damage Reduction Project–Newtok, Alaska, April 3, 2008, https://www.commerce.alaska.gov/web/portals/4/pub/2008_Newtok_Sec_117.pdf.

23 Ibid.

24 Tetra Tech, Inc., *Shishmaref Partnership: Shishmaref Relocation and Collocation Study*, 146.

25 Elizabeth Ferris, "Planned Relocation and Climate Change," in Koko Warner, Walter Kalin, Scott Keckie, Beth Ferris, Susan F. Martin, and David Wrathall, *Changing Climate, Moving People: Framing Migration, Displacement, and Planned Relocation*, United Nations University, 2013, 32.

26 Michael M. Cernea, "Understanding and Preventing Impoverishment from Displacement: Reflections on the State of Knowledge," J. *Refugee Studies* 8, 1995, 245.

27 Tetra Tech, Inc., *Shishmaref Partnership: Shishmaref Relocation and Collocation Study*, 105-6.

28 Division of Administration of the State of Louisiana, Office of Community Development, Disaster Recovery Unit, "National Disaster Resilience Competition: Phase II Application State of Louisiana," October 27, 2015, http://www.doa.la.gov/OCDDRU/NDRC/NDRC_PII_Final_ExImg.pdf, 104.

communities. The most obvious factor in mitigating this risk is that communities can be relocated to an area that is near traditional lands—including hunting and fishing grounds—but out of the hazard zone. All communities that have decided to relocate as an adaptation strategy, including Shishmaref,[29] Taholah,[30] and Isle de Jean Charles,[31] have sought to resettle on land either contiguous or otherwise easily accessible to the original settlement, seeking to preserve access to traditional livelihoods and cultural heritage.

Cultural heritage is another important impetus for wholesale relocation. The impacts of climate change can pose a heightened existential threat to Native Americans and Alaska Natives because of the place-centered nature of their cultural and religious identities. Some indicators of tribal community health, like cultural cohesion and use of natural resources, are directly impacted by where the community is located. The Army Corps of Engineers concluded that moving residents from the Native Village of Shishmaref to a neighboring city, like Nome or Kotzebue, would likely destroy unique cultural aspects of the community, such as its distinct Inupiaq dialect and traditional carving and sewing practices.[32] Additionally, Alaska Native communities have long practiced subsistence hunting, both as a cultural practice and as a major contributor to local economies and food security. Residents in the Shishmaref study expressed repeated concern that moving to existing population centers such as Nome—some 125 miles away—would impair their "subsistence way of life."[33] Shishmaref residents perceived multiple risks to their identity, emanating both from decreased access to members of their community and to their traditional land if they were not to be relocated as an intact community to a new site. Comprehensive community relocation can help mitigate the potential loss of social cohesion, food insecurity, and cultural heritage in certain communities, particularly if communities can be relocated to an area that is near traditional lands—including hunting and fishing grounds—but out of the hazard zone.

Challenges of Relocation

While relocating a community to a new site is preferable to collocating to an already existing settlement for cultural, social, and psychological reasons, relocation is not without its challenges. Arguably the biggest challenge of relocation is its cost. Rebuilding a community, including all shared infrastructure like electric and sewer systems, schools, fuel tanks, and transit routes, is quite expensive.[34] The total cost of the relocation of the Isle de Jean Charles, Louisiana, the only community to have received federal funding to wholesale relocate because of the effects of climate change, is projected to cost $100 million.[35] In Alaska, the cost is even more extreme due to the isolation and difficult weather conditions of the region. The estimated cost of relocating the Native Village of Kivalina, for example, goes as high as $400 million, or roughly $1 million per resident.[36]

At present, there is no dedicated funding, dedicated lead agency, or dedicated policy framework to guide communities in need of relocation. At the federal or state government level, there is no funding stream to assist with wholesale relocation of communities displaced due to the effects of climate change. Communities must either seek non-relocation-specific block grants, as in the case of Isle de Jean Charles, which won a Department of Housing and Urban Development grant competition, or cobble together grants from a variety of agencies. The latter method has been used for many Alaskan communities in need of relocation including those in Newtok, Kivalina, and Shishmaref. However, these efforts have not yet garnered enough funding

29 Davis Hovey, "Shishmaref Community Votes to Relocate," Alaska Public Media, August 18, 2016, http://www.alaskapublic.org/2016/08/18/shishmaref-community-votes-to-relocate/.

30 Taholah Village Relocation Master Plan, September 7, 2016, http://www.quinaultindiannation.com/planning/neighborhoods.html.

31 Division of Administration of the State of Louisiana, "National Disaster Resilience Competition," 107.

32 Tetra Tech, Inc., *Shishmaref Partnership: Shishmaref Relocation and Collocation Study*, 143.

33 Ibid.

34 It should be noted that compared with protecting a community in place by building seawalls or a levee system, the cost-benefit analysis of retreat is favored over timescales greater than twenty-five years. Once a community is relocated, managed retreat involves minimal recurring financial costs while permanently reducing the natural hazard risk at play. Once one structural protection is built, development tends to increase behind it and thus amplifies motivation for a continuation of building up both the settlement and hard armoring to protect it.

35 In January 2016, Isle de Jean Charles, via the State of Louisiana's application, was awarded a $48 million grant by the Department of Housing and Urban Development's National Disaster Resilience Competition.

36 Tryck Nyman Hayes and URS Corporation, "Kivalina, Alaska Relocation Planning Project Master Plan," US Army Corps of Engineers, Alaska District, June 2006, http://www.poa.usace.army.mil/Portals/34/docs/civilworks/reports/KivalinaMasterPlanMainReportJune2006.pdf.

The US Army Corps of Engineers constructed a rip rap sea wall to protect much of Shishmaref from 2005 to 2009. The project is the latest in a number of sea walls constructed to try to slow the rate of erosion on Sarichef Island. *Photo credit*: Eli Keene.

for any of these communities to relocate. In addition to no dedicated funding steam, there is also a lack of any guiding principles on assisting communities in the relocation process. Planning and guidelines are important because a badly managed relocation may raise the likelihood that community members will not stay at the new site or that the community may experience cultural or economic loss that the relocation was meant to avoid.[37]

Relocation also requires considerable, specialized legal expertise, time, and connections to navigate the abandonment of the current site, the selection and ownership of the new property, and physical moving to and building on the new site. There is a long record of forced—as well as environmental disaster—relocations in US history. Any community looking to relocate will not only need to heed the lessons of that history, but also find funding and legal solutions. This is particularly true for American Indian and Alaska Native communities, which over two centuries have experienced land negotiations, treaties, and policies with and by the federal government concerning their land and mobility. Aptly put by University of Hawaii law professor Maxine Burkett:

> Federally recognized Native American and Alaska Native tribal communities already have specific property law tools for acquisition and governance of land. These tools are the result of many generations of contradictory policies —beginning with programs aimed at forced dispossession, followed by some policies that supported—and many others that hindered —Native communities' efforts to reclaim and

37 Residents of Shishmaref interviewed in August of 2016 often cited concerns that residents would either refuse to leave the island, specifically noting that their ancestors graves were located there, or that they would individually move to Nome or Kotzebue instead of the new site. See also Ted Jackson, "Stay or Go? Isle de Jean Charles Families Wrestle with the Sea," *The Times-Picayune*, updated May 4, 2017, http://www.nola.com/weather/index.ssf/2016/09/stay_or_go_isle_de_jean_charles_families_wrestle_with_the_sea.html (documenting Isle de Jean Charles residents' decision-making process to stay on the island or relocate).

govern their homelands. And the tensions arising out of state and federal government decisions on whether to recognize a particular group as a Native community further complicate matters.[38]

The Trump administration is unlikely to implement a federal policy, allocate federal funding, or designate a federal agency for coordination of climate-induced community relocations. His proposed budget plan[39] would eliminate key programs for coastal adaptation research and capacity building like the National Sea Grant College Program;[40] zero out the budget for the Denali Commission,[41] the independent federal agency mandated to facilitate climate-induced relocation in Alaska; cut dozens of Environmental Protection Agency programs, including infrastructure assistance to Alaska Native villages; and reduce the Army Corps of Engineers' construction account by more than 50 percent.[42]

In the absence of federal funding, several nongovernmental organizations (NGOs) and grants have been mobilized to continue to move relocation planning forward. Some of these nonprofits include the Unitarian Universalist Service Committee, which is working on climate-forced displacement;[43] the Lowlander Center,[44] a nonprofit based in the bayous of Louisiana supporting lowland people and places through education, research, and advocacy; and the Alaska Institute for Justice, which is working on rights, resilience, and community-led relocation[45]—but more is needed. The inaction of the Trump administration demands widening the conversation on relocation solutions to include stakeholders who are willing and capable to act. Actors that exist outside the federal government in the private, philanthropic, and nongovernmental sectors must be more engaged in the relocation dialogue so that communities in need today can be provided with the necessary support in an era of public sector inertia.

"The inaction of the Trump administration demands widening the conversation on relocation solutions to include stakeholders who are willing and capable to act."

A Philanthropic Relocation Support Framework

The model of the Rockefeller Foundation's 100 Resilient Cities initiative offers one potential framework for how a nongovernmental philanthropic organization can step in to support communities. The 100 Resilient Cities program was launched in 2013 to help "cities around the world become more resilient to the physical, social, and economic challenges that are a growing part of the 21st century." Cities within the network are provided with the resources "to develop a roadmap to resilience" through four key programmatic pillars:

1. Financial and logistical guidance for establishing an innovative new position in city government, a Chief Resilience Officer, who will lead the city's resilience efforts

2. Expert support for development of a robust Resilience Strategy

3. Access to solutions, service providers, and partners from the private, public and NGO sectors who can help them develop and implement their Resilience Strategies

38 Burkett, Verchick, and Flores, *Reaching Higher Ground*.

39 Office of Management and Budget, The White House of President Donald J. Trump, "A New Foundation for American Greatness – President's Budget FY 2018," https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/budget.pdf.

40 Victoria Herrmann, "After 46 Years in Operation, an Uncertain Future for Alaska Sea Grant," *High North News*, March 31, 2017, http://www.highnorthnews.com/after-46-years-in-operation-an-uncertain-future-for-alaska-sea-grant/.

41 Naomi Klouda, "Denali Commission Directed to Work on Shutdown Plan," *Alaska Journal of Commerce*, April 7, 2017, http://www.alaskajournal.com/2017-04-05/denali-commission-directed-work-shutdown-plan#.WVq_hNMrJAY.

42 Jennifer Scholtes and Sarah Ferris, "Trump's Budget Surprises and Wishful Thinking," *Politico,* May 23, 2017, Http://Www.Politico.Com/Story/2017/05/23/Donald-Trump-Budget-Surprises-238732.

43 For ongoing work, please see "Climate Forced Displacement," Unitarian Universalist Service Committee, http://www.uusc.org/campaign/environmental-justice/.

44 For ongoing work, please see "Home," Lowlander Center, http://www.lowlandercenter.org/.

45 For ongoing work, please see "Climate Change," Alaska Institute for Justice, http://www.akijp.org/policy-and-research/climate-change/.

4. Membership of a global network of member cities who can learn from and help each other[46]

The aim of providing this support is to help individual cities become more resilient and create a global practice of resilience in all sectors of urban governance, planning, and development. A similar program for villages and towns in need of relocation could offer the same support. A foundation-led effort to coordinate a program providing the resources, expertise, support, and guidance to town members to successfully design, develop, and implement a relocation strategy with concrete milestones could move communities forward in the absence of federal action on climate change. Such a program could create a roadmap for funding and fundraising for a relocation, build community buy-in, and create the necessary social infrastructure to support cultural heritage and cohesion in the relocation process. A framework based on the 100 Resilient Cities initiative could borrow three of its main pillars, namely (1) financing a chief relocation officer; (2) offering connections to solutions and expertise developed by the private and nonprofit sectors; and (3) establishing a well-resourced network of communities facing similar challenges in climate-induced relocations.

Financial and logistical guidance through a chief relocation officer. One of the first actions of a relocation-specific program should be to fund a chief relocation officer (CRO) for select towns and villages at no cost to the communities for two or three years. Similar to the chief resilience officer for cities, this individual would be tasked with developing a roadmap for relocation.

Because of their small size, the local governments of many at-risk villages are under-resourced and understaffed. They are already overburdened with multiple coordinating and administrative tasks and may not have the capacity to take on additional time-intensive work related to relocation like fundraising, consensus building, and project management. Each of the seventeen communities in the process of full or partial relocations today involve fewer than one thousand people. While all inundated towns will not be as small as these communities, the disparities in local government and town council funding are an important consideration.

The CRO would be a town employee responsible for working across sectors and silos to map priorities and make decisions about how to adapt, grow, and thrive through the managed-retreat or displacement and colocation process. In addition to fully funding the position for two or three years, the initiative should include training on grant writing and strategic planning and allow CROs to dedicate 100 percent of their time to relocation and displacement work. Through this work, the CROs would use their leadership to inspire, influence, and enlist others in the towns to participate in the roadmap to relocation. CROs should be or be trained to be self-starters, effective fundraisers, and efficient project managers to coordinate the physical, social, economic, and cultural rebuilding of a town. They will need to be able to engage locally, understand their communities, and establish and maintain strong engagement from other local leaders.

Ultimately, relocation is not only about moving buildings. Securing funding and navigating the legal landscape, topics discussed in the next section, are vital. However, there are less tangible but equally important aspects of moving—like ensuring social cohesion, facilitating the establishment of a sustainable and resilient local economy, and preserving the community's cultural heritage and traditional knowledge—that should be included in a roadmap to relocation, and thus be under the CRO's purview.

Given the high costs and long timeline of a relocation effort, an extreme weather event may hit a community in the short term and cause displacement. In the event of a disaster like flooding, the impacted community may be forced to evacuate and colocate to another larger nearby settlement temporarily or permanently. One can think of the displacement and dispersion of neighborhoods and families from southern Louisiana and New Orleans to geographies across the country after Hurricane Katrina.[47] Having a CRO that has worked on social cohesion, cultural heritage, and resilient local economic activity are all also extremely helpful in an emergency evacuation, displacement, and colocation situation. It may also be of use for the CRO to create a community-specific contingency plan for colocation, so that community members are prepared.

46 "About Us," 100 Resilient Cities, http://www.100resilientcities.org/about-us#/-_/.

47 "From the Graphics Archive: Mapping Katrina and Its Aftermath," *New York Times,* August 25, 2015, https://www.nytimes.com/interactive/2015/08/25/us/mapping-katrina-and-aftermath.html.

Expert support and access to solutions, service providers, and partners from the private, public, and NGO sectors. CROs cannot, and should not, work alone to build a relocation roadmap for their communities. Managed retreat is an intricate and complex process that requires the involvement of actors at the local, state, and national levels, and expertise across law, finance, history, geology, engineering, public health, economics, and politics, among others.

At present, federal agencies provide a handful of resources and some expertise on evaluating and developing relocation sites. Within the US Climate Resilience Toolkit, a federal website designed to help people find and use tools, information, and subject matter expertise to build climate resilience, information on relocation is a subsection under Tribal Nations.[48] The site provides information and three case studies, including the experiences in Kivalina, Alaska, and of the Quinault Indian Nation in Washington. While this is helpful, the information is descriptive and does not offer interactive support throughout the planning, development, and implementation process. At present, public, private, and nonprofit expert support are insufficient to meet current demands of the seventeen communities, much less the demands on the horizon as millions of other US residents face the need to consider retreat.

A community must have economic and cultural heritage plans for the new site, engineering designs for the move and construction, public health considerations for the strains of the move, and access to adequate and specialized legal advice to name a few. The 100 Resilient Cities program offers a platform of partners as a curated suite of resilience-building tools and services provided by private, public, academic, and nonprofit partners to give cities access to needed resources. Combined, these partners provide cities with important tools, advice, and services for building resilience that they otherwise would not have access to.

A relocation program should have a similar partner platform wherein solutions and services are available for communities to use in planning and developing their relocation roadmaps. A foundation initiative for relocation could partner with the Community Engineering Corps, a partnership between Engineers Without Borders, the American Society of Civil Engineers, and the American Water Works Association to bring underserved communities and volunteer engineers together to advance local infrastructure solutions in the United States. Nonprofits or pro bono divisions of large law firms could provide partnerships to help towns navigate the legal challenges of retreating inland. And places like the National Trust for Historic Preservation and the Society for American Archaeology could help ensure that cultural heritage, historic sites, and local traditions are included in the relocation roadmap and effectively protected, or documented with dignity when saving them is not possible.

Partners must recognize that the process of relocation does not end with the physical move. Rather, the needs of community members must be adequately supported in the long term, and partners must deliver services that are also informed by non-climate-related social and economic vulnerabilities and non-climate-related environmental stressors. No two relocations are alike. Providing an interactive platform of partners rather than a static toolkit can provide at-risk communities with the necessary expertise and support needed to continue planning for relocation despite federal government inaction.

Building a global network of towns, villages, and cities who can learn from and help each other. While people, places, languages, and specific situations differ, lessons can be learned by sharing the challenges and successes to approaches in relocation solutions across geographies. Creating a peer-to-peer learning network of member towns, villages, and cities for the relocation initiative can help communities overcome the difficulty of sharing information about best practices.

Rockefeller's 100 Resilient Cities program has a similar network, and hosted its first-ever Chief Resiliency Officer Summit in New Orleans in November 2014, and a follow-up summit in Mexico City in November 2015. The aim of the summits was to break down barriers to sharing solutions and creative problem solving by creating strong personal and professional connections between members of the network. From this event, 100 Resilient Cities identified two key needs from the network: (1) a trusted peer venue of confidence and information sharing where they can be honest about successes and challenges and (2) a force for collective

48 See "Relocation," U.S. Climate Resilience Toolkit, National Oceanic and Atmospheric Administration, https://toolkit.climate.gov/topics/tribal-nations/relocation.

resilience advocacy, leadership, and mobilization across member cities.[49]

A foundation-based initiative for communities pursuing relocation should form a similar network to regularly share insights, celebrate successes, and support each other. While there have been several meetings convened for communities and professionals working on relocation, these are often one-off, regional events that fail to offer a sustained network approach to building connections and sharing experiences. A strong relocation network backed by a foundation initiative could include in-person, immersive exchanges where chief relocation officers are given the opportunity to spend time in other communities across the United States for on-the-ground learning. Annual summits and other in-person meetings with members and a virtual online community to keep members connected across time and geography can help make collaborations possible.

No Time for Business as Usual

The Trump administration is already noticeably impacting the agendas and actions of the philanthropic sector. Foundations usually focus on long-term goals set forth by their missions and values; however, the actions of this administration are forcing the philanthropic community to be nimbler to respond to new circumstances and meet the new needs that seem to emerge daily. As president and trustee of the Barr Foundation, Jim Canales aptly sums it up: "In changing times, philanthropy must adapt" when "the moment compels us to engage."[50] For many, this has meant staying the course with existing programs while simultaneously providing rapid response funds for pressing needs—what Canales calls "status quo plus." In a recent survey conducted by The Center for Effective Philanthropy, almost 30 percent of the 162 foundation chief executive officers (CEOs) included intended to make changes to their giving in light of the Trump administration's actions and agenda.[51] Almost all the causes supported by large foundations are threatened by President Trump's agenda, including international development, assistance to the poor, the rights of marginalized groups, journalistic freedom, and environmental and climate change programs. While foundations cannot direct the winds of federal action and parallel funding, they can adjust the sails of philanthropic support by listening attentively to the needs of the country and investing in a healthy democracy where all citizens feel safe—including safe from the impacts of a changing climate.

In the aftermath of President Trump's decision to begin the process of withdrawing the United States from the Paris Agreement, a number of foundations, including MacArthur, Hewlett, Rockefeller, McKnight, and the Goldman Environmental Foundation, made statements condemning the decision.[52] Bloomberg Philanthropies, perhaps the most vocal in its disappointment, pledged up to $15 million to the UN Framework Convention on Climate Change (UNFCCC), the body that oversees the implementation of the agreement, to cover a portion of the operating costs the US would have paid.[53]

Philanthropy cannot replace the federal government's commitment to international climate mitigation, nor can it cover the full cost of climate-induced community relocations in the United States. However, much like Bloomberg is funding part of the US commitment to the UNFCCC, foundations can provide much-needed

49 Michael Obermatt and Paul Melson, "Five Lessons from the World's First Chief Resilience Officer Summit," 100 Resilient Cities, June 3, 2015, http://www.100resilientcities.org/blog/entry/five-lessons-from-the-worlds-first-chief-resilience-officer-summit#/-_/.

50 James E. Canales, "In Changing Times, Philanthropy Must Adapt," Barr Foundation Blog, February 16, 2017, https://www.barrfoundation.org/blog/in-changing-times-philanthropy-must-adapt.

51 Phil Buchanan and Ellie Buteau, "Shifting Winds: Foundations Respond to a New Political Context," The Center for Effective Philanthropy, April 2017, http://gife.issuelab.org/resources/27397/27397.pdf.

52 For statements please see Julia M. Stasch, "Statement on the U.S. Withdrawal from the Paris Climate Accord," MacArthur Foundation, June 1, 2017, https://www.macfound.org/press/commentary/statement-us-withdrawal-paris-climate-agreement/; "Statement on President Trump's Announcement on Paris Accord," William & Flora Hewlett Foundation, June 1, 2017, http://www.hewlett.org/statement-president-trumps-announcement-paris-accord/; "Statement by Rockefeller Foundation President Dr. Rajiv Shah on the United States Withdrawing from the Paris Climate Agreement," Rockefeller Foundation, June 1, 2017, https://www.rockefellerfoundation.org/about-us/news-media/statement-rockefeller-foundation-president-dr-rajiv-shah-united-states-withdrawing-paris-climate-agreement/; "Statement on the US Withdrawal from the Paris Climate Accord," The McKnight Foundation, June 2, 2017, https://www.mcknight.org/newsroom/news-releases/statement-on-the-us-withdrawal-from-the-paris-climate-accord; "Goldman Environmental Foundation Condemns U.S. Withdrawal from Paris Climate Agreement," The Goldman Environmental Prize, June 1, 2017, http://www.goldmanprize.org/blog/goldman-environmental-foundation-condemns-u-s-withdrawal-paris-climate-agreement/.

53 Bill Chappell, "Bloomberg Promises $15 Million to Help Make Up for U.S. Withdrawal from Climate Deal," NPR, The Two-Way, June 2, 2017, http://www.npr.org/sections/thetwo-way/2017/06/02/531238185/bloomberg-promises-15-million-to-help-make-up-for-u-s-withdrawal-from-climate-de.

support for communities in need of managed retreat. A program similar to the Rockefeller Foundation's 100 Resilient Cities, through a single foundation or a collaborative effort, could empower dozens of communities to prepare for displacement and relocation or colocation. Investments in local adaptations are important. A 2016 Heartland Monitor Poll found that most Americans look to "local, not national, institutions for progress on the country's key challenges."[54] Aptly summarized by Ronald Brownstein of *The Atlantic*, "by a margin of three to one, those surveyed say they believe 'new ideas and solutions' for the nation's 'biggest economic and social challenges' are more likely to emerge from state and local institutions like government, businesses, and volunteer or community organizations than national institutions like the federal government, national businesses, and major non-profit organizations."[55]

Nonpartisan in nature, community adaptation can bring communities and the country together and build national support for locally implemented strategies for resilience. Foundations know this—in the Center for Effective Philanthropy's report, more than 40 percent of CEOs reported plans to increase their emphasis on collaboration and advocacy at the state and local levels.[56] Collectively, foundations and donors concerned about climate change are sitting on billions of dollars in endowments and accumulated personal wealth. The money is there to give, and there is no time to waste.

Climate change will continue to intimately disrupt and devastate the lives of Americans along the country's eroding coastlines regardless of the current US administration's stance on climate science. The seventeen communities that have already made the decision to retreat in part or in full will relocate without guidance or comprehensive financial support from the federal government. More can be done by engaging the philanthropic sector in building capacity in communities facing climate-induced relocation. If given the necessary support and resources, communities can not only create relocation or colocation plans to survive, but thrive in the face of a changing climate.

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54 Roland Brownstein, "Why Americans Argue Nationally but Act Locally," *The Atlantic*, July 12, 2016, https://www.theatlantic.com/politics/archive/2016/07/looking-for-change-from-the-bottom-up/490937/.

55 Ibid.

56 Buchanan and Buteau, "Shifting Winds: Foundations Respond to a New Political Context."

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