

**Building Capacity to Receive:
How Four Communities in the U.S. are Preparing for Climate Driven In-Migration**

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Abstract

In the U.S. and throughout the globe, the impacts of climate change will cause significant migration both within and between countries. While some communities will confront shrinking populations and a smaller tax base, others will need to prepare to receive these migrants and accommodate resulting population growth. A growing body of work focuses on out-migration and displacement, but there is little understanding and virtually no guidance for what communities on the receiving end should be doing to prepare for it.

This paper explores lessons learned and issues raised from case studies of four communities in the U.S. that have begun to experience or anticipate in-migration as an impact of climate change. Buffalo, NY and Cincinnati, OH have been identified as relative havens from the most extreme climate impacts and see climate driven in-migration as a way to breathe new life into otherwise shrinking cities. Orlando, FL and St. Tammany Parish, LA are less buffered from climate extremes and hazards, but have received large numbers of climate driven migrants already due to their relative proximity and connections to even more disaster-prone areas along the coast. Climate driven in-migration can provide opportunities for local growth and economic development—especially for rural areas and cities that have experienced decades of decline—but can also strain local infrastructure and resources.

Findings from stakeholder interviews in each of these communities highlight affordable housing shortages, cultural and language barriers to accessing local services, and mental health needs of migrants as some of the challenges that need to be addressed to better prepare for migrants. Even in these communities that have publicly acknowledged in-migration as a current or potential impact of climate change, however, planning for the local impacts of this migration is still in very early stages. Stakeholders identified lack of awareness, lack of data, competition with other local priorities, and the absence of federal funding for receiving communities as primary barriers to local planning and preparation for climate migration. In the face of these barriers, the presence of local champions can help to maintain and expand local attention on this issue, while participation in national peer learning networks can support local progress by providing access to resources and information as well as opportunities to learn with and from other communities. Though this study focuses on experiences and approaches at the local level, greater regional, state, and federal coordination were identified as critical elements in responding to increasing migration and building local capacity to receive.

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1. Introduction

The impacts of climate change and extreme weather events are contributing to the displacement of a growing number of people in the U.S. and across the globe. In 2020, tropical storms, wildfires, landslides and other disaster events resulted in the internal displacement of roughly 30.7 million people globally, including more than 1.7 million in the U.S. alone (Internal Displacement Monitoring Center, n.d.). Slow onset impacts of climate change like sea level rise, water scarcity, and reduced agricultural yields are also driving displacement and migration. A report released by the World Bank in 2018 projected that slow-onset impacts of climate change could lead to the internal displacement of more than 200 million people by the year 2050 (Rigaud et al., 2018). The recently released 6th Assessment Report of the Intergovernmental Panel on Climate Change confirms that climate and weather extremes are already driving significant displacement in all regions of the globe and that levels of displacement will increase over the course of this century due to the intensification of heavy precipitation and flooding, tropical cyclones, drought, and sea level rise (IPCC, 2022). It is impossible to know how many people will be displaced for climate related reasons or where they will go, but there is growing consensus that the collective impacts of climate change will be responsible for one of the greatest migrations of modern history (Marandi & Main, 2021; McLeman & Hunter, 2010; Rigaud et al., 2018). This migration will have significant impacts—for individual migrants themselves, for the communities they leave behind, and for the communities that receive them.

Many communities are already receiving people displaced by the impacts of climate related hazards while others—based on real or perceived climate advantages—have been flagged as potential future destinations. But there is little in the way of guidance or best practices for these communities to look toward to inform planning or policymaking around this issue. Absent a better understanding of climate migration and the opportunities and challenges that it poses, receiving communities may find themselves ill-prepared to accommodate and adapt to it. Through cases studies of four communities in the U.S. that have begun to grapple with the reality or prospect of climate driven in-migration, this study explores how actors at the local level are responding to and planning for climate-displaced migrants and what they are learning along the way. Two of the communities—Orlando, FL and St. Tammany Parish, LA—are already experiencing significant migrant flows that include identifiable influxes of people displaced by rapid onset disasters. The other two—Buffalo, NY and Cincinnati, OH—are cities recovering

from decades of population loss and economic decline that have been flagged as potential future “climate havens” due to climate advantages and infrastructure capacity. All four communities have openly addressed the issue of climate migration to varying degrees within local planning documents or official statements. Drawing on data from planning documents, news media, and stakeholder interviews in each of these communities, I identify common themes, challenges, and opportunities that have arisen from their experiences of preparing for and receiving climate migrants.

Despite planning recommendations or official public statements regarding their role as receiving communities, local policymakers and planners in these communities are still in the early stages of understanding the impacts of climate migration and developing the local capacity and infrastructure necessary to prepare for and accommodate it. Nonetheless, their collective experiences and insights illuminate a common set of factors that can enhance or limit local capacity to receive. Respondents from both current and potential receiving communities spoke to the need to expand their physical, social, and cultural infrastructure to accommodate a larger and, in many cases, more diverse population. They called for greater federal involvement and support for receiving communities to address current gaps in funding, research, and coordination around climate displacement and resettlement and also pointed to the critical role of regional collaboration and planning around this issue. Though the level and type of climate related risks and hazards varies significantly between their communities, interviewees across all four jurisdictions highlighted the importance and the challenge of continuing to build local hazard resilience while also accommodating and planning for climate driven growth.

One of the primary challenges for communities seeking to pro-actively address and prepare for climate migration is the lack of current research or practice to inform their efforts. Given limited peer-reviewed research on the topic, this paper draws on a combination of peer-reviewed articles and policy papers as well as local and national news coverage to provide background on the experience and impacts of climate migration within the U.S. and how local communities are responding and preparing for it. Following a brief review of the literature and my methods, I provide background on each of the case study communities drawing from local planning documents and media coverage. I then discuss the primary findings that surfaced via interviews with local stakeholders in these communities and conclude with recommendations for

further research and policy development that could support these and other communities in better understanding and preparing for the impacts of climate-driven in-migration.

2. Background

The International Organization for Migration defines climate migration as “the movement of a person or groups of persons who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their habitual place of residence, or choose to do so, either temporarily or permanently, within a State or across an international border” (IOM, 2019). In more simple terms, climate migrants are people who have chosen to relocate or have been involuntarily displaced due to environmental disasters or slow-onset changes in the environment caused by climate change. As the IOM definition implies in its length and complexity, however, climate migration is far from simple. It encompasses a wide range of climate related drivers but is difficult to disentangle from other socio-economic or political drivers of migration. It can result in temporary or permanent relocation, can take place within or across national borders, and encompasses both voluntary and involuntary movement of people. It can be sudden and unexpected, as occurs in the wake of disaster, or planned, as in the case of managed retreat or individual decisions to relocate due to increasing climate stressors and their impacts on livelihoods, well-being, and quality of life. Climate migrants include individuals and families from historically marginalized communities as well as people with abundant financial resources and socio-economic privilege. The complexity of climate migration and the wide range of people and experiences that it encompasses complicate attempts to characterize and quantify it, which in turn can make it difficult to prepare for.

Despite these challenges, recognition of climate migration as a growing trend has led to increasing efforts to better understand both the numbers of people likely to be affected and the impacts it will have. These efforts are motivated in part by concerns over the potentially destabilizing effects that this migration could have throughout the globe. Research suggests that climate-induced migration is likely to increase the pace of urbanization and could lead to rising unemployment, competition for services, and deepening poverty (Ahsan et al., 2016; Rigaud et al., 2018). Increased climate displacement could pose challenges at the national and international level, in the form of greater instability, humanitarian need, and strain on current migration laws and frameworks (Podesta, 2019). It also poses challenges at the level of the individual and the

community—regardless of the driver, migration can be disruptive of social, cultural, economic and financial ties for the both the individuals that move and the communities they leave behind (Aranda & Rivera, 2016; Bhugra & Becker, 2005; Weber & Peek, 2012). Sending communities may struggle to protect and provide for remaining residents with dwindling resources and a smaller tax base (Flavelle & Belleme, 2021), while receiving communities may experience the strain of greater demands on their infrastructure, housing, and social services—even as they are facing their own climate risks and adaptation challenges (Marandi & Main, 2021; Urban Institute, 2022a).

Climate change is altering and magnifying existing human migration patterns, but the act of moving in response to environmental or climate related ‘push’ and ‘pull’ factors is as old as human civilization itself (Flavell et al., 2020). Migration can be a necessary and positive adaptation to environmental change or hazards and can bring opportunities for the migrants themselves and for the communities that receive them (Adger et al., 2020; Barnett & Webber, 2010; Black et al., 2011; Flavell et al., 2020). Through relocation, some climate migrants may face lower hazard risk and benefit from expanded economic opportunities (Barnett & Webber, 2010; Gemenne & Blocher, 2017). Communities receiving migrants—particularly those that have experienced population or economic decline in recent decades—stand to benefit from the increased tax revenue, economic development potential, and enhanced social capital that migration brings (Keenan, 2019; Kiger, 2019; Marandi & Main, 2021). Policy measures adopted to link migrants seeking refuge and work to communities with shrinking populations and labor shortages could further increase the potential benefits of this migration and leverage its adaptive advantages for both migrants and receiving communities (Black et al., 2011; Matias, 2020).

A growing body of research has emerged in recent years contributing to a better understanding of climate driven migration, but relatively little attention has been given to how this migration will impact receiving communities and what they might do to better prepare for it. One notable and recent exception to the overall lack of peer-reviewed literature on the subject, is a typology of domestic climate migration impacts in the U.S. developed by Anna Marandi and Kelly Main (2021). Marandi and Main argue that, as the impacts of climate change unfold, driving increased displacement, most cities in the U.S. will fall within three broad categories: “vulnerable cities,” “recipient cities,” and “climate destinations.” “Vulnerable cities” are those characterized by high levels of climate risk, population loss, and a shrinking tax base, as people

move elsewhere to escape local hazards. “Recipient cities”—though experiencing their own share of environmental, economic, and social stressors—are those likely to see high levels of immigration due their proximity to more hazardous places and a reputation for being marginally less vulnerable. “Climate destinations” are characterized by more manageable climate impacts, access to fresh water, excess housing and infrastructure capacity, and an active desire to attract new residents and businesses. Through case studies of cities in each of these categories, Marandi and Main provide examples of the impacts of climate migration across these three contexts, revealing the different challenges and opportunities faced and suggesting a range of preliminary strategies for policy makers to consider in designing planning initiatives aimed at adapting to increased climate risk and migration. They recommend the use of scenario planning to better understand and spur public discussion of adaptation options, urge increased regional and inter-city coordination, and call for greater state and federal leadership on climate migration and federal funding and support for climate receiving communities.

Though theirs is one of the few peer-reviewed articles on the subject, other researchers, practitioners, and journalists have also explored and written about communities receiving climate migrants. One prominent example—a 2019 study in Duluth, Minnesota—sought to explore the city’s physical, economic, and social capacity to accommodate and adapt to future climate migration (Keenan, 2019). Though the focus was specifically on Duluth, the study’s author, Jesse Keenan was interested in the potential opportunity for other Rust Belt cities to serve as future climate havens as well, based on their cooler climates, freshwater resources, and infrastructure and housing capacity. Concentrating largely on elective migration rather than disaster displacement, this study highlighted the economic development opportunities this migration could present for communities hard hit by de-industrialization, but also noted some of the challenges this migration could bring, including the potential to negatively impact marginalized residents by undermining affordability and exacerbating existing income inequalities (Dagenais, 2019; Keenan, 2019).

Keenan’s work led to a flurry of newspaper articles and blog posts introducing the issue of climate migration to the general public and profiling a small handful of cities deemed prime candidates for relocation in a warming world (see for example: Malo, 2019; Milman, 2018; Pierre-Louis, 2019; Sacks & Acevedo, 2020; Schleien, 2021). Concurrent with this increase in news coverage, there are signs that climate considerations are beginning to factor larger in both

real estate investment and individual relocation decisions. Vivek Shandas, a professor at Portland State University whose work focuses on the impacts of climate change on cities, reports receiving cold calls from real estate investors wanting to know where they should look to buy “climate-safe” property. In a recent survey by Redfin, 49% of respondents that planned to move within the next year said that increasing frequency and intensity of natural disasters played a role in this decision (Katz & Sandoval-Olascoaga, 2021). That survey doesn’t provide insight into where respondents plan to move, but anecdotal accounts in recent news coverage on climate migration indicate that at least some people are consciously factoring levels of climate risk into their decision about where to relocate (McCallum, 2022).

Currently, however, people in the U.S. are moving in far greater numbers towards places with climate risk than away from them, as demonstrated by rapidly growing populations in the Sunbelt, on the coasts, and in the wildland-urban interface (Katz & Sandoval-Olascoaga, 2021; Marandi & Main, 2021). Climate change is likely to shift migration patterns in unanticipated ways, but existing research into the effect of disasters on migration indicates that people are more likely to migrate to closer destinations than more distant ones (Eyer et al., 2018). Early attempts to model how slower onset climate impacts like sea level rise might impact population distribution in the U.S. suggest similar trends. According to these models, inland areas adjacent to the coast and urban areas of the Southeast are likely to see the greatest effects of sea-level rise induced in-migration, with existing urban areas receiving the largest numbers of migrants (Hauer, 2017; Robinson et al., 2020). While these projections indicate that sea-level rise is likely to drastically reshape population distribution in our country, they do not point to Rust Belt cities as particular hotspots of future migration. This suggests a potential mismatch between where migrants “should” go to minimize future risk versus where it is anticipated they actually will go. In light of these current migration trends and projections, efforts to better prepare communities to receive climate displaced migrants must focus not just on potential “climate havens,” but also on the communities that Marandi and Main describe as “recipient cities”—communities that may be only marginally less vulnerable than the places people are leaving, but currently seem poised to receive a far greater number of displaced people.

Some have suggested that government policy could be used to incentivize migration to safer destinations (Eyer et al., 2018). Aside from federally funded buy-out programs and temporary assistance for disaster evacuees, however, there is currently very little federal policy

or funding targeted to support climate displaced people, and none directed specifically toward supporting receiving communities (Martin & Williams, 2021a). In 2020, the Urban Institute held a Stakeholders Summit on Federal Policy for Climate Displacement, Relocation, and Migration to discuss the challenges and opportunities for federal intervention around this issue. Participants in the summit, unanimously agreed that there was a need for expanded federal coordination and leadership in response to climate migration and that receiving communities should be given federal assistance to support them in absorbing climate migrants (Martin & Williams, 2021a). Most participants in the summit, however, by their own admission had little experience with the needs of receiving communities and limited knowledge of what receiving communities were doing to plan or prepare for in-migration—highlighting the overall lack of attention given to these communities in current research and policy concerning climate migration (Martin & Williams, 2021b).

An Urban Institute study currently underway seeks to address this research gap through an exploration of climate migration in three Gulf Coast regions that focuses on how receiving communities are impacted by this migration and what they can do to prepare for and adapt to it. The full report on their findings is forthcoming, but an article published in early 2022 presents initial insights and recommendations, drawing from experiences in Orlando and surrounding central Florida communities and the influx of Puerto Rican evacuees that landed there in the aftermath of Hurricane Maria (Urban Institute, 2022a). The article describes how non-profit and public agencies at the local, state, and federal level came together to connect evacuees to resources and services, but also highlights some of the challenges they faced in accommodating this influx, the largest of which was the lack of adequate affordable housing options. To prepare for future climate in-migration, they recommend that cities expand their affordable housing stock; build out capacity and governance structures to support migrants before they arrive; and work to enhance cultural competency across city agencies to reduce language and cultural barriers for migrants to access services.

The Urban Institute study focuses exclusively on communities in the Gulf South, highlighting the experiences of places that are already seeing significant influxes of climate displaced migrants. My own research includes and extends beyond the experiences of current recipient communities like Orlando—considering both “recipient cities” and communities seeking to position themselves as future “climate destinations.” By surveying a wider range of

receiving community types, I provide a broad view of the challenges and opportunities that receiving communities are faced with, identify similarities and differences across their experiences, and the extent to which these differences affect the measures they are taking to prepare for climate migration. The following section describes the selection of case study communities and the methods used for interviews and data collection.

3. Methods

This study centers around case studies of four current and potential receiving communities: Orlando, FL, St. Tammany Parish, LA, Buffalo, NY, and Cincinnati, OH. Buffalo and Cincinnati are communities that Marandi and Main classify as “climate destinations”—not yet receiving huge numbers of climate-displaced in-migrants, but increasingly identified as potential future “havens” based on their inland location and cooler climates. Orlando and St. Tammany Parish, in contrast, face more extreme climate impacts, but have already received large identifiable influxes of climate migrants, with trends suggesting they will continue to be popular destinations for the foreseeable future. All four of these communities have begun to grapple, in varying ways, with what climate migration means for them and to engage in preliminary discussions around how to respond to and plan for it.

Communities were selected using a critical case approach (Flyvbjerg, 2006). Seeking to identify the opportunities and challenges that accompany climate migration and the steps that communities are taking to respond to and prepare for it, the primary criteria for case study selection were a demonstrated awareness of climate migration and the presence of official planning recommendations or public statements in response to this migration. Selection was also informed by the desire to compare and contrast the experiences of communities that are seemingly better positioned to provide refuge in the long term (i.e. “climate destinations”) and communities that are currently more likely to receive the majority of climate migrants based on existing and projected migration patterns (i.e. “recipient cities”). Through literature and media review, a list of communities that met these criteria was generated. A final selection was made based on the level of attention and number of actors involved in local discussion of climate migration and the integration of climate migration in local planning documents or public statements of intent. Table 1 provides an overview of the four communities ultimately selected. Two are “recipient” communities and two are “climate destinations”; three have climate

Table 1. Case study communities and their relationship to climate in-migration

Community	Type	Experience with Climate Migration	Inclusion of Climate Migration in Local Plans
Buffalo, NY	Destination	Estimated to have received as many as 5,000 evacuees from Puerto Rico following Hurricane Maria. Interested in receiving future climate migrants as a way to breathe new life into the city after decades of population decline.	No - In 2018 State of the City address, mayor stated Buffalo would be "a climate refuge city for centuries to come" but there is nothing written into formal plans regarding this role.
Cincinnati, OH	Destination	No significant influx to date, but anticipates that in-migration will be one of the primary climate impacts they experience in the future, as an inland city relatively buffered from climate extremes experienced elsewhere.	Yes - 2018 Cincinnati Green Plan includes a recommendation that the city prepare as a climate haven for residents and businesses relocating from more risk prone parts of the country.
Orlando, FL	Recipient	Orange County received as many as 35,000 Puerto Rican evacuees in the 6 months following Hurricane Maria, with thousands more settling in the counties immediately south and southeast of Orlando. Anticipates continued in-migration as sea level rise and intensifying coastal storms drive more people inland in the decades to come.	Yes - 2018 update of Orlando's Community Action Plan includes a goal to develop permanent supportive housing for veterans, homeless residents and "climate refugees."
St. Tammany Parish, LA	Recipient	Received thousands of Hurricane Katrina evacuees from St. Bernard, Orleans, and other more heavily impacted parishes. The vast majority eventually returned home or moved elsewhere, but many decided to settle permanently in St. Tammany. Subsequent storms and flooding have continued to drive more people to this north shore parish due to its relative abundance of upland areas.	Yes - 2019 LA SAFE Regional Adaptation Plan includes relocation from higher risk sending areas to lower risk receiving areas as a key adaptation strategy in the face of sea level rise and increased coastal hazards.

migration written into official planning documents; three have received identifiable influxes of climate driven migrants; and all four have been highlighted in local and national news media reporting on their experiences of and response to climate migration or their suitability future climate destinations.

While media and local planning documents provide critical context, primary data for this study was drawn from interviews with local government officials, planners, researchers, and other community leaders. Interview respondents were selected based on their ability to provide informed insight on local approaches to climate-related in-migration. Since the primary research objective was to better understand the nature and extent of current local level planning and policy regarding climate migration, interviewees were chosen based on their professional rather than personal connection to this issue. A total of thirteen interviews were conducted, three to four in each community, with stakeholders representing the public (n=4), private (n=2), academic (n=4), non-profit (n=2), and faith communities (n=1). Interviews averaged roughly one hour in length and were conducted over video call using a semi-structured interview script. Participants were asked to speak to the opportunities and challenges associated with climate migration (either experienced or anticipated), to share what was being done locally to respond to or prepare for climate migrants, and to identify any barriers that hindered local level planning or preparation for in-migration. The interviews were recorded and transcribed, and then coded using MAXQDA qualitative data analysis software. Some codes were generated a priori based on the research questions, while others emerged inductively based on themes found in the data.

4. Study Community Profiles

The intentional selection of communities positioned at the cutting edge of this emerging issue allows for critical observations of local level policy and planning around climate migration to date and identification of key factors that may facilitate or hinder this planning. Drawing from literature, news coverage and local planning documents the following sections provide background on the four cases study communities and their experiences with and responses to climate migration thus far.

4.1 Buffalo, New York

A legacy city situated on the banks of Lake Erie, Buffalo's current population is roughly half what it was at its peak in the 1950s, before deindustrialization triggered a steady decline in job prospects and population (Deaton, 2019). Their housing and infrastructure capacity was designed for a much larger population than the city currently holds and there is keen interest in attracting new people and businesses to grow their tax base and revitalize their urban core (Deaton, 2019;

Sacks & Acevedo, 2020). In 2018, Mayor Byron Brown saw an article on Jesse Keenan's work in Duluth introducing the prospect that cities like Buffalo could serve as future "climate havens" (Milman, 2018; Schleien, 2021). Taking the idea and running with it, Mayor Brown announced in his 2019 State of the City address that Buffalo would be "a climate refuge city for centuries to come" (City of Buffalo, 2019; Schleien, 2021). Though inspired by Keenan's work, his statement was also informed by local climate research indicating that, although average temperatures in western New York had increased slightly between 1965 and 2016, there had been no significant increase in severe weather, precipitation, or extreme heat (Vermette, 2017). Buffalo does experience flooding, snowstorms, and high wind events and is projected to see rising temperatures, greater precipitation, and an increase in lake effect snow in the decades to come (Clark et al., 2020; Tuzzo et al., 2018). But they will not be directly affected by sea level rise, nor do they face as much risk from hurricanes or wildfire as other parts of the country, a fact that has led both local leaders and outside researchers and media to dub them a relative refuge from more extreme climate impacts (Malo, 2019; McNeil & Pignataro, 2018; Milman, 2018; Schleien, 2021).

Beyond their excess infrastructure and more manageable climate impacts, Buffalo also has a long history of welcoming immigrants and refugees. Considered a "preferred community" by the federal Office of Refugee Resettlement, the city embraces this identity and has signaled their commitment to actively welcome and support migrants by opening an Office of New Americans in 2015 and soon thereafter launching a City of Buffalo New Americans Study, resulting in *A Strategic Action Plan to Advance Immigrant and Refugee Integration and Success* (City of Buffalo, 2016). In addition to their experience as a refugee resettlement community, Buffalo also received a significant number of displaced Puerto Ricans in the wake of Hurricane Maria, drawn by the city's existing Puerto Rican population and the availability of jobs and housing (Dewey, 2018).

4.2 Cincinnati, Ohio

Cincinnati is another city that has been singled out as a future destination for climate migrants (Malo, 2019; Milman, 2018; Rossi, 2019; Schleien, 2021; Swartzell, 2021). Like Buffalo, Cincinnati has a built infrastructure that exceeds the needs of its current population which has grown some over the past decade, but is still a fraction of what it was at its peak in the 1950s

(Swartzell, 2021; U.S. Census Bureau, n.d.-a). Cincinnati is expected to face increased risk of storms, flooding, and extreme heat in the decades to come, but as an inland community they will not have to directly contend with the impacts of sea level rise or coastal storms, nor do they face the same drought or wildfire risk experienced by communities in the other parts of the country (City of Cincinnati, 2018). The city has worked hard to build on this relative climate advantage through efforts aimed at increasing their resilience and decreasing their carbon footprint. Such efforts earned them the distinction of “Most Sustainable Metro” in Site Selection Magazine’s 2017 and 2018 sustainability rankings and a spot in the top three most sustainable metros in the years before and since then (Bruns, 2017, 2018). City leaders see climate resilience and emissions reductions not only as an investment in the future for current residents, but also as a way to attract new businesses and people (Kiger, 2019; Swartzell, 2021).

This intention was codified in the 2018 Green Cincinnati Plan which includes a recommendation that the city begin actively preparing for its role as a climate haven, leveraging their reputation for resilience as a way to recruit people and businesses seeking to relocate from higher risk locations (City of Cincinnati, 2018). The plan identifies in-migration as one of the primary climate impacts Cincinnati expects to encounter, pointing to growing climate driven displacement elsewhere in the U.S. and globally and seeing a role for Cincinnati as a potential haven for these migrants. The recommendation stipulates that the City will “cultivate its reputation as a safe location for risk averse businesses” and “will work to provide more affordable housing for individuals that need it for the short-term or that decide to make Cincinnati their new home” (City of Cincinnati, 2018, p. 188-189).

The original idea to prepare as a future climate destination grew in part from the realization that thousands of Katrina evacuees had relocated to Ohio in the wake of the storm (Swartzell, 2021). This influx was not large or concentrated enough to garner much notice at the time, but leaders within the City’s Office of Environment and Sustainability flagged this as an issue to pay attention to and began exploring how to integrate climate driven in-migration into future planning efforts.

4.3 Orlando, Florida

Orlando gained a reputation as a climate migrant receiving community almost overnight in the wake of Hurricane Maria, when tens of thousands of Puerto Rican evacuees poured into the city

and surrounding central Florida communities (Echenique & Melgar, 2018; Gramling, 2020; Urban Institute, 2022a). The city’s sustainability director, Chris Castro, says the city could see between 400,000 and 500,000 new residents between now and the end of the century due to climate change alone, as sea level rise and increasingly intense tropical storms spur further migration from islands in the Caribbean and communities along Florida’s coast (Donachie, 2021). Orlando is faced with the dual challenge of responding to and preparing for in-migration while also bracing against significant climate hazards of their own, including hurricanes and extreme heat. The reality of this was brought home by the experience of accommodating the influx of evacuees in the aftermath of Hurricane Maria just as residents and city officials were in the midst of recovering from Hurricane Irma, which hit Florida less than two weeks prior.

Estimates of the exact magnitude of the post-Maria migration vary widely. A study based on school enrollment data estimated that 135,000 people left Puerto Rico in the first six months following Hurricane Maria, and that over 40% landed in Florida (Center for Puerto Rican Studies, 2018). Another study using smartphone data estimated that the number was closer to 400,000 during that 6-month period, with 150,000 people landing in Florida, and nearly 35,000 landing in Orange County alone (Echenique & Melgar, 2018). While disagreeing on the numbers, multiple studies have identified Orange County, which encompasses Orlando, as having received more Puerto Ricans displaced by Maria than any other county in the U.S (Echenique & Melgar, 2018; Urban Institute, 2022a). Orlando’s population, around 307,000 in 2020, was already on the rise even prior to the storm and is predicted to continue growing at a rapid rate (Fleming et al., 2019; U.S. Census Bureau, n.d.-b).

While Hurricane Maria was the most significant “push” factor driving this influx of migrants, there were also a number of compelling “pull” factors that drew Puerto Ricans to the Orlando area. Many evacuees had family or friends in Orlando’s established Puerto Rican community that they turned to for help following the storm. As home to multiple theme parks and a booming hospitality industry, Orlando also promised a relative abundance of job opportunities and temporary housing in hotels and motels. Furthermore, as an established migrant destination and home to a large Hispanic population, the city had pre-existing institutions and resources in place to support new residents, including the Hispanic Office for Local Assistance (HOLA), which helps residents that speak English as a second language to access local services. These factors—kinship ties, employment opportunities, temporary housing

options, and access to services—contributed to Orlando’s attractiveness as a destination and to their ability to accommodate evacuees, but the sheer magnitude and pace of the influx was far more than they were prepared for.

Local officials and community leaders describe their experience in the wake of Maria as a wake-up call for the city (Gramling, 2020). It tested their capacity and provided a crash course in resettling climate-displaced people. It also opened their eyes to the prospect and likelihood of future climate driven in-migration. When Orlando’s Community Action Plan – the city’s sustainability policy framework – was updated in 2018, the plan acknowledged this likelihood and included a goal to develop permanent supportive housing for “climate refugees,” to accommodate continued in-migration of people escaping climate hazards along Florida’s coast and in neighboring states and islands (Green Works Orlando, 2018).

4.4 St. Tammany Parish, Louisiana

Located in southeast coastal Louisiana, on the north shore of Lake Pontchartrain, St. Tammany Parish has also had to balance the dual challenge posed by intensifying climate hazards and climate induced in-migration. In Hurricane Katrina, 48,792 homes were damaged throughout the parish (Threlkeld, 2015) and the parish’s public school system sustained \$125 million in damages (Varney, 2015). Despite these damages, and amid their own recovery, St. Tammany Parish hosted more Katrina evacuees than any other parish in the state besides Jefferson Parish, with many opting to stay even after the immediate crisis had passed (McDonnell, 2020). The influx of evacuees put a strain on local infrastructure, housing, hospitals, and school systems. Classroom sizes were expanded and a platoon system was implemented, with some students attending school in the morning and others in the afternoon, in order to accommodate both the influx of new students and the damage to local schools (Sullivan, 2006). Despite these challenges, new residents also meant an increase in much-needed tax dollars and spurred economic development in the parish.

Even prior to Katrina and the influx it brought, St. Tammany had seen rapid in-migration for decades (Johnson, 2021; McDonnell, 2020). This migration mirrored a nationwide suburbanization trend—with people flocking to the North Shore suburbs from neighboring New Orleans—as well as an overall population shift toward the Sunbelt. In the years since Katrina, as Southeast Louisiana has continued to experience the rapidly intensifying effects of climate

change, there are signs that recent population growth in the parish is also fueled by people moving from more hazardous areas along coast, drawn by St. Tammany’s relative safety (Chatelain, 2015; Fazio & Adelson, 2022; Johnson, 2021). This presents both opportunities and challenges for the parish as it is faced with accommodating rapid population growth and development while also managing their own increased risk (Cart, 2017; Fazio & Adelson, 2022).

In 2019, responding to the need for a more proactive strategy to manage growing risks, the Louisiana Office for Community Development in partnership with the Foundation for Louisiana, developed the LA SAFE Plan, a regional adaptation strategy encompassing St. Tammany Parish and five other parishes in the southeast coastal area (Louisiana Office of Community Development, 2019a). LA SAFE lays out a framework for adaptation that includes migration—from higher risk parts of the region to lower risk ones—as one strategy for resilience. St. Tammany, with its relative abundance of upland areas, is identified as a key migrant destination. The plan includes recommendations to direct growth to low-risk areas in the parish and to encourage higher-density residential and mixed-use developments, but it also emphasizes the importance of maintaining and enhancing the parish’s existing diverse communities (Louisiana Office of Community Development, 2019b). Noting the potential impact on lower-income communities and longtime residents as people move into the parish from higher-risk areas, the plan recommends creating and maintaining a “diverse and resilient housing stock for people at all income levels” with a focus on expanding affordable and senior housing (Louisiana Office of Community Development, 2019b, p. 129). The plan’s forward-looking strategies strive to balance resilience and equity, but as a non-binding document it is up to local officials to determine how many of the suggestions to implement (Flavelle & Rojanasakul, 2019).

5. Results and Discussion

Results of my interviews indicate that, even in these communities that have already experienced significant climate in-migration or have been singled out as future havens, planning and policymaking regarding climate migration is still in its very early stages. Respondents described much of their current work around climate in-migration as geared towards “introducing the concept” or “planting a seed”—creating opportunities for elected officials to “lay eyes on it” and laying the groundwork for future planning and policy-making around it. In speaking about the “climate haven” recommendation included in the 2018 Green Cincinnati Plan, one respondent

shared that one of the biggest reasons it was included was “to socialize the idea that this is one of the challenges/opportunities/changes that we will see.” The details of the recommendation he described as “back-of-the-napkin calculations [...] all subject to change”—the larger purpose and value of this recommendation was to “get the ball rolling on some of this thinking.” Another respondent in Cincinnati echoed this, suggesting that, at the time they adopted that recommendation, they were “very much [in] the idea phase.” Conversations have continued and developed since then, but have yet to result in more tangible policies, actions, or programs geared explicitly toward preparing for climate in-migration.

In Orlando, where the reality and impacts of climate in-migration were very concretely experienced in the influx of evacuees following Maria, interviewees spoke to the city having gained experience and strengthened relationships between government agencies, non-profits, and community groups in ways they predicted would improve their response to future influxes of this sort. But they couldn’t point to any programs or policies that had been adopted or changed since then that were explicitly geared toward improving the city’s capacity to receive. Results of my interviews suggest that, despite their direct and ongoing experience with this in-migration, even places like Orlando and St. Tammany are still in the stage of working to better understand and build awareness of the impacts of climate in-migration and the measures necessary to better prepare for it. Nonetheless, their experiences surface some of the key issues this migration raises at the local level and provide insight into factors that could enhance local capacity to receive. The following sections highlight and discuss some of these factors which can be grouped broadly under four main themes: local hazard resilience, physical and social infrastructure, external support, and planning capacity (see Figure 1).

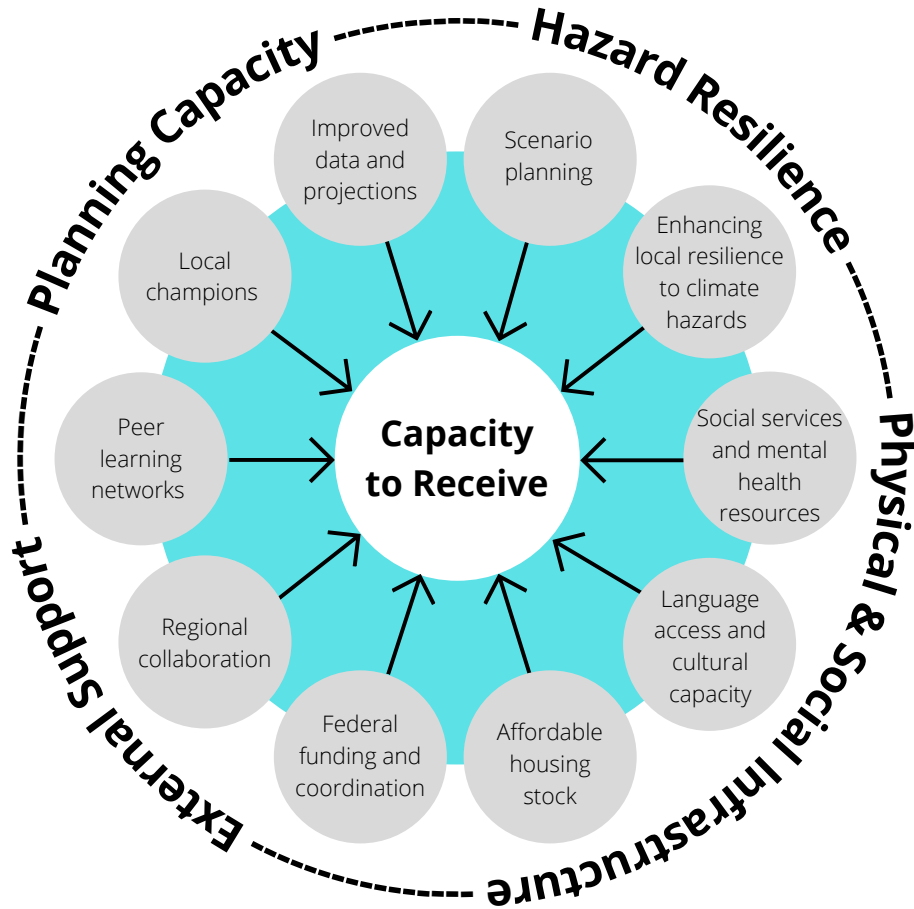


Figure 1. Factors that contribute to local capacity to receive

5.1 Enhancing Local Resilience to Climate Hazards

Respondents in all four communities spoke about existing and increasing climate hazards that their communities face and named enhancing local resilience to these climate impacts as a critical element of preparing for climate in-migration. Whether positioned as a “climate destination” or a “recipient city,” there was unanimous recognition among those interviewed that pro-active measures to build local hazard resilience are crucial to ensuring as much safety as possible for both current residents and future migrants. In the absence of forward-thinking local land use policy and hazard mitigation efforts, the growth and development resulting from climate in-migration is likely to exacerbate local hazards and increase risk, with negative impacts for new and existing residents alike.

Respondents described the current situation in St. Tammany as an example of what happens when efforts to accommodate growth and court development are not balanced with adequate measures to ensure sustainability and resilience. According to respondents, development in the parish has continued to happen with insufficient regard for flood risk or other hazards, despite the strategies and recommendations laid out in the 2018 LA SAFE plan. News coverage and the observations of local stakeholders indicate that demand for housing and a lack of strong development controls has resulted in new homes continuing to go up in the floodplain, often slab on grade, and with minimal drainage infrastructure (McDonnell, 2020; St. Tammany interviews, 2022). Development in the floodplain doesn't just create risk for the people that buy those homes, but also increases risk in surrounding areas by undermining the storage and absorption function that the floodplain serves (Mazur, 2019; Taskforce on the Natural and Beneficial Functions of the Floodplain, 2002).

To mitigate the negative impacts of future growth, respondents in St. Tammany recommended that the parish and its constituent municipalities enact changes to their zoning laws and building codes, adopting an overall approach to development that puts a greater emphasis on resilience and minimizing risk. Without this, respondents worried that people moving into the parish to escape hazards elsewhere would end up in situations where they still faced significant hazard risk. They also raised concerns that risk would increase for existing residents as well, and that the burden of this risk would fall disproportionately on low-income people and people of color. As an example of this, one respondent pointed to a development that recently went up in Slidell, a town in east St. Tammany. This development, she said, is not just in the floodplain, but is also located on the site of an old Hurricane Katrina debris dump and is being “marketed specifically to the black folks coming in from the east who are spending their life savings and a 30-year mortgage on something that will have zero value by the time they finish paying that mortgage.” She pointed out that the new residents of this sub-division are likely to face environmental and health risks, not just from flooding, but also from the contaminants and waste from the old dump—all the more so given its location on the eastern side of the parish, “right where storm surges come in.”

There are signs, however, that St. Tammany is taking steps towards increased regulation of development. The parish's newly adopted comprehensive plan includes recommendations discouraging intense new development or redevelopment in special flood hazard areas and the

2020 update of the St. Tammany Multi-jurisdictional Hazard Mitigation Plan calls for the adoption of International Building Codes which would impose higher building standards for future development in the parish (Mitchell et al., 2020; St. Tammany Parish, 2022).

Concerns over the impact of under-regulated development were echoed by respondents in Buffalo who worried that the city is prioritizing development and growth at the expense of longer-term resilience. For cities like Buffalo, where climate migration presents a welcome opportunity for economic development and increased tax revenues, one concern voiced by interviewees was that this growth would be courted without enacting the policies and actions necessary to minimize the environmental impact of it. Asked to speculate on what might happen if Buffalo did not pro-actively prepare for climate migration, one respondent said his primary concern was that they would repeat the mistakes of the past— “urban sprawl” and “growth without control”—resulting in greater climate risk and environmental hazards.

Development doesn’t necessarily need to come at the expense of resilience though. Multiple respondents throughout each of the communities studied saw the prospect of climate migration as an opportunity and justification for cities to approach growth differently: prioritizing sustainable, hazard resilient, and carbon-neutral development; concentrating growth in places of lower risk; and preserving land that performs important ecosystem services like cooling effects or flood mitigation. Given the ubiquity of climate risk, what may ultimately and more accurately define a community as a “climate haven” is the level and effectiveness of adaptation and hazard mitigation measures they are taking, just as much if not more so than any innate climate advantages they may possess.

5.2 Building the Social, Cultural, and Mental Health Infrastructure to Receive

In order to accommodate the needs of climate migrants and better support their transition, receiving communities will also need to expand their social, cultural, and mental health infrastructure. This includes expanding social services to support resettlement, enhancing cultural and linguistic access to city services, increasing mental health care options, and engaging in outreach and education efforts to combat intolerance and racial or ethnic tensions and improve the local context of reception.

Interview respondents pointed out that disaster displaced climate migrants in particular are more likely to arrive with fewer resources and greater immediate needs than people who

choose to migrate for economic or other pre-meditated reasons. Economic migration, even where it occurs under duress, generally involves at least some level of foresight and planning. In contrast, disaster migration effectively “happens over-night” (Orlando interview, 2022). “So the person doesn’t have a job lined up, they don’t have a house to live in, they just basically travel with whatever they can carry.” Accommodating migrants that are arriving with so many immediate basic needs, puts a much greater strain on public resources. In the wake of Hurricane Maria, then Governor of Florida, Rick Scott, declared a State of Emergency allowing for state funding and resources to be directed towards supporting Hurricane Maria survivors that had fled the island. This, in addition to FEMA funds, helped to house evacuees and connect them to needed resources and services in the months immediately following the storm (Alvarez, 2017; Urban Institute, 2022b). But there was also an immense pressure on city and county resources, as well as on local and national non-profits, particularly after the State of Emergency was ended and FEMA funds dried up.

Many disaster-displaced migrants also come with greater mental health needs. For those displaced, the trauma of the disaster event is often further compounded by the trauma of dislocation and the cultural and social stressors of having to adapt to a new community and different cultural context (Scaramutti et al., 2019). “We definitely need to prepare for climate migrants differently, because they are escaping and bringing trauma in their bodies and in their minds,” stated a respondent from St. Tammany, recalling that it felt like many people were “walking around like zombies” in the years following Katrina. This sense of shock and its aftereffects were observed in Orlando as well. Describing some of her interactions with Maria survivors after the storm, one respondent recalled instances of people just breaking down and crying— “they didn’t know what to do.” Another respondent in Orlando spoke about the ways trauma can impact the ability to function and complete regular daily tasks—particularly when operating in a context of on-going stress and in a new and unfamiliar setting. He went on to point out that, when mental health needs go unaddressed, they can lead to other problems like suicide, violence, alcohol and drug abuse—consequences that impact not just the individual and their family, but the receiving community as a whole.

Not all climate migration is disaster-induced, however; it also includes slower and steadier movements of individuals and families deciding to move pro-actively in the face of increasing climate stressors. To the extent that it breaks with or amplifies existing migration

flows, however, climate migration—whether disaster driven or undertaken as a pro-active move to reduce risk—can bring cultural shifts and language access issues that receiving communities may be unprepared for. A respondent from Cincinnati described the city as “less multi-cultural” than many other cities their size and stated he wasn’t sure they were prepared with the level of language access and culturally competent services necessary to receive non-English speaking migrants. Even in Orlando, multiple respondents stated that language barriers were a major issue for Puerto Ricans that migrated to the city in the wake of Hurricane Maria, despite Orlando being a migrant destination with a sizeable Spanish speaking population and a city office expressly dedicated to helping non-English speaking residents access services. Respondents asserted that the city needed better language access and cultural competency “baked into all city services and agencies,” not just housed in one city office (Orlando interview, 2022). The experience in Orlando following Maria suggests that the ability to respond to and accommodate non-English speaking migrants may be a challenge that a wide range of communities will need to better address, even those that already have some level of institutional capacity in place.

Potential demographic and cultural shifts resulting from climate migration aren’t isolated to instances where migrants come from far away or speak another language, however. They can be a factor even when the sending and receiving communities are relatively close in proximity. Such was the case in St. Tammany Parish, which received many evacuees from neighboring parishes in southeast Louisiana that were harder hit and slower to recover from the impacts of Hurricane Katrina. One respondent from St. Tammany spoke to increased levels of conflict in St. Tammany schools in the months following the storm—in part the effect of overcrowding and trauma, but also motivated by racial tension and intolerance. The schools, she reflected, “just weren’t ready.” She spoke to the need for greater training and preparation for teachers and school administration to be able to manage cultural conflict and minimize discrimination in schools, as well as to help acclimate and orient new students. Respondents in Orlando shared similar stories—particularly around the need for more English as a Second Language resources in schools and training to better prepare teachers for non-English speaking students, as well as better supports to help migrant parents in navigating new school systems and expectations.

Many of the challenges identified in interviews with stakeholders and summarized here are challenges that accompany migration and demographic shifts in general and are not necessarily unique to instances of climate driven displacement. What made these experiences

remarkable, however, was the pace at which they happened, the scale of the influx, and the magnitude of the needs, given how many people were arriving with very little. In many ways, the experiences and needs of climate migrants displaced by disaster are akin to the experiences and needs of refugees. Many arrive with nothing or very little, are fleeing traumatic experiences, and often land in places that are culturally and linguistically distinct from where they are coming from. Despite these similarities however, the experience of receiving refugees versus receiving climate displaced migrants is made wholly different by the fact that climate migrants, even those displaced by disaster, are generally not recognized as refugees. Whereas there is a framework and established funding sources for resettling refugees, there is no corresponding framework or funding for the resettlement of climate displaced people (McDonnell, 2018; Yayboke et al., 2020). In the U.S., FEMA transitional sheltering assistance and other state and federal emergency funds can provide short-term assistance to those displaced by domestic disaster, but these programs are time limited—often only provided for a few weeks or a few months after the event, rarely enough time for those displaced to get fully back on their feet (FEMA, 2017; Morales, 2018). Once federal and state emergency assistances funds expire, the onus is on local receiving communities to continue supporting migrants in the resettlement process or to manage the consequences of not doing so, in the form of higher poverty and homelessness rates.

5.3 Climate Migration and the Affordable Housing Crisis

Beyond building local capacity to meet mental, social, and cultural needs, the number one challenge that communities experienced or anticipated in relation to climate in-migration was that of ensuring sufficient housing stock—particularly affordable housing stock—to accommodate climate migrants and avoid displacement of existing residents. With less housing available for sale or for rent in the U.S. than any other time in the last 30 years, tight housing markets and lack of affordable housing are growing issues nationwide (Parrott & Zandi, 2021). Given this national housing crisis and its many local iterations, communities faced with absorbing climate migrants are doing so in the context pre-existing affordable housing shortages. This has implications for their ability to absorb and accommodate migrants, and also raises concerns that climate migration itself will further exacerbate the housing crisis and could lead to the displacement of existing low-income residents (Deaton, 2019; Marandi & Main, 2021; Urban Institute, 2022a; Yoder, 2021).

The situation in Orlando following Maria exemplified this challenge. “Hurricane Maria created a housing crisis on top of an existing housing crisis” observed one respondent. Orlando already had a shortage of affordable housing prior to the storm and the influx of Puerto Ricans after Maria quickly overwhelmed what little available stock there was and drove already high rental prices even higher. Many evacuees stayed at least temporarily with family or friends, while thousands more were put in hotels and motels in and around Orlando with the help of FEMA funds. But even temporary housing options like these were overwhelmed by the sheer scale of the need, and many evacuees that initially landed in Orlando ended up having to move elsewhere in Florida or out of state to find housing.

Even in Buffalo and Cincinnati, adequate housing stock and affordability were identified as one of the primary challenges they anticipated needing to address to build their capacity to receive migrants. Articles that have identified these and other former Rust Belt cities as ideal receiving communities for climate migrants have based this not only on their cooler climates and more manageable climate impacts, but also on their housing and infrastructure capacity. References to excess capacity in these cities, however, often gloss over realities of age and disrepair, giving the false impression that this infrastructure and housing is “move-in ready.” For example, one story that named Cincinnati as a potential future “climate haven,” noted that there were up to 48,000 vacant units across the greater metropolitan area (Rossi, 2019). Commenting on this statistic, and the implied narrative that goes along with it, a public sector respondent from Cincinnati said: “a vacant unit doesn’t mean a habitable unit.” He went on to share that the city is growing at a pace it hasn’t experienced in decades, raising issues of affordability and availability that the vacancy rate hides. A 2017 Housing Affordability Study for Hamilton County, which encompasses Cincinnati, found that when comparing affordable housing availability with housing demand, there was a deficit of about 40,000 units affordable to Hamilton’s lowest income residents (Community Building Institute at Xavier University, 2017). The deficit was worse in suburban than urban parts of the county, but even urban Hamilton (i.e. Cincinnati) was still short 68 units for every 100 lowest income households.

Respondents in Buffalo also spoke to redevelopment, rehabilitation, and expansion of existing housing stock as something that would need to happen to accommodate any significant level of in-migration. “Buffalo has one of the oldest housing stocks in the country” one interviewee stated (corroborated by census data in Preval, 2019). With 64% of the city’s housing

stock built before 1940, she said “we can’t talk about having all this infrastructure and the capacity to receive climate migrants, when we don’t actually have the housing stock to accommodate them and be able to guarantee a certain level of quality and safety.”

Though Buffalo and Cincinnati are just beginning to see population growth after decades of decline, this growth is already having an impact on local housing prices. Respondents in both places raised concerns over the potential for climate migration to exacerbate this trend. As illustrated in the case of Orlando after Maria, the sheer volume of new residents coming in, regardless of their socio-economic status, can drive up prices simply through the pressure on supply. But, for Cincinnati and Buffalo, neither of which have seen a recent influx on quite that scale yet, the greater concern is based around a speculation that their position as relative climate havens will increasingly attract both well-resourced migrants—with the resources to relocate proactively to places of lower risk—and investors who see potential to profit from this anticipated migration. Respondents feared that, without pro-active measures to ensure adequate affordable housing, the resulting increase in home values and cost of living could result in financial strain and displacement for existing lower-income residents and could ultimately render these “climate destinations” accessible only to those with a certain level of resources and buying power.

The salience of concerns around housing, and specifically affordable housing, was apparent not just in interviews, but also in the plan recommendations that these communities have adopted regarding climate migration. The recommendation in Orlando’s 2018 Community Action Plan—to develop permanent supportive housing for “climate refugees”—proposes tiny house villages as one possible way to address the affordable housing shortage and enhance Orlando’s capacity to house climate migrants. Cincinnati’s intentions to prepare as a “climate haven” laid out in the 2018 Green Cincinnati Plan state that the city will work to provide more affordable housing, with a preliminary strategy to house 100 climate migrant households annually. St. Tammany’s LA SAFE plan notes the importance of supporting existing low-income communities and longtime residents as people move into the parish from higher-risk areas and includes recommendations that the parish ensure a diverse and resilient housing stock for people at all income levels with a focus on expanding affordable and senior housing.

These recommendations all highlight the prominence of housing as a primary concern for communities that are experiencing or anticipating climate migration. So far, however, the

specific strategies laid out in these recommendations have not been implemented. There was no mention of tiny house villages for climate migrants in any of my interviews with stakeholders from Orlando. Likewise, respondents in Cincinnati acknowledged that the plan to provide housing for 100 climate migrant households annually has not materialized in housing or programs geared specifically toward that purpose. This is not to say that these communities aren't doing anything to address affordable housing shortages—respondents in Orlando and Cincinnati in particular spoke to a range of local strategies and funding sources that were being engaged to expand local housing stock and address affordability. But the efforts they mentioned were all efforts designed to meet existing needs and business-as-usual population growth projections—not efforts that were explicitly factoring in and planning for climate migration. Given that these communities, like many throughout the U.S., are already struggling with affordable housing shortages and that local resources to address this challenge are already spread thin, efforts to ramp up affordable housing to accommodate existing residents and future climate migrants would benefit greatly from increased federal funding to do so.

5.4 The Call for Federal Funding and Coordination

Though the interviews for this study were largely focused on local level experiences and approaches to climate migration, I also asked respondents for their perspective on policy or programmatic changes at the state or federal level that could enhance local capacity to plan for and receive climate migrants. The primary responses given revolved around the need for federal funding to support receiving communities in building the infrastructure and services to receive. Some respondents also expressed a desire for greater federal coordination—particularly around helping to connect migrants to places where jobs, housing, and other services are available.

The federal government has long played a significant role in providing response and recovery assistance following disaster. Collectively, federal disaster response, recovery, and hazard mitigation programs account for billions of dollars in federal expenditure annually (Congressional Research Service, 2022), but very little of this money is specifically earmarked towards communities on the receiving end of people that are displaced by disaster or proactively moving in the face of rising hazards (Martin & Williams, 2021a). One respondent in St. Tammany pointed out with frustration that federal and state governments currently spend far more money on rebuilding in places of high risk than they do in funding the infrastructure and

capacity necessary to receive people in places of lower risk. Respondents across all four cases cited limited local budgets and competing demands for local tax dollars as factors impeding greater planning and preparation for climate migration to their communities. Federal funding for receiving communities could help to overcome this barrier, providing communities with the funds necessary to build the infrastructure and capacity to receive and accommodate migrants.

Asked about the types of programs or support that they would like to see funded with federal dollars, support for expanding affordable housing stock was the most frequently mentioned, followed by support for enhancing language access and increasing cultural accessibility of city services. Multiple respondents also spoke to the need for outreach and educational programming designed to combat xenophobia and uplift the positive impacts that migrants have for local communities, and saw this as another area where federal funding and support would be helpful. One respondent in Cincinnati identified the need for planning grants to support local level planning around climate migration and to fund national and regional convenings around climate migration and displacement that could help build collective understanding of how this migration is impacting communities and inform more strategic interventions at all levels of government.

In addition to the absence of federal funding for climate migrant receiving communities, there is also no framework or federal agency that exists to assist in coordination of this migration. Multiple respondents spoke to the value that a national level coordinating body could provide—particularly in helping to match displaced people in search of a new home with communities that have the housing, jobs, and services to accommodate them. A public sector respondent in Orlando said that she received countless calls in the months following Maria from companies and communities all throughout the country who had available jobs and housing, saying “Send people here!” She would take down the information and try to get it out as best she could, but busy as she was managing the immediate needs of evacuees arriving daily, she didn’t have the capacity to also manage all of this information or better leverage these connections.

A respondent from Buffalo shared about attending a national convening on climate migration and asking whether anyone knew the criteria FEMA uses to decide where to send people who have been temporarily (or permanently) displaced by disaster. In this gathering, which included a diverse range of experts on migration and climate change, not a single person was able to answer his question. His story suggests that, beyond the lack of broader coordination

and federal policy on this issue, there is also a lack of transparency around the coordination that does happen and how these decisions are made. Some communities, like Orlando in the wake of Maria or Houston in the wake of Katrina, have seen sudden massive influxes of disaster displaced people that strained local resources and housing stock (Alvarez, 2017; Bliss, 2015; Cotto & Villegas, 2021), while others—like Buffalo and Cincinnati—are actively interested in receiving more (Deaton, 2019; Kiger, 2019). Federal research and coordination could serve to identify potential receiving communities—both those that are likely destinations based on current migration pathways and those that are actively interested in serving as “havens” for future migrants. This information could be used to inform decisions around post-disaster evacuation destinations, but also to direct funds to these communities in advance of migration in order to help build local capacity to receive.

Experiences in Orlando following Maria also highlighted state and federal policies that can hinder smooth resettlement in receiving communities. Respondents shared stories of migrants having difficulty accessing benefits like Medicaid, which—though in part federally funded—is administered on a state-by-state basis. Likewise, professional licensing requirements and processes that vary state-by-state hindered the ability of migrant teachers, nurses and other professionals to secure work in their respective fields. According to the recent report by the Urban Institute, Florida’s division of emergency management did help to expedite licensure transfers for professionals (Urban Institute, 2022a), but the stories shared by multiple interview respondents for this study suggest that some migrants still encountered barriers in this area. Respondents, however, also shared stories of cases where pre-emptive changes to usual eligibility requirements or application processes were hugely impactful in helping to connect evacuees to much needed benefits and services immediately upon arrival. For example, one respondent shared that Supplemental Nutrition Assistance benefits (food stamps) were automatically awarded to everyone arriving from Puerto Rico for a period of 90 days without having to go through the usual process of applying and having to prove eligibility. And a number of state universities throughout Florida, including the University of Central Florida in Orlando, decreased barriers to continued education for student evacuees by allowing them to qualify for in-state tuition (Figueroa, 2017).

Actions like these that adjust usual procedural processes or requirements can help to connect migrants to much needed services and opportunities in a timely fashion, which in turn

benefits the receiving community by easing demand for local social services and non-profit relief aid and helping to integrate migrants more quickly into the community and economy. Further review of state and federal policies and procedures to identify those that serve as barriers to resettlement in the wake of sudden, disaster-driven inter-state (or international) moves, could be used to inform policy or procedural changes that would aid future migrants of this sort and, by extension, the communities they are settling in.

5.5 Regional Collaboration

Another common theme that emerged throughout the interviews was the importance of regional, multi-jurisdictional coordination and collaboration around climate driven migration. A respondent from Buffalo remarked: “everybody wants to pick a location—Buffalo, Duluth—but it's not like we're growing all of our own food and producing all of our own energy within Buffalo city limits, so [it's important] to look at these things as a regional issue.” Given the environmental and economic connections and interdependencies between cities, suburbs, and surrounding rural areas, regional planning is critical to building resilience in the face of increasing hazards and disrupted global supply chains. Current or expected population movement and growth only amplifies that importance, affecting local demand for food, energy, land, and other resources and potentially increasing the environmental footprint and hazard risk of the receiving community, as more housing and industry goes up to accommodate and employ a growing population. Respondents pointed to regional collaboration and planning as critical to managing this growth and ensuring local and regional resilience despite the challenges that it will bring.

Respondents also spoke to the importance of ensuring that capacity building to accommodate migrants is focused not just on major cities, but also on other surrounding communities that will likely receive migrants. With many cities facing rising home prices, particularly within the urban core, it is likely that migrants will look to suburbs and secondary cities or towns in search of available and affordable housing. The migration to the Orlando area after Maria provides one example of this. Though Orange County, where Orlando lies, received the greatest number of Puerto Rican evacuees, thousands of people also landed in neighboring Osceola and Polk Counties (Echenique & Melgar, 2018; Urban Institute, 2022a). A lack of adequate regional transit meant that many migrants faced significant barriers in accessing jobs

and resources in Orlando, despite their relative proximity. Respondents from Orlando, Cincinnati, and Buffalo all identified enhancing regional transit access and connectivity as an important part of building up regional infrastructure to receive. Respondents also spoke to the need to improve language access and culturally accessible services in surrounding communities, recognizing the disparity that often exists in the level and accessibility of services between major cities and the smaller jurisdictions that surround them.

Hazard risk can vary greatly within a region, so regional planning and collaboration could also be engaged to support relocation within rather than away from the region. Pro-active regional planning that anticipates—or even encourages—relocation from higher risk to lower risk areas within the same region has potential to benefit migrants and communities alike. These shorter distance moves allow migrants to maintain social ties and sometimes even jobs despite relocation and can provide opportunities for communities to creatively mitigate some of the local level impacts of population change in regard to tax revenues, economic health, and labor force. Speaking to the importance and potential of this sort of approach in St. Tammany and throughout southeast Louisiana, one respondent observed: “in Louisiana, we're going to keep experiencing these catastrophic events, right? And if we're going to avoid this disaster displacement idea, then we have to plan ahead for what that retreat can and should look like, and how we prepare communities, not only for absorbing population, but also losing population.” The LA SAFE plan, which is inclusive of five other parishes in southeast Louisiana in addition to St. Tammany, is an example of this type of regional adaptation approach—linking strategies for relocating people out of harm’s way with strategies to enhance capacity for local or regional communities to receive them.

Building on this concept even further, some have advocated for the formation of regional or inter-local alliances between sending and receiving communities, with shared tax bases and merged governments (Martin & Williams, 2021a). Arrangements like this would likely be complex and politically complicated to implement, but if successful could provide a way to mitigate some of the revenue and capacity challenges experienced by sending and receiving communities alike when facing these demographic shifts. Many communities already have inter-local mutual aid agreements regarding emergency management and are party to regional councils of government and regional hazard mitigation planning efforts. Short of merging governments and pooling tax revenue, communities might explore ways to expand these inter-local mutual aid

agreements and regional planning efforts to enable greater capacity sharing and coordination around hazard driven relocation as part of broader regional adaptation and hazard mitigation efforts.

5.6 Local Champions and Peer Learning Networks

Interviews for this study surfaced barriers to local planning and preparation for climate migration but also revealed factors that, where present, have helped to facilitate and support local planning around this issue. One such factor is the presence of local champions—individuals that have flagged climate migration as something that the community should be paying attention to, have helped to build awareness and spur local level discussion around it, and have worked to keep it on the radar of city staff and elected officials. As a respondent in Cincinnati put it, a big part of what has driven local attention on this issue is “having the right people in the room to make it a priority.”

In Cincinnati and Orlando, conversation and planning around climate in-migration has largely been led by people within their respective sustainability offices. From their role within city government, these local champions have been able to ensure integration of this issue within broader sustainability and resilience planning efforts and to put it on the radar of local elected officials. Local researchers and advocates outside the public sector in both Cincinnati and Orlando have also helped to build understanding and contributed to local conversations and research on climate migration. But the leadership of city staff around this issue has facilitated greater integration of these conversations and research findings into local level planning and policy discussion—leading to the adoption of recommendations concerning climate migration within their local sustainability plans and to continued local momentum around addressing and planning for its impacts.

In contrast, neither Buffalo nor St. Tammany have a local sustainability or resilience office, nor has there been anyone on city staff that has taken up the issue of climate migration in a consistent and public way, despite the Mayor’s public proclamation around it in Buffalo and its inclusion in local and regional planning documents in St. Tammany. Interview respondents stated that climate migration is not something that local level leaders in St. Tammany are really thinking about—at least not in those terms. “I don’t think they’ve even acknowledged that this is a thing,” commented one respondent. Her sense was that local leaders are interested in the

economic development and increased tax revenue that accompany in-migration—regardless of what is driving migrants there—but that there is no conscious conversation around preparing for people that are losing their homes or ensuring that development to accommodate growth is happening in a way that prioritizes resilience and minimizes hazard risk. Similarly, in Buffalo, there has been no clear public leadership or movement on this issue within local government, despite the Mayor’s 2018 proclamation that Buffalo would be a “climate refuge for centuries to come.” The sense of respondents I spoke with outside local government was that the city is not really doing anything. One respondent said that the Mayor’s statement in his 2018 State of the City address is more or less “the extent of what the City of Buffalo has done about creating a climate refuge or climate haven.” There are a small handful of researchers and community advocates outside of local government that have continued to press the issue and call the city to task around the lack of concrete action backing up the Mayor’s statement, but this hasn’t translated into clear action or policy on the part of the city in regards to preparing as a “climate refuge” beyond general climate adaptation and resilience planning. Though all four communities are still in the early stages of figuring out how to prepare for and respond to climate migration, the buy-in and leadership of city staff in Cincinnati and Orlando seems to have conferred the issue a little more momentum and traction than seems present in Buffalo or St. Tammany.

Another factor that has helped to grow local understanding of climate migration and inform local planning efforts around it in some of the case study communities is participation in national and international peer learning networks. Given how little is known about climate in-migration and the relative absence of guidance or established best practices around how to prepare for it, participation in networks like these can provide access to greater resources and information, as well as opportunities to learn with and from other cities that are addressing similar issues. There are multiple national and international networks that have recognized climate migration as something that will increasingly impact their constituent communities and have begun to support communities in thinking about how to respond to and prepare for the challenges and opportunities that this migration will bring.

One such network is the National League of Cities (NLC)—an organization comprised of community leaders from cities and towns nationwide that are focused on improving quality of life for current and future residents. The NLC’s Leadership in Community Resilience Program uses a cohort model to support cities that are working to advance local climate preparedness, and

lessons learned are captured to share and replicate in other communities. The NLC is increasingly including preparation for climate migration in their work with member cities and recently released a report on this, entitled *The Next American Migration: What Local and State Governments Need to Know About Climate Change and Populations on the Move* (Marandi & Main, 2022). Stakeholders I interviewed from Cincinnati shared that NLC has become a key partner for them around this issue and has pushed them in their thinking on the topic. Through NLC they have had opportunities to participate in multiple climate migration focused events, sharing their own experiences and learning from other communities within and beyond the NLC network. Through these forums they were also connected to other peer networks and capacity building organizations, like Welcoming America—a non-profit organization that works with local governments and non-profits in cities throughout the globe to build more inclusive and welcoming communities.

According to interview respondents from Cincinnati, participation in networks like these has very much informed and enhanced their approach to climate migration. Funding from NLC through the Leadership in Community Resilience Program is supporting efforts to better incorporate equity and increased community engagement in the planning process for the next iteration of the Green Cincinnati Plan. And core tenets from Welcoming America are pushing them further in their thinking around the policies, practices, and services needed to welcome and integrate future climate migrants. Cincinnati is also part of the Urban Transitions Alliance, a global network of industrial legacy cities “committed to realizing sustainable and inclusive urban transitions” (Urban Transitions Alliance, n.d.). Membership in the Alliance provides another forum for Cincinnati to better understand and leverage the opportunities that climate-induced migration presents, including thinking through how their local resilience efforts can help transition and re-brand Cincinnati from industrial city of the past to “climate haven” of the future.

Buffalo is another member of the Urban Transitions Alliance and respondents there also spoke to the value that membership in this and other networks has brought them as they consider the potential challenges and opportunities that climate migration presents. A public sector respondent from Buffalo shared that the Urban Transitions Alliance supported Buffalo in conducting a study looking at equitable provision of services in the context of anticipated climate migration. She said this study helped them to identify “critical questions” regarding climate

migration to Buffalo and will serve to inform their current climate action planning efforts. Buffalo has also worked with and benefited from recent research conducted by the American Society of Adaptation Professionals (ASAP) which partnered with New York State Energy Research and Development Authority (NYSERDA) in 2020 to support the development of methodologies for predicting climate induced migration to New York and the wider Great Lakes region. Given the limitations to current knowledge around climate migration and a lack of designated funding or staff capacity within local governments to support local research or planning around climate migration, participation in networks like these can play a critical role in expanding local understanding of the issue and enhancing capacity to plan for it.

5.7 Overcoming the Data Gap and Planning for Uncertainty

Uncertainty and lack of data regarding climate migration pose significant barriers to local communities seeking to plan for it. Interviewees throughout all four communities spoke to the need for better data and more reliable projections regarding climate migration in order to inform local planning and motivate investments in preparedness. Some proposed scenario planning as one tool that could be used to work around the unpredictability and plan in the face of uncertainty.

Population projections generated from recent historic trends are regularly used as the basis for local planning efforts—informing everything from annual budgets to capital investment plans and major infrastructure projects. These projections, however, do not take into account the effect that climate change may have on existing migration pathways and future population distribution. Climate migration is difficult to project due to multiple layers of uncertainty regarding levels of emissions, the impacts those emissions will have on climate systems, the adaptation measures communities will engage to mitigate hazards, and the individual migration decisions people will make in response to increased risk or specific hazard events. Models like those mentioned earlier, combining sea level rise projections with migration systems simulations (Hauer, 2017; Robinson et al., 2020), are valuable resources for beginning to explore and anticipate how climate change might reshape population distribution in the U.S. However, they are limited in their utility for local level planning around climate migration since they only consider the impacts of sea level rise, to the exclusion of other climate drivers. In addition to the lack of reliable projections, there is also very little data around the climate-related migration that

is already happening, even in highly visible cases surrounding specific disaster events—and the data that does exist can be widely variable as exemplified by estimates of Puerto Rican migration after Maria (Center for Puerto Rican Studies, 2018; Echenique & Melgar, 2018; Urban Institute, 2022a).

Given the data gaps and unpredictability, cities flagged as potential climate destinations, like Cincinnati and Buffalo, are planning for something they can only speculate on right now—a speculation that goes against current migration trends in this country, wherein people are more likely to move toward places with greater climate risk than away from them (Katz & Sandoval-Olascoaga, 2021; Marandi & Main, 2021). Though some have suggested that this trend will likely flip at some point in the future (Lustgarten, 2020), the lack of reliable projections makes it difficult for potential climate destinations to know what to plan for. Respondents in both Cincinnati and Buffalo observed that this can also make it harder to rally the political will to do so, particularly in the face of many competing demands on government resources and staff time.

Even in communities like Orlando and St. Tammany, which have experienced steady in-migration and population growth for decades, the unpredictability associated with climate migration distinguishes it from other forms of migration and population growth. Puerto Ricans had been moving to Orlando long before Hurricane Maria hit—a migration flow that had increased even in the years preceding the storm, due to worsening economic conditions on the island (Alvarez, 2017). Puerto Ricans who arrived in Orlando following Maria were thus following a well-worn migration pathway, but the suddenness, pace, and scale of the influx in the wake of the hurricane caught the city by surprise and went beyond what their systems and infrastructure were prepared to accommodate. This surprise factor is inherent to any migration flow caused by a disaster event and is not unique to climate related hazards alone. But as the number of extreme weather events and other climate hazards increases due to climate change, so too will the number of sudden, unexpected, and sometimes large-scale migration flows. Even for cities accustomed to in-migration and growth, these sudden large-scale influxes will present significant challenges, because rapid, unpredictable changes are harder to plan for and accommodate.

Multiple respondents in Orlando reflected that, despite this unpredictability, the city could have been more prepared for the influx of migrants following Maria if they had engaged in more pre-event discussions and planning around the expected impacts of a significant tropical

storm hitting the Florida coast or a neighboring island like Puerto Rico. Pointing to Orlando's existing migration ties to Puerto Rico and the island's known exposure to extreme coastal storms, they suggested that, moving forward, cities like Orlando need to consider not just their own climate risks, but also the potential hazards faced by major sending areas to their region. "There are certain parts of the US - and Florida is definitely one of them - where when something happens in the Caribbean, or in Latin America, people are going to come," pointed out one respondent from Orlando. "Whether it's a hurricane, an earthquake, a civil war, a bad government—people are going to show up here." Given this context, he felt that the city should have better anticipated and been more prepared for something like the post-Maria influx.

In the face of uncertainty and the lack of reliable projections around future climate migration, local stakeholders like the one quoted above suggested that greater attention to and use of the knowledge that we do have—regarding known migration pathways and hazard exposure in those sending areas—could be used to inform and improve preparedness for the local impacts of distant hazards. Such an approach would extend current hazard assessment methods to include hazard risks beyond the immediate jurisdiction, and then engage scenario planning to inform local capacity building and contingency planning for the anticipated impacts of those hazards. Given constraints in local planning capacity, there are limitations to the number of sending areas or hazards that a community could reasonably consider in this sort of analysis, but even considering a few of the most likely case scenarios could help to inform greater preparedness.

A respondent in Buffalo also spoke to the utility of scenario planning. Pointing out that Buffalo's role as a climate haven is by no means set in stone, he advocated for the use of scenario planning as a way to prepare for multiple possible futures. Such scenario planning would consider not just a future where population increases, but also one where it declines and—alongside these alternative population scenarios—would also consider a future with more mild climate impacts versus one where climate impacts are more extreme. The goal of this scenario planning would not be to determine the most preferable scenario, or even the most likely one, but rather to determine policies and adaptation strategies that would be beneficial across all four scenarios, in order to chart a path forward that is environmentally resilient and economically viable no matter what the future holds.

6. Conclusions

Without pro-active measures to enhance local hazard resilience and build the infrastructure to accommodate growth and demographic change, communities on the receiving end of climate driven migration will be ill-prepared to meet migrant needs and to manage the challenges that accompany this growth. Results of my research, however, indicate that even communities that have distinguished themselves on the cutting edge of this issue are still in the early stages of building local understanding and awareness of climate migration and cultivating the capacity and political buy-in necessary to prepare for it more actively. As a respondent from Cincinnati remarked: “This is a field of work that’s in nascent stages. We’re all still figuring it out.”

In this emergent stage, local champions have played a key role in introducing the issue and pushing for its integration in local planning and policy-making discussions. Participation in national and international peer learning networks has provided these local leaders with access to resources, information, and peer learning opportunities that have helped to enhance local understanding of the potential impacts of climate migration and measures they might take to prepare for it. Stakeholders named lack of funding and competition with other local priorities as barriers to greater investment in preparation for climate in-migration and identified a need for federal funding to overcome this barrier and help build local capacity to receive.

On the one hand, the measures necessary to enhance local capacity to receive are not wholly dissimilar from strategies communities might engage to improve conditions for existing residents or prepare for population growth in general: increasing affordable housing stock; enhancing cultural and language access to city services; expanding availability and access to mental health care; building resilience to hazards. However, the experiences and observations of local stakeholders grappling with this emerging issue also revealed aspects of climate migration that set it apart from business-as-usual population growth. Most fundamental of these differences is the way in which climate change disrupts and alters current migration patterns and the uncertainty and unpredictability that this entails for local planning efforts. Scenario planning was identified as valuable tool that can be engaged in this context of this uncertainty and the absence of better climate migration data and projections. But future research to improve tracking of current climate migration and to develop, fine-tune, and scale down climate informed demographic modeling would also provide valuable information for local level planning and could help to build political will around preparing for anticipated in-migration.

Given the limited number of cases and respondents included in this study, further research will be needed to corroborate and expand on the observations surfaced and to incorporate a wider range of voices on the topic. Future research would benefit from inclusion of the perspectives and experiences of climate migrants themselves and a wider survey of stakeholders, with greater representation of local leaders in economic development, refugee resettlement, and housing. Furthermore, though climate migration is inclusive of a wide variety of drivers and circumstances, the stories and insights offered up in interviews for this study were disproportionately informed by experiences of disaster induced climate migration. Respondents acknowledged other types of climate migrants as well—such as individuals and families making voluntary, pre-meditated decisions to move in the face of increasing hazard risk—but comments regarding this form of migration were largely anecdotal and speculative, compared to stories of the more visible, large-scale, and documented impacts of migrants that arrived in the wake of Hurricanes Maria and Katrina. Going forward, more research is needed to better understand and track voluntary climate migration and the specific challenges and opportunities it poses for receiving communities, particularly in light of concerns regarding its impact on existing residents and the potential for displacement and gentrification.

Unplanned for, climate driven in-migration has the potential to exacerbate existing local problems, as happened in Orlando when the influx of Hurricane Maria evacuees compounded a pre-existing housing shortage, or in St. Tammany where development to accommodate growth has led to more homes going up in the floodplain, increasing the number of people that will be at risk when the next storm hits. Proactive planning and capacity building in advance of in-migration is critical to heading off and mitigating these challenges, but there is a gap in research and guidance around what this preparation entails and requires. The findings outlined in this paper provide a preliminary glimpse into some of the measures necessary to build local capacity to receive as well as current barriers to doing so. Addressing these barriers and building the capacity of communities to accommodate climate in-migration and adapt to its impacts will lead to improved outcomes not only for migrants, but also for existing residents in the communities that receive them.

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