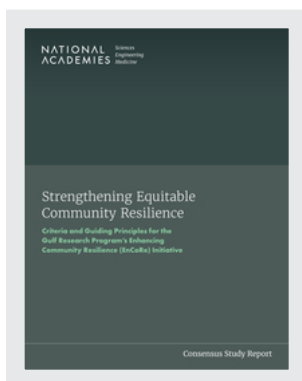


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Strengthening Equitable Community Resilience

Criteria and Guiding Principles for the Gulf Research Program's Enhancing Community Resilience (EnCoRe) Initiative

Committee on Criteria for Community Participation
in the Gulf Research Program's Enhancing
Community Resilience (EnCoRe) Initiative

Policy and Global Affairs

Consensus Study Report

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Acknowledgment of Reviewers

This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the National Academies of Sciences, Engineering, and Medicine in making its published report as sound as possible and to ensure that the report meets institutional standards for quality, objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process.

We wish to thank the following individuals for their review of this report:

Matthew Druckenmiller, University of Colorado Boulder; **Gerald Galloway, Jr.**, (NAE) University of Maryland, College Park; **Rashid Hassan** (NAS), University of Pretoria; **Chanda Meek**, University of Alaska Fairbanks; **David Perkes**, Mississippi State University; **Chandra Brown Stewart**, Lifelines Counseling Services; **Megnha Tare**, The University of Texas at Arlington.

Although the reviewers listed above have provided many constructive comments and suggestions, they were not asked to endorse the conclusions or recommendations nor did they see the final draft of the report before its release. The review of this report was overseen by **Maureen Lichtveld** (NAM), University of Pittsburgh. She was responsible for making certain that an independent examination of this report was carried out in accordance with the standards of the National Academies and that all review comments were carefully considered. Responsibility for the final content rests entirely with the authoring committee and the National Academies.

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Summary

Starting with Hurricane Katrina in 2005, a series of natural and human-made disasters in the United States and around the world have brought increased attention to vulnerable communities that face persistent health, environmental, and economic threats. Resulting efforts on the part of governments and private philanthropies have aimed at strengthening the resilience of such communities. The National Academies of Sciences, Engineering and Medicine report, *Disaster Resilience: A National Imperative*, defined resilience as the “..the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events” (NASEM 2012:1) In the United States, resilience efforts have focused particularly on the Gulf Coast, which was imperiled by the 2010 Deepwater Horizon offshore drilling disaster, as well as by Hurricane Katrina and other major storms.

In 2013, the National Academies of Sciences, Engineering, and Medicine established the Gulf Research Program (GRP) as one response to the Deepwater Horizon disaster (see NASEM, 2020 for additional information about the origins of GRP). Since that time, GRP has spent close to \$200 million to support studies, projects, and other activities aimed at advancing and applying knowledge “to enhance oil system safety and the protection of human health and the environment in the Gulf of Mexico region and other areas along the U.S. outer continental shelf” (NASEM, 2017, p. 3). GRP’s 2020–2024 strategic plan calls for new approaches to spur positive change, with the aims of (1) advancing scientific understanding, (2) building partnerships and engaging networks, (3) bridging knowledge to action, and (4) monitoring for progress and change (NASEM, 2020).

In a 2019 report, the National Academies recommended that GRP develop a major new program to strengthen community resilience in the Gulf region (NASEM, 2019). Because Alaska shares similar challenges, with a history of hydrocarbon extraction, communities in Southcentral Alaska are also included as part of the geographic scope of the resulting program, known as the Enhancing Community Resilience (EnCoRe) initiative. EnCoRe aims to

- reduce inequities in health and community resilience;
- advance research and practice in health and community resilience; and
- build the capacity of communities for
 - addressing the impacts of climate change and disasters on at-risk populations, and
 - sustaining their disaster and climate resilience efforts.

To achieve these goals, EnCoRe will support long-term, multiyear community engagement projects that partner directly with select communities across the Gulf region and Alaska.

This report develops findings and recommendations intended to help guide EnCoRe in identifying, selecting, and engaging with communities as it moves forward with the initiative. Following this summary, Chapter 1 provides an introduction, including the committee's statement of task. Chapter 2 contains findings and recommendations aimed at helping to orient community selection for the EnCoRe initiative within the changing context of resilience and community engagement efforts. Chapter 3 highlights guiding principles and lessons learned from past and existing resilience-strengthening efforts. Chapter 4 contains the report's core recommendations for EnCoRe—criteria and guiding principles for community identification and selection. Finally, Chapter 5 highlights the broader importance and potential of EnCoRe as a mechanism for sustainable and equitable change.

The committee chose the term *partnership* to describe the various mechanisms of community engagement that EnCoRe might utilize. Based on planning documents and presentations from GRP to this committee, these mechanisms could include, among others, direct funding for communities; funding for nonprofit or community-based organizations, or academic institutions working with communities; or funding for GRP staff or consultants working with communities (see the definition of *partnership* in Box 1-1 in Chapter 1 and more information about EnCoRe's mechanisms in Chapter 4).

This summary highlights key insights from the report, including abbreviated versions of the committee's findings and recommendations. Full versions of the findings and recommendations are included in the body of the report.

REIMAGINING COMMUNITY RESILIENCE

Community resilience, defined as the “the ability to prepare and plan for, absorb, recover from, and more successfully adapt” (NRC, 2012, p. 1), can remain a useful and powerful central concept for capacity-building efforts in Gulf and Alaskan communities, such as those that EnCoRe is planning to undertake. At the same time, the ongoing relevance and utility of resilience as an organizing principle will depend on reimagining the concept by incorporating new understanding and experience, particularly in areas related to equity and sustainability. A reimagined community resilience paradigm needs to go beyond recovery and “bouncing back,” to include capacity building that promotes posttraumatic growth. In addition, it will be important to address resilience fatigue, which may affect some individuals and communities, and the skepticism toward the resilience paradigm that has emerged among some community organizations and activists, particularly in the Gulf region.

Recommendation 2.1: The Enhancing Community Resilience (EnCoRe) initiative should adopt an updated and reimagined concept for community resilience in its selection of communities and formation of partnerships. This reimagined concept should recognize disparities among communities in their baseline resilience capacities; recognize systemic issues that affect capacities; develop holistic approaches to building resilience that take account of persistent environmental, mental, and public health burdens that some communities face; and monitor and address resilience fatigue where it might arise.

PARTICIPATORY ACTION RESEARCH AND PRACTICE

Participatory approaches to applied research, in which those most directly impacted by the research become active participants in the process, are being utilized increasingly across a range of domains. This trend comes in response to accumulating experience from research efforts in areas such as planning, agriculture, psychology, and public health, and from a greater appreciation of the needs and rights of community members. The committee applied a body of knowledge to this study referred to broadly as *participatory action research* (PAR). Key elements of this approach are relevant to working with Gulf and Alaskan communities that might participate in EnCoRe. These elements include (1) focusing on cocreation and codesign at the initial phase so that projects are not being imposed in a top-down manner; (2) using an iterative process of action and reflection to develop effective solutions during the implementation phase; (3) prioritizing the long-term sustainability of programs and solutions; and (4) ensuring that researchers and other outside technical experts make proactive efforts to engage with community members in order to understand and learn from their lived experiences, narratives, stories, and other information. *Action research* is a form of participatory research, with an explicit goal of social change, that is informed and driven by those most affected by the problem at hand. In addition to addressing equity issues, PAR approaches can also improve the effectiveness and sustainability of interventions.

The term and acronym *participatory action research and practice* (PARP) were developed by the committee for this study. The inclusion of the term *practice* underscores the practical applications of PAR and how the PAR approach can be applied beyond pure research projects to include capacity-building projects that may or may not include a research component.

Recommendation 2.2: The Enhancing Community Resilience (EnCoRe) initiative should employ participatory action research and practice (PARP) as a framework for selecting and engaging communities. PARP involves a focus on cocreation and codesign of projects, including the development of metrics, and emphasizes long-term sustainability of capacity and solutions. When outside researchers and other experts participate in projects and partnerships, they should understand and commit to the PARP approach.

CRITERIA AND GUIDING PRINCIPLES: LEARNING FROM PAST AND EXISTING EFFORTS

The committee's examination of a range of relevant programs reveals several important lessons about which criteria and approaches contribute to strengthening resilience equitably and building sustainable capacity. EnCoRe can apply these lessons, which have been incorporated into the criteria and guiding principles laid out in Recommendations 4.1 and 4.2. In selecting and partnering with communities. They include the importance of identifying and empowering *champions*, which are individuals and organizations that are trusted locally and that are invested in the long-term success of the partnership; using a collaborative approach to identifying community needs and developing project evaluation strategies; supporting cultural and language competence; and ensuring the potential for sustainability and expansion. Flexibility in how partnerships are initiated and launched helps to ensure inclusivity and a diversity of partners.

Recommendation 4.1: The Enhancing Community Resilience (EnCoRe) initiative should employ an approach to community selection that aims to build equitable resilience by applying the following criteria flexibly: (1) community need for enhanced resilience, (2) community interest in participating and commitment to partnering, (3) existing community capacity and potential for building capacity, and (4) community potential for sustaining equitable resilience.

Recommendation 4.2: In applying the recommended criteria, the Enhancing Community Resilience (EnCoRe) initiative should utilize lessons learned from past and existing efforts to maximize the potential for success by adopting the following guiding principles: (1) empowerment of program champions, (2) collaborative identification of community needs, (3) collaborative development of metrics and evaluation plans, (4) support for the cultural and language competence of program participants from outside the community, and (5) commitment to inclusion of underserved and small-population communities.

ENCORE'S OPPORTUNITIES AND POTENTIAL FOR BROAD IMPACT

EnCoRe has a tremendous opportunity to strengthen equitable resilience across many communities in the Gulf region and in Alaska, and to contribute to sustainable, positive changes in the lives of community members. EnCoRe also has the opportunity to develop insights and new knowledge that can be applied more broadly to efforts to engage with and empower communities in the context of resilience and beyond. Particular challenges and opportunities will arise in fostering sustainability among, within, and across partnerships and programs; in

engaging with communities in Alaska; and in employing approaches to funding, reporting, and evaluation that promote equity.

The National Academies plays an important role as a neutral convener in a variety of science policy contexts and has the potential to play a role in helping existing and new efforts in the Gulf region and Alaska work together more effectively for the benefit of communities. Also, EnCoRe can help communities achieve greater visibility for their needs among local, state, and national policymakers, as well as philanthropic, academic, nongovernmental organization, and corporate leaders.

Recommendation 5.1: The Enhancing Community Resilience (EnCoRe) initiative should apply the recommended community selection criteria and guiding principles to address significant challenges and opportunities in areas such as fostering sustainability in partnerships and programs; engaging with communities in Alaska; developing innovative and equitable approaches to funding and the partnership initiation process; and developing and implementing robust approaches to metrics and evaluation. EnCoRe should help communities achieve greater visibility among local, state, and national policy makers, as well as philanthropic, academic, nongovernmental organization, and corporate leaders.

1

Introduction

On April 20, 2010, the explosion that occurred at the Deepwater Horizon offshore drilling unit in the Gulf of Mexico caused the largest offshore oil spill in U.S. history. The well spilled an estimated 200 million gallons of oil into the Gulf of Mexico, injuring natural resources on which people's livelihoods depend and causing disruptions to their communities. As one response, in 2013, the Gulf Research Program (GRP) of the National Academies of Sciences, Engineering, and Medicine was created to “enhance oil system safety and the protection of human health and the environment in the Gulf of Mexico and other U.S. outer continental shelf areas by seeking to improve understanding of the region's interconnecting human, environmental, and energy systems and fostering application of these insights to benefit Gulf communities, ecosystems, and the Nation” (NRC, 2014, p. 6). Box 1-1 defines key terms used in the report.

BOX 1-1

Definition of Key Terms Used in This Report

Conclusions: “inferences, interpretations, or generalizations that are based on findings drawn from the evidence” (NASEM, 2016, p. 11).

Coproduction: The process of developing new knowledge through iterative engagement between science and society—for example, through direct collaborations between researchers and practitioners (Meadow et al., 2015).

Community: A geographically defined collection of people, at a subnational and substate level of jurisdiction (NASEM, 2019)—for example, “metropolitan statistical area[s]; rural villages or townships sharing similar environmental, cultural, or political ties; politically bounded places such as counties, cities, water districts, or wards within cities; or culturally defined places such as neighborhoods or street blocks that are greater than an individual household, parcel, or built project” (NASEM, 2019, p. 13).

Community of practice (CoP): Groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. Three characteristics are crucial: a shared domain of interest, active engagement of community members in activities

and discussions, and a member-developed shared practice (Edmonton Regional Learning Consortium, n.d.).

Community resilience: A community's "capabilities that buffer it from or support effective responses to disasters" (Wells et al., 2013, p. 1172). There are multiple dimensions of a community that underlie resilience, as represented by the six types of capital: natural, built, social, financial, human, and political (NASEM, 2019).

Criteria for participation: Desired attributes of communities that could potentially participate in the Enhancing Community Resilience (EnCoRe) initiative.

Environmental justice: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA, n.d.).

Findings: "Statements of fact, based on the available scientific evidence" (NASEM, 2016, p. 10).

Guiding principle: Overarching precepts designed by the committee for aligning EnCoRe community selection and engagement with the Gulf Research Program's (GRP's) vision and goals.

Participatory action research (PAR): Collective, self-reflective inquiry that researchers and participants undertake so they can understand and improve upon the practices in which they participate and the situations in which they find themselves. The reflective process of PAR is directly linked to action, influenced by an understanding of history, culture, and local context and embedded in social relationships (Baum et al., 2006).

Partnership: Based on planning documents and presentations from GRP to this committee, this term describes various mechanisms of community engagement that EnCoRe might utilize. These mechanisms could include, among others, direct funding for communities, for nonprofit or community-based organizations or academic institutions working with communities, or for GRP staff or consultants working with communities (see Chapter 4 for further elaboration).

Recommendations: Specific actions directed to specific actors related to policy, practice, or subsequent research. Recommendations should be based on evidence and supported by the committee's findings and/or conclusions (NASEM, 2016).

Resilience: "The ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events" (NRC, 2012, p. 1).

Structural racism: "The public and private policies, institutional practices, norms, and cultural representations that inherently procure unequal freedom, opportunity, value, resources, advantage, restrictions, constraints, or disadvantage for individuals and populations according

to their race and ethnicity both across the life course and between generations” (NASEM, 2022, p. 1).

Underserved community: A “community with environmental justice concerns and/or vulnerable populations, including people of color, low income, rural, tribal, indigenous, and homeless populations” (EPA, 2019, p. 1), including small communities (fewer than 1,000 people in population) that lack the resources to carry out resilience and public health building efforts.

Recognizing the importance of tracking community resilience to inform planning and action for healthy and resilient coastal communities, GRP commissioned a consensus study to inform the development of its human health and resilience portfolio. The study report, *Building and Measuring Community Resilience: Actions for Communities and the Gulf Research Program* (NASEM, 2019), states that the “GRP has a rare opportunity to alter the resilience trajectory of Gulf communities through a community resilience framework, community engagement, a learning collaborative, and longitudinal, transdisciplinary studies that inform decision making” (p. 9).

In response, GRP developed a new initiative, Enhancing Community Resilience (EnCoRe), which operates out of GRP’s Gulf Health and Resilience Board (GHRB). Initial activities of the EnCoRe initiative included appointing an oversight body and developing a set of profiles of communities along the Gulf of Mexico and the coast of Alaska that could advise EnCoRe in ways recommended in the 2019 report.

In 2021, GRP asked the National Academies’ Policy and Global Affairs (PGA) division to undertake a study to develop and recommend guiding principles and criteria for community participation in EnCoRe (see Box 1-2). The committee includes experts from a variety of organizations, with expertise in areas such as planning, community resilience and engagement, the natural and built environment, public health, program development and evaluation, and social and behavioral sciences (committee biographies can be found in Appendix A). At the time this new study was sponsored, and throughout the study, National Academies staff and the committee were not divulged of EnCoRe’s plans for implementing the program. As reflected in the study’s statement of task (Box 1-2), this report considers the possible implications of selection criteria and guiding principles for EnCoRe’s approach to carrying out the program but does not develop recommendations regarding implementation.

BOX 1-2
Statement of Task

A committee of the National Academies of Sciences, Engineering, and Medicine will help shape the Gulf Research Program's program on Enhancing Community Resilience (EnCoRe). Specifically, the committee will:

1. Examine past and current community engagement efforts and other relevant materials, particularly those that have included communities in the Gulf region and Alaska (e.g., Alaska ACE, Project Impact, CARRI, Texas Target Communities, 100 Resilient Cities) for the purpose of identifying guiding principles and lessons learned.
2. Develop a set of guiding principles and identify criteria for selecting the participating communities in the EnCoRe program.
3. Discuss the potential challenges and opportunities of applying the committee's selection criteria, and the possible advantages and disadvantages of alternative approaches.

The committee will issue a consensus report with its findings and recommendations.

STUDY CONTEXT

The settlement language that establishes GRP's terms for the Gulf of Mexico endowment specifies that GRP will focus on the Gulf of Mexico and the outer continental shelf of the United States, which includes Alaska, with a particular emphasis on the Southcentral region and other areas of Alaska with intensive offshore hydrocarbon extraction. Enhancing resilience in these regions will be an important focus of GRP's work going forward.

Communities across the Gulf region and coastal Alaska vary in demographics, economies, cultures, natural and other hazards, stressors, and histories, and as such also vary in the expression of the six community capitals that underlie community resilience: natural, built, financial, human, social, and political (NASEM, 2019). The EnCoRe initiative seeks to engage directly with a heterogeneous group of communities across these regions to build capacity and advance efforts that result in healthier, more resilient communities. Some outcomes of EnCoRe are envisioned as new or enhanced networks, peer-to-peer learning, and the sharing of lessons learned and best practices in health and community resilience that can be expected to contribute to improved whole-community and whole-region outcomes. EnCoRe is unique in focusing on and highlighting the interconnection between hazard resilience and health. As the human health impacts of climate change grow, EnCoRe can both raise awareness about impacts and connections, and intentionally convene representatives from multiple disciplines at the

community level.¹ Thus, the selection of communities is central to both the design and the success of EnCoRe, and this committee focused on developing clear, well-supported guiding principles and selection criteria with the goal of enabling EnCoRe to establish effective partnerships that can help build capacity and strengthen community resilience over time.

GOALS AND ORGANIZATION OF THIS REPORT

This report is based on three main data streams: (1) the experiences and expertise of its committee members, discussed and deliberated, as relevant to the study's statement of task; (2) an examination of past and ongoing resilience, capacity building, and public health efforts in Alaska, the Gulf region, and nationally, as examined in closed sessions with staff, and as presented in open sessions in the form of public data-gathering panels by community members and representatives from relevant organizations, institutions, and agencies; and (3) evidence-based literature.

This report seeks to reach two main audiences. The primary audience is GRP, for whom the report provides specific guiding principles and selection criteria that GRP should follow for developing partnerships that will enhance community resilience and health in Alaska and the Gulf region. The report is also intended for decision makers at institutional and community levels who are interested in adopting a community-centric approach to resilience, capacity-building, and public health efforts. Above all, the intent of this report is to elevate the importance of the equitable distribution of resources when supporting, developing, maintaining, and sustaining community resilience partnerships. The report also highlights the ongoing need for the equitable establishment of procedures to ensure that the people most impacted by the partnership have access to, and can provide input into, fair and transparent decision-making processes. Furthermore, this report builds on the foundational consensus report completed by the Committee on Measuring Community Resilience (NASEM, 2019), which highlighted that community resilience takes on “highly localized dimensions,” which requires tailored “relevant and achievable goals” (p. ix). Given that the field of community resilience is nascent, and taking into account the array of existing definitions and measurement tools, this report also highlights the importance of robust measurement within and across projects and regions, in order to facilitate the development of this field and sustainable outcomes.

The following chapters lay the groundwork for selecting communities for participation in the EnCoRe program. Chapter 2 describes historical and theoretical foundations, and contains findings and recommendations aimed at helping to orient community selection and engagement

¹ Importantly, EnCoRe's efforts will need to continuously adapt to changing conditions, such as natural disasters, that might increase in frequency and/or severity as a result of climate change—an understanding that is currently reflected in a variety of existing GRP programming and efforts. As one example among many, GRP announced in October 2019 that it would award \$10.7 million in grants to four Gulf Coast community resilience projects. For more information about these grants, see <https://www.nationalacademies.org/news/2019/10/national-academies-gulf-research-program-awards-10-7-million-in-grants-to-four-gulf-coast-community-resilience-projects> (accessed February 10, 2023).

within the changing context of the resilience and community engagement efforts. Chapter 3 examines relevant past and ongoing resilience and public health efforts, and highlights lessons learned from these resilience-strengthening efforts that should inform selection and engagement. Chapter 4 reviews and describes the recommended criteria for selection and guiding principles for identification, selection, and engagement. Chapter 5 describes critical considerations for the EnCoRe initiative as relevant to its stated intent (NASEM, 2019), and highlights the broader importance and potential of EnCoRe as a mechanism for sustainable and equitable change.

2

Contexts and Frameworks for Community Resilience

The Gulf Research Program (GRP) was created in 2013 with \$500 million in criminal settlement funds from British Petroleum and TransOcean, the companies who pleaded guilty and were held liable for the 2010 Deepwater Horizon oil spill. The funds are required to be spent over 30 years to “improve understanding of the region’s interconnecting human, environmental, and energy systems and foster...benefit[s] [for] Gulf communities, ecosystems, and the nation” (NASEM, 2017, p. 3).

Health and Community Resilience is one of four program areas identified in GRP’s 2020-2024 strategic plan and is the priority of the GRP’s Gulf Health and Resilience Board (GHRB). The GHRB aims to enhance health, well-being and resilience by working to put science into action for the benefit all who call the Gulf region home. Specifically, GHRB implements program activities through three of GRP’s strategic approaches:

- building partnerships and engaging networks,
- advancing science and understanding, and
- bridging knowledge to action.

The EnCoRe initiative was created in response to a recommendation from a 2019 consensus study by the National Academies of Sciences, Engineering, and Medicine, titled, *Building and Measuring Community Resilience: Actions for Communities and the Gulf Research Program* (NASEM, 2019). That report summarizes “the existing portfolio of resilience measurement efforts...describes how some communities build and measure resilience...and offers four key actions that communities could take to build and measure their resilience in order to address gaps identified in current community resilience measurement efforts” (NASEM, 2019, p. 3).

The EnCoRe initiative was created in response to the report recommendation that GRP “should develop a major, coordinated initiative around building or enhancing community resilience in communities across the Gulf Region” (NASEM, 2019, p. 7). Because Alaska shares similar challenges, and has a history of hydrocarbon extraction, communities in Southcentral Alaska are also included as part of the geographic scope of the EnCoRe program. GRP responded to the recommendation by initiating EnCoRe and making its mission to “build the capacity of Gulf of Mexico and Alaskan communities through engagement, education, collaboration, and integration of data and science into decision-making in order to advance

community-based efforts to achieve healthy, resilient, and thriving communities that are equitable and inclusive for all.”¹

EnCoRe’s goals are to

- reduce inequities in health and community resilience;
- advance research and practice in health and community resilience;
- build the capacity of communities for
 - addressing the impacts of climate change and disasters on at-risk populations, and
 - sustaining their disaster and climate resilience efforts.

The EnCoRe initiative aims to achieve these goals by supporting long-term, multiyear, community engagement projects that will partner directly with selected communities across the Gulf states and Alaska. EnCoRe will build and strengthen community capacity at the local level in ways that enable each of its community partners to embark on its own health and community resilience building path independent of EnCoRe and GRP. To advise GRP on the implementation of the EnCoRe initiative, the National Academies established an EnCoRe oversight committee in 2021. The objective of the present study’s committee on Criteria for Community Participation in GRP’s EnCoRe Initiative is to provide recommendations guiding the EnCoRe oversight committee in identifying communities for engagement with the EnCoRe initiative. The charge of the present study is not to recommend how EnCoRe should implement its community engagement program, or to recommend the types of community-engaged partnerships that EnCoRe should undertake. Rather, the charge of the present study is to develop a set of guiding principles and to identify criteria for GRP to utilize in selecting the participating communities for the EnCoRe initiative, and to discuss the potential challenges, opportunities, and key considerations of applying these selection criteria.

In addition to the recommendations in this report, the EnCoRe initiative will utilize two frameworks for examining community challenges and promoting solutions that influence the health and resilience of individuals and communities: the six community capitals of resilience and the social determinants of health.

SIX COMMUNITY CAPITALS OF RESILIENCE

Drawing on existing literature about approaches to community resilience (e.g., Beccari, 2016; Cutter, 2016), the report *Building and Measuring Community Resilience* (NASEM, 2019) noted that multidimensionality is a defining characteristic of community resilience: “The resilience of a community encompasses all of the resources and assets available in the community. These community dimensions are also referred to as ‘capitals’” (p. 15). The report

¹ This quote and more information about the EnCoRe initiative is available here: <https://www.nationalacademies.org/our-work/enhancing-community-resilience-encore-oversight-committee/about>.

observed that the following six types of community capitals are most often used in the resilience measurement literature: natural (environmental); built (infrastructure); financial (economic); human and cultural; social; and political (institutional or governance). The report recommended that the EnCoRe initiative approach community resilience through these capitals.

SOCIAL DETERMINANTS OF HEALTH

The social determinants of health are the environmental conditions into which people are born, live, learn, work, play, worship, and age, which affect a wide range of health, functioning, and quality-of-life outcomes and risks.² Conditions (e.g., social, economic, physical) in these various environments and settings (e.g., school, church, workplace, neighborhood) have also been referred to as “place.”³ In addition to the more material attributes of place, the patterns of social engagement and sense of security and well-being are also affected by where people live. Resources that enhance quality of life can have a significant influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins. Understanding the relationship between how population groups experience place and the impact of place on health is fundamental to the social determinants of health—including both social and physical determinants (ODPHP, 2020). The committee considered both the community capitals and social determinants of health frameworks during data-gathering sessions. The following section introduces two additional bodies of knowledge that further guided the study process and the committees’ recommendations to the EnCoRe initiative.

FRAMEWORKS FOR UNDERSTANDING AND ADVANCING COMMUNITY RESILIENCE

Two interrelated bodies of knowledge broadly informed the committee’s recommendations and shaped the guiding principles and criteria for EnCoRe community selection. The first is the concept of community resilience, how it is applied, and how the concept and its application have changed over time. The following section on resilience is informed principally by a literature review about recent uses, applications, and metrics of community resilience. One important aspect of the current context is the issue of *resilience fatigue*: “the exhaustion that comes after a prolonged period of having to stay motivated or

² More information about the Social Determinants of Health is available at: <https://health.gov/healthypeople/priority-areas/social-determinants-health>.

³ More information is available at: <https://wayback.archive-it.org/5774/20220413203948/https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>.

positive” (Janin, 2022). Several times, experts who spoke with the committee raised the issue of resilience fatigue, and the committee discussed how the EnCoRe initiative can avoid adding to the burden of resilience fatigue when engaging with potential partners.

The second body of knowledge that the committee applied to this study is broadly referred to as *participatory action research* (PAR). However, the committee decided that the term *practice* should be included in PAR, and thereby developed the term and acronym *participatory action research and practice* (PARP) for this study. The inclusion of the term *practice* underscores the practical applications of PAR and how the PAR approach can be applied beyond pure research projects to include capacity-building projects that may or may not include a research component. Additionally, the inclusion of *practice* acknowledges that the principles of participatory research can be, and have been, translated into practice in fields such as planning, resource management, and local governance, as further described below. The following sections contain lessons learned and best practices that inform the core criteria and guiding principles that the committee recommends to GRP (Chapter 4).

COMMUNITY RESILIENCE: DEVELOPMENT OF A CONCEPT AND ITS APPLICATION

Finding 2.1: Reimagining Community Resilience

Community resilience, defined as the “the ability to prepare and plan for, absorb, recover from, and more successfully adapt” (NRC, 2012, p. 1), can remain a useful framework for capacity-building efforts in Gulf and Alaskan communities, such as those with which EnCoRe is planning to engage. At the same time, the ongoing relevance and utility of resilience as an organizing principle will depend on reimagining the concept by incorporating new understanding and experiences, particularly in areas related to equity and sustainability. The committee has identified several important lessons and insights:

- **Meet communities where they are.** Approaches to building community resilience have sometimes implicitly taken resilience as an expected, attainable end state for all communities. Going forward, resilience efforts will need to better recognize and account for the significant differences among communities along the spectrum of resilience, from preparation through adaptation. Strengthening equitable community resilience requires meeting communities where they are on this spectrum, seeking to support the enhancement of existing resilience capacities, and working to forge new pathways that address the parts of the spectrum most needed and desired by the community.
- **Understand the impact of preexisting systemic issues.** Resilience efforts need to reflect an understanding that preexisting systemic issues—such as racism, poverty, and other forms of marginalization—can significantly shape the manner and speed with which many communities are able to benefit from resilience-building interventions. Social vulnerabilities that affect the predisaster capacity of communities can create an “equity

gap” in strengthening resilience capacities. Complementary efforts to address social inequality, power disparities, and unequal resource distribution may be needed alongside efforts more directly focused on vulnerability to hazards.

- **Use holistic approaches.** Efforts to strengthen community resilience equitably can benefit from incorporating environmental justice perspectives and the expertise of mental health professionals and psychology experts. Such holistic approaches recognize the intersection between climate change and social, economic, and health inequalities, while viewing resilience as a function of infrastructure, agency, self-organization, collaborative governance, social networks, and cultural knowledge.
- **Understand and address resilience fatigue.** As communities continue to develop and implement resilience programs, some community organizations and activists have become skeptical of the resilience paradigm and how it has been applied to postdisaster settings. An overemphasis on asking people to “be resilient” has produced a feeling of exhaustion from having to stay motivated and positive under challenging contexts in some communities that have been participating in resilience-related efforts. Clear communication among and between programs and communities on topics including roles and responsibilities, as well as metrics used to evaluate baseline resilience, can be helpful in preventing, monitoring, and addressing resilience fatigue at both the individual and community levels where it might arise; it may also aid in designing interventions that tangibly enhance communities’ baseline resilience.

Recommendation 2.1: The Enhancing Community Resilience (EnCoRe) initiative should adopt an updated and reimagined concept for community resilience in its selection of communities and formation of partnerships. This reimagined concept should recognize disparities among communities in their baseline resilience capacities; recognize systemic issues that affect capacities; develop holistic approaches to building resilience that take account of persistent environmental, mental, and public health burdens that some communities face; and monitor and address resilience fatigue where it might arise.

The concept of resilience is rooted in the discipline of ecology and was originally used to describe the ability of an ecosystem to adapt and continue functioning during and after disruption (Holling, 1973). The development of socioecological system theory (Folke, 2006; Gunderson and Holling, 2002) extended Holling’s original use of ecological resilience to social systems to describe socioecological contingency and interconnectedness, including place-based models of describing to which disturbances such systems aim to become resilient (Cutter et al., 2008).

Norris and colleagues (2008) conducted a review of the evolution of resilience thinking and definitions that extend beyond ecological systems to include individual, city, social, physical, and community resilience and hazards research. They found that no single definition of resilience could apply to the diversity of the disciplines utilizing this construct and of the

contexts to which it was being applied. A report from the National Academies, *Disaster Resilience: A National Imperative* (NRC, 2012), defined *resilience* as “the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events,” and observed that “enhanced resilience allows better anticipation of disasters and better planning to reduce disaster losses—rather than waiting for an event to occur and paying for it afterward” (p. 1). The current study adheres to this definition of resilience and underscores the need for a broad suite of predisaster strategies to enhance community resilience, including the use of preexisting social capital and its application throughout the disaster cycle. However, the committee also recognizes that “the ability to prepare and plan for, absorb, recover from, and more successfully adapt” is an ideal and aspirational vision of community resilience. In reality, different communities will be situated on a spectrum of ability, from preparation to adaptation. Thus, efforts to strengthen equitable community resilience would start by meeting communities where they are on this spectrum, seeking to support the enhancement of existing resilience capacities (e.g., existing social capital), and working to forge new pathways that address the parts of the spectrum most needed and desired by the community.

Recent articles and studies have taken stock of the landscape of community resilience (see Mayer, 2019; Koliou et al., 2018; Tiernan et al., 2018). In a review of the themes in disaster resilience and recovery, and the climate change literature, Tiernan and colleagues (2018) noted an overemphasis on “successful” adaptation in the face of threats as a marker of resilience. This “positive adaptation bias” risks shifting the definition of resilience from “what ‘is’ to what ‘ought to be,’” thus, giving resilience a normative connotation (p. 55). Tiernan and colleagues (2018) stress that, from an objective systems perspective, resilience does not necessarily imply development or enhancement but the ability of the system to persist “within a given set of parameters” (p. 56) (see also Holling, 2001; Middleton and Latty, 2016).

Mayer (2019) notes the mainstream emphasis on defining resilience in reference to hazards and calls out the lack of attention in the broader community resilience literature to how preexisting systemic issues are determining factors in whether a community can pursue resilience-building interventions. Ignoring the social vulnerabilities—preexisting roles of social inequality, power, and unequal resource distribution and access—that shape the predisaster capacity of communities, alongside more mainstream considerations of vulnerability to hazards produces an “equity gap” in the resilience literature (Matin et al., 2018; see also Cote and Nightingale, 2011; Cretney, 2014; Hornborg 2013). The focus on “bouncing back,” without accounting for preexisting inequalities, can imply to communities that the goal of resilience is to return to the status quo, thus trapping communities in a socioeconomic state that is neither just nor equitable (Meerow and Newell, 2019).

Literature on climate justice, a framework that recognizes the intersection between climate change and social, economic, and health inequalities, delivers a more direct critique of resilience thinking (see, e.g., Moulton and Machado, 2019; Porter et al., 2020; Ranganathan and Bratman, 2019). The notion of *climate justice* applies “matters of ethics and power to the way vulnerability is produced and managed” (Moulton and Machado, 2019, p. 4). Climate justice

supports substantive transformations in environment-society relations that achieve “environmental justice and social justice, rather than facile adjustments in policy” (Moulton and Machado, 2019, p. 4; see also Running, 2015). The promarket vision of “build back better,” a common term in resilience parlance, privileges “design solutions and externally imposed ideas for community cohesion” at the cost of ignoring the structural inequalities and historical inequities that made communities vulnerable to hazards in the first place (Ranganathan and Bratman, 2019, p. 116).

Berkes and Ross (2013) offer an integrated approach to addressing the divergent perspectives underlying the construct of community resilience; they weave together existing definitions of community resilience that are rooted in the socioecological systems literature with community resilience constructs drawn from mental health and developmental psychology. According to the literature strand, community resilience is best understood as a system’s concept that is subject to feedback loops, nonlinearity, renewal cycles, disturbance events, and homeostatic demands, among other drivers. In contrast, the psychology strand views resilience as a function of infrastructure, agency, self-organization, collaborative governance, and social networks. This latter approach highlights the importance of identifying and developing community strengths with devoted attention to people–place connections, a position often lost in the existing socioecological literature on resilience.

When adopting an approach designed to capture the community’s capacity for well-being in the face of significant and ongoing adversity, cultural knowledge and identity; local control and collective efficacy; cultural continuity; infrastructure development; and respect for diversity in language, lifestyle, and development emerge as central processes (Kirmayer et al., 2009). Thus, alongside criticisms, there has been increasing recognition of the role of social capital and connectedness, as well as the networks that facilitate resource and information sharing, in developing more resilient processes and outcomes across stakeholder groups, communities, and levels of government (Aida et al., 2013; Kirmayer et al., 2009; Mayer, 2019; Meyer, 2018; NASEM, 2021; Story et al., 2018). Social capital contributes to resilient outcomes in postdisaster settings. However, it is critical to recognize, understand, and respect how social capital developed before and through historical contexts wrought with systemic inequities, such as institutional racism, and how social capital has anchored communities in the presence or absence of climate and environmental hazards. Respectfully incorporating these dimensions of any community are essential to enhancing its resilience.

Recognizing and Addressing Resilience Fatigue

Ultimately, these perspectives and critiques of community resilience call attention to the need to consider questions of “resilience of what to what?” and “resilience for whom?” (Cretney, 2014; Lebel et al., 2006; Meerow and Newell, 2019; Vale, 2014). Clearly, resilience has proved to be a useful organizing paradigm for a range of efforts to strengthen communities, with many governments, private foundations, academic institutions, nonprofit organizations and

communities continuing to develop and implement resilience programs. Still, some community organizations and activists have been skeptical of the resilience paradigm since it emerged and was applied to postdisaster settings, such as Hurricane Katrina (Woods, 2017), despite widespread use of the concept by practitioners and academics. This idiomatic context within which resilience thinking finds itself has resulted in “resilience fatigue” in some communities—the feeling of exhaustion by people and communities that comes after a prolonged period of having to stay motivated and positive under challenging contexts, and from repeated demands to just “be resilient” (Butko, 2020; Janin, 2022; Mowe, 2017). The next section hones in on the development of resilience fatigue and recommends ways to avoid and address it.

The recent rise of the global resilience movement is largely attributed to the Rockefeller Foundation and the launch of the 100 Resilient Cities (100RC) initiative in 2013 (Galderisi et al., 2020). Cities participating in the initiative were expected to “improve their performances in the face of a wide range of acute shocks, such as earthquakes, floods or fires, and chronic stresses, such as unemployment, migrations, food and water shortage, etc. rather than preventing or mitigating the loss of assets due to a specific hazard” (Galderisi et al., 2020, p. 3). Concurrently, governments at all levels within the United States (e.g., federal, state, local) have poured and continue to pour massive investments into the “disaster resilience” concept, with unclear outcomes and a lack of tangible accomplishments (GAO, 2019). Following 100RC’s wind-up in 2019, the concept of disaster resilience received heightened scrutiny, including the observation that there is no consistent definition of what disaster resilience is or how it should be implemented in a practical manner (Keenan, 2018). For example, the field of planning, particularly land use planning, includes a range of practical and tangible tools, but contributed very little to the conceptual framework and application within 100RC. As one commentator noted, “Instead of doing the hard work of changing how you do things, disaster resilience allowed for an easy way out for politicians. It allowed them to always say yes to more infrastructure investments, but it never forced them to say no to building in high-risk areas in the first place, such as along the Louisiana coast” (Keenan, 2021, para. 11).

Especially in coastal environments heavily impacted by acute surge flooding and sea level rise, many communities are currently caught within what the sociologist Ian Gray has called the “treadmill of protection” (Gray, 2021), by which increasing levels of government-backed expenditures are used to defend their economic viability, regardless of social, economic, or environmental consequence. Yet, many actions aimed at preventing immediate loss also work to secure incumbent extractive industries, such as offshore oil and gas drilling, which themselves contribute to the very vulnerabilities requiring intervention in the first place. Consequently, frontline communities have experienced systemic breakdowns of social and economic functions and community networks.

This tempest of conditions fosters an environment by which some frontline communities have been consistently engaged in “resilience-building” exercises by agents of government, nongovernmental institutions, and academia, sometimes without tangible benefit to those communities or a clear articulation of how communal quality of life may improve across any

particular time horizon. Therefore, in many cases, when frontline and often beleaguered communities are asked to engage in vague “resilience” activities, they are also being asked, by implication, to expand or enhance their own capacity to withstand or recover from shocks and stressors—without being offered help in addressing the root causes of those shocks and stressors. Thus, resilience fatigue can be defined as the communal “exhaustion people experience from attempting to act motivated, inspired, and positive” (Butko, 2020, para. 3). In other words, resilience fatigue can occur when people are asked to thoughtfully engage in community-oriented resilience-building endeavors—even if those endeavors are well-intentioned—when the outcomes of the exercise are not clearly enumerated to the community itself, and those outcomes do not clearly resonate for community members as likely to enhance quality of life.

Much remains to be learned about resilience fatigue as a phenomenon and its implications for addressing the needs of specific communities and community members. For example, it is possible that smaller communities, communities that face preexisting systemic challenges (e.g., racism and poverty), and communities experiencing persistent health and environmental threats are more susceptible to resilience fatigue. EnCoRe can add value by taking approaches in community selection and engagement that reflect a holistic understanding of community strengths and vulnerabilities, and by developing a better grasp of resilience fatigue and how it can be prevented, monitored, and addressed over time.

Measuring and Communicating Resilience

As a consequence of the dual effects of “positive adaptation bias” and “resilience fatigue,” it is crucial that efforts intended to boost resilience first define and clearly communicate metrics under which communities delineate their baseline resilience. Effective communication of metrics also includes communication of the roles and responsibilities of community leaders, local governments, and other stakeholders prior to adverse events or disasters. Conflict over roles and responsibilities can negatively impact response and recovery efforts. Interventions must be evaluated based on their likelihood to tangibly enhance a community’s baseline resilience. The collaborative development of metrics by all impacted people should be prioritized to build mutual trust and understanding between practitioners and stakeholders alike, empowering citizens and enhancing decision-making processes (Cox and Hamlen, 2015). Communication among stakeholder groups, including community members and decision makers, allows individuals and groups to share local understandings of what resilience means to them (White et al., 2014) and can lead to collaborative processes that can facilitate the establishment of social networks that enhance community resilience (Frankenberger et al., 2013).

The report *Building and Measuring Community Resilience* (NASEM, 2019), which recommended that GRP establish the EnCoRe initiative, also recommends utilizing community participation and engagement from the outset of resilience building and measurement efforts. One approach to developing resilience metrics may entail working with communities to break down the concept of resilience into constituent parts, revealing a first-level set of categories from

which a collaborative development of specific resilience metrics may emanate. Based on the definition of *resilience* cited above, this first-level set of categories could measure a community's ability to (1) prepare, (2) plan for, (3) absorb, (4) recover from, and (5) adapt to a variety of adverse events that may occur cumulatively or unfold sequentially across time (NRC, 2012).

It is also important to appreciate the distinction between resilience as it is understood and experienced by individual community members and the collective capacity of communities to respond to adverse events. In the case of individuals, resilience is affected by factors such as their physical health and well-being, their ability to develop significant and meaningful relationships with other community members, and their sense of control over their lives and circumstances. Community resilience is affected by general structural, social, and economic circumstances, as well as the responsiveness of community leaders, local governments, and stakeholder organizations prior to, during, and after an adverse event. Both individual and community resilience depend on the implementation of effective policies and practices before adverse events.

By applying this framework, more granular outputs, outcomes, and metrics for success can then be developed in concert with a targeted community. Based on this literature and these examples, the committee considered several guiding principles for its core recommendations to EnCoRe (Chapter 4) that could help alleviate or avoid adding to resilience fatigue in the communities with which it engages. Efforts to engage and communicate with communities in ways without adding to resilience fatigue will include the following practices:

- Clearly enumerate how the engagement is likely to benefit individual community members and the community as a group.
- Consistently acknowledge and respect the historical resilience in place, including:
 - the “rooted practices of care and healing from historical trauma that residents already practice” (Ranganathan and Bratman, 2019, p. 116), and
 - the “chronic adversities and structural inequities that lead to historical trauma through multiple generations” (Mowe, 2017, para. 1).
- Recognize the current, “baseline” resilience present in frontline communities and clearly outline how to build upon that baseline.
- Communicate transparently that relationships with frontline communities are mutually beneficial, rather than extractive, and clearly outline what both partners intend to gain from the relationship (e.g., development and use of materials; accounts and findings for internal and external knowledge-building and use, including for publication), as well as what the engagement intends to facilitate or provide to the community.

Given the challenges associated with keeping the community and their priorities at the center of resilience-building efforts, this report proposes an approach the authoring committee

calls *participatory action research and practice (PARP)*. This approach, its roots, and its guiding principles are described in the following section.

Participatory Action Research and Practice: A Proposed Central Principle for the EnCoRe Initiative

Finding 2.2: Using Participatory Approaches to Strengthen Community Engagement and Sustainable Capacity Building

The value of participatory approaches to community engagement. Participatory approaches to applied research in which those most directly impacted by the research become active participants in the process are increasingly being utilized across a range of domains. This trend comes in response to accumulating experience from research efforts in areas such as planning, agriculture, and public health, as well as greater appreciation of the needs and rights of community members themselves.

Key elements of participatory action research. Although there is no one set of rules or procedures for participatory research approaches, key elements of the approach are relevant to working with the Gulf and Alaskan communities that might participate in the EnCoRe initiative. These elements include (1) a focus on cocreation and codesign at the initial phase so that projects are not being imposed in a top-down manner; (2) using an iterative process of action and reflection to develop effective solutions during the implementation phase; (3) prioritizing the long-term sustainability of programs and solutions; and (4) proactive efforts by researchers and other outside technical experts to engage with community members in order to understand and learn from their lived experiences, narratives, stories, and other information.

The importance of participatory approaches in developing metrics. A previous National Academies report recommends utilizing community participation and engagement from the outset of resilience building and measurement efforts (NASEM, 2019).

Recommendation 2.2: The Enhancing Community Resilience (EnCoRe) initiative should employ participatory action research and practice (PARP) as a framework for selecting and engaging communities. PARP involves a focus on cocreation and codesign of projects, including the development of metrics, and emphasizes long-term sustainability of capacity and solutions. When outside researchers and other experts participate in projects and partnerships, they should understand and commit to the PARP approach.

Participatory research is an approach to applied research in which the people most directly impacted by the research become active participants in the process. The goal of this approach is to make the research more directly applicable to real-world problems. Participatory research has roots in action research, which has an explicit goal of social change that is informed and driven by those most affected by the problem at hand (Greenwood and Levin, 2007). This approach is used in fields such as agriculture and rural livelihood research (Beebe, 2001; Biggs, 1989), public health (Minkler and Wallerstein, 2008), and planning (Innes and Booher, 2004), all of which can inform EnCoRe's approach.

Continuum of Engagement

There is a continuum of engaged forms of scholarship—all of which can be effective in providing communities with useful information and resources. Based on his observations of farmers' participation in agricultural research, Biggs (1989) described four modes of engagement: contractual, consultative, collaborative, and collegial. The four modes become progressively more participatory as one moves from contractual through collegial. Biggs' model has been expanded upon more recently (see, e.g., Meadow et al., 2015), notably by the addition of an Indigenous mode of research (David-Chavez and Gavin, 2018; see Figure 2-1). Given EnCoRe's mission of pursuing a long-term, multi-year, community engagement project that will partner directly with select communities across the Gulf states and Alaska, the focus here is on the collaborative and collegial end of the engagement continuum, including Indigenous research approaches, in which community needs, expertise, and knowledge are central to the research and related on-the-ground actions. The committee refers to this end of the engagement spectrum collectively as *participatory research and practice* (PARP). Because EnCoRe will fund more than just research projects, we include *participatory practice* in our definition and demonstrate below how the principles of participatory research can, and have been, translated into practice in fields such as planning, resource management, and governance, and how this approach can lead to more equitable and sustainable partnerships.

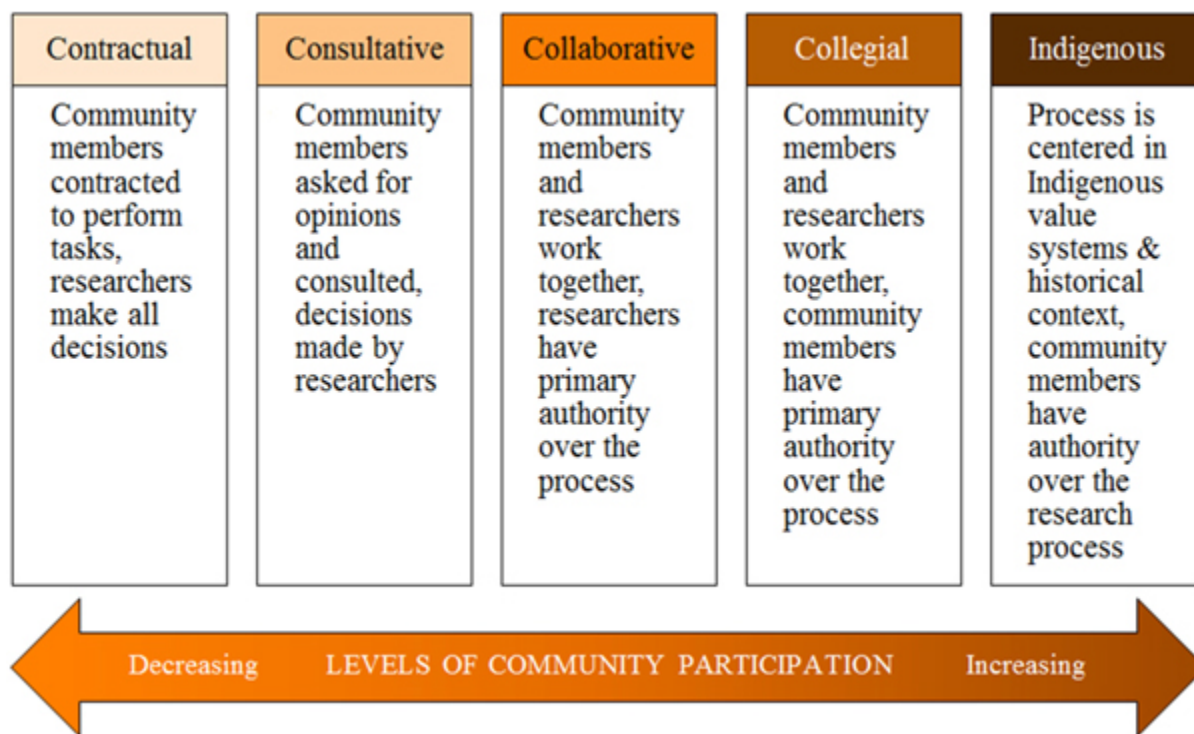


FIGURE 2-1 Scale for assessing levels of Indigenous community participation based on who has authority over the research process.

SOURCE: Dominique M. David-Chavez and Michael C. Gavin. 2018. A global assessment of Indigenous community engagement in climate research. *Environmental Research Letters*. 13(12).

At its core, participatory research involves the active engagement of diverse stakeholders as partners in the research process (Cvitanovic et al., 2019; Fluehr-Lobban, 2008). As a principle of research and practice, participatory approaches ultimately speak to the underlying reasons for conducting research and pursuing projects. Cornwall and Jewkes (1995) note that “the key element of participatory research lies not in methods but in the attitudes of researchers, which in turn determine how, by and for whom research is conceptualized and conducted” (pp. 1667-1668). We can extrapolate this research-focused definition to include the ways in which any community-based project is scoped and conducted.

Background and Applications of Participatory Research

Participatory research approaches have a long history in the social sciences, where they emerged as a direct response to a history of exclusion and “othering” of minoritized communities and voices (Greenwood and Levin, 2007). As mentioned above, an early form of participatory research is *action research* (Lewin, 1946; Tax, 1958), which has as an explicit goal of social change that is informed and driven by those most affected by the problem at hand.

Participatory research approaches are used in several health and science fields. Agricultural research, for example, uses rapid rural appraisal and other participatory methods in

development and extension work (Beebe, 2001; Biggs, 1989). Public health practitioners rely on community-based participatory research and practice, particularly in communities that have been underserved by health practitioners (Minkler and Wallerstein, 2008; Wallerstein and Duran, 2008). Participatory research approaches are a newer addition to the biophysical sciences and are to some extent driven by climate change adaptation and other environmental research in which the links between biophysical and social processes and impacts make the integration of bio-socioecological systems crucial (Lemos and Morehouse, 2005; Meadow et al., 2015; Pohl et al., 2017; van Buuren et al., 2014). In climate science work, the term *coproduction of knowledge* is now often used to denote a participatory research process; this term originated from the collaborative governance framework and was used to describe the ways in which citizens and government entities create society together (Ostrom, 1996).

Participatory approaches have been long used in planning, natural resource management, and policy making. Jane Jacobs revolutionized the field of planning from a top-down rational planning model to a bottom-up participatory approach by fighting to save the urban neighborhood Greenwich Village from urban renewal in the 1950s and 1960s and with the 1961 publication of *The Death and Life of Great American Cities*. Another early example of both critique and construction of public participation methods is Arnstein's (1969) ladder of citizen participation, which proposed a typology of participation levels noting that only the top three rungs of the ladder (partnership, delegated power, and citizen control) represent true citizen power (Arnstein, 1969). Community planners have advocated for the use of participatory approaches, particularly multiway interactions between citizens and decision makers, to ensure that new developments, infrastructure, and policies meet community members' needs and create better overall outcomes (Innes and Booher, 2004; Margerum, 2002; Meyer et al., 2018).

Similarly, in community development work, public participation is considered particularly important. For example, in order to solve societal problems, Homan (2008) describes engaging both the *action community*—those positioned to perform an action to address the problem, such as advocacy groups; academics; or those with power, including governmental entities and elected officials—and the *benefit community*—those directly impacted by a problem and who have the necessary information about the problem, its source, solutions, and potential effect (see also Schwarz, 2003). Specifically, this approach values the consent given to the action community by the benefit community, and focuses explicitly on the intention and attitude of the action community. The complementary approach of benefit and action communities working together moves toward a collegial mode of engagement (see Figure 2-1).

Community-based natural resource management and community-based adaptation are related (but distinct) approaches that center communities within decisions and actions about resource management and climate change adaptation (Dumarú, 2010). In both cases, practitioners note that when “communities’ priorities, needs, knowledge, and capacities” are central to the effort, communities are empowered to act in ways that make them safer and healthier in the long term (Reid and Schipper, 2014, p. 7). Additionally, federal agencies are increasingly adopting participatory approaches—for example, the U.S. Army Corps of Engineers

Collaboration and Public Participation Center of Expertise (CPCX), and the Building Resilient Infrastructure and Communities (BRIC) program of the Federal Emergency Management Agency (FEMA), which supports communities through capability and capacity building and provides technical assistance during the application process.¹

UTILIZING PARP IN PROGRAM FUNDING, DESIGN, AND IMPLEMENTATION

As is clear from the myriad uses of participatory processes, no one definition or set of rules exist. However, some commonalities and core principles can be distilled from the aforementioned scholarship that can help guide scholars, practitioners, and funders to keep community at the forefront (Isle de Jean Charles Biloxi-Chitimacha-Choctaw Tribe, 2019) when developing and executing community-based projects and programs. In this section, we rely on work by Grant and colleagues (2008) and Van Zandt and colleagues (2020) to suggest how PARP can be enacted throughout the course of a research or community-development project. The summary below is followed by a visual reference (Table 2-1) that captures the core components of this framework.

During the earliest phase of a project, the design phase, project staff and participants can focus on cocreation and codesign so that projects are not being imposed in a top-down, or outside-in, manner, and instead represent the community's needs as identified by the community itself. A particular role for funders and proposal reviewers is to look for clear evidence that community interests are being centered in the project design, such as a record of ongoing relationships between any outside researchers and community representatives and/or a track record of community-centered work in other locations. A project proposal that centers community interests and priorities will exhibit a clear representation of community perspectives. The proposal will be flexible so that, if community contexts shift (i.e., community participants need to adjust roles or immediate issues require community members' time and energy), project coordinators can respond and adapt.

Throughout a project, the principles of PARP play out through finding community-focused solutions to community concerns. An important part of keeping the focus on effective solutions is using an iterative process of action and reflection in which, before they take action, project team members and community members propose and plan actions based on a combination of research and experience; they then observe and reflect upon the results in order to improve subsequent actions and achieve the desired solutions. This process is often called the *action research cycle* (Reason and Bradbury, 2008) and is mirrored by the adaptive management process in natural resource management (Lee, 1993). The key to successful action research is to demonstrate respect for community knowledge and expertise and to incorporate that expertise into the action–reflection cycle. For projects involving both community members and outside

¹ For information on CPCX, see <https://www.iwr.usace.army.mil/About/Technical-Centers/CPCX-Collaboration-Public-Participation/> (accessed August 29, 2022); for more information on BRIC, see <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities> (accessed February 15, 2023).

technical experts or other entities, it is important that the outside entities strive to provide and present technical information in ways that are accessible and useful to the community participants so that all participants are fully engaged in the research, action, and reflection processes.

PARP prioritizes the long-term sustainability of programs and solutions, as successful programs should outlast specific projects. There are two ways to support the long-term sustainability of community-based programs: (1) build community capacity to manage program activities, incorporating capacity building from the outset; and (2) build the community's capacity to identify and access resources that are available to sustain program funding after the initial project ends. This entails actively guiding the community through the identification and access of resources—and building the capacity of community members to do this on their own.

The research team or other outside technical experts can build trust and enhance their own effectiveness by engaging with community members proactively to understand and learn from their lived experiences, narratives, stories, or other information. One increasingly common way to demonstrate respect for local knowledge is to include local experts as authors on reports or academic publications resulting from a project. While this approach can help move community knowledge into scientific discussions, researchers should guard against overburdening community partners with expectations for additional work or presume that the benefits of a scientific publication are the same for community members as for professional researchers (i.e., professional credit).

For all communities, but particularly when working with Indigenous communities, outside technical experts must handle all forms of community knowledge and data ethically, and adhere to any local data management and sharing requirements. If local data management and sharing agreements do not exist, outside partners should adhere to the CARE principles for Indigenous data governance: Collective benefit, Authority to control, Responsibility, and Ethics (Carroll et al., 2020).² Overall, data management plans should explicitly address how local knowledge will be protected and how newly derived datasets will be shared with, and explained to, the community.

The adoption of a PARP approach implies that attention is being paid to the equitable sharing of resources and benefits during each phase of a project: proposal and design, process and execution, outcomes, and sustainability. Funders and reviewers can pay particular attention to this principle during the proposal phase of the project by looking for evidence of direct benefits to communities, such as through stipends for participation in activities or knowledge-sharing and travel, among other commitments, and by ensuring that outside researchers or technical experts are not the only recipients of project funds. Utilizing a PARP approach ensures that project outcomes are designed to benefit the community and address their needs; and project activities are designed to provide community benefits, such as through cultural activities or other

² The CARE principles are “a guide for data producers, stewards, and publishers to affirm Indigenous rights to self-determination through CARE Full data practices that will ultimately address complex issues related to privacy, future use, and collective interests, and increase the value of data for reuse” (Carroll et al., 2020, p. 8).

opportunities for direct community engagement. Project staff can identify ways to amplify community stories through media or other venues in ways that support community goals and growth. Outside experts can identify ways to use their expertise to support community goals beyond direct project activities, such as by offering technical expertise for community grant writing and providing additional technical expertise to further other community activities—for example, by contributing curriculum for education programs, designing a website for a community group, or providing additional research to shed light on community questions or history (Lomawaima, 2000).

Finally, PARP principles include considering the sustainability of projects and relationships *after* the formal funding cycle ends. Sustainability in a PARP approach implies the incorporation of capacity-building opportunities for community members so that project and postproject activities or programs can be managed by community members (with compensation, as appropriate). To achieve this, projects would include a postproject action plan that identifies specific tasks and next steps, responsible parties, time frames, and potential funding to utilize during and after the conclusion of the project funds. Funders and reviewers can look for evidence of sustainable networks and relationships that may be available for furthering the work once project funds are depleted. A particular role for funders in PARP efforts is to provide mechanisms for project extensions and renewals to ensure successful activities can continue. Table 2-1 summarizes key aspects of the PARP approach.

TABLE 2-1 Utilizing a Participatory Action Research and Practice (PARP) Approach

<i>Project Phase</i> →	Proposal & Design	Process & Execution	Outcomes	Sustainability
<i>Partnership Objective</i> ↓				
Center community needs	Codesign projects with community.	Create a flexible project management structure that can adapt to the community context and unforeseen changes.	Ensure outputs directly address community priorities, questions, and concerns.	Amplify community stories and knowledge during and after the project ends.
Focus on solutions	Clearly define community priorities and potential tangible solutions and ensure these remain the focus	Make technological information accessible, which includes translating and teaching unfamiliar terminology and	Ensure access to equitable procedures for decision making; ensure the equitable distribution of	Identify additional resources so that successful activities can be maintained in the long term.

	of the work.	concepts.	benefits.	
Respect community knowledge	Consider community knowledge as a valid form of expertise, alongside the expertise of outside entities, and actively incorporate community knowledge into project work.	Ensure the ethical treatment of community data through CARE principles (Collective benefit, Authority to control, Responsibility, and Ethics) and other ethical forms of data management.	Incorporate (and credit) community partners and knowledge in project outputs, including publications.	Continue ethical community engagement in future projects.
Plan for the long term	Establish relationships before project design and proposal.	Build community capacity for managing activities at the outset and in the long term, including utilizing outside expertise to support the community beyond the project.	Provide mechanisms for extension and renewal to ensure the steady flow of benefits to the community.	Build in a postproject action plan to facilitate continued work and engagement.

SOURCE: Generated by the study committee, based on Carroll et al., 2020; Grant et al., 2008, and Van Zandt et al., 2020.

3

Evidence, Insights, and Lessons Learned from Relevant Efforts

This chapter addresses the first task of the study charge: “Examine past and current community engagement efforts, particularly those that have included communities in the Gulf region and Alaska, for the purpose of identifying guiding principles and lessons learned” (see Box 1-2). This chapter addresses this task by (1) describing the methodology that the committee used to examine relevant efforts; (2) identifying cross-cutting and relevant guiding principles and lessons learned from those efforts; and (3) detailing specific programs and describing how they relate to potential EnCoRe partnerships. The best practices and guiding principles identified in this chapter, such as those in Box 3-1, are indicative of what the committee learned from these programs and are not the committee’s own. In Chapter 4, however, the committee shares its core recommendations for the EnCoRe initiative, which are informed by the programs described below.

METHODOLOGY OF EXAMINING RELEVANT EFFORTS

During six virtual, public data-gathering sessions, the committee met with representatives and practitioners from institutions and organizations that were funding and/or conducting community-engaged resilience and public health work and supporting community capacity building. These sessions also included panels of community members that participated in these partnerships and projects. During these sessions, panelists representing both perspectives (institution or organization and community perspectives) were given similar discussion prompts and questions. Committee members moderated the panel and an open discussion followed (see Appendix B for the session agendas; see Appendix C for a complete list of the programs reviewed and considered for virtual engagement). Additionally, closed sessions were convened for the committee to examine other efforts and for committee members to share their own experiences in leading participatory action research and practice (PARP) and community resilience work in the U.S. Gulf of Mexico region and Alaska.

In selecting which efforts to address, the committee considered the following components:

- Jurisdictional scale (e.g., county or parish, region, state, national, international)
- Type of program (e.g., philanthropic, government, academic)
- Goal (e.g., resilience, public health, capacity building, environmental justice)
- Type of partnership (e.g., multisectoral, research-based, academic, community-based)

Although the Enhancing Community Resilience (EnCoRe) initiative intends to undertake direct and long-term community engagement with communities in the Gulf region and Alaska, the committee felt that it was critical to examine a diversity of resilience-building and public health efforts during the course of the study, in terms of these four components.

In addition to ensuring that it heard from diverse programs and efforts, the committee had to do its information gathering with limited time and resources. The choices of programs and communities explored reflect the committee's priorities. Arranging the virtual data gathering sessions also depended on the availability of community and organizational representatives. Therefore, it was not possible to examine all relevant efforts during the course of the study.

Also, this effort to examine relevant programs and extract lessons learned is not intended to serve as an evaluation of the programs or communities examined. The committee believes that the long-term impacts of most, but not all, of these programs have yet to be determined because many of the programs are ongoing and/or have not yet been evaluated longitudinally. Thus, the identified "lessons learned" are limited in this regard.

In order to identify "guiding principles and lessons learned from past and ongoing efforts" in a way that could inform guidance for the EnCoRe initiative, the conversations during the virtual sessions focused on the following themes and questions (see Appendix B for the session agendas and Appendix C for the list of participants):

- *Equity*: How do you form and maintain productive and equitable partnerships?
- *Partnership initiation criteria and guiding principles*:
 - For funding organizations: What criteria and/or guiding principles were used to select communities for your partnerships?
 - For communities: What was your experience with the partnership initiation process, such as the application process or request for support from external organizations, and/or funder requirements to provide project evaluations or metrics during or after project implementation? From your perspective, how could these processes be improved?
- *Sustainability and community buy-in*: How do you ensure the sustainability of the initial effort and the sustained engagement of community members during and after the initial project funding period?
- *Metrics and evaluation*: What are the metrics for evaluating the success of resilience, public health, and/or capacity-building partnerships?

- *Challenges and barriers and the potential of EnCoRe*: What are the challenges and barriers to forming equitable and sustainable partnerships? How can a program like EnCoRe best intervene or align with and enhance existing efforts?

The following sections explore each of these themes in diverse formats to illuminate their interrelations and relevance to various contexts and types of partnerships. For example, many session participants expressed how equitable processes of decision making (i.e., procedural equity) lead to community buy-in and long-term sustainability of the initial effort. Likewise, the potential sustainability of a partnership is itself a criterion that many programs look for when selecting partners. A persistent best practice across resilience-building efforts was the identification of a “community champion” (see Box-3-2). The data gathered during these sessions informed the committee’s core recommendations in Chapter 4.

SUMMARY OF LESSONS LEARNED AND GUIDING PRINCIPLES FROM PREVIOUS AND ONGOING EFFORTS

Equitable Partnerships

As discussed in Chapter 2, a core principle of PARP is the equitable involvement of the people most affected by the problem or issue of concern, and the equitable distribution of resources that the partnership or project provides, including access to decision making (Van Zandt et al., 2020). During a panel discussion about the Consortium for Resilient Gulf Communities (CRGC) initiative, the committee learned about the multiple dimensions that form the content of equity. *Distributive equity*, which addresses the distribution of risks, benefits, costs, and resources within a community or among different groups and communities, is principal but is often the only aspect of equity that is considered.⁴ Equally critical to distributive equity, *procedural equity* refers to equitable decision-making processes, including the equitable integration and inclusion of members of different groups in decision-making. Distributive and procedural equity are linked by a third form, *contextual equity*, which takes into account the historical forces that may have created an unequal playing field for participants in different programs or initiatives and the preexisting conditions that limit or facilitate people’s access to decision-making procedures and resources and, therefore, to the benefits of projects and partnerships (see McDermott et al., 2013).

Across the efforts examined that have sought to strengthen community resilience, several approaches have been employed to ensure equitable partnerships. Approaches to achieving distributional equity have included distributing budgets between community members and scientists or researchers involved in the project, crediting the cocreation of products to the community members involved, and recognizing and contributing to the mutual nonfinancial benefits and rewards of the partnership. Procedural equity has been achieved by establishing

⁴ See comments by Melissa Finucane, CRGC, in the panel presentation to the committee on January 28, 2022.

meaningful engagement strategies and decision-making processes. Equity goals for projects can be established in collaboration with community partners. Additionally, in some cases the collaborative development of an action-logic model has helped to identify the resources available for a project and map how the outputs and products of the partnership will advance the equity goals that were established in collaboration with community partners. Ensuring distributive and procedural equity allows partnerships to address systemic factors of contextual inequity, such as structural racism. Expanding and improving partnerships in equitable ways is a sustained social process that can take multiple years (3–5 years or more), which the EnCoRe program is well positioned to support. A flexible governance structure can facilitate sustained, effective partnerships by allowing new needs that may not have been identified as part of the original intent or proposal to be addressed and incorporated as the partnership develops.

During a panel discussion with the U.S. Environmental Protection Agency's (EPA's) Environmental Justice Division, EPA staff explained how they center equity into their partnerships in three key ways: (1) through *representation*, which entails community involvement in the partnership-initiation process and access to decision making; (2) through ensuring the *processes* for engagement and decision-making remain fair, transparent, and accessible; and (3) through the equitable *distribution* of the benefits and impacts of the partnership. Additionally, equity is achieved by extending beyond outreach and engagement and including capacity-building efforts in traditionally underserved and overburdened communities through grants, cooperative agreements, and technical assistance. An important lesson learned from EPA efforts is that equity also matters when considering the *unintended impacts* of projects, such as how community revitalization efforts could result in relocation and community gentrification. Considering and evaluating the potential unintended impacts of a project or partnership is a best practice for ensuring that a project has equitable outcomes.

The need for effective communication emerged from examining resilience efforts as another central theme. Every program stressed how clear communication facilitates equity. For example, using a common and shared language and having open dialogue allow people to contribute and feel confident and safe in relaying how their needs and challenges can be addressed by the partnership. In order to develop cross-cultural understanding, dialogues, community meetings, and focus groups, are generally convened in established venues familiar to community members. Likewise, inviting community members to a research station or other scientific arena is a pathway to build stronger relationships and allow community members to become familiar with the research culture of the partnership.

During data-gathering sessions with communities and institutions in Alaska, the committee heard how academic terminology and the language of community development (e.g., *resilience*) may not translate into Indigenous language categories. However, Indigenous communities are eager to learn new terminology, and use of Western categories is generally not considered to be problematic. At the same time, Melinda Chase, a tribal liaison at the Alaska Climate Adaptation Science Center, described how equity is about trying to understand the world from the perspective and the value system of the participating community. Community members

stressed the importance of standardizing terminology over the long term. A shared understanding creates the type of cross-cultural communication necessary to develop and sustain relationships and foster contextual equity by avoiding top-down imposition of processes in favor of a more horizontal codevelopment of the potential partnership. Enabling academic and research content to be accessible, for example, during the application process and during community meetings and the project itself, is a way to ensure procedural equity while working towards language justice. Similarly, it is important to make applications and other materials available in local languages, including Indigenous languages, particularly for Alaska, and in languages such as Spanish, Vietnamese, and Cambodian for the Gulf region.

Community members in the Gulf region and Alaska also emphasized the importance of communication and cross-cultural understanding. They described how both funding organizations and research professionals involved in a community partnership operate on different time scales than most communities. Technical capacity, transportation challenges, and the ongoing impacts of disasters contribute to these differences. It is important for funders and researchers to understand local conditions and local ways of communication during the partnership development process.

In summary, developing equitable partnerships involves the meaningful and active participation of the people impacted by the potential solutions of the proposed research projects, and reflects the needs and priorities of the impacted communities from the start. Project benefits, including funding, should be distributed equitably, especially if the project entails a research component. Procedural equity can be achieved by the development of accessible communication and decision-making pathways between funders, researchers, and communities.

Partnership Initiation Criteria

Through the data-gathering sessions, the committee learned of several guiding principles and criteria for the partnership initiation and selection process, which are listed in Box 3-1.

Box 3-1 Summary of Guiding Principles and Best Practices for Partnership Initiation Criteria

Involving community champions: Several initiatives stressed the importance of a *champion*—an individual and/or an organization that is locally trusted and invested in the long-term success of the partnership (see Box 3-2).

Delineated resilience goals: Rather than asking communities to simply “be resilient,” the programs we examined were successful because they engaged communities exhibiting a clear need for enhanced resilience, public health, or capacity building. Partnerships should be initiated with a delineation of goals for locally prioritized resilience needs and a plan for how support will be used to address the identified needs. Given the evolving definition of community resilience, the existence of resilience fatigue, and the diverse array of existing measurement tools, a clear but expansive definition of resilience should be considered and delineated for

communities to respond to, work with, and measure.

Commitment to evaluation: Successful and sustainable projects have an evaluation strategy that includes formative and summative assessments across time; the sponsor provides funds for the partner to document the project and determine whether equitable outcomes were achieved. The extent of this evaluation requirement should account for the technical capacity and seek to build that capacity. Some programs engaged in cross-region, cross-site, and/or cross-program evaluation strategies; these programs developed and worked toward enterprise-level and sustainable outcomes.

Cultural and language competence: People who review applications should have the relevant cultural and language competence for the applicant pool, particularly when reviewing applications from communities whose first language is not English and from Indigenous communities. The programs in Alaska that the committee heard from particularly stressed the need for cultural and language competence at the reviewer and program coordination levels. In the Gulf region, community leaders from Black, Hispanic, Vietnamese, and Cambodian communities facilitate in this capacity.

Integration of nonformalized communities and other entities: The U.S. Environmental Protection Agency (EPA) stressed that priority should be given to communities or organizations to partner with nonformalized entities (i.e., entities that do not have a 501(c)(3) tax-exempt status), because nonformalized entities are typically excluded from applying for support. As a federal agency, EPA cannot officially sponsor nonformalized entities, but they can support entities that partner with and support nonformalized entities. As part of a private, nonprofit organization (the National Academies of Sciences, Engineering, and Medicine), the Enhancing Community Resilience (EnCoRe) initiative is uniquely positioned to support nonformalized entities. For example, EnCoRe could provide start-up support for a new community organization that includes training on how to manage resources, or work with individuals through consulting contracts.

Potential for sustainability and expansion: Almost every program considered communities that were well positioned to cultivate relationships across their jurisdictional boundaries because this potential proved effective for the long-term sustainability of the initial effort while also expanding the impact of the effort to other communities.

Reflective of the needs and priorities of the impacted community: Every program the committee examined stressed that the proposal should reflect community priorities, particularly if the applicant is an external entity applying to do research or conduct a study in a community or about a community.

Understanding of the capacity of the applicant: Before selecting a community for participation, it is important to gauge its potential to complete the work in order to offer the relevant amount and type of support, as well as how to determine to which entity the flow of resources for the project should be directed.

Variety of application methods: A guiding principle to ensure inclusivity and a diversity of partners is to allow nontraditional proposal submission methods, such as videos or oral proposals. This strategy will help funders reach underserved communities, and Indigenous communities in particular. The programs in Alaska suggested video submissions.

Sustainability and Community Buy-in

The long-term sustainability of resilience-building efforts and sustained community buy-in during and after partnership initiation were key concerns for the stakeholders that the committee engaged. A cross-cutting guiding principle for ensuring sustainability is to focus on building partnerships and networks among public, private, nongovernmental organizations, and academic sectors within and across communities and jurisdictions (e.g., county or parish, state, federal). This cross-sectoral and cross-jurisdictional strategy was pioneered by the Federal Emergency Management Agency's Project Impact, a national initiative (1997–2001) that sought to prepare communities for disasters through a whole-community approach. Project Impact fostered community partnerships across sectors and jurisdictions, identified hazards and community-scale vulnerability, prioritized hazard-risk reduction actions, and communicated the success of Project Impact projects and the processes through which this success was enabled (FEMA, 1997). Maria Vorel, the national director of Project Impact, expressed the importance of strong peer mentoring during multisector collaboration, such as linking communities and their issues with relevant problem solvers in a broad and cross-sectoral network. Providing communities access to each other through networking opportunities fostered buy-in at a national level and increased the visibility and awareness of the efforts. The Project Impact strategy tapped into and utilized the strength of community culture, such as creating relevant summer hazard-mitigation jobs for college students and creating opportunities for private mentoring. Ann Patton, a local lead for a Project Impact initiative in Tulsa, Oklahoma, noted how the creation of a nonprofit arm (i.e., a formal 501(c)(3) organization) that could receive donations and be protected from political changes at the federal and local levels was effective in ensuring the longevity of resilience-building efforts.

BOX 3-2

Community Champions

Identifying a “community champion” was central to the success of the resilience-building efforts for the programs with which the committee engaged during public session panels; some panelists representing these efforts were community champions themselves (e.g., Gulf States Health Policy Center in Bayou La Batre, Alabama; Native Movement in Fairbanks and Anchorage, Alaska; Plaquemine Community CARE Center in Belle Chase, Louisiana; Seldovia Village Tribe in the Cook Inlet, Alaska). Funding organizations realized greater success for the projects they funded if there was a local community member to assume leadership of the partnership. For partnerships that involve an external research team and a local community, a champion should be identified for both sides (i.e., a research champion and a community champion), and the funding organization should facilitate interaction between them so they can learn from each other. Community champions can then communicate partnership progress and project understanding to the broader audiences on both sides of the partnership.

A community champion is one of many potential indicators of a partnership-ready community. However, an underserved community might have existing community leaders that are too overworked to take on new projects and assume the champion role. Underserved communities might also lack the funding and mentorship to cultivate a community champion at the time a partnership is initiated. In these cases, the partnership process might include support for capacity building to identify, recruit, and train community champions at the organizational or individual levels.

In communities where an organization or an individual has the capacity and necessary resources to assume the champion role, partnership development and implementation proceeds more smoothly and effectively. The Texas Target Communities (TxTC) program at Texas A&M University and the Louisiana's Strategic Adaptations for Future Environments (LA SAFE) program from Louisiana's Office of Community Development are examples of successful efforts that invested in capacity building to support an existing or new community champion.

In TxTC's approach, if a community did not have the clear community leadership indicators to engage with the program, TxTC connected community residents with the Texas Rural Leadership Program^a to develop capacity and leadership skills. Similarly, the LA SAFE program enlisted the support of the nonprofit organization, Foundation For Louisiana, and leveraged their Lead the Coast (LEAD) program. The LEAD program provided a baseline education on Louisiana's coastal crisis by offering training that related to the trainees' personal experiences as community residents with coastal hazard mitigation and resilience issues in Louisiana. The LEAD program was developed so that graduates would be well-positioned as champions to pass along their knowledge through their own community networks. LA SAFE enlisted LEAD graduates to serve as table hosts and facilitators in LA SAFE's engagement events.

^a <https://trlp.tamu.edu/>.

PROGRAM DETAILS

This section describes several of the programs the committee examined, along with important lessons learned about criteria and approaches that contribute to strengthening resilience equitably and building sustainable capacity.

Louisiana's Strategic Adaptations for Future Environments: A Multijurisdictional Partnership

Louisiana's Strategic Adaptations for Future Environments (LA SAFE)¹ provides insights on a multijurisdictional approach to strengthening equitable community resilience. LA SAFE, a joint initiative of the State of Louisiana and the Foundation for Louisiana, provides a holistic and regional approach to addressing climate-induced risks in coastal Louisiana. LA SAFE originated with the state government, engaged at the community level, and partnered with six parishes. This process was designed to include both local residents and multijurisdictional scales of government (local, state, federal). The LA SAFE program resulted in a regional climate adaptation strategy and six parish-level climate adaptation plans. Box 3-3 highlights best practices from the LA SAFE program.

BOX 3-3

Best Practices from Louisiana's Strategic Adaptations for Future Environments Initiative for Developing Multijurisdictional Partnerships

- **Develop a holistic and accessible approach to risk communication and feedback.** Louisiana's Strategic Adaptations for Future Environments (LA SAFE) used visual representations of past, current, and future risks during community engagement, and provided opportunities for communities to use visual aids to ground truth what they had seen and experienced in their own lives.
- **Clearly communicate to the public the need and opportunity to augment preacquired data and science with locally sourced experiential knowledge.** LA SAFE intentionally communicated the inherent limitations of their data and science for helping communities and parishes develop a common understanding of future risk and probable future outcomes. Developing consistent terminology and taking time to teach this terminology across communities, sectors, and jurisdictions ensures that those most impacted can communicate effectively with one another and therefore share knowledge and collaborate on local and regional resilience efforts.
- **Establish structured processes across jurisdictions and networks.** LA SAFE structured its community meetings to create a welcoming and hospitable environment to facilitate the exchange of data, science, and experiential knowledge. For example, LA SAFE provided meals and childcare at its meetings, as well as transportation options, for those who otherwise would not have been able to attend and participate. In this way, LA SAFE sought to eliminate common barriers preventing

¹ This effort was funded by National Disaster Resilience Program of the U.S. Department of Housing and Urban Development, with support from philanthropic organizations that include the blue moon fund, the Rockefeller Foundation, the Surdna Foundation, and the Ford Foundation. The effort included \$47.5 million in project funds and more than 70 engagement activities. For more information, visit <https://lasafe.la.gov>.

authentic community engagement, allowing for robust community-driven input to shape planning and project outcomes.

- **Collaborate with existing local organizations and provide training opportunities.** Partnering with established local community groups and state-level nonprofit organizations helped LA SAFE gain the credibility, trust, and relationships necessary to meaningfully include the voices, vision, and knowledge of local stakeholders across sectors. LA SAFE achieved trust and credibility through its partnership with the Foundation for Louisiana and the Foundation-administered Lead the Coast public awareness and leadership development program.^a
- **Design project meetings across different scales.** External entities across jurisdictions can offer scientific and planning expertise and community members can provide regional and community-scale experiential knowledge. LA SAFE held 71 community meetings with 2,835 individual participants, working across scales by including parish and state agencies and cross-sector stakeholder groups, such as businesses, nonprofits, community-based organizations, faith-based groups, and university researchers. Additionally, the various meetings were structured to encourage and facilitate multiscale thinking, alternating between meetings designed to create a future vision for the region and individual parishes, and community-centric meetings designed to envision future outcomes for individual localities.

^a More information about the LEAD the Coast Program is available at <https://www.foundationforlouisiana.org/lead-the-coast/> (accessed May 25, 2022).

Texas Target Communities: An Academic and Community-Based Partnership

The Texas Target Communities (TxTC) program is a service-learning program for students at Texas A&M University at College Station, and a community engagement initiative, with the stated mission “to facilitate the transformation of communities from high-risk/low-opportunity to equitable, resilient, and adaptive by mitigating threats to the economy, environment, and culture.”⁴ As an academic and community-based partnership program, TxTC seeks to increase the likelihood of community buy-in by providing technical knowledge to the community from a trusted local institution and by building on preexisting relationships and social capital to create and strengthen equitable community resilience.

TxTC employs an inclusive and equitable plan-making process to ensure the project is not developed exclusively by the university and includes active public participation from the affected community to achieve community ownership and investment. Projects range from small efforts of 1 year to more extensive facilitation and engagement efforts that occur over multiple years. See Box 3-4 for best practices gleaned from TxTC.

⁴ TxTC is an initiative of the College of Architecture, the Department of Landscape Architecture and Urban Planning, and the Office of the President at Texas A&M University. For information, see <https://www.arch.tamu.edu/impact/centers-institutes-outreach/txtc/> (accessed May 24, 2022).

BOX 3-4**Best Practices from the Texas Target Communities Program for Developing and Sustaining Academic and Community-based Partnerships****Cocreation:**

- Identify and enlist a core team of community members and members of the academic team who are thoroughly committed to the project and expected to assume the role of champions for the proposed effort (see Box 3-2).
- Gain a thorough understanding of local needs and priorities by forming a demographically and sectorally diverse task force of additional trusted community members.

Equitable Partnership:

- Keeping in mind that community members experience higher barriers to engagement compared with funders and academic institutions, lower the barriers to local participation by increasing the accessibility of project meetings by providing a locally accessible meeting location, a convenient time of day and day of the week, language access during meetings (i.e., non-English options, such as live translation services), childcare, and other resources such as food and transportation.
- Fund community and academic champions (see Box 3-2), such as community-based organizations, to manage and coordinate project logistics, including compensating community residents for time spent on the project.
- Require cultural competency training for the academic team, including students involved in the service-learning components of the partnership.
- Facilitate project activities efficiently by preparing in advance and keeping to the scheduled meeting time.
- Engage community members who are diverse in race, age, gender, ethnicity, duration and tenure in the community, and political affiliation.
- Set aside time and funds to celebrate the partnership actively and collaboratively.

The Gulf Region Health Outreach Program: An Evaluation Enterprise

The Gulf Region Health Outreach Program (GRHOP) highlights the benefits of adopting a flexible, long-term funding structure that can be applied to a select number of concentrated regional projects with a shared mission of enhancing human and environmental health and resilience. The GRHOP was developed jointly by British Petroleum and the Plaintiffs' Steering Committee as part of the Deepwater Horizon Medical Benefits Class Action Settlement. All target beneficiaries of the GRHOP were residents of one of the 17 designated coastal counties

and parishes in Alabama, Florida, Louisiana, and Mississippi, and many were uninsured or were from medically underserved communities.⁵

The GRHOP utilized diverse strategies for strengthening local and regional health care, promoting community resilience, and facilitating transparent health information and greater access in underserved areas. One strategy that the GRHOP utilized was supporting community involvement across its portfolio of integrated efforts. Led by the Alliance Institute, this effort worked in conjunction with all other GRHOP-funded projects and provided a shared community involvement platform to learn from all partnership activities and to disseminate best practices, outputs and outcomes, and lessons learned.

GRHOP also participated in a regional public health collaborative, which was initiated and sustained by the Louisiana Public Health Institute to promote synergy among community public health practitioners, local Federally Qualified Health Centers, and local and national academic and practitioner partners. This collaborative provided high-level trainings and opportunities to participate in workshops on topics of shared interest, while increasing cross-agency and cross-stakeholder awareness of lessons learned, challenges, and knowledge of other initiatives. GRHOP projects were positioned in universities within the identified footprint (University of West Florida, University of South Alabama, University of Southern Mississippi, Tulane University, Louisiana State University Health Sciences Center) to leverage and reinforce ongoing partnerships in local communities and to facilitate and build new partnerships. The project directors engaged, represented, and partnered with community stakeholders to ensure that funding was allocated equitably and aligned with emerging and aspirational community resilience missions and goals, as well as the existing efforts of health-centered organizations and community health champions (Lichtveld et al., 2017; Sherman et al., 2019a).⁶ The GRHOP was designed to be embedded in, and a complement to, existing efforts undertaken by local, state, and regional public health entities.

Project leaders and other appointed stewards of the GRHOP effort comprised a Coordinating Committee (GRHOP CC), which met quarterly, using a voting procedure to manage emerging controversies and cross-project concerns. These GRHOP CC meetings also promoted synergy, communication, and sustainability of efforts occurring within and across projects. Early work involved adopting shared definitions for key terms, generating and sharing project-specific and GRHOP-enterprise-level logic models, and initiating an enterprise evaluation strategy (Sherman et al., 2019b). Ongoing, objective-specific evaluations were also

⁵ The 17 named coastal counties and parishes: Alabama (Mobile, Baldwin), Florida (Escambia, Santa Rosa, Walton, Okaloosa, Bay), Louisiana (Orleans, Jefferson, St. Bernard, Plaquemines, Lafourche, Terrebonne, Cameron), and Mississippi (Hancock, Harrison, Jackson).

⁶ The GRHOP consisted of four integrated projects with the following objectives: build the capacity of primary care community health clinics in the region; increase the mental and behavioral health expertise of health professionals in the targeted communities and increase awareness by local communities of mental and behavioral health issues; increase the environmental health expertise of health professionals in the targeted communities and the health literacy of local communities; and train community health workers who will help residents navigate the healthcare system and access needed care.

conducted collaboratively (Langhinrichsen-Rohling et al., 2017). See Box 3-5 for best practices gleaned from GRHOP.

BOX 3-5

Gulf Region Health Outreach Program: Best Practices and Guiding Principles for Holistically Evaluating and Measuring Community Resilience

- Direct attention to the internal structure of the funded portfolio. Projects across partnerships are most effective by utilizing a shared vocabulary related to resilience, shared regional or enterprise goals, and a shared decision-making and conflict resolution strategy.
- Commit to evaluating the collective impact of the investment as a precondition to the partnership. Commitment principles can be articulated during partnership development and can include commitments to
 - communities (stewardship, inclusion, transparency, respect, responsiveness);
 - creating a lasting community benefit (strategic, leveraging, sustainable, system level); and/or
 - collaborative (mission-centered, cross-sector) and community-driven leadership.
- Evaluate and address the mental and physical health capacity and well-being of the participating community. Engage and elevate community health champions in all phases of project development and implementation.
- Prioritize the development of a regional community resilience collaborative to build relationships and share expertise and lessons learned among community partners and stakeholders.
- Focus on metrics that assess the sustainability of individual- and enterprise-level efforts from the outset.
- Formulate and prioritize a pathway for internal decision-making and conflict-management processes across regional projects, create an active advisory board for overseeing regional projects, and set aside funds for a consultant dedicated to the success of the overall enterprise.
- Fund a shared baseline assessment of all included communities in relation to all proposed partnership objectives.

100 Resilient Cities and the Resilient Cities Catalyst: From a Global Resilience Effort to City and Community Partnerships

100 Resilient Cities (100RC) was a \$165 million global effort pioneered by The Rockefeller Foundation in 2013, as part of its Global Centennial Initiative, to build urban

resilience worldwide. An overall intention of 100RC, as principal Michael Berkowitz said to the committee, was to “spark a revolution in the way that cities plan and act through better integration across sectors and silos and through more inclusive, risk-aware and forward looking ways.”⁷ Ultimately, an urban resilience movement would be catalyzed by cities around the world achieving better management of chronic stressors and acute shocks, so that residents, especially vulnerable groups, would be safer and have increased livelihood options. Resilience would be built and enhanced by four main pathways:

1. financial and logistical guidance for establishing the position of chief resilience officer to lead the city’s resilience efforts;
2. expert and technical support to develop a city-wide resilience strategy;
3. access to service providers, and partners from the private, public, and nongovernmental organization sectors who assisted in the development and implementation of the city’s resilience strategies; and
4. membership in a global network of member cities to facilitate city to city learning and support.

The 100RC Selection Process

100RC had a mix of selection criteria that blended quantitative aspects, such as municipal capacity, with qualitative aspects, or what Mr. Berkowitz called, “whites of the eyes meetings,” with mayors and other city leaders to gauge interest, investment, and motivation. Cities submitted applications, and 100RC had technical reviewers use quantitative scorecards to identify about double the number of cities in each of the three rounds of selection that would be eventually selected for the partnership (2013, 2014, 2015). In other words, after the quantitative selection to meet the technical aspects, approximately 60 cities were left and only about 33 would be selected for funding and membership. These 33 were selected after 100RC in-person meetings to determine their fit as a partner and for the network, and to discern their motivations. Applicants also needed to include a sustainability plan that explained how the city would continue its work after the agreed upon amount of funding was spent (e.g., a line item in the city budget for a chief resilience officer; a plan to institutionalize the resilience strategy process rather than just a plan for this one grant). Applicants were also asked to list their community partners (e.g., community-based organizations, nongovernmental organizations, nonprofits) to guarantee a diverse level of collaboration and support across sectors. Finally, 100RC also considered the national and political context to ensure that cities in the same country would have some level of support from each other and have networking opportunities, although some countries only included one 100RC city (e.g., Egypt, Ethiopia, Senegal). Considering this selection process, Mr. Berkowitz suggested that the EnCoRe program be very intentional in its last round of selection to ensure that the community or city is a good fit for the overall portfolio.

⁷ Comments by Michael Berkowitz, 100RC, in a presentation to the committee on January 11, 2022.

Despite the success of 100RC, Mr. Berkowitz acknowledged that the program had to part ways with several cities of the final 100. The principal reasons for ending the partnership were divergent visions of urban resilience; different motivations for becoming partners; and in some cases, mayoral transitions that introduced different priorities. In all of these, Mr. Berkowitz stressed the reciprocal nature of partnerships and the ability for the funding organization to be agile and flexible at both the broader program level and with specific partners. See Box 3-6 for best practices gleaned from 100RC.

BOX 3-6
Best Practices and Lessons Learned from the 100RC

- Aim for diversity in geography, capacity, resources, and hazards across your portfolio of selection.
- Gather information on current projects and who the important government and private actors are in the city.
- Require that the proposal includes a sustainability plan.
- Ask a city to identify community partners in the application and during screening interviews.
- Consider selecting as many communities as is practical because some will likely drop out along the way and political transitions can interrupt projects and timelines.
- Encourage cities to start with smaller projects so they learn how to do inclusive planning and other necessary processes.
- Smaller projects demonstrate to the community that the organization or municipality has the ability to complete projects.
- Smaller commitments also build relationships and trust with the community and enable the organization to adjust their approach for future, larger projects.
- Create unique deadlines by using anniversaries and historical moments as deadlines. For example, the 10-year anniversary of Hurricane Katrina for the city of New Orleans was the deadline for the release of their resilience strategy, which became a celebratory event.
- Value outside and additional partners, but the partnership with the principal program (e.g., 100 RC, EnCoRe) is the most important.

The Resilient Cities Catalyst in Houston

The Resilient Cities Catalyst (RCC) is a legacy initiative of 100RC that partners with cities and communities with a principal focus on enhancing partnerships between community groups and local governments. The committee heard from Corinne LeTourneau, who was one of the founding principals of RCC and the former managing director for the North American region

of 100RC. One of the biggest challenges from Ms. LeTourneau’s experience with 100RC in North American cities both large and small was the inability for local governments to meaningfully engage with their community partners. The root of the problem was that most projects did not include a codesign process from the start, and engagement and community input started at the tail end of the process when the project was almost fully developed. The challenge was that if a project was only partially developed and its feasibility unknown, then it risked significant setbacks and potential failure. Additionally, procedural equity was difficult to institutionalize in large-scale climate and infrastructure resilience projects, which often required the collaboration of a multitude of city agencies during design and implementation. To address this challenge, the RCC focused on the neighborhood scale and used the concept of a resiliency district to test out solutions.

The presentation focused on the specific example of RCC’s partnership with Houston. Ms. LeTourneau was joined by Ms. Laura Patiño, City of Houston deputy chief resilience and sustainability officer, and Ms. Huey German-Wilson, program director from a community-based organization called the Northeast Houston Redevelopment Council (NHRC). In the specific example of Houston, JPMorgan Chase funded both RCC to implement a resilience district and NHRC for community development projects. The dual funding catalyzed a partnership between RCC and NHRC, whereby RCC brought capacity and technical expertise and NHRC brought local knowledge, trust, and vision to ensure that projects they partnered on would be successful and meaningful at the community scale. RCC and NHRC collaborated on a resilient neighborhoods pilot program in the Kashmere Gardens neighborhood. The pilot project created a community resilience and resource hub, known as a “Lily Pad,” as a way to do community outreach while centering the effort within the community (Figure 3-1). See Box 3-7 for best practices gleaned from the RCC and NHRC partnership.

Houston’s First Lily Pad | From Idea to Implementation

Lily Pads - known globally as neighborhood resilience hubs - are trusted community-serving facilities, led by community members, that are augmented to support residents by coordinating resources and services as they face everyday stressors and occasional shocks.



FIGURE 3-1 Houston’s first Lily Pad, created through a multiagency partnership with Regional Cities Catalyst (RCC) and the community-based organization the Northeast Houston Redevelopment Council.

BOX 3-7

Best Practices and Lessons Learned from the Partnership of the Resilient Cities Catalyst Program and the Northeast Houston Redevelopment Council

- An interest and willingness from the community and other partnering organizations to create a team—including a willingness to change their standard processes of planning, engagement, and implementation—is a good indicator of investment.
- A key initial condition to successful coalition building is identifying projects that utilize a cross-sectoral approach.
- Partnering a community group with a technical-capacity-building organization has wide ranging benefits, but the two groups need to see each other as equal partners.
- Ensuring all partnering agencies understand the same terminology (e.g., *resilience*, *capacity building*) will facilitate coordination and communication.

THE NATIONAL SCIENCE FOUNDATION’S NAVIGATING THE NEW ARCTIC

Program: Cultural Competency as a National Funding Organization

The National Science Foundation (NSF) established the Navigating the New Arctic (NNA) Initiative in 2017 to “empower new research partnerships from local to international scales, diversify the next generation of Arctic researchers, enhance efforts in formal and informal education, and integrate the co-production of knowledge where appropriate” (NNA, n.d., para. 1). In 2020, through a formal letter to NSF, numerous Indigenous Tribes and tribal organizations that represent a large portion of western Alaska and communities along the Bering Sea provided strong feedback that identified a disconnect between resource managers, policy makers, academics, agencies, and communities. The letter called for meaningful access to, and participation in, the research process to ensure that issues are addressed in locally relevant and respectful ways (see also Yua et al., 2022).⁸ The letter expressed grave concerns about the

⁸ See the “Navigating the New Arctic NSF Comment Letter,” available at <https://kawerak.org/natural-resources/social-science/>. The Tribes and tribal organization signatories of the letter include (1) Kawerak Incorporated: the Alaska Native nonprofit tribal consortium for the 20 federally recognized Tribes of the Bering Strait region; (2) the Association of Village Council Presidents: the regional nonprofit Tribal consortium for 56 Alaska Native villages in the Yukon-Kuskokwim Delta; (3) the Bering Sea Elders Group: an association of elder

impacts from the NNA process and funded projects. NSF's NNA program responded by creating the NNA Community Office (NNA, n.d.; see Figure 3-2), revising their Arctic Research Opportunities program solicitation,⁹ and strategizing other ways to improve the inclusion of local and Indigenous voices at every stage of the partnership process (NSF, 2021). Examining the correspondence between these two entities and the changes made to NSF's NNA program, as well as hearing firsthand from the director of the NNA Community Office, Matthew Drunkenmiller, during a public data-gathering session, provided valuable lessons learned and guiding principles for the committee to consider as it formulated its core recommendations for the EnCoRe initiative (see Chapter 4). NSF's decision to translate the feedback of local and Indigenous voices into tangible, structural change to their engagement approach provides an opportunity for EnCoRe to learn from NSF's evolution. The diagram in Figure 3-2 represents how the NNA Community Office is distributed across three main locations, with various affiliate centers and both nontribal and tribally controlled extension offices for research, education and outreach. The recommendations from arctic Tribes and tribal organizations to NSF focused on issues of food security and community infrastructure, changes in the process for request for proposals, increased input from Indigenous communities, and efforts to make broader impacts and to incorporate equitably a coproduction-of-knowledge approach.

representatives appointed by 38 Tribes in the Yukon-Kuskokwim and Bering Strait regions, and (4) the Aleut Community of St. Paul Island: a federally designated name used to identify the community of Unangan, also known as Aleuts, residing on St. Paul Island.

⁹ For more information, see NSF's "Arctic Research Opportunities" (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf21526 [accessed June 30, 2022]).

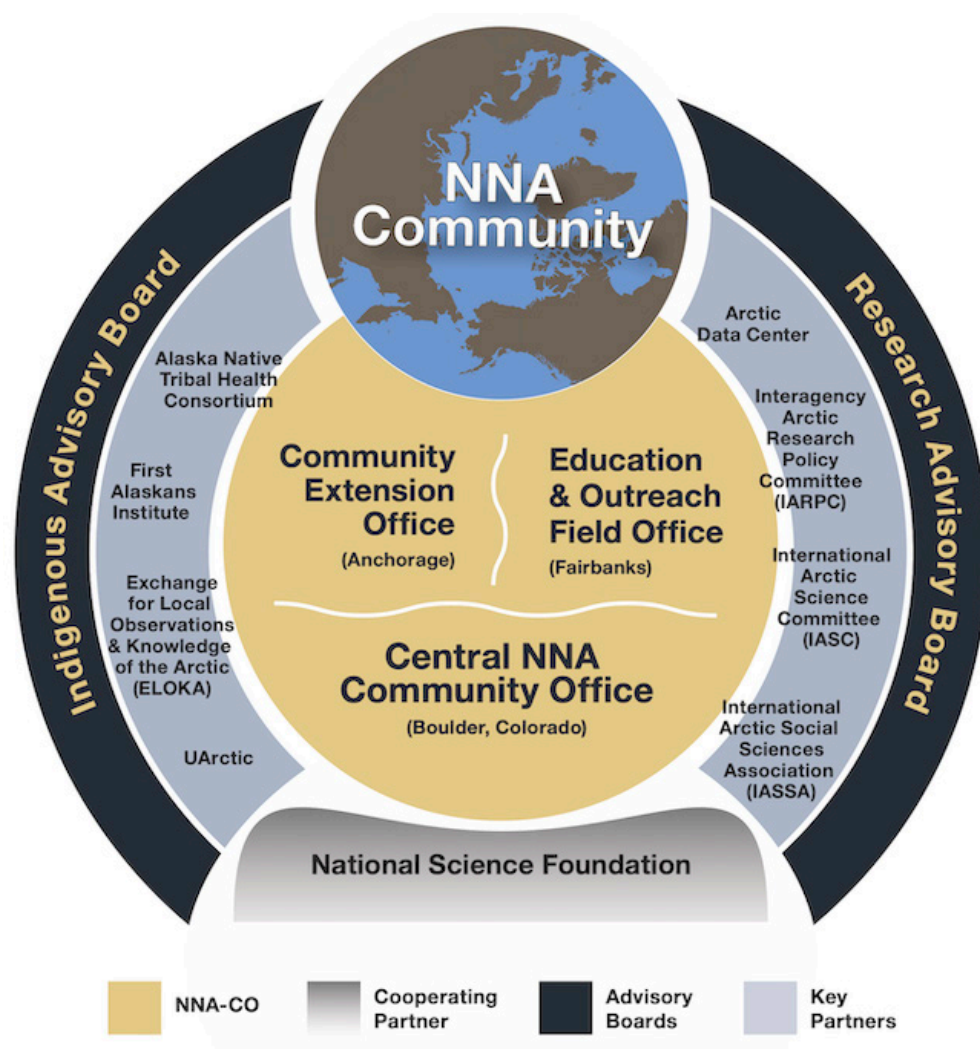


FIGURE 3-2 Organizational diagram for the Navigating the New Arctic Community Office.
SOURCE: NNA, n.d.

4

Proposed Criteria and Guiding Principles for Community Selection

This chapter develops and explains the criteria that the committee proposes for the Gulf Research Program to use in identifying and selecting communities to participate in the Enhancing Community Resilience (EnCoRe) initiative, as well as recommended guiding principles for applying the criteria and engaging those communities. The criteria represent the desired attributes of communities, while the guiding principles represent overarching precepts for aligning EnCoRe community selection and engagement with GRP's vision and goals for the program. The criteria and guiding principles flow from the findings and recommendations in Chapter 2 related to reimagining resilience and the use of participatory approaches to engaging communities, and from Box 3.1 that covers lessons learned from past and existing resilience-strengthening programs.

As described in Chapter 2, the committee proposes participatory action research and practice (PARP) as the framework for EnCoRe to use in selecting and engaging communities. The basic orientation of PARP is that those most directly affected by a problem should actively participate in developing solutions. The expectation is that actively engaging diverse stakeholders and keeping community needs, contexts, and capacities at the core of partnerships will help to foster capacity building that is sustainable and addresses needs that are a priority to the community. The PARP approach also recognizes the need to make special efforts to work with communities with significant needs, including underserved and small-population communities, that may have difficulties in securing resources to build resilience through existing programs.

The criteria and guiding principles also reflect the committee's understanding of certain basic aspects of EnCoRe's program design as described in planning documents and in committee discussions with GRP staff. The original vision for EnCoRe put forward in the report *Building and Measuring Community Resilience* was that the initiative would “include multiple communities, capture and document community resilience strategies and measurements, foster interactions across and among GRP communities through a resilience learning collaborative, and implement longitudinal research that includes systematic analysis and integration of data from various sources” (NASEM, 2019, p. 7).

EnCoRe will support long-term, multi-year, community engagement” and “partner directly with select communities across the Gulf states and Alaska to build and enhance health

and community resilience at the local level (Augustine and Milliken, 2021). The ultimate goal is to build community capacity at the local level in ways that enable each of its community partners to embark on its own health and community resilience path independent of EnCoRe and the GRP. Concretely, EnCoRe’s work is expected to involve building relationships and partnerships through direct community engagement, supporting existing and new local health and resilience efforts, and working with communities to build capacity in areas such as measuring health and resilience, and strengthening community leadership. See Chapter 2 for a more detailed discussion of EnCoRe plans and assumptions. See Figure 4-1 for EnCoRe’s anticipated timeline.

ENCoRE INITIATIVE TIMELINE

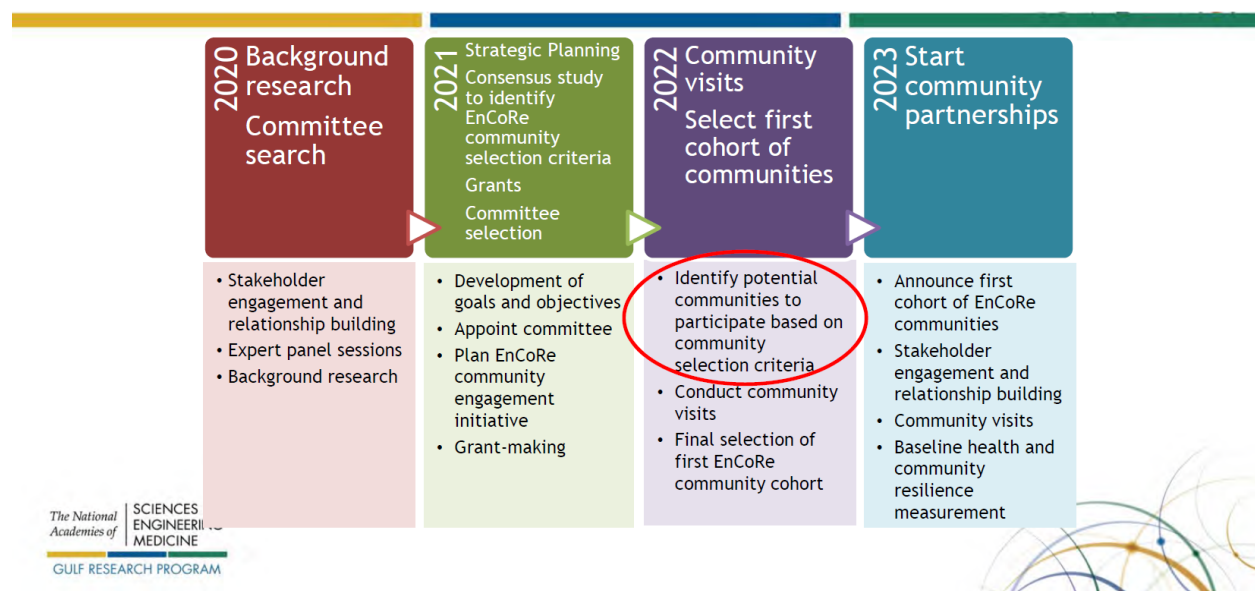


FIGURE 4-1 EnCoRe anticipated timeline.
 SOURCE: Generated by the Gulf Research Program.

CRITERIA FOR COMMUNITY IDENTIFICATION AND SELECTION

Recommendation 4.1: The Enhancing Community Resilience (EnCoRe) initiative should employ an approach to community selection that aims to build equitable resilience by applying the following criteria flexibly: (1) community need for enhanced resilience, (2) community interest in participating and commitment to partnering, (3) existing community capacity and potential for building capacity, and (4) community potential for sustaining equitable resilience.

EnCoRe's Opportunity and the Value of Flexibility

As discussed above, EnCoRe's mission and governance within the Gulf Research Program will give it the flexibility to engage with communities and build capacity in a variety of ways. EnCoRe has the opportunity to test and validate innovative modes of operation. The findings and recommendations developed in Chapters 2 and insights developed in Chapter 3 provide a framework and rationale for approaches available to EnCoRe that may not be feasible for government or private funders.

For example, community engagements can be phased, with efforts to identify and train community champions, launch pilot projects, build networks and collaboratives, and other preparatory work leading into more extensive engagement efforts focused on a variety of specific communities. EnCoRe might employ staff and retain consultants to undertake certain resilience-strengthening tasks; support universities and other nonprofit organizations to undertake research and other activities; partner with existing national, state, and community organizations; and provide direct assistance to communities. In partnerships where one or more community groups have some management responsibility, or where communities are smaller, underserved, or have lower capacity, GRP itself could be more directly involved in engaging community members in planning and implementing the partnership. Specific mechanisms could include involving community members directly in project design or providing resources such as facilitators, technical grant assistance, and connections to researchers to develop a plan to meet community needs.

The recommended criteria are described at a general level so that they may be applied in a flexible way. EnCoRe will be able to learn and adjust its approaches over time in response to experience and evidence. Considerations that might arise in employing various modes of operation and the implications for selection will be discussed in Chapter 5.

EnCoRe has an opportunity to expand its impact by working with a variety of communities with diverse needs. Communities will inevitably vary in the extent to which they meet the criteria recommended by the committee, presenting different opportunities for strengthening resilience. For example, communities that already possess some capacity and experience in identifying resilience-related needs might provide an opportunity for EnCoRe to make targeted investments that address those needs. Working with communities that have been engaged in resilience-strengthening efforts and need additional support to fully maximize positive impacts could yield excellent return on investment. Such engagements could also add a developmental and growth focus within networks supported by EnCoRe or other organizations. Likewise, communities that have more acute needs but have not been involved in resilience-strengthening programs in the past might provide opportunities for a longer-term, more comprehensive approach to engagement. A rigid application of selection criteria might close off these sorts of opportunities.

The actual mechanisms used to assess the extent to which communities meet the criteria will likely vary depending on the stage and type of engagement. For example, at early stages of

an engagement where planning or training grants are utilized to build community capacity, assessment can be somewhat informal. For larger-scale, more complex engagements, assessment might be undertaken through a formal proposal process. Such a process might address how community members have been engaged in project scoping, how the project timeline aligns with existing community initiatives and priorities, and the track record of the applying organizations in meeting community needs.

Community Need for Enhanced Resilience

While it might seem straightforward that the need for additional capacity to enhance resilience would be a central criterion for community participation in EnCoRe, earlier chapters of this report indicate areas in which identifying and measuring community needs and vulnerabilities can be a complex undertaking that requires a nuanced and flexible approach.

As discussed in Chapter 2, understanding of community resilience and the capacities that strengthen resilience has evolved over the years since 2005, when the experience of communities, governments, and other entities with Hurricane Katrina and its aftermath led to a rethinking of how communities prepare for and respond to disasters. This rethinking, in turn, resulted in programs and initiatives by governments, private foundations, and nongovernmental organizations aimed at encouraging communities to strengthen their capacity to manage and recover from shocks, as well as cope with persistent challenges such as environmental degradation and climate change. The report *Building and Measuring Community Resilience* (NASEM, 2019) points out the continuing challenge of defining the dimensions of resilience that apply across communities that may be facing very different circumstances and threats, as well as the difficulty of developing appropriate measures for resilience that can be used to determine design and evaluate interventions.

Chapter 2 also describes resilience fatigue as arising from some of the policies and programs adopted with the ostensible aim of strengthening resilience. Some efforts might be seen as yielding suboptimal or dysfunctional outcomes, or even as perpetuating community vulnerabilities. For example, some coastal communities in the Gulf region that are heavily impacted by acute surge flooding and sea level rise may be caught in what sociologist Ian Gray has called the “treadmill of protection”—increasing levels of government-backed expenditures that seek to defend economic viability, regardless of social, economic, or environmental consequence. The treadmill of protection can also include actions aimed at preventing immediate loss that may work to secure incumbent extractive industries, such as offshore oil and gas drilling, which contribute to the very vulnerabilities requiring intervention in the first place (Gray, 2021).

GRP has adopted the six community capitals of resilience and the social determinants of health as its primary frameworks for assessing resilience and structuring its EnCoRe partnerships (see Chapter 2). GRP ascribes to a broad definition of *community resilience*, to include planning, absorbing, recovering, and adapting at the level of the environment, as well as the physical and

mental health of the community and its members; approaches that appreciate the interplay of these elements could have significant positive impact.

Community Interest and Commitment to Partnering

One of the key themes emerging from the discussions with programs and communities summarized in Chapter 3 is that communities should demonstrate a baseline of interest in participating in resilience-strengthening efforts, including identifying needs, setting shared expectations, measuring progress, and making adjustments in approach over time as needed. Ensuring that a critical mass of the community is interested and willing to participate in the program, as opposed to just one or a few community members, appears to increase the likelihood of sustainable, positive impacts. The best evidence that communities possess a baseline level of interest is that community groups and community partners have participated in discussions and planning for the project.

Assessing community interest and commitment has several interrelated aspects. For example, given EnCoRe's stated intention to build networks and partnerships, a community's commitment and willingness to engage with partners outside its own jurisdiction is important. Communities are physically and economically interconnected with other communities, and their resilience depends in part on the resilience of these other communities. Examples where this might come into play include shared infrastructure, such as housing and roads in one community that bring workers to another community; levees in one community that affect flood water management in other communities; or several communities surrounding a shared source of jobs and income, such as a port, factory, or military installation.

As discussed in Chapters 2 and 5, effective approaches to assessment and evaluation will play a significant role in shaping EnCoRe and determining its ultimate impact. Community participation in evaluation processes that develop lessons learned that can be applied not only in making their own partnership more successful, but also across regions or in other communities facing similar challenges will be valuable for everyone involved in EnCoRe. Conceiving of communities participating in EnCoRe—both as a totality and as regional groups—as a learning network underlines the importance of keeping communities engaged in evaluation processes.

It will be important for EnCoRe and prospective participating communities to agree on one or more intended outcomes that ultimately define what enhanced resilience will look like in that particular community. Naturally, if there is clear concurrence on what success looks like at the end of the process, then there will also need to be secondary agreement between EnCoRe and any community that may participate regarding the “who” and the “how” of establishing and monitoring milestones along the way. Any prospective community with which EnCoRe engages will have concerns and issues beyond EnCoRe's scope and purpose. As such, it will be crucial for EnCoRe and participating communities to establish goals and responsibilities clearly, mutually, and early in the process so that expectations for the relationship are both reasonable and beneficial for both parties. And, in going through that early process in which expectations

and responsibilities are established, some communities may decide that EnCoRe participation is not right for them. Forming partnerships on the basis of clear, mutually understood, and agreed-upon expectations can help EnCoRe avoid resilience fatigue, which can emanate from poorly defined objectives and/or misaligned priorities between a community and programs designed to enhance resilience.

Existing Community Capacity and the Potential for Building Capacity

Community interest and existing capacity also come into play in identifying and working to protect community knowledge as part of the partnership, and in developing capacity as needed. EnCoRe can build support for developing such capacity into its partnerships.

The importance of assessing existing community capacity and taking this into account when designing partnerships is discussed above in reference to the value of a flexible approach to engagement and assessing needs. Communities with varying levels and types of existing capacity will benefit from participation in the EnCoRe program, and various approaches to forming and developing partnerships can be taken to address the needs of diverse communities.

Sustaining Equitable Resilience

Sustainability and equity are key elements of successful resilience-strengthening efforts, and EnCoRe has an opportunity to structure community selection and partnership initiation in ways that support those goals. Effectively sustaining equitable resilience entails a commitment on the part of communities and participating organizations to distribute the benefits of the partnership equitably among the stakeholders and include them in decision-making processes. EnCoRe's can help communities make and keep such commitments by designating resources to support community participation as part of the partnership initiation process (e.g., transportation, child care, food, and payment for participants' time where appropriate). Chapter 5 includes additional discussion related to sustainability and equity.

GUIDING PRINCIPLES FOR APPLYING THE SELECTION CRITERIA

Recommendation 4.2: In applying the recommended criteria, the Enhancing Community Resilience (EnCoRe) initiative should utilize lessons learned from past and existing efforts to maximize the potential for success by adopting the following guiding principles: (1) empowerment of program champions, (2) collaborative identification of community needs, (3) collaborative development of metrics and evaluation plans, (4) support for the cultural and language competence of program participants from outside the community, and (5) commitment to inclusion of underserved and small-population communities.

Empowering Program Champions

Chapter 3 includes an extensive discussion of the importance of individuals and/or organizations that are trusted in the community and invested in the long-term success of the partnership, which provides the support and rationale for this guiding principle. For several of the programs examined by the committee, working with existing champions, training new champions, and providing support to champions contributed to success.

In practice, identifying actual and potential champions and supporting them may not be easy or straightforward. Individuals and groups may well emerge that claim to be representing a community but are more interested in pursuing their own goals or ambitions. Developing a good understanding of who is an actual or potential champion and who is not is vital. Also, there may not always be a champion in place in some frontline communities, and there may not be anyone with the capacity to take on such a role. See Box 3-2 in Chapter 3 for an overview of community champions.

Collaborative Identification of Community Needs

The discussion of PARP in Chapter 2 and the discussion of past and existing efforts in Chapter 3 provide the rationale and support for the guiding principle of collaborative to identify community needs. Community needs are central to EnCoRe, and community selection and program initiation reflect this. From the discussion of past and existing programs in Chapter 3, it is clear that collaborative approaches contribute to strengthening resilience on a sustained basis. Reviewing the community's history of climate and hazard challenges, projecting risks and possible future impacts, and connecting these impacts to health and environmental outcomes will be critical to structuring effective partnerships.

Collaborative Development of Metrics and Evaluation Plans

The principle of collaborative development of metrics and evaluation plans is closely linked with the collaborative identification of community needs, and likewise is supported by the discussions in Chapters 2 and 3. A collaborative baseline assessment of needs, readiness to engage, and capacity would implement both of these principles. Such a baseline assessment of needs would aid GRP in deciding which communities to prioritize in partnership activities, in developing partnership plans, and in establishing a baseline for ongoing data collection to track progress. Baseline assessments could also document past, present, and anticipated future shocks and stressors to communities—as well as inventory capacity to withstand or avoid those shocks and stressors using frameworks such as the six community capitals of resilience and the social determinants of health.

A baseline evaluation of the community's readiness to engage in EnCoRe would also facilitate support and consultation efforts, as readiness is understood to be a function of

motivation, innovation-specific/resilience initiative capacity, and general capacity (Scott et al., 2017). Understanding initial conditions holistically will help GRP and the community structure a partnership equipped to address cascading impacts of shocks and stressors that ultimately speak to community health and resilience. It will also position EnCoRe partner with communities in a transformational growth process (e.g., the Plan, Do, Study, Act cycle of Deming, 1993, as cited in Moen and Norman, 2009).

Following the PARP principles of cocreation and respect for community knowledge, the collaborative baseline assessment will help the community better specify their needs, consider their capacity and readiness, and establish goals for EnCoRe intervention. This assessment work at the outset of the partnership can also help ensure that any research activities undertaken as part of EnCoRe partnerships will generate and apply knowledge that is relevant to community needs and reflects understanding of existing community resources and information. This framework can also foster respect for existing community resilience, which is “necessary to respond to chronic adversities and structural inequities that lead to historical trauma through multiple generations” (Mowe, 2017, para. 1).

Supporting Cultural and Language Competence of Participants from Outside the Community

As discussed above, EnCoRe partnerships may involve support for academic institutions engaged in research activities within communities or involving community members intended to strengthen resilience. Chapters 2 and 3 discuss a number of characteristics of research activities that contribute to partnerships by generating and applying knowledge relevant to community needs and reflecting an understanding of the community. Necessary preconditions include adhering to ethical standards with respect to data collection and control, committing to collaboratively identify and protect community knowledge, and establishing in a clear and transparent way that research relationships with frontline communities will be mutually beneficial and not extractive.

Supporting the cultural and language competence of researchers and other project participants from outside the community is an important principle for helping to ensure that these preconditions are met. EnCoRe might require that researchers or research institutions receiving support demonstrate in the proposal itself that community groups and partners support the project or have collaborated in developing it. The principal investigator for one of the awards granted under the National Science Foundation’s Navigating the New Arctic program described a multifaceted approach taken to form productive and equitable partnerships with local Alaskan communities. This approach included participation in established convenings, research on published material about the community and its challenges, and scenario workshops that brought together various stakeholders to work through how community members would respond to different situations and events.

Commitment to the Inclusion of Underserved Communities

Chapter 3 describes some of the challenges and limitations faced by federal agencies and other organizations in working with underserved and small-population communities. Such communities may not have their own incorporated political entity and/or lack an associated nonprofit with the tax status and capacity to receive and manage federal awards. EnCoRe has the mission, resources, and flexibility to reach and engage with underserved communities on a long-term basis. In this way, EnCoRe has the potential to make a unique and long-lasting contribution to community resilience and health, and its degree of success in this area will be important to the overall success of the program. Implementing this approach will likely involve some additional time, effort, and resources, and may require more innovative outreach approaches to identifying and initiating communication with communities than is usual or expected in other programs. GRP may have to work with a community over time, utilizing meetings, planning grants, and other mechanisms, to enable the community to articulate its needs.

5

Applying the Criteria and Guiding Principles: Challenges, Opportunities, and Other Considerations

This chapter addresses the third task of the study charge: “Discuss the potential challenges and opportunities of applying the committee’s selection criteria, and the possible advantages and disadvantages of alternative approaches” (see the statement of task in Box 1-2 in Chapter 1). The committee approached this task by discussing key considerations necessary for the Gulf Research Program (GRP) to apply the recommended criteria and guiding principles effectively and equitably (as outlined in Chapter 4) in the selection of communities to participate in the Enhancing Community Resilience (EnCoRe) initiative. The challenges and opportunities in this chapter are referred to as “key considerations” for the EnCoRe program. The key considerations in the first section of this chapter pertain to (1) engaging the unique geographical, demographic, and historical context of Alaskan communities; (2) innovative approaches to funding and reporting in order to promote equity; and, (3) evaluation considerations and solutions for EnCoRe, from the proposal and project design phase to a comprehensive enterprise level evaluation for the entire portfolio of EnCoRe partnerships. The finding and recommendation based on these considerations are aimed at ensuring that community resilience efforts and the partnerships that support them are implemented and strengthened equitably. The final section of this chapter describes sustainability in partnerships and programs, which includes networking across communities and sectors and linking smaller and larger jurisdictions, regional entities, and communities at different capacities, including the provision of resources to facilitate long-term sustainability and catalyzing connections and synergies with existing efforts. The goal of this chapter is to explain how these considerations are critical for EnCoRe to successfully apply the core community selection criteria and guiding principles of this report (as described in Chapter 4).

CONSIDERATION 1: ENGAGING WITH COMMUNITIES IN ALASKA

Alaska is the largest U.S. state by area and the most sparsely populated, with only about 1.25 people per square mile. It has more coastline than all combined coastlines in the lower 48

states (U.S. Census Bureau, 2020). The population includes 229 Indigenous Tribes across 11 distinct cultures, with at least 20 languages in four distinct language families, and hundreds of dialects (Alaska Native Language Center, n.d.; see Figure 5-1). A majority of Indigenous rural communities in Alaska are environmentally threatened by climate change, which amounts to 43 percent of all communities in the state of Alaska.¹ The remainder of this section describes the federal government's unique approach to Alaska Indigenous governance as compared with the lower 48 U.S. states.

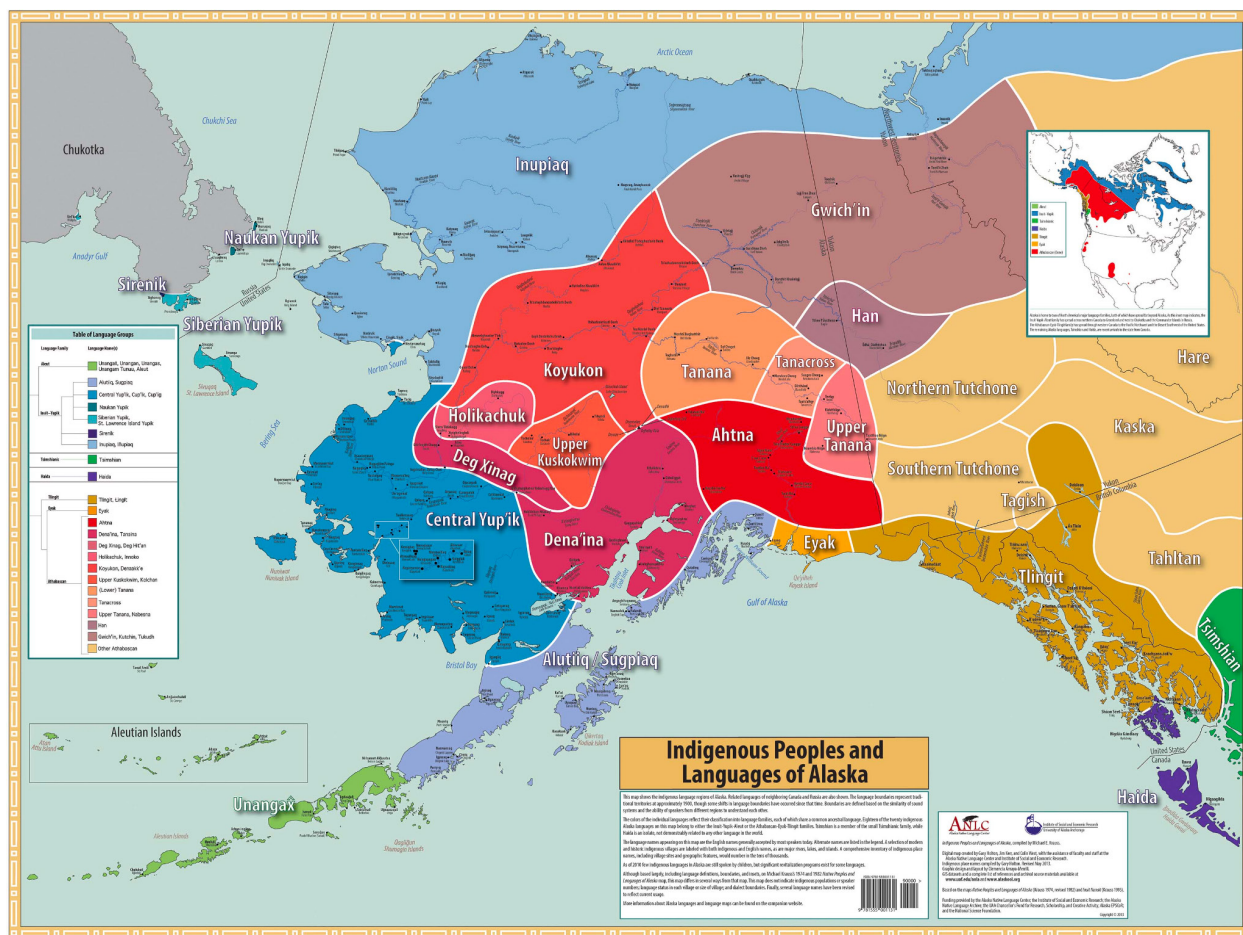


FIGURE 5-1 Indigenous peoples and the languages of Alaska.

SOURCE: Alaska Native Language Center, n.d.

In 1867, the United States purchased Alaska from Russia. After purchase, the United States did not definitively address Indigenous land claims until the passage of the Alaska Native Claims Settlement Act of 1971 (ANCSA). ANCSA was a new approach by Congress to federal policy for Indigenous people. It extinguished Indigenous claims to lands by dividing the state

¹ ANTHC [Alaska Native Tribal Health Consortium], DCRA [State of Alaska Division of Community and Regional Affairs], et al. (Draft report). Unmet Needs of Environmentally Threatened Alaska Native Villages: Assessment and Recommendations (proposed title). Publishing organization(s) to be determined.

into 12 regions, mandating the creation of 12 private, for-profit Alaska Native regional corporations and more than 200 private, for-profit Alaska Native village corporations, and mandating ownership of regional and village corporations to enrolled Alaska Native shareholders (see Figure 5-2). With its foundation in Alaska Native corporate ownership, this approach deviates significantly from the reservation system applied by the federal government to the lower 48 states.

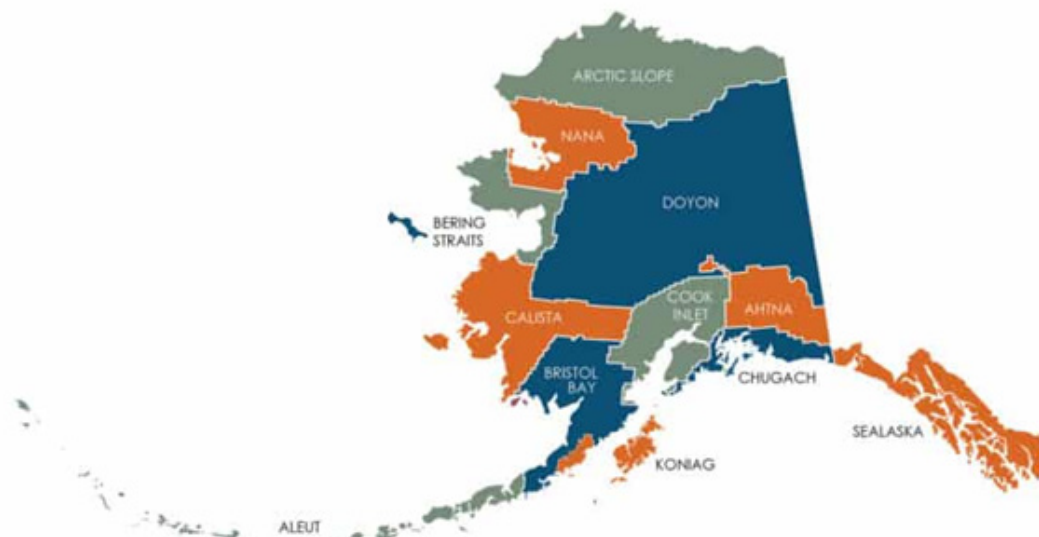


FIGURE 5-2 The 12 regions of the Alaska Native Claims Settlement Act of 1971.
SOURCE: ANSCA Regional Association, n.d.

ANCSA allowed for federal lease sales to move forward across Alaska, with proceeds going to the federal government. As a result, the oil and gas exploration on the North Slope of Alaska and the construction of the Trans-Alaska Pipeline System funneled revenues into the state coffers and eventually led to the creation of the Alaska Permanent Fund Corporation (APFC), a state-owned corporation based in Juneau that manages the assets of the APFC and other funds designated by law, such as the Alaska Mental Health Trust Fund.²

Thomas (1986) describes how many Indigenous Alaskans initially thought that ANSCA “would resolve basic issues of self-sufficiency, self-determination, and survival of cultural

² For more information, see “Who we are,” <https://apfc.org/> (accessed May 5, 2022).

integrity” (p. 35). However, ANCSA created a web of ambiguities and questions about “the potential incompatibility of corporate structure, development, and maintenance of cultural heritage [and Indigenous Alaskan] dependence on the cash economy,” which would make the pursuit of traditional activities difficult (Thomas, 1986, p. 35).

ANCSA introduced structures that should be considered as EnCoRe develops and implements partnerships with Alaskan communities:

- Land ownership: regional corporations own much of the subsurface resources on their land endowments, but land swaps and other recent initiatives have allowed some village corporations to gain access to subsurface mineral estates.³
- Cash economy versus subsistence economy: some villages are up to 70 percent subsistence-based, but this subsistence economy is not recognized by regional or state jurisdictions and creates difficulty for the financial feasibility of small rural communities.
- Multilayered governance: through the creation of Tribal, municipal (city), village corporation, regional corporation, and borough structures, it is challenging to create unity and collaboration across levels of governance.
- Labor livelihoods (e.g., mining, oil, gas) versus traditional livelihoods (e.g., subsistence fishing) creates conflict and separation among local residents.⁴

The Cook Inlet

The Cook Inlet basin is a prolific hydrocarbon region. Since the discovery of Alaska’s first commercial oil field in 1957 (the Swanson River field) nine additional oil fields and 34 gas fields have been drilled in the Cook Inlet basin.⁵ In Southcentral Alaska (west and south of Anchorage), federal onshore petroleum resources are located on both sides of the Cook Inlet. Indigenous villages of the Cook Inlet region include Eklutna, Knik, Salamatof, Tyonek, Chickaloon, Ninilchik, Kenaitze, and Seldovia. The region also includes the non–federally recognized group sites of Alexander Creek, Caswell, Gold Creek, Montana Creek, and Point Possession.

Challenges and Considerations in Engaging Alaskan Communities

During data-gathering sessions, the study committee learned about guiding principles and partnership selection criteria that facilitate equitable partnerships. Many of the challenges and

³ For more information, see <https://ancsaregional.com/about-ancsa/#land-selection-process> (accessed February 10, 2023).

⁴ For more information, see “About the Alaska Native Claims Settlement Act,” <https://ancsaregional.com/about-ancsa/#:~:text=ANCSA%20extinguished%20aboriginal%20land%20title,profit> (accessed May 5, 2022).

⁵ State of Alaska, Department of Natural Resources “Cook Inlet,” <https://dggs.alaska.gov/energy/cook-inlet.html> (accessed 14 April, 2022).

opportunities that the committee learned about pertain to communities both in the U.S. Gulf of Mexico region and Alaska. Yet, these sessions also revealed considerations that are particularly relevant for potential EnCoRe partnerships in Alaska. The following sections describe these unique considerations.

Environmental Challenges

Infrastructure and other community-development projects in Alaska are both limited and controlled by the extreme environmental conditions of the region. River and coastal communities have seasons of thaw, principally from April to May, when the ice conditions deteriorate and the only method of transportation is air carrier; the opposite is true when conditions are freezing for the winter (late fall). Communities that experience these fluctuations are then limited to summer months (late May through September) for any project implementation and for project planning that might require transportation or site visits. When funders consider a 12-month project season or cycle, many Alaskan communities must seek exemptions or extensions.

Data Sovereignty

Data about Alaskan Indigenous groups have historically resulted in policies that have worked against communities.⁷ Resilience-strengthening partnerships with Alaskan communities should coproduce data agreements so these agreements are locally understandable. Agreements should make the data fully accessible and usable for the communities impacted by the partnership. EnCoRe should utilize the CARE Principles for Indigenous Data Governance: Collective benefit, Authority to control, Responsibility, and Ethics.⁸

Communication and Technological Considerations

Alaskan communities need more time than communities in other regions to respond to partnership opportunities. Many Alaskan communities do not have reliable internet and function with a less time-constrained schedule than the research community. Providing enough time and resources to enable responses is critical to developing and sustaining partnerships. At the same time, access to communication technology (e.g., internet and cellular service) varies greatly from Tribe to Tribe and across jurisdictions, and extreme weather is a variable. In developing partnerships with Alaskan communities, it is critical to learn how each community, and especially the point-of-contact within each community, are best able to communicate. During data-gathering sessions with residents from Alaska, every

⁷ See <https://usindigenousdata.org/> (accessed May 5, 2022).

⁸ For more information on the CARE principles, see Chapter 2, Carroll et al., 2020, and <https://www.gida-global.org/care> (accessed May 5, 2022).

person noted that in-person conversations are far more effective than technological communication; however, Alaskan experts also noted that transportation is the costliest part of engaging with communities, often consuming a large portion of project budgets.

An expert at Native Movement (Ruth Miller), a nonprofit organization that focuses on grassroots mobilization and community improvement, told the committee that the starting point to engaging with Alaskan Indigenous communities by external entities should be the recognition of Indigenous rights and land sovereignty, and the unique contributions (e.g., knowledge, perspectives, world views) that Indigenous people provide.⁹ Additionally, in consulting and partnering with Indigenous people, researchers and funders need to plan to join residents in community activities, such as subsistence or traditional practices.

Working with Tribal Governments

When outsiders engage with individuals, programs, or organizations within a Tribe, it is critical that the tribal leadership is aware of the partnership and supportive of it. Without support from leadership, projects will not be cohesive with the community's existing efforts and social infrastructure. In terms of working with either the state, a regional entity, or a Tribe, our Alaskan experts stressed that the local Tribe is generally the most effective scale to pursue, both in terms of channeling funds where they are most needed and making sure that the project is effective at positively impacting the people who need it most. However, many Alaskan Tribes are small and therefore lack a population base for capacity-building efforts, including basic technological capacity. To facilitate partnerships with small and underserved communities in Alaska, the EnCoRe initiative may need to first engage with regional or statewide networks for communication and capacity support.

While the federal government recognizes Tribes, the state has only recently passed a resolution “recognizing” Tribes. However, unlike federal recognition, the state resolution does not create any new fiscal or policy obligations. The resolution has the potential to create a normative expectation that state agencies treat tribal partners similarly to how they treat municipal partners in project cocreation and funding, but a lack of policy obligation might still present a barrier to reaching the tribal level. Furthermore, turnover in state agencies is high, while regional entities might be more helpful because they are often more stable. If the local Tribe is a very underserved community, outside entities should consider hiring a regional consultant to assist in developing partnerships with the Tribe and facilitating the successful development and implementation of the intended program or project. Two trusted partners that work statewide are the Alaska Native Tribal Health Consortium (ANTHC)—a nonprofit tribal health organization—and the Denali Commission—an independent federal agency designed to

⁹ Comments by Ruth Miller, Native Movement, in a panel presentation to the committee on October 4, 2021.

provide critical utilities, infrastructure, and economic support throughout Alaska that works with Native and non-Native Alaskan communities.¹⁰

Across Alaska, different communities have different cultural strengths and collective memories: different boarding school histories, experiences with the U.S. government, and disaster histories (see NCAI and MSU, 2012). Recognizing site-specific knowledge and history is crucial to establishing trust and building relationships. Most Indigenous history is oral and tribal elders are the local scholars who carry the oral history. The oral method of communication and strength varies from community to community.

CONSIDERATION 2: CREATING EQUITABLE FUNDING OPPORTUNITIES

A recurring theme in committee discussions and in the philanthropy literature is that, too often, the grant application, funding, and reporting processes exclude diverse and community-based organizations because of high bureaucratic hurdles (Bull and Steinberg, 2021; Chan and Fisher, 2016; Garry, 2021).¹¹ Common critiques include the length and complexity of applications, which place a heavy burden on organizations with small staff and few existing resources; restrictions on how funds can be used, which limit an organization's ability to support staff and other capital expenses that affect their ability to pursue critical programmatic activities; and reporting requirements that place additional burdens on underserved organizations. There are a number of tangible, practical approaches the EnCoRe initiative can consider in order to avoid these common pitfalls and work toward greater equity in its funding processes. EnCoRe can address inequities in funding patterns and ease the burden on applicants by playing a more active role in recruitment and technical assistance than is common for funding agencies. Examples of how the EnCoRe initiative can achieve equity in funding opportunities include the following:

- Taking an active role in researching and vetting community-based organizations doing relevant resilience and public health work and inviting them to apply for appropriate opportunities, rather than relying on those organizations to seek out the funding opportunity, particularly when a pilot project presents a good opportunity to try a new activity or approach (Chan and Fischer, 2016).¹²
- Incorporating community input into funding calls, especially region-specific opportunities, to ensure that community priorities are represented (Arnott et al., 2020).
- Providing technical assistance to applicants throughout the process, including providing language or cultural translation when appropriate and/or enlisting local assistants with the

¹⁰ For more information about ANTHC, see <https://www.anthc.org/who-we-are/overview/> (accessed May 5, 2022); for more information about the Denali Commission, see <https://www.denali.gov/> (accessed May 5, 2022).

¹¹ Comments shared with the committee by Ruth Miller and Juan Parras, Environmental Justice Panel, October 4, 2021, and Desirae Mack and Evon Peter, Alaska Panel, December 17, 2021.

¹² Comment shared with the committee by Evon Peter, Alaska Panel, December 17, 2021.

language and cultural competence to assist applicants, including pre-reviewing drafts (Chan and Fischer, 2016; Francis et al., 2018), and providing diversity, equity, and inclusion training to review panelists.

- Ensuring that review panelists represent a range of relevant academic and practice-based knowledges (Chan and Fischer, 2016).¹³
- Providing connections to appropriate sources of data or other information (e.g., vulnerability assessments) that could provide a baseline for an identified need for enhanced community resilience across dimensions of vulnerability to climate change, natural disasters, environmental degradation, and threats to health.
- Providing capacity-building opportunities to grantees during the grant period, such as nonprofit management or skills-development activities (Francis et al., 2018).¹⁴ However, these capacity-building opportunities should be tailored and adapted to the specific needs and capacities of grantees, so as not to add to a community's administrative burden.

Difficult bureaucratic processes can be internal to communities and local governments and/or external and originate from the funding programs themselves. Simplifying the application process and shifting administrative burdens to GRP or to the partnering institution (e.g., in the case of university and community-based partnerships) can alleviate the burden of bureaucratic processes and allow communities to focus on completing project goals. In this respect, the EnCoRe initiative can consider the format of the funding application. In order to reduce the administrative burden for applicants, the application should be as concise and streamlined as possible¹⁵ and aim for a process that takes 10–15 hours to complete (Chan and Fischer, 2016; Le, 2015). Providing easy-to-use templates for applications can also reduce the administrative burden.¹⁶ The EnCoRe initiative can consider nonwritten applications, which will open the door for organizations with few staff and existing resources, and communities in which oral conversation is the principal form of communication.¹⁷ Video applications, site visits, or interview-based processes should all be considered (Chan and Fischer, 2016).¹⁸ Bureaucratic processes can be an insurmountable hurdle to many communities.

While encouraging applications in a variety of formats is important, GRP should be aware that an electronic application process may exclude some communities entirely. Exclusion because of a lack of broadband access recently occurred during the National Telecommunications and Information Administration's Tribal Broadband Connectivity Program (TBCP) application period. Only about half of the eligible communities applied for funding from

¹³ Comment shared with the committee by David Shaw, GoMRI, October 25, 2021, and Evon Peter, Alaska Panel, December 17, 2021.

¹⁴ Comments made to the committee by Mathew Sanders, LA SAFE, October 25, 2021, and Maria Vorel, Project Impact, January 21, 2022.

¹⁵ Comments made to the committee by Desirae Mack, Alaska Panel, December 17, 2021.

¹⁶ Comments made to the committee by Danny Paterson, Gulf Regional Panel, January 28, 2022.

¹⁷ Comments made to the committee by Evon Peter, Alaska Panel, December 17, 2021.

¹⁸ Comments made to the committee by Matt Druckenmiller and Evon Peter, Alaska Panel, December 17, 2021.

the program, largely because the application forms noted that the TBCP preferred that applications be submitted online—an impossibility for many tribal communities that lack broadband access (Pedrosa, 2022). While budget transparency is important in all grant processes, the EnCoRe initiative can consider accepting budgets in a variety of formats as long as the budgets contain the necessary components; this would further reduce the workload for applicants who may need to change budget formats each time they apply to a different funder (Le, 2015).¹⁹

The amount and timing of funding can be considered to maximize support and reduce burdens for grantees. Sustained funds can help organizations continue successful work without having to divert resources to additional funding applications (Garry, 2021).²⁰ Sustained funding also helps to ensure continuity of services to communities, so community members are not harmed by a valuable service ending suddenly.²¹ GRP can also consider the size of awards; for example, small grants may carry the same administrative costs to awardees as larger, sustained awards. Accountability and reporting requirements can be incorporated into longer-term funding agreements while simultaneously supporting community-based work that may take time to become fully sustainable.

Streamlining reporting can also ease the funding process for community-based organizations. Interim reports, in particular, can be kept as concise as possible; and verbal reports or conversations may be appropriate instead of written reports in some cases (Chan and Fischer, 2016; Francis et al., 2018). GRP can also provide technical assistance with evaluation and final reporting to help ensure that grantees are able to fully capture and demonstrate the impact of their work, as well as enhance their own learning and organizational development (Chan and Fischer, 2016; Francis et al., 2018; Le, 2015).

CONSIDERATION 3: KEY PROGRAM AND PARTNERSHIP EVALUATION

The report by the National Academies of Sciences, Engineering, and Medicine (2019) *Building and Measuring Community Resilience* aptly articulates ongoing challenges that communities face with regard to measuring their current and ongoing resilience efforts (pp. 4–5).²² In the face of these challenges, the 2019 community resilience consensus committee made the following recommendation (#5): “The GRP should develop a major, coordinated initiative around building or enhancing community resilience in communities across the Gulf region” (NASEM, 2019, p. 7). This recommendation was the impetus for the EnCoRe initiative. The

¹⁹ Comments made to the committee by Desirae Mack, Alaska Panel, December 17, 2021.

²⁰ This idea was mentioned multiple times, in general conversation; by speakers in the Alaska Panel, December 17, 2021; and by Ruth Miller, Environmental Justice Panel, October 4, 2021.

²¹ Comment made to the committee by Julie Olson, Gulf Regional Panel, January 28, 2022.

²² These challenges include lack of consensus on the definition of resilience; a large array of available tools, none of which are currently accepted as a gold standard tool that is broadly applicable to all communities; and incompatibility of (sometimes rich) datasets among existing community stakeholders, resulting in a lack of common metrics across sectors, communities, and regions.

committee also made the three following recommendations, designed to highlight ways to move forward with regard to community resilience (NASEM, 2019, pp. 7–9, emphasis added):

- For each community in the Gulf Research Program (GRP) community resilience initiative, the GRP should *develop and employ a community resilience framework* that includes: (1) community engagement to engender buy-in around resilience priorities, goals, and leadership; (2) resilience across multiple community capitals; (3) *measures and ways to track progress that are useful to decision makers*; and (4) investments in resilience that result in multiple benefits.
- The Gulf Research Program should *create, finance, and maintain a resilience learning collaborative* for diverse stakeholders to exchange information about lessons learned, approaches, challenges, and successes in their respective and collective work to advance community resilience in the Gulf region.
- The Gulf Research Program should *implement longitudinal research* associated with its community resilience program.

The committee for the present study supports, affirms, and echoes the above recommendations that were reached by its colleagues in 2019. However, across the work of the current committee, these were not the only considerations identified for emerging EnCoRe evaluation efforts. In fact, four different evaluation-related considerations were raised during this committee's work that are necessary to apply the recommended selection criteria and guiding principles effectively. We will briefly describe each consideration and ways forward for the EnCoRe initiative.

Preproposal and Proposal Evaluation

Careful evaluation is needed at the preproposal and proposal stages to determine which communities and which partnerships are poised to use EnCoRe resources most effectively and efficiently for enhancing community resilience and public health. The following questions can aid in this evaluation:

- Is the partnership equitable and inclusive of the community members most impacted?
- Are there baseline measurements of resilience?
- Is there readiness to engage, a receptive context and culture, and an alignment with local community values?
- Do the communities (or consortium of communities and stakeholders) that are proposed for funding demonstrate the core criteria (see Chapter 4)?

The following strategies may aid EnCoRe in preproposal and proposal evaluation:

- Site visits and site/community development processes prior to funding.
- Planning grants as an entry point into longer-term partnerships with underserved communities.
- Community recruitment strategies that are nontraditional, innovative, culturally connected, and community-centric (see Consideration 2, “Creating Equitable Funding Opportunities”).
- A stream of developmental funding within EnCoRe.

Internal Evaluation of EnCoRe

An internal evaluation mechanism is needed for determining how EnCoRe will distribute resources equitably. Communities responding to the same call for funding may vary in their overall and program-specific capacity. Communities may also have differing levels and types of resources to contribute to the partnership. Therefore, EnCoRe needs to consider how to fund previously overlooked communities and support them with potentially different funding structures from those directed to communities that have already received considerable funding. Based on what we have learned, traditional evaluations of proposals are unlikely to be effective, and different internal evaluation strategies may be needed.²³ The following questions can aid in internal evaluation:

- Are there processes in place to align with the local community resilience framework and support successful implementation?
- Have potential barriers to successful implementation (e.g., seed or planning grants, capacity-building initiatives) been addressed?
- Are resources being distributed equitably across the portfolio?
- Have the proposed interventions been considered in the context of the history and outcomes of previous interventions and approaches?

Ongoing Partner and Project Evaluation

EnCoRe will need to develop and implement project-specific and embedded evaluation strategies that include formative and summative assessments across time and strong community participation (Milstein and Wetterhall, 2000). To facilitate this type of evaluation, funds for the EnCoRe partnership can be allocated for the documentation of the project and to determine whether the stated outcomes from the proposal were obtained. For this consideration, strategies to simplify the reporting structure are essential, particularly when EnCoRe engages with underserved communities. Ongoing partner and project evaluations would benefit from being routine and informative, with stakeholder investment, voice, and buy-in. The development of a

²³ Comments made to the committee during the GoMRI panel discussion, October 25, 2021.

standardized template with discrete response categories might be particularly valuable. The following questions can aid in partner and project evaluation:

- Are current interorganizational networks and communication processes working effectively and efficiently?
- Are the implementation strategies and processes for enhancing community resilience and public health working effectively?
- Can these evaluation strategies achieve the proposed outcomes?

Collective Impact and Enterprise Evaluation for the EnCoRe Initiative

EnCoRe needs to avail itself of the lessons learned from related efforts, described and summarized previously in this report (see Chapter 3), as it develops and implements novel strategies for determining the collective impact of EnCoRe's entire funding portfolio. Collective impact is a practical framework for measuring shared long-term outcomes across multiple projects that are working in the same geographic footprint (see case study on the Gulf Region Health Outreach Program, Chapter 3). The results of a collective impact assessment can provide EnCoRe communities with a political voice, especially when contesting the structures and policies that permit the conditions that continue to make communities vulnerable.

Collective or enterprise evaluation efforts have much to offer but require a thoughtful investment in infrastructure support and cohesive scientific approaches within and across project exchange throughout the life of EnCoRe. An EnCoRe enterprise evaluation, for example, could identify one to three long-term outcomes that cross all projects, which will support a shared agenda at the outset and make cohesion across projects more likely (Born, 2017). Nested within these long-term outcomes, individual proposals for communities could include a logic model with activities, short-term outcomes, and intermediate outcomes, which could directly result in achieving one or more of these long-term impacts (Sherman et al., 2019b) and provide EnCoRe a starting point for an enterprise evaluation. Ongoing review and dedicated use of project-specific and collective logic models promotes project synergy and enhances collective impact (Langhinrichsen-Rohling et al., 2017). Implementation of an enterprise evaluation is also facilitated by dedicated resources for regular, directed interactions; an expectation of shared outputs and collaboration; and an enterprise-evaluation facilitator that routinely works with project leaders to advance the meta agenda. This approach would be especially important if EnCoRe or some subset of projects (e.g., delineated regionally) can be encouraged to develop a broad partnership to create added value.

SUSTAINABILITY OF ENCORE PARTNERSHIPS

Finding 5.1: In addition to the recommended core criteria and guiding principles, the success of the EnCoRe initiative will be enhanced by partnership sustainability. Sustainability can be achieved by catalyzing connections and synergies with existing efforts and supporting the launch of new collaborations. The National Academies plays an important role as a neutral convener in a variety of science policy contexts and has the potential to play a role in helping existing and new efforts in the Gulf region and Alaska work more effectively together for the benefit of communities.

Recommendation 5.1: The Enhancing Community Resilience (EnCoRe) initiative should apply the recommended community selection criteria and guiding principles to address significant challenges and opportunities in areas such as fostering sustainability in partnerships and programs; engaging with communities in Alaska; developing innovative and equitable approaches to funding and the partnership initiation process; and developing and implementing robust approaches to metrics and evaluation. EnCoRe should help communities achieve greater visibility among local, state, and national policy makers, as well as philanthropic, academic, nongovernmental organization, and corporate leaders.

Addressing the most complex and vexing challenges in creating resilient communities will come only when a diversity of thought, expertise, and resources is brought together to form long-term and lasting solutions. As EnCoRe seeks to be an innovative funding mechanism that can support communities in a way that promotes enduring capacity building and meaningful resilience gains, it is critical to consider how other entities and efforts can also support these outcomes and sustain progress. The National Academies report that recommends that GRP develop a long-term community engagement program, which became the EnCoRe initiative, found that “communities are better able to pursue resilience-building efforts when those efforts align with other community initiatives and provide multiple community benefits” (NASEM, 2019, p. 47). The following section describes how EnCoRe is uniquely positioned to increase the sustainability of its partnerships in the broader landscape of existing efforts, as well as the opportunities and challenges associated with aligning with regional and national efforts, including communities of practice (CoP), networks, and coalitions.

POTENTIAL ALIGNMENT WITH EXISTING EFFORTS

It may be useful for EnCoRe to think about sustainability in terms of its partners building a support network by creating new partnerships and by developing new or enhanced abilities to access resources from governmental and nongovernmental sources. When EnCoRe support ends, those communities that have established partnerships providing mutual benefits and have gained

the skills necessary to apply for and manage funding or in-kind support from other entities will be positioned to thrive in the long term.

Multijurisdictional local and regional planning agencies play an essential role in developing resilience strategies for much of the country (Dabson et al., 2012; NADO, 2015). The impacts of climate change, from the increasing frequency of extreme heat events to heightened flood risks and the impacts of rising sea levels, will severely impact the functioning of many local governments. In fact, cities and counties are the primary entities that will have to respond to many of these challenges to protect peoples' health, safety, and welfare. Climate adaptation planning will happen at the local level because the impacts will be varied and location specific. However, the capacity for localities to meet these challenges is also extremely varied. Cities such as Houston and Miami are large and sophisticated entities with infrastructure budgets in the billions of dollars. Midsized cities, such as New Orleans, Louisiana, or Tampa Bay, Florida, have dedicated departments for addressing sustainability and the challenges of climate change. In these cases, communities can mobilize internal resources and access external support for adaptation planning. In contrast, the vast majority of local governments are small towns and county or parish governments that lack adequate internal resources and often lack the expertise needed to access federal programs and other means of support without external assistance. These communities are often also the most vulnerable and historically disenfranchised. A lack of resources at the local government level to help these communities address the growing threats of climate change is one of the most significant barriers to implementing a successful and equitable climate adaptation strategy at both the local and regional levels. Multijurisdictional planning agencies play a key role here, and the sustainability of EnCoRe partnerships would benefit from extending these partnerships to such agencies. Additionally, aligning with extra-community programs or networks, such as a regional or multijurisdictional planning agencies or councils, can mitigate the impacts of losing a mayor, manager, or champion at the local community level.

Supported by pooling resources from many jurisdictions, and often with additional state support and funding from federal contracts, planning agencies provide many of the types of services to smaller communities that larger wealthy areas are able to provide on their own. Without this assistance, many cities and counties would struggle with basic operations such as building-code enforcement or zoning administration. Planning agencies also work to enhance community resilience by supporting the disbursement of federal funds for hazard mitigation planning, as well as housing, transportation, environmental protection, economic development, and other activities. Increasingly, resilience is an explicit concern for these entities and their member communities. In addition to supporting access to resources and resilience planning and implementation, regional planning agencies provide an important educational function. Frequently, professionals working for these multijurisdictional agencies are the most trusted sources for needed scientific data and resilience planning practices. Their role in increasing community resilience is critical, especially for ensuring that efforts to improve resilience are implemented in a fair and equitable manner that addresses all communities, regardless of wealth and resources.

As we learned during our information-gathering sessions and from committee experience, many entities in the Gulf region can provide assistance. This region is richly diverse with potential collaborators and expertise; however, these have not always been connected effectively, and opportunities for long-term impact and sustainability have been missed. Potential collaborators include programs and organizations, such as programs funded by the Infrastructure Investment and Jobs Act (several federal agencies), the Gulf of Mexico Alliance (a coalition of state and federal agencies, tribal governments, communities, academic organizations, businesses, and nongovernmental organizations in the region), the National Sea Grant Program (provided by the National Oceanic and Atmospheric Administration [NOAA], including the Gulf States and Alaska), the Sea Grant's Community Resilience Initiative, The Water Institute of the Gulf (independent nonprofit), the NOAA Community Resilience Hub, Building Resilient Infrastructure and Communities (BRIC, a program of the Federal Emergency Management Agency [FEMA]), the National Science Foundation's Navigating the New Arctic Program, and the Alaska Native Health Consortium (see Chapter 3 for other relevant programs with which EnCoRe can partner). Additionally, Community Development Financing Institutions (CDFIs) have significant potential to assist communities on an ongoing basis. There is a coalition of CDFIs, and one area of focus is on disaster recovery.²⁴ Also present in one shape or another are resilience communities of practice (CoPs), which can be an important source of expertise, lessons learned, and connections for communities. For example, in 2009, NOAA's Gulf of Mexico Regional Collaboration Team and the four Gulf of Mexico Sea Grant Programs (in Florida, Missouri/Alabama, Louisiana, and Texas) began to form the Gulf of Mexico Climate and Resilience Community of Practice.²⁵ This CoP includes individuals from a variety of Gulf communities as well as extension practitioners and state and federal agency representatives. In Florida, there are a number of regional resilience coalitions or compacts, and the Florida Housing Coalition is an affordable housing coalition that focuses on resilience issues.²⁶ There are also coalitions dedicated to address health and mental health impacts, such as the Gulf States Health Policy Center (GS-HPC).²⁷

²⁴ The Coalition of Community Development Financial Institutions (CDFI Coalition) is a national organization in the U.S. promoting the work of community development financial institutions (CDFIs). For more information, see <https://cdfi.org/disaster-relief/> (accessed February 15, 2023).

²⁵ The Gulf of Mexico Climate and Resilience CoP enables local decision-makers and those involved in extension, outreach, and education to collaborate on incorporating all types of coastal hazards into Gulf Coast communities' comprehensive plans; it holds annual workshops and develops common approaches for working with federal, state and local decision-makers, such as planners, emergency managers, and coastal zone managers, among other relevant groups. For more information, see <https://masgc.org/climate-resilience-community-of-practice/about1> (accessed February 10, 2023).

²⁶ For more information about the Florida Housing Coalition, see <https://flhousing.org/about/> (accessed February 10, 2023).

²⁷ The GS-HPC aims to reduce health disparities and improve health outcomes in the Gulf, conducts health policy research, and builds community coalitions to improve the health rankings of the five Gulf States (Alabama, Mississippi, Louisiana, Texas, and Florida). The GS-HPC is a partnership of BayouClinic, the University of Alabama at Birmingham, and The University of Southern Mississippi. For more information, see <https://gshpc.org/index.php/about-2/> (accessed February 15, 2023).

The EnCoRe initiative has the capability to channel funding and provide dedicated staff and other priority resources directly to communities that need it most, while making the application process and reporting and/or evaluating requirements less burdensome on communities, compared with the processes required by federal agencies, as mentioned above. As such, EnCoRe can serve as a testbed for future federal, state, regional, and private efforts to impact communities positively. Additionally, EnCoRe can fund resources that federal and state agencies cannot always provide, such as food, child care, transportation, if these services are not available locally, and EnCoRe can offer other forms of compensation for community participation in EnCoRe efforts. EnCoRe can connect communities with the greatest need to grant writers and program managers, which is normally not an option with federal or state programs.

The EnCoRe initiative is unique in focusing on and highlighting the interconnection between hazard resilience and health. As the human health impacts of climate change grow, EnCoRe can both raise awareness about impacts and connections, and intentionally convene representatives from multiple disciplines at the community level. Creating resilient communities is about empowering their inherent abilities and developing new ones, rather than a typical research project or grants program. The EnCoRe initiative can also facilitate connectivity and empower collaboration among entities to ensure long-term sustainability and resilience by selecting partnerships that clearly demonstrate a drive and mechanisms for sustainability over the long term. Federal funding to support resilience and climate adaptation continues to grow (e.g., FEMA's BRIC program, the Community Development Block Grant Mitigation program of the U.S. Department of Housing and Urban Development), but applying for and administering federal funding is complex and presents an insurmountable obstacle for many communities. EnCoRe could provide significant benefits and increase the sustainability of its partnerships by collaborating with or increasing the capacity of communities to secure federal grants.²⁸

Additionally, EnCoRe could consider developing a requirement for participating communities to connect with some number of potential partners that could provide ongoing support in some form. Communities often are unaware of who to ask or how and where to start developing collaborations with other supporting entities and communities; therefore, they may need help both identifying relevant partners and connecting in a way that leads to ongoing engagement. EnCoRe needs to avoid excluding any potential partnerships by this requirement, and instead consider developing a resource page that provides communities with contacts to supporting entities and incentives to connect with these entities.

Additionally, the EnCoRe initiative would benefit from developing its own sustainability plan and should consider requiring sustainability plans for the participating communities that have the capacity and connections to do so over the course of their project. The sustainability plan should include ongoing partnerships and sources of financial or in-kind resources to

²⁸ For example, EnCoRe could make communities aware of opportunities such as the BRIC best practices manual released by the Environmental Defense Fund and AECOM (see https://www.edf.org/sites/default/files/documents/FEMA%20BRIC%20Application%20Best%20Practices%20and%20Recommendations_FINAL.pdf (accessed May 18, 2022)).

continue building capacity moving forward. Again, communities may need help identifying and learning how to access resources directly or through partnerships. This type of support for long-term sustainability will be incredibly important, but as noted above, such a requirement should not disqualify the communities with the greatest need and most compelling justification for selection as an EnCoRe partner. Finally, EnCoRe can ensure sustainability by forming a network of participating communities that could itself become a community of practice (CoP). In selecting the communities for participation, EnCoRe could select a percentage of proposals that have the opportunity and capacity to participate in a cross-regional CoP. During partnership development, EnCoRe can connect the appropriate resources to the applicants with the most compelling needs and opportunities.

Many underserved communities do not have the means to identify partners and potential sources of long-term support. As we have heard, it takes time to build and maintain relationships (NASEM, 2019).²⁹ Aligning with other organizations and efforts requires willingness of all partners to engage and clearly commit to effective relationship building. CoPs, while extremely valuable for both learning and moral support, struggle to get funding on an ongoing basis, so they may dissolve over time. Additionally, continual turnover in organizations can require starting from scratch on relationship building. Too often it is assumed that communication and coordination are free, whereas in reality, this usually requires the most resources in terms of time, effort, and finances. EnCoRe could support such activities.

²⁹ Comments made to the committee by the Alaska and Sea Grant and the Consortium for Resilient Gulf Communities (CRGC) panels, on December 17, 2021, and January 28, 2022, respectively.

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Appendix A

Committee Member Biographies

Dr. Anne C. Petersen (Chair) is founder and president of Global Philanthropy Alliance, a foundation making grants in Africa. She is also research professor at the Center for Human Growth and Development and faculty associate at the Center for Global Health, both of the University of Michigan, among other affiliations there. Dr. Petersen serves on several voluntary boards or committees for other foundations and government, scientific, and community-based organizations. She is co-chair of the advisory board for CALIT2, an organization created a decade ago to move information technology advances from the University of California system to industry in California. Previously, Dr. Petersen held positions as professor of psychology at Stanford University, deputy director of the Center for Advanced Study in the Behavioral Sciences, senior vice president for programs and corporate officer at the WK Kellogg Foundation, and department head and founding dean of the College of Health and Human Development at The Pennsylvania State University. She was the first vice president for research at the University of Minnesota, as well as graduate dean, and professor in the Institute for Child Development and Department of Pediatrics. Dr. Petersen was also faculty at the University of Chicago and associate director of the MacArthur Foundation Health Program. She has authored numerous articles and books. Her honors include election to the National Academy of Medicine and Fellow of several scientific societies including the American Association for the Advancement of Science, the American Psychological Association (three divisions), and founding Fellow of the Association for Psychological Science. She cofounded the Society of Research on Adolescence, was president of several scientific societies, and is past president of the International Society for the Study of Behavioral Development. Dr. Petersen received her PhD in measurement, evaluation and statistical analysis from the University of Chicago.

Brian Bledsoe is GAA distinguished professor and director of the Institute for Resilient Infrastructure Systems at the University of Georgia. He has more than 30 years of experience as a civil and environmental engineer, hydrologist, and environmental scientist in the private and public sectors. Before entering the professorate, Dr. Bledsoe worked as a consulting engineer and surveyor, and for the State of North Carolina as a watershed restoration engineer. His research is focused on the interface of engineering, hydrology, and ecology with

an emphasis on infrastructure, stormwater and flood management, water quality, and restoration of river and wetland ecosystems. Dr. Bledsoe received a National Science Foundation CAREER Award in 2006, served as a Fulbright Scholar in Chile in 2008, was elected a Fellow of the American Society of Civil Engineers in 2017, and is past president of the American Ecological Engineering Society. He holds degrees from Georgia Tech, North Carolina State University, and Colorado State University (PhD in civil engineering).

Irene Dankwa-Mullan is chief health equity officer and deputy chief health officer for IBM Corporation, IBM Watson Health. IBM Watson Health created a cloud-based data hub that brings together individual, clinical, research, and social data from a variety of resources and that is powered by advanced cognitive and analytic technology. Dr. Dankwa-Mullan is responsible for the global strategy for driving and building clinical evidence for Watson Health solutions. This is accomplished through evaluation research, real-world evidence studies, and implementation studies to support evidence-based practices to transform health care. She works with multidisciplinary teams at the interface of big data, cognitive computing, and machine learning technology to inform health care delivery and clinical decision making. Dr. Dankwa Mullan is a physician-researcher with nearly two decades of experience in clinical research, public health, disparities, and population health. She spent nearly a decade delivering and managing frontline primary care, preventive services, and community-based clinical research as a public health physician and medical director. Prior to her role at IBM, Dr. Dankwa-Mullan was a medical officer at the National Institutes of Health (NIH), where she served as director of the Office of Innovation and Program Coordination and then as deputy director for the Division of Scientific Programs within the National Institute on Minority Health and Health Disparities. She was awarded the first NIH Director's award for exceptional contribution to advancing the science of health disparities. Dr. Dankwa-Mullan received her MD from Dartmouth Medical School.

Jennifer Langhinrichsen-Rohling is professor of psychological science at University of North Carolina at Charlotte and a licensed clinical psychologist. She is core faculty in the clinical health and community health concentrations of the health psychology doctoral program. Her most recent research is community based, focused on underserved and disadvantaged populations, and occurs while integrating mental and behavioral health care into primary care and public health settings. Her work typically centers around the prevention of violence: sexual assault, intimate partner violence, stalking, and gun violence. Implementing, evaluating, and educating others to provide evidence-based, solution focused and resiliency-enhancing interventions is a priority for Dr. Langhinrichsen-Rohling. Previously, she served as executive director of the Gulf Coast Behavioral Health and Resiliency Center and has more than 175 peer-reviewed publications. Dr. Langhinrichsen-Rohling received her PhD in clinical and community psychology from the University of Oregon.

Amy E. Lesen (*resigned from committee October 13, 2021*) is professor of Environmental Leadership and Participatory Change at Antioch University. She was previously associate professor in the Minority Health and Health Disparities Research Center at Dillard University and research associate professor at the Tulane ByWater Institute at Tulane University in New Orleans. The overarching theme of her work is the interrelatedness between environmental and human social dynamics in coastal cities and coastal communities, and how those systems are influenced by climate and environmental change. Most of her current work is focused in New Orleans, Southeastern Louisiana, and the Gulf Coast. Dr. Lesen also researches and writes about the intersection between science and the arts, disaster resilience, informal science learning, scientific public engagement, science communication, participatory research, and interdisciplinarity. She received a PhD from the University of California, Berkeley, in integrative biology with a concentration in biological oceanography and paleoceanography.

Jaimie Hicks Masterson is director of Texas Target Communities at Texas A&M University, an engaged research program that works alongside low-capacity communities to plan for resilience. Based on this work, in 2019, the Liberty County Strategic Plan received the national Silver Planning Achievement Award from the American Planning Association. Ms. Masterson is author of *Planning for Community Resilience: A Handbook for Reducing Vulnerabilities to Disasters*, which focuses on hazard mitigation strategies and tools for government officials, planners, and emergency managers that can be incorporated predisaster. Additionally, she is coauthor of *Engaged Research for Community Resilience to Climate Change*. She is co-principal investigator of the Plan Integration for Resilience Scorecard project funded by the Department of Homeland Security, through the Coastal Resilience Center at the University of North Carolina at Chapel Hill. Ms. Masterson also consults with small communities to develop comprehensive plans and other planning needs to fold and infuse resilience practices into community initiatives. She previously worked as a landscape designer and secondary education instructor. Ms. Masterson received her bachelor of landscape architecture and master of urban planning with a certificate in environmental hazards from Texas A&M University.

Alison M. Meadow is associate research professor in the Arizona Institutes for Resilience. With her background in environmental anthropology, Indigenous studies, and urban planning, Dr. Meadow's research focuses on the process of linking scientists with decision makers to improve the usability of climate science, with a particular emphasis on evaluating the societal outcomes of such partnerships. She partners with communities in Arizona and New Mexico to support their climate adaptation planning efforts through the Climate Assessment for the Southwest (CLIMAS) program. In addition to her affiliation with CLIMAS, she is a co-principal investigator with the Department of the Interior's Southwest Climate Adaptation Science Center. Dr. Meadow received her PhD in anthropology from the University of Alaska Fairbanks.

Fernando I. Rivera is professor of sociology at the University of Central Florida. He has established an ongoing research program in the fields of medical sociology; sociology of health, race, and ethnicity; and sociology of disasters. Dr. Rivera has studied the differential patterns of health among Puerto Ricans in the United States by analyzing social indicators such as perceived discrimination, residential segregation, and socioeconomic status, and impacts of these indicators on Puerto Rican health. In the area of race and ethnicity, he has studied racial relations among college students, the process of incorporation of Puerto Ricans to Central Florida, and several aspects of the Puerto Rican diaspora in the United States, including health disparities, culture, and discrimination, among others. For the study of disasters, his work has emphasized disaster resiliency and the importance of social and economic indicators in promoting resilience to the process of preparedness, mitigation, response to, and recovery from disasters. Dr. Rivera has expanded his disaster resilience work, particularly as it relates to community resilience, to the study of restoration and resilience for an ongoing National Science Foundation research grant. He received his PhD in sociology from the University of Nebraska-Lincoln.

Mathew Sanders manages the state planning portfolio of The Pew Charitable Trusts' Flood-Prepared Communities initiative, which focuses on state-level efforts to plan for current and future flood risk. In this role, he works directly with state governments and community leaders to advocate for, develop, and implement comprehensive disaster-resilience plans for various flood risks, including coastal surge, riverine, and flash flooding. Before joining Pew, Mr. Sanders led the development of Louisiana's successful application to the U.S. Department of Housing and Urban Development—sponsored National Disaster Resilience Competition; upon receipt of a \$92.6 million award, he was principal planner in development of both funded projects—Louisiana's Strategic Adaptations for Future Environments and the relocation of Isle de Jean Charles in remote coastal Louisiana. He received the Route Fifty Navigator Award in the Leaders category for excellence and achievement in state government. Mr. Sanders holds a bachelor's degree in mass communication from Louisiana State University and a master's in urban planning from New York University's Robert F. Wagner Graduate School of Public Service. Additionally, he is accredited by the American Planning Association's American Institute of Certified Planners.

Jackie Qataliña Schaeffer is community development manager for the Community Environment & Health program of the Alaska Native Tribal Health Consortium (ANTHC). Ms. Qataliña is Iñupiaq, and comes from Kotzebue, Alaska. She has worked in comprehensive planning, energy, housing, and water/sanitation efforts in rural communities across Alaska, utilizing a holistic approach to project development. Her passion has led her to infuse traditional Inuit knowledge into strategic planning to change the top-down approach into a locally driven, grassroots approach, which allows local leadership to be empowered to own and lead the discussions and decision making. Ms. Qataliña believes her ancestors' traditional knowledge

will help bridge gaps in our multicultural lifestyles and create balance in how we adapt to our rapidly changing climate. Her current work includes innovative sanitation solutions for unserved communities, tribal resilience adaptation planning, and community engagement for communities responding to climate impacts. Ms. Qataliña also works with various indigenous groups to revitalize the return of traditional practices, including Iñupiaq language, traditional healing, medicinal plants and harvesting practices, storytelling, traditional skin sewing, and Iñupiaq dancing. Her commitment to serving the Indigenous people of Alaska allows her to utilize a variety of skills and talents. She currently sits on the NANA Regional Corporation Board of Directors, Alaska Institute for Climate & Energy Board of Directors, and the ANTHC Scholarship Committee, and is a Kikiktagruk Inupiat Corporation shareholder and a tribal member of the Native Village of Kotzebue. Ms. Qataliña studied interior design and sustainable building in London and in the United States.

David R. Shaw is provost and executive vice president at Mississippi State University (MSU). As the university's chief academic officer, he oversees all academic policies, the integrity of the academic mission, and academic operations. He provides direct oversight for eight academic colleges and two campuses, as well as many academic and nonacademic support units. A long-time faculty member and former vice president for research and economic development at MSU, he works with senior administrators to develop budgetary recommendations that affect the teaching, research, and service mission of the institution. Dr. Shaw previously served as founding director of the Northern Gulf Institute, a National Oceanic and Atmospheric Administration Cooperative Institute, and as founding director of the Geosystems Research Institute at MSU. Dr. Shaw is a Fellow of the American Association for the Advancement of Science. In 2017, the Fulbright U.S. Scholar Program selected him for its prestigious U.S.-France International Education Administrators Program. Dr. Shaw serves on the board and chairs the budget committee for the Gulf Research Program. He was recently appointed to the Environmental Protection Agency's Pesticide Program Dialogue Committee. Dr. Shaw holds a bachelor's in agriculture from Cameron University in Oklahoma and a master's and doctorate from Oklahoma State University.

Heidi Stiller is south regional director for National Ocean Service (NOS) Office for Coastal Management (OCM) at the National Oceanic and Atmospheric Administration (NOAA); she is based in St. Petersburg, Florida. Ms. Stiller serves as a focal point for senior-level coastal partner interaction at the regional, state, and local levels from North Carolina to Texas, including the Caribbean. She helps to implement national and regional statutory and other coastal and ocean programs; responds to the needs of users, partners, and coastal decision makers; and delivers technical assistance to meet coastal and ocean challenges. Before joining NOAA, Ms. Stiller worked for the North Carolina Division of Emergency Management and spent 3 years at the Florida Coastal Management Program. Her work is focused on planning

that incorporates hazard mitigation, climate adaptation, and natural resource sustainability, including providing data and tools to help communities address and communicate coastal inundation risks. Ms. Stiller has experience with postdisaster recovery planning and recently served as an author on the coastal chapter of the Fourth National Climate Assessment. She received her master's degrees in public policy and environmental management from Duke University.

James Temte is a member of the Northern Cheyenne Tribe; he is acting director of the Office of Research and Community Engagement at Alaska Pacific University (APU) and adjunct faculty in the Institute of Culture and the Environment. Among other subjects, he teaches modern Indigenous art, climate change, and coproduction of knowledge. He has spent time with Tribes in all regions of the United States, and most recently in Alaska. Mr. Temte has a passion for supporting Indigenous voices, tribal sovereignty, tribal self-determination, and coproduction of knowledge, including Indigenous methodologies and Western science. He uses innovative community engagement methods, including mural art, traditional Indigenous culture, science, and media. Mr. Temte works with communities on multidisciplinary teams to inspire a broader understanding of community voices and priorities, so that they are not only heard but also supported, celebrated, and preserved. He has a BS in biology from Fort Lewis College and an MS in applied environmental science and technology from the University of Alaska Anchorage.

Appendix B

Agenda of Public Sessions

Sponsor Discussion

Tuesday, July 6, 2021

2:30–4:30pm EDT

2:30–3:00pm

Welcome and Introductions

- Tom Arrison, Study Director; Director of Board on Research Data and Information, National Academies of Sciences, Engineering, and Medicine (National Academies)
- Anne Petersen, Committee Chair; Research Professor, University of Michigan

3:00–4:30pm

Sponsor Discussion and Q&A

- Lauren Alexander Augustine, Executive Director, Gulf Research Program
- Charlene Milliken, Senior Program Manager, Gulf Health and Resilience Board, Gulf Research Program

Panel: Environmental Justice Partnerships

Monday, October 4, 2021

1:00–2:30pm EDT

1:00–1:05pm

Welcome and Introductions: The Enhancing Community Resilience (EnCoRe) Criteria Study and Panel Objectives

- Anne Petersen, Committee Chair, University of Michigan
- Tom Arrison, Study Director, Policy and Global Affairs (PGA)

1:05–1:30pm

Environmental Justice at the U.S. Environmental Protection Agency (EPA)

Moderator: Heidi Stiller, National Oceanic and Atmospheric Administration (NOAA)

- Victoria Robinson, Lead for Stakeholder Engagement and Emergency Management, Community Support and Engagement Team, Office of Environmental Justice, EPA
- Sheryl Stohs, Region 10, Environmental Justice Program and Grants Coordinator, Office of the Regional Administration Division, Policy and Environmental Review Branch, EPA
- Danny Gogal, Tribal and Indigenous Peoples Program Manager, Lead

for International Human Rights, Community Support and Engagement Team, Office of Environmental Justice, EPA

- 1:30–1:40pm** **Q & A and Clarifications from the Moderator**
- 1:40–2:05pm** **Environmental Justice Community Stakeholders**
Moderator: Jackie Qataliña Schaeffer, Alaska Native Tribal Health Consortium
- Ruth Miller, Climate Justice Director for Native Movement (Alaska)
 - Juan Perras, Founder and Executive Director of T.E.J.A.S. (Texas)
- 2:05–2:15pm** **Q & A and Clarifications from the Moderator**
- 2:15–2:25pm** **Discussion with Committee Members, Panelists and Moderators**
- Anne Petersen, Committee Chair, University of Michigan
- 2:25–2:30pm** **Closing Remarks**
- 2:30pm** **Adjourn**

Committee Member Presentations

Monday, October 25, 2021
1:00–3:00pm EDT

- 1:00–1:05pm** **Welcome and Agenda**
- 1:05–3:00pm** **Presentations from Committee Members**
- 1:05–1:35pm** ● Jaimie Masterson: Texas Target Communities—Lessons Learned and Criteria for Participation
- 1:35–2:05pm** ● Mat Sanders: Louisiana’s Strategic Adaptation for Future Environments—Multijurisdictional Engagement Efforts
- 2:05–2:35pm** ● David Shaw: Gulf of Mexico Research Initiative—Research-Intensive Partnerships
- 2:35–3:00pm** ● Jennifer Langhinrichsen-Rohling: Gulf Region Health Outreach Program—Enterprise Evaluation and the Management of a Regional Public Health Effort
- 3:00pm** **Adjourn**

Presentations by David Perkes and Roy Hart

Friday, October 25, 2021
1:00–3:00pm EDT

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| 12:00–12:05pm | Welcome and Introduction |
| 12:05–12:25pm | Presentation: Expanding the Work of Resilience with Long-term Community Partnerships <ul style="list-style-type: none">• David Perkes, Professor of Architecture and Founding Director of the Gulf Coast Community Design Studio, Mississippi State University |
| 12:25–12:40pm | Discussion and Q&A with Committee |
| 12:40–1:00pm | Presentation: Community Involvement, Data, and the Management of Public Health Coalitions <ul style="list-style-type: none">• Roy Hart, Executive Director, Mississippi Public Health Institute |
| 1:00–1:15pm | Discussion and Q&A with Committee |

Panel on Alaskan Perspectives

Friday, December 17, 2021
1:00–4:00pm ET

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| 1:00–1:10pm | Welcome and Agenda <ul style="list-style-type: none">• Anne Peterson, Committee Chair• Tom Arrison, Study Director• John Ben Soileau, PGA Staff |
| 1:10–3:10pm | Panel Presentations: Institutional Perspectives
Moderator: James Temte, Acting Director, Office of Research and Community Engagement, Alaska Pacific University |
| 1:10–1:20pm | <ul style="list-style-type: none">• Malinda Chase, Tribal Liaison for Alaska's Tribes and the Climate Research Community at University of Fairbanks |
| 1:20–1:30pm | <ul style="list-style-type: none">• Desirae Mack, Senior Program Manager at Alaska Native Tribal Health Consortium |
| 1:30–1:40pm | <ul style="list-style-type: none">• Matt Drukenmiller, Director of Navigating the New Arctic, National Science Foundation |
| 1:40–2:10pm | Moderated Discussion |
| 2:10–2:40pm | Open Q & A |
| 2:50–4:00pm | Panel Presentations: Community Perspectives
Moderator: Jackie Qataliña Schaeffer, Community Development Manager, ANHC |

- Michael Opheim, Environmental Coordinator for Seldovia Village Tribe
- Sylvia Lange, Cordova Community Leader
- Evon Peter, Founder of Tanan Ch'at'oh and UAF Professor of Indigenous Studies

4:00pm **Adjourn**

Panel on 100RC & Resilient Cities Catalyst Partnerships

Tuesday, January 11, 2022
1:00–3:30pm ET

1:00–1:10pm **Welcome & Agenda**

- Anne Peterson, Committee Chair
- Tom Arrison, Study Director
- John Ben Soileau, Project Lead

1:10–2:00pm **Lessons Learned from 100 Resilient Cities (100RC)**
Moderator: Jaimie Masterson, Director, Texas Target Communities

1:10–1:25pm **Presentation: The 100RC: Overview, Lessons Learned, and Best Practices**

- Michael Berkowitz, Founding Principal, 100RC and the Resilient Cities Catalyst (RCC) Program

1:25–2:00pm **Moderated Q&A**

2:00–3:30pm **Panel: The RCC Partnership in Houston**
Moderator: Jaimie Masterson, Director, Texas Target Communities

Panel Presentations:

- Corinne LaTourneau, Founding Principal of RCC & Former Managing Director for N. America 100RC/RCC
- Laura Patiño, Deputy Chief Resilience and Sustainability Officer for the City of Houston
- Huey German-Wilson, Program Director at Northeast Houston Redevelopment Council

2:45–3:10pm **Moderated Discussion**

3:10–3:30pm **Open Q & A**

3:30pm **Adjourn**

Project Impact Panel: FEMA and Community Perspectives

Friday, January 21, 2022

2:00–4:00pm ET

2:00–2:10pm

Welcome and Agenda

- Anne Peterson, Committee Chair
- Tom Arrison, Study Director
- John Ben Soileau, Project Lead

2:10–4:00pm

Moderated Dialogue: Project Impact and Multisectoral Community Partnerships

Moderator: Mathew Sanders, Committee Member; Senior Manager, Flood-Prepared Communities, The Pew Charitable Trusts

Moderated Dialogue

2:10–3:10pm

- Maria Vorel, Former National Director of Project Impact
- Ines Pearce, Former Seattle Project Impact Director
- Ann Patton, Former Tulsa Project Impact Executive Director

Moderated Discussion and Open Q & A

3:10–4:00pm

Panel on Gulf Regional Partnerships

Friday, January 28, 2022

1:00–4:00pm ET

1:00–1:10pm ET

Welcome and Agenda

- Anne Peterson, Committee Chair
- Tom Arrison, Study Director
- John Ben Soileau, Project Lead

1:10–2:00pm

Moderated Dialogue: Institutional Perspectives

Moderator: Jennifer Langhinrichsen-Rohling, Committee Member; Professor of Psychological Science, University of North Carolina at Charlotte

Panelists

1:10–1:25pm

- Tracie Sempier, Coastal Resilience Engagement Specialist at Mississippi-Alabama Sea Grant Consortium.

1:25–140pm

- Melissa Finucane, Codirector, Consortium for Resilient Gulf Communities

1:40–2:00pm

Discussion and Q & A

2:10–4:00pm

Moderated Dialogue: Community Perspectives

Moderator: Irene Dankwa-Mullan, Deputy Chief Health Officer, IBM Corporation, IBM Watson Health, and Study Committee Member

Panelists

2:10–2:35pm

- Carolyn A. Martin, Planning and Grants Coordinator, City of Ocean Springs, Mississippi

Appendix C

Complete List of Programs Reviewed

National Resilience Efforts

- 100 Resilient Cities (100RC)
- Community and Regional Resilience Institute (CARRI)
- Resilient America: Community Pilot Partnership Program
- Resilient Cities Network
- Resilience Cities Catalyst (RCC)

Federal and National Health Efforts

- Centers for Disease Control and Prevention's (CDC's) Good Health and Wellness in Indian Country
- CDC's Racial and Ethnic Approaches to Community Health (REACH) Program
- Robert Wood Johnson Foundation's Healthy Communities Program

Federal Resilience Efforts

- U.S. Environmental Project Agency/Federal Emergency Management Agency (FEMA) Recovery and Resiliency Partnership Projects (R2P2)
- FEMA Project Impact
- FloodWise Communities
- U.S. Department of Housing and Urban Development's National Disaster Resilience Competition
- National Ocean and Atmospheric Administration's (NOAA's) Regional Integrated Sciences & Assessment (RISA) Program
- NOAA's Great Lakes Integrated Sciences and Assessments (GLISA)
- Project Impact 2

Philanthropic Organizations

- Aspen Institute's Community Strategies Group
- Kresge Foundation
- MDC
- Walton Family Foundation

Gulf Activities from the Deepwater Horizon Oil Spill

- Consortium for Resilient Gulf Communities (CRGC)
- Gulf of Mexico Research Initiative (GoMRI)
- Gulf Region Health Outreach Program
- Gulf of Mexico Alliance
- Healthy Gulf, Healthy Communities

Nonprofits Working in Communities—Gulf of Mexico

- Boat People SOS—Gulf Coast
- Education, Economics, Environmental, Climate and Health Organization (EEECHO)
- The Water Institute of the Gulf
- Urban Strategies Inc.
- First People Conservation Council of Louisiana
- LEAD the Coast—Foundation for Louisiana
- Lowlander Center
- The Building Community Workshop—Design Company
- Texas Environmental Justice Advocacy Services

Planning Activities (State/Regional/Local)

- The Isle de Jean Charles Resettlement
- Louisiana's Strategic Adaptations for Future Environments (LA SAFE)
- Build Baton Rouge

- Dutch Dialogues: New Orleans
- Louisiana Coastal Master Plan
- Louisiana Speaks, by Louisiana Center for Planning Excellence (CEPEX)
- Unite New Orleans Plan (UNOP), by Goody Clancy
- Virginia Resilience Adaptation Feasibility Tool (RAFT)

Public Health—Gulf of Mexico

- Mississippi Public Health Institute
- Louisiana Public Health Institute

Alaska Initiatives and Organizations

- Alaska Adapting to Changing Environments (Alaska ACE)
- University of Alaska Fairbanks' Alaska Climate Adaptation Science Center
- Alaska Native Tribal Health Consortium (ANTHC)
- Alaska RISA (Alaska Center for Climate Assessment and Policy)
- Center for Alaskan Native Health Research (CANHR)
- Cook Inlet Regional Citizens Advisory Council (Cook Inlet RCAC)
- The Denali Commission
- Inlet Keeper
- Newtok Planning Group
- Prince William Sound Regional Citizen's Advisory Council
- National Science Foundation's Navigating the New Arctic Program (NNA)
- Native Movement in Fairbanks and Anchorage, Alaska
- Seldovia Village Tribe in the Cook Inlet, Alaska
- Tanan Ch'at'oh, a Gwich'in Language Nest in Fairbanks, Alaska

University-Affiliated Community-Based Programs

- Auburn University Rural Studio

- Colonias Program, Texas A&M
- Gulf Coast Community Design Studio (GCCDS), Mississippi State University
- Indiana University Sustaining Hoosier Communities (SHC)
- Resilient Communities Project, University of Minnesota
- Texas Target Communities (TxTC)—Texas A&M University
- University of Memphis Institute of Interdisciplinary Memphis Partnerships to Advance Community Transformation (iIMPACT)
- University of Mississippi M Partner
- University of Utah University Neighborhood Partners (UNP)

Networks

- Collective Impact Forum—FSG & The Aspen Institute
- Federation of Southern Cooperatives
- National Association of Counties' Gulf Coast County & Parish Caucus

Other Programs, Agencies, Departments, and Organizations

- City of Houston, Office of Resilience and Sustainability
- City of Ocean Springs, Mississippi, Planning and Grants Department
- Gulf States Health Policy Center in Bayou La Batre, Alabama
- Mississippi-Alabama Sea Grant Program (MS-AL Sea Grant)
- Northeast Houston Redevelopment Council (NHRC)
- Plaquemine Community CARE Center in Belle Chase, Louisiana
- EPA Office of Environmental Justice