

Climate Resiliency of Military Installations: Best Practices for Public-Public Partnerships

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August 2020



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NAVAL POSTGRADUATE SCHOOL



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Executive Summary

The Department of Defense first recognized climate change as a risk to national security in the National Defense Authorization Act Fiscal Year 1991 (NDAA FY). The NDAA FY 2020 requires incorporating energy, climate, and cyber resiliency measures into master plans at every military installation (Congress, vol. 116-92). Climate resiliency is a relatively new process for many installations and the cities and communities in which they reside. Installations and communities would benefit from more research to fully understand and implement resilience measures. This report relies upon analysis through government reports and primary data of interviews to analyze and offer the best practices of partnerships among DoD and municipal governments. The analysis utilizes climate and non-climate specific research to identify the best climate and energy resiliency practices through public-public partnerships.

These best practices confirm and build off practices identified in previous research like the 2020 RAND study, "Building Resilience Together." Findings presented here drill down into the cultivation of personal and professional relationships that can increase efficiency and productivity of partnerships. Overarching themes include the need to share information and establish institutional knowledge. Utilizing all available resources, including external inputs like consultants and tailoring each project and partnership to the region, will ensure more successful and sustainable partnership programs.

Challenges will arise over the course of resiliency projects. This research can act as a guide to overcome problems and help Planning Liaison Officers and municipalities build from existing relationships and policy structures to tackle the resiliency needs of communities and DoD installations. With a combination of best practices, innovative thinking, and commitment from partners, climate, energy, and cyber resiliency is within reach.

Introduction

A recent GAO report notes that, historically, DoD has failed to utilize climate projections and modeling to better prepare installations; adjustments, and infrastructure updates are primarily based on extreme weather events (Government Accountability Office, 2019). Climate change will continue to affect military installations directly and indirectly. Some known direct impacts include energy security, electrical supply, erosion, flooding, coastal infrastructure damage, water supply, and stormwater and wastewater disposal. Effects exist beyond the fence as well including transportation issues, electrical and power problems, and even relocation due to impacts. While installations and DoD cannot protect entire communities from the effects of climate change, resilience to its effects may mean the difference between safeguarding those communities from threats.

The NDAA FY 2020 was the first bill to require that DoD "promote military installation resilience, energy resilience, energy and climate resiliency, and cyber resilience" (Congress, S. 1790, Sec. 2804). Thus, this bill is the catalyst for this report and the consequent research and analysis. However, installation resilience alone may be meaningless if external threats are not addressed, such as the flooding of public roads accessing the base. For example, a low projection model for Norfolk predicts as many as 140 nuisance floods associated with tides alone between 2019 and 2050; higher modeling could mean 1,992 flooding events in that same time frame (Burgos et al. 2018). At this time, the Norfolk area is flooding multiple times a year

associated with weather events and king tides. Recognizing the importance of collaboration in the face of climate change, this report identifies the best practices for public-public partnerships.

Methodology

The findings and recommended best practices are the outcome of policy research, unstructured interviews with US Navy personnel and municipality employees, analyses of multiple implemented or attempted partnership models, and media research such as news and blogs. What began as local research quickly expanded as people recommended others from their previous work history and extensive networks within the sector.

Research

The first research phase was to understand military installations' policy landscape and the historical inclusion of climate resiliency techniques and models. We compiled and reviewed nearly 30 studies, reports, bills, and newsletters that shed light on the installation adaptation and resiliency. The chosen reports were either military in origin or were connected to an installation. Research also entailed reviewing partnership models, climate action plans, vulnerability assessments, and transportation adaptation plans. The primary partnership programs that influenced this report are the Hampton Roads Sea Level Rise Preparedness and Resilience Intergovernmental Pilot Project (IPP), the Monterey Model, Presidio of Monterey partnership, and non-specific intergovernmental support agreements (IGSAs). Appendix 1 includes all documents that influenced this report.

IPP

The IPP was the first and largest intergovernmental project of its kind. Overall, it consisted of 17 municipalities, 16 federal agencies, several for-profit, and non-profit organizations. The project's goal was to establish official partnerships and memorandums of understanding (MOUs) between the federal government (Naval Station Norfolk) and municipalities that make up the broader region known as Hampton Roads. The entire first year, from 2014 to 2015, the project established a steering committee and ten working groups and held numerous stakeholder engagement and public meetings. Phase two of the project lasted the summer of 2015 to the summer of 2016. It was a continuation of the sessions in phase one and working group meetings to develop recommendations for the steering committee for partnership development. To date, there is no official partnership or established MOU as a product of the IPP.

The Monterey Model

This partnership model is a derivative of the Base Realignment and Closure (BRAC) plan in Monterey's early 1990s to help make it economically feasible to keep the Defense Language Institute in Monterey. Surrounding municipalities like Seaside and Pacific Grove continued to benefit economically from the presence of the Defense Language Institute as well. As noted in more detail below, this partnership is almost strictly a cost-sharing contract for services and maintenance.

Presidio of Monterey

The Presidio of Monterey partnership branched off of the Monterey Model. Instead of the Monterey Model's service and maintenance focus, the Presidio partnership leases land to the city for one dollar. In return, the city maintains the area and park space for public use. This agreement relieves the Presidio of maintenance costs and salaries and provides the city with more green space and open access points.

Interviews

The interviews are the most crucial piece of this project. What began as a list of people within the Naval Support Activity Monterey (NSAM) and Naval Station Norfolk grew to incorporate Monterey city officials, Norfolk city officials, and additional Navy personnel in Monterey and Norfolk, Virginia. We also received contact information for other installations vulnerable to climate impacts such as China Lake, which can be used in future research. In one month, we initiated 16 new relationships and obtained suggestions or contact information for more.

Each interview's objective was two-fold; we wanted to learn about the individuals' role as it relates to partnership development and their personal experiences with the public-public partnerships in which they operated.

For replicability purposes, interviews were unstructured, and thus we used different sets of questions depending on the installation. For individuals in the Norfolk region, we kept a relatively direct focus on the IPP while gaining input from other aspects of the person's experiences with military partnerships. For Navy personnel and city officials in Monterey, questions pertained to the Monterey Model, existing vulnerability assessments, Monterey's Climate Action Plan, and the Monterey Transportation Demand Management plan.

Key Findings / Best Practices

These best practices are a mix of first-hand experiences expressed through interviews and inferences drawn from in-depth research. This report also builds off other public-public partnership evaluations like the RAND report and its top eight criteria for successful partnerships, some of which overlap here. These six best practices are derived from both climate-focused and non-climate models but can be adapted for installation resiliency partnership scenarios.

Information Sharing

The majority of interviewees mentioned information sharing as a challenge. DoD security requirements can prevent a free flow of data such as geographic information systems (GIS) from the military to the municipality. Protocols may be unclear about what is public versus private information. Some cities, like Norfolk and Monterey, have GIS databases accessible by the public. Reliance on a city database may create a dynamic of one-way information dissemination and complicate the relationship among public partners.

Another complication with sharing information is simply the fact that it may not exist. For example, Monterey has completed multiple climate vulnerability assessments, including the vulnerabilities of public spaces, but the assessments do not include the installations. Neither DoD nor NSAM has completed scientific studies that outline the specific vulnerabilities of

Monterey military installations. Without this data, both Monterey and NSAM rely on the city's analysis to evaluate and make decisions about plans.

Information sharing was one of the most common roadblocks municipal employees and DoD personnel mentioned. Therefore, to streamline the development of a partnership between municipalities and DoD, standard practice and a checklist for clarity can outline the resources available to the municipality or other partners upon request. The list can also have points of contact, or position titles at a minimum, for the corresponding information to ensure clarity and continuity. Clear and open communication about goals, data, foreseeable conflicts, and changes in plans are crucial to a successful partnership (McCollester et al., 21).

Institutional Knowledge

Another major theme that arose throughout the interviews was the establishment of institutional knowledge, or rather, lack thereof. High turnover, mostly in the military but in many civilian positions, can lead to disruptions and inefficiency. Some municipal employees felt the process of establishing relationships without set practices for information sharing to be daunting and time-consuming. Other people also found it challenging to transition from conversations to drafting new agreements, especially from scratch.

A lack of institutional knowledge is also directly related to information sharing. New employees must relearn practices, information, and points of contact, which slow processes and create confusion. Establishing a standard method for information retention can facilitate the dissemination of information for partners. Institutionalizing the processes and relationships will ensure they do not dissolve on a whim (McCollester et al., 21). Much like some cities provide a public access GIS database, a public, or even a DoD searchable database for past agreements would facilitate efficiency and more reliable follow-through when moving from discussions to contracts and encourage information sharing.

Relationship Building

"Partners become both teachers and learners" (McCollester et al., 21). The IPP is, in retrospect, a massive stakeholder engagement and relationship building exercise. Former IPP participants shared that while nothing official came from the IPP such as an MOU or signed agreement, many unofficial relationships persist today. That group of individuals is primarily made up of Norfolk municipal and military employees who are still loosely connected through friendships and professional networks. Through IPP introductions and learning sessions, people gained more understanding of each other's work and have maintained relationships that led to more fluid partnerships and information exchange.

Identified in our research and RAND's top eight recommendations, is the need to establish strong relationships in an official and unofficial capacity. For a successful partnership, participants should either build from existing contacts or invest in understanding each party's goals, working styles, and potential conflicts. Casual settings or icebreaker meetings are simple solutions for basic introductions and knowledge exchange; happy hours were mentioned as informal but valuable setting. Helping participants develop relationships is crucial to the cultivation of trust and confidence in the process.

Prioritization

A recommendation from multiple liaisons is, where possible, to designate a full-time position dedicated to resiliency work. One installation representative noted, "the Army is leading the way; they are steps ahead of the Navy because they have a dedicated team." In Virginia, resiliency is an urgent problem that has empowered some leaders to form specific teams that focus on achieving resilience through partnerships and cost-sharing models. Where climate issues are less prevalent, installations may have planning liaisons committed to other priorities who can only pursue additional partnership building and resiliency research when time and leadership allow. Regardless of the climate vulnerabilities, detailed job descriptions that include research and community relationships will provide employees with the assurance of priority and validate the process during partnership development.

When designating a full-time position is impossible, establishing a working group may provide validity, priority, and urgency. Without assurance from leadership that the work is essential, it may often fall to the wayside. Working groups already exist across federal agencies and in the private sector; opting to join or use an established group is a reasonable first step instead of creating a new group or process. Leadership empowering employees to pursue these routes will foster relationships and information sharing and highlight the prioritization of resiliency.

Necessity of a Convener

In the IPP, Old Dominion University acted as a convener for all stakeholders. The RAND report recognized the importance of nonpartisan conveners, specifically in the IPP, due to the scale of interests and authorities. In Norfolk, the Navy, Army Corps of Engineers, and Rockefeller Foundation had separate workshops on partnership development and stakeholder engagement. While each party had a project lead, the outside role from a nonpartisan group proved useful in terms of efficiency, deadlines, and ensuring the alignment of interests and goals of all parties involved.

For any project with more than two parties, employing a convener may be crucial to distributing equal weight and accountability. This convener may be a non-profit, an educational institution, or a hired consultant. In comparison, utilizing ineffective conveners, whether internal or external, can hinder the project's effectiveness. An effective convener will empower the parties with information, relationship-building opportunities, and organization. Shortcomings may lead to disgruntled participants who feel unprepared, uninformed, and pressured to provide information without proper authority.

Customization

Possibly the most important, and overlooked, practice in the interview and research process is the need to customize each project, partnership, and process to the needs and resources of the region. Each region should utilize existing data, agreements, and relationships to avoid starting from scratch and avoid the appearance of ignoring previous work and progress. Building from past projects allows not only a starting point for discussions but also the flexibility to make appropriate adjustments. Existing policy structures such as long-standing processes and partnerships also give participants something familiar to customize. Addressing big problems may seem daunting and overwhelming but using existing models can alleviate some

of that stress. Customization based on existing resources in a region is key to a successful partnership to ensure that each party is benefiting equally and contributing accordingly.

In the Hampton Roads region, the VA Military Advisement Council acts as an advisory board between the Commonwealth of Virginia and multiple DoD branches. Meetings ensure a proper and productive working relationship between both parties by keeping communication open and missions aligned. This established group allows parties to request meetings whenever necessary to resolve issues and openly discuss proposals. In Monterey, the long-standing Monterey Model provides a framework for cost-sharing and effective monetary relationships. Either of these policy structures could shape innovative ideas for climate resiliency within the respective regions.

Discussion

These findings and best practices, perhaps unsurprisingly, focus on developing the foundation of a healthy relationship. Any successful partnership, professional or personal, will only succeed if all parties trust each other, understand one another, and believe in the end goal. Working to visualize and strategize the end goal can also lead to inherent information sharing, relationship building, and commitment.

This list is by no means exhaustive; however, it highlights the most commonly mentioned aspects of both successes and failures of public-public partnerships. These best practices are relevant to any public-public partnership but are meant explicitly for climate and energy resiliency.

As most military installations have yet to incorporate plans for climate resilience and mitigation, a strategized and well-planned process could determine the safety and effectiveness of a DoD base. Part of that research should include deciding when to separate open public meetings from the key stakeholder engagement ones. While both are necessary, having too many parties involved can slow the process and prevent agreement. No one guide can outline a step-by-step process for installations beginning to incorporate climate projections into master plans. However, ensuring a strong foundation of research, a network of committed partners, and experienced participants will help with common issues like follow-through and contract execution.

Remaining Questions and Areas for Further Research

Transitioning from stakeholder engagement to official contracts is a complicated process. The IPP did not result in a formal MOU or agreement, and Monterey lacks an intergovernmental climate resilience agreement. As noted, visualization and strategizing for the end goal may increase the chance of follow-through. However, the underlying reasons for projects ending before they begin are unknown and difficult to remedy.

Another point of contention among some interviewees was the confusion about funding sources. Identifying funding sources may be straight-forward; securing those grants comes with challenges due to delayed timelines and competing priorities. The funding sources are also frequently reliant on partnerships to access and pool funds. Especially under a cost-sharing model, the ideal is for parties to contribute equally monetarily and in the effort. Without a transparent process for securing funding, it is difficult to enter into agreement negotiations, much less see the project through to completion. Compiling a clear list of DoD grants and other

climate resilience grants may help installations address these issues. Ideally, it will help with planning timelines and preparing when funds fall through, are reduced, or unavailable.

Some challenges related to resiliency are unavoidable and unpredictable. Each process will be different based on the resources, participants, and region. However, acknowledging and even outlining potential conflicts like funding and political investment will add to the foundation of any resiliency efforts.

Appendix I Preliminary Research

Batten, Brian, et al. "City of Virginia Beach - Nature-Based Coastal Flood Mitigation Strategies." *City of Virginia Beach - Nature-Based Coastal Flood Mitigation Strategies | Adaptation Clearinghouse*, 2019, www.adaptationclearinghouse.org/resources/city-of-virginia-beach-nature-based-coastal-flood-mitigation-strategies.html.

Briggs, Chad Michael. "Climate Security, Risk Assessment and Military Planning." *International Affairs (Royal Institute of International Affairs 1944-)*, vol. 88, no. 5, 2012, pp. 1049–1064., www.jstor.org/stable/23325016.

Burgos, Alessandra, Hamlington, Benjamin, Thompson, Philip, Ray, R. 2018/11/21. "Future Nuisance Flooding in Norfolk, VA, From Astronomical Tides and Annual to Decadal Internal Climate Variability." vol. 45, 10.1029/2018GL079572. *Geophysical Research Letters*.

Congress, S.1790, 2020. National Defense Authorization Act for Fiscal Year 2020 Congress, www.congress.gov/bill/116th-congress/senate-bill/1790?q=%7B%22search%22%3A%5B%22ndaa%22%5D%7D&s=1&r=3.

Government Accountability Office. (2016). Selected Governments Have Approached Adaptation through Laws and Long-Term Plans. (GAO Publication No. 16-454). Washington, D.C.: U.S. Government Printing Office. <https://www.gao.gov/assets/680/677075.pdf>

Government Accountability Office. (2017). DOD Needs to Better Incorporate Adaptation into Planning and Collaboration at Overseas Installations. (GAO Publication No. 18-206). Washington, D.C.: U.S. Government Printing Office. <https://www.gao.gov/assets/690/688323.pdf>

Government Accountability Office. (2019). DOD Needs to Assess Risk and Provide Guidance on Use of Climate Projections in Installation Master Plans and Facilities Designs. (GAO Publication No. 19-453). Washington, D.C.: U.S. Government Printing Office. <https://www.gao.gov/assets/700/699679.pdf>

Klare, Michael T. *All Hell Breaking Loose: The Pentagon's Perspective on Climate Change*. Metropolitan Books, Henry Holt and Company, 2019.

Lawton, Charlie, and Isha Alexander, editors. "The Newsletter of the NMFWA Climate Change Working Group." Mar. 2020.

McCollester, Maria, Michelle E. Miro, and Kristin Van Abel, "Building Resilience Together: Military and Local Government Collaboration for Climate Adaptation." Santa Monica, CA: RAND Corporation, 2020. https://www.rand.org/pubs/research_reports/RR3014.html. Also available in print form.

Revell, David L., et al. "Final Sea Level Rise and Vulnerability Analyses, Existing Conditions and Issues Report." *Revell Coastal*, 3 Mar. 2016, monterey.org/Portals/0/Policies-Procedures/Planning/WorkProgram/LCP/16_0316_FINAL_Monterey_ExistingConditions_wAppendixA_WEB.pdf.

“The City of Monterey Climate Action Plan.” California, Monterey, Mar. 2016.
<https://www.monterey.org/Services/Community-Development/Sustainability/Climate-Change/Climate-Action-Plan>

Tucker, Margaret, and G James Herrera. “In Focus.” *Congressional Research Service*, 26 July 2019, crsreports.congress.gov/product/pdf/IF/IF11275.

Udvardy, Shana. “President Trump's Visit to Newport News, VA and His Speech Aboard the USS Gerald R. Ford: The Climate Connection.” *Union of Concerned Scientists*, 3 Mar. 2017, blog.ucsusa.org/shana-udvardy/president-trumps-visit-to-newport-news-va-and-his-speech-aboard-the-uss-gerald-r-ford-the-climate-connection.

United States, Congress, Engineer Research and Development Center, et al. *Engineering with Nature: An Atlas*, 2019. hdl.handle.net/11681/27929.

United States, Congress, Naval Facilities Engineering Command Headquarters, and Louis Berger. *Climate Change Planning Handbook Installation Adaptation and Resilience*, 2017.

Appendix II
Network of Interviewees, Connections and Future Connections

1. Steve Jones, Community Plans & Liaison Officer - Naval Station Norfolk
2. Brian Ballard, P CIV NAVFAC - Navy
3. Michael King, Regional Community Plans and Liaison Officer - Navy Mid-Atlantic
4. Vicki Taber, Environmental Program Director - NSAM
5. Marlana Brown, Community Planning Liaison Officer - NSAM
6. Jack Collins, Plans and Programs Integrator - NSAM
7. Kim Cole, Community Development Director - Monterey
8. Nat Rajansathira, Assistant City Manager - Monterey
9. Fernanda Roveri, Senior Associate Planner - Monterey
10. Ted Terrasas, Sustainability Coordinator - Monterey
11. Tom Levendowski, Senior Administrative Analyst - Monterey
12. Ben McFarlane, Senior Regional Planner - HRPDC
13. Shep Moon, Coastal Planner - VA DEQ
14. Jefferson Flood, Coastal Planner - VA DEQ
15. Dave Kriebel, Ocean and Coastal Engineering Faculty - US Naval Academy
16. Zoe Johnson, Planning Liaison – US Naval Academy
17. Molly Brown, Senior Attorney - Chesapeake Legal Alliance
18. Lisa Greicko, Civil Engineer II - City of Annapolis