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Dredging Operations and Environmental Research Program

Informing the Community Engagement Framework for Natural and Nature-based Projects

An Annotated Review of Leading Stakeholder and Community Engagement Practices

Sarah L. Thorne, Daniel C. Kovacs, Joseph Z. Gailani,
and Burton C. Suedel

September 2022

Engineer Research and
Development Center

Cover Photos:

Landscape Architecture students tour along the Texas coast as part of a workshop hosted by the Galveston District, an EWN Proving Ground, to show them the work being done to create more resilience and ecosystem restoration. EWN Podcast Season 2, Episode 2. https://ewn.erdc.dren.mil/?p=2510

FREEPORT, Texas (June 16, 2020) –Dr. Edmond Russo, along with the commander of USACE Galveston District, Col. Timothy Vail, Jeff Pinsky, and Shane Pirtle (Port of Freeport board) listen to Brig. Gen. Paul Owen, commander, USACE Southwestern Division atop the Freeport container facility. (Photo by Ron Wooten, Outreach Specialist, USACE Galveston District) EWN Podcast Season 1 Episode 7. https://ewn.erdc.dren.mil/?p=917

Dr. Brian Bledsoe, Director of the Institute for Resilient Infrastructure Systems (IRIS) at the University of Georgia, and member of the Network for Engineering With Nature, discussing connections between infrastructure and river ecosystems with graduate students. EWN Podcast Season 1, Episode 10. https://ewn.erdc.dren.mil/?p=957

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Abstract

In its infrastructure development work, the US Army Corps of Engineers (USACE) engages and collaborates with numerous local, state, and national stakeholders. Projects incorporating innovative approaches, such as beneficial use (BU) of dredged materials and other natural and nature-based features (NNBF), are often not well-understood by stakeholders, including those at the community level. This often results in conflicts and project delays. By sponsoring the development of a *Community Engagement Framework*, the Dredging Operations and Environmental Research (DOER) program hopes to systematically improve how project teams design, conduct, and measure effective community engagement on infrastructure projects. The purpose of this focused *Review* was to assesses leading stakeholder and community engagement practices that reflect the state of practice of stakeholder engagement within USACE, and by other leading organizations in the US and internationally, to inform development of the *Community Engagement Framework*. While the resulting *Framework* will be particularly well-suited for community engagement on projects incorporating BU and other NNBF, it will be applicable to a broad range of USACE Civil Works' initiatives where effective stakeholder engagement is critical to project success. The assessment showed the practice of stakeholder engagement has evolved significantly over the past 30 years, with much more focus today on ensuring that engagement processes are purposeful, meaningful, collaborative, and inclusive - reflecting stakeholders' desire to participate in co-creating sustainable solutions that produce environmental, economic, and social benefits. This, and other key findings, are informing development of the *Community Engagement Framework* which is scalable and adaptable to a broad range of projects across the USACE missions.

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Preface

This technical report (TR) was funded by the US Army Engineering Research and Development Center (ERDC), Dredging Operations and Environmental Research (DOER) program. Dr. Todd Bridges was the program manager. This study was conducted for the DOER Program under Work Unit 19-03. The technical monitor was Dr. Todd S. Bridges, Office of the Senior Scientist Branch (CEERD-EZS).

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At the time of publication, Mr. James Lindsay was Chief, CEERD-EPR; Mr. Warren P. Lorentz was Division Chief, CEERD-EP; Ms. Ashley E. Frey was the Chief, Coastal Processes branch (CEERD-HFC) Branch; and Dr. Cary A. Talbot was the Division Chief, Flood Risk Management Division (CEERD-HF). The Director of ERDC-EL was Dr. Edmond J. Russo and for ERDC-CHL was Dr. Ty V. Wamsley. Ms. Tiffany S. Burroughs was Headquarters USACE Acting Navigation Branch Chief, and Mr. Charles E. Wiggins, ERDC Coastal and Hydraulics Laboratory, was the ERDC Technical Director for Civil Works and Navigation, Research, Development, and Technology Transfer portfolio.

COL Christian Patterson was Commander of ERDC, and Dr. David W. Pittman was the Director.

1 Introduction

1.1 Background

In its extensive infrastructure development work, the US Army Corps of Engineers (USACE) engages and collaborates with numerous local, state, and national stakeholders[1] – from agency partners, to public, private, and not-for-profit organizations, to community residents.

> *Stakeholders are defined as any individual, group, or organization that may affect, be affected by, or perceive itself to be affected by a potential risk, issue, or opportunity. Decision-makers are also stakeholders.*
>
> — (Decision Partners terminology, 1990; see also CSA (1997).

The broad range of USACE projects incorporating natural and nature-based features (NNBF), and other innovations are often not well-understood by stakeholders, and the benefits, which often take years to realize, may not be fully recognized or factored into stakeholder decision-making. Over the years, several projects have been canceled or significantly delayed and/or modified due to lack of stakeholder understanding and support. These delays and modifications challenge USACE's ability to develop strategies in the 3x3x3 planning process, which gives project managers only three years to implement projects that ultimately benefit the community.

A primary focus in the Dredging Operations Environmental Research (DOER) program is the development of its dredged sediment long-term management strategy (LTMS) that expands the practice of beneficial use (BU) of dredged material. Expanded BU can increase resilience of waterways and coastal communities, improve ecosystem health, and help manage costs of dredging activities. Realizing these benefits, however, require operational changes, such as placement of sediment in nearshore areas. Such changes are often viewed with initial concern by stakeholders

[1] Several terminology definitions included in this TR were developed by Decision Partners in its consulting practice, which began in 1990. These terms and definitions evolved over the next three decades. The most recent and most relevant versions (to USACE) are used with approximate dates they first came into usage.

as these areas may be highly visible and part of sensitive wildlife habitats. These challenges, and many others related to effective stakeholder engagement on infrastructure challenges of all kinds, are not unique to the DOER program, or to USACE. Now, the opportunity is to understand and systematically improve how USACE project teams design, conduct, and measure effective community engagement on projects of all kinds, building on proven and leading practices.

1.1.1 The broader external context: Effective stakeholder and community engagement on infrastructure activities

Around the world, the need for infrastructure development and the associated challenges are substantial. A 2016 McKinsey Global Institute study, Bridging Global Infrastructure noted that between 2016 – 2030, the world needs to invest approximately $3.3 trillion a year in infrastructure for transportation, power, water, and telecommunications systems to support the anticipated population growth, but that only about $2.5 trillion a year was being invested.

At the same time, experts estimate that 75% of global infrastructure projects are slowed or stopped by social conflict (Janelle Simunich, ARUP, Senior Consultant, Urban Planning and Architecture. Infrastructure and Nature Webinar Series. Ramifications for IUCN WCC and Beyond: What Have We Learned? December 10, 2020.) – what we call "social friction."

> *Social Friction is defined as the societal force operating on public planning processes related to infrastructure development, which results from complex differences in perceptions, values, and capacity of interdependent stakeholders in those processes.*
>
> — (Decision Partners terminology, 2008)

In a real-world example directly relevant to the USACE's responsibility for maintaining navigable waterway infrastructure, sediment – a byproduct of USACE dredging activities – can be used beneficially through strategic nearshore placement to support marsh restoration and coastal resilience. This BU approach has a double infrastructure benefit of reducing costs of dredging compared to the traditional placement of sediment in confined disposal facilities cut off from natural systems while also contributing to the continued health of marsh habitat and maintaining/increasing coastal resiliency in the face of sea level rise.

An innovative approach like transforming dredged material from a "waste product" to a resource, used in highly visible and often sensitive wildlife habitat can be controversial and resisted by stakeholders (Searcy-Bell et al. 2021; Thorne et al. 2021). Social friction on BU projects has been experienced on several projects over the years, often resulting in costly delays or the cancelation these projects due to stakeholder misunderstandings and concerns.

In 2006, Decision Partners defined the term 'social friction' in the context of public acceptance of infrastructure development because it is more comprehensive, more neutral, and less value-laden than many terms and labels (e.g., Not-in-My-Backyard or NIMBY) that were and continue to be commonly applied.

Social friction is primarily caused by lack of project governance, typically, inadequate priority for and commitment to stakeholder and community engagement by organizational leadership, and an inadequate framework for engagement.

> *Stakeholder Engagement is defined as a purposeful, dialogue-based process designed to enable stakeholders to participate in a meaningful, appropriate, and relevant way in decisions that could affect them. The desired outcome is well-informed decisions and actions by stakeholders and decision-makers.*
>
> — (Decision Partners terminology, 1990)

A robust, stakeholder and community engagement framework is values-based and includes appropriate, science-based processes, methods, tools, and measures. Inadequate governance typically results in misalignment between the project proponents and the community stakeholders, who will live with the benefits and risks of the infrastructure project over the long-term. The result is often costly, due to project redesigns, delays, and budget overruns. Often, the greatest cost is the failure to realize the full slate of potential social, environmental, and economic benefits, which is critical to all infrastructure projects. At the end of the process, social friction results in increased costs, unhappy proponents, and often, frustrated and angry stakeholders.

The need to provide a sound foundation and systematic approach for effective engagement on USACE-led projects at the community level was

the genesis of the *Community Engagement Framework* sponsored by DOER. The *Framework* being developed is based on a proven, and science-informed, evidence-based collaboration process that enables appropriate engagement and participation of community stakeholders, in a way they judge to be meaningful – from the early planning stages of a project, through its completion, and in some cases, monitoring. The science base and the evolution of the approach is documented in Section 3.1.

1.1.2 An Historical perspective on the evolution of stakeholder engagement

In conducting this assessment, current practices by leading organizations, as well as some of the seminal work in risk and decision science that provided the foundation for the approach adapted by USACE for development of the *Community Engagement Framework*, including the resulting Community Engagement Process, were reviewed. This provided a perspective on the evolution of stakeholder engagement over the past thirty plus years, along with insight into where the practice of stakeholder and community engagement is going.

The Bottom Line – Quantum Change: Stakeholder engagement has evolved from being a must do, driven by regulatory and project approval requirements, to a societal expectation and a fundamental business practice in leading organizations. Today's civil society not only wants to know and wants to have a say in decisions affecting them, but they also want to be empowered through collaborative engagement processes, contribute in a meaningful way to the co-development of solutions that are sustainable and provide benefits to society, the environment, and the economy (Thorne et al. 2021).

This historical perspective is not intended to be an exhaustive analysis, but rather a comprehensive reflection on the state of the practice of stakeholder and community engagement in North America and beyond. Starting in the early 1980s, we reflect on how it has evolved and been shaped globally by major events and movements, and where the practice is today. Key learnings from the review are being used to inform the development of the *Community Engagement Framework*.

From the mid-1980s through the 1990s, much of the leading work done in stakeholder engagement was by the resource industry through frameworks

usually led by associations and executed by member companies, including the chemical industry (see Responsible Care®) and the mining industry (Towards Sustainable Mining, see 3.1.5). These initiatives were typically driven by regulatory requirements, including the Clean Air Act and Superfund. The chemical, petrochemical, and the nuclear industry were conducting stakeholder engagement to various degrees, followed by oil and gas, including pipelines, mining, forest products, electricity, and water treatment sectors. Why were they doing this? In short – because they had to. They lost public trust and confidence due to incidents that resulted in loss of life and/or severe environmental damage. Regulations to protect health, safety, and the environment became much stricter. From a business perspective, these industries were at risk of losing their "social license to operate" and faced increasing regulations, greater scrutiny, and increased development and operating costs.

> *Social License to Operate is defined as the level of acceptance or approval by local communities and stakeholders of organizations and their operations. The concept has evolved recently from the broader and more established notions of "corporate social responsibility" and "social acceptability." It is based on the idea that institutions and companies need not only regulatory permission, but also "social permission" to conduct their business.*
>
> — (Learning for Sustainability, 2021)

As regulators and organizational leaders learned, often through difficult and very public experiences, stakeholder engagement had to be an integral part of project risk management and permitting, which resulted in a range of new regulatory requirements. Standards-setting organizations, professional associations, industry associations, and others began to codify stakeholder engagement and produce guidance documents and frameworks. Some of the seminal documents are included in this report. One is the original International Association for Public Participation (IAP2) spectrum (2007), which provided an increasing level of public participation goals – from "inform," to "consult," to "involve," to "collaborate." This was the basis of the Council on Environmental Quality's (CEQ) 2007 publication, *Collaboration in NEPA: A Handbook for NEPA Practitioners*, which was cited in the 2019 USACE Guidance pamphlet: *Planning: Stakeholder Engagement, Collaboration, and Coordination*. In the past few years, stakeholders, including those participating in the UN's 2030 Agenda, recommended adding a fifth public participation goal – "empower."

Measurement and reporting of stakeholder engagement have taken on increasing importance and focus. These practices have evolved substantially, from the initial voluntary Corporate Social Responsibility (CSR) reporting by leading companies in the chemical, oil and gas, and mining sectors, among others, in the early 1990s, to formal metrics documenting and reporting "triple-bottom-line" results now practiced by leading organizations around the world.

The International Organization for Standardization (ISO) is an international standard-setting body that also addressed the definition of CSR through its ISO 26000 standards on Corporate Social Responsibility. In these guidelines, last modified in 2018, ISO defines CSR as:

"The responsibility of an organization for the impacts of its decisions and activities on society and the environment, resulting in ethical behavior and transparency which contributes to sustainable development, including the health and wellbeing of society; takes into account the expectations of stakeholders; complies with current laws and is consistent with international standards of behavior; and is integrated throughout the organization and implemented in its relations."

Originally a form of corporate self-regulation, it evolved considerably from voluntary decisions at the level of individual organizations to mandatory schemes at regional, national, and international levels. Today, CSR has essentially been replaced and the more comprehensive Environmental, Social, Governance (ESG) measures are accepted as leading business practice.

> *ESG criteria are a set of standards for a company's operations that socially conscious investors use to screen potential investments. Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights.*
>
> — (Investopedia, 2021)

ESG elevates social measures, including stakeholder and community engagement, to the same level as financial and climate change reporting. Several leading international accounting firms contributed to the

development of official reporting structures for organizations, including that of the World Economic Forum, referenced in Section 3.4, Accountability and transparency are key.

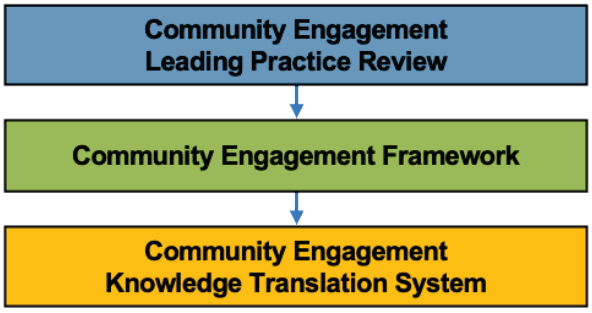
The evolution of stakeholder engagement continues. Societal expectations have changed and heightened significantly, now with more focus on ensuring engagement processes are purposeful, meaningful, and inclusive. Today, stakeholders are expressing a strong desire to collaborate, contribute expertise and experience, and be part of creating sustainable solutions that have measurable social, environmental, and economic benefits. Building social capital as an objective of the engagement process is very much top of mind for leading organizations.

We anticipate this evolution will continue as stakeholders take a more active role in the process of developing infrastructure projects that benefit host communities and society. The *Community Engagement Framework* will enable adaption to these changes as they emerge.

1.2 Approach

To address this challenge, DOER sponsored the development of a *Community Engagement Framework*, described further in Section 1.3.1. As a first step, leading practices in stakeholder and community engagement were assessed (Figure 1). This *Annotated Review of Leading Stakeholder and Community Engagement* is the result of that effort. The key findings are being used to develop the *Community Engagement Framework*, which will be published subsequently.

Figure 1. DOER sponsored community engagement work conducted by Decision Partners.



Having a robust, reliable, science-informed, evidence-based *Framework* is critical to the successful achievement of projects of all sizes, scopes, and complexity across USACE's mission areas. The next step will be to develop

a comprehensive *Community Engagement Knowledge Translation System* to leverage application of the *Framework* across USACE. The goal is to foster and sustain a culture of effective community engagement across USACE infrastructure projects, enable continuous learning and improvement, and advance Engineering With Nature (EWN) approaches, including NNBF.

1.2.1 How readers can use this review

The review of literature and leading stakeholder and community engagement practices provides readers with a 30-yr perspective on the evolution of the practice of engagement – the values-based policies, processes, methods, tools, and measures that have been used, adapted, and improved by leading organizations.

The intent is for this perspective and the examples featured will give readers deeper insight into the evolving practice of stakeholder and community engagement and its growing importance to successful infrastructure projects. It also demonstrates the strong foundation upon which the USACE *Community Engagement Framework* is being built.

The case studies, frameworks, tools, and models included in this review may be useful for project teams to consider as they initiate projects and consider early on, who their stakeholders are, and how do they need – and want – to be involved in the project. For example, thinking about how community stakeholders can contribute early to the process, by providing local and historical context, before the project is designed, is an important undertaking for project teams.

Early, thoughtful, and inclusive engagement often results in better projects – those that achieve the desired outcome, while delivering optimal social, environmental, and economic benefits – that are more sustainable and help build community resilience.

1.2.2 How This Review is Organized

The detailed annotated review follows in Section 3.0, organized as follows:

- **Section 3.1:** Adapted Stakeholder and Community Engagement Processes. This section provides the background, context, and history of the development of the stakeholder engagement process and

supporting methods and tools. It also includes examples of the most comprehensive frameworks for stakeholder engagement, many applied in organizations comparable in size and complexity to the USACE. These examples provide critical foundational context to help the reader better understand the nature and application of leading practices in stakeholder engagement and provide insight to aid those considering adoption of leading stakeholder engagement approaches.

- **Section 3.2:** Key USACE Stakeholder and Community Engagement Literature, Resources, and Practices. This section presents selected recent and relevant examples of stakeholder and/or community engagement policies, guidance, practices, and tools within the USACE. These provide significant USACE context reflecting lessons learned in stakeholder engagement and USACE resources and contacts for potential support and guidance in adoption of stakeholder engagement practice.
- **Section 3.3:** Key US Stakeholder and Community Engagement Literature, Resources, and Practices. This section presents select leading practices in stakeholder engagement and consultation frameworks of leading US agencies and organizations, including other US Government agencies such as the US Environmental Protection Agency (USEPA), as well as more academic frameworks and approaches. These examples provide a broader context and potential external resources for guidance in adoption of stakeholder engagement practice.
- **Section 3.4:** Key International Stakeholder and Community Engagement Literature, Resources, and Practices. This section presents stakeholder engagement and consultation frameworks and practices of leading international organizations, providing an even broader global context of application of leading stakeholder engagement practice. Some examples demonstrate innovative and unique approaches not currently applied in the US that may be of interest to readers.

1.3 Objectives

1.3.1 Role of the Community Engagement Framework

The array of stakeholder engagement challenges facing USACE project delivery teams are diverse and often complex. That said, ***stakeholder acceptance is critical to project success***. Effective stakeholder and community engagement are fundamental to efficient project completion

and achieving the USACE's navigation, flood risk management, ecosystem protection and restoration, and coastal resilience missions.

Much work has happened over the past decade to build bridges and foster effective working relationships with government and agency partners, including through the Engineering With Nature® (EWN) initiative. EWN, recognized as a USACE Program in 2020, is recognized world-wide as a leading practice and includes effective stakeholder collaboration as one of its core principles. Defined as the intentional alignment of natural and engineering processes to deliver economic, environmental, and social benefits efficiently and sustainably, EWN projects depend on effective collaboration. Significant progress has been made since its inception in 2010 to engage and collaborate with agency partners, non-government organizations, academics, and other stakeholders – and the results have been dramatic. See EWN references to Atlas I, Atlas II, the EWN Podcast in Section 3.2.1, and Bridges et al. (2018 and 2021).

The focus of this research project is to extend that work to the community level by providing a framework to support and enable effective community stakeholder engagement and collaboration on all types of projects involving traditional and nature-based solutions, or a combination of both. By continuously improving engagement at the local level, USACE project delivery teams will speed project acceptance by the host community, achieving shared project outcomes more efficiently, while delivering optimal solutions that provide sustainable social, environmental, and economic benefits.

Building on the general definition of Stakeholders, we define Community Stakeholders as any **local** individuals, groups, or organizations in the project host community who may affect, be affected by, or perceive themselves to be affected by potential benefits, risks, issues, and opportunities **related to the project at hand** (Decision Partners terminology 1990).

Through effective collaboration, community stakeholders contribute to:

- Framing the project scope and design,
- Understanding the issues, opportunities, and potential benefits related to a project,

- Participating in developing triple-win solutions – social, environmental, and economic benefits – that achieve their purposes and benefit the community, and in some cases
- Ongoing monitoring.

Decision-makers are also stakeholders in the project, including USACE project managers, local and state agency partners, regulators, and when appropriate, Tribal Nations.

USACE dredging project delivery teams typically work with a broad range of community stakeholders including those within the local USACE District; state government and agency partners; industry; local community and local government; environmental non-governmental organizations (ENGOs) at the local, state, and national level; academics; and media. For an example, see SMIIL Stakeholder Map in Thorne et al. (2021) as presented in Appendix 1.

Understanding and addressing stakeholder – and specifically community stakeholder – values, interests, priorities, and preferences is key to designing effective engagement strategies for diverse communities. This is the impetus for developing a *Community Engagement Framework* – proven behavioral science-based processes, methods, tools, and measures – to support and enable effective stakeholder engagement and collaboration at the community level.

Thorne et al. (2021) defines The Community Engagement Framework Opportunity as adapting a proven, systematic approach to enable USACE project teams to design, conduct, and measure effective community engagement on projects of all kinds. Having a robust, reliable, science-informed, evidence-based Framework is critical to successful achievement of projects of all sizes, scopes, and complexity.

The *Community Engagement Framework* supports the USACE Civil Works mission by advancing the practice of stakeholder and community collaboration, which is one of the four critical pillars of EWN. It supports and enables collaboration on the design, development, and implementation of infrastructure solutions, ensuring they provide optimal social, environmental, and economic benefits to the host communities and beyond. Through use of robust, innovative, science-based stakeholder engagement and collaboration processes, methods and tools, the

Framework will enable USACE project delivery teams to integrate effective engagement and collaboration at the community level into their projects. This effort is intended to enable adoption of leading practices across USACE and their partners and collaborators, as well as complementing and augmenting existing USACE stakeholder engagement approaches. (See Section 3.2.10 for more on the IWR Collaboration and Public Participation Center of Expertise).

Once piloted, tested, refined, and documented, the *Community Engagement Framework* will provide practical guidance that can be transferred and broadly applied across Civil Works' missions. It will provide USACE project managers with a proven, systematic, and standardized approach that is easily adapted and scaled to the unique challenges of each project. Project managers and their teams will be able to design and implement projects better aligned with community stakeholders' values, interests, priorities, and preferences enabling faster and more efficient realization of the multi-benefits of projects.

1.3.2 Purpose

The purpose of this focused review was to assess leading stakeholder and community engagement practices that reflect the state of practice of stakeholder engagement within USACE, and by other leading organizations in the US and internationally, to inform development of the *Community Engagement Framework*. It is not intended to be an exhaustive review of the universe of all stakeholder engagement frameworks, nor an in-depth critical analysis of any individual framework. Instead, it is intended to reflect the state of practice of stakeholder engagement within USACE, and by other leading organizations in the US and internationally for the purpose of informing the development of the *Community Engagement Framework*.

While the resulting *Community Engagement Framework* will be particularly well-suited for application to community engagement on sediment BU and other NNBF, it will be applicable to a broad range of USACE Civil Works' initiatives where effective stakeholder engagement is critical to project success.

The objectives for conducting this assessment were to:

1. Assess and validate the robustness of the Community Engagement Process, methods, and tools adapted from Decision Partners' proven Stakeholder Engagement Process for this DOER initiative, against leading practices and processes within USACE and other leading national and international organizations.
2. Identify leading and/or state-of-the-science approaches, methods, and tools that could be incorporated into the Community Engagement Framework and supporting materials and training.
3. Assess the level of commitment to effective stakeholder and community engagement by leading organizations, including the governance and accountability that supports and enables values-based stakeholder and community engagement.

2 Methodology for the Annotated Review

To accomplish this annotated review, numerous publicly available stakeholder and community engagement frameworks, processes, and tools were reviewed. The reviewed frameworks are typically employed by public, private, and not-for-profit organizations across different sectors and geographies, along with leading international organizations that have established guidance or standards for stakeholder engagement, particularly those focused on infrastructure development in the context of social, economic, and environmental sustainability.

The principles and practices of stakeholder engagement being adapted and piloted as part of the *Community Engagement Framework* are most closely aligned with USACE's EWN initiative presented in Section 3.2.1. Other organizations were included in the review based on our professional experience supplemented by internet searches using relevant keywords. The selection of organizations and frameworks were further refined to include those with proven, robust, systematic processes, methods, and tools that are implemented in practice.

To conduct the review, we adapted and updated a leading practice criteria assessment protocol and then developed a list of stakeholder engagement practices and frameworks and assessed them against the criteria (Figure 2). Those believed to meet or provide valuable insight that could inform the development of the *Community Engagement Framework* were included in this report. Some documents fundamental to USACE's current practices and in some cases were also included, note where they do not meet these criteria.

The detailed annotated review follows in Section 3.0, organized as follows:

- **Section 3.1:** Adapted Stakeholder and Community Engagement Processes
- **Section 3.2:** Key USACE Stakeholder and Community Engagement Literature, Resources and Practices
- **Section 3.3:** Key US Stakeholder and Community Engagement Literature, Resources and Practices
- **Section 3.4:** Key International Stakeholder and Community Engagement Literature, Resources and Practices

The organizations and associated stakeholder engagement frameworks and processes selected for this review include those closely related to the development of Decision Partners' adapted stakeholder engagement process, frameworks associated with the USACE, and other US and international frameworks. This review is intended to provide leading practice examples of processes, methods, and tools that could help project managers design and implement effective community engagement. The references listed in each section are in descending order, from most current.

Figure 2. Leading Practice Assessment Criteria developed by Decision Partners as a part of this review.

Stakeholder/Community Engagement (S/CE) is a business imperative, with clear values
• S/CE is a stated priority, formally endorsed and communicated by senior leadership.
• There are clear guiding principles for S/CE. These are communicated broadly.
• Leaders/project managers understand S/CE is systematic, proactive and outcome focused.
• Leaders/project managers understand the strategic and business value of effective S/CE. S/CE is an important (measurable) component of all projects.
• Engagement is understood to be outreach and dialogue-based, with a strong emphasis listening to learn from stakeholders through dialogue.
• One S/CE objective is building and sustaining relationships with key stakeholders.
• The team engages and collaborates stakeholders throughout the project, working to understand and come to agreement on shared values and priorities for the project.
S/CE applies science-based process, methods, and tools
• S/CE process, methods and tools draw on social sciences, including cognitive and behavioral psychology - e.g., strategic risk communications, behavioral economics, risk perception, decision science.
• There is a clear, systematic S/CE process. The process is dialogue-based and collaborative.
• The project team is able to adapt the process and select methods and tools appropriate for achieving its objectives. (note: stakeholders may be part of the team)
• The project team initiates the process with a clearly defined Opportunity Statement, (or statement of higher value purpose and desired outcomes) for S/CE on the project. The statement includes desired outcomes and how they will measure success.
• The team initially identifies the range of project stakeholders and conducts a formal or informal stakeholder hypothesis early in the process.
• Formal and/or informal research with project stakeholders informs the development of engagement, outreach, and communications plans.
• Communication about the project is dialogue-focused supported by relevant information.
• The team engages stakeholders throughout the project in a way that is meaningful and relevant to stakeholders.
• The team assesses both the process and the outcomes, and documents key learnings – what worked well, what didn't work well/could be improved, what learnings they would pass on to future project teams – enabling continuous learning and continuous improvement.

3 Key Findings

3.1 Adapted stakeholder and community engagement processes

This section provides the background, context, and history of the development of the stakeholder engagement process and supporting methods and tools that serve as the foundation for the *Community Engagement Framework*. This approach, originally developed in 1985, was formalized in the Canadian Standard CAN Q850-97 Risk Management: Guideline for Decision-Makers and has been applied by numerous organizations around the world. Key applications most relevant to USACE follow.

3.1.1 A community engagement framework using mental modeling: The Seven Mile Island innovation lab community engagement pilot project – Phase I (Thorne et al. 2021)

The Seven Mile Island Innovation Lab (SMIIL) community engagement pilot project initiated in 2019 by DOER provided the foundation for the customization of the Community Engagement Process. Progress in the pilot project is described in detail in this TR. Commentary on development and adaptation of the process follows.

The Community Engagement Process

The adaptation of Decision Partners' Mental Modeling Insight™ (MMI) approach, including its proven stakeholder engagement process, serves as the foundation for the *Community Engagement Framework*. Decision Partners' 7-Step Stakeholder Engagement[1] Process is shown in Figure 3. The science-based process is robust, proven, and scalable to a wide range of challenges and to broad, diverse, and often complex stakeholder environments. It is iterative and between each step is a decision – to stop and go back to get more information; to take immediate action (if an intervention is required); or to go on to the next step.

[1] As noted earlier: Stakeholder Engagement is defined as a purposeful, dialogue-based process designed to enable stakeholders to participate in a meaningful, appropriate, and relevant way in decisions that could affect them. The desired outcome is well-informed decisions and actions by stakeholders and decision-makers. Decision Partners terminology, 1990.

Figure 3. Decision Partners stakeholder engagement process.

The original process was formalized for inclusion in the Canadian Standards *Q850-97 Risk Management: Guideline for Decision-Makers* and was adapted for Health Canada and the Public Health Agency of Canada in 2006 as the base of their *Strategic Risk Communications Framework and Handbook* (Health Canada 2006) and is still widely used in Canada and by other health regulators, including USFDA. It was further customized and tested as part of a 2008-2011 research challenge supported by the US Water Environment Research Foundation (WERF) and adapted for use by WERF and its members in a handbook entitled *Conducting Effective Community Outreach and Dialogue on Biosolids Land Application: Primer for Biosolids Professionals*. These critical references follow in this section.

Decision Partners' Stakeholder Engagement Process has been adapted for the *Community Engagement Framework,* illustrated in Figure 4, as applied to the SMIIL project initiated in 2019 by DOER.

Figure 4. Community Engagement Process adapted for the Community Engagement Framework and applied to the SMIIL project.

Decision Partners' experience conducting community engagement on a broad range of challenges, issues, and opportunities related to various kinds of infrastructure projects has led to the identification of key factors critical to the success of stakeholder and community engagement (Figure 5). These are being incorporated into the development of the *Community Engagement Framework*.

Figure 5. Critical success factors for stakeholder and community engagement, originally developed by Decision Partners, 1990.

Critical Success Factors

- Science-informed, evidence-based process, methods, and tools
- Values-driven, dialogue-based, collaborative approach
- Measurable outcomes from outset
- Leadership commitment to meaningful engagement and understanding of total requirements for success
- In-depth understanding of stakeholders' values, interests, priorities, and preferences
- Enabling and encouraging participation from a broad range of community stakeholders including non-traditional stakeholders
- Respect for all stakeholders and their diverse perspectives
- Time to build shared understanding
- Ongoing monitoring and adaptation to changes in the environment
- Commitment to continuous learning and continuous improvement

3.1.2 Mental modeling approach: Risk management application case studies (Wood et al. 2017)

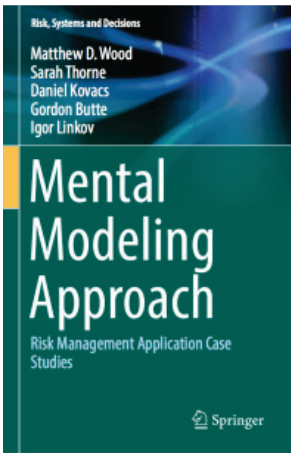
This reference presents the science-informed, evidence-based mental modeling approach, which is the foundation of the *Community Engagement Framework* and the core of the Community Engagement Process.

This book introduces readers to mental models, an evidence-based process to support and facilitate decision making by describing the values and knowledge of the critical stakeholders involved in decision-making processes related to a project, issue, or opportunity (Figure 6). It provides in-depth case studies detailing applications of the mental modeling approach for strategic risk management and stakeholder engagement on a broad range of topics.

It is particularly relevant for the USACE as many of the case studies were conducted in collaboration with USACE on topics including climate change, beneficial use of sediments, ecosystem protection, and flood risk

management. Readers may find Chapter 2, Mental Modeling Research Technical Approach, particularly useful as it describes the process (very similar to the Community Engagement Process adapted for USACE) in detail using a case study.

Figure 6. Decision Partners' *Mental Modeling Approach*.

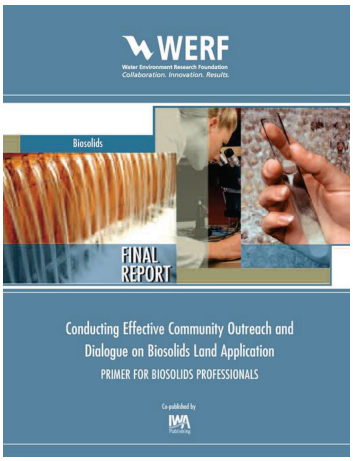


3.1.3 Conducting effective community outreach and dialogue on biosolids land application: Primer for biosolids professionals (WERF 2012)

Derived from Decision Partners' mental models approach and case study research, this Primer (Figure 7) provides an overview of risk communications principles and a practical "how-to" guide for biosolids professionals and others involved in designing and conducting effective outreach and dialogue with stakeholders, including:

- A step-by-step process for developing and applying a stakeholder communication strategy based on dialogue.
- Concrete and actionable worksheets to complete steps.
- Guidance on how process can be adapted in cases where resources are limited.
- Case study examples illustrating how the process was used to support two teams of biosolids professionals.
- Recommendations for developing a training package that can be used to provide hands-on, in-depth training, and coaching on operationalizing the Strategic Risk Communications Process.

Figure 7. Community outreach and dialogue primer.



The WERF Primer is included in this report because it provides an example of the adaptation of the Stakeholder Engagement Process for community engagement, along with step-by-step guidance for field staff who need to engage community stakeholders effectively before they can conduct biosolids applications. The Primer is still widely used in the industry. The *Community Engagement Framework* will provide similar practical guidance for project managers.

— See also: "Conducting Effective Outreach with Community Stakeholders about Biosolids: A Customized Strategic Risk Communication Process Based on Mental Modeling" (Eggers 2017).

3.1.4 Strategic risk communications framework and handbook (Health Canada 2006)

This Framework and supporting Handbook presents a science-based, seven-step approach for developing communication strategies that enable well-informed decisions among stakeholders leading to effective risk management (Figure 8). The approach is flexible enough to address internal and external risk communications for all types of risk issues – from enterprise risk issues, such as addressing public health risks associated with siting industrial facilities, to health-specific risk issues such as efforts to curb smoking or address vaccine hesitancy. It is grounded in the sciences of risk analysis and risk communication and is consistent with guidance from Health Canada, the Treasury Board Secretariat, as well as related work in Canada and jurisdictions outside Canada, including the US, Australia/New Zealand, and the United

Kingdom. (CSA 1997; US Presidential/Congressional Commission on Risk Assessment 1997).

Figure 8. Health Canada strategic risk communications handbook.

The purpose of risk communication is to help stakeholders and decision makers make well-informed decisions and take appropriate actions. With its focus on building shared understanding that results in desired outcomes, including behavioral outcomes – the actions – it is very much parallel to the desired outcomes of a USACE project manager, so it is included in this review. It also demonstrates a leading practice application in a different sector, public health.

> *Strategic Risk Communication is defined as A purposeful process of skillful interaction (dialogue) supported by appropriate information to enable well-informed decision making and action on risks.*
>
> — (Decision Partners terminology, 2006)

The *Strategic Risk Communications Framework and Handbook* continues to be used and adapted by groups within Health Canada and PHAC, including most recently, in planning for stakeholder engagement and communications with a broad range of stakeholders on issues related to COVID-19, including testing and vaccine acceptance. The Canadian Federal Government now has several behavioral science units, including within Health Canada and PHAC. Plans are underway to provide strategic risk communications training and an update on some of the tools.

The seven-step approach is an adaption of Decision Partners' original Strategic Risk Communications Process, that is aligned with Q850 (see Figures 2 and 9) and has the following steps:

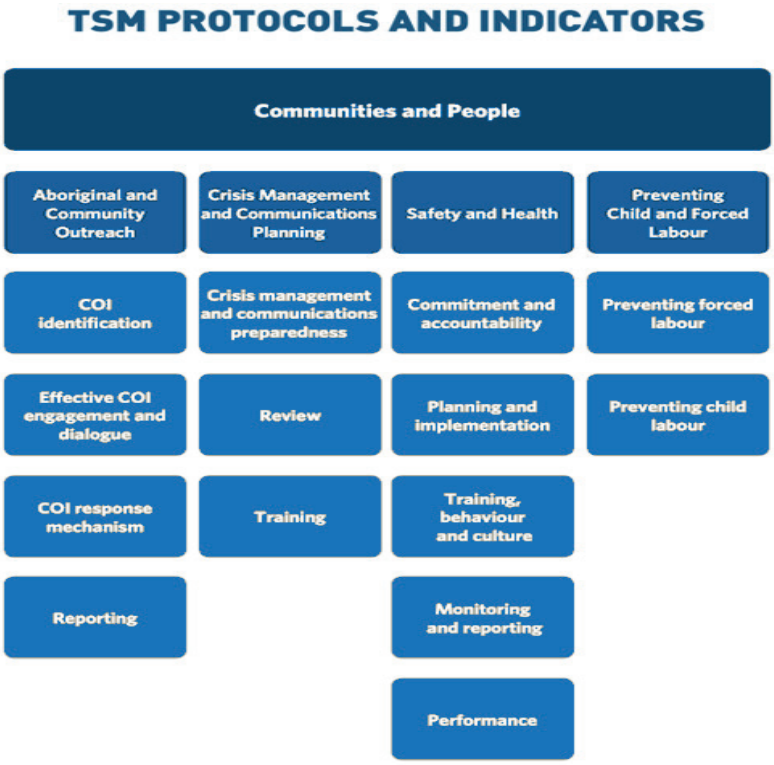
1. Define the Opportunity
2. Characterize the Situation
3. Assess Stakeholder Perceptions of the Risks, Benefits and Tradeoffs
4. Assess How Stakeholders Perceive the Options
5. Develop and Pre-test Strategies, Risk Communications Plans and Messages
6. Implement Risk Communications Plans
7. Evaluate Risk Communications Effectiveness

3.1.5 Towards Sustainable Mining (TSM) Standard (Mining Association of Canada 2004)

The Mining Association of Canada (MAC) established the Towards Sustainable Mining® (TSM®) initiative in 2004 to address critical "license to operate" challenges being faced by its members in Canada and around the world. Based on an adaptation of *CSA Q850 Risk Management Process for Decision-makers* and Decision Partner's state-of-the-science stakeholder engagement process, TSM is an award-winning performance system that helps mining companies evaluate and effectively manage their environmental and social responsibilities. Values-based policies supported by tools and indicators drive performance and ensure critical risks associated with mining are managed responsibly by member companies' mining operations and metallurgical facilities. Participation in TSM is mandatory for MAC's members and TSM continues to be recognized around the world as the leading industry approach and has been adopted by numerous companies and industry associations in South America, Africa, and beyond.

One key component, the TSM Community Engagement Model, Communities and People, is presented in Figure 9. It is supported by protocols, guidance, training, and tools for each supporting element, along with metrics for measuring performance.

Figure 9. TSM community engagement model.



See also Mining Association of Canada, 2004-2019. Towards Sustainable Mining (TSM) Standard for additional related information.

3.1.6 Risk Communication: A Mental Models Approach (Morgan et al. 2002)

This book introduces the mental models approach for developing informed risk communication strategies to achieve behavioral change. It provides a how-to description of the applied mental models research methodology and gives examples of the wide variety of applications, from radon in homes to nuclear energy sources. It provides the underlying methodology for the work cited previously and was foundational in the development of Decision Partners' original Stakeholder Engagement Process.

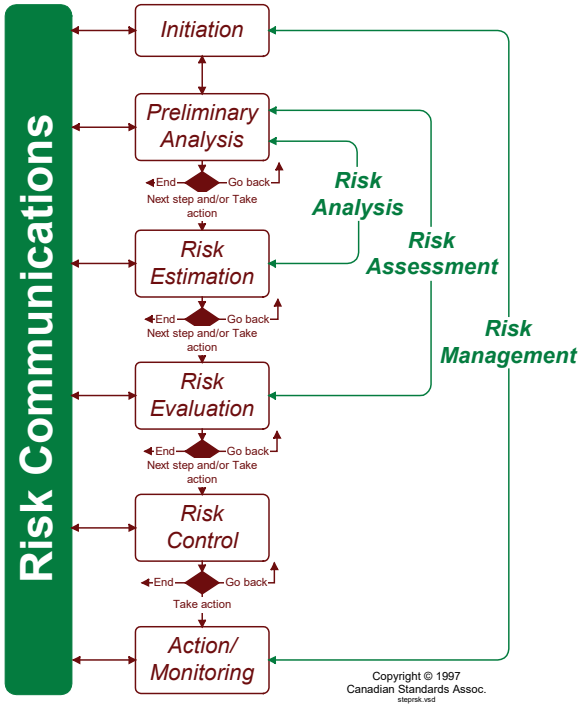
3.1.7 Q850 risk management: Guideline for decision-makers (CSA 1997)

The process underlying Decision Partners' Stakeholder Engagement Process (Figure 2) draws on and contributed to the Canadian Standards Association's *Q850-97 Risk Management: Guideline for Decision-Makers*, to which Decision Partners' Principal, Sarah Thorne, was a coauthor and lead on the risk communications component. This guideline provides the

principles, framework, and process, which integrates stakeholder engagement in a meaningful way, making the process transparent, systematic, and credible. It provides a systematic method for defining, analyzing, communicating, and effectively addressing complex issues and demonstrates how integrating risk perception and risk communication into the decision-making process results in well-informed decisions and actions on the part of both decision-makers and stakeholders.

Q850 clearly documents the importance of identifying stakeholders and engaging them appropriately at every step in the process, making stakeholder engagement through risk communications an integral part of the risk management/decision making process (Figure 10). As such, it was a breakthrough approach and still stands the test of time. Q850 is aligned with the *US Presidential/Congressional Commission on Risk Assessment and Risk Management Process* and the Australian/New Zealand Risk Management Standard. Q850 was reaffirmed in 2009 and became the foundation for several international standards, including *CAN/CSA-ISO 31000, Risk Management – Principles and Guidelines* (2009), to which Decision Partners provided input. *31000* was further updated in 2018.

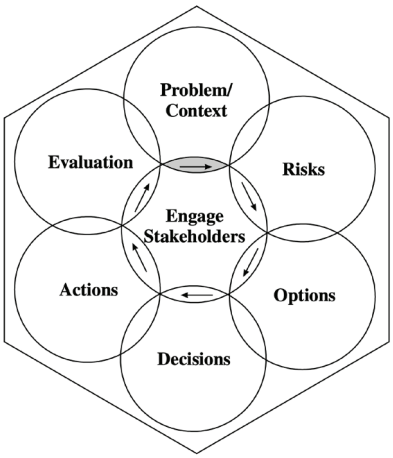
Figure 10. Q850 risk management process.



3.1.8 Framework for environmental health risk management. Final Report, Vol. 1 and 2 (US Presidential/Congressional Commission on Risk Assessment and Risk Management 1997)

This framework was developed over the same period as CANQ850 and illustrates the need to engage stakeholders at every step in the process (Figure 11). We reference it here as it was a seminal piece when published. Like Q850, it was notable in that it was the first-time stakeholder engagement had been given such prominence in a US risk management framework.

Figure 11. US Presidential/Congressional Commission on Risk Assessment and Risk Management's Framework for Environmental Health Risk Management.



To the best of our knowledge, there has been no update to this document. Some US agencies have developed specific risk management guidance integrating risk communication and stakeholder engagement into the risk management process, most notably, those dealing with health risk communication including the Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC), and National Library of Medicine (NLM) and emergency communications.

US EPA's guidance documents, including their most recent, 2018 Area Contingency Planning Handbook, identify risk communication as: the process of informing people about potential hazards to their person, property or community. The focus of this guidance appears to be based on an "information out" objective, not dialogue-based engagement. Given that dialogue and collaboration is a critical component of the USACE Community Engagement Process, we have not provided an annotated reference to the USEPA Handbook in the section on Key US Stakeholder

and Community Engagement Literature, Resources and Practices, Section 3.3.

3.2 Key USACE stakeholder and community engagement literature, resources, and practices

This section presents selected recent and relevant examples of stakeholder and/or community engagement policies, guidance, practices, and tools within the USACE. These provide context regarding the current state of practice and insight for the development of the *Community Engagement Framework*.

3.2.1 Achieving sustainable outcomes using Engineering with Nature® principles and practices (King et al. 2020)

The Engineering With Nature (EWN) initiative led by the USACE has and continues to be recognized world-wide as a leading practice and includes effective stakeholder collaboration as one of its core principles (Figures 12 and 13).

> *Engineering With Nature (EWN) is defined as the intentional alignment of natural and engineering processes to efficiently and sustainably deliver economic, environmental, and social benefits through collaboration.*
>
> — (King et al. 2020)

Figure 12. EWN logo.

Figure 13. EWN elements.

Initiated in 2010 by a team of USACE scientists and engineers, EWN seeks to enable and support more sustainable water and infrastructure development practices, projects, and outcomes by integrating engineering and natural processes. There is a growing interest in nature-based solutions worldwide, and EWN approaches provide a means for delivering those solutions across USACE's missions, including Navigation Infrastructure, Flood Risk Management, Ecosystem Restoration, and beyond. The collaborations and partnerships developed through the EWN initiative continue to expand knowledge sharing and application across government, the private sector, non-governmental organizations, and academia in the US and internationally.

Effective stakeholder engagement through collaborative, dialogue-based processes is one of the four critical EWN Elements. Numerous case examples can be found on the EWN website (**https://ewn.el.erdc.dren.mil/**), in the project case studies described in Atlas I and Atlas II, and in other EWN publications, including presentations in the Resources section of the EWN website.

Sustainable development of infrastructure projects will continue to present challenges and opportunities. Practical approaches are needed to better understand and combine natural and engineered systems where the

desired outcome is more socially acceptable, economically viable, and environmentally sustainable projects. This is a goal shared by the USACE, its partner organizations, stakeholders, community members, and the public.

Natural and nature-based features (NNBF) that are a component of EWN include innovative beneficial use practices, such as creation or restoration of coastal islands by the placement of dredged sediments to mimic natural features while providing similar, if not identical services as natural infrastructure.

The need and opportunity to enhance the stakeholder and community engagement skills and expertise of USACE project teams working on critical infrastructure projects is a key objective of the *Community Engagement Framework*.

See also:

- "Use of Natural and Nature-Based Features (NNBF) for coastal resilience" (Bridges et al. 2015)
- "Proceedings from the US Army Corps of Engineers (USACE) and the National Oceanic and Atmospheric Administration (NOAA)–National Ocean Service (NOS): Ecological Habitat Modeling Workshop" (Herman et al. 2020)
- "Using Engineering with Nature® (EWN®) Principles to Manage Erosion of Watersheds Damaged by Large-scale Wildfires" (Haring et al. 2021)
- EWN Podcasts (USACE 2020).

The focus of EWN is developing and implementing nature-based solutions for a broad range of water and infrastructure projects. EWN brings together a growing international community of practitioners, scientists, engineers, and researchers from all kinds of disciplines to collaborate on how best to harness the power of nature to innovate, solve problems, and create sustainable solutions. In 2020, the EWN Podcast was launched to tells their stories (USACE 2020).

It's a show about innovation and collaboration and combining natural and engineering systems. The podcast also outlines amazing results for infrastructure, the environment, and communities. People from different

organizations, disciplines, and perspectives discuss how they are transforming traditional approaches to infrastructure development across the US and around the world by applying the principles and practices of EWN.

The EWN Podcast features provocative conversations with practitioners, scientists, and engineers from numerous organizations who are transforming traditional approaches to infrastructure design and development by applying the principles and practices of EWN.

In Season 1, the theme was ***Innovation and Collaboration***, Season 2 focused on ***Advancing Nature-based Solutions***, and now in Season 3, the theme is ***Creating the Future With EWN***. Effective stakeholder and community engagement is a theme throughout all episodes, so the EWN Podcast has been included in this review.

Season 3, Episodes 1 and 2 focus on how infrastructure policy is evolving and how measurement is critical to making real progress on climate change. The climate imperative is focusing attention on the need to act now; the EWN program is doing just that, in part by using the Podcast to demonstrate how natural infrastructure is a critical part of sustainable solutions. President Biden's January 2021 Executive Order, *Tackling the Climate Crisis at Home and Abroad*, emphasizes the urgency of taking action to build climate resiliency and specifically calls for the inclusion of nature-based solutions. That, combined with the $1 trillion *Infrastructure Investment and Jobs Act* was signed into law November 15, 2021, represent an unprecedented opportunity to incorporate EWN approaches into infrastructure policy and projects.

Effective stakeholder engagement, especially at the community level, will be critical to USACE project success, so these episodes may be particularly relevant to readers.

3.2.2 Engineering With Nature Strategic Plan 2018-2023: Expanding Implementation (USACE 2018)

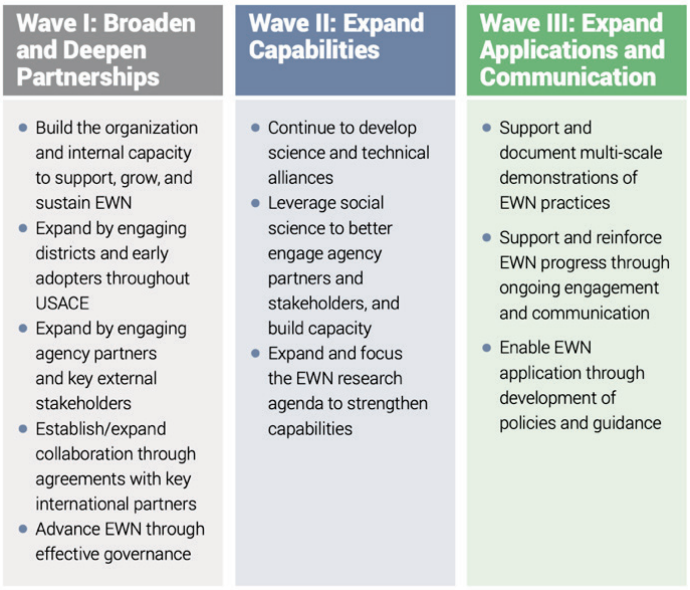
The EWN Strategy 2018-2023 is focused on bringing innovative and environmentally sustainable solutions to the Nation’s water resources challenges while also contributing to the missions of its partners (Figure 14). The Strategic Plan intends to broaden EWN implementation by broadening and deepening engagement and collaboration with

colleagues across mission areas and organizations (Wave I), growing the capability to apply EWN principles and practices at project and system scales (Wave II), and increasing the number and diversity of EWN applications while communicating effectively about accomplishments and future opportunities (Wave III).

Figure 14. EWN Strategic Plan for 2018-2023.

The Vision is to expand EWN application by incorporating the approach into the priorities and practices of USACE, partner organizations, and stakeholders while actively delivering, demonstrating, and communicating EWN's interconnected benefits to society, the environment, and the economy. The three interrelated Waves of activity are summarized in Figure 15.

Figure 15. EWN Strategy "Waves."



3.2.3 Engineering With Nature Atlas Volume I and Volume II (Bridges et al. 2018, 2021)

Atlas I describes 56 projects that demonstrate the diversity of applications and benefits that can be achieved through Engineering With Nature. Similarly, Atlas II expands the application of EWN through description of 62 additional national and international projects that illustrate advances in the principles and practices of EWN (Figure 16).

Figure 16. EWN Atlas I and Atlas II.

All case studies reflect the critical role of stakeholders – agency partners, community members, environmental organizations, and many others – collaborating on solutions that provide optimal social, economic, and environmental benefits.

3.2.4 International guidelines on natural and nature-based features for flood risk management (Bridges et al. 2021)

This *International Guidelines on Natural and Nature-Based Features for Flood Risk Management* (NNBF Guidelines, FRM) is the product of a large-scale collaboration that included years of working-level meetings and knowledge sharing involving key practice leaders from around the world (Figure 17). The project was initiated and led by the USACE as a part of its EWN initiative. The USACE in the US, the Rijkswaterstaat Ministry of Infrastructure and Water Management in the Netherlands, and the Environment Agency in the United Kingdom were the three primary government institutions that organized and led the effort. Many other organizations provided critical leadership and participation including the National Oceanic and Atmospheric Administration, World Bank, National Institute of Standards and Technology, and The Nature Conservancy.

Figure 17. NNBF Guidelines.

More than 180 practitioners, researchers, engineers, scientists, and other professionals from public, private, nongovernment, nonprofit, and academic organizations were part of the global team. All were driven by a desire to collect, organize, and learn from the wide range of experience with NNBF around the world.

The common motivation of the individuals and organizations that contributed to the international NNBF Guidelines was to expand the arsenal of FRM solutions available to decision-makers, project planners, and practitioners. An overarching goal is to provide guidance on engaging with landowners, communities, and stakeholders to secure their support and address challenges related to perceptions of what NNBF is and what it can achieve.

In Chapter 2 of King et al. (2021), one foundational principle described as critical to the development of successful NNBF projects is to "engage communities, stakeholders, partners, and multidisciplinary team members to develop innovative solutions" as part of a broader structured framework (Figure 18).

The key elements of stakeholder engagement (King et al. 2021):

- The involvement of multidisciplinary partners and teams that can work together in innovative, creative, and collaborative ways that cultivate new options to meet the evolving needs of communities

- Engaging communities and stakeholders that are the end users of the solution involving NNBF *(In many ways, these entities pay the cost of projects, experience the damages incurred as a result of storms, influence the decision-making process, can improve solutions, make solutions fit their circumstances because "one size does not fit all," and help realize the multiple benefits of an NNBF project.)*

Figure 18. Framework steps and their corresponding NNBF project phases.

Chapter 3 of Dillard et al. (2021) provides more detail on the stakeholder engagement practices outlined in the NNBF Framework, describing these as important and necessary components of each step, and key to supporting the Framework's iterative and flexible nature. It emphasizes the need to identify and reach out to stakeholders in the scoping phase.

A well-planned process for engagement …

enables all those who have an interest in, have influence over, or will be potentially impacted by a project to be involved from an early stage to be kept informed, understand, and add unique perspectives, and influence positive outcomes. Engagement processes should focus on the overarching objectives of the communities and agencies involved, which should generally require a neutral approach to any specific final solution. Good engagement minimizes the risk of project failure and project schedule delays, and enhances opportunities for long-term, sustainable outcomes that benefit multiple parties.

— (Dillard et al. 2021)

The *Guidelines* describe engagement as being particularly beneficial to NNBF projects given their "complexity, length of these projects, the high levels of uncertainty, multiple interests, and diversity of co-benefits involved" and identifies positive outcomes.

A well-designed engagement plan will support the inclusion of a range of co-benefits and the increased likelihood of positive outcomes, including the following:

- *Developing an enhanced and shared understanding about complex problems in the context of specific local circumstances,*
- *Ensuring relevant information, expectations, interests, and needs are considered when making decisions,*
- *Enabling and empowering stakeholders to take some form of ownership over the issue and act themselves to become part of the solution,*
- *Maximizing opportunities for a wide range of solutions to be considered by gaining a broader view of the relevant context (e.g., efficient, or alternative financing options or innovative solutions),*
- *Laying longer term foundations for successful future projects by enhancing a mutual understanding across expert and layperson views, shifting mindsets, resolving conflict, and raising awareness or seeing the bigger picture, and*
- *Increasing commitment to agreed courses of action from a broad range of stakeholders.*

— (Dillard et al. 2021)

Assessment and documentation of the application of these engagement principles at the community level to the broad range of NNBF opportunities that lie ahead will provide important learning and insight critical to the continued evolution of the practice of stakeholder and community engagement for NNBF projects, and others.

3.2.5 USACE levee safety program draft agency guidance (USACE Levee Safety Program 2020)

This recently published document provides high-level policies for implementing the USACE Levee Safety Program. Notably, while it has general language about working with sponsors and other agencies – processes that call for sponsors to participate in inspections, site visits, and risk assessments – it does not provide guidance for conducting this stakeholder engagement or for engaging community stakeholders. An earlier publication from the National Committee on Levee Safety provides some history on stakeholder engagement on levee safety.

— See also: Levee Safety Program Website

NCLS (2011) describes the stakeholder involvement process that the National Committee on Levee Safety (NCLS) used to get input into the scope and content of *Recommendations for a National Levee Safety Program: A Report to Congress from the National Committee on Levee Safety*, January 2009. Participants included representatives from federal, state, tribal, and local governments, as well as the private sector. The authors note the makeup of the NCLS was intended, in and of itself, to be a form of stakeholder involvement. The paper goes on to describe how the NCLS used the input (generally), along with future plans for outreach and collaboration.

This resource is included as an example of structured, multi-stakeholder engagement on a technical infrastructure topic using team meetings, site visits, and webinars.

3.2.6 Galveston stakeholder partnering forum (Galveston District 2015 – Ongoing)

The USACE Galveston District conducts semi-annual Stakeholder Partnering Forums with non-federal sponsors, customers, and agency partners. They collaborate on best practices regarding programs ranging from ecosystem restoration to flood risk management, maintaining and

improving Texas coastal navigation systems, and regulatory oversight of US waters at its Galveston headquarters.

These events help identify opportunities to better support stakeholder commitments and emerging interests for Planning Studies, Preconstruction, Engineering and Design, Construction, Operations, and Maintenance. The forum serves as an opportunity for non-federal sponsors, customers, and agency partners from along the Texas coast to network and exchange ideas on ways the Galveston District can improve value delivery to the nation across civil works and regulatory business lines.

The Galveston Stakeholder forum is a current example of ongoing structured, multi-stakeholder engagement conducted by the USACE. Dr. Edmond Russo, USACE Director, Environmental Laboratory, discusses the importance of this forum and ongoing stakeholder engagement related to the extensive *Coastal Texas Protection and Restoration Feasibility Study,* in EWN Podcast Season 1 Episode #7.

— See also: Coastal Texas Protection and Restoration Feasibility Study (USACE 2020)

3.2.7 Missouri River recovery implementation committee (USACE 2008)

The Secretary of the Army established the Missouri River Recovery Implementation Committee, as authorized by Section 5018 of the 2007 Water Resources Development Act (WRDA), to make recommendations and provide guidance on a study of the Missouri River and its tributaries and on the existing Missouri River recovery and mitigation plan. The committee provides a collaborative forum for basin stakeholders to come together and develop a shared vision and comprehensive plan for Missouri River recovery. The committee's purpose is to help guide the prioritization, implementation, monitoring, evaluation, and adaptation of recovery actions.

Broad stakeholder representation is in place to ensure a comprehensive approach to Missouri River recovery implementation, while providing for congressionally authorized Missouri River project purposes. A key objective is to ensure that public values are incorporated into the study and the recovery and mitigation plans. This is another example of formal stakeholder engagement on a regional basis.

- See also: Missouri River Recovery Implementation Committee Charter (as amended, 2014)

3.2.8 Planning: Stakeholder engagement, collaboration, and coordination (USACE 2019)

This publication provides guidance for stakeholder engagement as part of project planning within the USACE. Definitions for stakeholders, collaboration, and coordination are included, along with goals and objectives for the stakeholder engagement process. Legal requirements are also described. It provides a basic structure for stakeholder engagement strategy and levels of engagement based on the 2007 Handbook for NEPA Practitioners. In the 2019 pamphlet, USACE defined stakeholders as follows:

> *Stakeholders include any member of the public that might be able to affect, are affected by, or are interested in, the results of the Corps planning process. They are people or groups who see themselves as having rights and interests at stake, either directly or indirectly. Some people may not realize they are stakeholders, i.e., that they are affected by a Corps study, such as those identified as socially vulnerable populations. Federally recognized tribes (as defined in section 102 of the Federally Recognized Indian Tribe List Act of 1994 (25 U.S.C. 5130) and including Alaska Natives are not considered stakeholders due to their sovereign status.*

The document is based in part on the Council on Environmental Quality's (CEQ) 2007 *Collaboration in NEPA: A Handbook for NEPA Practitioners* (referenced in Section 3.3.8) which, in turn, is based on an older version of the IAP2 spectrum of stakeholder engagement (referenced in Section 3.4.11).

While this publication provides a broad overview of stakeholder engagement practice, it lacks a clear process, specific step-by-step guidance, and templates for implementation of effective stakeholder engagement. Some practitioners may interpret this guidance as limiting, suggesting that doing anything beyond what is explicitly called for from a regulatory perspective is not required, necessary, or perhaps even permitted.

The goals and objectives described in the guidance document include:

1. The goal of stakeholder engagement and coordination is to consider all views and information, improve the quality of decision-making, and increase the legitimacy of the decision reached by establishing and maintaining channels of communication with stakeholders throughout the planning process. The result is a better recommendation, alternative, strategy, or potential list of additional projects that is implementable and sustainable.
2. The objectives of stakeholder engagement are to:
   a. Provide stakeholders with clear, concise, and timely information about proposed Corps activities.
   b. Learn from stakeholders with diverse perspectives and incorporate the scientific, technical, and social information they can provide into the planning process.
   c. Make the stakeholders' desires, needs, and concerns known to decision-makers and respond to their concerns.
   d. Manage conflict by discussing and resolving differences as they arise, thereby reducing study and implementation risks.
   e. Consider the stakeholders' views in reaching decisions.
3. Stakeholder engagement, collaboration, and coordination must, however, maintain the understanding that the Corps retains final decision-making responsibility for actions within its authority.

3.2.9 Using serious games to facilitate collaborative water management planning under climate extremes (Bathke et al. 2019)

This paper describes the theoretical basis for using game constructs as an approach to engaging stakeholders on complex societal challenges such as sustainable management of environmental resources. It presents a case study using the multi-hazard tournament to facilitate watershed management focused on the Middle Cedar Watershed. Participants included federal, state, and local governments, non-governmental organizations, farmers, and academia.

This is one example of innovative, science-based tools being studied and deployed by USACE practitioners to address the challenging task of engaging stakeholders on the complex decision making and tradeoffs inherent to managing watersheds. Tools such as this will be referenced in the *Community Engagement Framework* for possible application by project teams.

Brunton and Merritt (2018) provides a summary of a multi-hazard tournament demonstration conducted in the Sacramento District of a gaming approach to making policy and planning decisions for water-related projects addressing hazards such as drought, flooding, and water quality. The demonstration was conducted with colleagues from the Sacramento District as well as representatives from California Department of Water Resources, Natural Resource Conservation Service, and other Corps of Engineers offices.

It is included as an example of an innovative approach to decision-making, in this case, with agency partner stakeholders.

3.2.10 IWR collaboration and public participation center of expertise CPCX (Undated)

The Collaboration and Public Participation Center of Expertise website notes it provides technical assistance to Districts and Divisions on collaborative processes, builds USACE collaborative capacity, publishes reports on environmental conflict resolution and collaborative processes, and manages the Corps' Public Participation and Risk Communication Community of Practice (CoP). As CPCX notes, "a growing body of research and evidence, both quantitative and qualitative, demonstrates that well-executed collaborative processes save time and money, improve project outcomes, and improve short- and long-term governance" (Environmental Collaboration and Conflict Resolution (ECCR): Enhancing Agency Efficiency and Making Government Accountable to the People; A Report from the Federal Forum on Environmental Collaboration and Conflict Resolution).

CPCX's work is focused on its four goals of consultation services, capacity building, policy support, and research.

Support to the Field

CPCX's website notes it is the hub for the USACE field offices to find best practices and liaise with world leaders in their respective disciplines. In addition to creating a directory of internal Corps and external collaboration experts, the CPCX is the lead for USACE's Memorandum of Understanding with the US Institute for Environmental Conflict and their National Roster of Environmental Dispute Resolution and Consensus

Building Professionals. A Corporate Oversight Panel and Field Review Group guide the Center's work.

CPCX provides technical assistance to Districts and Divisions by assisting field offices in specific cases through advice, guidance, and support. Training and outreach by the Center include assisting field offices to manage conflicts and productively engage the public, offering training related to collaborative problem solving and effectively involving the public in Corps projects, sponsoring world class experts who write and lecture during their residence at the Center, and ensuring that new tools such as interactive modeling and software for negotiations are effectively integrated into field applications. No published documentation of processes or tools that could provide guidance to project teams could be found.

The CPCX Strategic Plan describes the organization's Mission, Vision, and Goals:

- **Mission:** Improve the outcome of USACE missions by supporting collaborative processes and ensuring the interests of partners, stakeholders, and the public are addressed.
- **Vision:** CPCX is highly valued throughout all USACE mission areas for advancing a culture of collaboration that improves US water resources management.
- **Goals:** These five goals are mutually supportive in achieving the CPCX vision and mission. Goal 5 is a center management goal designed to enable the achievement of the first four goals.

    1. Build the collaborative capability of USACE staff and partners to enable effective convening of, and participation in, collaborative processes.
    2. Provide direct support to increase the success of collaborative processes.
    3. Catalyze effective use of collaboration agency-wide through proactive engagement with USACE leadership.
    4. Deliver innovative collaborative processes, tools, and techniques to address water resources management challenges.
    5. Manage resources to ensure high quality team performance and raise awareness of CPCX services.

- See also: USACE Collaboration and Public Participation Center of Expertise (CPCX), Undated, Accessed February 2021. 2021-2025 Strategic Plan.

3.2.11 Flood Risk Communications Toolbox (Institute for Water Resources undated, ~2017)

This toolbox provides resources to support USACE District personnel in effectively communicating with their sponsors, stakeholders, and the public about flood risk and flood risk management projects. It features information about the principles and best practices of risk communication, as well as materials that can be distributed directly to the public. The authors note it provides information that will be helpful to a wide range of District staff, including Planners, Silver Jackets Coordinators, Project Managers, Public Affairs Officers, Levee and Dam Safety Officers and Program Managers, and others. IWR defines Risk Communications as follows:

> *Risk communication centers on an open, two-way exchange of information and opinion about risk designed to lead to a better understanding and better risk management decisions. Communication is integrated into the assessment and management process. It is not a* process *that occurs only after decisions have been made. There is internal risk communication between risk managers and assessors and external communication with key stakeholders. Internal communication ensures that risks are fully evaluated, understood, and managed. External communication takes into account the emotional response to an event; empowers the stakeholders and the public to make informed decisions; and prevents negative behavior and/or encourages constructive responses to a crisis or danger.*
>
> — (USACE IWR 2017)

The Toolbox consists of three sections:

How to Communicate Risk which covers how to plan and conduct risk communication. It includes:

- Corps' guidance and policy,
- Methods and strategies developed by the Corps,
- Methods and strategies developed by other organizations, and

- Peer-reviewed research literature on risk communication and perception.

Flood Risk Outreach includes materials that can be used directly for risk communication activities and cover a range of technical topics, including:

- Documents,
- Fact sheets,
- Multi-media and websites, and
- Interactive tools.

Case Studies and Testimonials provides a growing collection of resources to demonstrate how people have carried out successful risk communication around the US

3.2.12 USACE Centers of Expertise (USACE 2020)

Centers of Expertise (CX) are designated USACE organizations (District, Laboratory, or Center) demonstrating capability and expertise in a specialized area. According to the website, CXs improve capabilities and management, eliminate redundancy, optimize the use of specialized expertise and resources, enhance Corps-wide consistency, facilitate technology transfer, help maintain institutional knowledge in key areas, and improve service to customers, including rapid response to emergencies.

3.2.13 USACE Campaign Plan (USACE 2017)

The USACE Campaign Plan (UCP) is the Agency's strategic change decision document and supports the Army Campaign Plan (ACP) and National Goals and Objectives. As such, it drives and aligns strategic change; anticipates and shapes the future operating and fiscal environments; unites all USACE with a common vision, purpose, and direction; and responsively adapts to mission and "battle space" changes.

The 2017 Campaign Plan, signed by LTG Semonite, the USACE Chief of Engineers at the time, notes an objective to Develop the Civil Works Program to meet the future water resources needs of the Nation. This objective will be considered complete when the USACE has a Civil Works

Program that meets the needs of the nation and provides sustainable and resilient solutions in collaboration with partners and stakeholders.

3.2.14 Sustainable Solutions to America's Water Resource Needs: USACE Civil Works Strategic Plan 2014-2018 (USACE 2015)

The Civil Works Strategic Plan highlights the importance of stakeholder involvement, noting "USACE uses the systems-based watershed approach to focus on water resources planning and collaborative problem solving. Such an approach seeks to balance economic, environmental, and social objectives, while increasing active partnering with others. It requires the involvement of all stakeholders." It goes on to describe Collaboration and Partnering as a cross-cutting strategy to "… leverage funding, talent, data, and research from multiple agencies and organizations." The Missouri River Recovery Implementation Committee is cited as an example of a collaborative forum. As with many other examples, this resource highlights the importance of collaboration and engagement – primarily with agency partners – but does not present a framework for consistently doing so.

3.3 Key US stakeholder and community engagement literature, resources, and practices

This section presents select stakeholder engagement and consultation frameworks of leading US agencies and organizations, summarizing perspectives and leading practices that align with and can inform the Community Engagement Framework being developed. The USEPA is featured heavily in this section as they have detailed, structured stakeholder engagement processes that are designed to address complex social and environmental factors on projects and programs similar in scale to those of the USACE, and, in fact they are often a partner agency on many USACE projects. The state of practice for EPA stakeholder engagement appears to be similar to the USACE, typically a top-down, regulatory-based consultation approach.

Other US organizations and references are included highlighting innovative approaches or tools, application in other contexts such as health and seminal references such as NEPA.

3.3.1 Superfund community involvement tools and resources (USEPA 2020)

The Superfund Community Involvement Tools and Resources page provides guidance and tools for EPA staff on community involvement planning and designing stakeholder engagement activities for Superfund projects. Given their regulatory context, the handbook, guidance, and tools are top down – highly tactical, based on processes designed to meet regulatory requirements – and not bottom up – processes based on guiding principles and values for stakeholder-centric engagement.

- See also: Superfund Community Involvement Handbook. OLEM 9230.0-51. (USEPA 2020).

The USEPA (2020) publication *Public Participation Guide* is an interesting complement to the Superfund Community Involvement Tools in that it appears to be more general and not based in the regulatory process. It is geared toward helping those in government responsible for public outreach in environmental decision-making to design and implement meaningful public participation that incorporates "fair treatment, meaningful involvement and social inclusion of all people regardless of race, color, national origin, sexual orientation or income." The process references for the IAP2 spectrum can be found in Section 3.4.11.

3.3.2 Resource Conservation and Recovery Act Public Participation Manual (USEPA 2016)

Like the Superfund Community Involvement Tools and Resources, this Manual is primarily regulatory focused and process-based but customized to permitting activities for facilities that manage hazardous waste. The initial framing steps are casual and impressionistic, such as talking with colleagues and community members to assess the level of interest. While these are all potentially constructive tasks, particularly at the preliminary stages, they do not appear to be rooted in the science-based methods recommended for the *Community Engagement Framework*.

3.3.3 Public Involvement Plan and Toolkit for Las Cruces (USEPA 2011)

This Plan was developed for the city of Las Cruces with technical assistance through EPA's Smart Growth Implementation Assistance program. The authors noted the goal was to develop a Public Involvement

Plan and Toolkit that included strategies to invite and maintain the participation of all residents, especially ethnically diverse, low-income populations and others who have had limited or no involvement in community planning and design. Creative strategies focusing on engaging people through pictures were tested in two visioning workshops. *The Public Involvement Plan and Toolkit* summarizes the process and includes many of the outreach and participation tools used to begin developing a vision for the El Paseo corridor.

This reference is included as it presents a public involvement plan following the IAP2 structured process, tailored to a specific project location to examine general issues of land use and redevelopment and focuses on engaging demographically diverse communities, which may be relevant to USACE project managers.

3.3.4 The Water Institute

The Water Institute of the Gulf is a not-for-profit, independent applied research and technical services institution. They note their mission is to help coastal and deltaic communities thoughtfully prepare for an uncertain future. Through an integrated and interdisciplinary approach, their work helps create more resilient communities, thriving economies, and healthy environments. They have developed and applied some interesting decision support tools in recent engagement initiatives with community stakeholders. A few examples follow.

Hemmerling et al. (2020a) describes an approach to engage local stakeholders to collect and utilize local knowledge of residents working in the Breton Sound Estuary in southeast Louisiana, US (mostly fishermen, shrimpers, and oystermen who utilize the estuary daily). This knowledge would be used to develop, plan, and assess a suite of nature-based solutions and evaluate the related and potential ecosystem function using a series of participatory modeling scenarios. Two main research questions were: (1) Based on the traditional ecological knowledge (TEK) of residents what are the possible nature-based solutions to address coastal hazards in and around the estuary; and (2) How do these nature-based solutions support various ecosystem services? A team of natural and social scientists worked directly with residents and resource users to develop a participatory modeling approach to collect and use local knowledge. Knowledge mapping methodology was designed to catalogue local understanding of current and historical conditions within the estuary and

identify desired ecological and hydrologic end states. The results informed further modeling activities to assess the applicability of the identified restoration solutions.

This reference was included as a recent example of comprehensive community engagement at the local level that used knowledge mapping tools to facilitate shared understanding of the estuary and build stakeholder support in the process of planning and designing coastal protection and restoration projects. This is an approach that could be applied by USACE project teams working on similar challenges.

- See also: The Water Institute of the Gulf, 2018. Partnership for Our Working Coast: Resiliency. Opportunity. Sustainability.

Hemmerling et al. (2020b) highlights the importance of integrating community knowledge, including that of minority, indigenous, and vulnerable populations, into assessments of community resilience. The authors note that typical quantitative tools fail to adequately incorporate community knowledge and experience. A community's "ability to recover from repeated disruptions suggests a degree of inherent resilience" a more on-the-ground assessment of resilience compared to what is included in typical quantitative modeling. A framework for integrating this local knowledge of different types of resilience (population; infrastructure; environment; economy; government services; community leadership; social connections) into a quantitative framework is described. Engagement tools included facilitated group conversations, polling, and mapping exercises.[1]

- See also: Hemmerling, S. A.; Barra, Monica; Bond, Rebecca H. (2020). Adapting to a Smaller Coast: Restoration, Protection, and Social Justice in Coastal Louisiana. In Louisiana's Response to Extreme Weather, Extreme Weather and Society. Chapter 5. Pp. 123-154.

Davis et al. (2019) highlights the application of integrated qualitative research methodologies to assess community perceptions and influences on decision making. In this case, how community members perceive potential responses to threats to resilience and sustainability of coastal communities is assessed, along with potential factors that can influence

[1] See also Hemmerling et al. (2020c).

decision making in these complex environments. Potential "tipping points, beyond which community members become victims of change rather than managers of change," including decisions to stay or leave their community, are discussed.

This article is included as it reinforces the need to respectfully engage stakeholders to understand influences on their judgment and decision making about risk/benefits related to coastal projects. Gaining such insight using formal and informal qualitative and quantitative methods is a critical component of the Community Engagement Process.

3.3.5 Best Practices for Participant and Stakeholder Engagement in the All of Us Research Program (Rand 2018)

The All of Us Research Program (AoURP) is a key component of the Precision Medicine Initiative launched by President Barack Obama in January 2015. This innovative research initiative is led by the National Institutes of Health with a mission to revolutionize how health research is conducted. Precision medicine focuses on prevention and treatment strategies that consider individual variability in genes, environment, and lifestyle. To advance precision medicine, the AoURP is collecting survey data, electronic health records (EHRs), physical measurements, and biospecimens to build a large and diverse data set for health research. The program hopes to engage one million or more individuals from diverse social, racial/ethnic, geographic, and economic backgrounds across the US for at least ten years.

The report presents strategies and tactics associated with six facets of engaging both participants and relevant stakeholders (e.g., community leaders, RMC champions), which the authors describe as follows:

1. **Laying the foundation:** Working with communities to develop culturally appropriate engagement approaches and making potential participants aware of the AoURP.
2. **Leading by example:** Building internal and external support for the AoURP that help RMCs prepare for participant enrollment.
3. **Capitalizing on health care infrastructure:** Facilitating enrollment in health care facilities
4. **Tailoring and personalizing communications:** Delivering the AoURP message to potential participants and engage them in the program over a long period of time.

5. **Building and nurturing engagement teams:** Identifying the right engagement staff and organize and manage engagement teams.
6. **Dealing with uncertainties:** Handling different questions that potential participants may ask during engagement activities.

While the context of this application is in the area of health and engagement, the strategies and tactics associated with the six facets reinforce the critical success factors described in Figure 5 and the Community Engagement Process illustrated in Figure 4. It could also provide some useful suggestions to project managers.

3.3.6 Strong Voices, Active Choices: TNC's Practitioner Framework to Strengthen Outcomes for People and Nature (The Nature Conservancy 2017)

The Nature Conservancy notes that twenty-five percent of the world's land is managed by or designated for indigenous peoples and local communities. With their territories harboring more than 17 percent of the world's forest carbon, and much of global biodiversity, they are among the Earth's most important stewards. Their leadership is key to conservation and sustainable development of their own lands, the territories surrounding them, and ecosystems globally.

This framework describes The Nature Conservancy's approach to partnering with indigenous peoples and local communities on shared conservation and sustainable development goals. The authors note the framework will be most useful in situations where human well-being conservation outcomes are linked and interdependent, where the leadership of indigenous peoples and local communities is essential to achieving shared goals, where power imbalances may hinder achieving sustainable results for nature and people, and where projects may significantly impact local communities.

This reference was included for its focus on engagement with indigenous populations and its inherent challenges along with considerations on the need to build social capital.

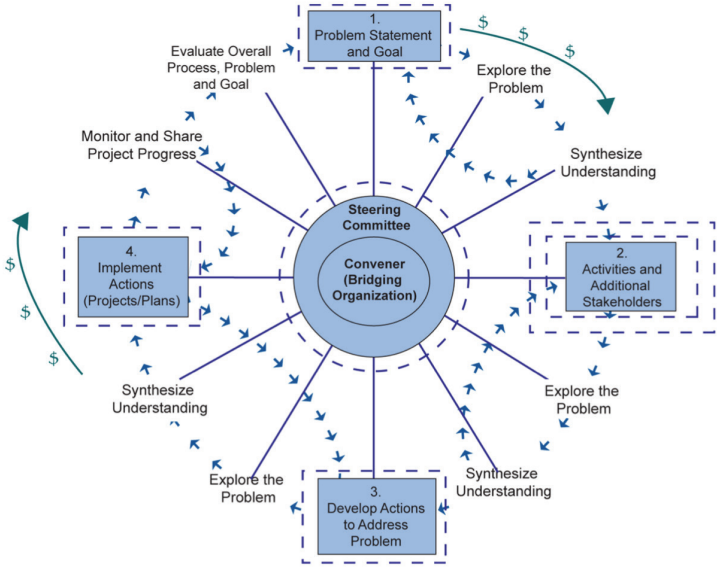
3.3.7 Explore, Synthesize, and Repeat: Unraveling Complex Water Management Issues through the Stakeholder Engagement Wheel (Lecroix and Megdal 2016)

Effective stakeholder engagement is fundamental to water management, yet there are as many approaches to consultation as there are efforts. This paper provides an evaluation of, and lessons learned from three water management engagement processes, and uses this assessment to offer a framework for stakeholder engagement. The authors describe the Stakeholder Engagement Wheel framework as centered on a bridging organization to ensure the process continues to move forward, and a steering committee to guide and adapt activities to address stakeholder interests.

Around the Stakeholder Engagement Wheel, four steps examine the water management issue driving the engagement process and expand the sphere of interests involved. Many engagement processes have limited effectiveness because of: (1) lack of time; (2) complexity of water resources management; (3) difficulty of engaging diverse stakeholders; and (4) lack of methods for engagement that are centered on empowerment, equity, trust, and learning. The authors note that they encountered all four issues and addressed all but the first through a deliberate, iterative, and flexible approach. By cycling through activities and actions in the Stakeholder Engagement Wheel, they were able to build a community of practitioners who had shared understanding of the need for cohesive action and robust decisions to effectively address these complex water management challenges.

This reference was included for the innovative, structured process of the Engagement Wheel (Figure 19), which illustrates a process with significant opportunity for iteration based on listening to and learning from stakeholders.

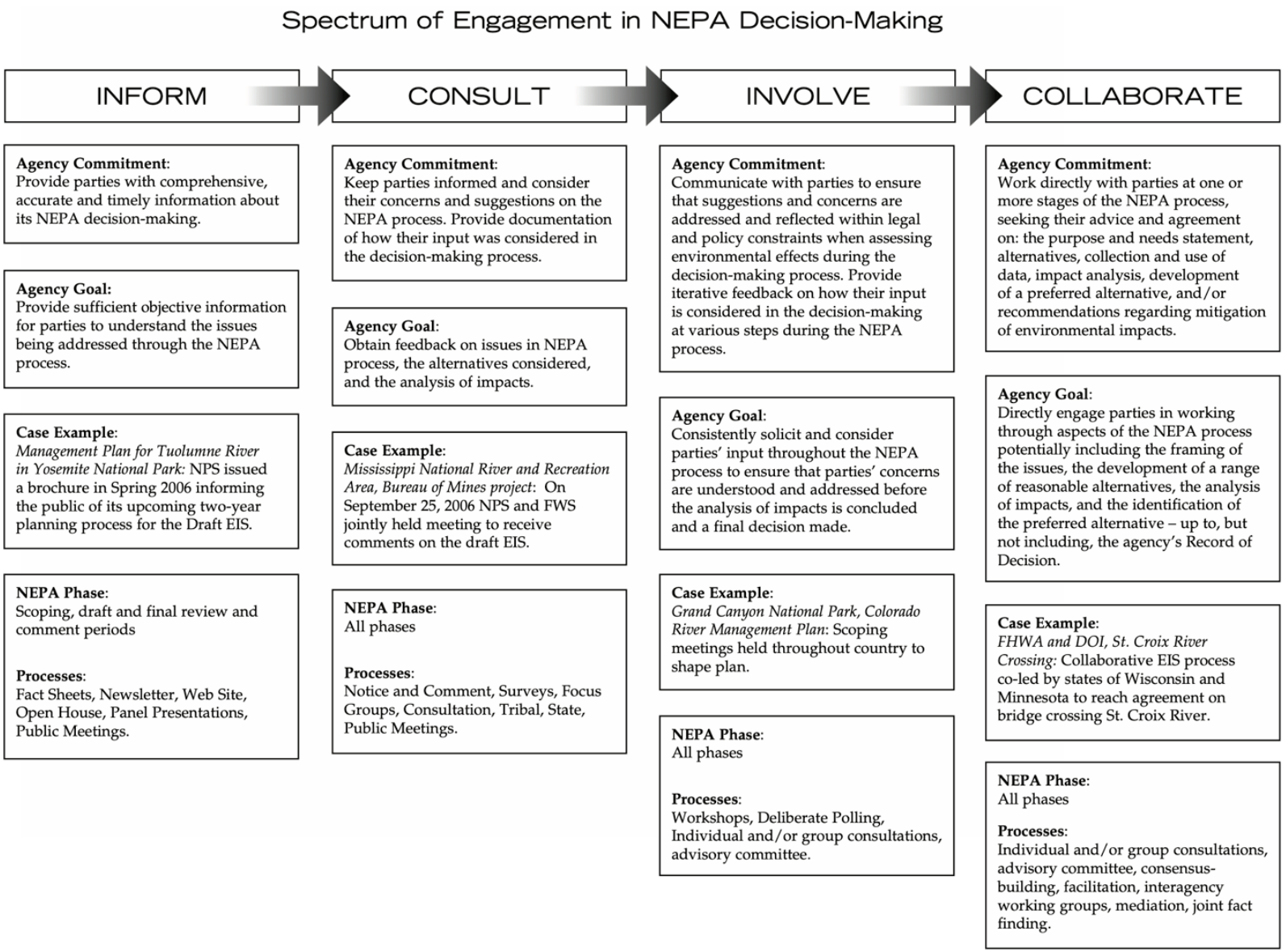
Figure 19. Stakeholder Engagement Wheel.



3.3.8 Collaboration in NEPA: A Handbook for NEPA Practitioners (Council on Environmental Quality 2007)

This reference, which presents a process built on an earlier version of the IAP2 spectrum of engagement model, while dated, is included because it is prominently referenced in the relatively recent USACE guidance, *Planning: Stakeholder Engagement, Collaboration, and Coordination* (2019), described in Section 3.2. This reference proposed a four-step process to inform, consult, involve, and collaborate with stakeholders to promote decision-making (Figure 20). The process in this reference should be compared to that of the more recent version of the IAP2 Spectrum described in Section 3.4.11.

Figure 20. Spectrum of Engagement in NEPA decision making.



3.4 Key international stakeholder and community engagement literature, resources, and practices

This section reviews stakeholder engagement and consultation frameworks and practices of leading international organizations, looks for perspectives and practices that align with EWN principles and practices and could add value to the *Community Engagement Framework*. We wanted to see what we could learn about definitions, values, and processes for stakeholder engagement; principles and governance; and leading practices in community engagement from leaders on the ground.

The key finding is an elevated commitment to science-based, process-driven stakeholder engagement by the leading international organizations, including the business community. Meaningful stakeholder engagement and participation is being discussed and activated globally. The values for engagement and the emphasis on meaningful participation – which are closely aligned with the critical success factors described in Figure 5 is key – will continue to influence community stakeholder expectations now and in the future. Measures are being developed and adopted to further elevate the importance – and business imperative – of effective stakeholder and community engagement.

3.4.1 Stakeholder Engagement & the 2030 Agenda: A Practical Guide (DESA and UNITAR 2020)

The *2030 Agenda for Sustainable Development* is based on an understanding that addressing the world's most urgent challenges requires engagement, collaboration, and partnerships with all stakeholders, including citizens, local, regional, and national governments, parliamentarians, academics, civil society, the private sector, and others. After three years of significant consultation and engagement, in 2015, United Nations Member States agreed to revitalize global partnerships. They agree to do this through multi-stakeholder engagement which they believed was critical to realizing the ambitions in *Transforming our world: The 2030 Agenda for Sustainable Development*. The authors underscore the importance of multi-stakeholder engagement for the implementation of the 2030 Agenda throughout the intergovernmental document, as well as in the targets that support the Sustainable Development Goals (SDGs).

In September 2019, Member States adopted a political declaration in support of accelerating efforts on The United Nations 2030 Agenda for

Sustainable Development, and the 17 Sustainable Development Goals (SDGs).

This publication adapts the content of an e-learning course developed by the United Nations Department for Economic and Social Affairs (UN DESA) and the United Nations Institute for Training and Research (UNITAR). It is designed for government officials and stakeholders who want to build and enhance participation and inclusion in the implementation of the 2030 Agenda at all levels. It provides information about participatory approaches in SDG implementation along with concrete methods and tools beneficial to USCE project teams.

The Framework for Planning and Assessing Quality Engagement in Figure 21 is driven by values, supported by behavioral measures.

Figure 21. United Nations' framework for stakeholder engagement.

Source: Creating a Seat at the Table – Stakeholder Engagement for the 2030 Agenda - ESCAP and IAP2: https://www.unescap.org/sites/default/files/Stakeholder%20Engagement%20Indicator%20Framework%20Brochure_180518_0.pdf

The UN's key elements included in a stakeholder engagement strategy are as follows:

1. Setting up a vision for engaging stakeholders in the process.
2. Setting up a justification for engaging stakeholders – who stands to gain and what?
3. Defining who should be engaged.
4. Defining how stakeholders will be engaged.
5. Setting up specific and tailored outreach strategies for different groups.

6. Devising challenges and how to overcome them.
7. Defining expected outcomes and outputs.
8. Defining the activities to be undertaken as part of the stakeholder engagement process
9. Planning and mobilizing the necessary resources
10. Setting up a clear timeline.
11. Registering the process (as appropriate).
12. Evaluating the process.

- See also: UNEP, 2020. Handbook for Stakeholder Engagement. UNEP Civil Society Unit.

3.4.2 World Economic Forum, Global Future Council on Infrastructure (2020a)

In November 2019, The World Economic Forum's Global Future Council on Infrastructure met in Dubai, United Arab Emirates, to understand how they could do their part to encourage the development of a widely accepted sustainable infrastructure asset class to draw more private capital into sustainable infrastructure investment. Leveraging the diverse experience of its members, the Council constructed an overall vision of what sustainable infrastructure was, and then explored frameworks and case examples that could help realize this vision.

We include this here as it ties so closely to the focus of EWN and efforts and partnerships underway to support and encourage the integration of nature-based infrastructure – or "green" infrastructure – with traditional "grey" infrastructure. There is a growing understanding globally, across USACE and its partner agencies and organizations of the critical need to proactively engage stakeholders from across sectors and representing various kinds of expertise, in infrastructure design and implementation.

Without proper engagement, sustainable infrastructure risks of execution increase, that is, if it is treated as a nice to do, rather than the global imperative it truly is. By laying out clear and achievable processes and providing strategies and examples for engagement which will enhance project adoption, the Global Future Council on Infrastructure hopes to do its part to encourage the development of infrastructure projects and systems. Existing frameworks and research were assessed to understand the state of the conversation around sustainable infrastructure, and areas where more attention was needed. Highlights of some of that work follows.

World Economic Forum, Global Future Council on Infrastructure (2020b) focuses on the six qualities of sustainable infrastructure and clearly illustrates the integral role of stakeholder engagement (Figures 22 and 23).

The UN people-first model in Figure 22 is consistent with the Sustainable Development Goals (SDGs). The authors envisioned that public-private partnerships would be made "fit for purpose" and oriented towards meeting the needs of "people-first." This model stipulates five desirable outcomes (UN-5) that can be applied to infrastructure projects. Their bottom line: the more inclusively and sustainably prosperous future the world deserves.

The fifth pillar – Engagement – calls for fully involving all stakeholders in all projects, including those not engaged or have not had a voice in the past. Social engagement and social equity are key themes in Figure 23 GFC-6 Desired Outcomes for Sustainable Infrastructure.

Figure 22. Desired outcomes for sustainable infrastructure.

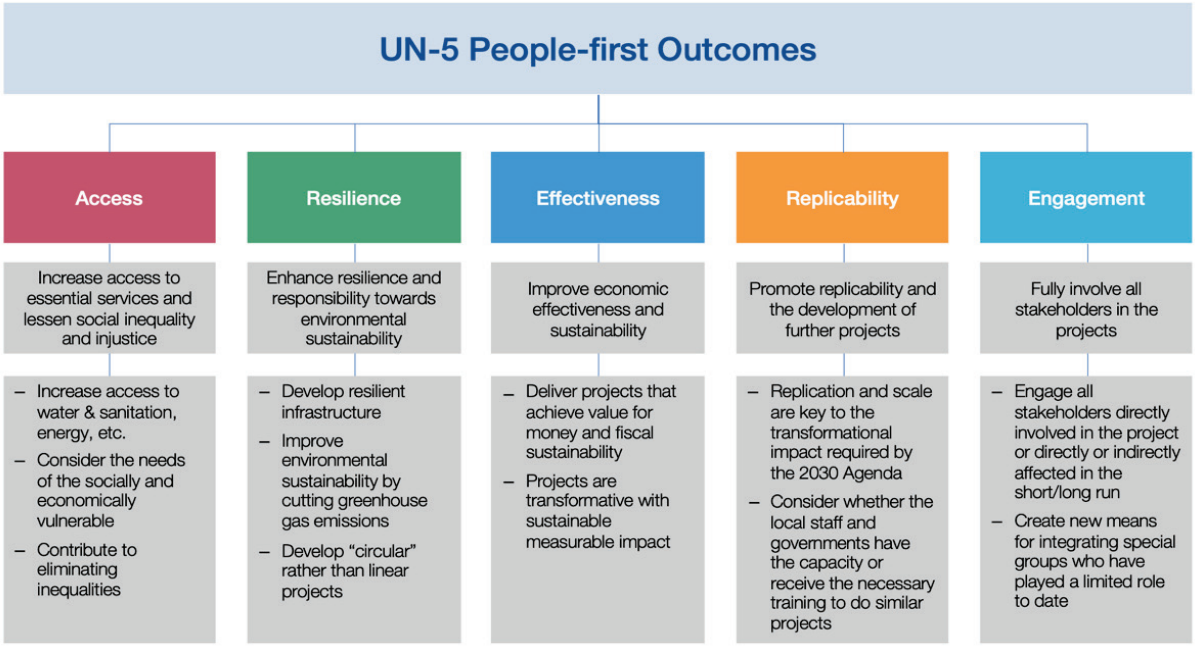
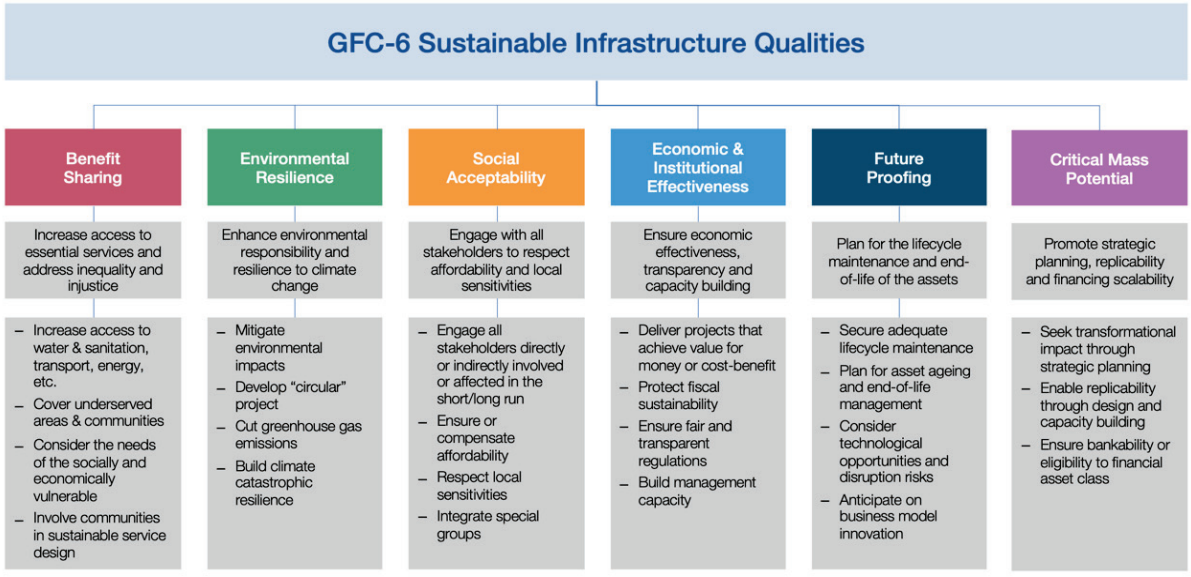


Figure 23. Global Futures Council Qualities of sustainable infrastructure.



Source: GFC

3.4.3 Stakeholders for a Cohesive and Sustainable World: The Role of Lighthouse Projects (World Economic Forum 2020)

This report was prepared for the World Economic Forum Annual Meeting in 2020 and lists more than 160 "Lighthouse Projects." Each project describes how stakeholders are making concrete progress to address current societal, economic, environmental, technology, regional, and industry challenges. Hundreds of leaders of large companies, civil society, governments, international organizations, research institutes, and the innovation community are participating in several diverse activities.

This report is included as it outlines many projects similar in scope and complexity to EWN projects and highlights corporate commitments to collaboration and range of Public Private Partnerships. Given the USACE Civil Works' interest in expanding engagement with partners, and EWN's strategy to broaden and deepen engagement and collaboration across mission areas and with and through partner organizations, these examples may be of interest to project teams.

3.4.4 Toward Common Metrics and Consistent Reporting of Sustainable Value Creation (World Economic Forum 2019)

The business context today has been transformed by climate change, nature loss, social unrest around inclusion and working conditions, COVID-19, and changing expectations of the role of corporations. The authors note that the

global pandemic has exacerbated underlying and longstanding failures regarding equality and access to economic opportunities. They emphasize that to continue to thrive, companies need to build their resilience and enhance their license to operate, through greater commitment to long-term, sustainable value creation that embraces the wider demands of people and the planet.

This report is included as it demonstrates the growing desire and requirements for stakeholder engagement as a fundamental governance process. It also indicates the depth of stakeholder reporting desired by WEF members and Deloitte, EY, KPMG, and PWC. These international firms are leading many corporations to build consistent reporting centered around four principles: Governance; Planet; People and Prosperity.

Principles of governance

The White Paper notes that we are in a period of transition where the public understanding of the purpose of a corporation is shifting – for some, quite dramatically -- to focus on long-term value creation, based on a corporation's commercial and societal value. This shift creates important implications for the role and meaning of good governance. Organizations are increasingly expected to define and embed *purpose* in a way that integrates societal impact into the core of their business. Meanwhile, traditional governance principles of agency, accountability, and stewardship will continue to be vital in ensuring companies are well governed.

Good governance is the foundation to achieving long-term value by aligning and driving both financial and societal performance, as well as by ensuring accountability and building legitimacy with stakeholders. Achieving this alignment requires governance to oversee the setting of an organization's aspirations regarding planet, people, and prosperity to ensure risks and opportunities associated with these dimensions are respectively navigated and embraced over time, and to ensure the interests of stakeholders, including shareholders, are protected

Stakeholder engagement

Stakeholder engagement is important for guiding governance to prioritize long-term value and holding company boards accountable. The authors note that effective stakeholder engagement should ensure a robust process for identifying and selecting relevant stakeholders (e.g., policy makers,

employees, suppliers, civil society, shareholders, and others) and proactively soliciting their input, including by defining the frequency and method of engagement. Such engagement is vital to strengthen accountability around long-term value and trust in organizations.

They suggest the specific stakeholder reporting recommendations that should address (a) the impact of material issues on stakeholders, which is a list of the material topics is identified in the process of defining report content and how they impact stakeholders; and (b) the process for engaging stakeholders. This covers the organization's approach to stakeholder engagement, including frequency of engagement by type and stakeholder group, and processes for ensuring reliability of information.

- See also: World Bank (Accessed February 2021). Sovereign environmental, social, and governance data: Data, Tools, and Guidance (BETA).

- See also: World Bank (Accessed February 2021). Sovereign environmental, social, and governance data: Data, Tools, and Guidance: Sovereign ESG Data Framework.

3.4.5 Involving Stakeholders in the Risk Governance Process (IRGC 2020)

The International Risk Governance Council (IRGC) is an independent non-profit foundation. Its goal is to help improve the understanding and management of risks and opportunities by providing insight into systemic risks impacting human health and safety, the environment, the economy, and society.

It is a science-based think tank that provides a neutral collaborative platform with multidisciplinary expertise. Through its collaborative process, IRGC develops concepts of risk governance, anticipates major risk issues, and provides risk governance policy advice for key decision-makers.

IRGC's new publication, *Involving Stakeholders in the Risk Governance Process*, is an important piece of work and highly relevant to USACE. It provides a leading-edge perspective on the importance and application of stakeholder engagement to risk and decision making.

IRGC recognizes that stakeholder involvement is a necessary part of risk governance, especially when there is uncertainty or ambiguity concerning a

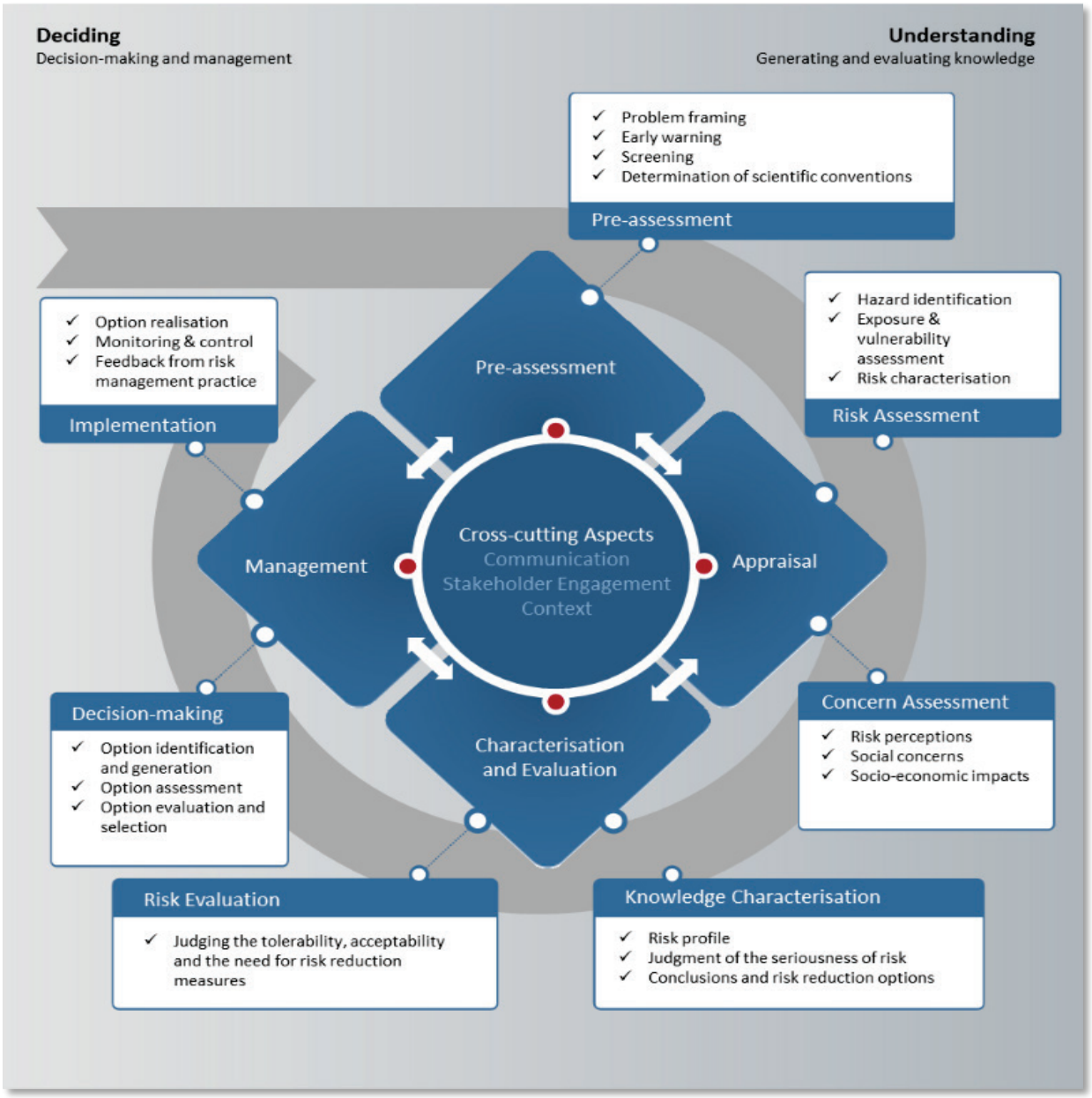
risk. The authors note that to assess, evaluate, manage, and communicate the risk effectively, one must account for the perceptions and concerns of the stakeholders. They emphasize that is just as necessary as the technical assessment of risk, or the risk management methods and tools themselves.

The main objective of involving stakeholders in the risk governance process is to improve risk managers' decision-making. This involvement will provide a greater understanding of the rationale behind stakeholders' interests, expectations, and motivations influencing their decisions. This document describes the purpose of involving stakeholders; where stakeholders have a role in the risk governance process; and outlines specific objectives that may be met and expected outcomes for these different objectives. It concludes by emphasizing the major benefits and challenges of involving stakeholders in an appropriate manner.

> *IRGC defines stakeholders in the realm of risk governance as "Socially organized groups that are or will be affected by the outcome of the event or the activity from which the risk originates and/or by the risk management options taken to counter the risk." Groups can socially organize through various means, whether formal (i.e., through the creation of non-governmental organizations or civil society organizations) or informal, as the advent of social media has shown (i.e., Facebook groups, Twitter accounts that have a capacity to communicate and mobilize groups).*
>
> — (IRGC 2020)

Figure 24 demonstrates the critical role of stakeholder engagement in IRGC's risk governance framework. IRGC notes that risk communication is critical to effective risk governance.

Figure 24. Involving stakeholders in the risk governance process.



IRGC on Risk Communication and Risk Governance

> *Risk communication is a vital and ongoing part of effective risk governance. It is a cross-cutting function at the centre of the risk governance framework. It is the continuous process of sharing or exchanging risk-related information, data and knowledge among the diverse groups involved in risk governance, such as scientists, policymakers, regulators, industry, consumers, and the general public.*

Internally, risk communication develops a common understanding among risk assessors and managers of their tasks and responsibilities. As part of stakeholder involvement, risk communication allows stakeholders to receive important information in a timely manner. It also allows stakeholders to make informed contributions to the risk governance process by creating a deliberate two-way dialogue, which gives stakeholders a voice. Once a risk management decision has been made, the role of communication is to explain the rationale for said policy decision to stakeholders.

Without risk communication, there cannot truly be any successful stakeholder involvement. Effective and early communication is the key to creating long term trust in risk management, in particular when knowledge about a risk is complex, uncertain and/or ambiguous. Stakeholder involvement then goes beyond communication by ensuring that stakeholder knowledge, interests, values and world views are incorporated and given their due in the governance process. In addition, stakeholders are important agents for disseminating the results of the risk governance process and facilitating outreach throughout.

- See also: International Risk Governance Council (IRGC), 2017. An Introduction to the IRGC Risk Governance Framework.

- See also: Schweizer, P.J., & Renn, O. (2013). A resource guide for developing and implementing science-based stakeholder involvement research, policy, strategies, and practices. Geneva: IRGC.

3.4.6 WWF GEF Tracks: A how-to Guide for Developing and Executing a WWF GEF Project (WWWF and GEF 2020)

The World Wildlife Fund (WWF) partners with the Global Environment Facility (GEF) to design and implement GEF programs and projects on their behalf, including stakeholder engagement. Stakeholder Analysis is an important step in their project development process.

The Stakeholder Analysis guidance notes that effective stakeholder engagement is vital to ensuring a project's success: it can make a significant contribution to successful project design and execution; improve the environmental and social sustainability of projects; and enhance project

buy-in and acceptance[1]. Key steps in conducting the analysis include identifying relevant stakeholder groups; identifying their interests in the project; prioritizing stakeholders; and assessing past information about stakeholders. They recommend stakeholders be engaged in their own communities and these consultations be documented.

The guidance cites the WWF Standard on Stakeholder Engagement[2]. The WWF work is not leading practice in terms of policy or process. It is included to show the prominence of stakeholder engagement in a major ENGO work. While the values are closely aligned with those of the *Community Engagement Framework*, guidance in how to engage effectively, including substantial methods and tools are missing.

- See also: Standard on Stakeholder Engagement.
- See also: GEF, 2017. Policy on Stakeholder Engagement; Guidelines on the Implementation of the Policy on Stakeholder Engagement.

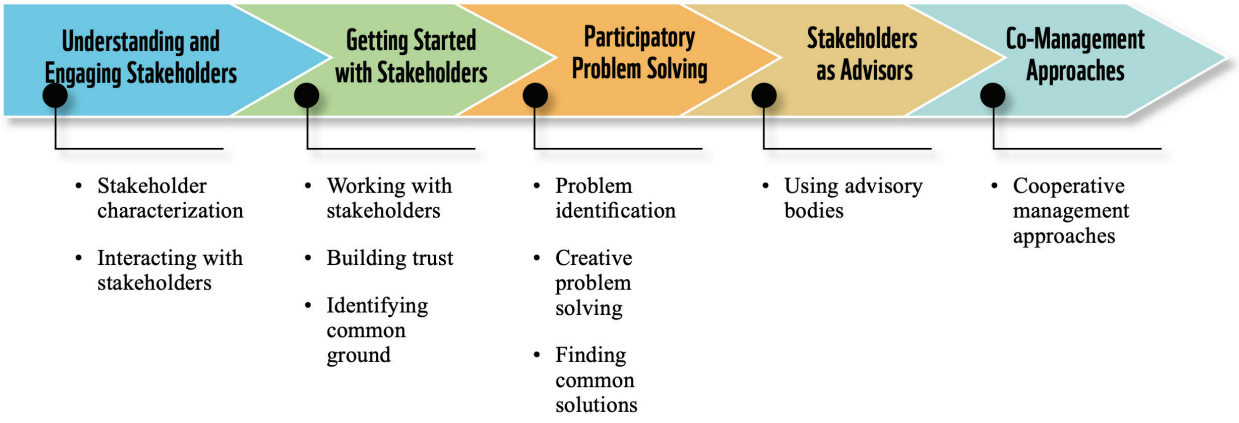
A five-step process was developed for participatory engagement of stakeholders in Gomei and Di Carlo (2013) (Figure 25).

- See also: Huzzard, T. (2018). Stakeholder Engagement Manual. European Commission's Horizon 2020 QuInnE project 649497.
- See also: Association for Project Management. (2017, June 28). Stakeholder engagement.
- See also: Participedia. Crowdsourcing platform providing guidance and case studies regarding participatory politics and governance.

[1] WWF. Stakeholder Analysis. Available at: https://wwfgeftracks.com/pif/stakeholder-analysis.

[2] WWF. Standard on Stakeholder Engagement. Available at: https://wwfgeftracks.com/sites/default/files/2019-02/Standard%20on%20Stakeholder%20Engagement_0.pdf.

Figure 25. WWF 5-step process for participatory engagement of stakeholders.



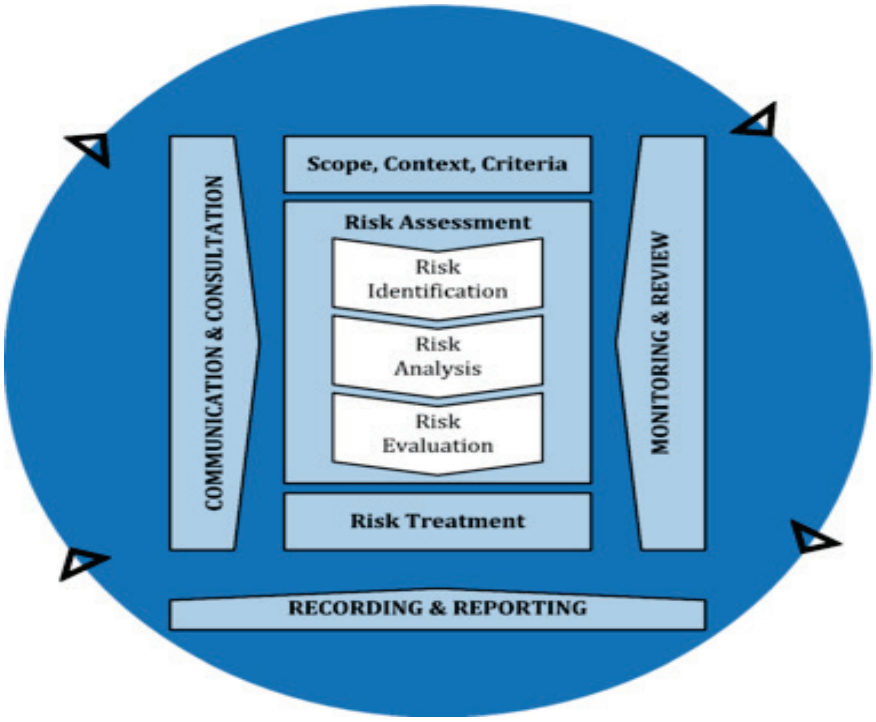
3.4.7 ISO-31000, Risk Management Guidelines (ISO 2018)

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies (ISO member bodies). International Standards are prepared by ISO technical committees comprising subject matter experts.

We include ISO 31000 (Figure 26), not because it is a leading practice, but because in the authors' estimation, it is not. Building on CAN Q850, and through the involvement of many risk managers around the world, the Standard was homogenized to enable consensus. The result, from our perspective and many other experts in the field, is a much weaker document that is no longer relevant.

Risk communication and stakeholder engagement are no longer an integral part of the process, and communication and consultation are top-down.

Figure 26. ISO risk management process.



Establishing communication and consultation

The organization should establish an approved approach to communication and consultation to support the framework and facilitate the effective application of risk management. Communication involves sharing information with targeted audiences. Consultation also involves participants providing feedback with the expectation that it will contribute to and shape decisions or other activities. Communication and consultation methods and content should reflect the expectations of stakeholders, where relevant. Communication and consultation should be timely and ensure relevant information is collected, collated, synthesized, and shared, as appropriate, and that feedback is provided, and improvements made.

As the leading practices we have highlighted in this report demonstrate, the practices of stakeholder and community engagement and risk communications, continue to evolve, as do the expectations of stakeholders. Old thinking and top-down processes are not the way of the future, and certainly not acceptable for the *Community Engagement Framework* and the project teams that refer to it for guidance.

3.4.8 AccountAbility (2018)

AccountAbility is a global consulting and sustainability standards firm that works with businesses, governments, and multilateral organisations to advance responsible business practices and improve long-term performance. AccountAbility notes that its AA1000 Series of Standards are principles-based frameworks used by global businesses, private enterprises, governments, and other public and private organizations to demonstrate leadership and performance in accountability, responsibility, and sustainability.

The AA1000 Series of Standards are founded on the principles of:

- Inclusivity – People should have a say in the decisions that impact them.
- Materiality – Decision makers should identify and be clear about the sustainability topics that matter.
- Responsiveness – Organizations should act transparently on material sustainability topics and their related impacts.
- Impact – Organizations should monitor, measure and be accountable for how their actions affect their broader ecosystems.

3.4.9 Stakeholder Engagement Standard (AA1000SES) (AccountAbility 2015)

In 2015, AccountAbility noted that while stakeholder engagement is not new, it is now accepted as integral to an organization's sustainability and success. They wanted to help organizations recognize the difference between good-quality and poor-quality engagement, so they developed this standard to establish the benchmark for good-quality engagement.

They define stakeholders as follows: *Stakeholders are not just members of communities or non-governmental organisations. They are those individuals, groups of individuals or organisations that affect and/or could be affected by an organisation's activities, products, or services and/or associated performance with regard to the issues to be addressed by the engagement.*

In the AA1000 Framework Standard published in 1999, AccountAbility first introduced the principle of *Inclusivity*.

AccountAbility notes the AA1000 Stakeholder Engagement Standard (AA1000SES) is the most widely applied global stakeholder engagement standard. Its purpose is to support organizations in their efforts to assess, design, and implement an integrated approach to stakeholder engagement, and communicate fairly and accurately with stakeholders and the public about those efforts.

AccountAbility defines stakeholder engagement as the process used by an organization to engage relevant stakeholders for a clear purpose to achieve agreed outcomes. They note it is now recognised as a fundamental accountability mechanism since it obliges an organization to involve stakeholders in identifying, understanding, and responding to sustainability issues and concerns, and to report, explain, and answer to stakeholders for decisions, actions, and performance. For these benefits to be realized, stakeholder engagement must be designed and implemented in a credible way.

Like the Critical Success Factors in Figure 5, AccountAbility notes quality stakeholder engagement must be:

- Based on a commitment to principles (theirs!)
- Clearly define its scope
- Have an agreed decision-making process
- Focus on issues material to the organization and its stakeholders
- Create opportunities for dialogue
- Be integral to organizational governance
- Be transparent
- Have a process appropriate to the stakeholders engaged
- Be timely
- Be flexible and responsive, and
- Add value for the organization and its stakeholders

3.4.10 Consultation, Participation & Disclosure of Information (The World Bank 2017)

This report on consultation, participation, and disclosure of information is the fourth in a series of publications by the World Bank Inspection Panel. The Panel drew on key lessons from its caseload over nearly a quarter century. They noted that they hoped the key lessons described in this report would highlight areas in which continued improvements can enhance the Bank's and its member countries' overall approach to consultation,

participation, and disclosure of information as tools to empower affected persons and communities to participate in development projects affecting their lives.

The main conclusions from the cases analyzed are as follows:

- Consultation is a tool to empower affected persons and communities to participate in the development process and integrate their voices in projects. Under the right circumstances, consultations help projects achieve improved development results and deliver benefits.
- Ensuring adequate consultations from the start of the project cycle and maintaining continuous communication with local stakeholders can enhance project design, prevent conflicts, avoid delays, and improve development outcomes. Conversely, considering consultation, participation, and information disclosure in the narrow context of one-way information dissemination and as a time-limited process can amplify adverse environmental and social impacts.
- Outcomes of consultations are highly context-specific and dependent on the borrower's and citizens' capacity and willingness to engage, as well as on social, political, economic, cultural, and geographic factors.
- Consultations should be considered for the preparation of safeguard instruments and should remain flexible and adapt to changing project needs throughout the duration of the implementation cycle.

3.4.11 Public Participation Pillars (IAP2 2007)

Founded in 1990, the International Association for Public Participation (IAP2) has grown into an international federation of over 6,000 professionals in 26 countries working to advance the practice of public participation. Many organizations, including USACE (see Section 3.2.8), reference IAP2 and variations on its Level of Engagement chart (Figure 27).

IAP2 **Core Values** define the expectations and participation process. P2 processes are based on the following Core Values:

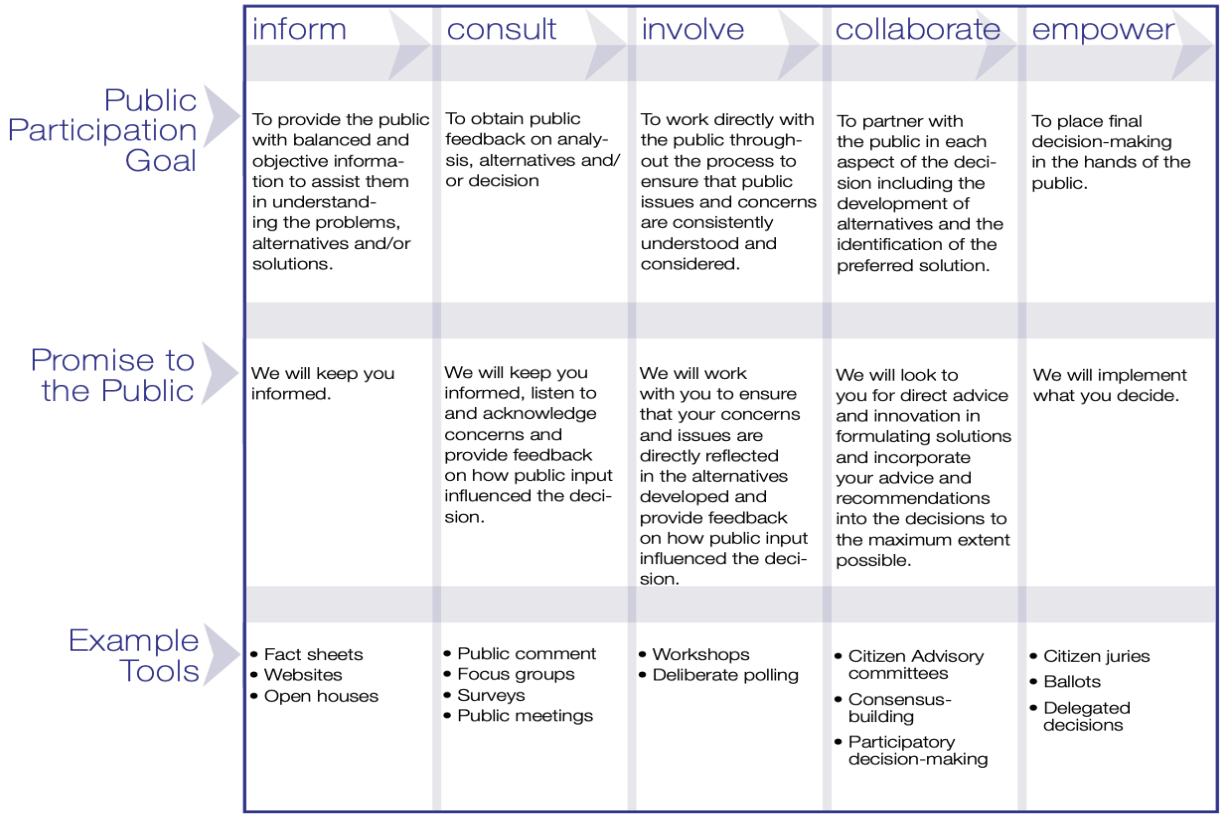
1. Public participation is based on the belief that those affected by a decision have a right to be involved in the decision-making process.
2. Public participation includes the promise that the public's contribution will influence the decision.

3. Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision makers.
4. Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
5. Public participation seeks input from participants in designing how they participate.
6. Public participation provides participants with information needed to participate in a meaningful way.
7. Public participation communicates to participants how their input affected the decision.

Level of Engagement

IAP2's original four levels of stakeholder engagement have evolved, based on input from practitioners, to include a fifth level of engagement – "empower" (Figure 27).

Figure 27. IAP2 Spectrum of Public Participation.



Reference: Australian Nursing & Midwifery Accreditation Council, 2017. Stakeholder Engagement Framework.

This is an interesting and thoughtful adaptation of the Stakeholder Engagement Framework developed by the Australian Nursing & Midwifery Accreditation Council (2017). We offer it here because the Framework is driven by their values: purposeful; relevant; open and honest; inclusive; and responsive.

3.5 Other useful resources related to risk and decision making

The following are some older, but useful documents that provide background, context, and in some cases, valuable insight into risk and decision-making, which are critical components of effective stakeholder engagement and ultimately, infrastructure project success.

Risk communication research literature is large and diverse, including results from many contributing disciplines (e.g., psychology, decision science, sociology, communications). The status of the literature leaves many practitioners relying on their intuition, unproven best practices, and popular accounts of psychological research to guide their work. The USFDA (2011) guide seeks to make evidence-based risk communication accessible to the practitioner. Chapters in this guide address four topic areas: basic principles of risk communication; processes of risk communication; communication design; and perspectives on implementing evidence-based communications. Each is written to be as accessible as possible, while preserving details needed to represent the science faithfully and avoid oversimplification. The research presented is then translated into concrete recommendations for designing communications and coupled with the testing procedures needed to make communications as good as possible. The guide emphasizes practicality, hoping to improve communications, even when time and resources are limited. It intends to make the science of communication as sound as the science being communicated.

The brief text of Fischhoff and Kadvany (2011) targets general readers and students of public policy, management and business, environmental science, engineering, psychology, politics, and philosophy. It helps the reader understand risk to enables better risk decisions in their own public and private lives by using a variety of everyday examples. It also explores the concept of decision theory and behavioral decision research.

A favored model for public input is to use the tools of dispute resolution to seek consensus among members of a multi-party stakeholder group. Gregory et al. (2001) believes a focus on dispute resolution and consensus building can pose impediments to the creation of insights for decision-makers and lead to the adoption of inferior policy choices. Instead, they advocate an alternative approach to stakeholder participation characterized as "decision aiding" through a structured process based on constructive, multi-attribute techniques, and value-focused thinking. In this paper, some major difficulties posed by a dispute-resolution approach are articulated, and the principles of a decision-aiding process reviewed with reference to certain principles of risk communication. This alternative approach is illustrated by describing a stakeholder consultation involving water-use planning for a hydroelectric facility on the Alouette River in British Columbia, Canada.

4 Summary

4.1 Key findings from the assessment

The review of literature and leading stakeholder and community engagement practices resulted in a 30-yr perspective on the evolution of the practice of engagement – values-based policies, processes, methods, tools, and measures. The Key Findings of our assessment against the three core objectives discussed in Section 1.6 are presented below, followed by considerations for USACE broadly, and specific implications for the *Community Engagement Framework*.

4.2 Objective 1

Assess and validate the robustness of the Community Engagement Process, methods and tools adapted from Decision Partners' proven Stakeholder Engagement Process for this DOER initiative, against leading practices and processes within USACE and other leading national and international organizations.

- The foundational Stakeholder Engagement Process underlying the DOER adaptation – the Community Engagement Process – has stood the test of time and benefitted from a broad range of application and adaptation. It is a proven, values-based, and scalable process ideally suited for application by USACE DOER and EWN programs for sediment beneficial use projects where community engagement is critical. Additional rigor will be added by incorporating new methods and measures.

The Stakeholder Engagement Process has deep and strong science-based roots. Versions have been applied to a range of stakeholder engagement and risk communications challenges and opportunities since the late 1980s as described in Section 3. Initial versions served as the foundation of the risk communications component of the *Q850 Risk Management: Guideline for Decision-Makers*, then for several stakeholder engagement frameworks over the years, many of which continue evolving to meet current challenges.

The Mining Association of Canada's *Towards Sustainable Mining Initiative* (see Section 3.1.5) demonstrates the robustness of the stakeholder engagement approach and process recommended for USACE. It has evolved

and continues to be the leading practice globally in the mining industry. Developed over 20 years ago, its values-based guiding principles, science-informed process, methods, and tools, have enabled continuous learning, technology transfer, and adaptation to changing circumstances, including community expectations.

The Stakeholder Engagement Process provides a solid, tested, and proven foundation for the *Community Engagement Framework* and supporting Community Engagement Process.

The adaptation of the Community Engagement Process for USACE will deliver on these attributes, determined to be critical based on the leading practice assessment:

- **Values-driven, dialogue-based, and collaborative –** an interactive process designed to define and deliver shared outcomes.
- **Aligned with the values of leading practice frameworks**, notably, those of the World Bank, the World Economic Forum, the IRGC Risk Governance Process, and the AccountAbility standards discussed in Section 6.
- **More developed, more comprehensive** than most stakeholder engagement processes and approaches reviewed. Leading practice stakeholder engagement is rife with "ideals" – principles about the importance of conducting stakeholder engagement in a way that is structured, comprehensive, respectful, meaningful, etc., but short on practical approaches, tools, templates to achieve those ideals.
- **Practical and field tested over three decades and numerous applications**. The detailed methods and tools are based on proven prior applications and have been refined over years of application. This additional level of specificity results in more standardized practice and greater reliability of results. Core planning tools, including the Stakeholder Map and Expert Model, have been developed and used in several USACE projects and applied most recently adapted for the Seven Mile Island Innovation Laboratory (SMIIL) Pilot Project (Thorne et al. 2021).
- **Scalable.** The process is adaptable to projects of all sizes and all levels of both social and technical complexity.
- **Measurable**. A key component of the process is measuring process outcomes against objectives, as well as measuring and documenting the process itself to ensure continuous learning.

- **Robust**. As ESG (environment, social, and governance) metrics are leading practice being driven by the World Economic Forum and others, ensuring relevant ESG metrics are incorporated into USACE projects will be important. These will be added to the measurement tools supporting the Community Engagement Framework.

The Community Engagement Framework will support, enable, and expand leading practice within DOER, EWN, and the USACE.

- Current USACE stakeholder engagement guidance is based on old models that are 15 – 20 years out of date and primarily regulatory-based.

The current USACE guidance for stakeholder engagement, *Planning: Stakeholder Engagement, Collaboration, and Coordination* published in 2019 (see Section 3.2.7), is based on the 2002 NEPA standards. This approach appears to be mostly top down, one-way provision of information ***to*** stakeholders and not two-way, dialogue-based collaboration ***with*** stakeholders. The approach appears to be based on conflict resolution models and fulfilling regulatory requirements for consultation. The *Civil Works Strategic Plan 2014-2018* (see Section 3.2.13) does promote Collaboration and Partnering at a high level – to "Build and sustain collaboration and partnerships with other agencies and organizations at all levels to leverage authorities, resources, talent, data, and research" – but its focus is primarily on working with agency partners.

The website for the IWR Collaboration and Public Participation Center of Excellence has a recently published Strategic Plan for 2021-2025, but the Plan doesn't provide guidance for project teams.

- The EWN program is driving leading practice in USACE and beyond.

Collaboration has been one of the four key elements of EWN (see Section 3.2.1) since its inception in 2010. Building on examples of best practices over the years, the EWN initiative has highlighted the power of broad collaboration across government, private sector, academic, and non-governmental organizations (NGOs) to deliver successful, multi-beneficial projects.

The EWN website (http://www.engineeringwithnature.org/) and the EWN Atlas I (Bridges et al. 2018) and Atlas II (Bridges et al. 2021) feature numerous

examples of stakeholder engagement on a broad range of projects, led by USACE and other organizations, including several European entities. There are several examples of innovative, leading practices demonstrating the power of effective collaborations with leading corporations, government agencies, and ENGO partners. These underscore the serious investment and commitment to collaboration across sectors and organizations to organize and focus community stakeholders, other stakeholders, and partners to co-create more broadly acceptable and multi-benefit projects, while reducing social friction, resistance, and costly delays.

- Even as a leading practice in the USACE, EWN stakeholder engagement is not currently supported by a systematic, science-based stakeholder engagement framework.

Such a framework could be readily adapted from the *Community Engagement Framework* currently being developed, applied to projects of various scales and complexity, and documented.

- Documentation and measurement will enable technology transfer resulting in broader application of EWN – a key strategic objective – as well as effective stakeholder and community engagement.

Developing a systematic approach that can be scaled and applied within DOER and EWN for beneficial use and other projects consistent with USACE missions is one key driver for the development of the *Community Engagement Framework*. Recognition of the critical role effective stakeholder and community engagement plays in optimizing the benefits of infrastructure projects could leverage EWN's reach and value through increased project opportunities and partnerships and expand its practices and applications.

- Application of leading practices for stakeholder and community engagement in USACE appears to be occurring in pockets and led by innovative project leads, many of whom are affiliated with EWN.

Strong stakeholder engagement efforts at the district level are typically led by innovative project leaders. Many are affiliated with EWN and/or are working in EWN Proving Grounds. USACE Galveston, Buffalo, and Philadelphia Districts serve as "proving grounds" for district-wide implementation of EWN principles and practices within the USACE

(https://ewn.el.erdc.dren.mil/provinggrounds.html). These Districts are committed to working collaboratively to identify opportunities to implement EWN principles and practices in current and future district projects. The Mobile District, which has a long history of innovative EWN projects, became a proving ground District in 2021.

Strong relationships built over time have been critical to the success of projects and enabled the USACE leads to initiate new projects, incorporate new technologies, or innovate with support from an expanding circle of stakeholders. The innovative work with thin layer placement by the Philadelphia District, an important component of the SMIIL (Thorne et al. 2021), is one example.

The lack of a single systematic approach results in limited opportunity for tech transfer or continuous improvement.

- The state of practice by the USACE's US Agency partners did not yield new or innovative stakeholder engagement approaches.

Most appear to be based on similarly dated, regulatory-driven engagement models as those used by USACE (Section 3.2.8). Conflict resolution models are typically at the core and communications appears to be primarily top down and driven by regulatory requirements. The EPA stakeholder engagement guidance, initiated at the beginning of Superfund in the early 1980s, appears to have been adapted and updated for different applications.

4.3 Objective 2

Identify leading and/or state-of-the-science approaches, methods, and tools that could be incorporated into the Community Engagement Framework and supporting materials and training.

Collaboration underlies leading practice. New innovative collaboration methods and tools will be incorporated into the *Community Engagement Framework*.

- The old consultation processes based on legal/conflict resolution models are out of date and no longer relevant or appropriate for addressing the infrastructure development challenges and opportunities today or in the future.

The old consultation processes typically do not meet the needs of community stakeholders or proponents and rarely lead to sustainable solutions. A clear, dialogue-based collaborative stakeholder engagement process that systematically engages stakeholders in the process of designing and implementing projects producing triple-win benefits are required.

A key takeaway for the *Community Engagement Framework* is the need to emphasize how to reach out, how to engage, and how and when to collaborate effectively using proven methods and tools along with those that are new innovative and delivering results for leading organizations and stakeholders.

- There is more focus on enabling inclusivity and building stakeholder capacity to engage in a meaningful way. This is particularly important when it comes to including non-traditional stakeholders in project development processes.

Transparency of process and outcome is critical and something the authors have been encouraging for over 30 years. For this reason, the focus on inclusivity, building social capital, and solutions-focused collaboration will be increased in the *Framework*, along with metrics for measuring these factors.

- Effective stakeholder engagement has evolved beyond consultation and consent to collaboration – "enlightened development."

Inuit ENGO and scholar Terzah Tippin Poe (Polar Research & Policy Initiative and Harvard lecturer) notes that "enlightened development" is the way of the future. Creative collaboration results in holistic solutions that incorporate the needs, values, knowledge, interests, priorities, and preferences of the community. These typically lead to more sustainable solutions.

- Key trends and the evolution of stakeholder engagement reinforce the need for an open, transparent engagement process, clear decision-making rights, up-front agreement to collaborate on creating optimal solutions, and respect for all stakeholders.

Organizations can no longer impose solutions on communities. They are better served by generating them with community stakeholders. This a

growing expectation of stakeholders, especially ENGOs, NGOs, and corporations around the world. Consumer and social activism have been heightened by the COVID-19 pandemic. Experts, including Tippen Poe, believe it is the norm and expect it will increase. People want to be informed and have a say in things that affect them; this is the fundamental definition of stakeholders. They expect to be involved in decisions that affect them and their community. And they expect to be involved in a meaningful way – that is, a way they judge to be meaningful.

- **Innovative risk and decision-making tools have been identified for inclusion in the Community Engagement Framework.**

This Leading Practice review has identified several relevant practices for stakeholder and community engagement being applied in contexts comparable to USACE. These include relevant work being conducted by ENGOs such as The Water Institute that demonstrate the importance of eliciting and integrating local knowledge into quantitative methodologies through science-based qualitative engagement approaches. Many practices incorporate innovative tools and approaches but are not developed nor comprehensive enough to serve as a *Community Engagement Framework*.

There are also examples of applying innovative solutions to addressing environmental objectives such as using insurance to promote better individual decision making by landowners. One example can be found in Narayan et al. (2017) and USACE EWN Podcast Season 1, Episode 6: Assessing the Value of Natural and Nature-Based Features in Coastal Storm and Flood Risk Reduction (https://ewn.el.erdc.dren.mil/podcasts.html).

These unique approaches and contexts also require more thorough understanding of individual values, interests, and priorities as they are a key focus of the proposed approach.

4.4 Objective 3

Assess the level of commitment to effective stakeholder and community engagement by leading organizations, including the governance and accountability that supports and enables values-based stakeholder and community engagement.

At the international level, leading organizations have made significant contributions to incorporating stakeholder engagement as a business

priority. Organizations such as the World Economic Forum's Global Future Council on Infrastructure are developing metrics to measure and report results appropriately, and accountability systems to enable it.

- The *Community Engagement Framework* will incorporate leading practice methods, including considerations on ESG measures being developed at the international level.

Effective stakeholder engagement is acknowledged to be critical to effective governance. Over the past few years there has been intense focus, resulting in important work at the international level led by the World Economic Forum (See Sections 3.4.2–3.4.4) and World Bank (Sovereign Environmental, Social, and Governance Data: Data, Tools, and Guidance) and leading accounting firms including Deloitte, EY, KPMG, PWC, AccountAbility and others who have seen the value and business imperative for improving and enabling more effective stakeholder engagement, measurement, and reporting.

As the influence of stakeholders on organizations has increased, the international business, government, and NGO community has done significant consultation to develop and build alignment on best practices for stakeholder engagement, along with metrics to demonstrate the value.

There is an elevated commitment to science-based, process-driven stakeholder engagement by the leading international organizations, including the business community.

- Meaningful stakeholder engagement and participation, along with the importance of measurement and reporting, is being discussed and activated globally.

The values related to purposeful engagement and the emphasis on meaningful participation – which are closely aligned with the critical success factors described in Figure 5 – are key and will continue to influence stakeholder expectations now and in the future. Values-based stakeholder and community engagement are described in detail in the UN's Stakeholder Engagement & the 2030 Agenda (See Section 3.4.1) and WEF's UN-5 People-first Outcomes (See Section 3.4.2).

At the community level, USACE project managers will need to anticipate and incorporate community members' interest in being actively engaged in projects from the early design phase. Time will be required as well as skills – including dialogue skills that enable and support collaboration. Stakeholder capacity to engage in a meaningful way will be an important consideration along with opportunities to build social capital. Measurement and reporting will also be key to continuous learning, continuous improvement, and knowledge translation.

Development of a *Community Engagement Field Guide,* training, coaching, self-guided learning modules, and systematic documentation and sharing of lessons learned is being considered to support implementation of the *Community Engagement Framework*. The primary purpose will be to build out skills and internal capacity and support and enable continuous learning and technology transfer within the project teams, their Districts and ultimately, across USACE and perhaps beyond.

- Social equity is a key theme, which will likely build and become stronger over time.

Social engagement, inclusion, and social equity, including enabling access to and participation in stakeholder engagement processes related to projects is an increasingly important focus of leading practices (See Sections 3.4.1 and 3.4.2).

Ensuring social equity and enabling inclusion, plus considerations on building social capacity, will be explicitly built into the *Community Engagement Framework* and supporting tools, and specifically into to the stakeholder mapping and hypothesis step as described in Thorne et al. (2021).

4.5 Considerations

Stakeholder and community engagement, measurement, and reporting is evolving, along with stakeholder expectations and their desire to be involved in a meaningful way. Demands on USACE project managers to deliver sustainable projects that meet the needs of community stakeholders and society, while delivering triple bottom line solutions are increasing. Expectations regarding appropriate and transparent measurement and reporting are increasing, and we anticipate the new ESG models will become the norm soon. Building social capacity through the project collaboration

process is increasingly seen as a desired outcome that should be planned for at the outset. The ongoing development of the *Framework* and the methods and tools that support it will need to keep pace with the evolving expectations of critical partners, including corporate stakeholders and civil society, along with leading practices.

The need for a robust *Community Engagement Framework* to help USACE project managers effectively address stakeholder needs, values, and expectations and deliver beneficial infrastructure projects is critical. Successful implementation calls for two critical elements: a strong policy and supporting methods and tools for project managers and their teams.

Key Strategic Recommendation #1: Establish a USACE Stakeholder and Community Engagement Policy

Establish a robust stakeholder and community engagement policy to support and enable leading practice across USACE Civil Works navigation O&M program, establish clear accountability, and serve as a model for partner agencies and other collaborators. The policy will provide the impetus for successful implementation of the Community Engagement Framework.

The following are specific policy-related considerations.

- USACE Policy
    - USACE's current guidance and standards on stakeholder engagement are largely outdated (Section 3.2.7). The opportunity and the impetus to modernize stakeholder engagement policies and practices is now, underscored by new policies and regulations that highlight the need to define new, better ways to engage stakeholders and involve them in the critical decisions ahead, including those relating to climate change and infrastructure.

For example, the Congressional Research Service Report (2020), currently passed by the House and awaiting consideration in the Senate, would require USACE to develop water resources in a way that, according to Section 110, "fully identifies and analyzes national economic benefits, regional economic benefits, environmental quality benefits, and other societal effects." From our perspective, that can only be done well if

stakeholders at all levels, including community stakeholders, are involved in the holistic assessment of benefits – and costs – and are able to work through the tradeoffs through dialogue-based engagement processes.

President Biden's Executive Order 14008 (2021), "Tackling the Climate Crisis at Home and Abroad" emphasizes the need for all levels of society to work together to address the "climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth." Section 201 goes on to note: "Successfully meeting these challenges will require the Federal Government to pursue a coordinated approach from planning to implementation, coupled with substantive engagement by stakeholders, including State, local, and Tribal governments."

An earlier Executive Order, 13985 (2021), "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government focuses on social inclusion and equity" entrenched disparities in our laws and public policies, and in our public and private institutions, have often denied that equal opportunity to individual and communities," and underscores that this has been exacerbated by the "converging health and climate crises." These Orders reflect the government's policy to "pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically marginalized."

Given the current US policy direction, the evolving national and international focus on conducting and measuring social benefits, and the imperative for appropriate and holistic engagement of stakeholders, USACE has an unprecedented opportunity to adapt leading practices in community engagement and lead by example. Building on USACE experience and its leading practices, including the EWN program, USACE can set the bar higher for Federal agencies (and other organizations) and leverage the innovative efforts currently underway.

The opportunity now is to update USACE policy, ensuring alignment with the modernization of regulations and internationally accepted methods and measures. The following are some considerations.

A recent memo released by the White House Office of Science and Technology Policy (OSTP) in 2021 on Indigenous Traditional Ecological Knowledge (ITEK) and Federal Decision Making describes ITEK as, "a body

of observations, oral and written knowledge, practices, and beliefs that promote environmental sustainability and the responsible stewardship of natural resources through relationships between humans and environmental systems." Such knowledge, "includes insights based on evidence acquired through direct contact with the environment and long-term experiences, as well as extensive observations, lessons, and skills passed from generation to generation." And further, is "one of the many important bodies of knowledge that contributes to the scientific, technical, social, and economic advancements of the United States and to our collective understanding of the natural world."

In addition to the scientific value of such knowledge, the memo represents the commitment of the White House to "strengthening the relationship between the Federal Government and Tribal Nations and to advancing equity for Indigenous people…."

Such a focus is entirely consistent with many of the Guiding Principles of the USACE's EWN program. Further guidance from the OSTP and the Council on Environment Quality (CEQ) is expected in 2022. Members of USACE Tribal Nations Technical Center of Expertise (TNTCX) are participating in the Interagency Working Group on Indigenous Traditional Ecological Knowledge (IWG-ITEK) charged with developing guidance for Federal agencies, as described in the recent OSTP-CEQ Memorandum on Indigenous Traditional Ecological Knowledge.

- Policy Levers:

    - Lead by example. Commit to, adapt, and adopt ESG measures relevant to USACE, its missions, and business plans.
    - Change the focus, from inside-out, top-down, regulatory-driven to inclusive, collaborative, and driven by a shared desire for sustainable solutions that deliver social, environmental, and economic benefits.
    - Commit to leading practice values-based stakeholder and community engagement through collaboration by elevating its prominence and importance to mission achievement in critical policy documents, including the next USACE Campaign Plan and Civil Works Strategic Plan.
    - Formally adopt EWN principles and practices across USACE as the leading practice how-to to support the policy.

  - Build accountability – measurement at the individual level – for delivering values-based stakeholder and community engagement processes and outcomes into project management systems.
  - Achieve international recognition and support from leaders in the ESG community.

- Program levers:

  - Update and augment the stakeholder engagement and collaboration component of EWN based on leading practice results from this assessment.
  - Integrate the principles and practices of values-based stakeholder and community engagement into existing programs.
  - Build on strong, proven programs that currently have significant stakeholder engagement components – EWN, RSM, WOTS, DOTS, Levee Safety, etc., – and take them to the next level of practice. Document project applications, measurements, and results to demonstrate leading practice in action, enable continuous learning, and technology transfer.
  - Develop a *Community Engagement Knowledge Translation System* to leverage application of the *Community Engagement Framework* across USACE to foster and sustain a culture of effective community engagement and enable continuous learning and improvement. Through the *Community Engagement Knowledge Translation System,* create a sustainable culture of effective community engagement across USACE that significantly advances the practice of community engagement by enabling project teams to adapt and implement the *Framework*. The user-centric, collaborative learning *System* will enable project teams to successfully deliver infrastructure projects that incorporate EWN principles and will serve as a model to others.
  - Establish USACE Community Engagement Center of Excellence to enable adoption and implementation of the *Community Engagement Framework* across USACE and/or a Community of Practice.
  - Formalize requirements for measurement, documentation, and technology transfer in all projects.
  - Incorporate into USACE project design, project budget and approval process, and project reporting and accountability systems.

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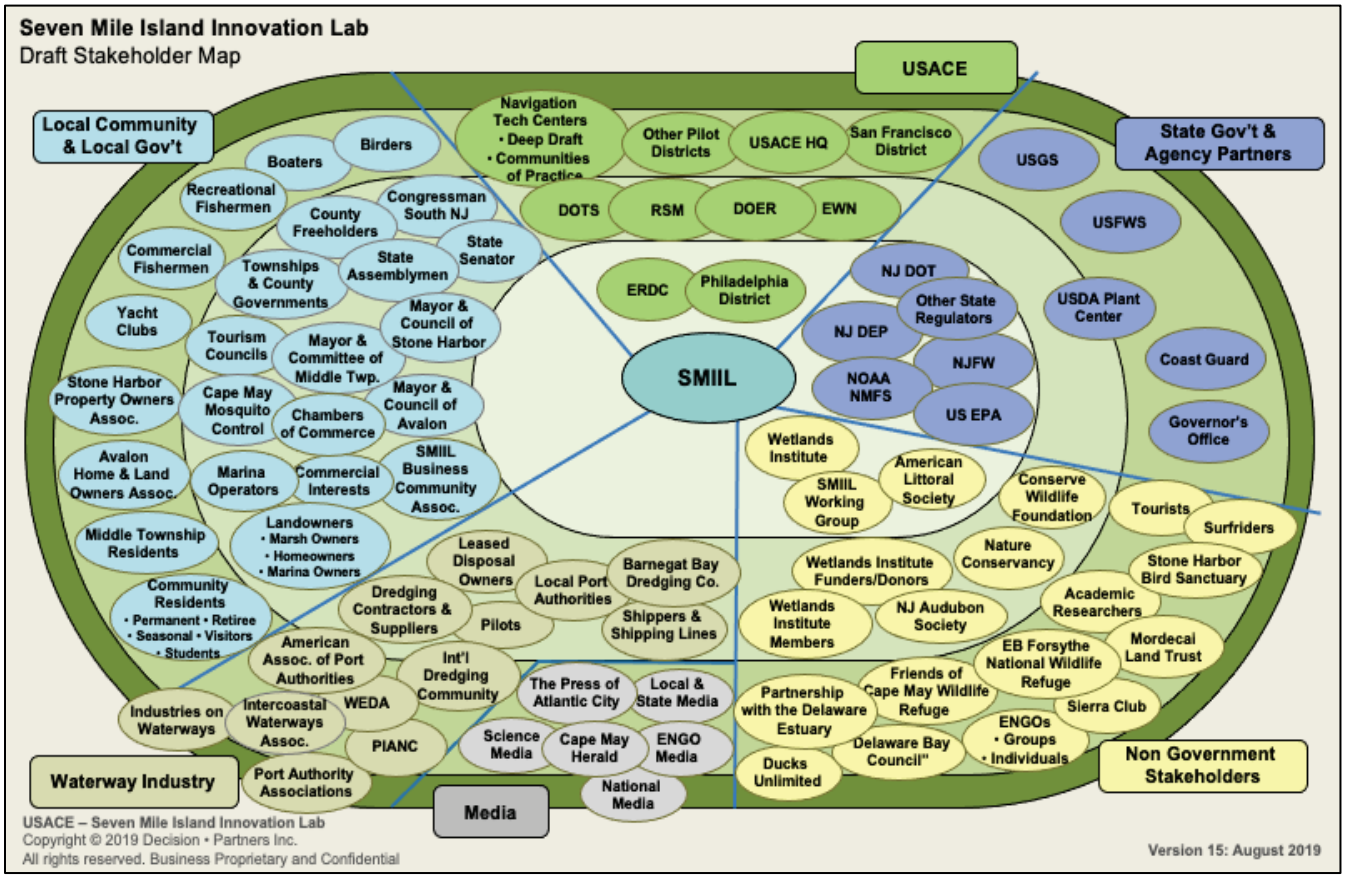
Appendix: SMIIL Stakeholder Map

The Stakeholder Map shown in Figure 27 was developed working with the Project Team, drawing specifically on the expertise of the local members, Monica Chasten and Dr. Lenore Tedesco. This shows individual stakeholders – individuals, groups, and organizations, including decision makers – identified by the team who may affect, be affected by, or perceive themselves to be affected by activities in SMIIL wetlands.

For this SMIIL project, stakeholders are organized in the Map by sector for clarity. A draft Map was developed based on a review of background materials, which enabled the identification of broad categories of stakeholders. The Map was then populated with specific stakeholders through discussions with the project team. The Stakeholder Map was refined throughout the research process. Additional stakeholders were added as they were identified, including through engagement with other stakeholders.

Figure A-1. Stakeholder Map for the SMIIL Project.



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14. ABSTRACT

In its infrastructure development work, the US Army Corps of Engineers (USACE) engages and collaborates with numerous local, state, and national stakeholders. Projects incorporating innovative approaches, such as beneficial use (BU) of dredged materials and other natural and nature-based features (NNBF), are often not well-understood by stakeholders, including those at the community level. This often results in conflicts and project delays. By sponsoring the development of a *Community Engagement Framework*, the Dredging Operations and Environmental Research (DOER) program hopes to systematically improve how project teams design, conduct, and measure effective community engagement on infrastructure projects. The purpose of this focused *Review* was to assesses leading stakeholder and community engagement practices that reflect the state of practice of stakeholder engagement within USACE, and by other leading organizations in the US and internationally, to inform development of the *Community Engagement Framework*. While the resulting *Framework* will be particularly well-suited for community engagement on projects incorporating BU and other NNBF, it will be applicable to a broad range of USACE Civil Works' initiatives where effective stakeholder engagement is critical to project success. The assessment showed the practice of stakeholder engagement has evolved significantly over the past 30 years, with much more focus today on ensuring that engagement processes are purposeful, meaningful, collaborative, and inclusive - reflecting stakeholders' desire to participate in co-creating sustainable solutions that produce environmental, economic, and social benefits. This, and other key findings, are informing development of the *Community Engagement Framework* which is scalable and adaptable to a broad range of projects across the USACE missions.

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