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Acronyms

- BIPOC – Black, Indigenous, and People of Color
- CAC – Citizens Advisory Committee
- CBP – Chesapeake Bay Program
- CBT – Chesapeake Bay Trust
- CBPO – Chesapeake Bay Program Office (EPA)
- CBLP – Chesapeake Bay Landscape Professionals
- CSBM – Community-based Social Marketing
- DEIJ – Diversity, Equity, Inclusion, and Justice
- EPA – Environmental Protection Agency
- GIT – Goal Implementation Team
- IAP2 – International Association for Public Participation
- LGAC – Local Government Advisory Committee
- NFWF – National Fish and Wildlife Foundation
- NOAA – National Oceanic and Atmospheric Administration
- P2P – Peer-to-peer
- STAC – Science and Technical Advisory Committee
- STAR – Scientific, Technical Assessment, and Reporting
- SRS – Strategy Review System
- USACE – U.S. Army Corps of Engineers

Chapter 1 - Introduction

This thesis seeks to understand local stakeholder engagement in networked governance and adaptive management structures. More specifically, I am interested in the structures and strategies that support the collection, assessment, and integration of input and feedback from local stakeholders within government funded regional partnerships, as well as challenges and gaps in engagement common to networked governance and adaptive management arrangements. There are unique challenges to providing the public and local stakeholder engagement expected of today's 'good governance' (Fischer, 2012). Scarlett and McKinney describe governance as the "style or method by which decisions are made and the way in which conflicts among actors are resolved" (2016). Broadly defined, network governance combines both formal institutions and sanctions of the state and mechanisms that extend beyond the state, like networks, which support ordered and collective action within public policy domains (Milward and Provan, 2000) to address complexity (Goldsmith and Eggers, 2005). Networked governance which incorporates adaptive management approaches is a form of 'new governance' popular within natural resource management, for its ability address increasingly complex environmental problems and to supplement and increase capacity of other forms of governance (Scarlett and McKinney, 2016).

This thesis seeks to explore local stakeholder engagement in networked governance and adaptive management arrangements. More specifically, I am interested in the structures and strategies that support the collection, assessment, and integration of input and feedback from local stakeholders within government funded regional partnerships, as well as challenges and gaps in engagement and inclusion common to networked governance and adaptive management arrangements.

This research is anchored in Pahl-Wostl's conceptual framework for resource governance regimes, which supports the analysis of adaptive capacity and multi-level learning processes necessary for effective governance (2009). This research also draws from Quick and Feldman's work on engagement and inclusion (2015).

In order to achieve these research aims, I am looking at the Chesapeake Bay Program, a case study chosen to provide insight into local engagement within a government funded regional partnership that includes both networked governance and adaptive management structures and characteristics. Research for this project is grounded in the practical study of the relationship between the partnership's structures, strategies and networks and its efforts to engage the public and other local stakeholders.

Research for this project involved a qualitative analysis of publicly available documents and any documents that interviewees were able and willing to share, and semi-structured interviews of key Bay Program staff, advisory committee members, and Bay Program partners. In this thesis I describe the stakeholder engagement efforts of the Bay Program, particularly in reaching underserved communities. By providing information they can use to engage local stakeholders more effectively, my findings may be of value to Chesapeake Bay Program staff, advisory committees, partners, and potentially other

government funded partnerships. This thesis pays particular attention to efforts to engage underserved populations.

This thesis incorporates both planning and public administration perspectives, which are representative of my academic interests and professional experience in nonprofit program administration and partnership development. The Chesapeake Bay Program is a respected, federally funded partnership that has supported an almost 40-year environmental restoration effort. The scientific aspects of the Bay Program's progress, and adaptive management approach provide an interesting view into the history of environmental planning. I am equally intrigued by the opportunities and limitations in the partnership's design, which demonstrates both effective cooperative governance and the complications associated with distributed authority over multiple jurisdictions. The aim of this research is to highlight and support the Bay Program's ongoing inclusive engagement work, and to identify areas of challenge, success, and learning that may benefit other networked governance and adaptive management arrangements.

1.1 Problem Statement

Networked governance and adaptive management have become increasingly popular over the last few decades within the natural resource management field in order to better address uncertainty, complexity, and change. The public demand and expectation for stakeholder engagement within government funded programs has strengthened over this same period. The capability of a governance arrangement—like networked governance—to address the problems it was designed to address determines its effectiveness (Fung, 2015). Increased adaptability within governance arrangements allows for adjustments and pivots to improve effectiveness. Pahl-Wostl's conceptual framework provides a tool to better understand the tensions (e.g., democratic tension between public contribution and bureaucratic discretion in decision-making), that exist within these systems of governance, as well as the effectiveness of these governance arrangements to address their intended goals. There is a need to better understand these arrangements and how they contribute to meaningful engagement and social learning that leads to network and societal change.

This thesis focuses on local stakeholder engagement, including the core engagement goals of diversity, equity, inclusion, and justice (DEIJ). This thesis accepts the premise argued by Quick and Feldman (2015) that describes participation and inclusion as two distinct dimensions of engagement, in which “inclusion supports an ongoing community with capacity to address a stream of issues” (p. 272). Building on this premise, this thesis argues that networked governance arrangements can strategically employ engagement practices that create spaces for social learning, and that such engagement strategies are viable avenues for recognizing and increasing diversity, increasing equity, and justice, through inclusion. This paper argues that inclusive local stakeholder engagement, practiced in both episodic and institutionalized forms, is critical to the social learning and change required for successful natural resource management.

The paper's research is based on the study of the Chesapeake Bay Program, which provides insight into government funded regional partnerships' need to identify and operationalize avenues for inclusive local stakeholder engagement and feedback, limits for inclusion and engagement created within governance systems, and opportunities for additional and more meaningful engagement with local stakeholders.

1.2 Brief Overview of Gaps Filled by Project

Evolution within the environmental planning and resource management fields within the last several decades, moving from models of decision-making with no or very passive participation to increased levels of public involvement. Collaborative learning and management are now planning ideals in many contexts (Randolph, 2012). With the ongoing shift towards collaborative management in the planning field, there is a need to better understand networked governance and adaptive management arrangements (e.g., regional partnerships focused on natural resources management) role in local stakeholder engagement, and how these structures and strategies support inclusive determination and implementation of regional planning and funding priorities.

Engagement social science research regarding the Bay Program has focused on how to motivate stakeholders to implement identified planning priorities. For example, recommending cultural models (i.e., cognitive frameworks) research to understand and increase public participation (Paolisso et al., 2015). Less emphasis has been placed on research to understand how governance arrangements and strategies support or impede meaningful engagement and social learning.

The Chesapeake Bay Program, founded in 1983, is a government funded regional partnership generally well regarded for its progress in advancing regional environmental planning efforts to improve water quality. It has significantly decreased the concentrations of pollutants like nitrogen and phosphorus, leading to a shrinking dead zone in the Bay (CBF, 2020), through scientific research and stakeholder engagement.

As the Chesapeake Bay Program partnership reaches the final 2025 restoration milestone for full implementation of practices for nutrient and pollutant reduction, it lacks the collective action required to reach the milestone goals to restore water quality within the Bay. Since 2014, the Chesapeake Bay Program partnership has become increasingly concerned with local engagement, as evidenced by the addition of the Local Government and Diversity Workgroup in the 2014 Agreement. Recently, internal conversations have focused on the need for investments in social science research and behavior change, rooted in the understanding that human action guided by effective environmental science is the key to reaching restoration goals.

It is my hope that this thesis can supplement the Chesapeake Bay Program's engagement and DEIJ work critical to these restoration goals, and identify areas of challenge, success, and learning that may benefit engagement (and social learning) efforts within other networked governance and adaptive management arrangements.

1.3 Research Questions

The questions explored by this research include:

Q1: How do regional partnerships like the Chesapeake Bay Program engage local stakeholders? Looking at this particular case, what formal and informal structures (i.e., institutions) and strategies are focused on local stakeholder engagement?

Q2: Does Bay Program engagement effectively reach local communities, particularly underserved communities? Looking at this particular case, what intentional efforts are made to address challenges to engagement?

Q3: Are additional intentionally structured arrangements, strategies, and networks needed to support inclusive engagement? Looking at this particular case, have new intentionally built structures, strategies, and networks been developed to support more inclusive engagement?

1.4 Methodology

The research undergirding this thesis includes semi-structured interviews conducted with Bay Program staff, advisory committee members, and partner staff, as well as the analysis of supplemental documents identified through research and interviewee recommendations. Prior to formulating the semi-structured interview guide, I researched the Bay Program partnership's formation, organizational structures, stakeholder engagement efforts, identification of funding recipients, and local feedback processes. That background research provided a preliminary understanding of the Bay Program's partnership and protocols for engaging with local stakeholders, including the existence of any programs or protocols it has for including traditionally underrepresented populations.

This preliminary understanding, and questions raised, shaped the formulation of the semi-structured interview guide (see questions in *Appendix B*), including the definitions. This document and internet-based research also allowed me to identify a list of potential interviewees through purposeful sampling based on their roles within the Bay Program's organizational structure (e.g., Stewardship and Partnership GITs, local engagement, grant funding). Additional interviewees were identified during the interview process using the snowball method and led to interviews with three Community Advisory Committee (CAC) members.

Interviews were conducted with eleven individuals, who opted-in to the research by responding to my email invitation. The interview questions were framed to gain an understanding of the interviewees' perspectives on the potential barriers to engagement within the partnership's structures, strategies, and networks, as well as ideas to remove or navigate those barriers. Interviews were approximately one hour in length and held via Zoom. Each interview was recorded, transcribed, and the transcription was shared with the interviewee for clarifying edits. Interviewees were asked to share supplemental documents, and many provided additional information through email communication.

Coded interview transcripts (see condensed codebook in *Appendix C*), and relevant communication and supplemental documents were analyzed to understand and characterize Bay Program structures and strategies that exist to engage local stakeholders, as well as identify barriers to stakeholder engagement and feedback, particularly for underrepresented communities.

1.5 This Thesis

This thesis includes seven chapters. Chapter 2 provides background information which initiated my interest in the unique stakeholder engagement challenges faced by a government funded partnership like the Chesapeake Bay Program. Chapter 3 details research methods. Chapter 4 provides a literature review, which references concepts like ‘behavior change’ and ‘trusted sources’ that were identified through interview research. Chapter 5 explains my research findings regarding the different structures, strategies and networks utilized to engage local stakeholders, engagement successes and challenges shaped by these operational tools, and intentional engagement of underrepresented local stakeholders. Finally, Chapter 6 provides a discussion of research implications, research summary, recommendations for the future development of the Bay Program engagement strategy, and future research suggestions. Chapter 7 provides a conclusion with an overview of potential application within other government funded regional partnerships.

Chapter 2 - Background

2.1 Case Selection

The Chesapeake Bay Program (CBP or Bay Program) is one of the oldest and largest examples of networked governance in natural resource management. From its formation, the Bay Program has set large goals, undertaking the environmental restoration of the largest estuary in the United States, with a watershed that covers an area of 64,000 miles and is home to 18 million people and over 3,600 plant and animal species (NOAA, 2021). The Chesapeake Bay Program is exemplary in its efforts to engage and incorporate political, scientific, and local or experiential concerns and knowledge, which are essential components of public program implementation (Feldman and Khademian 2007). Since 2014, the Program has operated using an adaptive management approach, which was operationalized through its Strategy Review System (SRS) in 2017.

When developing the 2014 *Chesapeake Bay Watershed Agreement*, partners prioritized input from citizens, and other local stakeholders to “align federal directives with state and local goals to create a healthy Bay” (CBP, 2021a). This inclusive process identified “10 goals and 31 outcomes to restore the Bay, its tributaries and the lands that surround them” (CBP, 2021a). Goal Implementation Teams (GITs) then worked to create Management Strategies that detailed the agreement’s vision.

The CAC and Scientific and Technical Advisory Committee (STAC) have been in operation since 1984, and the Local Government Advisory Committee (LGAC) was formed in 1987 (CBP, 2020b), but the 2014 agreement created renewed focus on engagement, through the development of both the Local Government Workgroup and the Diversity Workgroup as part of the Enhance Partnering, Leadership and Management, and Fostering Chesapeake Stewardship GITs, respectively. The development of these work groups—as well as the additional staffing that followed in the form of the EPA’s diversity and local engagement coordinator position and the local government work group coordinator— underscored the importance of further operationalized engagement with local stakeholders that had not previously been emphasized within the Bay Program infrastructure.

The Bay Program’s intentional inclusion of local stakeholders (e.g., citizens, government officials, scientists), and its success in operationalizing adaptive management learning through its strategy review system, makes it an interesting case study to explore engagement structures and strategies and potential barriers to engagement in collaborative governance networks.

2.2 Context: Environmental Planning and Management

Environmental planning and management efforts like the Chesapeake Bay restoration are often marked by uncertainty, complexity, change, and conflicting values. Water and other natural resources are agnostic to political and other boundaries (e.g., jurisdictional, ownership), and negative impacts are linked by both ecosystems and causation (e.g.,

industry, land use). Environmental challenges are thus often best described as “wicked” due to the difficulties associated with unraveling their causes and crafting effective solutions (Leong et al., 2011; Rittel and Webber, 1973). Addressing these problems requires multi-jurisdictional and multi-disciplinary efforts that leverage knowledge, decision-making authority, and resources.

2.2.1 Collaborative governance and management

Collaborative models of governance (e.g., networked governance) and management (e.g., collaborative adaptive management) have risen in popularity within environmental planning and management contexts to address “wicked” problems. Networked governance often emerges when problems and issues are recognized as too large for one person or the organization that they represent to independently address. Connecting across jurisdictional levels, and organizational lines to deliver solutions together is seen as the best way to achieve their interests (Scarlett and McKinney (2016). Collaborative adaptive management processes incorporate scientific monitoring and analysis within intentionally structured joint-fact finding bodies that prioritize scientist, stakeholder, and decision-maker communication (Susskind et al., 2012). Adaptive management is a good choice in contexts—like the Bay Program—where balance between physical systems and human communities is desired (Scarlett, 2013), or where stakeholder values are in conflict (Susskind et al., 2012).

2.3 Governance and Management in the Bay Program

Although the Bay Program is supported through government mechanisms (e.g., federal funding, EPA administration), the Bay Program’s governance and management structures are inclusive of non-government actors such as nonprofit staff working through cooperative agreements, and an adaptive management framework that empowers volunteer contributions through GITs, workgroups, and action teams. These characteristics place the Bay Program as a model of networked governance which incorporates shared leadership from government and non-government actors, although the ultimate authority and decision-making power often resides with government actors.

The CBP Governance Document (2020) outlines “the organizational function and governance for the Chesapeake Bay Program partnership” represented by the signatories of the agreement (e.g., jurisdictions, Chesapeake Bay Commission, U.S. EPA) and “who participate in the different levels of the organization and in the development and implementation of Management Strategies” (p. 3). This document is reviewed and updated periodically and as needed to represent structure and governance changes within its adaptive management approach.

The Bay Program’s history is marked by updated partnership agreements, partners, and methods of management, communication, and governance. Expectations of government delivered programs, methods of delivery, and environmental goals have changed since the Bay Program’s founding. The program’s governance framework has allowed it to adjust to the needs of federal, state, and local partners, and the arrival of new scientific knowledge and information regarding best practices with a natural evolution of the

program’s structures and goals. The Bay Program officially adopted an adaptive management approach with the signing of the Chesapeake Bay Watershed Agreement in 2014, however its governance framework has supported adaptation since the beginning of the program. Major organizational structure changes were made throughout the program’s design. These changes occurred prior to the signing of the 1983 Agreement, in 1987 (Hennessey, 1994), and again in 2014 with the signing of the current agreement. A 1994 paper by Hennessey described an “organizational learning capacity” represented by adjustments to programs and structures to account for “changing circumstances and new information” (p.139). The current Bay Program organizational structure is represented in *Figure 1*.

Figure 1. Chesapeake Bay Program ‘How We Are Organized’
 Courtesy of the Chesapeake Bay Program (2021b)



2.3.1 Bay Program history

As described by the Chesapeake Bay Program in “Bay Program History”, the decline of wildlife and aquatic life within the Chesapeake Bay led Congress to fund a five-year study in the late 1970s to determine the cause, making the Bay the first estuary identified for restoration and protection by Congress. The Chesapeake Bay Program was created based on the findings of this study, to lead restoration efforts in targeting nutrient pollution as the largest identified contributor to the Bay’s decline (CBP, 2021a).

The initial *Chesapeake Bay Agreement* (1983) was a one-page partnership pledge signed by jurisdictional leadership (i.e., Maryland, Pennsylvania and Virginia, and the District of

Columbia) and agency partners (i.e., US Environmental Protection Agency [EPA] and the Chesapeake Bay Commission) (CBP, 2021a). Four years later, a new *Chesapeake Bay Agreement* (1987) identified goals to alleviate pollution and ecological restoration in the Bay Watershed (CBP, 2021a). A 1992 amendment committed the partnership to address upstream nutrients delivered through the Bay’s rivers and prioritized understanding the effects of chemical contaminants within the Bay (CBP, 2021a).

Table 1. Snapshot of the Bay Program

	Chesapeake Bay Program
Origin	Program began in 1983 as a voluntary agreement between four jurisdictions (Virginia, Maryland, Pennsylvania, and the District of Columbia), the EPA, and the Chesapeake Bay Commission
Current Signatories	Original signatories + headwater states of New York, Delaware, West Virginia, that joined the partnership through the Chesapeake 2000 agreement
Structure of (Local)/State/Federal Relationship	Multi-jurisdictional agreement and regional partnership with additional funding from other Federal agencies; local government is not formally included within the governing body, which is comprised of the 2014 Agreement signatories, but there has been recognition of the need for local government participation from the beginning of the partnership
Focus of Work	Environmental restoration of the Bay is the driving factor
Programming	Programming is defined by ten goals which guide a total of 31 outcomes
Annual Funding	\$85 million (EPA) - over \$300 million from multiple federal agencies
Funding Distribution	EPA funding goes through the Chesapeake Bay Program Office (CBPO) for distribution to jurisdictions and through the Chesapeake Bay Trust (CBT) and the National Fish and Wildlife Foundation (NFWF) for grant funding, while USDA and other federal agencies distribute additional funding through projects and grants
Geographic Area	6 states + DC (~64,000 square miles)

The partnership continued to develop with the signing of *Chesapeake 2000*, which “established 102 goals to reduce pollution, restore habitats, protect living resources, promote sound land use practices and engage the public in Bay restoration” (CBP, 2021a). This document provided a “clear vision and strategy to guide restoration efforts” for the next decade (CBP, 2021a). Each “headwater state” (Delaware, New York, and Pennsylvania) signed this agreement to join the partnership by 2002 (CBP, 2021a). The success of Chesapeake 2000 was mixed, showing improvement in some measures, and falling short in others. Nevertheless, it laid a foundation for today’s restoration efforts. In

2009, an executive order from President Obama (EO 13508) pushed the federal government to renew Chesapeake Bay Watershed restoration and protection efforts, and in the Chesapeake Executive Council (i.e., Bay Program decision-making authority) initiated “two-year milestones to hasten restoration and increase accountability” (CBP, 2021a).

The Chesapeake Bay Total Maximum Daily Loads (TMDLs) was launched in 2010 by the EPA as a federal “pollution diet” that established nutrient (e.g., nitrogen, phosphorus) and sediment limits to meet water quality goals within the Bay and its rivers (CBP, 2021a). The Bay Program jurisdictions (six states and DC) created Watershed Implementation Plans (WIPs) working alongside local and federal governments to outline “specific steps the jurisdiction will take to meet these pollution reductions by 2025” (CBP, 2021a). Two-year milestones within WIPs are used to track and assess local and state restoration progress (CBP, 2021a).

Currently, the Chesapeake Bay Program utilizes a Strategy Review System (SRS), that guides the partnership’s work within the Chesapeake Bay Watershed Agreement. The SRS, developed in 2017, might best be described as an “adaptive decision framework” or a structured process to enable adaptive decision making (Scarlett, 2013). ChesapeakeDecisions is an online tool created to support communication regarding SRS implementation. The strategy review system supports two-year cycles with standard stages, paperwork, and actions for each workgroup and GIT within those cycles. These cycles provide a process in which GITs and their workgroups report progress to the Management Board to highlight challenges and make requests. The Management Board then reviews each work group or GIT’s progress toward identified Chesapeake Bay Watershed Agreement outcomes, and support changes to the partnership’s work. The SRS process includes documentation of progress in three documents: “the Logic & Action Plan, the Narrative Analysis and the Presentation” (CPB, 2021c). This standard documentation provides a reference point for Quarterly Progress meetings, commitments, actions, and resources (CBP, 2021c).

The Chesapeake Bay Program’s strategy review system operationalizes collaborative adaptive management principles. It is a system that leverages governance, management, and stakeholder participation through established roles and processes that lead to progress toward its goals.

2.3.2 Local stakeholder engagement

Local stakeholders in the context of the Bay Program are citizens, community leaders, and local governments. The Bay Program’s structure and its use of the Strategy Review System provide avenues for ongoing input from citizens, community leaders, and local and state government officials who participate in Goal Implementation Team (GIT) work group meetings, action teams, and more officially through the Citizens Advisory Committee, Local Government Advisory Committee, and Scientific and Technical Advisory Committee (CAC, LGAC, and STAC).

The Bay Program supports ongoing community engagement through these advisory committees, though information gathered from community members “external” to the Bay Program infrastructure (i.e., non-advisory committee members) through these avenues is largely organic, and dependent on the personal and professional networks of the committee members. Efforts to engage local community members, leaders, and governments through the goal implementation teams and other existing formal structures (e.g., nonprofits, local government groups) is episodic and highly dependent on outside grant funding. Information flow from these local stakeholders is filtered through committee work before reaching the Management Board. Although Advisory Committee Members are officially members of the Management Board, they are non-voting members.

2.3.3 Funding

Implementation grant funding priorities are identified by the EPA and then administered by the National Fish and Wildlife Foundation (NFWF) as the Chesapeake Bay Stewardship Fund. NFWF manages the Bay Program’s competitive grant programs, including the Innovative Nutrient and Sediment Reduction Grant Program and the Small Watershed Grants Program (NFWF, 2020). Administration of the Stewardship Fund includes the development of the grant requests for proposals (RFPs) and selection and coordination of the expert panel which offers technical support to grant applicants.

Additionally, NFWF funding has supported peer to peer events (episodic engagement) designed and convened by Bay Program Local Government Coordinators working under a cooperative agreement between the EPA and the nonprofit Alliance for the Chesapeake Bay. This funding falls under NFWF’s commitment to “targeted investments that support networking and information-sharing among restoration partners on emerging technologies, successful restoration approaches, and new partnership opportunities” (NFWF, 2020).

The NFWF Small Watershed Grants 2021 Request for Proposals includes a section on partnership and community engagement under “Other Criteria” (NFWF, 2021). This section highlights the importance of engaging “diverse local community members, leaders, community-based organizations, and other relevant partners to ensure the long-term sustainability and success of the project, integration into local programs and policies, and community acceptance of proposed restoration actions” (NFWF, 2021). It also mentions the inclusion of “non-traditional partners or communities [...] to broaden the sustained impact of the project” and then lists the Diversity Outcome Management Strategy, EJ Screen, and Environmental Justice and Equity Dashboard as tools to assist in designing partnership and community engagement in the project. The evaluation for the criteria listed in the RFP is unclear, it is also unclear whether any of the field liaisons listed as resources for project development have expertise in community and DEIJ engagement.

Chapter 3 - Methods

Research for this project involved a qualitative study using document analysis (from publicly available documents and any documents that interviewees were able and willing to share), and semi-structured interviews of key Bay Program staff, advisory committee members, and Bay Program partners to describe stakeholder engagement, particularly in reaching underrepresented communities.

3.1 Preliminary Research and Literature Review

Prior to formulating the semi-structured interview guide, I began research focused on the Bay Program partnership's formation, organizational structures, stakeholder engagement efforts, identification of funding recipients, and local feedback processes. The Bay Program documents, websites, and tools identified throughout this preliminary research are included in *Appendix A*. This preliminary research supported the development of my project's Institutional Review Board protocol and my written thesis.

I used Google Scholar to identify extant literature using search terms such as 'Chesapeake Bay Program,' 'stakeholder,' 'local,' and 'engagement.' I also scanned the list of references for particularly informative articles to identify additional relevant research and explored the wealth of information stored on the Bay Program website and websites of program partners. This process to identify literature and Bay Program documents was continuous throughout my research. Literature that I was exposed to through coursework in planning and public administration also provided additional context and framing for this project and literature review.

3.2 Development of Semi-structured Interview Guide

Semi-structured interview questions were developed alongside preliminary research conducted to outline and define research questions and protocols. Preliminary research identified some of the Bay Program documents which informed research design and supplemented interview data (e.g., CBP Governance Document).

Initial background research provided a preliminary understanding of the Bay Program's partnership and protocols for engaging with local stakeholders, including the existence of any programs or protocols it has for including traditionally underrepresented populations. This preliminary understanding, and questions raised, shaped the formulation of the semi-structured interview guide, including the definitions (see 'Conducting Interviews'). The interview questions were framed to gain an understanding of the interviewees' perspectives on the potential barriers to engagement within the partnership's structures, strategies, and networks, as well as ideas to remove or navigate those barriers.

The questions were reviewed by my thesis committee, and they suggested edits and additions. The interview questions are listed in *Appendix B*.

To assess the effectiveness of my interview guide in surfacing interview data that would inform my research questions, I conducted a pilot interview after my research’s Institutional Review Board approval. I was able to interview a consultant who has worked recently with the Bay program on a goal implementation team project. This pilot interview data was used to inform and contextualize engagement research but was not used to characterize the Bay Program’s engagement structures or practices.

3.3 Identifying Interviewees

After a thorough review of the Bay Program’s website inclusive of goal implementation pages. I identified roles based on position title, placement within the organizational structure, and goal implementation team and workgroup participation. All of this information is easily accessible on the Bay Program’s website. I was looking for interviewees that had experience in local engagement (including diversity and grantee engagement) within the Bay Program. The Local Engagement Strategy was one of the first documents that was shared with me by interviewees, and the authors of this document were all sent an interview request. Additional contacts were identified using a snowball sampling technique, in which I asked interviewees if there was anyone who they thought I should talk to. In total, I contacted 23 potential interviewees, 14 responded (2 declined, 1 interview was never scheduled), and 11 were interviewed. The name and Bay Program affiliation of each interviewee is listed in Table 2.

Table 2. Interviewees

EPA Bay Program Office	2
<i>Amy Handen</i>	
<i>Tuana Phillips</i>	
Bay Program Partner Staff (through cooperative agreements or contracts)	6
Alliance for the Chesapeake Bay	
<i>Jess Blackburn</i>	
<i>Laura Cattell Noll</i>	
<i>Rachel Felver</i>	
<i>Jennifer Starr</i>	
University of Maryland Center for Environmental Science	
<i>Kristin Saunders</i>	
Consultant (External to Infrastructure)	
<i>Christy Gabbard</i>	
Citizens Advisory Committee Members	3
<i>Julie Patton Lawson</i>	
<i>Michael Lovegreen</i>	
<i>Daphne Pee</i>	

Together the interviewees present a cross-section of the Bay Program that includes EPA staff, nonprofit staff contracted through cooperative agreements, GIT work group and advisory committee coordinators, Citizens Advisory Committee members, and a consultant. Within these roles they focus on local implementation, grant management,

social science integration, Local Engagement Strategy development, communication, and creating value for networks.

Unofficial characterizations of their roles provided by interviewees include silo-buster, educator, and translator. Their experience with the Bay Program ranges from six months to over thirty years. Over half of the interviewees have been working in the environmental field for over a decade. Their professional experience includes everything from program-wide scholarship to resource delivery at the local level.

3.4 Conducting Interviews

At the beginning of each interview the researcher shared three definitions, with the goal of providing a common language and context for the conversation. The first definition was *stakeholders*: anyone who has an interest in, influence over, and/or is impacted by, the work that you do. This was left intentionally broad to capture an accurate depiction of the range of internal and external stakeholders within each interviewee's Bay Program work.

The second definition was *engagement*: any interaction or involvement (organic or intentional). This definition was also intentionally broad. This broad definition, and interviewees' reaction to it, revealed to me the Bay Program's internal discussions to define engagement, and allowed interviewees to share both thick and thin engagement methods. Of all the definitions, this one resulted in the most conversation with interviewees.

The third definition was "*underserved*: populations who receive inadequate or inequitable services, who experience quality-of-life disparities, and who by design have little power or influence over outside decisions that impact their daily quality-of-life" (Skeo Solutions, 2019). This definition of underserved is from *DEIJ in Action: A Diversity, Equity, Inclusion, and Justice Guide for the Chesapeake Bay Watershed*, sponsored by the Chesapeake Bay Trust, the Chesapeake Bay Funders Network, and the Choose Clean Water Coalition and developed by Skeo Solutions in 2019. Although this is not a Chesapeake Bay Program document, Skeo Solutions also worked with the Bay Program to create *Restoration from the Inside Out: A Diversity, Equity, and, Inclusion, and Justice Strategy for the Chesapeake Bay Program* (2020). This document and the Bay Program's DEIJ Statement highlight communities of color, low-income communities, indigenous communities, and other underrepresented groups as populations disproportionately burdened by "impacts of discrimination and continuing environmental, economic and health disparities" (CBP, 2020a). "The term 'other underrepresented groups' is used throughout the [CBP DEIJ Strategy] framework to give the actions on the framework relevance as CBP's representation priorities evolve" (Skeo Solutions, 2020).

One interviewee asked if this definition was inclusive of the latest terminology from the Bay Program (Interviewee 7, June 18, 2021). I shared the source of this definition with that interviewee (and any interviewee who asked). They noted the Alliance for the Chesapeake Bay was developing a resource for DEIJ language, which would likely be adopted by the Bay Program. I like the word underserved rather than underrepresented

because I believe it is important in naming the role of the Bay Program as a federally funded and government agency led partnership. However, within the Findings section, I have used the term underrepresented as it is the term used by the Bay Program.

The interview questions were used to guide the conversation, but interviewees were encouraged to expand based on their experience. Each interview was approximately one hour in length and held via Zoom. Interviews were recorded, transcribed, and the transcription was shared with the interviewee for clarifying edits. Following the interviews, interviewees were asked to share supplemental documents, and many provided additional information through email communication.

3.5 Coding Process

The coding process was guided by the type of research conducted, which was inductive and exploratory in nature. The research questions, literature review, interview notes, research memos, and initial transcript review shaped the development of an initial set of codes and theme development. Transcripts were created from the video recordings of each interview using Zoom and Kaltura. Transcripts were reviewed as soon as possible after the interview and the transcripts were sent to interviewees for approval. The process of transcript review and writing interview and theme-focused memos led to the development of codes related to ‘behavior change’ and ‘trusted sources.’ Additionally, research questions and literature review identified codes related to ‘engagement structures’, ‘strategies’, and ‘networks’, as well as ‘DEIJ’ and engagement ‘barriers’ and ‘opportunities.’

Systematic coding of the transcripts was completed manually in Excel, followed by more detailed sorting in Word to structure the data. This method, developed by Ose (2016), allows large collections of interview data to be structured and analyzed in a systematic way. Ose recommends this method for general inductive research that includes at least four interviews. Coding using this method was an iterative process, with the development of memos and drafts of this thesis providing ongoing re-definition and refining of the codes, themes, and categories. A condensed codebook is provided as *Appendix C*.

3.6 Validity

Research validity was ensured through member check and triangulation procedures. Member checks included transcript review by interviewees, clarifying questions following my own transcript review, and talking through tentative interpretations with interviewees (Merriam, 1998). After the first few interviews I began sharing the IAP2 chart in interviews to assess interviewees familiarity with public engagement. This often led to additional conversation regarding the role of Bay Program staff and partners in local stakeholder engagement. Research triangulation procedures included discussing tentative research concepts like ‘trusted sources’ and ‘behavior change’ in interviews, asking questions about documents surfaced through research, and using outside documents to further contextualize interview data. A general triangulation approach was

to work towards a “holistic understanding” of the Bay Program in order to reasonably explain research observations (Mathison, 1988).

3.7 Research Limitations

Interview subjects were identified using publicly available information regarding positions within the Bay Program partnership. An introductory email explained the purpose of the study and the interview process, and interviewees opted-in to the research by completing a Google form linked within an attached Research Study “Information Sheet.” Emails were sent to 23 potential interviewees, across the Bay Program’s Goal Implementation Teams. Nonrespondents, and their missing perspectives, created the main research limitation for this project. All potential interviewees identified through purposeful sampling as part of the Bay Program’s Grants Team were nonrespondent. However, both EPA interviewees have roles which either guide or inform grant processes. There were also potential interviewees identified through the snowball method that did not respond to an interview request. For example, individuals that were referenced by their peers as experienced in engagement processes in the Sustainable Fisheries GIT, and new staff and partners with engagement experience in other federal agencies.

Respondents were primarily from the Fostering Chesapeake Stewardship and Enhance Partnering, Leadership and Management Goal Implementation team, which is inclusive of the local leadership and diversity workgroups. Five of the respondents participated in developing the Local Engagement Strategy. Interviews were held with every respondent who expressed interest except for one, due to scheduling. The respondents’ interest in local engagement that led them to respond may create a bias in the depiction of the Bay Program’s engagement efforts and success.

Chapter 4 - Review of Literature

4.1 *Participation, Inclusion, and Engagement*

A rise in participatory experiments across the globe has led to an understanding of participation as a key component of “good governance” (Fischer, 2012). Yet, participation alone does not ensure improved governance or successful engagement. Participatory engagement efforts must be carefully planned to effectively address barriers to engagement like citizen skepticism “about the worth of investing their time and energy into participatory activities,” immediate relevance of participatory activities, and stakeholders’ abilities and motivation to participate (Fischer, 2006, p. 22). Consideration of both the “viability and quality of participation” is necessary for success (Fischer, 2006, p. 22).

The International Association for Public Participation (IAP2) identifies five types of engagement with increasing levels of participant impact on the decisions in the Spectrum of Public Participation. The types of engagement identified are inform, consult, involve, collaborate, and empower (IAP2, 2018). Each type identified in IAP2’s Spectrum includes a goal for public participation, and a promise to the public from facilitators of the public participation process.

Leighninger (2014) has identified two categories of participation used to increase democratic input beyond conventional engagement methods such as town hall meetings and public comments. ‘Thick’ participation is “intensive, informed, and deliberative” and usually is centered on bringing people together for face-to-face dialogue in which they share their experiences, interact with policy options, and develop interest and motivation for action and change (2014, p. 2). Thick participation is often associated with the ‘empower’ side of IAP2’s spectrum. Leighninger describes ‘thin’ participation as “faster, easier, and potentially viral”, and usually focused on a wide-spread collection of participants through online or remote interactions focused on collecting opinions and preferences or allowing people to “affiliate themselves with a particular group or cause” (p. 2). Thin participation is often associated with the ‘inform’ side of IAP2’s spectrum. Innovative combinations of the best features of both thick and thin participation practices have also surfaced, for example thick practices often include in-person and online components (Leighninger, 2014), which increases accessibility. Thick and thin participation methods developed as a response to and leveraging of “the new expectations and capacities of citizens” (Leighninger, 2014, p. 2). Participants value both types of interactions as “opportunities to be heard, to belong, [and] to make a difference” and both contribute positively to policy outcomes when they reach a large and diverse group of people at the right time (Leighninger, 2014, p. 2).

Engagement practitioners should have clear intentions when convening citizens and create engagement opportunities that lead from engagement to those intentions (Fung, 2015). Engagement goals are important, but so is the ‘promise to the public’ component highlighted by the IAP2 Spectrum (and other engagement design tools). Recognition of a promise to the public reminds those designing public participation processes that

engagement—both thick and thin—is a reciprocal process requiring something of citizens and practitioners. IAP2’s Spectrum is a helpful tool to identify the appropriate type of public engagement for a decision-making process, with the goal of increasing citizen involvement to an appropriate level for the decision-making context. Thick or thin participation practices may be utilized to meet the goal of participation.

The IAP2 tool also serves as a point of reference for communication with the public to help them understand their role in any engagement interaction, and to manage expectations about how their contribution will shape decisions. Fung explains:

It is important to design participation in ways that its outcomes are meaningful to participants. Frustration, cynicism, or apathy can be the results of a poorly designed public engagement process in which participants’ hopes for learning, working, or accomplishing some goal are disappointed by a process that is futile, in which the relevant decisions have been made elsewhere by someone else, or in which the choices and stakes are trivial. (2015)

Communicating roles within engagement is essential to clarify expectations and eliminate potential frustration when decisions are made. This tool is equally relevant to staff working within a government funded partnership like the Bay Program as it is to public officials, all of whom must consider the appropriate level of public engagement.

There is a growing expectation for increased participation and transparency in “good governance” and decision making. The ‘promise to the public’ component of the IAP2 Spectrum of Public Participation assists in addressing these expectations and avoiding potential frustration from participants. Understanding and addressing engagement challenges created by both the Bay Program’s complex infrastructure, and local stakeholder knowledge, resistance, and motivation, is essential to “good governance” and the future of the Bay’s restoration.

4.1.1 Meaningful engagement, governance, and social learning

Quick and Feldman (2015) have defined participation and inclusion as two distinct and independent dimensions of public engagement. They describe participation as increasing input, while inclusion focuses on making connections with people, between issues, and over time to build community capacity. Inclusion constitutes and sustains a community with “capacity to address a stream of issues” (p. 272). Governance structures can make use of this community capacity “to improve planning and policy outcomes” (p. 273). Quick and Feldman understand engagement practices as “highly consequential choices that shape the inherently political process of planning and policy making” rather than simply techniques to be applied (p. 273).

Both participation and inclusion—like Leighninger’s ‘thin’ and ‘thick’ participation—are important dimensions of effective and meaningful citizen engagement within governance and programs, and both can be avenues to engage diverse populations (Quick and Feldman, 2015). Participatory practices can be made more accessible, and thus enable more diverse input, by “providing language translation, childcare, or transportation assistance, and choosing convenient meeting times and places for various constituencies”

(p. 285). Inclusionary practices not only invite diverse voices to the table, but invite them to define problems, join in the development of practices, and utilize diverse participatory input to “incorporat[e] learning and change” (p. 285).

The Bay Program has begun to work towards meaningful engagement in their DEIJ work, which they have identified as including four factors:

People have an opportunity to participate in decisions about activities that may affect their environment and/or health; The public’s contribution may influence the regulatory agency’s decision; Community concerns will be considered in the decision-making process; Decision makers will seek out and facilitate the involvement of those potentially affected. (DEIJ Action Team, 2021a)

This description of meaningful engagement appears to lean more towards engagement focused on social learning than on increased citizen control popularized by Arnstein’s Ladder of Participation in which the rising rungs indicate increased citizen decision-making power (1969). Much has been written about the usefulness of Arnstein’s ladder and the pitfalls of equating levels of citizen representation with citizen power. Collins and Ison have identified the limitations created by focusing on citizen control in an adaptive governance structure, as doing so fails to differentiate between situations where existing governance mechanisms are useful in progressing goals, and “situations where new policy and practices are required to make progress” (2009, p. 365).

Collaborative adaptive management is a type of governance that is common in natural resource management, favored for its ability to foster engagement between public officials and citizens, lending credibility, relevancy, and legitimacy to decisions (Scarlett, 2013). By bringing different stakeholders into dialogue or allowing them to provide information within a feedback loop, decision-makers can better understand conflict (Scarlett, 2013), and planning processes can alleviate “problems that often thwart ecosystem management, including overlapping authority, conflicting decision-making processes and tension between stakeholders with different interests” (Susskind, et al., 2012).

While collaborative adaptive management programs focus on incremental adjustment and public participation, the ways in which they integrate decision-making and stakeholder engagement vary and can greatly influence outcomes (Susskind, et al., 2012). Due to their focus on ongoing learning and implementation, collaborative adaptive management processes require long-term engagement and interest from decision-makers and stakeholders. This commitment is difficult to sustain, especially as conflict and politics remain and can threaten the progress of program efforts (Susskind et al., 2012). Strong communication and governance structures that support systematic decision making and stakeholder engagement toward a clear objective can help reduce the risk of potential frustration and stagnation within the collaborative adaptive management process. The development of effective structures and programs take time, and programs should go through periodic modification within the collaborative adaptive management process (Susskind, et al., 2012).

Collaborative adaptive management processes are designed to meet measurable outcomes, identified as priorities by stakeholders and decision-makers (Scarlett, 2013).

Within the context of an adaptive governance approach, the use of existing mechanisms (e.g., hierarchy, bureaucracy, formal networks) provides both avenues and barriers to the organization's ability to engage meaningfully with local stakeholders in support of its goals. Some of these barriers limit the further integration of participation into governance structures (Hügel and Davies, 2020). The hierarchical and bureaucratic nature of the government partnerships, along with a focus on natural resource management and its regulatory drivers seem to require decision-making by experts and politicians. Yet there is still a recognition of the importance and need for participation and engagement within the program's implementation and learning.

Social learning is part of the adaptive management tradition (Blackmore, 2007). 'Social learning' is a term that grew from "recognition that learning occurs through situated and collective engagement with others" (Collins and Ison, 2009, p. 370). Drawing on the work of social theorists, Armitage et al. define social learning within natural resources management as:

[...] a process of iterative reflection that occurs when we share our experiences, ideas and environments with others. Social learning includes single-loop (correcting errors from routines), double-loop (correcting errors by examining values and policies) and triple-loop learning (designing governance norms and protocols). (2008, p. 88)

Social learning occurs in interactions and relationships with other people, and can be cultivated within systems of governance systems.

Meaningful participation and engagement is an important component of social learning within governance, and participatory processes that "acknowledge and accommodate [...] paradoxes of participation" allow for co-production of knowledge and admit citizens and communities as experts of their lived experiences (Sprain, 2017). Collins and Ison (2009) argue that social learning implemented in "policy and praxis [...] can generate practices that question norms, policies and objectives in interactive processes involving multiple stakeholders" (p. 364).

4.2 Behavior Change and Engagement

The notion of 'behavior change' was closely linked to engagement and participatory research within interviews. Interviewees' perceptions were that behavior change has only been talked about within the Bay Program recently – i.e., approximately within the last two to five years (Interviewee 9, July 16, 2021). Within the context of participation, behavioral change strategy focuses on the phenomenon of a group's influence on its individual members (Burke, 1968). This strategy is built on two premises: 1) changing individuals' behavior is easier when they are a part of a group than changing behavior for each individual separately, and 2) individuals are more likely to support decisions and

help enact the decision if they were included within the decision-making process (Burke, 1968).

The behavior change required in environmental restoration efforts like the Bay Program includes convincing an individual to change a component of their lifestyle (e.g. farming methods), which will necessarily confront barriers (e.g., epistemological, inconvenience) and requires more than an information campaign to be successful (McKenzie-Mohr, 2000). McKenzie-Mohr presents community-based social marketing as an approach that merges psychology with social marketing expertise to address this reality (2000). The first steps to community-based social marketing, similar to social marketing, are to identify barriers to behaviors and then decide which behaviors to promote. A program is then designed to overcome the barriers to the behavior, the program is piloted, and then implemented and evaluated.

Behavior change strategies rely on social learning to support program goals. In its focus on behavior change, the Bay Program is beginning to draw on participatory research that is developed as “knowledge for action” rather than conventional research that focuses on “knowledge for understanding” (Cornwall and Jewkes, 1995).

Research was conducted in 2012 by University of Michigan graduate students in partnership with the Chesapeake Bay Trust to understand watershed outreach professionals, and specifically, Chesapeake Bay Trust grantees’ behavior change practices, challenges, and needs (Kelly et al., 2012). The results indicated that responding organizations work to motivate individuals in Bay Restoration through outreach programs but are met with challenges such as engagement of new audiences, effective implementation of behavior change strategies, and program evaluation (Kelly et al., 2012). Responding organizations also identified needs such as increased collaboration with other organizations and training to improve their programs through research, social marketing, and evaluation. Over 75 percent of responding organizations wanted to learn more about both participatory programs and behavior change (Kelly et al., 2012). Although their research focused on stakeholder organizations and grantees, these same challenges are encountered by Bay Program partnership in the use of behavior change practices.

4.3 Networks and Engagement

Networks play a key role in engagement. Insular networks with centralized decision making can limit the inclusiveness of engagement work. Network ties can increase the number of stakeholders engaged and encourage social learning.

Networked governance may share characteristics with the collective impact model, with government partnerships (or other entities) serving as the backbone organization. The collective impact model was introduced by Kania and Kramer in a 2011 article, and it was quickly adopted by government agencies and foundations (Wolff et al., 2017). Kania and Kramer described collective impact as collaborations that “involve a centralized infrastructure, a dedicated staff, and a structured process that leads to a common agenda,

shared measurement, continuous communication, and mutually reinforcing activities among all participants” (2011). Collective impact may “require many different players to change their behavior in order to solve a complex problem” (Kania and Kramer, 2011).

The collective impact model has been criticized for failing to include “advocacy and systems change as core strategies, engage those most affected in the community as partners with equal power, and directly address the causes of social problems and their political, racial, and economic contexts” (Wolff et al., 2017). Characterizing collective impact as a “top-down” collaborative model, which fails to include those most affected by the problem in decision making, Wolff et al. question whether it “can be fundamentally reengineered [...] for true inclusion and equity”. Networks engaged in social learning and collaborative change must explore power and privilege dynamics that exist in who is included, who sets the agenda and makes decisions, and who controls authoritative power and resources (LeChasseur, 2016, p. 2). As more governments and communities engage in multi-stakeholder collaboration and partnerships, the issues of power and privilege will remain important issues in the partnership’s enactment and promotion by key actors (LeChasseur, 2016).

4.3.1 Network brokerage

Brokers are important actors in networks, as they build connections between groups by “coordinat[ing] information across structural holes” (Burt et al., 2021) within networks. Brokerage is one of two main mechanisms that contributes to social capital in a network (Burt, 2000). Brokerage fosters “growth and innovation” as a diversity of opinions and practices circulate within the network (Burt, 2000). The second mechanism, closure, strengthens connections within a group, limiting the circulation of opinions and practices, which builds trust, alignment, and increases efficiency (Burt, 2000; Obstfeld et al., 2014).

The notion of ‘trusted sources’ was highlighted as a key audience in engagement within interviews. The ways in which interviewees referred to trusted sources was similar to the role of brokers in social network theory. A recent study indicated that people “are perceived to be leaders when they behave as network brokers” (Burt et al., 2021). This connects to another term, ‘local champions’, used in a similar manner to trusted sources within the research interviews.

4.3.2 Social learning within networks

Pahl-Wostl (2009) found that “more polycentric structures and balance between bottom-up and top-down approaches lead to higher adaptive capacity” and stability within resource governance models (p. 363). Network governance characteristics, like various networks within a central network, support innovation and social learning, and its informal networks support double and triple loop learning (Pahl-Wostl, 2009).

Pahl-Wostl identifies three characteristics of learning cycles: the presence of a partially informal network of actors who meet regularly; the network is issue or problem specific and is “open and willing to explore alternatives or approaches; and the network is a community of practice. Within these characteristics, an informal network is defined as a network in which the group’s rules and boundaries “are not formally prescribed” and

flexible, and a community of practice is, as described by Wenger (2009), a “group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (p. 1). Networks provide opportunities for social learning, as organizations collaborate and build off the work of network partners to create strengthened resources and programing. The Bay Program’s precedent for this type of organizational collaboration is seen in its incorporation of program partner planning and research into its DEIJ Strategy.

Multi-disciplinary networks like the Bay Program are also exposed to social learning from various fields, which can be beneficial to its efforts. For example, inclusive design is gaining popularity in a variety of fields, with broad application in education, architecture, and the development of interior spaces. The idea is that by providing support to eliminate barriers for those who are most impacted or face the most barriers, they are able to participate fully, and everyone is able to participate more easily. Focusing on helping the most vulnerable often improves conditions for everyone. Glover Blackwell (2017) discusses this phenomenon in the context of curb-cuts, describing how pressure from disabled activists led the city of Berkely to install its first curb-cut in 1972, and hundreds, and then thousands of curb-cuts followed, creating greater accessibility for people in wheelchairs, people pushing strollers, the elderly, workers pushing carts, runners, and business travelers with wheeled luggage. Removing a barrier identified by one group of people created greater access for everyone. Glover Blackwell argues that although policymakers often overlook the curb-cut effect in policymaking, focusing on one group may be the best path forward to increase impact and the positive effects for society at large.

Universal (or inclusive) design principles can be applied to engagement practices as well, by applying a DEIJ framework to prioritize the engagement of underserved, underrepresented, and under-resourced populations and communities. By prioritizing communities that face the most barriers to participation in the Bay Program and designing engagement opportunities to include those with the most barriers and fewest resources, the Bay Program is made more relevant and accessible to all.

Chapter 5 - Findings

5.1 Introduction

Local stakeholder engagement is essential in supporting the outcomes that drive the Bay Program’s work, and engagement efforts are focused on meeting those outcomes. As one interviewee described it, the whole Bay Program is focused on engagement, with landowners implementing the best science identified by the program (Interviewee 11, July 21, 2021). Within the last few years, there has been more focus on local stakeholder engagement within the Bay Program, and several interviewees noted this research is timely due to ongoing conversations.

The results of this research are presented in seven sections: engagement overview; existing engagement structures; strategies and practices; social science and behavior change, engagement challenges, engagement needs and supports, structures institutionalizing engagement, strategies guiding engagement, and networks supporting engagement.

5.2 Engagement Overview

Engagement within the Bay Program is categorized in *Table 3* based on participants’ level of influence in decisions that impact the programming and resources within the Bay Program. Notably, no Bay Program public participation or local engagement falls into the “decide” category, as decisions are made by the Management Board, PSC, and Executive Council, which are comprised of appointed and elected officials.

Spectrums of participation are common tools utilized by engagement practitioners. Interview data and supplemental documents informed and helped tailor the table to better represent engagement within the Chesapeake Bay Program. The different forms of engagement on the spectrum are discussed in more detail in the remaining chapters.

Engagement within the Bay Program can also be categorized as institutionalized and ongoing or episodic. Institutionalized and ongoing engagement is codified within the Bay Program’s structure, while episodic engagement occurs on an as needed basis to support its work. Institutionalized and ongoing engagement in the form of the Advisory Committees and Goal Implementation Teams and workgroups typically engages local stakeholders who have a professional interest in the Bay Program. Episodic local stakeholder engagement occurs as a Goal Implementation Team or workgroup project, Advisory Committee community conversation, or wide-scale local stakeholder engagement at the program level.

The DEIJ and Local Engagement Strategies seek to operationalize engagement concepts. Action teams and informal work teams have been tasked with exploring local stakeholder engagement and increasing diversity, equity, inclusion, and justice through engagement efforts. Both strategies are being implemented at different scales within the program.

Table 3. Spectrum of Bay Program Participation

Table is based on Ornstein et al.'s Spectrum of Processes for Collaboration and Consensus-Building in Public Decisions which draws from the IAP2 and the National Coalition for Dialogue and Deliberation spectra. Interview data and supplemental documents informed and helped tailor the table to better represent engagement within the Chesapeake Bay Program.

	Explore/Inform	Consult	Advise	Decide	Implement
Public Participation Goal	To obtain and/or provide the public with information to support decision-making	To obtain public feedback on options, strategies, or decisions	To work directly with the public through representative bodies to create solutions and inform decision-making	--	To partner with the public in creating solutions, and decision-making
Bay Program Implementation	Audience research	Ongoing engagement with trusted sources, Agreement input	Advisory Committee, action teams	No public engagement. Management Board, Principals' Staff Committee, Executive Council make decisions.	GITs, workgroups
Who is engaged	Local audiences targeted based on interest (e.g., farming) or location (e.g., town)	Trusted sources identified by Bay Program staff and partners	“Appointed and/or elected volunteers” (p. 16) <i>Advisory Committees:</i> Citizens with significant interest in the Bay Program <i>Action Teams:</i> Bay Program Staff and partners, advisory committee members, trusted sources	Appointed and elected officials, advisory committee members are non-voting members of the Management Board	Natural resource professionals, Bay Program Staff, and Citizens with some level of interest in the Bay Program
Outcomes	Improved understanding, information identification, exploration of perspectives, build new relationships	Comments on draft policies, suggestions for approach	Development of independent recommendations within Bay Program, Program leadership aware of relevant stakeholder perspectives	Direction of the Bay Program's work decided through a <i>consensus-based approach</i>	Outcome Management Strategies developed through a <i>consensus-based approach</i> , subject to Management Board approval

Except for the advisory committees, GITs, and workgroups, which are internal to the Bay Program structure, the Bay Program rarely engages directly with citizens, except through participatory research projects, training, and implementation efforts organized with the help of trusted sources (including state governments). The advisory committees and trusted sources serve as the main conduits for local stakeholder input and feedback to the Bay Program outside of mandated public comment periods and GIT and workgroup participation.

Although engagement is mentioned only one time in the Bay Program’s governance document (in relation to the Citizens Advisory Committee), the governance document outlines a consensus-based decision-making process designed to meaningfully engage participants. This consensus-based approach is used by the program leadership, including the Executive Council, Principals’ Staff Committee, Management Board, and GITs. As outlined in the governance document,

The goals of consensus decision-making are to be: Inclusive, of as many members as possible; Participatory, actively soliciting the input and participation of all; Cooperative, striving to reach the best decision for the group, rather than the majority; Egalitarian, with all afforded, as much as possible, equal input into the process, and; Solution-oriented, emphasizing common agreement over differences and reaching effective decisions using compromise to resolve mutually-exclusive positions. (CBP, 2020, p. 17-18)

The document goes on to note that there are times when consensus is inappropriate, stating that whatever decision-making process is utilized, it should be clear to participants “exactly what the process is and that they feel included in the process” (p. 18). This section on decision-making is representative of an organization that values relationship building, diversity and inclusion, respect for roles, co-creation, and communication.

It is unclear whether the Bay Program encourages this same level of communication and transparency about process and influence in decision making when engaging local stakeholders. Although it could be implied, this research did not indicate that this foundational aspect of engagement is encouraged explicitly within the Bay Program’s engagement efforts.

5.3 Existing Engagement Structures, Strategies, and Practices

5.3.1 DEIJ Strategy

Although there have been efforts to address gaps in diversity, equity, inclusion, and increase justice within the Bay Program over the last several years, there has been an increase in momentum over the last year and a half. *Restoration from the Inside Out: A Diversity, Equity, Inclusion and Justice Strategy for the Chesapeake Bay* was completed by Skeo Solutions in April 2020. Additional momentum was likely created by the heightened societal recognition of racial disparities following the death of George Floyd in May, and social justice learning and protest amidst the pandemic (Interviewee 5, June

11, 2021). An updated DEIJ Statement was signed by the Executive Council in August, followed by the PSC's DEIJ Action Statement, which outlined its commitment to:

Continuing our path toward embracing the human diversity in the Chesapeake Bay watershed and promoting diversity, equity, inclusion and justice in our work to restore the Bay, we hereby strive to implement the recommendations in the Chesapeake Bay Program DEIJ Strategy to the extent consistent with applicable state and federal law and policy. (PSC, 2020)

The Statement also outlined five commitments towards the implementation of the recommendations in the DEIJ Strategy, including:

- 1. Within six months of the signing of the Chesapeake Executive Council statement, a draft implementation plan for the DEIJ Strategy will be presented to the PSC. The development of this plan will include direct outreach to underrepresented communities for input and feedback.*
- 2. Within three months of the signing of the Chesapeake Executive Council statement, explore a process for a community advisory board composed of environmental justice leaders and representatives from organizations led by people of color or other underrepresented groups. This board could be part of one of the partnership's existing advisory boards (Citizens Advisory Committee or Local Government Advisory Committee).*
- 3. Advancement of the DEIJ Strategy through work plan development and implementation for all GITs and Workgroups on their respective strategy review system schedules.*
- 4. Meaningful inclusion of DEIJ milestones on the agendas for the Management Board and PSC meetings at a minimum every six months with a commitment to update the Chesapeake Executive Council annually.*
- 5. Meaningful consideration of DEIJ in development of any future Chesapeake Bay Watershed Agreement(s). (Edwards and O'Sullivan, 2020)*

As part of the PSC's commitments, a 45-member Action Team reporting directly to the PSC was formed in October 2020 to develop a plan informed by input and feedback solicited from underrepresented communities through direct outreach to assist the Bay Program's implementation of recommendations within the DEIJ Strategy developed by Skeo Solutions. The Action Team "members were selected to ensure representation from across the partnership, to reflect the diversity of the people living within the Bay watershed and include members knowledgeable of DEIJ and Environmental Justice matters" (DEIJ Action Team, 2021b).

The DEIJ Strategy implementation plan, developed by the Action Team focuses on four intentional areas of implementation: strengthening authorizing environment, internal improvement, restoration work, and partner improvement. Engagement is referenced throughout the implementation plan, with the intention of this engagement described in the plan's introduction:

Meaningful engagement with historically underrepresented communities in the development of this plan is a core objective of the DEIJ Action Team and will be vital for building and maintaining a plan that is actionable, relevant and drives change. The CBP seeks input and feedback from all watershed communities and organizations. It will strive to use this outreach process as a foundation for organizational change and meaningful and long-term engagement in all CBP endeavors. If done well, these strategies and actions will strengthen the partnership's ability to achieve its mission and carry out its responsibilities effectively over the long-term (DEIJ Action Team, 2021b)

In this statement, the DEIJ Action Team has pointed to a need to diversify engagement in order to accomplish the DEIJ goals set out for them, and the positive effect this could have on engagement practices and internal culture. Diversity includes many aspects (e.g., race, ethnicity, sexual orientation, faith, nationality, income-level), but the Bay Program leads their DEIJ engagement work with race, recognizing that barriers to participation and inclusion are often compounded within BIPOC communities (Interviewee 5, June 11, 2021).

Themes within the DEIJ Strategy implementation plan relevant to engagement include building relationships and expanding networks to better reach “communities of color, low income communities, and other underrepresented groups (including tribes)” and incorporate these leaders into decision-making and implementation” and expanded internal understanding and capacity for DEIJ, both of which serve to incorporate underrepresented leaders and communities in the Bay Program’s “decision-making and implementation” (DEIJ Action Team, 2021b).

Several interviewees were members of the DEIJ Action Team. Interviewees referenced internal deliberation over the appropriate placement of DEIJ focused engagement within the Bay Program structure (Interviewee 3, April 9, 2021; Interviewee 5, June 11, 2021; Interviewee 8, July 13, 2021; Interviewee 10, July 21, 2021). Considerations include the formation of an advisory committee, or the infusion of underserved representation throughout the partnership. In addition to this DEIJ strategy implementation plan, the DEIJ Action Plan also prepared a proposal for the PSC outlining the creation of a Community Advisory Board. The proposal was presented at the March PSC meeting, and includes a clear distinction between the CAC, the proposed Community Advisory Board, and the Diversity Workgroup, comparing the relationship between CAB and the Diversity workgroup to LGAC and the Local Government workgroup (DEIJ Action Team CAB subgroup, 2021). Yet, the decision of the PSC was to request incorporation of the envisioned standalone Community Advisory Board into the existing Bay program structure through evaluation of the Advisory Committees’ governance documents to broaden their missions to better support DEIJ principles (PSC, 2021). Interviewees indicated that the reason for this decision was the lack of discretionary funding available to support a standalone CAB (Interviewee 5, June 6, 2021; Interviewee 8, July 13, 2021), while one interviewee also recognized the need to ensure the CAB was a way that underrepresented communities wanted to be engaged, rather than a recommendation imposed on these communities (Interviewee 5, June 6, 2021).

Two important components of the DEIJ strategy work that will also contribute to engagement efforts include the development of “a current list of organizations and groups led by and/or serving underrepresented communities as well as a set of community engagement resources” and the development of a GIT funded project “Cultivating and Strengthening Relationships with Underrepresented Stakeholders” (DEIJ Action Team, 2021c). Both of these resources were supported through the Diversity Workgroup, and as noted in the DEIJ Strategy Implementation plan will help “identify and pursue opportunities to increase mutually beneficial partnerships” (DEIJ Action Team, 2021c).

Several interviewees referenced the GIT funded project designed to explore meaningful engagement with underrepresented groups. These interviewees recognized the significance of this funding, which represents both recognition of an existing engagement gap, and the importance of engaging underrepresented groups within the Bay Program. This project is being contracted through the Chesapeake Conservancy (Interviewee 3, April 9, 2021), and will engage directly with local stakeholders to understand “how they would like to be engaged and what value they could have from being engaged” (Interviewee 5, June 11, 2021).

5.3.2 Local Engagement Strategy

A few years ago, while listening to a cohort share their two-year Outcome updates and requests as part of the Strategy Review System, the Management Board recognized a common theme in an existing local engagement gap. The Local Government Advisory Committee (LGAC) Coordinator happened to be the last presenter during the meeting that day and was asked to lead the development of a Local Engagement Strategy (see Barranco, et al., 2019) to help GITs better address local engagement needs.

The Local Engagement Strategy was written to engage local government audiences, with the idea that if it is effective, the same model can be replicated for other audiences. The strategy “present[s] a road map for Chesapeake Bay Program (CBP) engagement with local government leaders. The strategy defines the roles of the different players involved and articulates a mechanism for creation and delivery of messages that both meet CBP needs and relate to local government priorities” (Barranco, et al., 2019).

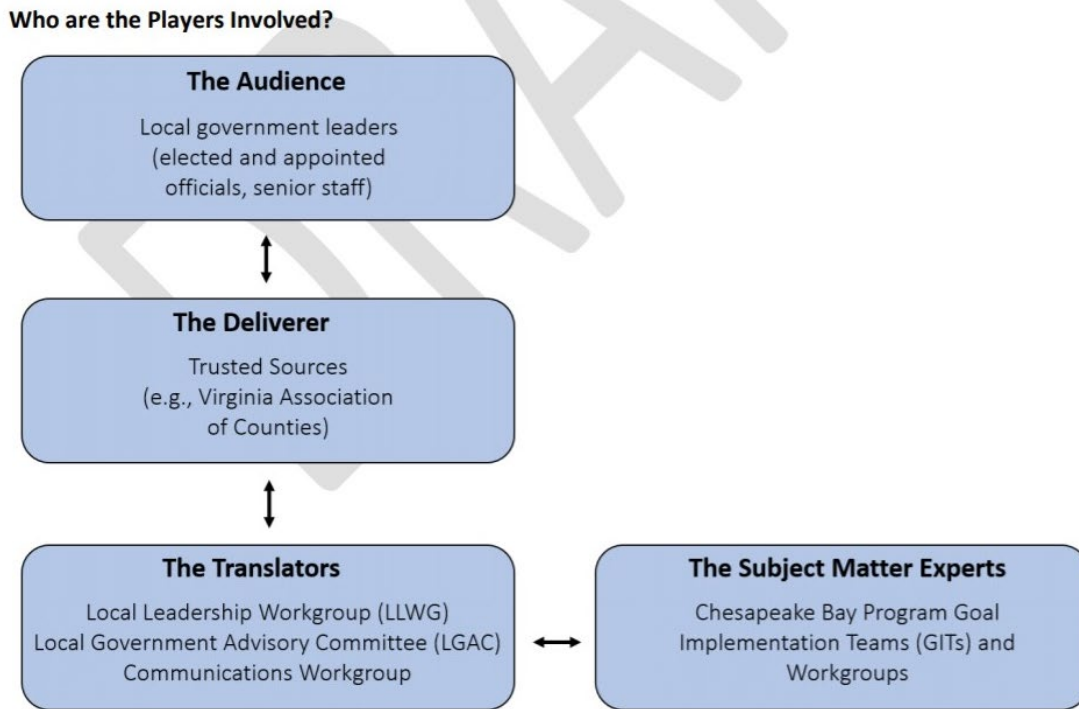
As written, the strategy has two main components, role identification and a mechanism for aligning Bay Program and local government priorities. Roles identified by the strategy include subject matter experts (i.e., goal implementation teams and workgroups), translators (i.e., Local Leadership Workgroup, Local Government Advisory Committee, and Communications workgroup), deliverer (i.e., trusted sources), and audience (i.e., local government leaders) (Barranco, et al., 2019). *Figure 2* illustrates the roles or ‘players’ identified within the Local Engagement Strategy.

The mechanism for aligning Bay Program and local government priorities is to assign them to four priorities “portals” identified through the 2017 Ecologix report, *Strategic Outreach Education Program for Local Elected Officials in the Chesapeake Bay Watershed*. This report identified economic development, public health and safety, infrastructure maintenance and financing, and education for local officials and

recommended using these priorities as “portals” to communicate Bay Program goals (Barranco et al., 2019).

Figure 2. Local Engagement Strategy (Draft): Who are the Players Involved?

Figure is included in a draft Local Engagement Strategy and describes roles and players in Bay Program local stakeholder engagement and information flow. Courtesy of the Chesapeake Bay Program (Barranco et al., 2019)



Interviewees referred to trusted sources as the audience for engagement, specifically within the context of the development of the Local Engagement Strategy (Interviewee 2, March 24, 2021; Interviewee 3, April 9, 2021; Interviewee 5, June 11, 2021; Interviewee 7, June 18, 2021; Interviewee 9, July 16, 2021). Within this context, trusted sources are the organizations and people that community leaders and the public go to for information (e.g., local watershed nonprofits, professional organizations, representatives of state governments) (Barranco, et al., 2019). These trusted sources are seen as the best people to deliver messages generated within the Bay Program.

Five interviewees contributed to the team that developed the Local Engagement Strategy. The development of the Local Engagement Strategy is based on the goal of sharing technical subject matter expertise with local audiences. To do this, messages are ‘translated’ to match with audience priorities, taking “complex science, boiling it down into terminology that’s understandable and that resonates with the audience” (Interviewee 4, April 19, 2021). The strategy also relies on trusted sources, recognizing that people are more likely to accept information provided by sources that they trust (Interviewee 4, April 19, 2021). One interviewee observed that communicating through non-government trusted sources might be more inclusive of underrepresented

communities (e.g., communities affected by environmental injustice) that do not trust state agencies (Interviewee 4, April 19, 2021).

A significant takeaway that came out of the Local Engagement Strategy work was that local engagement means different things to different people within the Bay Program infrastructure, which impacts the definition of both engagement and local stakeholders (Interviewee 3, April 9, 2021; Interviewee 4, April 19, 2021). GIT representatives were surveyed regarding their local engagement needs, and some were referencing local elected officials, while others “were more interested in engagement with local planners, local organizations or technical service providers” (Interviewee 4, April 19, 2021). A member of the strategy team looked at the various responses and grouped them according to how they defined local stakeholders so the strategy team could understand various target audiences (Interviewee 4, April 19, 2021). But there is still follow-up work to be done, longer conversations that seek to understand the audience and goals of local engagement for each GIT.

Another discovery in this work was the need to make a distinction between engagement, which is loosely defined as a two-sided interaction or dialogue, and communication or outreach efforts which are often one-sided (Interviewee 4, April 19, 2021). The Local Engagement Strategy team is leading work to explore “Who do we mean when we say engagement, local engagement? And are [we] really prepared to do that? Engagement as a two-way communication path of shared understanding and dialogue. And really meeting people where they are” (Interviewee 4, April 19, 2021).

There has been a recognition that the Local Engagement Strategy’s focus on the four categories or ‘portals’ identified by local government officials as being important to them may not resonate with other audiences, particularly with “people on the ground” (Interviewee 4, April 19, 2021).

For local governments, the most trusted sources most obvious to the Bay Program are associations of counties (Interviewee 4, April 19, 2021) or state governments (Interviewee 9, July 16, 2021). However, it is difficult to assess if these trusted sources are reaching underrepresented communities, and it is important to acknowledge “many structures [like local government associations] may not be welcoming to people of color [...] they don’t feel safe [...] that is not their trusted source” (Interviewee 2, March 24, 2021).

5.3.3 Advisory Committees

Although citizens can technically participate in GITs and workgroups, the Advisory Committees are the main mechanism for ongoing citizen engagement within the Bay Program.

The Bay Program’s three advisory committees are described in its governance document as “appointed and/or elected volunteers who provide independent perspectives from critical stakeholder groups and strengthen the natural and social science basis for Bay protection and restoration activities” (2020, p. 17). Advisory committees provide formal independent recommendations to the EC, PSC and MB, they are also able to attend

meetings of the EC, PSC and MP as advisors, and members may participate in GITs and workgroups (CBP, 2020b). These committees operationalize engagement principles in an institutionalized manner. Because engagement is institutionalized, it can begin to feel like lack of engagement, particularly alongside the Bay Program's insularity.

Advisory committees function outside of the Bay Program's SRS adaptive management process, but their positions and recommendations may contribute to Management Strategies. The Citizens Advisory Committee is recognized within the Bay Program as "a strong advocate for increased transparency and accountability, citizen engagement and education, and independent evaluation of the restoration work of the partnership" (CBP, 2020, p. 17).

Advisory Committees often come up with their own agendas that may not align with the work of GITs and workgroups, or outcomes (Interviewee 3, April 9, 2021; Interviewee 8, July 13, 2021; Interviewee 10, July 20, 2021). Partially due to this reason, position letters shared with Management Board, GITs, and workgroups do not always receive a response, which fails to acknowledge the value contributed by the commitment of these volunteers (Interviewee 8, July 13, 2021). Two interviewees also mentioned behind the scenes conversations that occur outside of the formal decision-making space (e.g., meetings) at the Principals' Staff Committee level. These conversations were characterized as information seeking among colleagues rather than intentional attempts to circumvent the process. However, because these conversations happen outside of the Bay Program's formal meeting and decision-making structure, they do not always provide an opportunity for the CAC (and other advisory groups) to provide advisement and influence decisions (Interviewee 8, July 13, 2021; Interviewee 10, July 20, 2021). In some cases, CAC members preemptively participate in offline conversations with individual members of the bodies that they advise to influence and negotiate common interests within a decision (Interviewee 10, July 20, 2021).

These behind the scenes or offline conversations impact trust within the partnership and are experienced outside of the Advisory Committees. For example, the PSC's decision to incorporate the CAB into existing advisory committees rather than creating a standalone Board goes against the recommendation of the DEIJ Action Team and the decision was perceived at least by some members of the Bay Program infrastructure to be made before the March PSC meeting, i.e., outside of the formal decision-making space. The effects of this type of decision appear to undercut the program's commitment to both DEIJ and engagement through institutionalized and ongoing engagement structures like Action Teams. It communicates a lack of respect for the process as well as the work contributed by staff and volunteers, after program leadership have requested recommendations that are then disregarded. It also decreases internal excitement for the work (Interviewee 8, July 13, 2021).

Advisory Committees pact as empowered spaces for contribution and innovation. For example, the CAC is a "self-selected guinea pig" for implementing practices like recruiting a diverse cohort of members or a broadened discussion of environmental impacts within the Chesapeake Bay Watershed (e.g., flooding, urban heat islands) that are

not captured in TMDL or the Bay Program’s very specific outcomes (Interviewee 10, July, 20, 2021). If the Bay Program is committed to the work of meaningful engagement and applying a DEIJ framework to their work, there are lessons to be learned from the CAC’s challenges and successes in this area over the past year and a half. The CAC is ahead of the CBP curve in implementing DEIJ principles in their work, which creates the challenge of CAC provided input that the Bay Program may not be ready to incorporate into their work, but at the same time the CAC acts as a necessary test laboratory for strategies to recruit and retain new voices (Interviewee 10, July 20, 2021).

5.3.4 Goal Implementation Teams (GITs), workgroups, and staff

Participation in GITs and workgroups is a form of institutionalized local stakeholder engagement, although those who are most deeply engaged are often those with a professional connection to the work and may or may not be connected to their local communities. GIT participation is voluntary, but it requires that a local stakeholder—or someone in their network—knows about the Bay Program structure and is able to advocate for their inclusion or that they are invited to participate. The governance document specifically outlines that “[in an effort to empower non-signatory partners in the decision-making process, priority for at-large membership will be reserved for NGOs, quasi-government organizations, federal agencies, academic institutions, and other local practitioners,” all of which indicate the need for a certain level of pre-existing professional knowledge to participate (p. 12). Opportunities for episodic local stakeholder engagement supported by the GITs and Workgroups is dependent on the project, available resources, and network strength.

The establishment of the Local Government and the Diversity Workgroup with the signing of the 2014 Agreement, and the staff positions developed to support these efforts, is another example of the Bay Program’s commitment to institutionalized and ongoing engagement. The last few years have seen the addition of two positions to support the work of these workgroups, an EPA staff position focused on Local Engagement and Diversity, and a contracted position with the Alliance for the Chesapeake Bay to support Local Governments. Another recent EPA staffing addition spends half of their time focused on social science research. These staff have been instrumental in developing and supporting local engagement efforts included the DEIJ and Local Engagement Strategies discussed below, and tools like the Environmental Justice and Equity Dashboard, which provides visualizations of environmental justice and equity data within the Watershed.

5.3.5 The Infrastructure

The Bay Program infrastructure’s structural characteristics and culture impact meaningful engagement. Decisions within the Bay Program infrastructure are primarily made by elected or appointed officials that may not reflect the diverse demographics of the population within the Bay watershed. This creates a potential gap in understanding based on lived realities and experiential knowledge. Two interviewees spoke about the Bay Program’s struggle to engage the right people (i.e., stakeholders most impacted by decisions), describing the issue as relevant to both the Management Board and workgroup level, and closely linked to the capacity of members. Bay Program roles represent only one part of most Management Board and workgroup members broader

responsibilities and commitments. The Management Board fields requests that come through the system review process, but often they are making decisions or guiding resources for issues in which they have no stake (Interviewee 3, April 9, 2021). There is also a question of whether the right stakeholders are engaged to make decisions at the workgroup level. If workgroup focus does not “connect [directly] to what’s important in a [member’s] backyard” it is difficult to sustain participation (Interviewee 9, July 16, 2021).

The need for bottom-up approaches to engagement was another issue raised by interviewees (Interviewee 3, April 9, 2021; Interviewee 5, June 11, 2021; Interviewee 6, June 15, 2021; Interviewee 11, July 21, 2021). One interviewee described inclusion as bottom-up, because processes created to recognize diversity and increase inclusion have to include input from stakeholders, or they just become a “checklist” rather than authentic engagement (Interviewee 6, June 15, 2021).

Another interviewee spoke about the need for relationship building and listening to be prioritized within the Bay Program’s internal infrastructure. This interviewee also spoke about the general shift that has occurred culturally, in which more people are beginning to understand the privilege that they bring to this work (Interviewee 5, June 11, 2021).

Another interviewee recognized the need for an adaptive posture within the Bay Program’s work. This interviewee stated that “[w]e should be open to considering new opportunities and ways for both how we work collaboratively together, as well as how we function as a partnership, that would strengthen our partnership and our ability to achieve our goals and outcomes” (Interviewee 3, April 9, 2021).

5.3.6 Network documentation and collaboration

In 2009, the Bay Program began crafting the new Chesapeake Bay Agreement (2014) and worked with its partners to gather “input from citizens, stakeholders, academic institutions, local governments and more to draft an inclusive, goal-oriented document that would address current and emerging environmental concerns” (CBP, 2021a).

As the GITs or workgroups were developing outcomes or goals for recommended inclusion in the 2014 agreement, they began compiling lists of “interested parties” that could be contacted directly when it was time to seek public input. These lists of interested parties include people and organizations that may be on “the outer rim of the partnership” where they might not attend regular meetings but “they likely have some professional tie or interest in the work happening in the goal implementation team” (e.g., restoration contractor, nonprofit organization representative, local advocates) (Interviewee 4, August 10, 2021). Interested party listings from this process “remain in the goal implementation team database and any time there is a public notice, or a meeting or public input is sought, the distribution goes to them” (Interviewee 4, August 10, 2021). These lists serve as an important resource for Bay Program communication as well as potential DEIJ framework-led network expansion to improve both local stakeholder participation and engagement.

Jurisdiction wide stakeholder engagement processes were designed and implemented by signatory jurisdictions to inform both the 2014 agreement and their correlating watershed implementation plans (WIPs). These efforts included in-person events that were well staffed and well-suited to dialogue. For example, Maryland had several work sessions for the public when the 2014 agreement was in its final drafting, the public were invited to see a presentation or walk through an open house like event to view posters that outlined goals and outcomes. Staff were able to “interact, answer questions and explain” as well as “hear from stakeholders” (Interviewee 4, Interviewee 4, August 10, 2021). The event was held in the evening in different parts of the state to increase accessibility. The public was also invited to provide comments through a state hosted online portal after the event. Maryland used this feedback collected to inform their “negotiations with the other signatories on where the agreement language could be improved or changed” (Interviewee 4, August 10, 2021). Pennsylvania utilized stakeholder feedback groups as a part of their WIP development process. These stakeholder groups represented different sectors and acted as sounding boards at key points during WIP development (Interviewee 4, August 10, 2021).

The Chesapeake Bay Program Office led efforts to gather public comment on the draft and final versions of the 2014 agreement. Working with the Communications team, they created a public facing page that allowed users to navigate to discipline-specific themes to comment and provided an opportunity to “opt-in” as an interested party. The interested party information was added to the lists described above in the hopes of continuing to engage with those providing public feedback through GIT and workgroup work (Interviewee 4, August 10, 2021).

Following the finalization of the 2014 agreement, the U.S. Army Corps of Engineers (USACE) and NFWF led the development of a Chesapeake Bay Comprehensive Water Resources and Restoration Plan (CBCP) which “identified and evaluated [ecological] problems, needs, and opportunities in the Chesapeake Bay Watershed using an integrated water resources management approach” (USACE, n.d.). The Corps is active in several Bay Program goal implementation teams (e.g., Sustainable Fisheries, Habitat, and Healthy Watersheds) and work groups (USACE, n.d.) Representatives from the Bay Program worked with these partners to ensure the comprehensive plan “aligned with and reflected the goals and outcomes in the agreement as well as the NFWF business plan” (Interviewee 4, August 10, 2021). This work was prioritized to leverage EPA and NFWF investments with potential investments appropriated by Congress to Army Corps of Engineer projects. The goal was to identify and fund projects that would have the biggest impact. Due to existing network ties, the Army Corps of Engineers knew the Bay Program had put a lot of work into stakeholder outreach ahead of the 2014 agreement and wanted to build on the network of stakeholders that had been identified in that process (Interviewee 4, August 10, 2021). Leveraging this extended network of interested parties and subject experts within the Bay program infrastructure contributed to more robust input and feedback on the comprehensive plan throughout a “multi-year process that included in-person meetings, and webinars to explain and preview the work being done by the Corps and their contract consultants” (Interviewee 4, August 10, 2021). The Bay Program also helped to amplify the public comment and

stakeholder input opportunities through their networks to support the Corps in engaging a diverse pool of stakeholders. This inter-agency collaboration to engage stakeholders leveraged resources in support of Bay restoration in line with the 2014 Agreement (Interviewee 4, August 10, 2021).

5.4 Social Science and Behavior Change

Social science and behavior change are two terms that were mentioned in almost every interview. Interviewees agreed that social science and behavior change are critical to the Bay Program's efforts to reach its 2025 milestones, which is also the Bay Program's sunset date. Interviewees spoke about social science and behavior change as gaining momentum within the Program but recognized that it faces a challenge in shifting the mindset of the largely natural science experts that make up the Bay Program infrastructure. The term 'social science' within interviews was used to refer broadly to the need to focus on the 'human dimensions' of the Bay's restoration. The program's success depends on human action, which requires engaging with values and interests and sometimes, challenging long-held beliefs and mindsets. The best science in the world will not save the Bay if people do not put it into practice.

The 2025 sunset date of the Bay program requires significant citizen stewardship to maintain current and future restoration efforts after the Bay Program ends. Three interviewees noted that the Bay Program is excellent at identifying the best natural resource science, but it has not traditionally been good at ensuring people are able to put the best practices into place, which is essential to the success of the Bay's restoration and meeting the 2025 goals (Interviewee 3, April 9, 2021; Interviewee 5, June 11, 2021; Interviewee 11, July 21, 2021). The Bay Program's focus must include providing people the tools that they need to change their behavior and the culture (Interviewee 11, July 21, 2021). As one interviewee explained "we have all these rules and regulations and programs, but unless people in the community buy into those programs and understand why they're doing things, then as soon as we look away, then we'll be back to square one" (Interviewee 11, July 21, 2021). A Citizens Advisory Committee member described their motivation for participation in the Bay Program: "what guides my engagement as a stakeholder is that I'm trying to represent values that are missing from the process that I think are essential reasons why we're not hitting the goals" (Interviewee 6, June 15, 2021).

There is also recognition within the Bay program that effective engagement of stakeholders for behavior change requires more than the traditional government resource delivery method of packaging important information, sharing it with the public, and assuming people will take the information and apply it to their lives to create change (Interviewee 4, April 19, 2021). There is a need to engage in two-way communication and translate messages to language that is easy to understand and resonates at the local level (Interviewee 4, April 19, 2021; Interviewee 9, July 16, 2021; Interviewee 11, July 21, 2021). The Bay Program has provided staff resources towards this goal with a part-time position within the EPA Bay Program Office focused on social science. Yet, the time and resources required for social science and behavior change research are not fully

prioritized. People do not recognize that creating behavior change resources requires investments in funding and support. It is not enough to simply label something a behavior change resource (Interviewee 9, July 16, 2021).

Social science and behavior change were often linked within interviewees' thought processes, and not always clearly differentiated. When linked in conversation with behavior change, 'social science' appeared to refer to the foundation of research and understanding (e.g. human behavior, audience interests and values) needed to work toward behavior change. One interviewee described it in this way:

The partnership's recent engagement in social science has helped us learn that information doesn't change behavior. We frequently try to use information heavy campaigns like fact sheets and websites in the hopes that we will change people's behavior, but more often than not, it doesn't work. It is important for us to understand our audience and their behavior, including the barriers that are preventing them to adopt our desired behavior, and use this formative research to design more effective efforts to change behavior. (Interviewee 3, April 9, 2021)

The need for improved social science was also referred to in a more relational manner. In the field, resource delivery professionals need training and expertise to better relate and communicate with their clients in order to identify resource needs and solutions. At the local level, natural resource management relies on successful one-on-one or one-to-group interactions. Some people are naturally skilled in this area, but others need to develop personal skills to be able to facilitate successful interactions (Interviewee 11, July 21, 2021). One interviewee observed that the education and development that local resource delivery professionals receive today emphasizes technical skills (e.g., computers, technology, social media) over relational skills, which were more of a training focus in the 1980s (Interviewee 11, July 21, 2021).

One interviewee told a story relating the downside of this prioritization of advanced technical tools, seen in the Bay Program and the natural resource field more generally, which occurred around the time when computer use and modeling became popular:

This land owner, this farmer, that was very progressive and very active with conservation programs, came storming into the office and started to rant and rave with the people in the USDA office about how in the old days, if he had a big gully in his field that was washing out, people would come out and they would use chicken wire and old cars in there to dam it up [...] and have it fill in again and create sediment barriers and that type of thing. Now they're more concerned about, you know, doing computer programs and setting it out. And they can't get any assistance out there to help them with creative ideas. (Interviewee 11, July 21, 2021)

This interviewee related to the farmer's frustration and appeared to understand social science as the ability to recognize and relate to the impact technical advancements have on people and communities in everyday life. Natural resource professionals are more

successful when they understand what they are asking of people when they promote a new technology or even a best management practice.

This ability to relate, to understand the audience's experience and needs, was also spoken about by Bay Program staff focused on local government support. They related a conversation within the Bay Program in which their conversation partner wanted local governments to "consider fisheries" in comprehensive planning. As the conversation continued, it became clear to this interviewee that "being thoughtful about where development goes and living shorelines" was perhaps a better ask of local governments, because it would lead to decisions that supported fisheries. In the end, the goal is not to have local governments care about fisheries, but to encourage local government decisions that support fisheries (and other Bay Program outcomes). As this interviewee explained:

[...]that's hard for folks to understand because they are passionate about their thing, and they want local governments to be passionate about their thing too. But we have to let that go. Local governments are passionate about the challenges in their community. And we just have to find a way that what we're doing connects with that. Not change their hearts and minds to love fishing. (Interviewee 2, March 24, 2021)

Being able to identify and translate the desired action into the reality of a decision-maker, is grounded in a thorough understanding of human behavior and a capacity to relate to others (i.e., stakeholders). These are the foundational components of effective communication and behavior change and seem to be the 'social science' that interviewees felt were desperately needed.

5.4.1 Communicating for behavior change

Within the Bay Program's communication, there has been a shift to more targeted messaging rooted in audience research and specific outreach goals. This matches broader trends within the environmental field. One interviewee noted that the environmental field's understanding of communication and education for behavior change can be more narrowly described as social marketing, observing that although useful, it is "one tool in the toolbox" and it is tool that is still based on one-way communication (Interviewee 6, June 15, 2021).

An example of efforts to target messages to an audience is the Bay Program's Living Shoreline project. The focus has not been on education (i.e., awareness), but on actively getting property owners across the Chesapeake to consider incorporating living shorelines. As part of this effort, the Bay Program sent audience surveys by mail, in order to identify values relevant to landowners to inform behavior change efforts. Similar efforts are now being made to target technical service providers to develop more forest buffers and urban tree canopy (Interviewee 9, July 16, 2021).

This same focus is also seen in the Local Engagement Strategy's pilot with local government leaders in identifying four main issue interest areas and targeting Bay Program outcomes to those interests (Barranco et al., 2019). Much of the Bay Program's local engagement has been focused on identifying benefits to watershed restoration that align and benefit other community priorities (Interviewee 7, June 18, 2021). There has

been increased emphasis on moving from making requests to benefit Bay restoration (e.g., changing zoning codes and ordinances to better reflect stormwater regulations) to helping local stakeholders understand how these changes might benefit them. Recognition of the value in a given action for the stakeholder is key to local stakeholder engagement (Interviewee 3, April 9, 2021).

Two interviewees explained that the broader goal of communicating for behavior change is to move from awareness to action. It requires thinking through an entire decision process of identifying your audience and what you are trying to change, and then identifying barriers and challenges for your audience to change behavior (Interviewee 3, April 9, 2021; Interviewee 4, April 19, 2021). This requires participatory research to understand the needs of an audience and then develop resources that meet those needs to support decision making (Interviewee 3, April 9, 2021).

5.4.2 A culture shift

Another interviewee described an experience presenting the Bay Program's DEIJ work as a guest speaker for a university course focused on designing environmental justice indicators:

I did a presentation for them on, here's all the research we've done. Here's all of the consultants, sort of feedback to us after their audit. We're creating a plan. And the next step after we have this draft implementation plan is to take it out to the communities who we have not traditionally engaged with and get their reaction to it. And I was torn to shreds by several of the students who said that "So wait a second. You guys are admitting that you've had this program for 30 years. There's a whole contingent of the community that has not been at the table that you've not been involved with, have not worked with at ever- at any point. And you're trying to go forward to these communities. And you're starting with your own plan, that they had nothing to do with creating. That is a huge failure on your part." And this is the students talking to me. And "did it ever occur to you to do something differently if you're trying to get a different result at the end." It's like wow, that's really profound and, and you know, the delivery was not subtle. It was like I got clobbered over the head and I'm really grateful for it because it was an important lesson. (Interviewee 4, April 19, 2021)

After this interaction, the staff member went back to the Bay Program and shared this story with the Local Engagement Strategy Team and Program leadership, as an indicator of the need for a cultural shift within the Bay Program. This experience created a clear takeaway that the Bay Program has to move beyond the traditional model of "do good work, deliver it, [and] put it out to the world" because this model is not effective in getting stakeholders to make decisions based on that work (Interviewee 4, April 19, 2021). Behavior change, and engagement, requires authentic interaction that meets people where they are, but this is a major shift from the way the Bay Program operates. It requires change from the administrators of the Program, and people's behavior change at the ground level within the watershed (Interviewee 4, April 19, 2021), and getting past beliefs and biases (Interviewee 11, July 21, 2021).

The Bay Program is beginning to understand that a better use of social science is required to create the collective action needed for success (Interviewee 3, April 9, 2021). There are pockets within the Bay Program that are incorporating ‘social science’ into their work; the Local Engagement Strategy Team is comprised of staff working in different capacities throughout the Program to implement communication and engagement through trusted sources (Interviewee 2, March 24, 2021; Interviewee 3, April 9, 2021; Interviewee 4, April 19, 2021; Interviewee 5, June 11, 2021; Interviewee 7, June 18, 2021; Interviewee 9, July 16, 2021), there are GIT projects that are building and drawing on audience research and inviting local stakeholders into planning processes (Interviewee 3, April 9, 2021; Interviewee 5, June 11, 2021; Interviewee 9, July 16, 2021), and the Citizens Advisory Committee has explored effective engagement and incorporating new voices to address gaps in social understanding (Interviewee 6, June 15, 2021; Interviewee 8, July 13, 2021; Interviewee 10, July 20, 2021; Interviewee 11, July 21, 2021).

5.5 Engagement Challenges

The Bay Program’s networked governance and adaptive management frameworks impact its work, including its engagement. Thus, challenges to inclusive engagement mirror some of the same challenges identified in natural resource management contexts including complexity, lack of role clarity, multi-layered structure, lack of funding and capacity, and barriers to participation.

5.5.1 Complexity

The Bay Program is as complex as the wicked problem that it seeks to address. One interviewee noted the time-intensive development of base knowledge needed for “an outsider to [...] be integrated into the Leviathan that is the program” (Interviewee 8, July 13, 2021). Another interviewee commented that it is sometimes a treasure hunt to find the person you are looking for within the Bay Program infrastructure (Interviewee 4, April 19, 2021).

The collaboration that contributes to the partnership requires a variety of actors representing many interests, outcomes, and levels of authority within different government agencies and partner organizations. Roles within the Bay Program structure are often unclear to the outsider with many people filling a few roles in and outside of the partnership. All of this poses a challenge to CAC members, and conceivably members of LGAC, STAC, and certainly members of the public who want to be involved in the Bay Program’s work. Keeping track of the Bay Program’s progress and who is responsible and accountable for that work is difficult, and if an advisory committee member is engaged in the Bay Program’s GIT work groups or an action team, they typically also have a relationship to the work in their professional realm. In this case, they may be paid to participate as they would in their normal work, or alternatively they may have the time because they are retired (Interviewee 8, July 13, 2021).

One CAC member stated the challenge clearly: “from an engagement perspective, so many voices are missing. So many voices are missing. But at the same time, I don’t know

how you broaden that without continually having to educate people” (Interviewee 6, June 15, 2021). The heavy lift required by those “outside” of the Bay Program’s work to understand TMDL, policy, regulations over six jurisdictions, and other technical elements of Chesapeake Bay 101 that CAC members are asked to understand and speak to requires significant investment that not everyone is able or willing to give (Interviewee 6, June 15, 2021).

The complexity of the Bay Program, and the expertise expected of each component in its structure, even its Citizens Advisory Committee, is a barrier to the inclusion of the diversity of voices within the Chesapeake Bay Watershed. Which in turn creates missing avenues within the structure to the sorely needed local or experiential feedback and co-creation that is critical to the Bay Program’s success. Interviewees recognized this and voiced the importance of more diverse leadership and participation. One Bay Program staff member noted that the Executive Council, Principals’ Staff Committee and Management Board are elected and appointed officials that tend to lack diversity and went on to say “we need the leadership of this effort to reflect the people who live in this watershed and to [...] not just look like that broad array, but to bring those varied perspectives. It can be very insular” (Interviewee 4, April 19, 2021). The professional network is small, leading to interaction with the same people at meetings and they get to know each other (Interviewee 4, April 19, 2021), which makes it difficult for new people to break in and feel welcomed, especially when their life realities are different from most of the group members’ realities (Interviewee 10, July 20, 2021).

Additional challenges linked to program complexity and the resulting insular networks are that people’s networks do not always extend to their communities outside of work, which contributes to the self-perpetuation of the Bay Program’s insularity (Interviewee 10, July 20, 2021). The GITs are fully voluntary, anyone can participate. But because branding the complex partnership is difficult, the Bay Program lacks visibility, and participation relies largely on personal and professional networks that do not fully represent the communities served.

5.5.2 Lack of role clarity in engagement

Understanding the Chesapeake Bay Program’s role in local stakeholder engagement is another challenge. Several interviewees noted that their role was not to engage local stakeholders, but instead to support those that do. This need to support engagement rather than engage directly is partly due to capacity, and partly due to respecting jurisdictional roles in engagement. Engagement happening between states and local officials is common, and a different voice or perspective can create confusion.

Identifying the type of support role is equally important, in terms of resource allocation or providing information to trusted sources. One interviewee communicated that the focus on trusted sources for engagement is a strategy to allowing state and local officials to lead engagement, while still finding a way to “effectively [work] with people who are ultimately impacted by the work that we do” (Interviewee 4, April 19, 2021). Establishing best practices in Bay Program local stakeholder engagement requires balancing the flexibility and independence that comes with government positions and

discretion, which can be a challenge. Everyone has their own view of what role they should play in local stakeholder engagement (Interviewee 3, April 9, 2021).

Another challenge is balancing the shift in culture being experienced internally, which is sometimes voiced as an issue of staying within established Bay Program roles. In the context of the CAC, role dissonance is exhibited by members with a more traditional understanding of TMDL defined water quality when other topics are raised as important, if left unaddressed, this dissonance fuels resistance to change (Interviewee 8, July 13, 2021). The feeling that “we have gone ‘off’ course” is very real for CAC and GIT members that are grounded in natural science or experience the Bay Program’s work as veering from its well-defined outcomes. I witnessed a similar dynamic during a local leadership work group meeting, when a conversation focused on DEIJ engagement and integration surfaced the question of “but is that even our role?” Program leadership must be aware of this dynamic and navigate it in a way that includes everyone in growing and learning amidst the Program’s cultural shift to a broadened understanding of Bay restoration that intersects with and includes social justice work. This shift is necessary to both support the local stakeholder behavior change necessary to support the Bay’s restoration, and to fully operationalize the DEIJ efforts it has committed to with the adoption of the DEIJ Strategy.

To ensure that DEIJ is fully operationalized, and not simply treated as a trend, Program leadership will need to ensure the Program is ready to listen to voices that have not been historically heard within the Bay Program. This will mean assessing capacity and willingness to incorporate new voices and establishing appropriate responses to and incorporation of new ideas that arise. One interviewee observed that this is work that has not yet been fully recognized and understood by Bay Program leadership at the Management Board and PSC level (Interviewee 8, July 13, 2021). In many ways this is a bottom-up pressure in a top-down management structure.

5.5.3 Multi-layered structure

The Bay Program’s multi-layered hierarchical structure creates distance between ongoing feedback from local stakeholders and decision-makers. Each level of the hierarchy provides space for miscommunication, similar to the children’s game of telephone (Interviewee 5, June 11, 2021). The multi-layered structure contributes to messages that get lost in translation or are simply ruled as unimportant or lack prioritization within each level of reporting. The end result can lead to a decision that is not fully understood by lower levels within the hierarchy, including stakeholders. Decisions can feel inconsistent with feedback that was shared (Interviewee 5, June 11, 2021).

Language has recently been included in the Bay Program’s governance document to codify the response to recommendations from advisory committees, improving internal communication flow. This attempt to codify a response seeks to address potential silence when an entity within the Bay Program structure receives a recommendation from an advisory committee, particularly in cases where the silence is a response to opinions, advice, or ideas from traditionally underrepresented stakeholders that appear to be unrelated to the Bay Program’s current outcomes (Interviewee 8, July 13, 2021).

The Bay Program listens to state partners because they have a designated role in the partnership, but it is less consistent in taking advantage of opportunities to listen to local partners and stakeholders (Interviewee 3, April 9, 2021). One interviewee said they would personally like to see more engagement at the GIT level because GITs tend to be “populated predominantly by academics and by agency people” rather than practitioners focused on resource delivery who are interacting with local stakeholders (Interviewee 11, July 21, 2021).

A weak connection between the Bay Program and action in the field creates a situation where the resources (e.g., funding) are defined by programmatic direction and may not match the needs of local stakeholders (Interviewee 11, July 21, 2021). Local resource providers can compile information and advocate for resources or resource delivery that more directly addresses stakeholder needs, but they may not be successful in those requests (Interviewee 11, July 21, 2021), especially since there is no formal avenue for requests other than through participation in the GITs, which is not always possible due to capacity and resource issues discussed below.

The Bay Program’s incorporation of larger federal programs also contributes to its bureaucratic nature and inflexibility, which creates barriers to program implementation for local stakeholders (Interviewee 11, July 21, 2021). An intensive application process or the requirement of a multi-year commitment may keep local stakeholders from participating in programs that are meant to increase resources and eliminate barriers to implementation (Interviewee 11, July 21, 2021).

The Bay Program decision-making structure is a barrier to momentum. Requests for decisions and resources across 31 outcomes are funneled to the Management Board, and then back out by Management Board members to the appropriate person within a given jurisdiction (Interviewee 3, April 9, 2021). The number of requests and handoffs contribute to a bottleneck, which may lead to loss of important information. The handoff also creates a lack of ownership for the work and impacts the timeliness of the identification and coordination of a solution (Interviewee 3, April 9, 2021). The scale of the Bay Program’s work taxes the system that it relies on to push forward decisions.

5.5.4 Lack of funding and capacity

Engagement efforts are limited by lack of funding and capacity. Workgroup coordinators and other staff within the Bay Program infrastructure are often focused on developing agendas and moving internal processes (e.g., SRS Management Strategies and Logic Plans) along (Interviewee 5, June 11, 2021). This does not leave time to support time-intensive engagement processes like public listening sessions (Interviewee 5, June 11, 2021). As one Bay Program Staff member explained, “communications and engagement is always the last thought” (Interviewee 9, July 16, 2021). Even though the Bay Program has committed to prioritizing engagement through the local government action team and DEIJ work. Even when people realize how important engagement is, it is difficult to find resources and funding to support the work (Interviewee 9, July 16, 2021). Funding for the program is appropriated through Congress and often earmarked for specific uses.

Internally, GIT projects that are based on natural science are typically chosen over engagement proposals (Interviewee 9, July 16, 2021).

Two interviewees mentioned the need for staff capacity as being as, if not more, important than additional funding resources (Interviewee 5, June 11, 2021; Interviewee 9, July 16, 2021). Within a federally funded program, the ability to hire, and then the need to train new staff after a hiring freeze, is connected to the Presidential Administration's stance on environmental work (Interviewee 7, June 18, 2021). Also, reliance on congressional appropriations means funding is often strictly earmarked for "on the ground work" (Interviewee 9, July 16, 2021) through implementation grants and is difficult to divert to priorities like engagement and DEIJ (Interviewee 5, June 6, 2021).

These interviewees also spoke about the link between grant funds and quantitative measures. Relationship-building is very qualitative, and difficult to measure (Interviewee 5, June 11, 2021; Interviewee 9, July 16, 2021). Within the grant process, it is often overlooked and, in some cases, even results in fewer points on grant applications. Granting organizations, including the Chesapeake Bay Program and its community partners, should be encouraging relationship building within grant applications (Interviewee 5, June 11, 2021). This requires a mindset change for both funders and program staff. Funders will need to reassess budget allocations to include avenues for relationship building and partnership development. Meanwhile program staff will need to negotiate normalized reporting metrics that assign value to social media posts over relationship development and in doing so reassign value to reflect the importance of meaningful engagement (Interviewee 9, July 16, 2021).

Another interviewee shared a story of successful community engagement led by a Baltimore area nonprofit. The effort included three years of funding allocated to the development of nontraditional partnerships. Organizations and leaders identified for these nontraditional partnerships were given money to use as needed, and the relationship that developed also created space for conversation around how to improve water quality in their community. As trust developed, local champions were empowered to co-create solutions within their communities, and it became clear that the community did not need a water quality 101 training, they needed to know how to get someone to address an issue they had reported to 311. The technical water quality information was less important to them than the problems they had already identified as a community (Interviewee 6, June 15, 2021). The investment in nontraditional partnerships had created trust and co-learning.

5.5.5 Barriers to participation

Four interviewees mentioned time and lack of compensation as barriers to stakeholder engagement (Interviewee 2, March 24, 2021; Interviewee 3, April 9, 2021; Interviewee 5, June 11, 2021; Interviewee 8, July 13, 2021). One interviewee talked about fearing that the Bay Program is missing the small local governments in under-resourced communities that may not have a representative that can afford a conference or to take time off, particularly if they represent an unpaid position and would need to take time off from their paid job to attend a networking or engagement event (Interviewee 2, March 24,

2021). Another mentioned that community organizations have provided feedback that attending a meeting takes precious time from the work they are doing on the ground, and they are not getting paid to do so (Interviewee 5, June 11, 2021).

The engagement required within the Bay Program infrastructure as an advisory committee, action team, or GIT member is significant, and difficult for anyone who is not essentially paid to participate due to the relevance of their job (Interviewee 8, July 13, 2021). Advisory committee members are paid for their meals, accommodations, and mileage associated with their meeting travel (Interviewee 8, July 13, 2021), but this is only so helpful for single parents or caregivers.

These realities negatively affect the Bay Program's relevancy and effectiveness. As one interviewee described it:

We are a partnership created to engage with professionals who are getting paid to do this work. And you already kind of have a built-in bias. By virtue of having been trained and involved in these conversations for many years. And maybe even a predetermined perspective that keeps things very narrow and maybe limits our innovation in terms of new solutions (Interviewee 8, July 13, 2021).

Barriers to participation for participants whose jobs do not align with Bay Program work, and even for those whose work does align, but they are unable to volunteer their time, contribute to the Bay Program's insularity.

For BIPOC participants, the rise in societal awareness of equity issues has led to many requests for representation on focus groups and committees. If "a person of color works in the environmental related field, it is likely that person has been asked to do a lot of extra volunteer work to 'help' white-led organizations with their 'DEIJ work' (Interviewee 8, July 13, 2021). The CAC's work to increase the diversity of its representation and support for BIPOC members was accelerated when a BIPOC member stepped down from their position due to the combined emotional toll of DEIJ engagement in their work and the CAC position (Interviewee 10, July 20, 2021).

Even as the CAC is undertaking significant efforts to increase its diversity by developing a new cohort intentionally inclusive of BIPOC, the Bay Program and the advisory committees still reflect a government and environmental field that is typically educated, wealthy, white, and nonimmigrant (Interviewee 6, June 15, 2021). BIPOC in these fields are often tapped for multiple opportunities that may not provide personal value proportional to their input (Interviewee 6, June 15, 2021).

5.6 Engagement Needs and Supports

Interviewees identified the practices highlighted in *Table 4* as important for both episodic and institutionalized and ongoing engagement within the Bay Program's work. Program supports exist for some of these practices. For others, more support is needed. Examples

of these practices, existing forms of support, and additional needs are discussed in more detail below.

Table 4. Local Engagement Best Practices and Supports

	What Works	Supports
People and relationship focused	Building relationships within the community, starting with a leader, and then building relationships with other residents to understand challenges (Interviewee 3, April 19, 2021, Interviewee 7, June 18, 2021; Interviewee 9, July 16, 2021; Interviewee 11, July 21, 2021)	Engagement with local decision-makers, trusted sources, and community champions leverages the Bay Program’s ability to effectively engage local stakeholders.
	Understanding local community interests and working with them to achieve their goals (Interviewee 3, April 19, 2021; Interviewee 7, June 18, 2021; Interviewee 8, July 13, 2021; Interviewee 9, July 16, 2021; Interviewee 11, July 21, 2021)	Time and resources to build relationships, meet with, and expand networks to include a diverse set of trusted sources (and include those that they reach) to inform programming, decisions, and opportunities for local stakeholder leadership.
	Regular opportunities to connect, and going to the people that need to be engaged (Interviewee 2, March 24, 2021); Interviewee 10, July 20, 2021)	
	Encouraging participation, identifying strengths and knowledge, and requesting specific help and involvement (Interviewee 10, July 20, 2021)	
Information Seeking	Avenues for communication and feedback – ongoing conversation on the progress of recommendations and decisions (Interviewee 7, June 18, 2021; Interviewee 10, July 20, 2021)	Gather information from trusted sources and user research, but also develop and operationalize procedures that extend beyond the usual stakeholders and practices to expand opportunities for two-way communication and dialogue.
	Listening and making adjustments/modifying approach based on feedback (Interviewee 3, April 9, 2021; Interviewee 11, July 21, 2021)	
Co-creation and co-learning	Developing solutions (e.g. emergency stream intervention) and tools at field level, with practitioners and agency staff – ensure technical language is broken down and steps for implementation are clear (Interviewee 2, March 24, 2021; Interviewee 7, June 18, 2021;	Bay Program successfully operates as convener. Increase opportunities for co-creation and co-learning. Invite field level staff into program development and technical and social

	Interviewee 11, July 21, 2021)	translation, allow local leadership to lead when possible
	Allowing local partners to lead (Interviewee 2, March 24, 2021; Interviewee 7, June 18, 2021; Interviewee 11, July 21, 2021)	Regular opportunities to share field successes in person with peers and with agency staff.
	Sharing successes in region – conferences, and peer to peer training events at the field level including state and federal agency staff (Interviewee 2, March 24, 2021; Interviewee 7, June 18, 2021; Interviewee 11, July 21, 2021)	
Intentional Design	Nonprescriptive engagement, listening and meeting people where they are at (Interviewee 3, April 9, 2021; Interviewee 6, June 15, 2021; Interviewee 8, July 13, 2021; Interviewee 10, July 20, 2021; Interviewee 11, July 21, 2021)	Develop program-wide engagement strategy and training resources that can be applied in a fluid and flexible manner, train new staff and advisory committee members in engagement as appropriate, operationalize the sharing of successful engagement practices internally through a system similar to the CBP Science Needs Database, or incorporate social science more intentionally into the existing database.
	Include time for education and scaffolding (Interviewee 7, June 18, 2021; Interviewee 8, July 13, 2021; Interviewee 10, July 20, 2021)	
Adequate Resources	Grant funding, internal and external – even when staff time is paid for, engagement costs add up (e.g., venue, transportation, food) (Interviewee 3, April 9, 2021); Interviewee 5, June 11, 2021; Interviewee 7, June 18, 2021; Interviewee 9, July 16, 2021)	Funding/budgets with space for staff capacity and resources focused on Bay Program engagement efforts

5.6.1 Building relationships and identifying trusted sources

There was recognition from interviewees that building relationships, trust and credibility is an important foundation of their work (Interviewee 3, April 19, 2021, Interviewee 7, June 18, 2021; Interviewee 9, July 16, 2021; Interviewee 11, July 21, 2021).

One positive support for this work is the additional Bay Program staffing added in the last few years in the form of a full-time Local Government Coordinator, Local Engagement and Diversity Coordinator, and Local Implementation Coordinator (Interviewee 7, June 18, 2021). These additional staff members contribute to the relationship building that is needed to support local engagement and diversity efforts (Interviewee 7, June 18, 2021).

Another positive support is internal recognition that relationship-building is immediate and ongoing, evidenced by the CAC's increased support for the latest cohort of new members through a robust introduction period marked by phone calls, information sharing, and questions before submitting a recommendation for membership to the Chesapeake Bay Alliance Board for approval. Relationship building is prioritized by CAC leadership as new members are integrated into their roles within the Bay Program. Advisory committee in-person meetings rotate throughout the watershed, requiring both travel and overnight accommodations, creating space for informal interaction outside of the meeting time which contributes to relationship and trust building (Interviewee 8, July 13, 2021). Similar efforts for informal interaction are made virtually through meet and greet and happy hour type gatherings between quarterly meetings (Interviewee 10, July 20, 2021). The connections made within these groups also contribute to network building, as members learn about their peers and share relevant resources to support their work or communities of place and practice (Interviewee 8, July 13, 2021).

Decision-makers have often been prioritized as a local stakeholder priority within the Bay Program (Interviewee 2, March 24, 2021; Interviewee 7, June 16, 2021; Interviewee 9, 2021). These are the people with the funds or authority to make changes (e.g., private landowners, businesses, local governments). More recent efforts have focused on trusted sources who may not have decision-making authority but are trusted sources of information for those that are making decisions (e.g., planners, universities) (Interviewee 7, June 18, 2021).

Externally, credibility is especially important to form and maintain ties with trusted sources, and between trusted sources and community stakeholders. Within the field, natural resource staff interacting within the farm setting gain credibility if they grew up in a rural area or are comfortable around fields of manure (Interviewee 11, July 21, 2021). Natural resource staff rely on relationships to increase credibility and effectiveness (Interviewee 11, July 21, 2021).

Additional time and resources allocated for relationship building, and potentially network mapping to understand gaps in existing networks, particularly in including a diverse set of trusted sources to inform programming, decisions, and opportunities for local stakeholder leadership. Additional time and resources are also needed to train local resource providers to develop relationships, listen, and collaborate with local stakeholders, particularly to assess and develop diversity within trusted sources networks to incorporate new voices.

5.6.2 Connecting local needs to Bay Program priorities

Understanding citizen and community needs to align them with Bay Program priorities requires conversations and other communication to identify what is most important within local communities, and then identifying ways that Bay Program staff can assist in developing solutions and sharing those resources via different avenues (e.g. video, webinar, newsletter, direct email) (Interviewee 3, April 19, 2021; Interviewee 7, June 18, 2021; Interview 8, July 13, 2021; Interviewee 9, July 16, 2021; Interviewee 11, July 21, 2021). For example, sharing workforce development opportunities such as green

infrastructure training so that local professionals can assist with stormwater projects rather than having small towns compete to hire civil engineers with Northern Virginia and other areas that can pay more (Interviewee 7, June 18, 2021). The Chesapeake Bay Landscape Professional (CBLP) certification is one innovative effort that developed to provide the resources that communities need to implement mutually beneficial priorities, and it is now expanded into cross state certification (Interviewee 7, June 18, 2021).

At the field level, this allows practitioners to check in about both the level of need and identify and recommend Bay Program resources (e.g., funding, technical assistance) to address needs. Often the conversation at the field level is focused on informing local landowners about various available state and federal resources, rather than on the Bay Program specifically, which contributes to the lack of program visibility. The Bay Program supports a set of tools and resources that are applied by a local practitioner (e.g., conservation district employee, resource professional) to meet community need. Outreach and engagement performed by these practitioners informs them of what the needs are and allows them to facilitate a better resource match (Interviewee 11, July 21, 2021).

Within the Bay Program, stakeholder information gathered through outreach and other types of engagement informs the products produced by the program. For example, user research and testing inform the Bay Program's production of a new website to ensure that it will be used by the public. Communication staff have recently worked to create informational components that demonstrate how investment in clean water contributes to recreation and other economic benefits to local communities. This work is based on behavior change stakeholder research (Interviewee 9, July 16, 2021). The Scientific and Technical Advisory Committee has also been discussing the need to shift to a farmer-centric approach when working to get farmers to adopt certain BMPs (Interviewee 9, July 16, 2021). The need to understand the audience and translate the Bay Program and product so that people understand what is being said and how it benefits them is critical (Interviewee 9, July 16, 2021).

Another example of engagement used in-person feedback to create more effective informational materials provided by the Bay Program. An outreach specialist worked for several years on fish consumption advisories. As part of this work, they developed an infographic, and printed it as a large-scale poster to share with the community. Community participants used sticky notes to identify sections of the infographic that were confusing or particularly effective. This positive example of effective, in-person community engagement that contributed user feedback (Interviewee 9, July 16, 2021).

Many projects that incorporate user research projects within the Bay Program have been developed recently enough that they are still being implemented and have yet to inform Bay Program operations because information is still being collected (Interviewee 9, July 16, 2021).

User research and participatory research is limited by staff capacity and available funding to hire contractors for specific research projects. For example, the Bay Program

communication team currently has one research analyst focused on the development of web or technical products (Interviewee 9, July 16, 2021).

5.6.3 Convening to learn

Interviewees identified a variety of examples of the Bay Program's success in the role of convenor. Gathering interested stakeholders and providing opportunity for peer-to-peer and experiential learning is recognized as successful engagement.

Learning tours provide an example in which the Bay Program operates as convenor. Interviewees identified two types of learning tours, including opportunities provided for both local government officials in peer-to-peer tours and for CAC members focused on a theme covered in the accompanying quarterly meeting. (Similar opportunities may be provided by GITs, workgroups, and advisory committees not directly represented in this research.) These opportunities support networking and allow for experiential learning. Government officials learn from their peers, while CAC tours contribute to understanding the variety of environments in which the Bay Program operates (e.g., farming, oyster harvesting) providing opportunities for conversation with citizens and professionals that are impacted by the Bay Program and restoration efforts (Interviewee 8, July 13, 2021). One Bay Program partner staff member reported that interactions like these break down biases and assumptions about different stakeholders within the Bay watershed and contribute to their personal job satisfaction (Interviewee 8, July 13, 2021).

Learning meetings are held between the quarterly advisory committee meetings to CAC members so that they can ask more informed questions and suggest topics for quarterly meetings and provide informed advice and guidance as CAC members. A recent CAC learning meeting focused on public health, which CAC leadership identified as a relevant topic area that lacks stakeholder representation within the current CAC membership (Interviewee 8, July 13, 2021). The meeting included a panel of five speakers, with a public health representative co-facilitating alongside the CAC chair. The speakers were external to the Bay Program, representing agencies such as the Children's Environmental Health Network, Sierra Club, and University of Virginia. In this case, the meeting was open to the public, with about 100 people in attendance, and it was recorded and hosted on the Chesapeake Bay Alliance's Website for future viewing. The public health learning meeting not only provided education for CAC members, but also revealed a lack of knowledge in the public health arena about the robust data collected by the Bay Program (Interviewee 10, July 20, 2021).

Other learning meetings are internally focused, with Bay Program scientists presenting information to CAC members (Interviewee 10, July 20, 2021). A recent topic of discussion for the CAC was improving community engagement. The committee includes many members with a limited understanding of outreach and engagement, influenced by their experience within the environmental science field where outreach is often equated with education efforts to inform the public (Interviewee 6, June 15, 2021). At the CAC meeting focused on community engagement, a lightning round of case studies allowed members with experience in grassroots organizing and community work to highlight various forms of engagement. The broad spectrum of engagement represented within

these case studies was eye opening to members who might have previously thought of newspaper articles as an effective form of engagement (Interviewee 10, July 20, 2021).

Other successful convenings allow high-level policy and agency leaders to interact and hear from field level implementers alongside peer-to-peer interaction and learning. The local government advisory committee supported local leadership roundtables where advisory committee members served as facilitators in a conversation of their peers in their local area, with the Deputy Secretary of Natural Resources in attendance for each roundtable, serving as a regulatory representative who was invested in local stakeholder voices (Interviewee 7, June 18, 2021). Another field level example includes a two-day training, in which local natural resource professionals share tools co-developed with USGS to address emergency stream intervention. The training has included approximately 2,500 people, including first responders, municipal workers, and federal and state agency staff. About 25% of participants have been agency staff, allowing for interaction between local, state, and federal stakeholders (Interviewee 11, July 21, 2021).

Bay Program staff also work to organize panels at state level conferences. Bringing various local government officials or practitioners together to discuss flooding or another relevant issue for their communities (Interviewee 2, March 24, 2021; Interviewee 7, June 18, 2021). This way, those in attendance are learning from their peers and trusted sources, and then they have more information when they make decisions in their own community (Interviewee 7, June 18, 2021).

Grant funding from NFWF and funding external to the Bay Program supports these efforts (Interviewee 7, June 18, 2021). Additional funding and focused staff capacity could contribute more opportunities like these. Sharing the success of engagement efforts internally could increase recognition and provide an opportunity for the Bay Program to increase internal understanding and leverage knowledge of best practices in planning and funding these events.

5.6.4 Cross-pollination and program-wide collaboration

There are two mechanisms for increasing communication between the advisory committees and the rest of the Bay Program infrastructure. The first is an assigned Bay Program liaison and support staff for each committee, the second is an opening for Advisory Committee Coordinators on each GIT (Interviewee 2, March 24, 2021). Two interviewees spoke specifically about the potential value of more interaction with the advisory committees internally. One interviewee stated, “I would like to see more active engagement and dialogue between the goal teams and workgroups and the advisory committee’s because there are a lot of opportunities to learn from each other as we pursue actions to implement the Watershed Agreement” (Interviewee 3, April 9, 2021).

Another interviewee talked about cross-pollination as a way for those working within the Bay Program to better connect with and understand their audience. Suggesting that if more people within the Bay program “attend[ed] the Local Government Advisory Committee meeting to listen to what local governments are talking about or concerned about, because I think that’s a pretty big breakdown” (Interviewee 2, March 24, 2021).

The interviewee noted Bay Program staff and members tendency to assign needs to stakeholders rather than first hearing from stakeholders to identify their needs. This seems to support the idea that having a non-stakeholder group representative (i.e., Advisory Committee Coordinator) interact on behalf of the advisory committee is less beneficial to the social learning than interaction with the stakeholder group itself.

One CAC member spoke about a helpful trend within the last year or two of the three advisory committees working together and coordinating their recommendations. They have also overlapped their meeting schedules for a day so that they can ‘cross-pollinate’ and the hope identified by this interviewee is that “our voices become collectively stronger because we’ve coordinated across the three [committees]” (Interviewee 10, July 20, 2021).

Another interviewee mentioned recent efforts have been made to strengthen the relationship between the Bay Program and NFWF as a program partner. An EPA staff person serves as liaison for the NFWF grant program, facilitating communication between the Bay Program and NFWF. Representatives from NFWF have recently attended coordinator and staff meetings (Interviewee 5, June 11, 2021).

Although it was not mentioned by interviewees, the CBP Science Needs Database serves as a mechanism to track science needs within the Bay Program partnership. A quick search reveals that a few social science needs (e.g., training, engagement resources) have been tracked within the database. However, the database appears to be designed to track and report on natural science needs, due to the way science needs are identified for entry in the system. There are three avenues for identification: 1) by goal implementation teams, 2) through the strategy review system, or 3) through Scientific and Technical Advisory Committee (STAC) workshop report systems (STAR, 2021). A webpage dedicated to the system states that “CBP uses this database to engage stakeholders, identify opportunities to better align or evolve resources, update activities and workgroups to address needs, and inform STAC of research priorities” (STAR, 2021).

Chapter 6 - Discussion and Research Implications

6.1 Strategies Operationalizing Engagement

Opportunities exist to operationalize engagement with the Bay Program in ways that intentionally invite and support participation and inclusion from the full diversity of watershed residents.

6.1.1 Operationalizing DEIJ in engagement

Within the infrastructure, the Citizen’s Advisory Committee has already begun this work, making an effort to invite and support a racially diverse cohort by recruiting outside of insular networks to include new voices, and prioritizing relationships to increase trust to support inclusion.

The Local Engagement Strategy is a tool that can assist GIT teams and others within the Bay Program infrastructure to frame and operationalize engagement with local stakeholders. This strategy can be used to both reach the highest number of local stakeholders, and to target underrepresented groups (inclusive of under resourced local governments). As written, it will likely be used to reach the highest number of local stakeholders, but it could be reframed to intentionally prioritize engagement with underrepresented groups which has been recognized as a priority by the Bay Program in their DEIJ Strategy and various Outcome Management Strategies (e.g., Local Leadership, Citizen Engagement, and Diversity).

Intentional strategies to reach outside of insular networks to identify participants can increase diversity among those engaged. This is true particularly in the case of identifying trusted sources. Additionally, trusted sources are usually identified and vetted through brainstorming with peers and network scanning, which has the potential to create more insularity in an already insular network. One way to counteract this is to intentionally develop trusted sources that are engaging with underrepresented communities such as the group Maryland Black Mayors, a potential trusted source identified through Bay Program engagement efforts.

The Bay Program governance document recognizes that the Executive Council is “accountable to the public for progress made under the Bay agreements” (p. 6). As a government funded program, part of that accountability is acknowledging the ways in which its organizational structures, and engagement strategies create barriers to inclusion, or overlook exclusion.

6.1.2 Engaging through trusted sources

Meaningful engagement supported and ideally led by trusted sources can complement the current governance structures and capacity of the Bay Program. The Bay Program in communicating through trusted sources is leveraging relationships, which makes sense given limited capacity and engagement needs. Bay Program staff are unable to build relationships with everyone, so working to communicate and engage with local

stakeholders through clusters is a practical strategy. Identifying additional audiences, such as non-profit organizations, community representatives, or technical service providers, is the first step in tailoring the Local Engagement Strategy, which was piloted with local officials, to a new audience with different interests.

A potential issue with the use of trusted sources as trust brokers is whether or not the Bay Program has chosen the right, or the most representative, brokers. There can also be trust issues related to brokerage, as well as issues of competency and bottleneck.

Benefits of working with trusted sources include the potential to increase trust within the network through new ties between Bay Program representatives and local stakeholders facilitated through trusted sources, creating network closures which builds trust and efficiency (Burt, 2000; Obstfeld et al., 2014). To fully activate this trust building, the Bay Program would need to create avenues for relationship building (i.e. two-way interaction) with local stakeholders as well as the trusted sources that provide initial introduction to these stakeholders.

6.1.3 Cultivating two-way communication

There is an opportunity to cultivate two-way communication internally and externally within the Bay Program. The current Bay Program infrastructure is not built for back-and-forth information flow, which impacts the motivation for engagement and the ability to listen to partners and local stakeholders. Gaps in communication between various levels within the Bay Program's multi-layered structure can create confusion, and lead to mistrust. Increased local stakeholder engagement would support increased information flow between those developing implementation plans and resources and those implementing the work.

The Local Engagement Strategy's focus on trusted sources is a great foundation, particularly in its identification of actors and appropriate methods of message relay, but despite the two-way arrows in the flow chart included in the plan, the overall language and emphasis of the document appears to be one-way communication.

Identification of local government leaders (and other local stakeholders) as "The Audience" fails to recognize the local or experiential knowledge that they bring to the exchange. Likewise, identifying Bay Program workgroups and committees as "The Translators" and trusted sources as "The Deliverers" fails to recognize the translating role often undertaken in local resource delivery, and has the potential to reinforce one-way communication within engagement.

Interviewees spoke of the importance of reciprocal relationships and two-way communication within local engagement efforts, but the language and focus of the Local Engagement strategy tool could serve to reinforce one-way communication mindsets within engagement. Highlighting the importance of two-way communication in the Local Engagement Strategy beyond the small two-way arrows within the graphic could assist the Bay Program in cultivating increased input and feedback from local

government and other populations targeted for engagement, as well as invite more co-creation with local stakeholders.

6.1.4 Opportunities to unify engagement efforts across the Bay Program

The Bay Program has developed a variety of engagement best practices within GITs, and workgroups, but lacks a comprehensive engagement strategy and mechanism for sharing best engagement practices and learning internally, training staff in relevant local engagement protocols, or inviting advisory members to contribute more impactfully to the Bay Program's local stakeholder engagement efforts.

Outcome Management Strategies document the engagement efforts related to each outcome, but a comprehensive view of engagement at the GIT and workgroup level requires scanning each of these 31 documents for the relevant information. Currently the sharing of engagement best practices across outcomes appears to be rare, and largely dependent on GITs or workgroups initiating contact with other workgroups, often with a heavy lift for the local government, citizen stewardship, communication, and diversity workgroups.

6.2 *Structure Institutionalizing Engagement*

There are several components of the Bay Program's structure that contribute to institutionalizing engagement. These include the Advisory Committees, the Local Government and Diversity Workgroups that focus specifically on engagement goals and contribute to the DEIJ Strategy and the Local Engagement Strategy. The Bay Program infrastructure's characteristics and culture impact meaningful engagement.

6.2.1 Improved internal communication builds trust

Recent edits to the governance document have worked to improve communication flow by codifying a process of response to advisory committee position letters and input within the Bay Program. Information and communication flow between advisory committees and other groups within the Bay Program's infrastructure strengthen relationships and build trust within institutionalized engagement, which is critical to ensure sustained interest in engagement by participants.

6.2.2 Opportunities for internal collaboration and co-creation

The Advisory Committees are underutilized as stakeholder experts. Advisory committee meetings serve as opportunities for engagement and social learning for committee members and guest participants. However, the Bay Program lacks full integration of the CAC (and other advisory committees) into its infrastructure. Beyond overlap with their professional interests, advisory committee members have few incentives to participate in GITs and workgroups, even though their participation in these groups has the potential to strengthen sub-network ties and communication within the Bay Program's infrastructure. Advisory Committees are not represented in the strategy review system, and work to identify their own priorities.

Increased communication and interaction improve the likelihood of social learning and the development of informal networks that contribute to learning within the Bay Program.

6.3 *Networks Supporting Engagement*

Cultivating a strong and diversified network to support local stakeholder engagement, and particularly inclusive stakeholder engagement is key within the long-range planning process.

6.3.1 Supporting engagement through collaboration and network learning

The network documentation during the 2014 Chesapeake Bay Agreement process and its later use within the Comprehensive Water Resources and Restoration Plan demonstrate the usefulness of networks in supporting engagement. The successful engagement of local stakeholders through both thin and thick participation practices developed resources and learning that could be intentionally harnessed and shared for future engagement. Analysis of network development during the 2014 Chesapeake Bay Agreement and the Comprehensive Water Resources and Restoration Plan processes illustrates the importance of network ties to access local knowledge in large-scale engagement efforts led by the Bay Program and its partners. The importance of networks to successful local stakeholder engagement within these program-wide examples is clear.

As the Bay Program shifts to increase its capacity to respond to the human dimensions of natural resource management, creating mechanisms that highlight and promote learning (e.g., that could benefit the program, and operationalize the sharing of those practices internally could encourage program and network learning. A positive example of this is the development of the Local Engagement Strategy which identifies trusted sources as the ideal conveyor of messages to local stakeholders.

The Scientific, Technical Assessment, and Reporting (STAR) database makes research needs visible to outside researchers (e.g., academic institutions, citizen science programs) interested in collaborating with the Bay Program. Given these goals, it would make sense to incorporate social research needs, and explicitly name this on the introductory webpage and other program documents to encourage the generation of social science research needs. Citizen and Local Government Advisory Committees could also be included in making resource development or research recommendations that might not be captured by the Scientific and Technical Advisory Committee (e.g., the need for additional research and resources on network and relationship building). There is a need for additional engagement support and resources to increase inclusivity, and tracking these needs is the first step to their development.

6.3.2 Strengthening and diversifying networks to support engagement

Cultivation of relationships within the Bay Program leads to stronger internal and external network ties. Engagement with local decision-makers, trusted sources, and community leaders leverages the Bay Program's ability to effectively engage local stakeholders. Investment in external relationship building is key to the Bay Program's success. A better understanding of the Chesapeake Bay's network through mapping and analysis could be used to leverage resources and learning at the program level to support and guide episodic local engagement efforts. A strong network provides incentives for participation, particularly if network ties are used to continually increase access to, and relevance of, information and resources.

The need to extend the Bay Program's networks is evidenced by several references to insularity within the Bay Program in research interviews and Program documents, as well as the reliance on trusted sources within the Local Engagement Strategy. By relying heavily on trusted sources developed through formal networks, the Bay Program is reliant on these networks to reach across the diversity of the Bay watershed's population. Yet many of these trusted sources are government or quasi-government organizations that may lack diversity due to a tradition of systemic exclusion. The Bay Program has an opportunity to further develop the Local Engagement Strategy through a DEIJ framework to 'vet' trusted sources and increase efforts to develop relationships with trusted sources that are already connected to underrepresented populations and communities. Attention to this issue is ongoing, but it has yet to be addressed in an operationalized manner.

6.3.3 Role of informal subnetworks

The Local Engagement Team, Citizens Advisory Committee, and DEIJ Action Team function as informal subnetworks within the Bay Program. They meet Pahl-Wostl's (2009) three characteristics of networks engaged in learning cycles. Each is allowed some form of self-governance, they are issue specific, and they serve as communities of practice. These informal subnetworks are generating ideas and innovative solutions as they engage in double loop learning, creating avenues for network learning when efforts to establish social learning within the partnership have fallen short.

Their innovative solutions will eventually require Bay Program leadership approval to be codified, but the social and network learning that is occurring as they work to come up with solutions contributes to the program's effectiveness, in both engagement and as a whole.

6.4 Summary

The Chesapeake Bay Program is one of the oldest and largest examples of networked governance in natural resource planning and management, incorporating seven jurisdictional signatories, federal agencies, local governments, regional and local nonprofits, and the 18 million people that live within the 64,000 square mile watershed. The Bay Program's institutionalized inclusion of local stakeholders (e.g., citizens, scientists, local governments) through advisory committees and goal implementation

teams, the renewed focus on engagement in the 2014 agreement, and its ability to operationalize environmental science learning through its adaptive management approach make it an interesting case study to understand engagement and potential barriers to engagement withing collaborative governance networks.

This research has explored and characterized local stakeholder engagement within the Bay Program. Institutionalized and ongoing engagement happens through the Advisory Committees, Goal Implementation Teams, workgroups, and staffing, which are built into the Bay Program's structure, and wider institutional infrastructure more generally. Direct local stakeholder engagement is episodic, which is appropriate due to the current governance, scale and goals of the Bay Program's work. Bay Program engagement efforts vary across GITs, workgroups, and action teams, depending on their focus. Internal conversations have worked to separate one-way communication from engagement efforts that are two-way, but this distinction may not be fully adopted throughout the program.

A DEIJ Strategy has been approved by Bay Program leadership and a Local Engagement Strategy, focused primarily on message translation and delivery to external local stakeholder audiences, is being piloted with local governments. The DEIJ and Local Engagement Strategies seek to operationalize engagement concepts. The DEIJ Strategy work has surfaced conversations about meaningful engagement, and Bay Program partner staff working on local engagement are working to increase diverse representation among their trusted sources. A GIT project exploring ways to better include underrepresented populations through engagement has the potential to inform, and potentially merge components of both strategies. Continued definition of engagement goals, values, and roles is critical to the Bay Program's success.

'Social science,' which this research interprets to be a thorough understanding of human behavior and a capacity to relate to various stakeholders, is foundational to effective communication and the behavior change required to meet the Bay Program's goals. Behavior change and effective engagement require authentic interaction that meets people where they are, but this is a major shift from the way the Bay Program operates.

The Bay Program faces engagement challenges due to its complexity, lack of role clarity, multi-layered structure, lack of funding, and barriers to participation. Despite these challenges, Bay Program interviewees identified effective best practices and supports including building relationships and working through trusted sources, connecting local needs to Bay Program priorities, acting as a convenor, and increasing cross-pollination.

The Local Engagement Team, Citizens Advisory Committee, and DEIJ Action Team function as informal subnetworks within the Bay program, generating ideas and innovation that contribute to social learning within the network. Two significant program-wide local stakeholder engagement efforts undertaken around the 2014 Agreement exemplify the advantage of documenting and strengthening network ties within the Bay Program to support local stakeholder engagement. Local stakeholder engagement supports social learning that is essential to the Bay Program's success.

The Bay Program's progress within the natural sciences to identify best management practices (BMPs), technical resources, and programs to restore the Chesapeake Bay has been impressive. But this learning rooted in natural science has failed to spur the collective action necessary to successfully translate it into action. The need for more effective engagement with local stakeholders, the people that the Bay Program depends on to reach its goals, is clear. Participation and inclusion supported through institutionalized and ongoing and episodic engagement has the potential to increase social learning, which is required for behavior change. Developing spaces for increased feedback and co-creation and co-learning may produce more efficient behavior change, although it also may expand the focus of the Bay Program's work or necessitate the redefinition of its structure in order to more effectively address community needs.

The Local Engagement Team, Citizens Advisory Committee, and DEIJ Action Team function as informal subnetworks within the Bay Program, generating ideas and innovative solutions as they engage in double loop learning, creating avenues for network learning when efforts to establish social learning within the partnership have fallen short.

Leaders and informal knowledge networks can prepare systems for change (e.g., incorporation of 'social science', inclusion of more diverse voices, alternative methods of decision-making) by testing alternative methods and strategies to help decide potential futures (Pahl-Wostl, 2009). The Bay Program has experienced a high level of change and uncertainty in the last few years as it faced an unsupportive presidential administration, an increase in social awareness regarding environmental justice and equity, the rising impacts of climate change, and a fast-approaching 2025 milestone that leaves much to be accomplished. Yet amidst that change, the partnership is continuing its work, and trying to improve its capacity to do the work well through both network and social learning.

6.5 Recommendations for the Future

I recommend the following actions to supplement existing Bay Program engagement efforts: prioritize DEIJ considerations in engagement design; clarify engagement goals and values, and clearly defines roles; strengthen networks to support diversity in participation and inclusion; create mechanisms to operationalize engagement learning; and regularly evaluate engagement practices.

6.5.1 Prioritize DEIJ considerations in engagement design

It can be difficult to incorporate DEIJ after a strategy, structure or network is in place. Because engagement seeks to equitably include a diversity of stakeholders in decision-making practices, prioritizing a DEIJ framework when developing a new engagement structure, strategy, or network makes sense. Although it is tempting when designing local stakeholder engagement to prioritize opportunities that engage the most stakeholders, engagement efforts designed to engage underrepresented groups and those with fewer resources and more barriers has the potential to contribute to more inclusive resource production and provision by raising the baseline of services for all. Intentionally

developing engagement strategies that prioritize underrepresented groups and those with fewer resources and more barriers necessarily creates a more inclusive strategy.

6.5.2 Clarify engagement goals and values, and clearly define roles

A government funded regional partnership must clarify what it hopes to achieve through local stakeholder engagement, and how to best achieve these goals. Clarifying engagement values helps shape engagement strategies to reflect what is most important to the partnership. Clearly defining jurisdictional and partnership staff roles within engagement assists in enacting goals and priorities. Increasing avenues and spaces for two-way communication has the potential to create collaboration, creativity, and a sense of ownership in the partnership's work. Feedback, co-creation, and co-learning facilitated by a diverse representation of stakeholder voices may produce social learning that contributes to behavior change. Including avenues for participation and spaces for inclusion may change and expand the partnership's understanding of its work or redefine its structure in order to address community needs more effectively.

6.5.3 Strengthen networks to support diversity in participation and inclusion

Networks are a powerful tool for engagement within regional partnerships. Within the Bay Program, and the natural resource management field more generally, networks tend to be insular. Networks accessed by government partnerships are often dependent on existing institutions and formal networks that may lack diversity due to traditions of systemic and systematic exclusion. Intentional expansion of these networks, particularly in terms of their racial and economic diversity, can create avenues for increased network and social learning through participation and inclusion of new stakeholder voices.

6.5.4 Create mechanisms to operationalize engagement learning

The human dimensions of natural resource management, and the need for participation and inclusion within networked governance requires mechanisms that accessibly highlight and promote network and social learning (e.g., engaging through trusted sources). Mechanisms can help improve engagement by operationalizing and institutionalizing research, resource development, and learning within partnerships, networks, and communities, and support adaptive management principles.

6.5.5 Regularly evaluate engagement practices

The Bay Program, and other regional partnerships must think critically about their role in engagement. Regular evaluation and integration of new information (e.g., the results of the GIT funded project) will likely produce new learning regarding best practices for engagement of underrepresented communities, and other local stakeholder groups. This knowledge should be incorporated into a comprehensive engagement strategy and practices, allowing them to evolve with the partnership.

6.6 *Future research suggestions*

I recommend the following areas for future research: identification of structural and policy barriers to inclusive practices; exploration of opportunities in engagement and

resource distribution; and investigation of white supremacy within governance processes and norms.

6.6.1 Identification of structural and policy barriers to inclusive practices

Government funded programs may incorporate top-down approaches, hierarchy, and bureaucracy. These governance characteristics create challenges to DEIJ, behavior change, and engagement goals that are increasingly common within government funded regional partnerships. Hügel and Davies (2020) and Quick and Feldman (2011) discuss the limitations of program structure on inclusive engagement practices, innovation, change, and the incorporation of social learning. Pahl-Wostl (2009) has found that polycentric governance arrangements that decentralize decision-making and balance top-down and bottom-up attributes increase governance adaptability and learning and are less impacted by disturbance. There is a research need to further examine structural and policy barriers to integration of inclusively driven input and design (e.g., co-learning and co-creation) in the governance of regional partnerships, as removing or reducing these barriers may increase partnership effectiveness and efficiency through social learning.

6.6.2 Exploration of opportunities in engagement and resource distribution

Although resource distribution (e.g., grant funding) is mentioned throughout this research, the relationship between resource distribution and community need, and potential engagement are not fully explored due to a narrowed project scope and the complexity of funding within the program partnership. Since this research began, the Chesapeake Bay Environmental Justice and Equity Dashboard (Beta) added a map view that shows the distribution of NFWF grant awards alongside map layers such as ‘percent people of color’, ‘percent low income’, and ‘percent in linguistic isolation’ which would provide rich data for future research as communities reflecting these characteristics tend to experience compounded environmental stress. The EPA’s CBPO (Chesapeake Bay Program Office) grant guide includes a reference to the CBPO’s intention to “work with partners on including DEIJ and environmental justice criteria in grant targeting and evaluations as part of the 2022 Grant and Cooperative Agreement Guidance” (CBPO, 2020), updated based on the Executive Council’s commitments in the DEIJ Statement (CBP, 2020a). More generally, there is a need within the natural resource management field to better track resource distribution, build strategies to reserve resources for communities impacted by environmental injustice, and incorporate stakeholder voices in identification of funding priorities. Research regarding best tools and practices to meet these needs and ongoing evaluation of these methods and their impact is needed. This research could lead to widespread changes in natural resource management contexts.

6.6.3 Investigation of governance norms driven by white supremacy

One issue that was raised by this research in relation to grant funding was the way in which institutions prioritize quantitative data over qualitative data as a sign of program success. Anti-racism practitioner Tema Okun (2000) draws on the work of Daniel Buford to name this emphasis on quantity over quality as a characteristic of white supremacy culture in our institutions. This issue is particularly relevant within government institutions and programs working to incorporate inclusive engagement and DEIJ practices. Okun provides some antidotes to the characteristics of white supremacy culture identified. More generally, there is a need to increase research and critical cultural understanding to identify governance norms (e.g., grant award criteria) driven by white supremacy, which may needlessly stand in opposition to identified program goals and values (e.g., inclusive engagement).

Chapter 7 - Conclusion

Lessons learned within the Bay Program from integrating adaptive natural resource management with adaptive local stakeholder engagement practices to meet its goals, and the challenges it faces, may be helpful to other regional programs seeking to effectively engage with local stakeholders and increase social learning. The strategies, structures, and networks that support its engagement work are impacted by the overall program structure's strengths and weaknesses. Attention to these strengths and weaknesses—including the potential of excluding underrepresented groups through chosen governance structures and adaptive management frameworks—has the potential to provide space for adjustments to improve engagement through new or strengthened structures, strategies, and networks to accomplish partnership goals more effectively.

Institutionalized and episodic engagement allow for a mix of 'thick' and 'thin' engagement methods to reach more stakeholders. In insular networks, intentional cultivation of new structural arrangements, strategies, and networks that include underrepresented groups that have been systemically excluded is key to maintain relevance and engage local stakeholders in the partnership's work.

Structures and strategies that support network and social learning are important components of effective partnerships facing high levels of complexity, change, and uncertainty. Institutionalized and episodic engagement can be spaces for participatory and inclusive practices that have the potential to increase social learning, which is required for behavior change. Leadership and informal knowledge networks can prepare systems for change (e.g., incorporation of 'social science', inclusion of more diverse voices, alternative methods of decision-making) by testing alternative methods and strategies to help decide potential futures (Pahl-Wostl, 2009).

7.1 Applying findings to planning practice

This thesis has explored local stakeholder engagement in complex networked governance and adaptive management structures. It has given particular attention to adaptive capacity, multi-level learning, and stakeholder engagement and inclusion processes organizations engaged in transboundary environmental planning employ for effective governance.

The findings are relevant to local stakeholder engagement in applications of networked governance and adaptive management arrangements in environmental and natural resource planning. These findings are particularly relevant to regional partnerships like the Chesapeake Bay Program, which are funded at the federal or state level, have a centralized decision-making structure, and are seeking to engage local governments and other local stakeholders more fully.

The findings are potentially relevant in other planning and public administration contexts where multi-level governmental partnerships and networked governance models address various complex or ‘wicked’ problems.

The recommendations, stripped of the Bay Program details are relevant for any networked governance engagement strategy, although a different partnership may prioritize them differently.

Allow DEIJ framework to guide engagement
Clarify engagement goals, and values, and clearly define roles
Create mechanisms to operationalize engagement learning
Strengthen networks for inclusive ongoing input and feedback
Regularly evaluate of engagement practices

The areas of future research are relevant outside of the Bay Program, with potential implications in various planning and public administration contexts.

Identification of structural and policy barriers to inclusive practices
Exploration of opportunities in engagement and resource distribution
Investigation of governance norms driven by white supremacy

Interview Dates

Interviewee	Date of Interview
Interviewee 1	March 3, 2021
Interviewee 2	March 24, 2021
Interviewee 3	April 9, 2021
Interviewee 4	April 19, 2021
Interviewee 5	June 11, 2021
Interviewee 6	June 15, 2021
Interviewee 7	June 18, 2021
Interviewee 8	July 13, 2021
Interviewee 9	July 17, 2021
Interviewee 10	July 20, 2021
Interviewee 11	July 21, 2021

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Appendices

Appendix A Documents Reviewed

	Chesapeake Bay Program
Agreement	2014 Agreement (amended 2020)
Structure	How We're Organized
Budget	State and Federal Spending (Chesapeake Progress) Bay Program Funding and Financing
Stakeholder Engagement Assessment	2015 Stakeholder Assessment Management Strategies: Citizen Stewardship Outcome Local Leadership Outcome Diversity Outcome
Local Stakeholder Engagement Strategy	Bay Program Local Engagement Strategy
DEIJ	DEIJ in the CBP (PPT) Restoration from the Inside Out: A Diversity, Equity, and Inclusion, and Justice Strategy for the Chesapeake Bay Program PSC Endorsement of the DEIJ Strategy for the CBP - unsigned DEIJ Strategy Implementation Plan CBP Environmental Justice and Equity Dashboard (beta)
Work Plans and Meetings <i>Note: all Bay Program meetings are public - with recordings and meeting notes available on the Bay Program's website</i>	Relevant GIT work group plans and meeting notes Relevant Management meeting notes
Grants	Chesapeake Bay Stewardship Fund (NFWF) U.S. Environmental Protection Agency Chesapeake Bay Program Office 2021 Grant and Cooperative Agreement Guidance NFWF Grant Distribution, CBP Environmental Justice and Equity Dashboard (beta)
Research Database	STAR Needs Tracking

Appendix B Semi-Structured Interview Questions

1. Who would you say are your most critical stakeholders?
2. How do you typically engage with your stakeholders as decisions are made? Is there a good example of a process you were involved with?
3. What factors guide how you approach stakeholder engagement?
 - a. Formal rules and requirements?
 - b. Perceived norms?
 - c. Best practices picked up along the way?
 - d. Other factors?
4. How does information gathered from stakeholders inform your work?
5. Are there any stakeholders that you are not engaging?
6. In what ways do your engagement activities deviate from mandated approaches to stakeholder engagement? Why?
7. Are underserved communities intentionally engaged through local stakeholder engagement structures, strategies, and networks? If so, how?
8. Is there a particular example or story that stands out for you of when things have gone well (or not) regarding local stakeholder engagement and incorporation of local stakeholder feedback?
9. What barriers do you encounter when engaging local stakeholders and working to incorporate their feedback? Have you had success overcoming those barriers?
10. What change(s) would you like to see to improve stakeholder engagement, or to support feedback processes? Why?
11. Is there a question I should have asked and did not?
12. Is there anyone else you think I should talk with?

Appendix C Condensed Codebook

Category	Theme	Consolidated Codes
Engagement necessary to support outcomes	Behavior Change and Social Science	Need to do more than package information
		Need for message translation
		Communication for behavior change (social marketing)
		Research to understand needs and assist decision making
Structure is a challenge to engagement	Program complexity	Complicated structure
		Tension of stakeholder inclusion, and ability to speak to natural science issues (Bay Program's base)
		(Infra)Structure/governance insular
		Flexibility vs. independence (role definition)
	Structure	(Infra)structure not built for two-way communication
		Program hierarchy, bureaucracy, and sluggishness
Availability of resources is a challenge to engagement	Lack of resources (participants)	Local governments under-resourced
		Volunteer (unpaid) vs. work participation (paid)
		Time, energy, education/knowledge, language
	Lack of funding and capacity (Program)	Engagement not prioritized in funding
		Program/grants do not recognize value of relationship building
Engagement practices and supports (what works)	Adequate resources	Outside grant funding
	Co-creation and co-learning	Field level development and implementation
		Allowing local implementers to lead
		Sharing success: Peer to peer, field level interacting with agency staff
	People and relationship focused	Focus on community interests and goals, match Bay Program and stakeholder priorities and benefits
		Building relationships, trust, and credibility
		Regular and targeted connection
		Encourage participation based on strengths and knowledge
		Avenues for communication/feedback
		Listen and adjust based on feedback
	Fluid and flexible	Fluid engagement strategy
		Flexible solutions, less prescriptive
	Strategic	Role definition (Bay Program and jurisdiction)
		Bay Program as convenor
		Prioritize decision-makers
		User research
	Intentional design	Time for education
		Communicate engagement intent and expectations
Set tone for active engagement		
Bay Program engagement (institutionalized and ongoing)	Advisory committees	Communication
		Innovation
	GITs and workgroups	Local Government and Diversity workgroups
	DEIJ Strategy	DEIJ Action Team
		Efforts to operationalize DEIJ (e.g., CAC)
		Diversity workgroup GIT funded project focused on engaging underrepresented populations
	Engagement strategy	Trusted sources for information

	(trusted sources)	Community champions
Bay Program engagement (episodic) + network support	Engagement examples (program wide)	2014 Agreement
		Contribution to the Army Corps of Engineer Plan
Bay Program engagement (opportunities)	Opportunities within roles (staff and partners)	Identifying stakeholders, are the right people being engaged, strength of relationship, providing with what they need?
		Provide data to decisionmakers
	Adaptive Management (program)	Defining or shaping funding
		Potential modifications to existing structure