

**REDEFINING THE NETWORK MANAGEMENT MODEL
FOR COLLABORATIVE PUBLIC POLICY-MAKING:
THE CASE OF MARYLAND'S ACCOUNTING FOR GROWTH NETWORK**

by

Sonia Lorelly Solano

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Urban Affairs and Public Policy

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DEDICATION

This dissertation is dedicated to three men who make me reflect upon my origins, my place in the world, and my purpose. To my father, Lino, who taught me the values of hard work, humbleness and perseverance. To Andrew, who makes me love and appreciate the present. And to Ernesto, who motivates us to be better every day.

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LIST OF ABBREVIATIONS

- AFG/AfG: Accounting for Growth
- BMPs: Best Management Practices
- CAVR: Clean Air Interstate Rule
- CBF: Chesapeake Bay Foundation
- CBP: Chesapeake Bay Program
- CCWC: Choose Clean Water Coalition
- CSOs: Combined Sewer Overflows
- CWA: Clean Water Act
- ESD: Environmental Site Design
- MDA: Maryland Department of Agriculture
- MDE: Maryland Department of the Environment
- MDNR: Maryland Department of Natural Resources
- MDP: Maryland Department of Planning
- Metro: Metro High School
- MS4: Municipal Separate Storm Sewer System
- NPDES: National Pollutant Discharge Elimination System
- NPM: New Public Management
- NPG: New Public Governance
- NPS: New Public Service

- ODNRA: Oregon Dunes National Recreational Area
- POSDCORB: Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting.
- STEM: Science, Technology, Engineering, and Math
- The Bay: Chesapeake Bay Watershed
- TMDL: Total Maximum Daily Load
- UNESCO: United Nations Organization for Education, Science and Culture
- USEPA: United States Environmental Protection Agency
- USGAO: United States Government Accountability Office
- WIP: Watershed Implementation Plan
- WQS: Water Quality Standards

ABSTRACT

Collaborative public networks have become an important governance mechanism to promote change and enhance the effectiveness of the public sector. Research indicates that, despite their potential to produce better outcomes, public networks can also yield failure, thus precluding the development and implementation of effective solutions to public problems. It is anticipated that, through a better understanding of management process, public policy networks could optimize their operation, in order to achieve intended outcomes.

This research was conducted as a qualitative single case study with multiple units of observation, featuring the work of the Accounting for Growth (AFG) network. The purpose of the study was to test the applicability of McGuire and Agranoff's (2014) network management behaviors framework in a public policy network, and to uncover the processes and approaches used to achieve common understanding, agreement, and decision-making capacity. The sources of information were direct input from participants, public documents and audio recordings. Data analysis consisted on coding the data, creating categories, and developing categories and themes.

The findings of this research supported the partial applicability of the network management behaviors framework and recommended the expansion of the model to better reflect the operational context of public policy networks. Such expansion operationalizes the moves and countermoves, actions and adjustments that characterize network management, as inferred from the experience of the AFG

network. The empirical observations collected in this research were integrated into three general processes: formal and informal learning, systematic problem solving, and flexible and dynamic decision-making.

Chapter 1

INTRODUCTION

Collaborative public networks have become an important governance mechanism in today's democracy to promote change and enhance the effectiveness of the public sector. Public policy networks, in particular, bring together people from diverse sources and backgrounds to address issues that trespass the boundaries of policy domains, political and administrative jurisdictions, and the different interests of society.

Networks are “structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement” (O’Toole, 1997, p. 45). The connections among people, programs, and organizations are typically the central characteristic that brings the parts together for the purpose of implementing public policy (Milward & Provan, 2006). These emergent structures are considered flexible and adaptable, and with greater potential than hierarchies or markets to respond to the most intricate needs and challenges of society. However, despite their potential to produce better outcomes, networks can also yield failure, due to action barriers that require further analysis (McGuire & Agranoff, 2011).

This research seeks to contribute to the ongoing development of theory by identifying processes and mechanisms to attain common understanding, agreement and decision-making capacity in public policy networks. It is anticipated that the

knowledge generated from this research may help to elucidate ways to promote collaborative advantage and effectiveness.

This chapter presents a brief overview of the context and background that frames the study, the problem statement, statement of purpose, research questions, and a description of the research approach. It concludes with an explanation of the organization of this dissertation.

1.1 Background and Context

While there has been a proliferation of public networks and research during the last three decades, collaborative public networks still struggle to achieve collaborative advantage and effectiveness. Therefore, there is a need to support practice through the construction of a “coherent theoretical framework informing their optimal design, governance arrangements and management, and the development of different mechanisms for evaluation” (Mandell, 2014, p. 3).

The foundations of a distinctive public sector network theory have been established (Keast, Mandell, & Agranoff, 2014). Building upon this scholarship, this research seeks to contribute to the ongoing construction of theory by expanding our knowledge about management processes and approaches to attain common understanding, agreement and decision-making capacity in public policy networks.

1.2 Problem Statement

Research indicates that collaborative public networks are promising, yet fragile governance structures. Despite their potential to produce better outcomes, public networks can also yield failure, thus precluding the development and implementation of effective solutions to public problems. More information is needed to understand

how to enhance network management effectiveness, in pursuance of collaborative advantage.

1.3 Statement of Purpose and Research Questions

The purpose of this research was to test the applicability of the network management behaviors framework (McGuire & Agranoff, 2014) in a public policy network, and to identify the processes and approaches used to achieve common understanding, agreement, and decision-making capacity. The study revolves around the work of Maryland's Accounting for Growth (AFG) network.

It is anticipated that, through a better understanding of management process, public policy networks could optimize their operation, in order to achieve intended outcomes. To uncover this knowledge, this research has established four general research questions:

- Did the AFG network exhibit the four management stages described in the network management behaviors framework (McGuire & Agranoff, 2014)?
- If network participants reached common/mutual understanding, how did they do it?
- If network participants reached agreement, how did they do it?
- If network participants reached the ability to make joint decisions, how did they do it?

These general questions were explored through the assessment of theoretical propositions and specific questions (see details in Section 3.5).

1.4 Research Approach

After satisfying the requirements of the University of Delaware's Institutional Review Board, this study was conducted as a qualitative single case study with

multiple units of observation, in which theoretical propositions derived from McGuire and Agranoff (2014) network management behaviors framework were examined. Alternative explanations were formally considered through the use of secondary theoretical frameworks.

The case study selected for this research is the work of the AFG network, which was part of Maryland's AFG policy initiative. The AFG policy project was envisioned as a component of Maryland's Watershed Implementation Plan (Maryland, 2010), with the purpose of addressing the "increase in the State's pollution load from increased population growth and new development" (MDE, n.d.-a). The research focused on past events (regarding the formation and operation of the network).

The sources of information were public documents, audio recordings, and the perspectives of network participants, which were obtained through interviews and/or written questionnaires. The stage of analysis consisted on coding the data, creating categories, and developing themes. Data analysis relied on the formal assessment of theoretical propositions and the examination of alternative explanations. Pattern matching was utilized as analytical technique. The data were utilized to reject, refine, further develop, and/or complement the previously defined theoretical propositions. The multiple units of observation allowed reaching a satisfactory level of data saturation and triangulation of findings. Public documents and recordings were particularly useful to expand the level of inference, identify illustrative examples, and discern some interaction subtleties not fully acknowledged by participants.

1.5 Rationale and Significance

The rationale for this study emanates from the need to improve the efficiency of public networks, in order to mobilize solutions for the most difficult challenges

affecting society. This case study, for example, addresses policymaking efforts to account for nutrient pollution that negatively impacts the water quality of the Chesapeake Bay, the largest estuary of the United States. The policy sought to achieve a solution through a market mechanism that would simultaneously engage non-point sources of pollution (agriculture) in restoration activities. Besides, this case study is particularly significant, as it represents one of the first collaborative public policy programs undertaken by the Maryland Department of the Environment (MDE).

From a theoretical perspective, it is imperative to better understand the barriers that negatively affect collaboration and to develop further knowledge to “harness the inherent benefits of networks” (Mandell, 2014, p. 3). By increasing network capacity and their effectiveness, more solutions could be created for challenging public problems.

1.6 Organization of the Dissertation

This dissertation is organized in seven chapters. Following this brief introduction, chapter two addresses the problem statement, highlighting the theoretical foundations of public sector network theory, the relevance of public participation for collaborative governance, and the potential of public policy networks to solve challenging environmental problems. The third chapter describes the primary and secondary frameworks adopted for this research and introduces the five theoretical propositions that guide this study. Chapter four explains the research design and methodology followed in this case study. Next, chapter five introduces this dissertation’s case study while providing the technical, policy and historical background of the AFG network. Chapter six presents the analysis of the data and provides empirical illustration of the findings. Chapter seven offers managerial,

governance and conceptual conclusions; articulates recommendations for research and practice; describes the contributions to theory; and acknowledges the study's limitations.

Chapter 2

PROBLEM STATEMENT: THE POTENTIAL OF COLLABORATIVE PUBLIC POLICY NETWORKS TO ADDRESS COMPLEX PUBLIC PROBLEMS

2.1 Introduction

This study is aligned with a research tradition that recognizes substantial governance changes in the recent decades, including the rise of networks as valued management tools to solve complex public problems. In consequence, this research seeks to contribute to the literature on public sector networks by increasing our understanding of essential management functions in collaborative public policy networks. Increased knowledge about the processes and approaches to attain network goals could increase the likelihood of successful collaborative initiatives, thus unleashing the potential of collaborative governance at-large.

This chapter is organized in three broad sections. First, a description of networks will be provided, taking into consideration their role in contemporary public governance. Next, a foundation of public sector network theory will be presented, highlighting the differences between two general categories: service delivery and public policy networks. The last section emphasizes the potential of policy networks to address environmental issues, such as the improvement of water quality.

This dissertation illustrates the experience of Maryland's AFG network, which sought to develop a policy solution for water quality problems of the Chesapeake Bay Watershed, originated as consequence of unaccounted growth and development

activities. The AFG network project is relevant from a public policy perspective, as it was a pioneer attempt of the MDE to create regulatory policy by means of an active participatory process involving key stakeholders.

2.2 A Description of Networks Within the Context of Contemporary Governance

Governance is understood as the act of solving public problems across multiple sectors, including government, business, and civil society (Pierre, 1999). In the context of this pluralistic environment, where greater productivity and a stronger service orientation are valued (Kettl, 2005), public networks are the materialization of substantial governance changes, as reflected by the processes of decentralization, devolution, and outsourcing, increasingly observed in the past decades (Kamarck, 2002; Milward & Provan, 2006). The definition of the term network will be presented later in this section, after the exploration of governance and collaboration aspects.

Contemporary governance evolved as a result of two public management movements: New Public Management (NPM) and New Public Governance (NPG). Researchers tracked the beginning of NPM to the governments of Reagan and Thatcher (Isett et al., 2011), and it is estimated NPM lasted until the beginning of the twenty-first century, when NPG emerged (Osborne, 2006). New public management, which is considered highly competitive, promotes the privatization of public goods and services (Isett et al., 2011) with the purpose of improving cost-efficiency (Velotti, Botti, & Vesci, 2012). Concerns have been raised about the shortcomings of NPM to promote values of democracy, citizenship, and public interest (J. Denhardt & R. Denhardt, 2015). In contrast, NPG recognizes the high level of fragmentation and complexity of the current public management context, and emphasizes the legitimate

relationship between policy making, implementation, and service delivery (Haveri, 2006; Osborne, 2006). Consequently, NPG exhibits a more collaborative nature and is considered a superior governance model to manage complex public problems requiring the involvement of multiple actors, organizations and sectors (Velotti et al., 2012). Alternatively, R. Denhardt and J. Denhardt (2000, p. 550) proposed a public management approach that “places citizens at the center”. The New Public Service (NPS) is a normative model based on democratic theory and strategic rationality (R. Denhardt & J. Denhardt, 2000). Under this paradigm, the government mediates the interests of citizens and community groups, while creating shared values (R. Denhardt & J. Denhardt, 2000).

As a result of these trends, the contemporary governance system now includes active hierarchies, markets and network structures. The hierarchical model, which was the prevalent governance structure from the late nineteenth century until the late 1970’s and early 1980’s (Osborne, 2006), relies on formal administrative and authoritative ties that provide an “integrating and supervisory structure” (Lowndes & Skelcher, 1998, p. 318). In contrast, the market modality relies on contractual relationships over property rights and is mediated through price mechanism and the law (Osborne, 2006). Actors engage in this modality to derive particular advantages (Osborne, 2006); therefore, market-based relationships are highly competitive (Velotti et al., 2012). Finally, relationships under the network modality are based on trust, loyalty and reciprocity (Osborne, 2006). Networks operate horizontally, integrating the strengths and assets of participant organizations (Milward & Provan, 2006).

Altogether, these governance structures seek to promote an efficient distribution of tasks and responsibilities, thus encouraging markets to deliver as many

public services as possible, while limiting the scope of government to the basic roles of determining, arbitrating, and enforcing rules (Friedman, 1962; Kettl, 2006). This arrangement helps the public sector to focus on “problems that cannot be solved, or solved easily, by single organizations” (Agranoff & McGuire, 2003, p. 4). As such, government has become “an equal player in a world of interdependent activity” (Koontz et al., 2004, p. 6; see also Kickert, Klijn, & Koppenjan, 1997; Mandell, 1990).

The network approach is considered critical to increase the effectiveness of government in today’s multisectoral and multiorganizational context (Kettl, 2006). If properly deployed, and if aligned with the other parts of the governance system at-large, networks could play a critical role in the changing public sector. Concepts of collaborative governance and metagovernance expand upon other characteristics of the system that influence the effectiveness of public networks. For instance, Ansell and Gash (2008) link network action and outcomes to a larger collaborative governance context that includes considerations such as starting conditions (i.e., power, resource and knowledge asymmetries; incentives and constraints, and antecedents of cooperation or conflict), institutional design (i.e., participatory inclusiveness, forum exclusiveness, rules, process transparency), leadership and empowerment. At a higher level of observation, Sørensen and Torfin (2009) look at networks within the metagovernance context, which includes operational aspects of the network; political normative and context-dependent choices; and higher order systems.

Networks should not be seen as isolated structures, but as a systemic component of a larger governance system. This observation has important implications for management and legitimacy. External network factors (e.g., societal context, institutional design and political struggles) could positively or negatively

influence collaborative processes (Sørensen & Torfin, 2009). Moreover, institutional and higher order governance authorities could encourage or discourage the implementation of collaborative network decisions, for a variety of reasons, including the ideological alignment of different governance levels and legitimacy apprehensions (Easton, 1957).

Given the public participation component of collaborative networks, valid concerns about the stability of democratic representation and the accountability of elected and appointed officials have been voiced (Sørensen, 2006). For example, accountability and representativeness could become compromised if powerful and/or influential subjects engage in the process (potentially leading to self-appointments, undue pressure, and/or manipulation of the agenda and the outcomes), if the technicality of the issue at hand is above the understanding of non-expert communities, and if reaching consensus is unlikely (Dietz & Stern, 2008). Therefore, considerations about the scope and the extent of public participation are central to the collaborative network management and collaborative governance discourses.

A more participatory governance regime is currently perceived as legitimate and desirable change (Sørensen, 2006). Public participation has been associated with a positive sense of community (Hajer, 2003), civic engagement/capacity (Innes & Booher, 2004; Putnam, 1995; Randolph & Bauer, 1999), and a good democratic expression (Hartz-Karp & Newman, 2006; Smith, Vogel, & Cromwell, 2009). Such participation compensates for inherent governance deficiencies such as incomplete information (Booher, 2004; Jones, 1999; Lindblom, 1959; Stringer et al., 2004) and fragmentation (Lindblom, 1959; Weber & Khademian, 2008), while assisting decision-makers in the formulation of more robust and socially desirable solutions to

public challenges (Agranoff & McGuire, 2001; Daniels & Walker, 2001; Dietz & Stern, 2008; Hajer, 2003). If linked to the ability to make decisions, public participation is perceived as empowerment and power redistribution (Arnstein, 1969).

Public participation can be described in terms of selection methods, modes of communication and decision, and extent of authority and power (Fung, 2006). For example, the case study featured in this dissertation (AFG network) was integrated by professional stakeholders, professional representatives, expert administrators, facilitators, and members of the public. Deliberation and negotiation were used as communication and decision modes. The extent of authority and power given to participants was advisory and consultation. The different permutations of participation selection, modes of communication and decision, and extent of authority and power inform about the extent of inclusiveness/inclusiveness, intensity of communication and decision-making, and extent of authority (see Fung, 2006 for details). In the case of the AFG network, the level of inclusiveness, intensity of communication and decision-making, and extent of authority and power exercised were considered intermediate.

Collective efforts can be described in terms of structural design, purpose, and relational approach. Structural design ranges from small and perhaps informal groups of individuals, to more organized and formal teams, task forces, councils, commissions, committees, working groups, communities of practice, partnerships, and networks (Denhardt, Denhardt, & Aristigueta, 2009; Mandell, 2014; USGAO, 2012). The main purpose of a collective effort (e.g., sharing resources, delivering services, developing programs/policies) can influence the selection of the most appropriate administrative/organizational design structure (McNamara, 2012; Milward & Provan,

2006; Thatcher, 2007). Relational approaches include cooperation, coordination and collaboration. *Cooperation* refers to “an interaction between participants with capabilities to accomplish organizational goals but *chose to work together*, within existing structures and policies, to serve individual interests” (McNamara, 2012, p. 391; emphasis added). *Coordination* refers to “an interaction between participants in which formal linkages are mobilized because *some assistance from others is needed* to achieve organizational goals” (McNamara, 2012, p. 391; emphasis added). And *collaboration* refers to an “an interaction between participants who work together to pursue complex goals based on shared interests and a collective responsibility for interconnected tasks which *cannot be accomplished individually*” (McNamara, 2012, p. 391; emphasis added). Alternatively, collaboration has been defined as “any joint activity that is intended to produce more public value than could be produced when the organizations act alone” (USGAO, n.d.). Keast, Brown, and Mandell (2007, p. 19) observe that collaboration requires “much closer relationships, connections, and resources and even a blurring of the boundaries between organizations”. In other words, collaboration revolves around the principles of trust, reciprocity and mutual gains (Mandell, 2014).

The meaning of collaboration has evolved through time. According to Agranoff (2012), earlier interpretations of collaboration referred to internal agency efforts, but now it encompasses people working together across multiple boundaries. As an umbrella concept, collaboration often encompasses the terms *communication, consultation, conflict resolution, consensus building, cooperation, and coordination* (Margerum, 2011).

Collaboration has become an essential component of public management at all levels. For the federal government, collaboration is part of an integrated approach that focuses on results and government performance (USGAO, n.d.). For local governments, collaboration is a mechanism to share information, resources, activities and capabilities, in order to produce outcomes that could not be efficiently achieved by single organizations (Bryson, Crosby, & Stone, 2006; Swindell & Hilvert, 2014). Examples of collaborative mechanisms identified by the U.S. Government Accountability Office (2012) include: 1) appointment of presidential assistants and advisors; 2) creation of permanent or temporary groups; 3) establishment of nation-wide guiding frameworks, strategies and initiatives; 4) creation of interagency groups (including department heads and/or program-level staff); 5) clear designation of leadership (individual vs. shared); 6) positioning several agencies and/or departments in the same geographic region or facility; 7) designation of positions to carry out interagency collaboration, liaison tasks, and/or fulfilling obligations to more than one agency; 8) creation of interagency offices with their own authority and resources to cover a policy area that crosses a number of separate agencies or departments; 9) establishment of written agreements and memorandums of understanding; 10) sharing program efforts (e.g., joint budgeting and funding, joint exercising and training, and joint development of policies, procedures, and programs); 11) meetings, conferences, and communities of practice for the discussion of common problems, exchange of information, or the development of agreements on issues of mutual interest; and 12) use of collaboration technologies (e.g., shared databases and web portals).

While the range of collaboration strategies -colloquially called the art of collaboration- can't be addressed in a single theoretical framework, many scholars

have attempted to capture the *essence* of collaboration and provide practical recommendations to achieve satisfactory outcomes. For example, Milward and Provan (2006) recommended a focus on the management of accountability, legitimacy, conflict, design (appropriate governance structure), and commitment. O’Leary and Gerard (2012) emphasized the relevance of people and their relationships, the need to achieve results, a sense of urgency, directives from the top and organizational support. Through continued observation, analysis and refinement, the U.S. Government Accountability Office (USGAO, 2014) suggested a focus on outcomes, accountability, leadership and resources. Subsequent chapters offer detailed descriptions of management strategies, highlighting critical aspects of public network collaboration.

Scholars support the notion that a collaborative network approach is necessary to enhance the effectiveness of the public sector, because these emerging structures are better suited than hierarchies or markets to manage complex problems (Bennington, 2011). Complex public problems, sometimes referred as *wicked problems*, are extremely difficult to manage, as they cut across multiple boundaries, such as organizations, policy domains, political and administrative jurisdictions, and interest groups (Weber & Khademian, 2008).

In collaborative networks, people work together to find a common solution to shared problems, under the understanding that the problem can’t be solved by a single individual or organization (McNamara, 2012). Collaborative networks, in contrast to autonomous and independent organizations, capitalize on “more complex reciprocal interdependencies and closer, denser relationships in which participants are engaging in system changes” (Keast & Mandell, 2014, p. 34). In addition to a superior capacity

for horizontal coordination, networks promote innovation (Agranoff, 2014; Kettl, 2006; Mandell, 2014; Milward & Provan, 2006; Orr, 2014; Weber & Khademian, 2008).

Operating in networks can contribute to the achievement of better performance outcomes, such as higher quality work, quality decisions, sustainability, timeliness, better public service and economies of scale; better relationship-focused outcomes, including buy-in of parties, ownership of solutions, alliances, job satisfaction and empowerment; and better processes outcomes, like more efficient and less cumbersome practices (O'Leary & Gerard, 2012).

The benefits of the collaborative network approach should not be romanticized or taken for granted. To operate in collaborative networks, participants require distinctive management and leadership skills, as the context of public networks is different from public organizations and private corporations (Agranoff, 2014; Chang, 2012; Keast et al., 2014). Moreover, networks can also yield failure, due to action barriers that require further analysis (McGuire & Agranoff, 2011).

The definition of *network* lacks precision. At the fundamental level, a network is a structure involving multiple nodes and linkages (McGuire, 2003; Keast, 2014), where nodes refer to individuals and/or organizations, and the links represent the relationships among them (i.e., cooperation and collaboration) (Milward & Provan, 2006). While social (informal) networks emerge from everyday interaction among individuals, networks of organizations are typically created with a specific purpose, such as tackling challenging public management problems like homelessness, terrorism, and environmental issues (Daniels & Walker, 2001; Milward & Provan,

2006). The term *interorganizational network* has been defined in the following manners:

1. “Networks are structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement. Networks exhibit some structural stability but extend beyond formally established linkages and policy-legitimated ties.... The institutional glue congealing networked ties may include authority bonds, exchange relations, and coalitions based on common interest, all within a single multi-unit structure.”¹ (O’Toole, 1997, p. 45).
2. Networks are “structures involving multiple nodes—agencies and organizations -with multiple linkages. A public management network thus includes agencies involved in a public policy making and administrative structure through which public goods and services are planned, designed, produced, and delivered (and any or all of the activities). Such network structures can be formal or informal, and they are typically intersectoral, intergovernmental, and based functionally in a specific policy or policy area. That is, officials from government organizations and agencies at federal, state, and local levels operate in structures of exchange and production with representatives from profit making and not for profit organizations.” (McGuire, 2003, p. 4).
3. “... [N]etworks of public organizations ... [involve] formal and informal structures, composed of representatives from governmental and nongovernmental agencies working interdependently to exchange information and/or jointly formulate and implement policies that are usually designed for action through their respective organizations.” (Agranoff, 2004, p. 63).

Based on these relevant definitions, Milward and Provan (2006, p. 9-10) identified the following characteristics of interorganizational networks:

- They consist of multiple organizations that are legally autonomous.
- Relationships (linkages) are based on cooperation and collaboration.

¹ This definition is frequently cited in the public administration literature.

- In the public sector, law and funding holds them together.
- The central characteristic of a public management network is the connections among people, programs, and organizations for the purpose of implementing public policy.

Given the lack of conceptual consensus regarding the definition of the term *network*, this dissertation acknowledges the previous characteristics as interorganizational network premises². Failure to reach agreement over the definition of the term has resulted from the diversity and variability of networks, focus of studies (structural vs. purpose aspects), and variety of research traditions, which includes studies from the following disciplines: political science, public administration, urban affairs, social welfare, public management and organizational/sociological research (Keast et al., 2014; Mandell, 2014).

The academic exploration of collaborative public networks dates back to the 1960's, when Litwak and Meyer proposed mechanisms of social coordination between bureaucratic organizations and community groups (Litwak & Meyer, 1966); but it wasn't until the 1990's when public networks came to full-bloom under Clinton's government reinvention, forcing the field of Public Administration to catch-up with a movement lead by practitioners (Isett et al., 2011). The operational aspects of networks have been a focus of academic attention during the past thirty years, and it

² This dissertation focuses on the work of the AFG network, which exhibited all of the characteristics identified by Milward and Provan (2006). This interorganizational network was created with the specific purpose of developing policy recommendations to offset the pollution generated by new growth in the state of Maryland (e.g., development and redevelopment projects).

was during the last decade when the use of collaborative networks matured (Breul & Crusser, 2012; Mandell, 2014).

Before Public Administration scholars engaged in network research, the study of networks had been conducted primarily through the lens of sociology, business and organizational disciplines (Mandell, 2014; Osborne, 2006). Former research on groups and teams, for example, offered valuable insights about how to effect change at the individual and organizational level (Denhardt et al., 2009). However, the applicability of the theory produced by these disciplines was limited, since public networks' structure, roles and missions can be very different from other administrative structures, especially if situated in non-public oriented organizations. Moreover, a distinctive theoretical framework was needed to capture the dynamics of cross-boundary interactions.

Early research was “largely descriptive and tended to overemphasize governance and structural considerations at the expense of establishing a predictive capacity for the network formation, operation and effectiveness” (Mandell, 2014, p. 6). In addition, the disparity of methods, traditions, use of a common language, and even the failure to extensively describe the distinctive characteristics of the studied networks, delayed or restricted the ability of scholars to integrate previous research into a single theoretical framework (Mandell, 2014). Therefore, the pressing need for a distinctive framework become imminent, in order to optimize network design, governance arrangements and management, and mechanisms for evaluation (Mandell, 2014). The following section provides a succinct overview, which reflects the effort at selectively integrating current and applicable public sector network knowledge.

2.3 Theoretical Foundation for Collaborative Public Networks

The contemporary foundation for a distinctive public sector network theory was established by scholars Robyn Keast, Myrna Mandell, and Robert Agranoff (2014), but not without facing many challenges and limitations. The authors and editors of the book titled *Network Theory in The Public Sector: Building New Theoretical Frameworks* explored aspects such as theory trajectory; theoretical frameworks to inform design, governance, and management; practical applications, implications; and theoretical gaps. Some outcomes of their work were: the identification of the key premises of a general public network logic, identification of theoretical gaps, and recommendations for future research. The following premises provide a brief but comprehensive look of the public sector network logic:

- **Networks govern:** “Networks exist to carry out some facet or facets of the policy process and policy stream” (Koliba, 2014, p.85).
- **Networks are ubiquitous:** “Networks exist within virtually every policy domain” (Koliba, 2014, p. 85).
- **Networks are multi-actor and multiscalar:** “Domain-specific networks are comprised of agents spanning sectors, geographic scales, and social scale” (examples of social scale: individuals, groups, organizations, inter-organizational networks) (Koliba, 2014, p. 85-86).
- **Networks are usually composed of mixed administrative authorities:** “Most networks of interest to public administration are comprised of mixed authorities, in which command and control arrangements persist for some administrative subsystems and assemblages, with more collaborative structures guiding other subsystems assemblages” (Koliba, 2014, p. 86).
- **Networks are complex:** “the multisector, multiscalar composition of network agents combine with mixed administrative ties to present a decidedly complex picture of network structure and function and network management”. Noteworthy, “the non-

linearity, emergent qualities of this complexity poses significant challenges to measuring network performance” (Koliba, 2014, p. 86).

- **Networks are governed:** networks “are steered by the decision making of individual network managers, guided by laws, rules, and regulations enforced by institutions and shaped by the policy tools designed and implemented to address public interests and provide public value” (Koliba, 2014, p. 87).
- **Network actors can use performance indicators to guide decision making:** performance metrics and goals can be used to “make a system or network responsive to the goals, desires, and ascriptions of certain agents –be they funders, regulators, or collaborators” (Koliba, 2014, p. 87).
- **Performance standards can keep networks accountable³:** “the use of performance measures to make decisions is guided by the kind of accountability that exist between members of the network, and between members of the networks and those outside the network” (Koliba, 2014, p. 87-88).
- **Performance standards are contingent on the value(s) placed upon them:** As suggested by Stoker (2006, p. 42), while the ultimate purpose of networks is to produce public value, “the judgment of what is public value is collectively built through deliberation involving elected and appointed government officials and key stakeholders”. Therefore, “determinations about what to measure and how to measure it are ultimately political considerations” (Koliba, 2014, p. 88; see also Stone, 2002).

Noteworthy, a public sector-oriented theoretical framework is still under construction, as important gaps still remain, awaiting for thoughtful exploration and expansion (Agranoff, 2014; Mandell, 2014). The following research areas should be explored through the development of new theoretical propositions:

³ Examples of accountability ties: democratic, administrative, and market ties (Koliba, 2014).

- **What constitutes a public network?** “the research community has used virtually any and all analytical concept to delineate networks in public management” (Agranoff, 2014, p. 200). Therefore, agreement must be reached to draw “parameters around the use of the term “network”, thus avoiding misuse and misconceptions (Agranoff, 2014, p. 201). Future research must address the diversity, complexity, and non-static nature of networks (Agranoff, 2014; Mandell, 2014).
- **The “how good question”:** It is argued that public networks are meant to enhance “public value, that is increasing efficiency, effectiveness, or fairness, or perhaps responding to a new political aspiration” (Agranoff, 2014, p. 201; see also Bardach, 1998). Clearly, the interpretation of public value remains problematic, as it seems an open-ended term. Moreover, it should be a goal of research to demonstrate the comparative effectiveness of the network approach through “meta-analyses of cases, particularly those that cross sectoral and industry boundaries” (Agranoff, 2014, p. 202; see also Berry et al., 2004; Isett et al., 2011).
- **New tools of network management:** There are several emerging managerial concepts that promise the differentiation of the public network management field from a theoretical perspective. Such concepts include: a “POSDCORB”⁴ equivalent for networks (see McGuire and Agranoff’s Network Management Behaviors Framework in Section 3.2), organization and structural forms, control and performance. All these areas require further investigation and expansion.⁵ As suggested by McGuire and Agranoff (2014), *a deeper understanding of the processes and approaches that predict the effectiveness of networks is necessary.*
- **Open source technology and networks:** The alignment of “network performance with systems dynamics, calls for capturing

⁴ POSDCORB: Acronym widely used in the Management and Public Administration fields to reflect the classic view of administrative management: Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting.

⁵ The major contribution of this study belongs to this area, as it will elucidate network management approaches to reach common understanding, agreement and decision-making capacity in collaborative public policy networks.

network-theory building with computer simulation modeling with such techniques as system dynamics, agent-based modeling, social network analysis, and qualitative comparative analysis, as new data-mining programs are allowing large numbers of verbal and numerical data to be analyzed for patterns” (Agranoff, 2014, p. 204). Part of the research agenda in this topic includes the development of a broader “information commons”, in order to increase the information flow about collaboration approaches from individuals to the network.

- **The distinctiveness of public networks:** the research agenda calls for further exploration of the distinction between governance networks (where governments participate) and corporatist models.

As it will be expounded in subsequent chapters, this research was designed with the primary intent of expanding our knowledge of new tools of network management. The case study selected for the research casted additional light on network evolution aspects and the distinctiveness of policy networks. Section 2.3.1 highlights the differences of policy networks, in contrast to service delivery networks, which are the most prevalent in the public sector.

The work of Keast et al. (2014) was envisioned as a roadmap for the continuous construction of a public sector-oriented theoretical framework that, when completed, will be able to: enhance the “capacity for the management of different types of networks, including new and existing methods of management techniques”, extend the “knowledge on the design, operation, and evolution of networks”, and develop “new performance measures that acknowledge and adequately capture the different outcomes produced through networks” (Mandell, 2014, p. 4).

2.3.1 Diversity of Networks

The diversity of networks is numerous, as they exist in virtually all policy domains (Koliba, 2014). The rich variability and complexity in network typology is

now acknowledged, but it is apparent that scholars failed to emphasize those differences in the past (Agranoff, 2014). As indicated by Mandell (2014, p. 9):

By not distinguishing among the different types of networks, researchers and practitioners continually fail to recognize the richness of networks. This failure also leads to a lack of understanding of why some networks can be effective while others are not.

At present, there is little consensus regarding the classification of public networks (also referred as public management networks, interorganizational networks, collaborative networks, and formal public networks). In consequence, the literature reflects multiple propositions according to their purpose and governance level at which they operate (Keast & Mandell, 2014). Consider the examples provided in Table 2.1, compiled by Popp et al. (2014).

Table 2.1. Examples of Network Types. Source: “Inter-organizational networks: A critical review of the literature to inform practice”. Adapted from Popp et al. (2014, p. 32).

Network Type	Function
Information sharing, informational, information diffusion	Primary focus is on sharing information across organizational boundaries. A number of authors make a distinction between information sharing and knowledge exchange.
Knowledge generation and exchange, knowledge management	Primary focus is the generation of new knowledge, as well as the spread of new ideas and practices between organizations.
Capacity building, social capital, outreach	Primary focus is on building social capital in community settings, and on improving the administrative capacity of the network members.
Individual, organizational, network and community learning	Primary focus here is learning, which overlaps both with knowledge exchange and capacity building.
Problem solving, complex issue management	Primary focus is on improving response to complex issues, and/or solving complex problems (where a solution is possible). Often emerges from an information diffusion or knowledge exchange network.
Effective service delivery, service implementation, service coordination, action	Primary focus is service delivery, where services are jointly produced by more than two organizations. Collaboration is often between programs in larger organizations.
Innovation	Primary focus is on creating an environment where diversity, collaboration and openness are promoted with the goal of enabling and diffusing innovation.
Policy	Primary focus here is an interest in public decisions within a particular area of policy. The original conceptualization of policy networks concerned decision making about public resource allocation.
Collaborative governance	Primary focus on direction, control and coordination of collective action between government agencies and non-public groups, including government funded initiatives or contracts.

To further frame and synthesize the scope of this dissertation, this research accepts the classification system proposed by Voets (2014), which recognizes two broad types of public interorganizational networks: *service implementation/delivery* and *public policy* networks. Voets' classification suggests that interorganizational networks are typically created to focus primarily on service or policy activities, but occasionally, a policy-service overlap may result as a consequence of the network's mission, as previously suggested by Rethemeyer and Hatmaker (2008).

Service implementation/delivery networks revolve around public programs and the organizations that deliver services directly to clients (Milward & Provan, 2006). Typically, the government manages these relationships through grants, contracts, fee-for service arrangements, and rules (Milward & Provan, 2006). These networks may be constituted by a large number of non-governmental third-parties (i.e., private firms, nonprofits, government agencies) and a governmental fiscal-agent that coordinates the collaboration between the parts (Milward & Provan, 2006). The reality of service delivery networks is highly fragmented, somewhat unstable, and competitive; therefore, key tasks include the promotion of cooperation, negotiation, and strategic network planning (Milward & Provan, 2006). Examples of service-delivery networks include temporary assistance for needy families, health care, and drug prevention (Milward & Provan, 2006). Service delivery networks focus on service provision choices and efficiency (Rethemeyer & Hatmaker, 2008). Noteworthy, service provision networks are the most prevalent network type in the public and nonprofit sectors (Provan & Lemaire, 2012); therefore, much of the theory has been developed from the study of service-delivery networks.

On the other hand, *policy networks* focus on decisions to tackle complex public problems that cut across multiple boundaries of public governance (Rethemeyer & Hatmaker, 2008; Weber & Khademian, 2008). Public policy networks have been defined as:

a set of public agencies, legislative offices, and private sector organizations (including interests groups, corporations, nonprofits, etc.) that have an interest in public decisions within a particular area of policy (e.g., adult basic education [ABE], mental health, energy, or the environment) because they are interdependent and thus have a 'shared fate' (Rethemeyer & Hatmaker, 2008, p. 619; see also Laumann & Knoke, 1987).

At the difference of service delivery networks, which tend to be more permanent, public policy networks tend to have a finite cycle that parallels the policy process: agenda establishment, formulation, adoption, implementation, and evaluation (Anderson, 2006). Implicitly, policy networks seem to experience a "life cycle", since they emerge to address problems and reach a culmination when the problem has been solved (Popp et al., 2014). According to the literature, these networks may become dormant, dissolve, or experience some type of transformation (Milward & Provan, 2006; Popp et al., 2014).

Rethemeyer and Hatmaker (2008) argue that public policy networks have emerged as a consequence of the decline of the hierarchical paradigm, the broader involvement of government in complex issues, third party service delivery, the demand for information and knowledge, the increased participation of corporate entities in politics and policy-making, and the organizational representation of citizen interests. A historic record of conflict has also sparked the creation of collaborative policy networks, particularly when traditional methods (e.g., litigation) have failed to produce satisfactory results, or when those methods are deemed cost-prohibitive

(Booher, 2004). Moreover, the emergence of cross-boundary policy networks is happening in the light of a cultural change, where increased public participation is perceived as necessary, desirable and progressive (Arstein, 1969; Innes & Booher, 2004; Stringer et al., 2006).

In contrast to the limited and unilateral forms of public participation observed in the traditional policy process, such as public hearings and written comments (Innes & Booher, 2004), collaborative public policy networks create an opportunity for face-to-face dialogue, deliberation, and potentially decision-making (Booher, 2004). As highlighted in game theory -which is broadly used in policy analysis to describe behavioral dynamics, policy networks are integrated by multiple players (e.g., people, government, organizations) with different preferences among the possible outcomes (Hermans, 2014). Players (network participants) strategically try to advance their interests in the context of rules adopted for the game (Hermans, 2014). Ultimately, the combination of strategies implemented by the players determines the quality of the outcome (Hermans, 2014). Policy network participants simultaneously deal with two contexts: the network management process and the policy game (Rethemeyer & Hatmaker, 2008). Rethemeyer and Hatmaker (2008) criticized that sometimes network management models fail to capture that duality, which is better reflected in collaborative governance models (Ansell & Gash, 2008; Emerson et al., 2011).

The rules for the operation of the network are typically stated in terms of structural arrangements such as a charter, managerial principles, protocols, procedures, etc. (Koontz et al., 2004; Milward & Provan, 2006). Those are considered supremely important to maintain structural coherence (McNamara, 2012; Milward & Provan, 2006). On the other hand, policy rules can be communicated in terms of guiding

principles (MDE, 2013a) and philosophical policy approach, such as rational choice, or incremental change. Agreement on policy rules is essential to maintain the ideological framework of the network (McGuire & Agranoff, 2014). Rational choice proposes the exhaustive exploration of available information and choices, and focuses on the selection a solution with the potential to correct the issue at its fundamental level (Lindblom, 1959). In contrast, incremental change is adopted in instances of high complexity, when the available information is insufficient, fragmented, and potentially contradictory; and when the formulation of a *perfect* solution is beyond human capacity or utterly costly (Jones, 1999; Lindblom, 1959).

As noted by Arnstein (1969) and Fung (2006), the level of inclusiveness, intensity of communication and decision-making, and extent of authority and power given to public participants in policy settings varies from case to case. Participation is often linked to expected incentives, such as the possibility to advance specific interests, and/or the recognition of mutual dependence (Laumann & Knoke, 1987; McGuire & Agranoff, 2014; Rethemeyer & Hatmaker, 2008). Participants often provide critical instrumental contributions to the network (e.g., expertise, financial, organizational) (Agranoff & McGuire, 2014; Bryson et al., 2006; Koontz et al., 2004; Steelman & Carmin, 2002) and increase the pool of creativity regarding possible solutions (Dietz & Stern, 2008). Network participants may support the collective effort at different policy development stages, based on their knowledge, expertise, and interest on the policy problem (Weber & Khademian, 2008).

The modes of communication and decision making approaches range from passive situations in which the public listens and reacts to government perspectives without engaging in a dialogue, to more dynamic processes in which the collective

(presume network participants) make attempts to aggregate information, deliberate and negotiate, or deployment of technical expertise (Fung, 2006). Most public policies and decisions are made by experts and exclude the participation of citizens (Fung, 2006). However, deliberation and negotiation is regarded as the deliberative ideal of democracy (Cohen 1989; Gutmann & Thompson, 1996).

When collaboration is sufficiently inclusive and interactive, network members tend to engage in a consensus-building process to guide decision-making (Booher, 2004). However, several authors imply the consensus-goal only serves symbolic purposes (Ansell & Gash, 2008). Often, the members of a collaborative public policy network can't reach consensus and an alternative decision-making strategy must be adopted, along with timelines (Margerum, 2011; Williams, 2010). Remarkably, the definition of *consensus* may require further operationalization (Vangen & Huxham, 2014), as both in theory and in practice, the term seems to convey different connotations with potentially pervasive consequences.⁶

The way in which authority and power is handled has direct implications for effective governance, as it influences the adoption of collaborative decisions. Fung (2006) notes that members from the public may participate in policy settings to become informed, to express a preference, to indirectly influence decision-makers, to provide advice, to make joint decisions, or to make final decisions with complete ownership of the process. These alternatives reflect an increment in authority, from no authority to complete authority. Absolute public authority is infrequent and problematic, as it shifts authority and responsibility from legitimate decision makers

⁶ The ambiguity of the term consensus created a serious collaboration barrier in the AFG network.

(elected and appointed officials) to members of the public *who may have or not, the experience and the legitimacy to carry out decisions on behalf of government.*

Therefore, in the majority of cases, network decisions need to be sufficiently attractive in order to be supported at higher levels of the governance context (Easton, 1957; Emerson et al., 2011).

To the extent that negotiated agreements and joint decisions reached by means of collaboration could be effectively translated into authoritative decisions and policy action, a legitimate intergovernmental form of democracy would be promoted (Sørensen, 2014). In the words of Agranoff and McGuire (2001, p. 321), a policy decision that is jointly achieved and in accord with the “multiplicity of societal interests” is “bound to be viewed as the best decision”.

Collaborative policy making has been proven as a valuable tool to address environmental problems. The following section illustrates the potential of collaborative networks to achieve societal goals in this contested policy arena.

2.4 Policy Networks’ Potential to Address Environmental Problems

The environment, alternatively known as the natural world or ecosystem, is a coupled human and natural system that encompasses humans, the natural components with which we interact (e.g., soil, air, water, minerals, animals, vegetation, etc.), and the ecological services that we derive from them (e.g., clean air, potable water, nutritious food, raw materials or natural medicines) (Liu et al., 2007). The natural system is integrated by multiple and complex subsystems, and consequently, its management requires the understanding of the multiple parts (Daniels & Walker, 1996). Like other public dimensions, no individual person or organization could

possibly claim to have the disciplinary expertise to solve multifaceted environmental problems alone (Daniels & Walker, 1996; Williams, 2010).

In the context of an industrialized world and its increasing population, it is recognized that anthropogenic activities have left a negative footprint on the environment (Maser & Pollio, 2012). Moreover, technological progress has often developed at a faster speed than the experts' ability to predict its externalities (Carson, 1962; Key, Ma, & Drake, 2008; Nickson, 2008; Ueköker, 2014). To the best of society's ability, each generation has addressed the most critical problems with state-of-the-art technology and creativity; however, the magnitude and the complexity of environmental problems continue to increase⁷ (Daniels & Walker, 2001). Therefore, the environment is much more than a coupled system of human and natural resources: *it is a contested arena*, subject of democratic governance and policy regulation. As a coupled system, science and politics are inherent features of the same, which need consideration when formulating solutions to environmental problems (Daniels & Walker, 1996). The environmental policy arena is “a world of massive experimentation, uncertain results, complex relationships, and an inescapable mandate for improvement” Kettl (2002, p. 9). Lant, Ruhl, and Kraft (2008) argue that the magnitude of the environmental policy challenge is considerable and that intrinsic cultural and governance changes will be needed to overcome them. Adequate policy solutions will need to meet social and technical expectations (Daniels & Walker, 2001).

⁷ Consider, for example, climate change, water scarcity, air and water quality degradation, energy, and chemical safety.

The United States made substantial environmental progress during the last three decades of the twentieth century through policy regulations; however, major economic and political problems remain unresolved (Kettl, 2002; see also Daniels & Walker, 2001). Consequently, Kettl (2002, p. 9) recommended consideration to the following governance questions:

- How much is society willing to pay for environmental improvement? And more specifically, who should pay for it?
- How could USEPA develop and prove new management technologies? And how could EPA transition towards regulation that embraces new technologies?
- How could USEPA promote devolution strategies to further engage private markets and state governments? And how could USEPA construct the trustworthy performance systems required to make the market and federalism-based systems work effectively.
- How could EPA create and sustain inclusive and representative partnerships to work around environmental problems?

A more inclusive, integrative and participative approach to environmental policymaking could help to advance environmental goals (Orr, 2014); however, the difficulties of crafting environmental policy in a collaborative manner should not be underestimated (Daniels & Walker, 2001). While collaborative environmental management is ideal to address some of the gaps and problems of traditional regulatory approaches, concerns have been expressed about the quality of the decisions reached through this approach (Koontz et al., 2004). The outcomes of environmental collaboration may reflect the “lowest common denominator” between stakeholders, which could potentially result in decisions that exercise the lowest level of environmental protection (Koontz et al., 2004, p. 19; see also Coglianese, 1999). When decisions reached through collaboration are not aligned with broader

institutional and/or political visions for the future, government officials face the challenge to either enforce policies that are considered deficient, or to overturn collaborative decisions (Koontz et al., 2004; see also Rhoads, Wilson, Urban, & Herricks, 1999). Therefore, ideological alignment and the management of conflict are particularly relevant in environmental public policy networks. Resolving environmental problems involves the reconciliation and reframing of multiple and contrasting positions (e.g., interests, goals, aspirations) and perceptions (e.g., incentives, disincentives) (Daniels & Walker, 2001), in a context where multiple aspirations can't be met simultaneously (Pruitt & Rubin, 1986). Individual perceptions about the environment may vary according to the extent that certain actions (or lack of action) may be interpreted as a threat (e.g., to one's health, safety or prosperity), or as a challenge against deep-rooted ethical positions (e.g., core values, beliefs, and sense of responsibility) (Maser & Pollio, 2012). Attaining those objectives is unlikely through conventional policy processes and methods. As stressed by Burger (2011, p. 2):

For many years environmental problems were “solved” with a top-down approach, whereby managers or governmental agencies defined the problem, conducted the science necessary to answer the question, and solved the problem. Solutions and plans were told to stakeholders, and sometimes at best they were asked their opinions about the problems or the solutions. However, stakeholders were not part of either problem formulation or the solutions.

Failure to integrate the public in the discovery of shared values and solutions contributes to a perception of civic erosion, as if the role of expert decision makers was simply to inform and educate a passive, receptive public (Daniels & Walker, 1996; Reich, 1990; Wondolleck, 1988). In contrast, more participatory and collaborative approaches could help to span stakeholder's differences and to reach

some extent of agreement and policy action (Margerum, 2011). The collaborative approach has demonstrated its applicability to address environmental policy issues for several reasons:

- A collaborative approach is needed because natural resources of public interests are degrading and depleting, thus leading to complex problems for which collective solutions are needed (Margerum, 2011).
- It is appropriate to tackle “diffuse problems that have not been adequately addressed through traditional approaches” (Koontz et al., 2004; Margerum, 2011, p. 11).
- It is necessary when dealing with issues that require an understanding about the interconnection of natural and human systems (Margerum, 2011).
- Public participation is desired to reduce frustration and distrust in government, thus promoting higher levels of trust in decision makers and the policy process (Margerum, 2011; Orr, 2014; Selin, Schuett, & Carr, 2000).
- It is appropriate to manage long-term issues that require continual attention, adaptation, and adjustment (Margerum, 2011).
- It promotes culturally sensitive solutions based on partnership models (Gilliam, Davis, et al., 2002; McDaniel & Miskel, 2002; Orr, 2014).
- It is necessary to reduce fragmentation and promote integrated solutions (Margerum, 2011).
- It promotes a more efficient implementation of policies and programs (Johnson, 2005; Margerum, 2011, Orr, 2014).

The literature on environmental collaboration confirms the ubiquitous application of this approach. Perhaps, the most prevalent scenario of environmental collaboration is water governance (Connick & Innes, 2003; Hardy & Koontz, 2008; Koontz et al., 2004; Lubell, Schneider, Scholz, & Mete, 2002; Margerum, 2011).

These policy arenas typically involve federal agencies, local government, interest groups, and the community (Margerum, 2002). Examples of collaborative enterprises working on water resources include: managing fisheries, restoring waterbodies, managing recreational areas, managing the impacts of navigation, establishing water quality guidelines, etc. (Margerum, 2002). The collaborative approach has also been reported in the following environmental areas: national parks and recreation areas, protection of endangered species, pollution control, local land use decisions, hazardous facilities, public land management, and ecosystems management at-large (Goldsmith & Eggers; Koontz, 2006; Orr, 2014; Randolph & Bauer, 1999).

Collaboration through networks is progressively becoming the dominant paradigm to address environmental problems, but not without facing the same operational challenges experienced in other public sector arenas (Margerum & Whitall, 2004). As a basic assumption, it must be recognized that, by nature of their intrinsic complexity, environmental policy problems may confer substantial collaboration barriers for stakeholders (Randolph & Bauer, 1999). For example, collaboration challenges have been reported in instances where the collaborative is mandated (Human & Provan, 2000), and are also likely to occur when policy outcomes could negatively impact the interests of certain sectors (e.g., unregulated polluters). In other words, the participants of environmental policy networks are extremely likely to experience entrenched positions, issues of power, and incompatible cultures.

From an academic perspective, environmental policy networks offer an exceptional opportunity to observe management, leadership and governance dynamics. Empirical evidence suggests that, in the midst of likely antagonistic settings, the

practice of environmental collaborative networks needs to place particular attention to the definition of the issue, the resources for collaboration, group structure, and decision-making processes (Koontz et al., 2004). These aspects are typically captured within network management frameworks.

Besides, more knowledge is needed to understand leadership in the context of environmental networks (Redekop, 2010; Satterwhite, 2010; Williams, 2010). The leadership to respond to complex environmental issues requires the capacity for integration, adaptation and ethical responsibility (Redekop, 2010; Satterwhite, 2010; Williams, 2010). Consequently, current leadership views recognize that leaders are not only embedded in social systems that constrain their behavior, but also embedded in a larger global environmental system, as also captured in models of governance (Redekop, 2010; see also Pfeffer, 1977). Under this context, leaders are expected to understand the sustainability problem in a systemic way, make the concept accessible to others, and to generate the vision and the authority to make progress (Friedman, 2008; Redekop, 2010). As illustrated in this dissertation's case study, new environmental leaders are compelled to address problems in a collaborative, networked manner, thus exercising their skills at the individual, organizational, and procedural levels (Williams, 2010).

The field of collaborative environmental policy making is typically one of leaders that advocate for the interests of diverse sectors of society. The challenges of collaboration in environmental policy networks, therefore, could be accentuated by the multiplicity of interests at stake. Consequently, the work of collaborative networks is often facilitated by professional mediators. This approach seems to strengthen the sense of neutrality, while allowing the process to transpire in the most efficient

manner. According to Maser and Pollio (2012, p. 153), a good mediator must be “both an effective leader who guides the mediation process and an effective manager who keeps it running smoothly”. Professional facilitators/mediators often carry operational task to ensure the practical functioning of the network (Voets, 2014), while arbitrating the participation of players/participants in the network context, which overlaps with the policy game (Rethemeyer & Hatmaker, 2008).

To conclude, environmental collaborative networks offer the possibility to look at the flow of governance from a leadership perspective. As stressed previously, joint decisions reached by means of collaboration often clash with governance barriers, thus preventing their implementation (Margerum, 2011).

2.5 Conclusion

This chapter illustrated the potential of collaborative networks as a management tool to address complex public problems, including environmental issues. The management of environmental problems is subject to value judgments, fragmented and incomplete information, and multilayered governance. Collaborative efforts, if properly deployed, offer the potential of creating technically acceptable solutions that are also satisfactory in their social and cultural contexts.

The success of collaborative network initiatives is both influenced by the effectiveness of the management process and the alignment of network outcomes with the rest of the governance apparatus. Collaborative governance is challenging because both levels of governance (the network and the metagovernance structure) are prone to fail (Sørensen & Torfin, 2009). The large governance context should be assessed prior to the establishment of networks, as sometimes the environment is not conducive to collaboration (Ansell & Gash, 2008; Booher, 2004).

In recognition of the value of environmental public policy networks as fertile case study settings, this research was conceived and designed with the purpose of making a direct contribution to public sector network management theory, through the observation and analysis of the management process of Maryland's AFG network. While related governance aspects are acknowledged, an in-depth exploration of governance dynamics was outside the scope of this research.

The case study portrayed in this dissertation is an example of a government-led collaborative initiative that involved federal and local government stakeholders, interest groups, and the community at-large. A detailed case study introduction is provided in chapter five, illustrating the background and policy context of the AFG initiative.

In accord with case study methodology (Yin, 2014), the following chapter introduces several frameworks that were formally considered in this study. The *network management behaviors* framework, proposed by McGuire and Agranoff (2014) was used as the central theory of this research. Three secondary frameworks were identified at the research design stage, anticipating the potential need for alternative explanations: the *collaborative learning* approach, proposed by Daniels and Walker (1996); the *composite theoretical model: process catalyst and strategic leveraging*, proposed by Keast and Mandell (2014); and the *network evolution framework*, proposed by Popp et al.(2014). Altogether, these frameworks may offer insights to complement, challenge, and/or expand McGuire and Agranoff's framework. It is anticipated that the findings of this study may help to improve our understanding of network management effectiveness.

Chapter 3

CONCEPTUAL FRAMEWORK: NETWORK MANAGEMENT

3.1 Introduction

As suggested in the precedent chapter, collaborative networks have become an important public management tool to address complex public problems (Kettl, 2006; McGuire & Agranoff, 2014; Milward & Provan, 2006; Weber & Khademian, 2008). While the advantages of networks are numerous, collaborative networks can yield failure (McGuire & Agranoff, 2011). Keast and Mandell (2014) argue that the network's potential has been taken for granted, at the expense of a more realistic recognition of its associated challenges:

Unfortunately this general acceptance has often turned into an idealistic complacency, one in which the focus is more on the promise of networks, rather than their realities. The end result of this has often been failures that could have been avoided, learning opportunities missed and, increasingly, a “bad name” for networks (Keast & Mandell, 2014, p. 33).

Ansell and Gash (2008) agree that collaborative failure can be harmful, as this reduces the incentives for future engagement in collaborative network initiatives, and it may worsen public problems by delaying the implementation of effective solutions. In consequence, the academic community recognizes the urgent need to improve the effectiveness of the network management process and increase their predictive. The case study featured in this research is an example of a public policy network that sought to advance policy goals in the state of Maryland, and that unfortunately, failed to achieve the full extent of intended outcomes. Therefore, this case study provided a

valuable academic opportunity to learn about the positive and negative aspects of the management process in a public policy network. Policy networks are distinct from and arguably more complex than service delivery networks.

This dissertation was conceived with a focus on the network management process, hoping to contribute to a greater conceptual operationalization of the management functions in policy networks. Network management, in the context of this research, is understood as the “strategies and actions aimed at ‘mediating and coordinating interorganizational policy making’” (Klijn & Koppenjan 2000, p. 136; Voets, 2014, p. 120). Research on network management typically explores the actions and behaviors that lead to the achievement of collaborative advantage, with a focus on goal achievement, content and process strategies, and resource allocation (Voets, 2014).

An accurate description of management models has been a valuable approach to transfer knowledge and create common understanding with scholars and practitioners of diverse communities. For instance, Henri Fayol (1949) proposed six primary functions of management for industrial processes: forecasting and planning, organizing, commanding or directing, coordinating, developing outputs, and controlling. An equivalent model for public administration described the following functions: planning, organizing, staffing, directing, coordinating, reporting and budgeting –this method is known by the acronym POSDCORB (Gulick, Urwirck, & Pforzheimer, 1937). Team’s process has also been described in terms of four functions or stages: forming, conforming, storming and performing (Parker, 1990). And the network management process has been described with regard to four

management descriptors: activation, mobilization, framing and synthesis (McGuire & Agranoff, 2014).

This research was conducted with the purpose of determining the applicability of the network management behaviors framework (McGuire & Agranoff, 2014) in a public policy network, and to identify the processes and approaches that the AFG network utilized to achieve common understanding, agreement, and decision-making capacity. To explore these aspects, five theoretical propositions were built after McGuire and Agranoff's (2014) network management behaviors framework, which is the central theory of this research:

1. The formation and operation of the AFG network exhibited the four management behaviors proposed by McGuire and Agranoff (2014), namely: activation, mobilization, framing and synthesis.
2. Common understanding⁸ is reached through shared learning, which is characterized by the exchange and application of knowledge.
3. Network agreement⁹ is reached through information dissemination, negotiation and deliberation, in a joint problem solving culture.
4. The early establishment of organizing principles and decision-making processes builds up the network's decision-making capacity¹⁰.
5. The establishment of desirable performance outcomes informs and orients the decision-making process.

⁸ In the context of this research, common understanding denotes shared knowledge about the topic/issue, and mutual understanding denotes knowledge and empathy about other stakeholders' perspectives.

⁹ Understood as reaching network consensus regarding courses of action.

¹⁰ Understood as the ability to make choices and decisions that result into final policy outputs/recommendations, or other preconceived outcomes.

Section 3.5 operationalizes in greater detail these theoretical propositions. To complement the assessment, the researcher took into consideration three additional frameworks that focus on the areas of experiential learning and alternative dispute resolution, leadership, and network evolution. As it will be further explained in chapter four, the secondary frameworks selected for this research provide a conceptual pool from which alternative explanations may be identified. Alternative explanations are understood as plausible alternatives (different from those proposed in the main theory) that could better explain the results (Yin, 2014).

The quest of this qualitative case study is to attain *analytic generalization*, which is achieved after confirming, challenging, or extending theoretical propositions (Yin, 2014). Conceivable contributions to generalizable knowledge derived from this research are:

- Adding empirical evidence to support or recommend changes to McGuire and Agranoff's framework, based on the assessment of their model in a collaborative public policy network.
- Extending the description of the mechanisms and approaches utilized to reach common understanding, agreement and decision-making capacity in a collaborative public policy network.
- Generating additional theoretical propositions for future examination.
- Identifying new areas for future research.

3.2 Primary Theory: Network Management Behaviors Framework

The network management behaviors framework was constructed by Michael McGuire and Robert Agranoff (2014). The purpose of McGuire and Agranoff's work was to identify the key descriptors of public network management, in a similar way to

which the POSDCORB model summarized the administrative management processes of public organizations (McGuire & Agranoff, 2014).

As a basic assumption, it is recognized that management is carried out differently in collaborative entities, in contrast to hierarchal organizations (McGuire & Agranoff, 2014). McGuire (2002, p. 602) asserted that network management “involves a complex sequence of moves and countermoves, adjustments and readjustments, actions and non-actions”. Those decisions and actions are recognized as behaviors in McGuire and Agranoff’s (2014) framework. The authors also use the terms stages, steps, and descriptors in an interchangeable way. For the purposes of describing network management functions, the *descriptor* seems more appropriate.

Observing the behavior of managers is a good way to describe how managers behave in response to the environment (McGuire & Agranoff, 2014; see also McGuire, 2002), or, as suggested by Kickert and Koppenjan (1997), how they steer interaction processes. McGuire and Agranoff’s (2014) network management behaviors framework evolved through the “translation” of direct observations from case study settings into theoretical propositions, by means of grounded theory approaches. First proposed in 2001, Agranoff and McGuire suggested a series of four stages or descriptors that presumably captured the essential steps of collaborative network management, along with a “vocabulary of tasks or behaviors” associated with each of them (McGuire & Agranoff, 2014, p. 153). The four components of the network management behaviors framework are: activation, mobilization, framing, and synthesis (McGuire & Agranoff, 2014). The model was evaluated in a networked high school (Metro High School, herein after “Metro”), leading to the confirmation that the four steps of the collaborative management model were exhibited throughout a decade

of operation (McGuire & Agranoff, 2014). The results, therefore, suggest that the network management behaviors framework has the potential to inform practice and guide future research (McGuire & Agranoff, 2014). Metro is operated as a network of public and private agencies and it is “actively engaged in developing operating [internal] policies and programs as well as carrying out its agreement and decisions” (McGuire & Agranoff, 2014, p. 137-138). For the purpose of this dissertation, and in alignment with the typology system proposed by Voets (2014), Metro is classified as a service delivery network, since its ultimate purpose is delivering an accelerated science, technology, engineering, and math (STEM) curriculum/program (McGuire & Agranoff, 2014).

As explained below, the network management behaviors framework explores aspects such as accessing resources, motivating participants, facilitating agreement and enhanced interactions that reflect theory in practice (McGuire & Agranoff, 2014). The following paragraphs summarize the essence of each stage and describe the empirical evidence retrieved from the Metro case study.

Activation refers to the “set of behaviors used for identifying and incorporating the persons and resources needed to achieve program goals” (McGuire & Agranoff, 2014, p. 138). According to the authors, resources like money, information and expertise are crucial to enable the viability of the network. Empirical observation suggested that champions, vision keepers and resource bearers are greatly needed during the activation stage (McGuire & Agranoff, 2014). When illustrating the activation stage of Metro, McGuire and Agranoff highlighted that a single grant evolved into a process of adding resourceful individuals to the project, up until the point the network was fully activated: “[p]rior working relationships grew, knowledge

was exchanged and applied, new social and professional connections were established, financial commitments emerged, and, overall, the size and scope of the network evolved into a fully activated entity” (McGuire & Agranoff, 2014, p. 151).

Mobilization refers to the behaviors “used to develop support for network processes from network participants and external stakeholders” (McGuire & Agranoff, 2014, p. 138). Obtaining people’s commitment towards the network and motivating them to embrace the collaborative approach are part of the mobilizing efforts (McGuire & Agranoff, 2014). Empirical observation suggested this could be one of the busiest stages of the process, as mobilizing behaviors are needed to gain legitimacy, support, and resources to operate as a network (McGuire & Agranoff, 2014). The evidence highlighted the need to have “one or more persons who are catalytic leaders¹¹ and have a passion for the collaborative undertaking” during the mobilization stage (McGuire & Agranoff, 2014, p. 147). For Metro, the role of champions ensured “selling the idea” to both investors and community stakeholders, thus gaining access to resources and creating momentum (McGuire & Agranoff, 2014). From Metro’s experience, it was also learned that seeking and obtaining external support at this stage is extremely important (McGuire & Agranoff, 2014). According to the authors, “the mobilizing frame suggests a gradual movement from finding ideas and supporters to committing resources” (McGuire & Agranoff, 2014, p. 149).

Framing “involves the practices and decisions that holds a group together”, both structurally and ideologically (McGuire & Agranoff, 2014, p. 149). This broad

¹¹ Also referred as *champions* in the literature.

concept includes setting the arrangements to “integrate a network structure by facilitating agreement on participants roles, operating rules, and network values” (McGuire & Agranoff, 2014, p. 138)¹², and “altering the perceptions of participants to understand the unique characteristics of working with persons in contexts without organizational mechanisms based in authority relations” (McGuire & Agranoff, 2014, p. 139; see also McGuire, 2002). Empirically, framing was distilled as the transformation of principles and agreements into a basic ideology that captured the areas of emphasis of the network (McGuire & Agranoff, 2014). As inferred from McGuire and Agranoff’s description of framing behaviors, this stage is not limited to the establishment internal principles and guidelines to operate as a network; it also entails agreeing upon the vision and the deliverables of the project. Based on Metro’s experience, it was highlighted that framing the network at an early stage, through the establishment of principles and the distribution of roles and responsibilities, helped to create a favorable sense of trust (McGuire & Agranoff, 2014).

Finally, synthesis refers to the “behaviors intended to create a collaborative environment and to enhance the conditions for productive interactions among network participants” (McGuire & Agranoff, 2014, p. 139), such as creating and maintaining trust among participants to facilitate productive interactions (McGuire & Agranoff, 2014). “Along the path to synthesis, successful network management achieves results-based collaboration between network participants while minimizing and removing informational blockages to corporation” (McGuire & Agranoff, 2014, p. 139). In practice, “synthesizing the network at the operational phases involves an

¹² Facilitating agreement on leadership roles was also cited as a framing behavior by McGuire (2002).

overwhelming number of transactions and their accompanying costs”, due to the interdependency of network operations, resources, knowledge, and authority (McGuire & Agranoff, 2014, p. 150). As empirically observed, synthesizing activities resulted in the ability to make decisions and take actions (McGuire & Agranoff, 2014). Information dissemination, negotiation and deliberation were highlighted as paramount approaches to achieve Metro’s success (McGuire & Agranoff, 2014). The practice of seeking out for additional expertise was also maintained during the synthesis stage.

According to McGuire and Agranoff’s observations (2014), activating and mobilizing activities seem to be prevalent at the early stages of a network, while framing and synthesis tend to be more notable during later stages (McGuire & Agranoff, 2014). The following figure illustrates the key concepts of the network management behaviors framework.

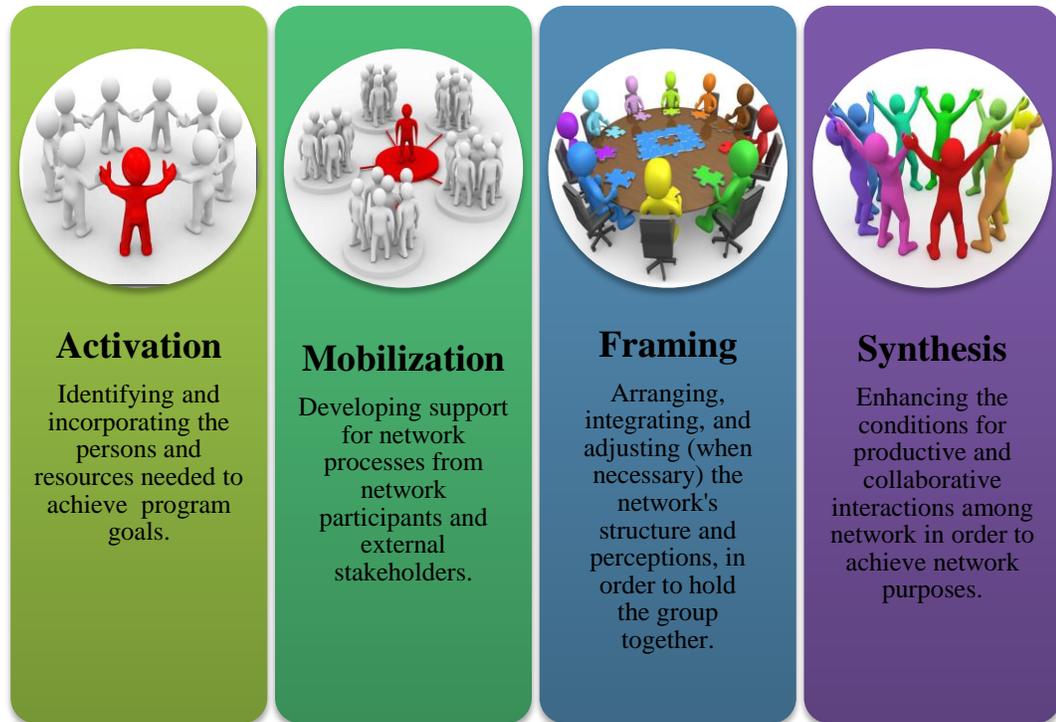


Figure 3.1. Network Management Behaviors Framework, Adapted from McGuire and Agranoff (2014). Behaviors can occur simultaneously and recurrently, therefore, *it should not be interpreted as a linear model* (McGuire & Agranoff, 2014).

The recent evaluation of the model allowed the authors to modify earlier premises. For example, back in 2001, Agranoff and McGuire proposed that activation, mobilization, framing and synthesis were independent and mutually exclusive stages, but the most recent findings demonstrated that all behaviors can transpire simultaneously, at any given time in the life of a network (McGuire & Agranoff, 2014). The authors also found that multiple managers (not just one) may perform different roles and at different given times (McGuire & Agranoff, 2014), as previously suggested by Saz-Carranza and Ospina (2011), and by Rethemeyer and Hatmaker (2008). This finding has important repercussions for leadership, as

evidence suggests this is as a collective endeavor. Finally, the findings supported that networks are not replacing hierarchies or minimizing the importance of home organizations (McGuire & Agranoff, 2014):

Managers work both for and in the state, and for and in the network. They increasingly operate with agents and organizations external to the agency, which has changed what they do and how they operate. However the “home” organization, be it a public agency or a nongovernmental organization, typically remains the primary focus of network managers (Agranoff, forthcoming; see McGuire & Agranoff, 2014, p. 152).

While the 2014 version offers the greatest level of synthesis and conceptual integration, this dissertation may benefit from additional observations, retrieved from earlier publications. *Big Questions in Public Management Research*, by Agranoff and McGuire (2001), selectively addressed several public network management questions and provided preliminary answers to frame a preliminary theory of collaborative network management (Agranoff & McGuire, 2001). In this publication, network processes were treated as a black box that, through observation and examination, allowed the elucidation of empirical knowledge that subsequently became useful for theory building (Agranoff & McGuire, 2001). Given the value of the narrative and the quality of the observations, the following aspects were extracted from *Big Questions in Public Management Research* (Agranoff & McGuire, 2001) to enrich the theoretical propositions that guided this research.

In 2001, Agranoff and McGuire introduced the four descriptors of the model (activation, mobilization, framing and synthesis), and also made reference to *reciprocal countermoves* such as deactivation and reframing.¹³ While not formally

¹³ Deactivation and reframing processes were considered part of the continuous operation of networks; however, the authors made no reference to a final stage such as

recognized as components of the network management process, such acknowledgement invites the consideration of additional management descriptors.

The authors also highlighted the importance of the processes of knowledge creation and learning, suggesting that “networks and other communities of learning are part of today’s knowledge program architecture” (Agranoff & McGuire, 2001, p. 296; see also Pasternack & Viscio, 1998). While the authors recognized the importance of knowledge creation and learning as a fundamental component of groupware,¹⁴ they were more concerned with the creation of knowledge to understand how “issues, problems and technologies are identified, brokered, and solved in networks” (Agranoff & McGuire, 2001, p. 297).¹⁵ As depicted in the MDE’s website, the AFG network engaged in a substantial effort of knowledge exchange. For this reason, Agranoff and McGuire’s earlier observations on knowledge creation and learning are relevant to the case study.

The 2001 publication also expounded the discussion about negotiation and the cultural factors that lead to agreement and decision-making capacity. It highlighted the relevance of a results-oriented joint problem solving culture and stressed the use of

deactivation, cessation, or *death* of the network as a whole. However, Voets (2014) suggested that policy networks experience a life cycle. To formally consider the possibility of a terminal stage/descriptor, the network evolution framework (Popp et al., 2014) was included among the secondary frameworks selected for this research.

¹⁴ Agranoff & McGuire (2001) define groupware as group development that reaches a mutual understanding that transcends the more immediate and interactive bases of coordination and communication.

¹⁵ In anticipation to the need for potential expansion of this topic, a secondary framework on collaborative learning (Daniels & Walker, 1996) was identified for this research.

outcome-oriented performance measures to ensure the quality of collaborative decisions and the demonstration of network goal achievement (Agranoff & McGuire, 2001). According to the authors, decisions made collaboratively aim for “agreed upon performance measures that capture the intent of policy objectives” (Agranoff & McGuire, 2001, p. 310).

Several studies have supported the applicability of the network management behaviors framework for research purposes (McGuire & Agranoff, 2014; McGuire & Silvia, 2009; Voets, 2014). For instance, Voets (2014) investigated how management channels were used in two policy networks from Flanders, Belgium¹⁶. His research reproduced a methodology previously used by Agranoff (2007) and acknowledged McGuire and Agranoff’s (2014) management behaviors: activation, mobilization, framing and synthesis. Yet, more case studies are needed to validate the network management behaviors framework as a research tool, for conceptual findings to be generalized with confidence. As stated by McGuire and Agranoff (2014, p. 137; see also McGuire, 2002), their framework “should be tested and refined, even rejected if sound data are collected from managers for this purpose”.

¹⁶ These policy networks had formal network operators who were public officials. The networks were integrated by local governments, different departments and agencies of provincial, regional and federal governments, nongovernmental and private organizations, and citizens.

3.3 Secondary Frameworks for Potential Alternative Explanations

3.3.1 Collaborative Learning

The collaborative learning framework, authored by Daniels and Walker (1996), offers an approach to improve decision-making in environmental settings, through systems-based participation. Collaborative learning acknowledges the complexity of natural and human coupled systems, along with the need for better communication between seemingly incompatible stakeholders (where public agencies are considered one of them), and the need for more participative decision-making processes.

The theoretical roots of the framework can be found in soft systems methodology and alternative dispute resolution (Daniels & Walker, 1996). Systems methodology stresses that learning and systematic thinking are critical for planning, decision-making and management, in complex and controversial environmental situations (Daniels & Walker, 1996). Alternative dispute resolution provides the tools to mediate value differences in situations where consensus is unlikely (Daniels & Walker, 1996). Therefore, the collaborative learning approach addresses “parties’ strategic behaviors by incorporating methods designed to promote collaborative, integrative negotiation” (Daniels & Walker, 1996, p. 82). Noteworthy, the collaborative learning approach requires the intervention of an impartial third party (mediator) (Daniels & Walker, 1996).

According to the authors (Daniels & Walker, 1996, p. 84), the characteristics of collaborative learning can be summarized in the following manner:

1. Stresses improvement rather than solution.
2. Emphasizes situation rather than problem or conflict.
3. Focuses on concerns and interests rather than positions.

4. Targets progress rather than success.
5. Seeks desirable and feasible change rather than desired future condition.
6. Encourages systems thinking rather than linear thinking.
7. Recognizes that considerable learning about science, issues, and value differences needs to occur before implementable improvements are possible.
8. Emphasizes communication and negotiation interaction as the means through which learning and progress occur.

The first five characteristics address the reconceptualization of the environmental issue, in the quest of a common understanding between stakeholders. First, a change of narrative, from *conflict* to *situation*, and from *solution* to *improvement*, seeks to create an environment in which all perspectives are respected, all positions are acknowledged, and a “temporarily-shared culture” may be created to afford some improvements to the status quo (Daniels & Walker, 1996, p. 81; see also Flood & Jackson, 1991). As conceptualized by the authors, the resulting progress should become the measure by which the success of the collaborative initiative should be appraised (Daniels & Walker, 1996). *Desirable and feasible change*, in contrast to *desired future condition* reflects the maximum extent of reconciliation and compromise regarding the multiple perspectives at stake (Daniels & Walker, 1996). The conceptualization of technically desirable and culturally feasible change is reflective of the resulting shared culture, rather than the preconceived desired conditions envisioned by specific groups of stakeholders. Noteworthy, this framework recognizes that no party should compromise their core values, and for this reason, reaching consensus is not required as part of the process (Daniels & Walker, 1996). Instead, the framework promotes the expansion of the participant’s perspectives, the

development of empathy towards each other, and the willingness to work with others (Daniels & Walker, 1996).

The remaining three characteristics emphasize the approaches by which common understanding and decision-making capacity are achieved under this framework. First of all, a systems-thinking approach is required in order to account for every dimension of the environmental problem, along with the acknowledgement of each stakeholder's perspective (Daniels & Walker, 1996). Next, a learning curve is involved, in order to acquire the technical/scientific knowledge to understand the environmental situation and the stakeholders' values that surround the issue (Daniels & Walker, 1996). Such learning occurs in an active, facilitated environment, where principles and rules for respectful and competent¹⁷ communication are established from the beginning (Daniels & Walker, 1996). Active learning occurs in settings where people are given opportunities to participate in activities, share experiences, and be real players (Daniels & Walker, 1996). In other words, active learning involves interaction, mutual learning, and the acquisition of knowledge from multiple sources and perspectives (Daniels & Walker, 1996). When contrasting active versus passive learning approaches, the authors emphasized that public deliberation activities (e.g., planning, problem-solving, analytical and information-sharing discussions, debates, and collaborative dialogues) are more effective at promoting learning and

¹⁷ Daniels and Walker (1996) stressed that in collaborative projects, participants tend to discuss technical, legal, financial, and procedural issues; perceptions, concerns, goals and values of all participants; alternatives and perceived benefits, among other things. Therefore, a minimum level of competence is necessary to promote effective and constructive communication.

understanding than passive and unilateral activities (e.g., speeches, hearings, and videos) (Daniels & Walker, 1996). Finally, this framework postulates that public participation leads to negotiation, where *negotiation* is understood as “joint decision-making among parties with interdependent yet incompatible interests” (Daniels & Walker, 1996, p. 75; see also Pruitt & Carnevale, 1993). The authors suggest that collaborative learning approaches such as active listening and questioning lead to the understanding of the legitimate positions of other stakeholders (Daniels & Walker, 1996). Through these negotiation dialogs, stakeholders are able to refine and improve possible courses of action (Daniels & Walker, 1996).

In conclusion, Daniels and Walker (1996) argue that collaborative learning has the potential to empower the public community, while providing official decision-makers with useful and meaningful public comment. According to the authors (Daniels & Walker, 1996, p. 98), collaborative management is appropriate to address environmental problems because:

- “[I]t explicitly adopts a systems approach to the situation and works to improve the participants’ systems understanding”.
- “[I]t is more modest in its expectations for progress than the more frequently used rational-comprehensive models that seek solutions”, and
- “[I]t expects and attempts to accommodate a wide range of worldviews about land management and the strategic behaviors that those worldviews are likely to generate in controversial situations”.

The practical application of this framework as part of the Oregon Dunes National Recreational Area (ODNRA) planning process demonstrated its effectiveness to improve environmental issues (Daniels & Walker, 1996). The collaborative learning approach provided a forum for innovation and collaboration that resulted into

three specific areas of change¹⁸ (Daniels & Walker, 1996). The practical implementation of the collaborative learning approach in ODNRA transpired in three stages: in the first one, stakeholder groups were informed about the initiative and were involved in the process design; in the second stage, a common base of knowledge about major dunes issues was provided, concerns about ODNRA management were identified, and improvements were suggested; in the third stage, those improvements were organized and debated according to strategic visions (Daniels & Walker, 1996). Workshops included the following activities: issue presentations, panel discussions, best and worst views and situation mapping, individual and small group tasks, dialog, and deliberation (Daniels & Walker, 1996).

As a result of this process, a dialog was created between the scientific, public, and administrative communities; scientific and public knowledge about the problem situation was integrated; and increased rapport, respect, and trust among participants was achieved (Daniels & Walker, 1996). These results were confirmed through a post-evaluation of the framework, which indicated that the collaborative learning process helped participants to broaden the understanding of the situations; provided an opportunity to express concerns, being listened to, and have meaningful discussions; allowed stakeholders to develop and implement improvements; and facilitated the moderate improvement of relationships (Daniels & Walker, 1996). Besides, participants expressed a preference for collaborative discussions, in contrast to other

¹⁸ In this case, not all decisions were reached through consensus; however, a good level of compromise was achieved, which was reflective of the stakeholders' core values (Daniels & Walker, 1996).

public participation mechanisms (e.g., coalitions, litigation, letter writing, use of media, and lobbying) (Daniels & Walker, 1996).

This finding was supported by a subsequent study, regarding the application of collaborative learning for the Wenatchee fire recovery effort (Blatner, Carroll, Daniels, & Walker, 2001). According to the authors, the results indicated that the collaborative learning approach created positive expectations about the quality of the results (Blatner et al., 2001). The collaborative learning approach is discussed in greater detail in the book titled *Working Through Environmental Conflict: The Collaborative Learning Approach*, by Daniels and Walker (2001).

3.3.2 Composite Theoretical Model: Process Catalyst and Strategic Leveraging

The composite model was created by Robyn Keast and Myrna P. Mandell. The authors of this model agree with the perception that collaborative public networks are still elucidating the ways to lead and manage in contexts that are different from the reality of traditional, hierarchical organizations. According to the authors, previous research has emphasized the management distinctions between single organizations and interorganizational networks, however, *“these management models generally underestimate the need to strategically connect and leverage relationships for collaborative advantage”* (Keast & Mandell, 2014, p. 34, emphasis added). McGuire and Silvia (2009) shared the opinion that scarce research has taken place to understand the characteristic of network leadership. Therefore, the literature has often failed to recognize and integrate the entangled nature of leadership and management in collaborative networks.

The composite theoretical model proposed by Keast and Mandell (2014) stresses that traditional leadership approaches do not always apply to collaborative

public networks. With this in mind, and aware of the growing relevance of collaborative public networks as new governance models, the authors argue that “the achievement of collaborative advantage via collaborative networks is a product of leadership action that conceptualizes and builds relational connections and a management approach that makes connections and leverages these to produce the synergies necessary for change” (Keast & Mandell, 2014, p. 34).

Keast and Mandell (2014) highlight the importance of transforming working interactions, so that network participants achieve systemic changes, a reciprocal interdependence between actors, the development of deeper/denser relationships, and a focus on relationships rather than tasks. Therefore, it is proposed that in order to accomplish tasks as a network, the members need to learn and apply new ways to build relationships, and commit to the collaborative process (Keast & Mandell, 2014).

In the composite model, this is coined as “process catalyst leadership”. This new type of leadership goes beyond previous theoretical approaches such as shared leadership and facilitation (Keast & Mandell, 2014; see also Huxham & Vangen, 1996). The process catalyst concept sees relationships as assets that should be used to achieve network goals (Mandell, 2014). The second component of the model, strategic leveraging, proposes a different management approach. Strategic leveraging highlights the need for deliberative network action to leverage relationships that, subsequently, yield collaborative advantage (Mandell, 2014). According to the authors, building strategic relations goes beyond building trust; it involves “attracting and engaging the right people, including people that may be considered ‘unlikely’ or different, and facilitating their capacity to build a new whole and mobilize needed resources to making the effort work” (Keast & Mandell, 2014, p. 37). If properly

practiced, strategic leveraging should work as a framework to deliver effective outcomes (Keast & Mandell, 2014). Therefore, this composite model offers a valuable perspective to formally look at leadership and management in networks as entangled and synergistic behaviors that can lead to the achievement of optimal outcomes, rather than looking at them as separate fields or theoretical dichotomies.

Keast and Mandell assessed the applicability of their framework in four different networks from different levels of government and community operation (Keast & Mandell, 2014). In general, the authors found empirical support for the composite model and concluded that effective leadership and management overlap in collaborative networks, thus refuting the perception that they are separate functions (Keast & Mandell, 2014). The empirical evidence from one of the case studies, Water Forum, offers particular insight to this research. Water Forum was created to address the issue of water supply for Sacramento, California (Connick, Sacramento Area Water Forum, & University of California, 2006). From the inception, it was apparent the involved agencies and organizations needed better coordination (Keast & Mandell, 2014). Moreover, they realized they needed to improve existing relationships prior to engaging in collaboration efforts (Keast & Mandell, 2014). To be clear, some Water Forum participants had experienced conflicts and legal battles in the past (Keast & Mandell, 2014). According to the authors, public officials did not seek control of the process, but instead enabled a collaborative venue deliberation and collaboration (Keast & Mandell, 2014). The process was supported through engagement in specialist programs (interest-based negotiation) and the provision of outside consultants who “helped to repair previously strained relations between members and to build sufficient levels of connection to achieve change” (Keast & Mandell, 2014, p.

41-42). An outside consultant was also responsible to keep the process on track and productive (Keast & Mandell, 2014). This role is known as “network driver” and it is considered essential for strategic leveraging (Keast & Mandell, 2014). In conclusion, the adherence to the process catalyst and strategic leveraging model contributed to the achievement of the Water Forum goals. A memorandum of understanding was signed among the members of the Water Forum, reflecting new commitments and ways to work together over the next three decades (Keast & Mandell, 2014).

From a theoretical perspective, Keast and Mandell’s (2014) composite framework may help to bridge leadership and management theories and activities, while providing additional insights to the network management behaviors framework.

3.3.3 Network Evolution

Network evolution is a component of an extensive report on interorganizational networks, authored by Janice Popp, Brinton Milward, Gail MacKean, Ann Casebeer, and Ronald Lindstrom (2014). Similar to the work of Keast et al. (2014), these authors made an effort to distill and integrate relevant topics, such as the conceptualization, implementation and evaluation of interorganizational networks. Given its practical and evidence-based approach, the report is also appropriate for an audience of practitioners, such as leaders, managers, participants, and facilitators (Popp et al., 2014).

The network evolution framework casts light on an aspect often neglected on the literature: the *natural life cycle* of inter-organizational networks (Popp et al., 2014). Several authors have stressed this gap in the literature and recommended the exploration of this issue (e.g., Berry et al., 2004; Birdsell & Matthias, 2003; Huerta, Casebeer, & VanderPlaat, 2006; Isett et al., 2011; Provan, Beagles, & Leischow, 2011;

Provan, Fish, & Sydow, 2007). Based on empirical evidence, drawn primarily from formal interorganizational networks, four distinctive stages have been observed: formation; development and growth; maturity, sustainability and resilience; and death or transformation.

The *formation* stage refers to the “multiple early decisions, activities and processes required when establishing a network” (Popp et al., 2014, p. 61). It takes into account the contextual factors and forces that trigger or constrain the formation of the network (Popp et al., 2014). This stage includes comparative analysis to determine if a network is the most appropriate structure to address the issue/problem; establishing governance arrangements; bringing the necessary resources, assembling and developing the inter-organizational network, and building legitimacy (Popp et al., 2014; Provan et al., 2007). The latter has been referred as a process of *orchestrating*, which includes bringing people together, stimulating relationships, creating engagement, mobilizing and framing the issue, and developing a common understanding that gives place to a resulting culture or narrative (Networks Leadership Summit IV, 2009; Paquin & Howard-Grenville, 2013; Popp et al., 2014). During the formation stage, the network defines the approaches for collaboration, consensus building, sustainability, and resilience (Popp et al., 2014). Empirical observations indicate that building relationships, alignment, and common understanding is very important at an early stage of the network development (Bixler, 2014; Popp et al., 2014). This has been effectively done through formal kick-off activities (Hoberecht, Joseph, Spencer, & Southern, 2011; Popp et al., 2014) and through common participation in special programs (Keast & Mandell, 2014).

The second stage, *development and growth*, focuses on balancing the needs of participant organizations and the network as a whole, through “conscious facilitation by network managers, attending to network structure, carrying out essential management tasks and encouraging distributed leadership” (Popp et al., 2014, p. 61). Four relevant themes that are characteristic of this stage are: building and maintaining trust; shared and equitable power allocation; considering innovative/non-traditional ideas and mechanisms, which is coined as positive deviance; and outcome attribution and accountability, which is considered a contested area that requires further research (Popp et al., 2014). The following paragraphs expound upon these aspects.

Trust is critical for successful collaboration and it is intrinsically tied to an expectation of reciprocity and a sense of accountability (Popp et al., 2014; Romzek, LeRoux, & Blackmar, 2012). Trust is influenced by a personal propensity to trust others, perceived trustworthiness of another, and trust transferability (Isett et al., 2001). The development of trust may be a time-consuming process, as individuals tend to experience conflict while developing relationships (Provan, Nakama, Veazie, Teufel-Shone, & Huddleston, 2003). At the organizational level, it is believed that organizations may need years to develop sound relationships (Popp et al., 2014). Empirical evidence has shown that previous relationships between network participants can have a positive or negative impact on trust (Bryson, Crosby, Stone, & Saunoi-Sandgren, 2009; Popp et al., 2014). Therefore, managers should anticipate conflict and instability as natural features of network evolution, and be prepared to manage these situations (Popp et al., 2014). To overcome possible biases, authentic stakeholder participation must be created through the facilitation and nurturing of relationships (Bryson et al., 2009; Popp et al., 2014). Those approaches are

considered critical expressions of leadership and management (Popp et al., 2014). As indicated by Gulati, Lavie, and Madhavan (2011, p. 216), a perception of trust is necessary to “negotiate and act in good faith”.

The second relevant theme that affects the development and growth of a network is *power*, as it affects relationships and perceptions of trust (Popp et al., 2014). Promoting balanced participation is imperative, as the extent to which individuals exercise or relinquish power can impact the development of the (Popp et al., 2014). Shared and equitable power allocation parallels equitable participation and decision-making (Popp et al., 2014). Empirical evidence suggests that, when the convening organization also acts as a network participant, attention must be paid to ensuring that they don’t become a dominant force (Purdy, 2012). Likewise, the literature warns about the apparent submission of *small stakeholders*, who sometimes leave the power, responsibility and accountability to larger organizations with the purpose of reducing risk (Popp et al., 2014). This attitude may delay the development of a collaborative culture (Popp et al., 2014).

Research has shown that power imbalances may be related with formal authority, tangible and intangible resources, and discursive legitimacy (Purdy, 2012). The excessive use of power may be exerted unintentionally or overtly, to resist/oppose network goals (Popp et al., 2014). The research agenda calls for further investigation of shared power mechanisms (Huxham & Beech, 2008; Popp et al., 2014).

Positive deviance is the third theme highlighted for network growth and development. Positive deviance refers to thinking outside the box to circumvent traditional ideas (Casebeer, Popp, & Scott, 2009; Popp et al., 2014). Behaving in a positively deviant way involves “seeking out, and learning from, individuals or

organizations that positively influence outcomes by behaving in ways that deviate from the organizational norm” (Popp et al., 2014, p. 67). Based on empirical evidence, positive deviance has resulted on the discovery of solutions within the network, thus strengthening the perception of network effectiveness at the community level (Bradley et al., 2009). As such, positive deviance has been related to knowledge exchange, network learning and innovation (Popp et al., 2014).

The last theme of the growth and development stage, *outcome attribution and accountability*, refers to the challenge of joint-production of outcomes, as both the member organizations and the network as a whole may claim ‘authorship’ and credit (Popp et al., 2014). This issue may be particularly important during the infancy of the network, as both the organizations and the network may be (bureaucratically) compelled to demonstrate outcome achievements, to satisfy external accountability requirements (e.g., government and nonprofit evaluations in response to funding) (Bryson et al., 2006; Popp et al., 2014). The challenge of outcome attribution and accountability also includes the acknowledgement of positive influence: to which extent do organizations credit the network for influencing internal changes, as a result of the network experience? (Popp et al., 2014). To avoid these types of challenges, organizational actors should “balance their organizational missions and goals with the collective network mission and goals” early in the process (Popp et al., 2014, p. 68).

The following stage of the network evolution model, *maturity, sustainability and resilience*, focuses on the development and maintenance of both internal and external legitimacy, in such a way that network participants remain motivated, engaged, intellectually active, and effective (Popp et al., 2014). Internal legitimacy, which refers to the way in which members appreciate the network’s value, is crucial to

sustain the network during times of crisis (Popp et al., 2014). This aspect is particularly important for mandated networks, as empirical research has shown that mandated networks are more likely to fail, in contrast to voluntarily created, emergent networks (Provan et al., 2007). Continued learning has been related to network effectiveness, and the exchange of knowledge and resources seems critical to remain resilient (Provan et al., 2007; Popp et al., 2014). Mature networks show some extent of stabilization, which is reflected through the institutionalization of structure and processes, and the selective deactivation of uncommitted members (Popp et al., 2014). Such stability leads to resilience, as multiple nodes would need to be altered or removed to weaken the network structure (Popp et al., 2014). It has been observed, however, that external shocks, such as funding cuts, internal organization restructuring, network leadership and governance changes, and political context changes, may weaken the stability of the network (Popp et al., 2014). A resilient and sustainable network is considered one that effectively manages paradoxical situations (Popp et al., 2014). Consider, for example, the struggle to maintain flexibility while reaching stability; to leverage relationships and activities without ‘over wiring’ the process; and the widely acknowledged challenge of shared leadership versus accountability. In summary, the following approaches are part of the maturity, sustainability and resilience stage: continued assessment of the network context; revision and potential adjustment of the network’s vision; promotion of internal and external legitimacy; and monitoring and evaluation of processes and outcomes (Popp et al., 2014).

The final stage, *death or transformation*, is one of the least explored topics in the research arena (Popp et al., 2014). In particular, there is a vacuum of knowledge

regarding *the end* of a network (Popp et al., 2014). This framework proposes, “there may be a natural evolution or progression to death or transformation that can be expected as the context changes” (Popp et al., 2014, p. 71).

The scarce research on this area has framed the evolution of a network in two analogical ways: a) as a *living organism* that experiences birth, growth, maturity, and ultimately death; and b) as an *ecosystem* that exhibits renewal and reinvigoration processes after experiencing some sort of destruction (Hurst & Zimmerman, 1994; Zimmerman, Lindberg, & Plsek, 1998).

The first approach states that:

Given that networks generally emerge in response to contextually embedded, complex issues that require a collaborative response, it may be that there is a natural lifespan for a network. That is, *there may be a natural evolution or progression to death or transformation that can be expected as the context changes* (Popp et al., 2014, p. 70, emphasis added).

The lifespan of a network may be contingent on context changes. Consider, for example, the satisfactory solution of a problem as a result of the network actions, or the transformation/differentiation of the network, in order to adjust to or confront new circumstances (Popp et al., 2014).

The second approach proposes that “networks and other collaborative efforts are much more of an organic life form and have eco-cycles, rather than life cycles, where there is a solid renewal loop (Hurst & Zimmerman, 1994) or reinvigoration process (Paquin & Howard-Grenville, 2013)” (Popp et al., 2014, p. 73). The eco-cycle perspective highlights adaptation and reinvention as resilience mechanisms (Popp et al., 2014). It is important to note that destruction is a likely outcome of an ecological cycle, sometimes needed as a precursor for renewal (Popp et al., 2014).

Formally considering the likelihood of death, destruction, or transformation has practical implications for public network management:

If network managers and leaders believe that networks do have a natural lifespan, it seems worthwhile for them to incorporate some element of ongoing planning for transition, with a goal of maximizing the legacy of the network and ensuring that network participants can continue to strive toward realizing the vision of the network (Popp et al., 2014, p. 72).

By means of interpretation of the life cycle analogy, network participants could differentiate between a natural (planned) death and an untimely death (network failure) (Popp et al., 2014). In consequence, they may consider to “prepare for the former and prevent the latter” (Popp et al., 2014, p. 73). Otherwise, through acceptance of the eco-cycle analogy, managers could focus on a renewal loop, where destruction gives places to network creativity (Popp et al., 2014).

3.4 Conceptual Summary

Table 3.1 summarizes the essential characteristics of the frameworks previously described. The theoretical premises of these frameworks, along with the empirical evidence associated with them, provide a vast pool of information to better understand and explain the phenomena observed in this research’s case study; in particular, how the AFG process was managed to achieve common understanding, agreement, and decision-making capacity.

Table 3.1. Summary of Theoretical Frameworks Identified for this Research.

Type	Framework	Authors	Focus of analysis	Key premises
Primary	Network management behaviors	McGuire and Agranoff (2014).	Managerial processes and behaviors.	Four descriptors depict the essence of the public network management process: activation, mobilization, framing, and synthesis.
Secondary	Collaborative learning	Daniels and Walker (1996).	Alternative dispute resolution approaches and experiential learning.	Collaborative learning uses systems approach, focuses on improvement and progress, and accommodates a wide range of perspectives through an active learning process.

Table 3.1. Continued.

Secondary	Composite theoretical model: process catalyst and strategic leveraging	Keast and Mandell (2014).	Entangled nature of leadership and management.	Collaborative advantage is a product of leadership action that conceptualizes and builds relational connections and a management approach that leverages connections to produce synergies.
Secondary	Network evolution	Popp et al. (2014).	Evolutionary stages of a network	Four distinctive stages have been observed in inter-organizational networks: formation; development and growth; maturity, sustainability and resilience; and death or transformation.

3.5 Description of Theoretical Propositions and Specific Questions

The goal of this dissertation is to attain “analytic generalization”, which is achieved after ‘confirming, challenging, or extending theoretical propositions’ (Yin, 2014, p. 51). Having considered the theoretical frameworks described in this chapter,

this research suggests five theoretical propositions and additional specific questions. Note that, in some cases, the specific questions contain elements from the secondary frameworks, thus illustrating the relevance of accounting for potential alternative explanations in advance.

3.5.1 Proposition # 1: About McGuire and Agranoff's Network Management Behaviors

Proposition #1: The formation and operation of the AFG exhibited the four management behaviors proposed by McGuire and Agranoff (2014), namely: activation, mobilization, framing and synthesis.

The four-management behaviors framework, fully described Section 3.2, depicts the steps to access resources, motivate participants, facilitate agreement and enhance interactions (McGuire & Agranoff, 2014). The authors claim this model reflects the distinctive stages or behaviors that transpire in public networks.

Each stage of the model is assessed through an individual research question (see below). Note the last question explores the potential existence of a final stage, as suggested in the network evolution framework.

- Did the AFG network exhibit a stage of activation, characterized by the identification and incorporation of the persons and resources to achieve program goals?
- Did the AFG network exhibit a stage of mobilization, characterized by the development of support for network processes from network participants and external stakeholders?
- Did the AFG network exhibit a stage of framing, characterized by the arrangement/rearrangement, integration, and adjustment of the network's structure and perceptions, in order to hold the group together?

- Did the AFG network exhibit a stage of synthesis, characterized by the enhancement of conditions for productive and collaborative interactions among network participants?
- If the network exhibited a final stage, such as death or transformation, which behaviors were observed during this stage?

3.5.2 Proposition # 2: About Common/Mutual Understanding

Proposition #2: Common/mutual understanding is reached through shared learning, which is characterized by the exchange and application of knowledge.

Agranoff and McGuire (2001, p. 296) supported that “networks and other communities of learning are part of today’s knowledge program architecture”. The collaborative interactions that transpire in interorganizational networks trigger knowledge exchange and creation, thus responding to knowledge gaps and uncertainties (Agranoff, 2007).

Common understanding is one of the requisites to arrive at joint solutions (Agranoff & McGuire, 2001). This outcome can be achieved through processes and techniques like shared learning, collaborative discussions and group problem solving (Agranoff & McGuire, 2001). Therefore, common understanding seems to be the result of a process of knowledge exchange among other variables, in which participants are willing to learn from each other and are able to transform disparate pieces of information into shared concepts. Common understanding, therefore, reflects the effective acquisition and application of knowledge in a collaborative manner.

Based on McGuire and Agranoff’s (2014) observations from Metro High School, knowledge exchange and application, either generated within the network or obtained through external advisors/stakeholders, was important to facilitate productive

linkages among participants and to fully activate the network (McGuire & Agranoff, 2014).

The following open-ended research question seeks to confirm if common and/or mutual understanding was achieved, and if so, which factors and processes contributed to it. Please note that, in the context of this research, *common understanding denotes shared knowledge about the topic/issue, and mutual understanding denotes knowledge and empathy about other stakeholders' perspectives.*

- If common/mutual understanding was reached between the AFG network stakeholders, how was it achieved?

3.5.3 Proposition # 3: About Network Agreement

Proposition #3: Network agreement is reached through information dissemination, negotiation and deliberation, in a joint problem solving culture.

Based on McGuire and Agranoff's observations (Metro High School, Columbus, Ohio), information dissemination, characterized by cooperative negotiation and deliberation, was critical for goal achievement (McGuire & Agranoff, 2014). In Metro network, task forces were created to encourage these processes, and external feedback was sought when necessary. Earlier publications highlighted the concept of a joint problem solving culture, in which negotiation is conceived at the heart of collaboration (Agranoff & McGuire, 2001). Agranoff and McGuire (2001) supported Innes and Booher's proposition (1999) that consensus-oriented negotiations only take place after exploring all the interests of members. In other words, it is apparent that mutual understanding and negotiation precede agreement. When addressing the

mechanisms to reach network agreement, Agranoff and McGuire (2001) suggested investigating how power issues are confronted.

The following open-ended research question seeks to confirm if agreement was achieved, and if so, which processes and approaches contributed to it. In the context of this research, agreement was defined as *reaching network consensus regarding courses of action*.

- If agreement was reached during the work of the AFG network, how was it achieved?

3.5.4 Proposition # 4: About the Relevance of Initial Principles and Guidelines to Support Decision-Making

Proposition #4: The early establishment of organizing principles and decision-making processes builds up the network's decision-making capacity.

Based on McGuire and Agranoff's (2014) observations (Metro High School, Columbus, Ohio), successful outcomes were achieved as a result of shared agreement and commitment towards organizing principles and decision-making processes, which were adopted early in the network cycle. The empirical evidence revealed that developing parameters, establishing and distributing roles and responsibilities, and building process agreements allowed network participants to develop a sense of trust (McGuire & Agranoff, 2014).

The following open-ended research question seeks to confirm if decision-making capacity was achieved, and if so, which factors and processes contributed to it. In the context of this research, decision-making capacity is understood as the *ability to make choices and decisions that result into final policy outputs/recommendations, or other preconceived outcomes*.

- If the AFG network stakeholders attained the capacity to make decisions, how was it achieved?

3.5.5 Proposition # 5: About the Relevance of Performance Outcomes to Support Decision-Making

Proposition #5: The establishment of desirable performance outcomes informs and orients the decision-making process.

Agranoff and McGuire (2001) highlighted the relevance of outcome-oriented performance measures to ensure the quality of collaborative decisions and the demonstration of network goal achievement. According to the authors, decisions made collaboratively aim for “agreed upon performance measures that capture the intent of policy objectives” (Agranoff & McGuire, 2001, p. 310). In general, Agranoff and McGuire (2001) stressed the need to further understand how accountability is promoted in network settings.

This theoretical proposition will be assessed as an extension of the previous one, since it suggests another approach to decision-making capacity, as defined before. Therefore, it is also assessed through the following research question:

- If the AFG network stakeholders attained the capacity to make decisions, how was it achieved?

3.6 Conclusion

As recognized in the literature, public networks are promising, yet vulnerable, governance structures. Given their increasing relevance in today’s democratic system, the work of practitioners and researchers is aimed at enhancing their effectiveness, while reducing the likelihood of failure, inertia, and/or unplanned cessation of operation.

This chapter identified several theoretical frameworks that inform different aspects of network's effectiveness, and that are consistent with the broader public network theory introduced in chapter two. These frameworks provide the theoretical foundation for a systematic analysis, intended to confirm, challenge, or extend the five theoretical propositions described before. It is anticipated that a better understanding of the processes and approaches that lead to the achievement of network goals may help policy networks to improve their effectiveness, while serving as the foundation for theory expansion in the area of network management. The next chapter describes the research design and methodology that will be utilized to explore these theoretical propositions.

Chapter 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This study was conceived with the purpose of making a direct contribution to public sector network management theory, through the observation and analysis of the management process of Maryland's AFG network. Current research is expected to achieve a deeper understanding about the processes and approaches that support network management (McGuire & Agranoff, 2014). In response to this research agenda, this study tested the applicability of the network management behaviors framework (McGuire & Agranoff, 2014) in a public policy network and tried to uncover the processes and approaches that the AFG network used to achieve common understanding, agreement, and decision-making capacity. Four general research questions were explored to attain this knowledge:

- Did the AFG network exhibit the four management stages described in the network management behaviors framework (McGuire & Agranoff, 2014)?
- If network participants reached common/mutual understanding, how did they do it?
- If network participants reached agreement, how did they do it?
- If network participants reached the ability to make joint decisions, how did they do it?

To uncover this type of knowledge, leading scholars have followed an inductive path (Agranoff, 2014), which is characterized by the study of real life

network settings and the translation of observations into new theoretical propositions, through the utilization of grounded and semi-grounded theory (e.g., Agranoff & McGuire, 2001; McGuire & Agranoff, 2014; Voets, 2014). New theoretical propositions have been the engine of the theory-building endeavor (Innes & Booher, 2010), as they promote “healthy discussion and debate which serves to distill new hypotheses for examination” (Agranoff, 2014, p. 205). Section 3.5 provided a detailed description of the theoretical propositions and specific questions that guided this study. The following section describes initial considerations that led to the selection of a case study approach.

4.2 Preliminary Research Design Considerations

To determine the most appropriate research design and methodological approach, the researcher took into consideration the goals and objectives of this research, along with the characteristics of the collaborative project from which data would be gathered. First of all, the purpose of this dissertation was to contribute to fundamental knowledge and theory: how to increase the effectiveness of public policy networks through the optimization of the management process? As indicated by Patton (2015), the research purpose is a *controlling force*, as it influences design decisions, measurement, analysis and reporting. Second, the research questions of this study sought to determine the applicability of a particular network management model while retrieving descriptive data about processes and approaches utilized by the network to attain intended goals. In other words, this research would require the in-depth observation of a situation, in order to provide a thick description of events. Third, this research would take place in a highly controversial environment, where the members of the network were ideologically split by different values, interests and

priorities. In some cases, and perhaps motivated by the nature of the traditional policy making approaches, their relationship involved (and continues to involve) litigation, as they attempt to support or oppose a Chesapeake Bay restoration blueprint expanded upon in the next chapter. Consequently, this research also needed to take in consideration the political tensions of the context. Fourth, the available sources of information offered comprehensive information about the process, but not as much detail about the evolution of the policy development. Furthermore, research participants were open to discuss management aspects of the project, but many of them were reluctant to talk about the controversial aspects of the policy issue. Such apprehension is understandable, as some participants expressed a preference to remain politically neutral. Finally, participants insisted on the need of anonymity, and for this reason, it was decided to design the research in a way that would not compromise their identity.

Given these considerations, the most appropriate scholarly test was a qualitative single case study. Case study research is ideal to study complex contemporary phenomena in real-world contexts (Yin, 2014). This methodology is a good fit when research questions seek descriptive and explanatory answers (*how* and *why*); when there is no need to control behavioral events; and when the focus of study is a contemporary situation (Yin, 2014). Single case studies allow a greater opportunity to focus on specific phenomena, being able to conduct in-depth observations and analysis, and keep a manageable research design to explore relevant alternative explanations. The selection of case study methodology was critical to address the inherent complexities and subtleties of a politically charged environment.

Arguably, this research could have utilized a more quantitative social network analysis approach, which may be considered more robust and objective than qualitative case study research. The utilization of network analysis is helpful to explain how social behaviors, attitudes, beliefs and knowledge influence relations and their structure, and provides the opportunity to suggest improvements to social conditions (Prell, 2012). However, the goal of this study was not to measure the quality and cohesiveness of relationships between nodes (e.g., individuals or groups) or to describe network properties such as density and centralization, but to understand *how the management process was conducted, and how the adopted approaches influenced network results*. All existing sources of information pointed at the progress achieved during the course of this program, rather than the nature and the quality of the relationships that evolved during the course of ten meetings. Therefore, case study methodology was better aligned with the objectives of this research and the character of available and retrievable data.

4.3 Research Design: Single Case Study with Multiple Units of Observation

This research was conducted as a qualitative single case study with multiple units of observation, in which theoretical propositions derived from McGuire and Agranoff (2014) network management behaviors framework were examined and alternative explanations were formally considered through the use of secondary theoretical frameworks. The study featured the work of the AFG network, which was part of a policy initiative of the state of Maryland that intended to address the issues of growth (urban and suburban development and redevelopment) and water quality through a market mechanisms involving nutrient trading. The research focused on past events (regarding the formation and operation of the network), from which

processes and approaches to attain network goals could be distilled. Chapter five will provide an exhaustive introduction to the case study, including water quality policy background, a description of the nutrient trading approach, and additional information about the case study settings.

Taking in consideration the configuration of the AFG network and the request to integrate participants in broad groups to protect their identity¹⁹, four units of observation were established, using as criteria the distinction of roles between them. The AFG network was integrated by a stakeholders group, an advisory team, a facilitating consultant firm, and public attendees²⁰. The following list describes the four units of observation:

1. **Stakeholders Group:** Members from diverse sectors and organizations, who were given the responsibility to revise the components of a policy draft, in order to find common ground, clarify areas of disagreement, and make recommendations for a subsequent policy draft.
2. **Advisory Team:** Agency members responsible for preparing and presenting guiding principles for the network; providing technical support, information and consultation regarding technical issues; participating in discussions and providing perspective when appropriate; interpreting the guiding principles and providing context as needed (MDE, 2012a). The advisory team was not static or permanent. Specific individuals supported each meeting. In occasions, they engaged persons who other times acted as “public attendees”.

¹⁹ While public documents contain identifiable information, this research makes an effort to maintain opinions private, only linking them to the categories of the units of observation.

²⁰ While the official *Accounting for Growth Work Group Charter* (a document that contains process principles and rules) combines the advisory group and the facilitating team into a single category called *support group* (MDE, 2012a), this dissertation treats the advisory and facilitating groups separately.

3. **Facilitating Consultant:** Personnel from a sustainability consulting firm, responsible for ensuring adherence to agendas and the network principles; promoting an exploration of the diversity of member opinions; helping the group discover ways to identify common groups and build consensus around issues and topics; allocating meeting time to accommodate discussions; preparing and distribute meeting agendas, meeting summaries and working documents; arranging for meeting space; securing necessary materials and/or resources for meetings; and assisting in the communications and logistics between participants and constituents, as appropriate.
4. **Public Attendees:** Individuals who attended the meetings and were only allowed to express comments. Some members of this group were occasionally invited to be part of the formal “support group”.

Please note that no hierarchical or authoritative relationship exists between the four described units of observation, although it must be stressed that public attendees had no direct or formal ability to participate in the decision-making processes.

4.4 Methodology

The methodological approach of this research is known as semi-grounded or adapted grounded theory. This approach was previously utilized for network studies by McGuire and Agranoff (2014) and Voets (2014). In contrast to the grounded theory approach, where new theory emerges strictly and exclusively from the data (without preconceived theoretical formulations) the adapted or semi-grounded method uses “literature-based major concepts” as its point of departure (McGuire & Agranoff, 2014; Voets, 2014, p. 120). Under the semi-grounded or adapted grounded approach, the data is utilized to reject, refine, further develop, and/or complement the previously defined theoretical propositions (McGuire, 2002; Voets, 2014).

The semi-grounded or adapted grounded approach is considered necessary to respond to the complex contexts of networks (McGuire, 2002; McGuire & Agranoff, 2014; Voets, 2014). This approach has been effective to expand the theory of public

collaborative networks, as it allows researchers to more effectively frame and focus current research, by capitalizing on pre-existing theories, research questions, and instrumentation (Corbin, 2009; McGuire & Agranoff, 2014; Miles & Huberman, 1994). McGuire and Agranoff (2014, p. 142) argue that it is now a “standard grounded theory practice to begin with a framework”. The semi-grounded or adapted grounded approach is consistent with Yin’s case study methodology, which encourages the identification of multiple theoretical frameworks that serve as immediate points of reference to reject, refine, develop, and/or complement the theoretical propositions built from a primary theoretical framework. The following subsections describe the data collection and analysis procedures.

4.4.1 Data Collection

The sources of information identified for this research were direct input from participants (obtained through semi-structured interviews that were audiotaped with permission of the participants, and written questionnaires), public documents, and audio recordings. Public documents include but are not limited to: archived materials, meeting materials, final report, and related links available at the AFG webpage (see MDE, n.d.-a).

In preparation for this study, the researcher fulfilled all the requirements of the University of Delaware’s Institutional Review Board. This research was deemed “exempt” and authorization was granted to start the collection of data (see Appendix A). Audio recordings became available after the research had started, so a procedural amendment was submitted to the University of Delaware’s Institutional Review Board, requesting permission to use this data. Permission was granted, as noted in Appendix B.

To identify prospective participants for this research, meeting summaries of the AFG project were revised. It was found that approximately 88 individuals attended at least one of ten meetings. Since this study aimed to obtain representative information that may lead to analytic generalization, a *minimum participation of 60%* (participation in at least six of ten meetings) was established as a *selection criterion* to become a research participant.²¹ Once applied this criterion, the number of eligible research participants was reduced to 38.

Taking in consideration the busy schedules of the participants, permission was asked to enable multiple communication channels (i.e., phone, Skype, and face-to-face semi-structured interviews, and/or written answers to questionnaires via email). Also, to maximize the efficiency of their time, the questionnaires were attached to the letter of invitation, along with the consent form. All materials were sent via email. The researcher recognizes that enabling several channels of communication could have triggered variances in the quality of the responses; however, the need for flexibility was imperative, given the small size and specificity of the population, along with the personal limitations of participants to contribute to this research (e.g., time conflicts, and level of motivation).

In general, interviews ranged between thirty minutes and two hours, but most of them lasted an hour. In preparation to the interviews, the researcher became familiar with the method of qualitative interview studies (Weiss, 1994; Patton, 2015).

²¹ During the course of the ten meetings, the AFG network went through a process of formal establishment, educational sessions, negotiations, and decision-making. The 60% minimum participation criterion seeks to reduce the risk of collecting data that may not accurately describe the evolution of the management process.

As described by Patton (2015), the interviews were conducted in a semi-structured manner (interview guide approach), using a questionnaire for guidance, but maintaining flexibility in the sequence and order of the questions. During the interviews, the researcher made an effort to adhere to basic interviewing principles, such as including open-ended questions, being clear, active listening, paying attention to the context, being empathic and neutral, making transitions throughout the process, distinguishing between types of questions (e.g., yes/no questions, personal perception questions, general/open ended questions), being prepared for unexpected situations, and demonstrating interest and attention through the interview (Patton, 2015). Sweiss (1994) provided recommendations for the use of interview excerpts, focusing on the value of the illustration, the protection of the participant's integrity, and the flow within the document. All interviews were transcribed for subsequent content analysis.

The two questionnaires designed for this research explored aspects related to network background information, management and leadership approaches and mechanisms, and network evolution perceptions (see Appendices C and D for instruments). A total of 26 participants of the eligible 38 were interviewed, for a response rate of 68.4%. Two individuals declined participations due to time constraints (5.3%), two were no longer available (5.3%), and the remaining eight individuals were unresponsive despite of the multiple attempts to establish contact (21.1%). The audio recordings helped to supplement the lack of participation of some individuals.

Four principles of data collection, proposed by Yin (2014), were adopted to promote validity and reliability: use of multiple sources of evidence; keeping systematic records; maintaining a chain of evidence; and thoughtful use of data from

electronic sources. The following paragraphs describe these principles and the benefits of adhering to them.

Converging data from multiple sources (i.e., public documents, recordings, questionnaires and interviews) results in data triangulation, thus conferring construct validity for the case study (Yin, 2014). Construct validity refers to the “accuracy with which case study’s measures reflect the concepts being studied” (Yin, 2014, p. 238).

The systematic archive of all the data serves to increase the reliability of the entire case study. A personal database may be utilized to preserve information and retrieve it when needed (Yin, 2014). To the extent allowed by the Institutional Review Board, information could be shared with other researchers and/or used for subsequent research.

Maintaining a chain of evidence refers to the alignment between the collected data and the findings reported in a final document. In other words, maintaining a chain of evidence requires adherence to the methodological guidelines proposed in the study protocol, and the subsequent utilization of the gathered data. It confers the ability to “move from one part of the case study process another, with clear cross-referencing to methodological procedures and to the resulting evidence” (Yin, 2014, p. 128). Following a chain of evidence strengthens the reliability of a case study’s research procedures (Yin, 2014).

The last data collection principle, exercising care when utilizing data from electronic sources, warns about potential risks of using the Internet (Yin, 2014). In this regard, thoughtful delimitation of the topic was necessary, as websites typically lead to a myriad of information. Issues of privacy and reliability of the information were also taken into account at all times.

4.4.2 Data Analysis

Data analysis is a systematic process of data manipulation that results in the creation of empirically-based findings (Yin, 2014). During this research, a process of data reduction, conceptualization, and interpretation was followed. The process included the following steps: collecting raw data, coding the data, creating categories, and developing themes.

Raw data were collected until reaching a level of confidence that is also known as data saturation, which means that no new information was being disclosed. For example, written answers to questionnaires were succinct and lacked illustrative details. However, the responses collected through interviews highlighted the same aspects mentioned in questionnaires and provided empirical details. Moreover, audio recordings expanded the level of inference by reproducing critical moments (e.g., situations when conflict was taken place, or when agreements were reached), and by unveiling tense or frustrating situations that, because of courtesy were probably not mentioned by the participants. For the purposes of this research, those situations were relevant as potential collaboration barriers.

For the analysis of collected data, two coding approaches were adopted: the *a priori* establishment of codes identified from the theoretical frameworks, and the establishment of emergent (open) codes –as the analytical stage evolves (Bloomberg & Volpe, 2008). The researcher started the coding process by reading the materials and identifying “big ideas”, maintaining flexibility, keeping the language from original documents and participants, and writing memos for subsequent analysis. Prior to engaging in the processes of interpretation and integration, all materials were reread and examined to confirm that all information had been considered and properly coded.

As suggested in the literature, categories were constructed by arranging “major code clumps into a ‘logical’ order” (Glesne & Peshkin, 1992, p. 135). The process of category building required a similar level of flexibility, as the exercised when creating emergent, open codes. In the last step of data analysis, development of themes, the goal was to reach a higher level of synthesis (i.e., theoretical claims, models, plausible recommendations or new theories).

Given the researcher’s proficiency in the use of Microsoft Excel, the coding process was conducted through the use of dynamic databases. Being able to design a customized instrument allowed the researcher to account for all possible answers and maximize the level of inference. Also, it was important for the researcher to maintain the differentiation between the questions, as certain queries were designed to confirm or reject theoretical propositions, while others were formulated to retrieve empirical data (i.e., the description of processes and approaches that were particularly effective to attain network goals). In certain cases, participants volunteered information at certain points of the interview that partially or completely answered a subsequent question. For this reason, it was important to be able to account for those answers when conducting the analysis of each component of the questionnaire. The head rows of the spreadsheets contained information such as: unit of observation, participant, original question for which an answer was provided, alternative questions for which the answer could be applicable, direct quote, researcher’s comments, code, category, and theme.

Thinking of the coding process as a sequence, the researcher first read the materials several times, made preliminary notes, and then exported information to the database. Direct quotes were copy-pasted, and if necessary, the researcher added

notes for clarification. Once all entries had been incorporated in the database (up to 867 entries for the largest unit of observation), the researcher proceeded to analyze question by question, making use of filters to narrow and focus the analysis to the applicable responses. Being able to see who said what and how often a person stressed (or repeated) the same concept, allowed the researcher to develop a sense of intensity about the opinions. Also, it made possible to discard repetitive or redundant data that didn't add value or novelty to the analysis. At this point, the researcher assigned codes to the data. In a second-round of analysis, with a more mature and comprehensive understanding of the case, the researcher constructed categories and themes. The resulting codebook is included in Appendix E.

At an intermediate stage of analysis and interpretation, the researcher wrote reports to integrate responses at the unit of observation level. This general process was repeated for each unit of observation, prior to making inferences at the network level. While the use of professional software was deferred, the analysis was conducted with strict adherence to qualitative analysis principles, as described by Bloomberg and Volpe (2008), and Glesne and Peshkin (1992).

In terms of analytical strategies, it was deemed appropriate to rely on theoretical propositions and the formal examination alternative explanations (Yin, 2014). The primary theoretical framework (the network management behaviors framework) provided the foundation for the construction of theoretical propositions. The use of secondary frameworks is a desirable methodological step to increase the validity of results (Yin, 2014). Under this methodological approach, researchers are encouraged to identify additional frameworks that may provide alternative explanations for the data, based on the research questions and general knowledge of

the case study²². Alternative explanations are plausible alternatives (different from those proposed in the main theory) that could better explain the results. When alternative frameworks are identified early in the research design process, it is possible to incorporate the premises of alternative frameworks in the research instruments, as it was done in this research. This is not to say that the researcher is predisposed or predetermined to integrate or hybridize the frameworks, or to limit the scope of interpretation to the previously identified frameworks. Instead, this methodological step demonstrates that, to increase the validity of constructs, the researcher has gathered a preliminary pool of concepts that may be applicable to the case study.

Finally, this research utilized the pattern matching technique, which consists on comparing an empirically based pattern (the evidence obtained from the data) against a predicted pattern established prior to the data collection (in this case, the theoretical propositions) (Yin, 2014). For the purposes of illustration: the empirical evidence retrieved in this study demonstrated that the AFG network experienced (and prepared for) a stage of formal deactivation of the network. On the other hand, the first theoretical proposition of this research indicated that *the formation and operation of the AFG network exhibited the four management behaviors proposed by McGuire and Agranoff (2014), namely: activation, mobilization, framing and synthesis.*

²² At the design stage, some characteristics of the AFG project suggested the need for additional frameworks on the areas of network evolution and collaborative learning. As depicted in MDE's website, the Accounting for Growth project was conducted as a finite process of ten meetings, and there was evidence of substantial amount of knowledge exchange. A third theoretical framework with emphasis on leadership was adopted, as it was perceived that the primary framework was shallow in the description of leadership dynamics.

Through the use of the pattern matching technique, it becomes evident that a formal stage of deactivation is not included in the theoretical proposition crafted after McGuire & Agranoff's (2014) model. Consequently, the researcher can systematically conclude that the network management behaviors did not match the empirical evidence, and that consequently, it may need modification or expansion.

4.5 Conclusion

This qualitative case study is part of a research tradition that acknowledges substantial public administration changes in the recent decades and that seeks to better understand, from a theoretical perspective, the challenges and characteristics of the emergent organizational forms in order to improve their practical effectiveness. As elaborated in this chapter, this research seeks to achieve a deeper understanding of the processes and approaches that contribute to the attainment of network goals. In the case of the AFG network, those goals consisted in reaching common understanding between network participants, agreement, and decision-making capacity.

This research reproduces a methodological approach previously used by McGuire and Agranoff (2014), and Voets (2014), while introducing innovations such as the use of secondary frameworks and the use of Microsoft Excel for systematic coding. The description of the case study settings will be presented in the next chapter, after a detailed description of the context and background that lead to the creation of the AFG network.

Chapter five introduces the national policy context to protect water resources, describes the emergence of the watershed approach, and illustrates local efforts to restore the Chesapeake Bay Watershed. The chapter concludes with an explanation of

the nutrient trading approach and a detailed description of the AFG network, which serves as case study for this research.

Chapter 5

CASE STUDY INTRODUCTION

5.1 Introduction

This research features the work of an interorganizational network, led by MDE, which used collaboration as the approach to craft policy recommendations for a nutrient trading policy program in Maryland. The AFG nutrient trading policy intended to “address the increase in the State’s pollution load from increased population growth and new development” (MDE, n.d.-a). This chapter introduces background concepts of water resource management, quality, and governance, with an emphasis on the Chesapeake Bay Watershed (alternatively referred as the *Bay*). It includes a general overview of Maryland’s restoration blueprint, which comprises the establishment of a nutrient trading program. This background is part of the knowledge that participants of the AFG network were expected to have. Chapter five concludes with a description of the nutrient trading approach and a detailed description of the case study settings of this research.

5.2 Relevance of Water Resources

Ensuring the viability and protection of water goes beyond ethical motivations. Water is more than a commodity; it is “the basis of life on Earth” (Cech, 2010, p. 1) and an essential resource for survival and progress (Draper, 2008). While perceived that water is plentiful in this planet, water availability can be limited because of quality and quantity issues, and the cost of access (Grayman, Loucks, & Saito, 2012).

Failure to protect and preserve the quality and viability of water resources (i.e., through comprehensive water policies and effective public management) may result on further water impairment and scarcity (Draper, 2008).

The ability to maintain the quality of a water body is highly dependent on the equilibrium of the hydrologic cycle, defined as the natural movement of water through land surfaces, groundwater, oceans, and the atmosphere (Cech, 2010). The hydrologic cycle exhibits the following processes: precipitation, runoff, surface and groundwater storage, evaporation and transpiration, and condensation (Cech, 2010). Changes in land use can alter the equilibrium of natural processes, leading to negative externalities such as water pollution and the urban heat island effect (Cech, 2010).

The combined effects of urbanization, industrialization, and population growth typically result on landscape changes such as removal of vegetation, depletion of green areas, loss of soil and natural depressions, creation of impervious surfaces, and the establishment of conventional stormwater infrastructure (Czemiel, 2010; United Nations Organization for Education, Science and Culture (UNESCO), n.d.). Consequently, these changes cause alterations to hydrologic cycle processes, such as reduced infiltration and percolation, reduced transpiration from plants, increases in runoff water, urban floods from sewers, reduced air humidity and increased air temperature (Czemiel, 2010). These alterations relate to water quality decline, as increased runoff volumes carry sediment and pollutants to waterbodies. The removal of vegetation in rural areas (i.e., agriculture and forestry practices) also contributes to water impairment, as high levels of nutrients and sediments are released to waterways.

The degradation of natural ecosystems also has negative impacts for human's quality of life, as it affects human physical and psychological health, productive

activities, and perceptions of value (Baldwin, Powell, & Kellert, 2011). This will be further explained with regard to the Chesapeake Bay Watershed, in a subsequent section of this chapter.

In the context of this dissertation, urban and suburban growth is approached as one of the critical pollution factors that negatively impact aquatic ecosystems and prevent the achievement of environmental and federal policy goals. The phenomenon of urbanization, understood as “the changing of land use from forest or agricultural uses to suburban and urban areas”, is taking place at an unprecedented speed in the United States (National Research Council, 2008). In addition to the previously mentioned physical changes, urbanization results in higher environmental pressure, as a consequence of post-development externalities that include the management of additional levels of human waste, garbage, and energy consumption, among others (Grayman et al., 2012; UNESCO, n.d.).

Urban areas are not the only critical sources of pollution. The literature identifies two broad sources of pollution: point sources and non-point sources (Pharino, 2007). The first type refers to “contamination discharged through a pipe or other identifiable location” (Cech, 2010, p. 521), and the latter refers to “contamination discharged from broad and difficult-to-identify sources” (Cech, 2010, p. 521). Examples of point sources include discrete discharges from regulated stormwater, municipal wastewater discharges, wastewater treatment plants, combined sewer overflows (CSOs), industrial facilities, and regulated agriculture (e.g., concentrated animal feeding operations). Since point sources of pollution can be easily targeted and they contribute to the drastic degradation of waterbodies, they have been effectively regulated through the National Pollutant Discharge Elimination

System (NPDES) program under the Clean Water Act (CWA) (National Research Council, 2008). On the other hand, nonpoint sources include runoff from unregulated agricultural operations, urban landscapes, forests, atmospheric deposition, septic systems and unregulated stormwater (Byun, 2014). According to the United States Environmental Protection Agency (USEPA), nonpoint source pollution is the “major source and cause of water quality impairment” (USEPA, 2014a) and it is the most pressing cause of water quality problems (USEPA, 2012a). Based on data from the Chesapeake Bay Total Maximum Daily Load (TMDL) Model Phase 5.3.2, Byun (2014) estimated that nonpoint sources account for 72% of the nitrogen, 73% of the phosphorus, and 87% of the sediment polluting the Chesapeake Bay.

Given their diffuse nature, non-point sources of pollution have remained elusive to direct regulation (Byun, 2014; Heberling, 2011). From a public management perspective, regulating non-point sources of pollution is impractical because command and control regulation requires the establishment of strict and expensive pollution control activities (Byun, 2014; Heberling, 2011; National Research Council, 2008). Moreover, the current political climate makes extremely difficult to address the issue through shared and comprehensive governance strategies (Byun, 2014). The current political context is characterized by funding constraints, heightened political resistance to traditional command-and-control environmental regulation (Greenhaw, 2012), and the prevalence of diverse and contrasting interest groups (Brugger & Maryland Historical Society, 1988; MDE, 2012a). Therefore, creating joint solutions that reduce non-point source solution will be essential to materialize water quality improvements.

The last decades have been characterized by policy advances in water governance at national level, which have ultimately reached the local level through the endorsement of a watershed approach. However, the former voluntary and traditional methods failed to achieve the expected results in practice. For this reason, new approaches are still needed to sync governance with the present and future needs of America's waterbodies (CBF, n.d.-b; United States Government Accountability Office, 2013a).

The United States continues to embrace the future with new visions, including becoming a society that prevent crises, rather than remaining as one that adapts in response to them; recognizing water management as a critical factor for democracy; achieving a higher level of consolidation (e.g., technology, utilities, supply sources), and higher levels of regional collaboration (Grayman et al., 2012). To achieve future visions for water quality and governance, simultaneous advances on planning, policy, science, technology, and education will be needed (Grayman et al., 2012). Moreover, to fully accomplish social and environmental goals for the future, policy decisions will need to recognize the interdependence of factors/stressors, such as: natural, climatic, demographic, social, economic, technological (e.g., infrastructure and security), governance (e.g., institutions, policy, law and finance), and environmental (e.g., public health pollution and sustainability) (Grayman et al., 2012).

Dealing with this arena is extremely challenging, as fragmentation is an intrinsic characteristic of public policy (Birkland, 2011; United States, 2001). From a technical standpoint, a collaborative effort will need to integrate the multiple disciplines involved in water management, including but not limited to: ecology,

engineering, hydrology, geography, economics, education, communication, planning, policy sciences, and governance.

Maryland's AFG policy project (further described in Sections 5.9, 5.10 and 5.11) is an example of an alternative water quality management strategy that relies on market forces and stakeholder participation. This innovative nutrient trading framework may complement other policy approaches, as it enjoys greater political acceptance than other regulatory approaches –such as taxes and command and control regulations (Greenhaw, 2012). Implicitly, a collaborative and participatory policy-making process is needed to develop the conceptual and operational components of a highly complex and innovative policy. Subsequent sections of this chapter will stress the need to address water quality concerns in a collaborative manner and will summarize the federal and local approaches to achieve water quality standards.

5.3 Water Quality Issues: Federal Perspective

Water quality, broadly understood as “a measure of a waterbody’s ability to support beneficial uses” (USEPA, 2012b), became a topic of popular interest during the 1970’s, following disastrous incidents such as the Cuyahoga River fires²³ (Ohio History Central, n.d.; Pharino, 2007). Public concerns regarding environmental pollution spurred the creation of the USEPA in December of 1970 (USEPA, 2014b) in order to provide protection to humans and the natural environment (USEPA, 2014c),

²³ The Cuyahoga River (Cleveland Ohio), one of the most polluted rivers of the United States, caught on fire multiple times (1912, 1952, 1968, and 1959). See Ohio History Central (n.d.).

through research, monitoring, establishment of standards, and legal enforcement (USEPA, 2014b).

Water quality has been a policy topic since 1948, as reflected in the Federal Water Pollution Control Act. This first law, established to encourage water pollution control through federal research and investigation, served as a foundation for subsequent acts and amendments (USEPA, 2012c). For instance, the Water Pollution Control Act Amendments of 1956 authorized states to establish water quality criteria; the Water Quality Act of 1965 was created with the goal of attaining water quality standards established by states; the 1972 Clean Water Act, required the use of technology-based approaches; the 1977 Clean Water Act Amendments stressed the importance of toxic pollutant control and provided funding to explore new water treatment methods; the 1987 Clean Water Act Amendments of 1987 established “a program for controlling toxic pollutants and stormwater discharges, a nonpoint source pollution grant program, and special programs to clean up the Chesapeake Bay, the Great Lakes and other large estuaries” (Dipity, n.d.; Freeman et al., 2000; Muskie, 1978; Pharino, 2007; USEPA, 2012c). Additional policies have also been developed to address national water issues, such as public drinking water, ground and underground water, wetlands, rivers, lakes, estuaries, coasts, beaches, oceans, and infrastructure (Dipity, n.d.).

The Clean Water Act, established with the purpose of restoring and maintaining “our nation’s waters by preventing pollution, providing assistance to publicly-owned wastewater treatment facilities, and maintaining the integrity of wetlands” (USEPA, 2013a), is considered a policy landmark that empowered USEPA to ‘punish polluters’ and legitimized the environmental movement (McLendon, 2012).

At the time of its establishment (1972), “two-thirds of the country’s lakes, rivers and coastal waters had become unsafe for fishing or swimming” (Aspen Institute, 2010). The CWA established the basic structure to regulate pollutants discharges into U.S. waters; authorized USEPA to implement pollution control programs; established water quality standards for all contaminants in surface waters by maintaining existing requirements; forbid the discharge of any pollutant from a point source into navigable waters -unless a permit was obtained under its provisions; funded the construction of sewage treatment plants with grants; and recognized the need for planning to address nonpoint source pollution (USEPA, 2015a). Relevant sections of the CWA include: Section 402, which established the National Pollutant Discharge Elimination System (NPDES); Section 303(d), which required the identification of impaired waters and the establishment of Total Maximum Daily Loads (TMDLs)²⁴; Section 309, which established the nonpoint control programs for the management of polluted runoff from land surfaces; Section 208, which required area-wide waste treatment management plans; and the Coastal Zone Act Reauthorization Amendments, which established coastal nonpoint source pollution control programs (Pharino, 2007).

The NPDES permit program holds particular interest for the purpose of protecting and improving water quality. This program regulates point sources of pollution that discharge pollutants into U.S. waters (USEPA, 2014d). In the light of the NPDES program, all point sources (e.g., municipal, industrial and commercial facilities) that discharge pollutants into U.S. waters (e.g., lake, river, or ocean) must

²⁴ “A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards” (USEPA, 2015b).

obtain a National Pollutant Discharge Elimination System (NPDES) permit (USEPA, 2014e). Permits are intended to ensure that receiving waters meet water quality standards (USEPA, 2014e). The NPDES program has been crucial to effectively regulate and reduce point source pollution (Byun, 2014). However, the challenge of controlling non-point source pollution, such as agriculture, remains outside the scope of command and control mechanisms (Greenhaw, 2012). As indicated previously, nonpoint source pollution is the major cause of water impairment (USEPA, 2014a).

Section 303(d) has also played an important role in addressing the pollution from both point and nonpoint sources by requiring states, territories, and authorized tribes to develop lists of impaired waters; establishing priority rankings for the waterbodies listed; developing TMDLs for impaired waters to meet water quality standards; and implementing approved TMDLs in the planning process (MDE, n.d.-a; USEPA, 2015b). USEPA oversees the identification of impaired waters and the causes of their impairment, along with the planning process for the development of TMDLs, TMDL alternative, and/or implementation plan (USEPA, 2013b). States, territories and tribes are then responsible for the implementation, improvement, and recovery of their waterbodies (USEPA, 2013b).

The resulting TMDL program implicitly addresses point and nonpoint sources of pollution in a holistic manner (Sierra Club v. Meiburg, 2002). The calculation of a TMDL is the sum of allowed pollutant loads for point sources, non-point sources, projected growth and a margin of safety (MDE, n.d.-b). Therefore, the TMDL program establishes load allocations for point and nonpoint sources that cap the amount of nutrients and sediments entering a water body (Greenhaw, 2012). As a note of caution, the United States Government Accountability Office (USGAO) indicated

that some of the TMDL program features are beyond the scope of EPA's regulatory system (USGAO, 2013). Consequently, the USGAO recommended the development of new regulations to include key missing features²⁵ and to potentially include mechanisms to reduce pollution from nonpoint sources (USGAO, 2013).

This new long-term vision for assessment, restoration, and protection established a timeline to achieve discrete outcomes through collaboration between states, federal agencies, tribes, stakeholders, and the public (USEPA, 2013c). By 2014, it was expected to actively engage the community to improve and protect water quality (USEPA, 2013c). By 2016 and beyond, states are expected to proactively prevent water impairment, while keeping the efforts to restore polluted waterbodies (USEPA, 2013c). By 2018, states are expected to increase the scope of adaptive management approaches, to improve accelerate restoration and reduce nonpoint sources of pollution (USEPA, 2013c). By 2020, states are expected to conduct site-specific water quality assessments, and final evaluations would take place in 2022 (USEPA, 2013c).

Clearly, the process of TMDL's establishment and implementation requires considerable coordination and collaboration at multiple levels (Byun, 2014; MDE, n.d.-b). To be effective, the process should engage the participation of local stakeholders (Benham & Zeckoski, 2009). The experience from the last two decades, which can be broadly summarized as the establishment and follow-up process of

²⁵ As indicated in the GAO-14-80 report, the current regulation fails to include features to identify pollution-causing stressors. USGAO (2013) highlighted the need to expand the scope of regulations, in order to achieve water quality standards.

approximately 65,000 TMDLs, evidences the emergence of a new collaborative framework for implementing the CWA 303(d) Program (USEPA, 2013d).

In the four decades after the passage of the Clean Water Act, substantial water quality improvements have been achieved. According to USEPA (2014g), more than 2,000 waterbodies identified as impaired in 2002 have met the water quality standards²⁶ established by the states. However, the general quality of U.S. waters remains as a concern, as 40% percent of the national waters are still heavily polluted (USEPA, 2013e; USEPA, 2014h²⁷). As estimated from the National Summary of State Information (USEPA, 2015c, March 29, 2015 update)²⁸, 53.66% of the assessed rivers and streams are impaired, as well as 67.55% of the assessed lakes, reservoirs and ponds; 78.16% of the assessed bays and estuaries; 88.25 of the assessed coastal shoreline; 63.20% of the assessed ocean and near coastal waters; 48.41% of the assessed wetlands; 98.24% of the assessed great lakes shoreline; and 99.88% of the assessed great lakes open water.

It is noteworthy that water quality problems negatively affect local economies. According to USEPA (2013f), “[m]ore than \$450 billion in food and fiber, manufactured goods, and tourism depends on clean water and healthy watersheds”.

²⁶ Water quality standards indicate the waterbody’s designated uses, water quality criteria, and antidegradation policies (USEPA, 2011).

²⁷ Showing recently assessed data, which displays the most current information provided by the states in their biennial integrated water quality assessments reports prepared under section 305(b) and 303(c) of the Clean Water Act.

²⁸ Note the sample of assessed waters is somewhat limited. Incomplete information may lead to discrepancies and/or missing information.

Therefore, the protection and restoration of water resources is essential to maintain the quality of life of multiple communities that depend on this natural resource.

Remaining challenges will need to be addressed with innovation and strict benchmarks (Aspen Institute, 2010). Moreover, solutions will need to address the multiple boundaries of environmental governance (USEPA, 2001). The watershed approach, offers a foundation to address water quality issues in a more integrated and comprehensive manner, taking in consideration all pollution and degradation threats (USEPA, 2001).

5.4 The Watershed Approach

A watershed, also known as river basin, drainage basin, and catchment, is the total land area that contributes surface water to a stream, lake, wetland or estuary (Cech, 2010; USEPA, 2001). A watershed is a practical unit for management, as it considers all the activities that transpire within the unit (USEPA, 2001). The watershed approach allows people to address environmental problems with a broader ecosystem perspective, which is more effective than addressing specific segments of the watershed (United States, 1995).

The watershed approach was first suggested by John W. Powell in 1890, as a governance system for western states (USEPA, 2001). It was later endorsed by USEPA in 1991 as a method for local, state, regional, and tribal cooperation (Cech, 2010). The watershed management approach highlights the need for public engagement and collaboration, as public policies, agencies, programs and political jurisdictions are extremely fragmented, thus making protection and restoration efforts extremely difficult to coordinate (USEPA, n.d.-a; see also USEPA, 2015d).

The watershed approach focuses on priority problems, stakeholder involvement, collaborative solutions, and monitoring for results (United States, 1995). In other words, the watershed approach connects land management decisions with actions and watershed health (USEPA, 2001). Benjamin H. Grumbles (n.d.), former Assistant Administrator for Water at USEPA and current Secretary of Maryland's Department of the Environment (2015) observes that the watershed approach has greater potential because it uses the input of local officials and public individuals to complement the work led by federal scientists and agency officials. To facilitate public engagement and participation, USEPA coordinates the *Adopt Your Watershed* program, which connects the public with more than 2,600 watershed groups and provides information to start new watershed-oriented organizations at the local level (USEPA, 2012d).

In today's context, the watershed approach framework has become a milestone of sustainability. As seen in USEPA's 2014-2018 Strategic Plan, watershed restoration and protection programs are listed as one of the strategies to "[p]rotect and restore waters to ensure that drinking water is safe and sustainably managed, and that aquatic ecosystems sustain fish, plants, wildlife, and other biota, as well as economic, recreational, and subsistence activities" (USEPA, 2014i). Some of the activities developed as part of the watershed approach include the development of TMDLs for impaired waters, implementing cleanup plans, and developing creative and cost-effective protection and restoration programs, such as water quality trading and watershed permitting (USEPA, 2014i). The strategic plan to protect America's water also promotes the continued implementation of national water programs and the management of water infrastructure (e.g., network pipes and treatment facilities)

(USEPA, 2014i). National core programs seek to improve water quality monitoring and information management, strengthen water quality standards, improve discharge permits, and reduce pollution from diffuse or nonpoint sources through collaboration with state partners (USEPA, 2014i).

The watershed approach provides a robust framework to consider all factors that impact a fundamental hydrological unit, but also requires a high level of coordination and collaboration between independent state and local jurisdictions (Randolph & Bauer, 1999). As pointed by Byun (2014), the governance of a watershed may involve coordination and collaboration between several levels of government, common watershed states, agencies that manage complementary and sometimes overlapping programs, non-governmental organizations, and the public. Consequently, regional and local management and coordination has become encouraged. While the federal government exercises general authority through environmental law and regulations, it grants significant power to state governments through delegation and flexibility (Byun, 2014).

The management of the Chesapeake Bay Watershed illustrates the application of the watershed approach. The Bay has been managed in a collaborative manner since 1983, after the creation of the Chesapeake Bay Program (CBP), a watershed partnership between federal and state agencies, local governments, non-profit organizations and academic institutions (CBP, n.d.-a).

5.5 The Chesapeake Bay: A National Treasure

The Chesapeake Bay, largest estuary of the United States, was recognized as “one of the largest and most biologically productive estuaries in the world” by President Obama in 2009 (Exec. Order No. 13508, 2009). The Chesapeake Bay

Watershed encompasses parts of six states (Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia) and the entire District of Columbia (Chesapeake Bay Program, n.d.-b).

The total area of the watershed (including land and water) is 64,000 square miles (USEPA, 2014f). The states of Pennsylvania, Virginia and Maryland account for 83% of the watershed area, and consequently, they play a major role in the Bay's restoration efforts (Byun, 2014). The surface area of the Bay and its tidal tributaries (approximately 4,480 square miles) includes tidal fresh waters, mixing zones, salt waters, and wetlands (CBP, 2012c; USEPA, 2014f).

As shown in Figure 5.1, the Chesapeake Bay Watershed is subdivided into eight major river basins (Susquehanna, Potomac, James, Rappahannock, York, Patuxent, Western Shore, and Eastern Shore).

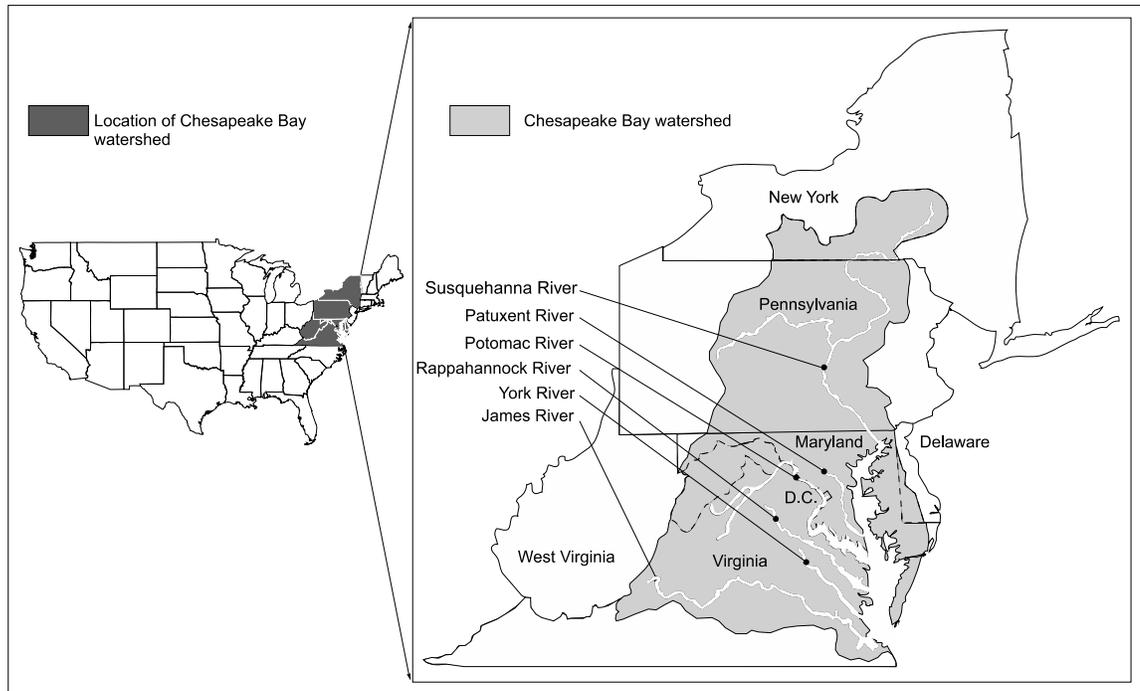


Figure 5.1. Major River Basins of the Chesapeake Bay. Source: United States Government Accountability Office, 2011, p. 6.

The Chesapeake Bay is home to more than 17 million people and supports more than 2,700 species of plants and animals, including organisms that are invisible to the naked eye, such as phytoplankton and microzooplankton, freshwater and seawater fish species, birds such as waterfowl, osprey and bald eagles, and the iconic oysters and blue crabs (CBP, n.d.-c; Chesapeake Bay Foundation, 2014a; CBP, 2004). The Algonquin Indians originally called the estuary *Chesepiooc*, which has been translated as *Great Shellfish Bay* (CBP, 2004).

Given the richness of this habitat, the estuary plays an active role on its economy (CBP, 2000). In addition to commercial seafood production, the beauty of the Chesapeake Bay calls for several recreational activities such as boating, crabbing,

swimming, hunting and camping, thus stimulating the tourism and realty markets (CBP, 2004). Estimates of the Chesapeake Bay Foundation (CBF) indicated that the annual economic benefits of the Chesapeake Bay amounted to \$107.2 billion, based on 2009 data (CBF, 2014a). Moreover, they estimated that, after the implementation of the *Chesapeake Bay Total Maximum Daily Load* (TMDL) program (see description in Section 5.6), this value could increase by \$22.5 billion through improvements in aesthetic value, climate stability, food production, recreation, waste treatment, water regulation and water supply (CBF, 2014a).

The uses of the land within the watershed are: 64% forest/woodland, 24% agriculture, and 8% urban (Paolisso et al., 2015). Noteworthy, the second land use activity (agriculture) releases the largest pollution loads of nitrogen, phosphorus, and sediments to local rivers, streams, and the Chesapeake Bay (CBF, 2014a). Based on data from the Chesapeake Bay TMDL Model Phase 5.3.2, it was estimated that agriculture contributes 44% of the nitrogen, 57% of the phosphorus, and 59% of the sediment polluting the Chesapeake Bay (Byun, 2014).

The Bay has been a focus of attention in the last decades, as research has shown a decline on water quality (Scott & Denver, 2015; USGAO, 2011). According to USEPA (2014f), studies conducted in the 1970s alerted about the declining quality of the Chesapeake Bay waters. The studies indicated the Bay was becoming nutrient enriched as a consequence of agricultural activities, population growth, and sewage treatment plant discharges (USEPA, 2014f). Some Chesapeake Bay states continue to anticipate substantial population growth in the future, which will add further pressure to the ecosystem. For instance, Maryland expects to add 478,000 households by 2035

(MDE, n.d.-a). In general, it is estimated that the watershed population will increase to 21.4 million by 2040 (CBP, n.d.-d).

A comprehensive basin-wide assessment conducted by USEPA in the Chesapeake Bay in 1976 demonstrated that high levels of nutrients (particularly nitrogen and phosphorus) and sediments were contributing to the decline of the estuary (Gillelan et al., 1983). These observations were linked to other negative ecological trends, such as the decline of submerged aquatic vegetation, decline in oyster populations, decline in freshwater-spawning fish populations, depletion of dissolved oxygen, and increased levels of heavy metals and toxic organic compounds (Gillelan et al., 1983). High levels of nutrients result on the excessive growth of phytoplankton and algae, which prevent essential vegetation from accessing sunlight (USEPA, 2014f). Excessive algae and phytoplankton deplete the available oxygen for “bottom-dwelling organisms such as oysters, clams and worms”, which are part of the food-chain of other economically important organisms, such as fish and crabs (USEPA, 2014f). Therefore, these pollutants have a negative impact on the following water quality measures: dissolved oxygen, chlorophyll-a, and water clarity (Paolisso et al., 2015). Dissolved oxygen, which refers to microscopic bubbles that are mixed in the water and occur between water molecules, is necessary for most aquatic plants and animals to survive (CBF, n.d.-a). Chlorophyll-a is an indicator of nutrient pollution that reflects the predominant type of chlorophyll found in algae (CBP, n.d.-f). Sediment refers to loose particles of sand, silt and clay that are pushed into the Bay as a result of erosion and stormwater runoff (CBP, n.d.-f). The initial findings of the research led by Gillelan (1983) motivated the creation of the CBP (CBP, n.d.-e).

The Maryland Department of Natural Resources (MDNR, n.d.) observes that efforts to protect the aquatic habitat of the Chesapeake Bay date back to 1820, when Maryland's legislation enacted protections for oysters and fisheries (see Chapters 24 and 199, Acts of 1800). In 1975, Congress selected the Chesapeake Bay as the first estuary targeted for protection and restoration in the United States (USEPA, 2014f). More recently, efforts to restore the Chesapeake Bay have been led and coordinated through the CBP, which is described next.

5.6 The Chesapeake Bay Program (CBP)

The CBP is a regional partnership that comprises 19 federal agencies, nearly 40 state agencies and programs, approximately 1,800 local governments, more than 20 academic institutions, and more than 60 non-governmental organizations (e.g., businesses, non-profits and advocacy groups) (CBP, n.d.-g). Its establishment, back in 1983, recognized that a collaborative approach is needed to coordinate the efforts of numerous political boundaries, agencies and organizations that span across the Bay (CBP, n.d.-g). Consequently, key stakeholders were recruited to share expertise and resources across organizations, promote stakeholder's involvement, broaden the understanding of the Bay's issues, promote collaboration and learning, improve coordination and avoid duplication (CBP, n.d.-g).

The CBP is led by the Chesapeake Executive Council, which is integrated by the governors of the six Bay states, the mayor of the District of Columbia, the chair of the Chesapeake Bay Commission, and the administrator of the U.S. Environmental Protection Agency (CBP, n.d.-h). Citizens, scientists, and local officials provide advisement to the CBP, while government agencies, academic institutions, and watershed organizations coordinate actions with the CBP (CBP, n.d.-h).

The CBP staff is organized into committees (i.e., citizen advisory, local government, and scientific and technical committees); goal implementation teams (i.e., sustainable fisheries, vital habitats, water quality, healthy watersheds; stewardship, partnering and leadership); workgroups (i.e., communications workgroup, and the scientific, technical assessment and reporting workgroup); and action teams (CBP, n.d.-h). The work of the CBP partners also includes field work, such as the collection data and monitoring activities of the *Nontidal Monitoring Water Quality Network*²⁹ at multiple sites (CBP, n.d.-g).

The program's actions and decisions are guided by an adaptive management approach (CBP, n.d.-j). Adaptive management is a science-based approach that is used to plan, implement and evaluate restoration efforts (CBP, n.d.-j). This approach allows CPB to learn from practice and to make adjustments as needed (CBP, n.d.-k). Individual goal teams initiate the process by developing adaptive management plans, which are later adopted by the partnership (CBP, n.d.-j). According to CBP (n.d.-h), the adaptive management process includes the following stages:

- Setting goals.
- Identifying the factors that influence goal attainment.
- Identifying gaps or overlaps in existing management efforts
- Developing a management strategy.
- Developing a monitoring program.

²⁹ The *Nontidal Monitoring Water Quality Network* is integrated by eight states and federal agencies (CBP, n.d.-g). The monitoring program has 126 stations throughout the Chesapeake Bay Watershed that conduct water sampling (CBP, n.d.-i). Results are used to estimate nutrients and sediments loads and trends (CBP, n.d.-i).

- Assessing performance.
- Adapting management.

The Funding and financing resources that support the CBP come from multiple sources, including federal agencies, state and local governments, non-governmental organizations and private interests (CBP, n.d.-l). This level of support has been essential to advance the restoration agenda. Since the CBP's formation, several written agreements have been made to promote pollution reduction (CBP, n.d.-l). These agreements reflect constant adaptation in response to actual restoration progress and alignment with new available science and technology (CBP, n.d.-m).

Starting with a one-page pledge (December, 1983), the governors of Maryland, Pennsylvania and Virginia, the mayor of the District of Columbia, the Administrator of the U.S. Environmental protection Agency, and the Chair of the Chesapeake Bay Commission committed to a cooperative approach to address the Bay's pollution problems" (CBP, n.d.-e). The Chesapeake Bay Agreement of 1983 established the Chesapeake Bay Program and designated the Chesapeake Executive Council as the chief policy-making authority in the watershed (CBP, n.d.-n). Then, in 1987, a new agreement was established with the intent of achieving a 40% reduction on nitrogen and phosphorus loads by the year 2000, among other goals (CBP, n.d.-e; CBP, n.d.-n). Subsequent amendments, in 1992, allowed the program to target nutrients at their source (upstream in the Bay's rivers) and promoted the reevaluation of the toxics reduction strategy (CBP, n.d.-e). Later, in 2000, an agreement defined the vision and strategy to achieve comprehensive restoration goals by 2010 (CBP, n.d.-e). The Chesapeake 2000 Agreement established "more than 100 goals to reduce pollution, restore habitats, protect living resources, promote sound land use and engage the public in restoration" (CBP, n.d.-e; CBP, n.d.-n). Chesapeake 2000 rendered mixed

results: progress was made on the areas of land conservation, forest buffer restoration, and fish passage; however, insufficient progress was made in other critical areas, such as increasing oyster populations and reducing nutrient pollution from agriculture and urban areas (CBP, n.d.-e). Realizing the need to accelerate the pace of restoration, the Chesapeake Executive Council shifted its focus to short-term restoration goals in 2009, also referred as *milestones* (CBP, n.d.-o). The seven Bay jurisdictions are expected to set and meet goals every two years until 2025, in order to accomplish the watershed's restoration goals (CBP, n.d.-e).

The establishment of the two-year milestones paralleled the signature of the 2009 Chesapeake Bay Protection and Restoration Executive Order 13508. Following President's Obama Executive Order, in which the Chesapeake Bay was recognized as a national treasure, further efforts were demanded to demonstrate restoration improvements and accountability (U.S. White House, 2009). Executive order 13508 required the federal government "to renew the effort to protect and restore the watershed, establishing the Federal Leadership Committee for the Chesapeake Bay and bringing the Chesapeake Bay Program to a new level of interagency coordination and cooperation" (CBP, n.d.-n). Specific goals of this executive order (U.S. White House, 2009) included:

- Defining the next generation of tools and actions to restore water quality in the Bay and describing the changes to be made to regulations, programs and policies to implement these actions.
- Targeting resources to better protect the Bay and its rivers, particularly in agricultural conservation practices.
- Strengthening storm water management practices for federal facilities and federal land within the Bay watershed and developing a best practices guide for reducing polluted runoff.

- Assessing the impacts of climate change on the Bay and developing a strategy for adapting programs and infrastructure to these impacts.
- Expanding public access to the Bay and its rivers from federal lands and conserve landscapes of the watershed.
- Expanding environmental research, monitoring and observation to strengthen scientific support for decision-making on Bay restoration issues.
- Developing focused and coordinated habitat and research activities that protect and restore living resources and water quality.

Following President Obama’s Executive Order, a *Strategy for Protecting and Restoring the Chesapeake Watershed* was prepared by the federal Leadership Committee for the Chesapeake Bay (2010), which encompassed four broad goals: 1) restoring clean water, 2) recovering habitat, 3) sustaining fish and wildlife, and 4) conserving land and increasing public access (USGAO, 2011). The strategy also contains twelve measurable goals and 116 actions (USGAO, 2011). Noteworthy, USGAO (2011) stressed that a collaborative approach would be needed to accomplish the goals of this strategy.

To guide the collaboration between federal, state and local stakeholders, a new pollution-reduction framework, also known as Watershed Implementation Plan (henceforth referred as “WIP”) was developed (CBP, n.d.-n). A WIP is a document that indicates how each Bay jurisdiction will coordinate efforts with governance partners to meet and maintain water quality standards (CBP, n.d.-p). The development of WIPs by the Bay jurisdictions occurred as a three phase planning process. Based on a letter, written by William C. Early, Acting Regional Administrator at USEPA, the first phase requested the description of the authorities, actions, control measures, and permitting criteria to achieve pollution reductions (Early, 2009). The second phase requested to further divide pollution allocations among smaller geographic areas, or

facilities, or sources where appropriate (Early, 2009). The third phase sets the expectation for jurisdictions to further refine actions and controls to achieve water quality standards, and to have them implemented between 2018 and 2025 (Early, 2009). Noteworthy, WIPs are part of a broader accountability framework: the *Chesapeake Bay Total Maximum Daily Load (TMDL)* program.

The TMDL program was first announced on April 2009, and established in December, 2010 (CBP, n.d.-n). It is apparent that approximately 450 meetings were needed to develop the Chesapeake Bay TMDL, since 2008 (Shenk, 2013). The TMDL program also includes two-year milestones, tracking and assessment of restoration progress, and contingent federal actions (USEPA & CBF, n.d.). Alternatively known as the *Bay's Pollution Diet*, the TMDL program defined thresholds on the amount of nutrients and sediments that can be loaded into the Bay without compromising the achievement water quality goals established for 2025 (CBP, n.d.-e). Such metrics were influenced by the WIPs prepared by Delaware, District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia during Phase I (Early, 2009; USEPA, n.d.-b). The TMDL program established the following caps for pollution at the watershed level: 185.9 million pounds of nitrogen, 12.5 million pounds of phosphorus, and 6.45 billion pounds of sediment per year (USEPA & CBF, n.d.). Those limits reflect a 25% of reduction in nitrogen, 24% of reduction in phosphorus, and 20% reduction in sediment (USEPA & CBF, n.d.). An interim goal projected that 60% of the total pollution reductions should be achieved by 2017 (MDE, n.d.-c). Notably, the establishment of the 2010 TMDL program marked the beginning of a strict, enforceable plan, in contrast to previous voluntary restoration and protection programs that failed to be effective (CBF, n.d.-b). The strength of the

Chesapeake Bay TMDL consists on the measures that will hold jurisdictions accountable for their progress (or lack of progress) with regard to the timelines established by the federal government (Early, 2009).

The most recent Chesapeake Bay Watershed Agreement was designed to support the Chesapeake Bay's restoration blueprint. The 2014 agreement, signed on June 16, 2014 by the Chesapeake Executive Council and representatives from the entire watershed (CBP, n.d.-m; CBP, n.d.-q), envisions a sustainable and vibrant Chesapeake Bay, excelling in the ecological, economic and cultural dimensions (CBP, n.d.-m). This recent agreement reflects a more systematic approach, as it revolves around ten interrelated goals and expected outcomes on the areas of water quality, sustainable fisheries, vital habitats, toxic contaminants, healthy watersheds, stewardship, land conservation, public access, environmental literacy, and climate resilience (CBP, n.d.-q).

Notably, the 2014 Chesapeake Bay Watershed Agreement places further emphasis on local efforts, collaboration, performance, accountability and incremental change (CBP, 2014). According to CBP (2014), the 2014 agreement is based on fourteen partnership principles:

- Collaborating to achieve the goals and outcomes of the agreement.
- Achieving goals and outcomes in a timely and cost-efficient manner.
- Fairly and effectively representing the diversity of interests throughout the watershed (e.g., cultures, demographics, and ages).
- Operating with transparency in program decisions, policies, actions, and reporting on progress to strengthen public confidence.

- Making science-based decisions³⁰ and seeking out for innovative technologies and management approaches.
- Maintaining a coordinated watershed-wide monitoring and research program to support decision-making and performance evaluation.
- Acknowledging, supporting and embracing local governments and local entities in watershed restoration and protection activities.
- Anticipating changing conditions (e.g., sea level, temperature, precipitation, land use).
- Managing adaptively to foster continuous improvements at all levels of the partnership.
- Seeking consensus when making decisions.

³⁰ From a scientific perspective, it must be highlighted that policy and restoration decisions have been informed by modeling or “mathematical representations of the real world that estimate environmental events and conditions” (CBP, n.d.-r). Environmental computer models are critical to capture and reduce the complexity of large and complex ecosystems, in order to provide essential information for decision-makers (CBP, n.d.-r). The Chesapeake Bay Watershed Model takes into consideration variables such as land use, fertilizer applications, wastewater plant discharges, septic systems, air deposition, farm animal populations and weather, in order to determine the origin of pollution loads and to estimate the amount of nutrients and sediments that reach the Chesapeake Bay (CBP, n.d.-r). Models have been developed and improved for nearly three decades through collaboration between the U.S. Environmental Protection Agency, U.S. Geological Survey, USDA Natural Resources Conservation Service, U.S. Army Corps of Engineers, University of Maryland, Virginia Tech, Penn State University, and Chesapeake Research Consortium. Advisers include Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia (CBP, n.d.-r). The CBP contributes to the quality of the models by providing reliable data, and engaging a wide range of partners, stakeholders and experts, that among other tasks, contribute to the peer-review process (CBP, n.d.-r). The most current model is the Phase 5.3 Watershed Model, which can be “used at the Chesapeake watershed scale as well as smaller scales for state-developed TMDLs” (CBP, n.d.-s).

- Using place-based approaches where appropriate to foster local perceived benefits while contributing to larger ecosystem goals.
- Increasing the number and diversity of engaged citizens involved in conservation and restoration activities.
- Exploring the use of social science to better understand and measure how human behavior can drive natural resource use, management and decision-making.
- Promoting environmental justice through the meaningful involvement and fair treatment of all people, regardless of race, color, national origin or income, in the implementation of the agreement.

In general, the observed policy decisions, agreements, and scientific advances seem promising. The CBF trusts that, if fully implemented, the current restoration blueprint has the ability to ensure shared responsibility for cleaning up the waterways, keeping progress on track through the implementation of two-year milestones, and holding Bay jurisdictions accountable in case of failure (CBF, n.d.-c). Indeed, the 2014 State of the Bay Report confirmed improvements in water quality: “Comparing only the scores for pollution indicators—nitrogen, phosphorus, dissolved oxygen, water clarity, and toxics—we see an almost 11 percent improvement over the 2012 pollution indicators’ scores and a 21.5 percent improvement over the 2010 scores” (CBF, 2014a, p. 9). The report warns, however, that agriculture and polluted runoff from urban and suburban sources are not making sufficient progress to meet the pollution reduction goals expected by 2017 (CBF, 2014a).

As indicated previously, agriculture is the second largest land use type in the Chesapeake Bay Watershed and is “the largest source of nitrogen, phosphorus, and sediment pollution damaging local rivers, streams, and the Chesapeake Bay” (CBF, 2014a, p. 13). While scientific knowledge and programs exist to reduce up to 75%

pollution loads from agriculture, the progress made up until this point is insufficient (CBF, 2014a; Shortle et al., 2012). It is thus apparent that “business as usual will not get the job done” (CBF, 2014a, p. 13). In consequence, the Bay jurisdictions are expected to be more proactive if those reductions are to be achieved (CBF, 2014a).

On the other hand, and as discussed before, urban and suburban runoff contributes to water quality degradation through the addition of sediments and toxic pollutants to the waterways. In particular, new construction can be detrimental in the absence of appropriate policies (CBF, 2014b). Some states such as Maryland and Virginia have increased the number of building permits over the last years, thus increasing the pressure on the ecosystem (CBF, 2014b).

USEPA and the Bay jurisdictions are currently working on the midpoint assessment that will be released on 2017 and that will provide the basis for Phase III WIPs (MDE, n.d.-c). The midpoint assessment will reveal if the implemented conservation practices are working and if the pollution reduction goals are attainable through such practices (MDE, n.d.-c). A recent multicriteria comparative analysis concluded that despite the increased interest to restore the Bay, the federal and local responses have been insufficient to reduce nitrogen, phosphorus, and sediment pollution from nonpoint sources (Byun, 2014). Given this context, the Bay jurisdictions must continue their actions to meet individual goals, while increasing their efforts to merge into an integrated and comprehensive Chesapeake Bay Watershed governance system (Byun, 2014).

The policy and scientific tools available to date provide a good framework for coordination and restoration. However, real life constraints (e.g., demographic, cultural, economic, political, and governance factors) prevent stakeholders from fully

embracing and implementing this restoration blueprint (Byun, 2014; Grayman et al., 2012; MDE, 2012b). Substantial coordination, collaboration and innovation will be needed to achieve the regional vision (Greenhaw, 2012; USGAO, 2011), as experience suggests that, even at the state level, is difficult to reach agreement and consensus regarding policy actions and approaches (MDE, n.d.-a).

5.7 Maryland's Blueprint for Water Quality Improvements

The Chesapeake Bay is at the heart of Maryland's identity, culture, recreation and economy (MDE, n.d.-c). Maryland's culture is perceived as a *middle-state ethos*, described as "a sensibility founded on compromise given conflict, on toleration given differences among people and their failings, on the pursuit of happiness given the brevity of life and the allurements of Maryland scenery and the Chesapeake Bay" (Brugger & Maryland Historical Society, 1988, p. X).

As the rest of the nation, Maryland's economic development required the extensive use of natural resources (Brugger & Maryland Historical Society, 1988; see also Koontz et al., 2004). However, at present Maryland is perceived as an environmentally progressive state and the leader of the restoration efforts (MDE, n.d.-c). Compared to Virginia and Pennsylvania, two relevant watershed partners, Maryland has accomplished the most progress in pollution reduction, by balancing strategies to address point and nonpoint sources of pollution (Byun, 2014).

Maryland's regulatory system has been characterized as accommodating and reactionary, as it revolves around a population that exhibits substantial variability in their social interests, economic sectors, and uses of land (Brugger & Maryland Historical Society, 1988). Apparently, this contrasting diversity has prevented, to

some extent, the alignment and implementation of the Bay's restoration efforts (Brugger & Maryland Historical Society, 1988; MDE, 2012b).

Maryland would benefit the most from a restored Bay, as 93% of the territory is located within the Chesapeake Bay Watershed (Maryland Pesticide Network, 2009; MDE, n.d.-c). Current restoration efforts are both driven by federal mandates, state agencies, and the advocacy of interest groups (e.g., environmental organizations and coalitions). Four agencies are involved in the state's water quality governance: Maryland Department of the Environment (MDE), Maryland Department of Natural Resources (MDNR), Maryland Department of Agriculture (MDA), and Maryland Department of Planning (MDP). In the aggregate, these agencies manage programs in the areas of agriculture, stormwater, erosion and sediment control, septic systems, land preservation, land use planning, funding, atmospheric deposition, among others (Byun, 2014). The ability to exercise effective coordination between agencies and the ability to effectively transition from one administration to another have been pointed as critical factors for the success of water quality initiatives in Maryland (Byun, 2014).

Maryland's water quality restoration blueprint, which consists of the TMDL program and the WIP, seeks to achieve a 60% of the total nitrogen, phosphorus and sediment pollution reduction goals by 2017 (MDE, n.d.-c). The remainder 40% is to be completed by 2025 (n.d.-c, 2015). Maryland's two-year milestones for 2014-2015 include implementation and program enhancement actions (MDE, n.d.-d).

Implementation actions, commonly referred as *best management practices* (herein after "BMPs"), are practical activities aimed at reducing nutrient and sediment loads (MDE, n.d.-d). BMPs are implemented in the areas of agriculture, forests, public lands, urban areas, and septic systems (MDE, 2014). Implementation actions covered

the period between July 1, 2013 to June, 30, 2015 (MDE, n.d.-d). Program enhancement actions are programmatic goals that are necessary to improve and accelerate restoration (MDE, n.d.-d). These actions include upgrades in major and minor municipal point sources; updates to minor industrial nutrient load data; strategic planning and management of the septic systems program; completion of work, guidance materials, and drafts regarding Phases I and II MS4 permits for urban stormwater management; other stormwater management milestones such as grant projects permits, letters of agreement, correspondence, outreach, and electronic tools; agriculture milestones including grant projects, coordination services, regulation, and permits; and milestones related to the intended AFG policy and Nutrient Trading Programs (MDE, 2015). Current programmatic milestones cover the period from January 1, 2014 to December, 31, 2015.

Local jurisdictions (counties and cities) continued to develop restoration plans and programmatic enhancements after the submission of the Phase II WIP on March 2012 (MDE, 2012c). Therefore, Maryland's blueprint also includes twenty-four local plans that address urban stormwater, wastewater treatment plants, and septic systems issues (MDE, 2015).

Based on 2013 assessments, Maryland seems to have completed approximately 41% of its nitrogen target and 61% of its 2025 phosphorus target for 2025 (MDE, n.d.-c). A comparison of current progress versus 2025 target reduction benchmarks suggests that sediment goals have already been achieved (as seen in Figure 5.2), but further reductions will need to be accomplished for nitrogen and phosphorus (see Figures 5.3 and 5.4, respectively). Consequently, more effective measures should be

adopted, as federally required to complete the restoration plan. This will probably become imminent after the 2017 midpoint assessment.

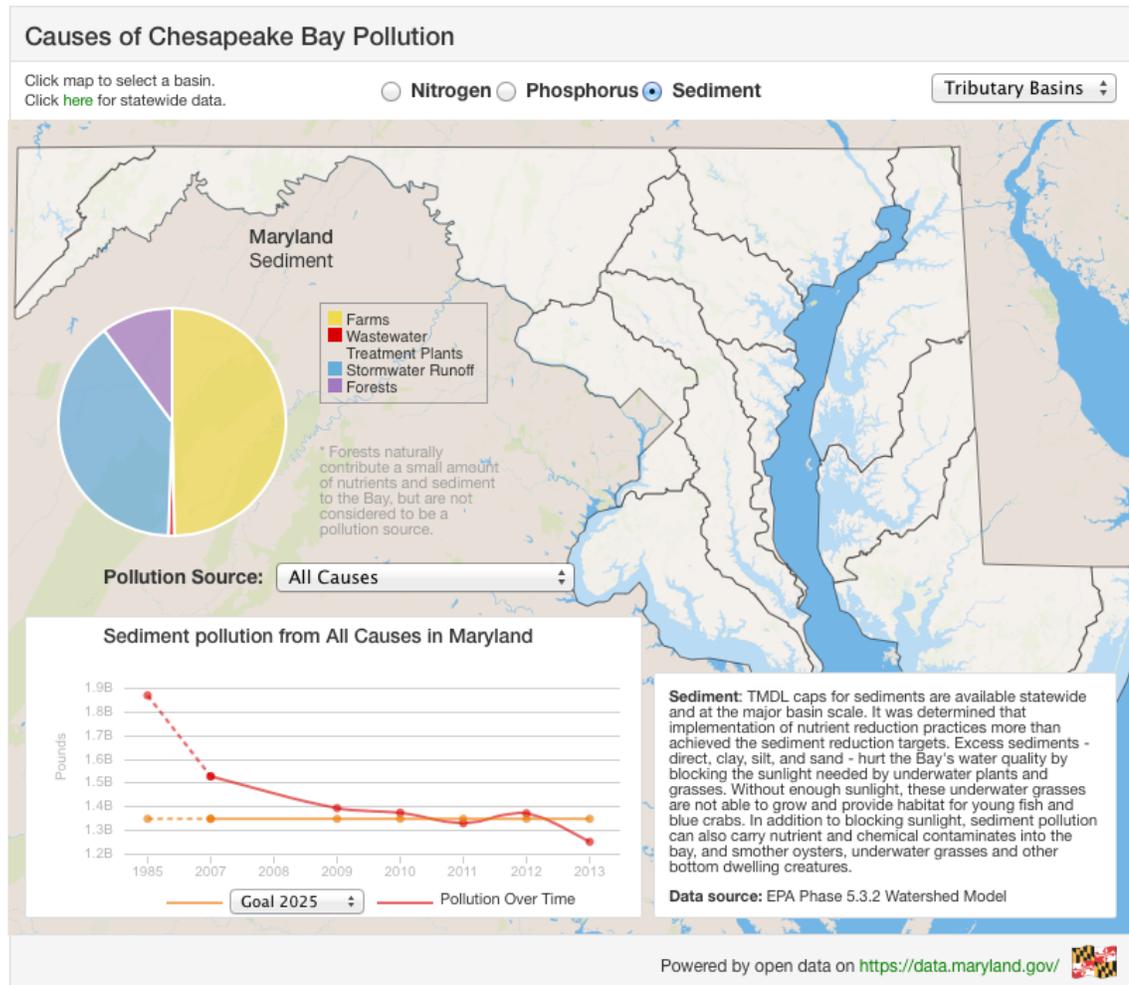


Figure 5.2. Sediment Pollution Reduction in Contrast to 2025 Goal. Note sediment reduction goals exceedingly achieved. Source: Maryland, n.d. Retrieved April 24, 2014 from <http://baystat.maryland.gov/causes-of-the-problems-map/>

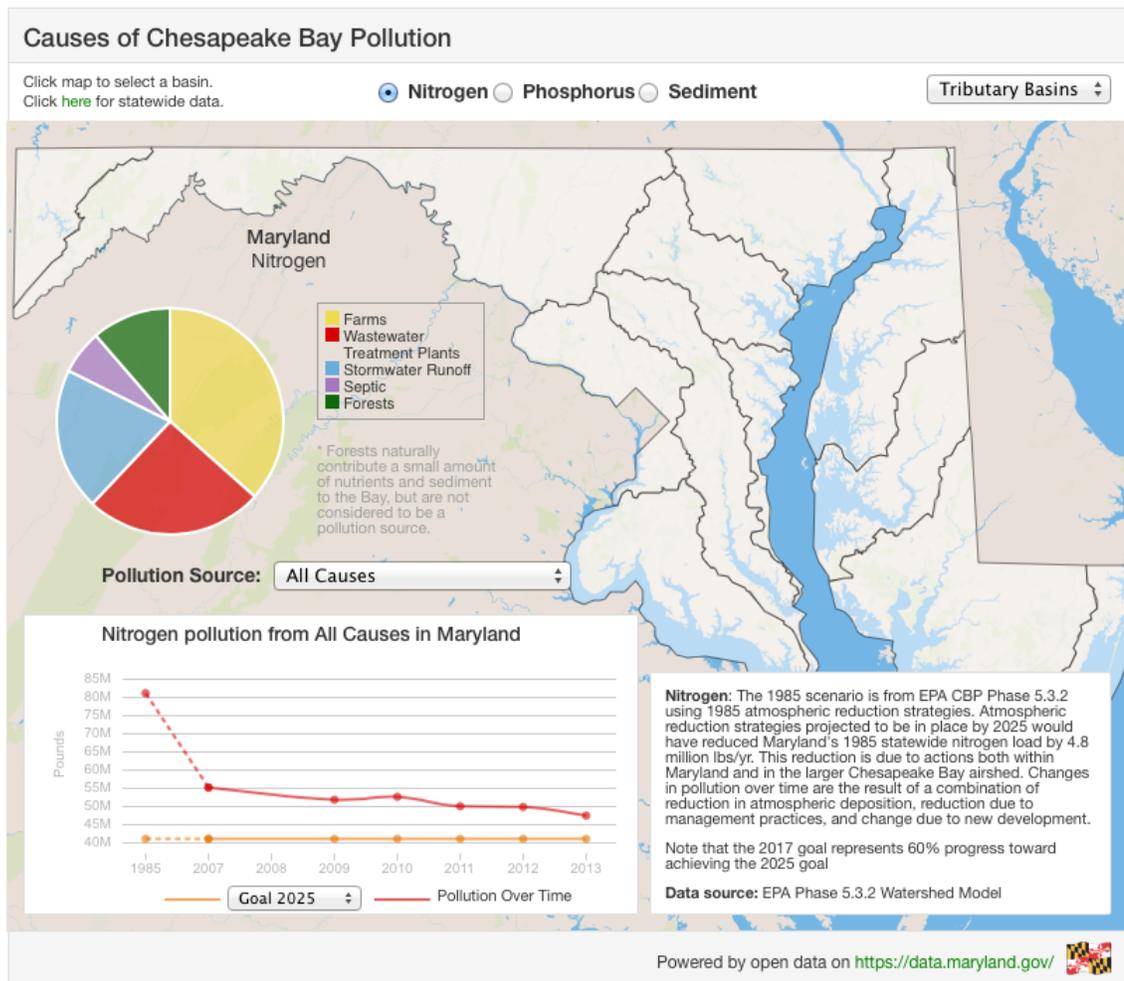


Figure 5.3. Nitrogen Pollution Reduction in Contrast to 2025 Goal. Note the need to further reduce nitrogen loads. Source: Maryland, n.d. Retrieved April 24, 2014 from <http://baystat.maryland.gov/causes-of-the-problems-map/>

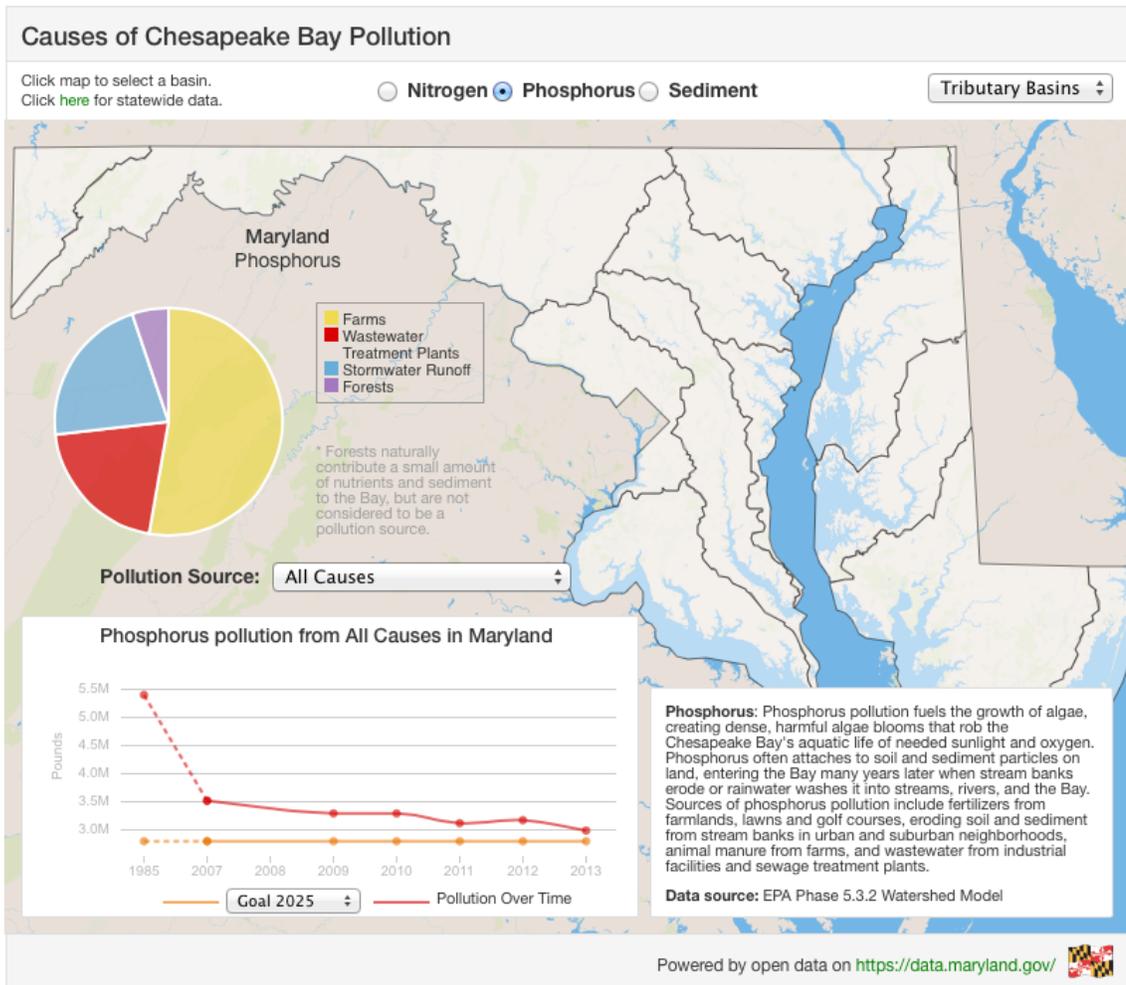


Figure 5.4. Phosphorus Pollution Reduction in Contrast to 2025 Goal. Note the need to further reduce phosphorus loads. Source: Maryland, n.d. Retrieved April 24, 2014 from <http://baystat.maryland.gov/causes-of-the-problems-map/>

The most recent report issued by the CBF and the Choose Clean Water Coalition (CCWC) suggests that Maryland’s progress to date is “slightly off track for nitrogen and on-track for phosphorus and sediment” (CBF & CCWC, 2015, p. 1). As observed in Figure 5.5, pollution loads from urban runoff require attention. The report warns that, as consequences of expected population growth, future pollution reductions will need to be achieved in other sources/sectors (CBF & CCWC, 2015).

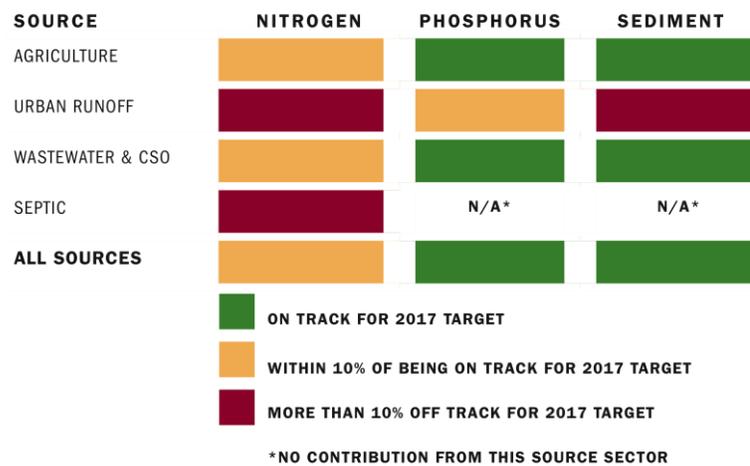


Figure 5.5. Maryland’s Progress to Date. Source: Maryland Milestones 2014-15 Interim Progress (CBF & CCWC, 2015, p. 1). Nitrogen pollution, in general, needs to be reduced in all sectors in order to meet 2017 goals. Urban runoff also needs to reduce phosphorous and sediment loads. Retrieved July 14, 2015 from <http://www.cbf.org/milestones?erid=42923061&trid=92062fc7-d521-4541-941e-754afdf8a217>

In synthesis, the Chesapeake Bay Watershed requires the urgent reduction of non-point sources of pollution. However, traditional methods, such as command-and-control regulations, have failed to achieve this outcome, perhaps because of the

elevated cost and the impracticality of monitoring physically diffuse sources. In response to this challenge, it has been argued that a possible approach to reduce pollution is the integration of point and nonpoint management strategies (Byun, 2014; Greenhaw, 2012; Shortle & Horan, 2013).

Maryland's AFG policy project attempted to integrate these strategies. The prospective policy proposed the regulation of new growth (development and redevelopment projects), through the implementation and trade of pollution management practices that reduce loads from a different source (MDP, 2011). The next sections of this chapter will refer to the proposed AFG policy and the key elements of a nutrient trading program.

5.8 The Nutrient Trading Approach

Meeting and sustaining the goals established by the TMDL program will be difficult for Maryland, as its population will experience a minimum 15% growth over the next twenty-five years (Maryland's Office of Policy Analysis, 2014). That means the addition of 430,000 households from 2010 to 2030 (Maryland, 2010) and an increment of more than 2 million pounds of nutrient pollution to the Chesapeake Bay watershed per year (MDE, n.d.-a). In recognition of this challenge, and in response to the 2010 TMDL requirements, Maryland's administration proposed two approaches to manage new pollution loads: 1) upgrading major wastewater treatment plants to handle additional sewage levels, and 2) "establishing a new growth policy to offset pollution loads from development" (Maryland's Office of Policy Analysis, 2014, p. 23; see also MDE, n.d.-a). The second strategy can be classified as an environmental trading mechanism, commonly referred as *cap and trade*, in which the authority of government is used to create environmental service markets, so that further

environmental damage is prevented (Mariola, 2011; Ribaudo et al., 2008; Shabman & Stephenson, 2007). The creation of environmental markets is considered a government intervention that takes place because of the occurrence of a negative externality –in this case, water quality degradation (Ribaudo et al., 2008).

Through this policy tool, the government sets mandatory caps on pollution loads entering the watershed and promotes flexibility for the market to comply with authorized levels of pollution (USEPA, 2012e; USEPA, 2009a). The cap and trade mechanism has been successfully implemented in the past to improve air quality, by regulating the power generation sector (USEPA, 2009b). Examples of national cap and trade programs operating in clean air markets include: the Clean Air Interstate Rule, the Clean Air Visibility Rule (CAVR), the Acid Rain Program, and the NO_x Budget Trading Program (USEPA, 2009b).

Water quality markets (alternatively referred as nutrient trading programs) emerged after the success of air emission markets. Trading programs allow different sources of pollution (point and non-point) to trade nutrient reductions credits to comply with given allocations, thus meeting water quality goals (Greenhalgh & Selman, 2009). Consequently, nutrient programs help facilities and sectors to meet regulatory obligations in a cost efficient manner, while promoting sustainable practices elsewhere (USEPA, 2014j). In theory, trading is designed to reduce the costs of water quality protection, while expediting compliance with water quality standards (Ribaudo & Gottlieb, 2011).

While nutrient trading is considered a suitable and complementary policy alternative in today's political context, the approach is not considered a solution in itself, as markets can also experience failures (Byun, 2014; Greenhaw, 2012; Ribaudo,

2008; Ribaudo & Nickerson, 2009; Shabman & Stephenson, 2007). In principle, nutrient trading programs should be robust enough to minimize the risks involved in the business transactions (e.g., stakeholders behavior, supply and demand changes) and to reduce other inherent uncertainties, such as best management practices performance, environmental variation, extreme events, regulatory changes, and institutional obstacles (Heberling, 2011; King & Kuch, 2003; Maroon, 2011; Ribaudo & Gottlieb, 2011; Walker & Selman, 2014). Table 5.1 illustrates mechanisms that can be adopted to reduce uncertainty and prevent program failure

Table 5.1. Types of Uncertainty Associated with Nutrient Trading Programs and Potential Mechanisms to Reduce Risks. Adapted from “Addressing Risk and Uncertainty in Water Quality Trading Markets”, by S. Walker, and M. Selman, 2014, World Resources Institute, p. 23-24.

Type of Uncertainty	Mechanisms to Consider
Scientific and Biophysical	Direct measurement; performance prediction of best management practices; estimation tools and models; uncertainty ratio; retirement ratio.
Extreme Events	Centralized credit reserve.
Behavioral	Use of aggregators; self-insurance; verification; shared liability.
Regulatory	Grandfathering; certainty programs; water quality trading design standards and best practices.
Market	Pre-implementation certification; credit banks; government guarantees.

As suggested by Heberling (2011) and Stephenson and Shabman (2011), trading often fails to live up to its claims, thus failing to meet intended goals. Moreover, the commodification of environmental services and pollution has raised concerns about the effects on nature and individuals (Mariola, 2011). This said, a

pragmatic approach is needed to maximize the potential of nutrient trading in the context of other governance actions (Greenhaw, 2012; Maroon, 2011).

At the national level, water quality trading has been promoted by USEPA since the early 1990s as an effective mechanism to meet water quality goals (MDA, 2013). As early as 2009, there was evidence of fifty-seven water quality trading programs worldwide -the majority of them located in the United States (Selman et al., 2009). Some of the factors that motivated the creation of water quality trading programs in the United States include: the enforcement of the Clean Water Act, USEPA's endorsement of the water quality trading approach in 2003, and the availability of government funding to finance market-based initiatives (Ribaudo & United States, 2008; Selman et al., 2009).

The CBP has also expressed interest in this approach since 2001, when a group of stakeholders established an organizing and policy framework for nutrient trading (MDA, 2013). At present, four Chesapeake Bay states have already established nutrient trading/cap and trade programs: Virginia, Maryland, Pennsylvania, and West Virginia³¹ (Van & Chesapeake Bay Commission, 2012), however, Maryland has not accomplished any trades to date (Anonymous, personal communication, May 18, 2015).

³¹ These programs share commonalities and differences, since they evolved independently (see Van & Chesapeake Bay Commission, 2012 for a detailed comparison). Scholars and practitioners recommend the standardization of key trading aspects (i.e., baseline requirements, the life span of a credit/offset, and the types and values of trading ratios) to facilitate interstate trading in the future (Branosky et al., 2011; Greenhaw, 2012; Ribaudo et al., 2009).

5.9 Purpose of the AFG Policy

The AFG policy project, a nutrient trading program, was envisioned as a component of Maryland's WIP (Maryland, 2010). The policy intended to "address the increase in the State's pollution load from increased population growth and new development" (MDE, n.d.-a). According to MDE (n.d.-a), Maryland's strategy to address pollution from new development consists on:

- The strategic allotment of nutrient loads to large wastewater treatment plants to accommodate growth.
- The requirement that all other new loads must be offset by securing pollution credits.

In addition to drafting regulations, MDE sought the activation of a private ecosystem market, thus creating opportunities for private investment to enhance ecosystem services and meet restoration goals (Maryland, 2010). A nutrient trading program could be beneficial for local government, developers, tax and rate payers, as it could reduce the cost of restoration while accelerating the restoration of a national treasure (MDE, n.d.-a). According to MDE, the nutrient trading approach is considered "an interesting alternative for achieving greater environment protection than through existing regulatory programs" (MDE, n.d.-a).

In practice, the policy would have required the development sector to offset the nutrient pollution generated as a result of new growth, in order to remain compliant with TMDL regulations (Knapp, 2013). Examples of nutrient offset practices include: direct onsite or offsite mitigation, buying credits through a nutrient credit trading process (e.g., agricultural practices), or paying a fee-in-lieu (Knapp, 2013).

The intended policy built upon existing nutrient trading policies and programs, seeking consistency and alignment with other state principles such as land

conservation, smart growth and sustainability (Maryland, 2010; MDE, 2013). As such, the policy envisioned seven general objectives (Maryland, 2010):

- Accounting for nutrient loads from new development.
- Encouraging development that will result in relatively small increases in loads to accommodate future growth.
- Ensuring an adequate supply of offset generators and helping to achieve targeted load reductions of the agricultural sector.
- Balancing incentives between development in and outside of *sewered areas*³², in acknowledgment of their relative impacts on the TMDL.
- Providing local government the ability to make land use decisions to contribute directly to TMDL goals.
- Recognizing State and local governments' accountability for impacts of land use decisions on TMDLs.
- Ensuring that management of land use and the regulation of pollution are mutually supportive (Maryland, 2010).

In addition to improving water quality, the policy sought to correct existing imbalances that create additional pressure on wastewater treatment plants and that discourage development in areas that already equipped with the necessary infrastructure to efficiently manage human waste (Maryland, 2010). Noteworthy, the WIP identified existing programs that could potentially participate in this market, including Maryland's Nutrient Cap and Trading, forest banking through the Forest Conservation Act requirements, Critical Area regulations, wetland banking to meet

³² *Sewered areas* are those equipped with an artificial and usually subterranean conduit to carry off sewage and, sometimes, surface water (Merriam-Webster, n.d.).

requirements for wetlands mitigation and State and regional greenhouse gas reduction goals (Maryland, 2010).

5.10 AFG's Policy Development

The state of Maryland made the first policy step in January 2008, when MDE proposed the initial phase for a nutrient trading policy (MDA, 2013). The Policy for Nutrient Cap and Trading, which took effect on 2008, addressed planned growth through “various environmentally sensitive offset/trading options and requirements” (Maryland, 2010, p. 3-12). This policy was envisioned as the foundation for subsequent nutrient trading policy development (MDA, 2013). Then, in the 2010 WIP, the state of Maryland reinforced the commitment to develop and implement a nutrient trading program to offset future pollution originating from growth, which doesn't have an allocation under the TMDL program (Maryland, 2010).

Consequently, a second policy development stage occurred to define the conditions of trading between point sources and non-point sources of pollution (MDA, 2013). As noted by Horan and Shortle (2011, p. 59), water quality markets involving nonpoint sources of pollution require “significant departures from the textbook concept”. The second policy stage was led by MDA, and culminated with the establishment of requirements and procedures for point and nonpoint agricultural trading (MDA, 2013). Therefore, the agricultural sector has been prepared since 2013 to produce and sell credits to point sources of pollution (MDA, 2013).

Further government intervention was needed to create the demand for agricultural practices (nutrient credits). The development of the AFG policy meant to trigger the conditions for trading between point sources (e.g., the development sector and waste water facilities) and nonpoint sources (e.g., agriculture). The failure or

deferral of the O'Malley Administration to produce AFG regulations prevented the activation of this market mechanism, and consequently, no trades have occurred in Maryland. However, as part of the policy development process, a collaborative network project took place, which is fundamental in the context of this dissertation.

The core concepts of the prospective AFG policy were formulated in June 2012 by the four state agencies involved in water governance: MDE, MDA, MDNR, and MDP (Anonymous, personal communication, February 02, 2015). The initial timeline for this project announced the collaborative revision of public comments, anticipated the completion of policies and procedures by 2012, and targeted the implementation of the AFG policy by 2013 (Maryland, 2010). This timeline was confirmed on the second phase WIP, which added the intention to regulate new development, redevelopment, new septic systems, and new point source loads; as well as including safety margins for offsets (Maryland, 2012).

The initial conceptual draft was discussed with leaders from different sectors in a one-to-one basis (Anonymous, personal communication, February 02, 2015). The draft was also posted online and discussed in at least eight outreach meetings between July and September, 2012 (MDE, n.d.-a; MDE, 2012d). As observed in the transcripts, local government officials and members from interest groups participated in these meetings, voiced concerns and asked questions. Public comments were also received and taken into account (MDE, n.d.-a). As a result of these information exchanges, it was concluded that “there was a lack of consensus on many fundamental issues” (MDE, n.d.-a). Apparently, the multifaceted complexity of the policy problem and the solution prevented a good level of agreement between state agencies and key stakeholders.

These circumstances changed the course of the policy development process, leading to the decision of involving public stakeholders to find common ground, clarifying areas of disagreement and making recommendations for a subsequent policy draft (MDE, n.d.-a). This task was carried out through the establishment of a network³³, which exhibited some of the characteristics highlighted by Milward and Provan (2006): it was integrated by multiple members from legally autonomous organizations who were linked through relationships based on cooperation and collaboration, and with the purpose of jointly formulating and implementing policies. Additional details will be provided in Section 5.11.

Summarizing, the AFG policy project has undergone three general stages: the first consisted on the formulation of the core policy concepts by the Bay Cabinet Agencies; the second reflects conventional public outreach and revision activities; and the last stage depicts the activation and the work of the AFG network, which is central to this research. These stages are illustrated in see Figure 5.6.

³³ Note the official documents describe the organizational design as a *work group*, rather than a *network*. Work groups, however, do not exhibit the same type of complexity and purpose as interorganizational networks. According to Katzenbach and Smith (1993), work groups have a strong leader, exhibit individual accountability, focus on individual work products, and seek the purpose of the organizational mission. In contrast, as extensively described in previous chapters, networks define collective objectives that go beyond the mission of single organizations and seem to exercise shared leadership to achieve common goals.

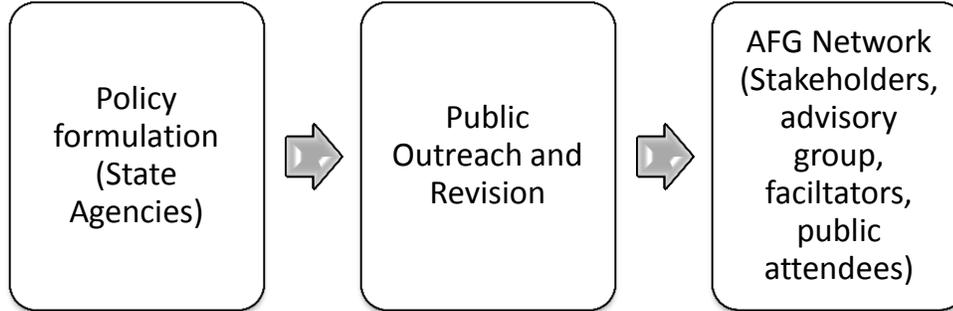


Figure 5.6. General Stages of the AFG Policy Project. This research focuses on the collaborative network project depicted in the third box.

5.11 Case Study Settings: the AFG Network

This research focuses on the work of the AFG network³⁴, which evolved at an advanced stage of the AFG policy project. The initiative was conceived along the lines of Maryland’s 2010 WIP, designed to meet federal mandates regarding water quality (Maryland, 2010).

At the difference of more traditional policy-making methods, the AFG process followed a highly cooperative and collaborative approach. In consequence, AFG is perceived as a pioneer project in the area of collaborative policymaking in Maryland, and for this reason, it was considered both a fertile and a relevant case study.

³⁴ As many other initiatives, the AFG network didn’t evolve self-consciously as a network. Instead, the documents refer to it as a workgroup. However, as highlighted throughout this dissertation, its purpose and configuration confirm its network character: it was integrated by multiple members from legally autonomous organizations, linked through relationships based on cooperation and collaboration, and with the purpose of jointly formulate and implement policies (Milward & Provan, 2006).

The fundamental concepts of the policy were first developed by the “Bay Cabinet Agencies” (MDE, MDA, MDNR and MDP) (Anonymous, personal communication, February 02, 2015). After receiving public input that revealed lack of consensus, it was decided to establish a collaborative network process (MDE, n.d.-a). This initiative involved multiple stakeholders in a professionally facilitated process, and also included the participation of experts and the public-at large. Diversity, expertise and talent (i.e., the ability to work well with others) were some of recruitment criteria to participate in the network (Anonymous, personal communication, February 02, 2015). To ensure a good level of representation, the four agencies proposed candidates for both the stakeholders and the advisory group (Anonymous, personal communication, February 02, 2015). On the other hand, the facilitating firm was hired through independent funding provided by a philanthropic group having an interest in environmental policy development (Anonymous, personal communication, February 02, 2015).

The AFG network engaged in a process of ten meetings between January and July, 2013 (MDE, n.d.-a). As indicated in the final report of the project (Workgroup for Accounting for Growth in Maryland, 2013), the configuration of the network was as follows:

1. A stakeholders group with representatives from the following sectors:
 - Agriculture (Farmer at-large, Maryland Grain Producers Association, Maryland Association of Soil Conservation Districts; Maryland Farm Bureau).
 - Environmental Community (South River Federation, Chesapeake Bay Foundation, 1000 Friends of Maryland, Sierra Club).

- Commercial and Residential Development (NAIOP Maryland Commercial Real Estate Development Association, Maryland State Builders Association, Gordon Feinblatt, LLC).
 - Local Government (Public servants from counties and cities, Maryland Association of Counties, Maryland Municipal League).
 - Public interest (Public at-large, Chesapeake Bay Commission, Maryland Sustainable Growth Commission).
2. An advisory group with members from the following organizations:
- U.S. Environmental Protection Agency.
 - Maryland Department of the Environment.
 - Maryland Department of Agriculture.
 - Maryland Department of Natural Resources.
 - Maryland Department of Planning.
 - Maryland Department of Business and Economic Development.
 - Maryland Department of Transportation.
 - Maryland Municipal League.
 - Washington County.
 - Baltimore County.
 - University of Maryland.
 - Rodgers Consulting (Planning and Design Consulting Services).
 - Environmental Banc & Exchange, LLC (Environmental Services Industry).
 - GreenVest, LLC (Environmental Services Industry).
3. Council Fire: professional facilitation group (facilitator/mediator and assistant), and

4. Public attendees (including but not limited to public servants from diverse agencies, non-governmental institutions, and the private sector (e.g., realtors, managers)). Note public attendees were not considered formal network participants (explanation will follow).

As depicted in the operational protocol of the network, stakeholders were given the opportunity and the responsibility to express their positions and to formulate common and/or alternative policy recommendations (MDE, 2012a). Advisors were formally requested to limit their participation to providing technical guidance, background, interpretation, logistic and management support (MDE, 2012a). The facilitators were responsible for ensuring adherence to agendas, exploring the diversity of opinions, help participants to find common ground and reach consensus, and assist in the communications and logistics between network members and constituents (MDE, 2012a). The facilitators were also responsible for allocating time to “accommodate discussions; prepare and distribute meeting agendas, meeting summaries and working documents; arrange for meeting space; and secure necessary materials and/or resources for meetings” (MDE, 2012a). Public attendees, for the most part government and non-governmental experts and/or stakeholders, were present at the meetings per request of formal network participants (to provide additional expertise), or to closely follow the development of a policy that could potentially affect their interests in the future. While public attendees were allowed to express comments at the meetings, they could not participate in the decision-making process.

As observed in the formal invitation extended to stakeholders, the AFG network was created as a collaborative body, charged with the “critical task of finding common ground and developing consensus recommendations for the State of Maryland’s use in designing and implementing a program to offset nutrient and

sediment loads from new development” (Council Fire, 2013). Noteworthy, initial communications did not explicitly express the extent of policy-making authority that would be vested on public stakeholders.

Participation in the AFG network required competence in several areas, including understanding of water quality issues, knowledge of the nutrient trading approach, familiarity with existing policy context, and awareness of the interests and positions of peer stakeholders. The meeting agendas, summaries and final report demonstrate that the AFG network invested no less than 30% of the time acquiring the necessary knowledge to undertake this task. The work of the AFG network included background/educational sessions (e.g., presentations by state agency experts and private consultants); revision of technical materials and case studies; use of electronic tools to envision different scenarios (e.g., AfG Calculator tool, and Maryland Nutrient Trading Tool), and substantial dialogue, discussion and deliberation. Once a common understanding was established, stakeholders addressed the following policy aspects³⁵:

- Applicability³⁶ of the policy (triggers, thresholds, exceptions).
- Effective date.
- Establishment of a fee-in-lieu system³⁷ (availability, administration, cost, price adjustment).

³⁵ These aspects are consistent with the common program elements recommended by USEPA for offset credit programs: legal authority, units of trade, timing of credits, uncertainty management, compliance and enforcement, public notice, and program evaluation (USEPA, 2014k).

³⁶ *Applicability* is defined as the “activity or the characteristics of the activity that bring a project within the ambit of regulatory program” (Workgroup for Accounting for Growth in Maryland, 2013, p. 25).

- Types of pollutants to be managed (nitrogen, phosphorus, sediments).
- Post-development load calculations³⁸ (stormwater and on-site disposal system loading factors, waste water management by treatment plants, atmospheric deposition).
- Baseline³⁹ selection (post-development loads, on-site disposal systems, and atmospheric deposition).
- Permanency⁴⁰ of offsets⁴¹.
- Criteria for offsets implementation and public announcement.
- Sustainable development patterns⁴² (definition, scope, exceptions).

³⁷ *Fee in lieu* is defined as the “[m]oney paid to a public agency in place of having to secure a required offset; the agency uses the money to generate credits at least equal to the required offset” (Workgroup for Accounting for Growth in Maryland, 2013, p. 25).

³⁸ *Calculations* determine the amount of pollutants (nutrients and sediments) entering water ways as a result of the “conversion of land from agricultural, forest, recreational, or other natural land use/land cover type to an industrial, commercial, institutional or residential use; or activities that increase density, intensity of use, or wastewater demand associated with property” (MDE, n.d.-f).

³⁹ *Baseline* refers to “[t]he pollutant control requirements that apply to buyers and sellers in the absence of trading. Sellers must first achieve their applicable baselines before they can enter the trading market and sell credits. Buyers can purchase credits to achieve their applicable baselines once they have met their minimum control levels” (MDE, n.d.-f).

⁴⁰ With respect to offsets, the word *permanent* is understood as “lasting as long as the load being offset” (MDE, n.d.-f).

⁴¹ “For purposes of the Chesapeake Bay TMDL, [*offset*] means (n.) a reduction in the loading of a pollutant of concern from a source or sources that is used to compensate for the loading of the pollutant of concern from a different point or nonpoint source in a manner consistent with meeting WQS [water quality standards]; or (v.) compensating for the loading of a pollutant of concern from a point or nonpoint source with a reduction in the loading from a different source or sources, in a manner consistent with meeting WQS” (MDE, n.d.-f).

- Credit⁴³ trading program⁴⁴ (on-site and off-site pollution reduction practices; credit certification⁴⁵, verification⁴⁶ and transparency; regulation of brokers and aggregators⁴⁷; restrictions on trading

⁴² A sustainable development pattern is one that results in relatively small increases in loads to accommodate future growth (e.g., redevelopment and infill practices).

⁴³ “For purposes of the Chesapeake Bay TMDL, [*credit*] means a measured or estimated unit of nitrogen, phosphorus, or sediment pollutant reduction per unit of time at a location designated and standardized by the jurisdiction that can be generated, sold, or traded as part of an offset” (MDE, n.d.-f).

⁴⁴ A *nutrient trading program* is a “market-based approach to achieving water quality standards in which a point source, nonpoint source, or third party purchases pollutant reduction credits from another point source or a nonpoint source in the applicable trading region that are then used to meet the source’s pollutant discharge obligations. To be creditable to the point source purchaser, the credits must reflect an actual, pollutant load differential below the credit seller’s baseline” (MDE, n.d.-f).

⁴⁵ *Credit certification* is the “[c]onfirmation that the estimated nutrient reductions are creditable and/or the nutrient reductions are being generated” (Workgroup for Accounting for Growth in Maryland, 2013, p. 25).

⁴⁶ *Verification* is the “[c]onfirmation by examination that specified requirements have been fulfilled” (MDE, n.d.-f).

⁴⁷ An *aggregator* is an “individual or entity that can collect and compile credits from individual agricultural non-point sources” (MDE, n.d.-f).

geographies⁴⁸; credit stacking⁴⁹, cross-sector trading for TMDL compliance⁵⁰).

- Margins of safety⁵¹ (ratios to increase margin of safety and accelerate Bay restoration).

The members of the AFG network strived to reach consensus, however, when this was not possible, the distinct positions of the stakeholders and respective policy preferences were documented (Workgroup for Accounting for Growth in Maryland, 2013). As indicated in the final report, the stakeholders “achieved acceptable compromise on nearly 80% of program issues, further defined and limited options for non-consensus issues, and provided an excellent foundation for successful resolution of those outstanding issues” (Workgroup for Accounting for Growth in Maryland, 2013, p. 21). The following table depicts the areas of agreement and disagreement, as observed in the final report.

⁴⁸ *Trading geographies* refer to the “[s]patial areas within or between which credits can be traded” (Workgroup for Accounting for Growth in Maryland, 2013, p. 25).

⁴⁹ *Credit stacking* is defined as “establishing more than one credit on spatially overlapping areas” (Electric Power Research Institute, n.d.). “Horizontal stacking occurs when a project performs more than one distinct management practice on non-spatially overlapping areas and the project participant receives a single payment for each practice. Vertical stacking occurs when a project participant receives multiple payments for a single management activity on spatially overlapping areas based on the multiple benefits” (Workgroup for Accounting for Growth in Maryland, 2013, p. 25).

⁵⁰ “The Work Group considered a policy of allowing, once an individual’s TMDL requirements were met, any sector (primarily urban sector/local jurisdictions) to trade (buy credits) with another sector (primarily agricultural sector)” (Workgroup for Accounting for Growth in Maryland, 2013).

⁵¹ A *margin of safety* is “an accounting of uncertainty about the relationship between pollutant loads and receiving water quality” (MDE, n.d.-f).

Table 5.2. Extent of Consensus Reached by the AFG Network. The first column shows the eleven components of the policy. The second column reflects the number of consensus decisions with regard to the total subcomponents of each category (e.g., “2/3” should be interpreted as two out of three recommendations were reached through consensus). The third column provides details about the distribution of the support.

Policy component	Number of consensus decisions	Notes
Applicability	2/3	For triggers: all stakeholders (12) except three agricultural representatives supported the same option.
Effective date	1/1	Consensus.
Establishment of a fee-in-lieu system	3/4	One environmental stakeholder abstained from making a recommendation. All others (14) supported the same option.
Types of pollutants to be managed	1/1	Consensus.
Post-development load calculations	5/6	Four environmental stakeholders supported an option. All others (11) supported another recommendation.
Baseline selection	2/3	Recommendations were split among three options. The first was supported by two stakeholders, the second by seven, and the third by six.
Permanency of offsets	1/1	Consensus.
Criteria for offsets implementation and public announcement	2/2	Consensus.
Sustainable development patterns	2/3	Three stakeholders supported a recommendation. Ten stakeholders opposed it, and two stakeholders abstained from providing a recommendation.

Table 5.2. Continued.

Credit trading program	5/8	<p><i>For credit certification, verification and transparency:</i> one environmental stakeholder supported an option. All other stakeholders (14) supported another option.</p> <p><i>For restrictions on interstate trading geographies:</i> all stakeholders supported the same recommendation (13) except one environmental stakeholder who opposed it, and another environmental stakeholder who abstained from making a recommendation.</p> <p><i>For in-state trading geographies:</i> Nine stakeholders supported an option, five stakeholders supported another option, and one environmental stakeholder abstained.</p>
Margins of safety	1/1	Consensus.

Stakeholders were able to propose common recommendations for the majority of the policy components. Besides, some apparent areas of disagreement reflected majority and supermajority positions, which, under more flexible network structure arrangements could have been interpreted as *the sense of the group*. However, it is clear that the AFG network was not able to reconcile a critical aspect: the baseline selection.

Despite the advances made by the AFG network, no legislation was developed to manage new pollution from infrastructure development. It is apparent that the lack of absolute consensus among stakeholders discouraged MDE from proposing a final AFG policy. In consequence, *Maryland continues to lack “a strategy to manage new pollution from infrastructure development”* (Maryland’s Office of Policy Analysis, 2014, p. 23, emphasis added). This policy issue remains to be addressed by Governor Larry Hogan’s new administration.

5.12 Conclusion

This chapter provided a comprehensive background about the water quality issue, its policy context, and the potential of the nutrient trading approach. This background helped to introduce the case study featured in this research, while illustrating the multifaceted and complex nature of the problem.

Recapitalizing, several state agencies from Maryland proposed the conceptual foundation for AFG, a policy that would create the market for a nutrient trading program. After being deemed problematic by the public, a group of stakeholders engaged in a collaborative process to develop policy recommendations for a subsequent draft, with the guidance, input, and support of experts, members of the public, and the leadership of a professional facilitation firm. The goals of reaching common ground, agreement, and decision-making capacity were partially accomplished, as a good level of consensus was achieved but some critical areas remained unresolved. The subsequent inaction of the lead agency prevented legislation from being proposed in the end.

From a public policy perspective, the AFG project may be considered a failure, as the final outcome of implementing an offset policy was not delivered, leaving unresolved the issue of mitigating pollution loads from future growth and failing to engage the agricultural sector in restoration efforts. This unfortunate aftermath is not uncommon, as materializing a trading program can be very complicated. According to Stephenson and Shabman (2011), water quality programs in the U.S. have yet to overcome the lack of understanding of (or attention to) the institutional requirements of market-like design, legal constraints, and regulatory inertia.

Despite the apparent failure of the AFG project, many lessons about collaboration were elucidated. Those are presented and analyzed in the following

chapter. The findings of this research contribute to the growing literature on collaborative public policy networks and will provide additional insights to improve the practical effectiveness of collaborative initiatives.

Chapter 6

ANALYSIS

6.1 Introduction

This research was conducted as a qualitative single case study, with the purpose of testing the applicability of the network management behaviors framework (McGuire & Agranoff, 2014) in a public policy network, and to uncover the processes and approaches that the AFG network used to achieve common understanding, agreement, and decision-making capacity. The sources of information were direct input from participants (obtained through interviews and/or written questionnaires), public documents and audio recordings. Data analysis consisted on coding the data, creating categories, and developing categories and themes. The findings from this study represent a contribution to the evolving theory of collaborative public network management. Four general research questions were explored:

- Did the AFG network exhibit the four management stages described in the network management behaviors framework (McGuire & Agranoff, 2014)?
- If network participants reached common/mutual understanding, how did they do it?
- If network participants reached agreement, how did they do it?
- If network participants reached the ability to make joint decisions, how did they do it?

The research was conducted as a qualitative single case study with multiple units of observation, in which theoretical propositions⁵² derived from McGuire and Agranoff (2014) network management behaviors framework were examined:

5. The formation and operation of the AFG exhibited the four management behaviors proposed by McGuire and Agranoff (2014), namely: activation, mobilization, framing and synthesis.
6. Common/mutual understanding is reached through shared learning, which is characterized by the exchange and application of knowledge.
7. Network agreement is reached through information dissemination, negotiation and deliberation, in a joint problem solving culture.
8. The early establishment of organizing principles and decision-making processes build up the network's decision-making capacity.
9. The establishment of desirable performance outcomes informs and orients the decision-making process.

The four units of observation (stakeholders group, advisory group, facilitating team and public attendees) provided the elements for the identification and cross-validation of the collaboration processes and approaches described in this chapter. In the aggregate, the members of the four units of analysis are described as *the participants* throughout the chapter.⁵³ Unless explicitly noted, the narrative reflects perceptions that are shared across units of analysis. When considered valuable, interview and questionnaire excerpts were included for illustrative purposes; however,

⁵² Theoretical proposition were linked to at least one specific research question (see Section 3.5 for details).

⁵³ While the role of public attendees was passive, their observations about the process were consistent with those provided by formal (active) members of the network. Therefore, for the purposes of the narrative, it was applicable to include public attendees within the generalizable term *network participants*.

no identifiable information was included in acknowledgement to the privacy agreements established beforehand. Herein after, personal communication references will not include the date, to prevent the identification of specific sources. In a few instances, quotes were edited to protect the identity of participants. While a substantial level of data saturation was reached from data gathered during interviews and questionnaires, additional sources of information (i.e., public documents and recordings) allowed the researcher to expand the level of inference, identify illustrative examples, and discern some interaction subtleties not fully acknowledged by participants. This chapter presents the findings of this research.

6.2 Opening Remarks

By virtue of the qualitative research approach and the design characteristics of this particular study, which included semi-structured interviews with open-ended questions, large amounts of data were retrieved. When conducting the analysis, it was realized that some of the empirical evidence was applicable to the research questions of the study, and that a substantial amount of data seemed to answer additional questions that were not formally stated at the outset of the research project. Moreover, many of the findings that described the management process of the AFG network could not be classified within the existing categories of McGuire and Agranoff's (2014) framework, thus posing the question: *which are the implications of this apparent mismatch between practice and theory?*

Two general implications are proposed. In the context of public policy networks, *the network management behaviors model fails to inform practitioners about the full extent of network management descriptors*. Consequently, practitioners need to expand the conceptual understanding of the management process of public

policy networks in order to be prepared to respond to the inherent challenges of collaborative network management. Based on the findings of this research, it is argued that negative traits such as collaborative barriers and power imbalances are much more than descriptive characteristics of the context: *they are real threats to the management process that have the potential of derailing the process*. Consequently, contingent situations need to be effectively managed for the network to maintain its equilibrium. The second implication is that *the network management behaviors model may need formal expansion to include contingent/reciprocal situations as network management descriptors*. As part of the academic exercise, this dissertation offers preliminary elements for expansion and subsequent evaluation of the model.

The remainder of this chapter presents the findings of this research in a systematic manner. The next section describes the direct (anticipated) findings of the research, through a discussion of the theoretical propositions that guided this research. Indirect (non-anticipated) findings will be reported in Section 6.4. The expansion of the model is addressed in chapter seven, along with the conclusions of this research.

6.3 Direct Findings

Examining, the data confirmed that the AFG network did experience the four management behaviors proposed by McGuire and Agranoff (2014): activation, mobilization, framing, and synthesis. Additionally, this collaborative public policy network exhibited a formal final stage, which is not identified in McGuire and Agranoff's model.

The data also reflected that the network goals of reaching common understanding, clarifying areas of disagreement, and formulating policy recommendations were not fully achieved. The extent to which understanding,

agreement, and decision-making capacity occurred was interpreted differently. Most participants perceived that the network achieved a substantial amount of progress, which ultimately resulted in a set of common recommendations (Table 5.2 illustrates the extent of consensus decisions achieved through the network process). Therefore, to identify effective collaboration processes and approaches, participants were asked to focus on the areas for which network goals had been successfully achieved. By default, the areas for which they couldn't reach a resolution provided empirical data to identify power issues and collaboration barriers (see Section 6.4).

At the higher level of integration, three general processes were depicted during the course of the ten meetings. These processes were coined as *formal and informal learning*, *systematic problem solving*, and *flexible and dynamic decision-making*. These processes transpired in a seemingly linear manner when addressing “low hanging fruit” issues, and in a reiterative fashion when addressing “thorny issues”. The most complex issues required continuous learning and multiple deliberation sessions to reach compromise positions. Besides, several activities/approaches were categorized as *recurrent*, as they occurred at multiple times during the network process. Consequently, those were not exclusive to any of the general processes identified in this research (formal and informal learning, systematic problem solving, and flexible and dynamic decision-making). Figure 6.1 illustrates these general processes within the context of the AFG policy project at-large, *as formerly envisioned*. Note this figure includes the expected outputs, outcomes and impact of the policy-making project, as formerly described in chapter five. A detailed description of these processes is embedded in the discussion of theoretical propositions.

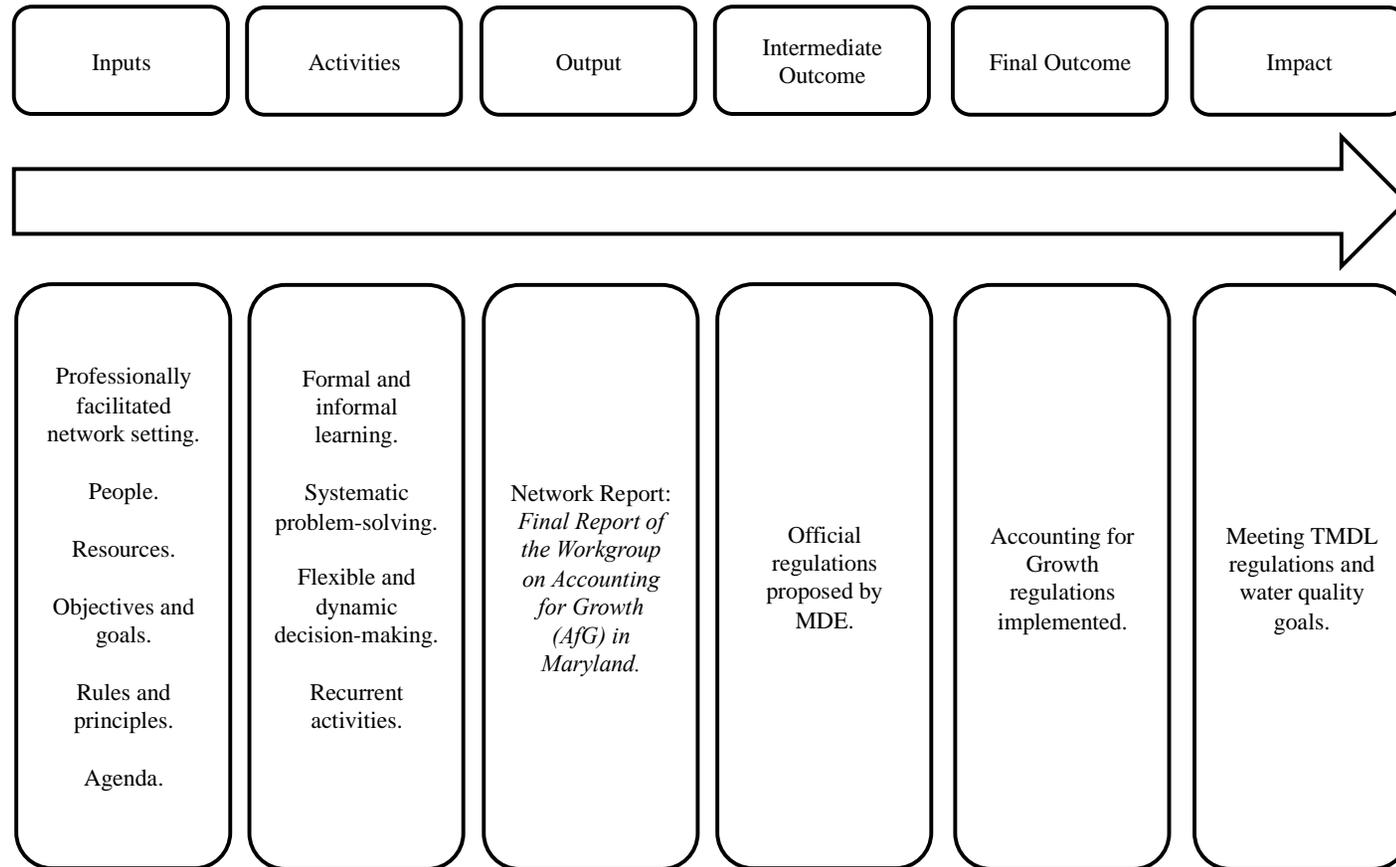


Figure 6.1. Logic Model of the AFG Network. Depiction of the network processes in the context of the envisioned policy process. Note that in reality, the process was truncated because the intermediate outcome was not achieved.

6.3.1 Proposition # 1: About McGuire and Agranoff's Network Management Behaviors

This theoretical proposition stipulates that the formation and operation of the AFG network exhibited the four management behaviors proposed by McGuire and Agranoff (2014), namely: activation, mobilization, framing and synthesis. McGuire and Agranoff's (2014) four-management behaviors framework (activation, mobilization, framing, and synthesis) depicts the steps to access resources, motivate participants, facilitate agreement and enhance interactions (McGuire & Agranoff, 2014). The authors claim this model reflects the distinctive stages, descriptors or behaviors that transpire in public networks.

To assess if the AFG network exhibited the four stages of this model, the occurrence of each stage was assessed individually through a research question. A fifth question was formulated in acknowledgement of the network evolution framework (Popp et al., 2014) to investigate the potential existence of a formal final stage, such as network's death or transformation.

- Did the AFG network exhibit a stage of activation, characterized by the identification and incorporation of the persons and resources to achieve program goals?
- Did the AFG network exhibit a stage of mobilization, characterized by the development of support for network processes from network participants and external stakeholders?
- Did the AFG network exhibit a stage of framing, characterized by the arrangement/rearrangement, integration, and adjustment of the network's structure and perceptions, in order to hold the group together?
- Did the AFG network exhibit a stage of synthesis, characterized by the enhancement of conditions for productive and collaborative interactions among network participants?

- If the network exhibited a final stage, such as death or transformation, which behaviors were observed during this stage?

The findings confirmed that the AFG network exhibited all four management behaviors or descriptors postulated by McGuire and Agranoff (2014): activation, mobilization, framing and synthesis. In addition, it was demonstrated that the AFG network exhibited a final stage that concluded with the deactivation or cessation of operation of the network.

A brief summary of the network process (MDE, 2013b - MDE, 2013k) proves the observation of activating, mobilizing, framing, and synthesizing activities. On the date of the formal activation of the network (January 18, 2013), structural arrangements were established, which included a network charter with goals, roles, rules and procedures, and guiding policy principles. Occasional reframing was sought at later stages of the process. The second meeting was exclusively used to transfer knowledge, but additional educational sessions were carried out in four other meetings. At the third meeting, tools and instruments were introduced and were used during the remainder of the process. After the third meeting, stakeholders played an active role, as depicted by the occurrence of focused discussions and deliberations. Throughout the process, stakeholders requested additional information. The advisory group honored those requests by providing additional materials and by conducting expert-guided discussions in subsequent meetings. Stakeholders consulted their respective communities at different times of the process to advance the decision-making process. An informal problem-solving subgroup emerged through the strategic leveraging of relationships. This subgroup supported decision-making processes several times during the project. Discrete agreement was reached on three occasions, amounting to nearly 80% of consensus recommendations.

The context of AFG was very different from “Metro”, the service network that was used as unit of analysis by McGuire and Agranoff (2014), and from which the theoretical propositions for this research were constructed. Precisely because of the contextual differences that distinguish policy networks from others, it was significant to assess the applicability of the framework in this case study setting.

6.3.1.1 Activation

Activation refers to the “set of behaviors used for identifying and incorporating the persons and resources needed to achieve program goals” (McGuire & Agranoff, 2014, p. 138). This research confirmed that the AFG network exhibited this management descriptor.

The activation stage included the selection of professional facilitators, establishment of an advisory group, incorporation of resources, and the recruitment of a representative group of stakeholders. For the most part, activating activities transpired *behind the scenes*, prior to beginning of the collaborative process on January 18, 2013. A professional facilitating firm was selected by virtue of their long-standing engagement with the issues, their skills and capacity. The firm was hired through independent funding provided by a philanthropic group having an interest in environmental policy development. Senior officials from the different government agencies performed network champion roles. As such, they promoted the network by making use of professional channels to recruit the most talented individuals. As noted in the *Final Report of the Workgroup on Accounting for Growth (AfG) in Maryland* (Workgroup for Accounting for Growth in Maryland, 2013), a large group of experts from governmental and nongovernmental institutions were drafted to share their experience, expertise and relevant information (e.g., technical and empirical). Along

with their knowledge and expertise, the advisory group incorporated additional resources such as tools and instructive materials. The government agencies also reached out to leaders from the following sectors: agriculture, commercial and residential development, environmental community, local government, and public interest. In some cases, the sectors proposed potential participants. In addition to ensuring geographic and gender representation, the organizers recruited people with the reputation of working well with others, since they wanted to promote a productive environment for dialogue and negotiations between the sectors. While people were the most important asset for this collaborative project, state agencies also provided resources such as appropriate venues for the meetings and food. The design of the network was intended to create a robust and representative environment for knowledge exchange, dialogue, and negotiation.

At the outset of the process, it was perceived that substantial communication had transpired between stakeholders and the state (through conventional policymaking channels), and that it was time for stakeholders to talk to each other and discuss the terms of an agreement that would be acceptable for the different sectors. Previously, stakeholders had opposed and resisted the policy proposal created by the Bay Cabinet Agencies under the lead of MDE. Therefore, by involving stakeholders in a collaborative process, the government agencies expected to reconcile fundamental differences in order to co-create a satisfactory outcome.

Prior to the formal activation of the network, the facilitating team worked with the agencies to prepare and define meeting agendas, supporting materials, and a framework for the management of the network. Two relevant documents *Workgroup*

Charter (MDE, 2012a) and *Guiding Principles* (MDE, 2013b) provided guidance and structure for the process.

The AFG network was formally activated on January 18, 2013. The first meeting brought together 16 stakeholders, 13 advisors, two facilitators (main facilitator and assistant), and six public attendees (MDE, 2013b). At the time, Secretary Robert M. Summers inaugurated the process by welcoming participants and thanking them for their commitment to the process (MDE, 2013b). After introductions, the guiding principles and the charter were presented, along with the project timeline and schedule (MDE, 2013b). Stakeholders were provided with a binder that contained reading and supportive materials and were encouraged to keep all related documents. Per courtesy of one of the stakeholders, his/her binder was made available to illustrate details of the process. In addition to materials that are still available at MDE's AFG official website⁵⁴, participants kept records of extensive email communications, matrix⁵⁵ updates, and personal notes.

It is apparent that the activation stage proceeded without complications. MDE's initiative to engage in a collaborative process was perceived as progressive and celebrated by other agencies. MDE received the necessary support to incorporate

⁵⁴ See Related Links / Meeting Materials. Available at: http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Pages/Accounting_For_Growth.aspx (last visited October 03, 2015).

⁵⁵ The matrix refers to an Excel document that was created by an advisory group member and further developed with the help of other network participants. The matrix summarized the components of the AFG policy for which stakeholders needed to formulate policy recommendations. It was designed to compile pros and cons and to keep records of all the decisions made by the group. Over time, this document became both a working framework and a tracking instrument. The matrix instrument is illustrated in Appendix H.

all necessary resources, and it was highlighted that, given the relevance and potential implications of the AFG policy, stakeholders were eager to participate. By the time the network was officially activated (January 18, 2013), virtually all resources and human capital had been committed; however, the individuals in the room had not yet connected with each other as network partners. Many participants expressed that, at the beginning, they were very skeptical about the collaborative approach and didn't think a substantial agreement could be possible.

The official meeting summaries (MDE, 2013b - MDE, 2013k) reflected fluctuations in the participation of stakeholders and advisory members, which led to the question of whether members were selectively deactivated throughout the process. The lead agency indicated the variability was a measure of flexibility” (Anonymous Advisor, personal communication). Different members of the advisory group attended when their expertise was aligned with the topics of the agenda. However, they were not obliged to attend all the meetings, since their input was not required for decision-making.⁵⁶ While the majority of advisory members were recruited at the beginning of the process, some individuals were invited later in acknowledgment of requests made by stakeholders. For example, *Meeting Summary #5* (MDE, 2013f) illustrates that stakeholders requested the engagement of an expert with background in economy. In the case of the stakeholders group, it was explained that substitutions were made at the discretion of the stakeholders. Absences and substitutions may have occurred as a

⁵⁶ As described in chapter five, this collaborative process –implicitly a consultation process, focused on obtaining the input of stakeholders. Through interaction with advisors, facilitators, and the public, stakeholders made decisions and provided recommendations for subsequent policy development.

result of time conflicts. However, it was emphasized that no interest group dropped participation during this process: “The interest was high throughout. I don’t know of any stakeholder group that dropped out and didn’t participate in all meetings” (Anonymous Advisor, personal communication).

6.3.1.2 Mobilization

Mobilization refers to the behaviors “used to develop support for network processes from network participants and external stakeholders” (McGuire & Agranoff, 2014, p. 138). According to McGuire and Agranoff (2014), the mobilization stage focuses on the gain of legitimacy, support, and resources to operate as a network. Selling the idea and creating momentum are examples of mobilizing behaviors (McGuire & Agranoff, 2014).

This research confirmed that the AFG network exhibited a stage of mobilization, characterized by the empowerment of decision-makers (stakeholders) through the transference of knowledge and expertise.

In the case of AFG, a high level of stakeholder’s commitment and support was obtained at an early stage of the process. However, to achieve the ultimate goal of providing public policy recommendations, stakeholders had to develop the necessary knowledge and skills to make valid and informed decisions. Therefore, in the AFG network context, mobilization referred primarily to the behaviors that empowered stakeholders to become resourceful: *it referred to the mobilization of knowledge and expertise*. However, it must be emphasized that the definition of knowledge is not limited to scientific or technical information. For the purposes of mobilization, knowledge is understood as “familiarity, awareness, or understanding gained through experience or study” (Farlex, 2015). In other words, the knowledge that was needed

to trigger interest, motivation, and fellowship between participants was a balanced mix of formal and informal knowledge.

The members of the advisory group played an active role transferring or mobilizing the knowledge deemed necessary to undertake this policy process. Prior to the start of the process and during the early stages, the advisory group planned and delivered formal educational sessions and materials, in order to ensure a common knowledge and understanding of the issues. Moreover, the meeting summaries demonstrate that, throughout the process, the advisory group acknowledged and fulfilled the great majority of information and support requests voiced by stakeholders (MDE, 2013b - MDE, 2013k). Therefore, the evidence suggests that the members of the advisory group functioned as creative thinkers who provided “the intellectual lubricant for the network to function” (Voets, 2014, p. 129). The advisory group was effective at “selling the idea” and maximizing the human capital of the network. Section 6.3.2.1 expounds upon the formal and informal learning mechanisms observed in this collaborative process.

At later stages of operation, an increased level of support from stakeholders became necessary to advance the agenda of the network. There were several instances in which the process reached collaborative inertia, and deliberations didn’t yield additional resolution (MDE, 2013g; MDE, 2013h; MDE, 2013j). In these occasions, stakeholders were either exhibiting entrenched positions, or didn’t feel at freedom to make unilateral decisions on behalf of their constituents or home organizations. In response to this challenge, stakeholders reached out into their professional, philosophical, and political channels to seek out input and support for subsequent

decision-making. Negotiations were resumed when additional perspectives from constituents and key external stakeholders were incorporated into the process.

However, certain issues required a higher level of analysis, discussion, and negotiation, which was not feasible as part of the regular operation of the network. In other words, a considerable investment was necessary to potentially reach a compromise position. In those instances, an informal problem-solving subgroup was leveraged to address the most difficult issues. The members of the subgroup were considered the most knowledgeable and engaged individuals with a passion for the collaborative undertaking. Consider the following view (Anonymous Advisor, edited, content between brackets added for clarity): “The subgroup (...) was determined on finishing the outcome, on finishing the project. They came to collaborate and they felt [worried about the lack of an outcome]”. Subsequent sections provide additional details about this problem-solving workgroup, which was considered essential to increase the level of agreement of the network.

6.3.1.3 Framing

Framing “involves the practices and decisions that holds a group together”, both structurally and ideologically (McGuire & Agranoff, 2014, p. 149). Empirically, framing is understood as the transformation of principles and agreements into a basic ideology that captures the areas of emphasis of the network (McGuire & Agranoff, 2014). This research confirmed that the AFG network exhibited a stage of framing, characterized by the arrangement/rearrangement, integration, and adjustment of the network’s structure and perceptions, in order to hold the group together. Two important types of framing were depicted: 1) the framing of the process, and 2) the framing of the issue. The former was structural and the latter ideological.

Prior to the activation of the network, the facilitating team and government agencies crafted two relevant documents that provided guidance and structure for the process: *Workgroup Charter* (MDE, 2012a; see Appendix F) and *Guiding Principles* (MDE, 2013a; see Appendix G). These framing documents were introduced and discussed on the first meeting. The charter describes general rules (including universal norms of courtesy, collaboration, and management of information), goals of the process, roles and responsibilities of network participants, and decision-making protocols (MDE, 2012a). On the other hand, the guiding principles reflect a “threshold of requirements that the State of Maryland must meet in crafting this program” (Workgroup for Accounting for Growth in Maryland, 2013a, p. 8). The facilitating team confirmed that network participants abided by the charter at all times. It is apparent, however, that the guiding principles were not fully understood nor embraced, thus generating tense interactions throughout the meetings. In an effort to reframe the process, the facilitator and the advisory group referred back to the principles several times. *Meeting summary #7* (MDE, 2013h) illustrates that a public official conducted a revision of the principles and highlighted their relationship to the State’s position. Several participants expressed this should have been done more often to maintain alignment.

The second framing area was the policy issue, per se. The first two meeting agendas suggest the process started with a weak plan to address the subject (MDE, 2013l; MDE, 2013m). Moreover, a member of the advisory team stressed that the previous stages of the policy process (prior to the network) had yielded failure because the conversation was fractured and lacked direction. Remarkably, by the third meeting, a member from the advisory group shared a preliminary Excel document that

he/she had prepared in preparation for the process. The document identified the components of the AFG policy for which stakeholders needed to formulate policy recommendations, and it was designed to compile pros and cons, and to keep records of all the decisions made by the group. What was formerly conceived as a basic “options table” was expanded and improved with help of other network participants. By the fourth meeting, the instrument was adopted as the network’s working framework, and afterwards, it became known as “the matrix”.

To refresh, the matrix refers to an Excel document that summarized and centralized the components of the AFG policy, policy alternatives, pros and cons, and decisions made by the group. Over time, this document became both a working framework and a tracking instrument. Participants couldn’t stress enough how important it was to operationalize the complex AFG policy into a manageable and workable set of issues and sub-issues. *Meeting Summary #4* shows that 11 issues and 20 sub-issues were identified (MDE, 2013e).

From a managerial perspective, this instrument made a difference. One of the advisory members who had been previously involved in the development of the policy referred to this moment as *the birth* of AFG. A stakeholder noted that after the network was able to effectively frame the issue, deliberations were focused rather than “amorphous”. A public attendee also perceived the creation of the matrix as an inflection point in terms of focus and productivity. The matrix was acknowledged as one of the essential approaches to reach agreement.

Altogether, the network charter, guiding principles, and the matrix provided the ideological and structural framework to hold the network together. However, the

issue of disagreement on principles seems to have constrained the network's ability to be successful.

6.3.1.4 Synthesis

Synthesis refers to the “behaviors intended to create a collaborative environment and to enhance the conditions for productive interactions among network participants”, such as achieving results-based collaboration and minimizing informational blockages (McGuire & Agranoff, 2014, p. 139). This research confirmed that the AFG network exhibited a stage of synthesis, characterized by the optimization of collaboration condition by means of facilitation, and the pursuit of the maximum extent of agreement over time.

The analysis and interpretation of this descriptor was particularly challenging due to the dual nature of this concept. The term synthesis means *combination*. In chemistry, for example, synthesis refers to the production of compounds by reaction from simpler materials. In McGuire and Agranoff's framework (2014), synthesis denotes the combination of art and technique to achieve collaborative advantage. More specifically, synthesis refers to the synergy of combining the subtle actions that enhance the collaborative atmosphere (e.g., promoting trust and motivation) with the more fact-oriented mechanisms to achieve and demonstrate results. Synthesis, as conceived by McGuire and Agranoff, reflects the entangled nature of leadership and management.

In the AFG network, synthesis wasn't limited to the creation and optimization of a collaborative environment; it included multiple transactions and a focus on productivity. The most important of all the variables that contributed to the creation of a collaborative environment was having a professional facilitator who was not

affiliated with the lead agency. For the most part, participants perceived the decision of hiring an external facilitator as an effort to ensure neutrality and balance the power. Moreover, the role of the facilitator as a network operator was considered essential to keep the process on track, smooth, and organized. Likewise, participants acknowledged that the facilitator also played a promoter⁵⁷ role, by ensuring balanced participation and fostering a favorable atmosphere for productive interactions. The facilitator was able to set the tone of conversations, acknowledge perspectives, leverage relationships, integrate information, maintain a sense of direction, and keep the process on track. Moreover, the facilitating team tried to maintain the motivation of the participants: “We continuously tried to keep the mood bright, people enjoying themselves as much, or as best as they could, with such a heavy topic” (Anonymous Facilitator, personal communication). This is not to say that the facilitation was perceived as spotless, but concerns will be addressed in a subsequent section of this chapter.

Synthesizing behaviors were also reflected through the network’s quest for productivity. Previously, it was noted that the matrix instrument served as a framework to guide deliberations in a comprehensive and organized fashion. Additionally, the instrument was used as a tracking system to inform participants about the progress achieved, in contrast to unresolved issues. For example, *Meeting Summary #9* indicates that, at that on July 7, 2013, the network had 15 unresolved issues left (MDE, 2013j). As noted in the final report, the number of unresolved

⁵⁷ Network promoters are those who take a leading role and “ensure binding actors within the network” (Voets, 2014, p. 128).

issues was reduced to eight at the end of the process (Workgroup for Accounting for Growth in Maryland, 2013).

The focus on productivity was also denoted by the unceasing efforts to remove information blockages and to reach out the network for feedback (as described previously). Stakeholders effectively identified areas for which additional input and information was needed. As noted throughout the meeting summaries, the advisory group helped to remove information blockages and knowledge gaps by providing and improving tools, disseminating materials, delivering additional presentations, and inviting experts to address the audience.

6.3.1.5 Final Stage

Besides the four stages or network descriptors originally described in the network management behaviors framework, the findings revealed that the AFG network experienced a final stage. As noted in Section 3.5.1, this research included a specific question to explore if a final stage, comparable to death or transformation (Popp et al., 2014) had transpired. This specific question was included in acknowledgement of the network evolution framework, and in anticipation of potential alternative explanations, as recommended by Yin (2014).

Public policy networks are believed to have a life cycle. Some authors have acknowledged the complete deactivation of the network (not just members), thus implying the formal existence of a final network stage (e.g., Kickert et al., 1997; Voets, 2014). In contrast to permanent networks (e.g., service delivery), policy networks are generally conceived with a “sunset date” in mind, under the assumption that they will cease operations once the problem is solved. However, it is apparent that there is a vacuum of knowledge regarding *the end* of a network (Popp et al.,

2014). McGuire and Agranoff's network management behaviors framework (2014), for instance, does not include a management descriptor to acknowledge the cessation of operations at the network level.

From a management perspective, the formal acknowledgement and understanding of a final stage, either as a threat or an anticipated phase, has practical implications. Network managers/operators could focus “on continually adapting and reinventing the network” to prevent an unwanted or untimely death (Popp et al., 2014, p. 73) or they could “incorporate some element of ongoing planning for transition, with a goal of maximizing the legacy of the network” (Popp et al., 2014, p. 73).

This research confirmed the AFG network experienced a final stage. However, post-collaborative network events (failure or deferral to propose and implement the policy) blurred the context and made difficult for some participants to classify the final stage as death or transformation. It is also apparent that the terms *death* and *transformation* conveyed an emotionally charged meaning, which was in sync with the level of satisfaction expressed by participants. Unlike a minority of stakeholders who understood *death* as a synonym of *failure* and expressed that the AFG network died, the majority of stakeholders seemed to have struggled with the concept of death, making apparent an emotional attachment to the network. Consider the following example (emphasis added): “I wonder about the death or transformation... I guess there was death because we didn't continue to meet, but *it sounds very abrupt*. Maybe that was death. It was an *unsatisfying resolution*, let's put it that way” (Anonymous Stakeholder, personal communication). Several stakeholders leaned towards the concept of *transformation*, emphasizing that the network could potentially be reactivated by the new administration. Even in the absence of a formal network,

stakeholders expressed that, in the future, they would remain engaged in the policy-making process.

The advisory members also perceived the AFG process as finite. In contrast to stakeholders, the advisory members didn't seem emotionally attached to the network.⁵⁸ About a third of the respondents simply acknowledged the network had experienced a final stage, without differentiating between death and transformation. However, the majority of the respondents perceived the final stage as a transformation, from active to inactive (alternatively referred as dissolved and dormant), and from formal to informal. Consider the following example (Anonymous Advisor, personal communication):

The group did not die, but it was actually transformed, not officially. Even though the group itself is not currently meeting, the participants are still there. If we need to resurrect this group to continue the work, I would say, the people are still there. Yes, they concluded, but it is still the group that has developed the expertise to understand the issues surrounding AFG.

Given time constraints during the interview, the facilitating team did not refer explicitly to this aspect. However, by expressing that the AFG project is still awaiting resolution, facilitators seem to have discarded the conceptual possibility of death.

Some participants felt the process had finished in an inconclusive manner, as if they had experienced an operational and/or emotional exhaustion: “We worked so hard on these proposals, and then, MDE came up with their own proposal. I think they took some of it into consideration, but it was very different from the one that we all

⁵⁸ It is somewhat apparent that the non-participation in the decision-making process may have affected the sense of ownership of the process.

had developed. *It was petered-out*⁵⁹” (Anonymous Stakeholder, personal communication, emphasis added). Several times, the participants of the network made reference to a celebration they meant to have at the end of the process, however, they implied they were exhausted and lost interest: “Towards the end, the facilitator said we would have this cocktail party (...) and nobody wanted. Even though everybody wanted to come to a happy conclusion, I think at the end *everybody was just done. They just wrapped up and got the report done*” (Anonymous Advisor, personal communication, emphasis added).

When participants were consulted whether there were any operational changes or special considerations in preparation for the conclusion of the project, they acknowledged modifications to the schedule and the agenda, an increased sense of urgency and focus, an increase in communications, greater willingness to reach a compromise, and higher reliance of the work and recommendations of the problem-solving subgroup. *Meeting Summary #6* reflects the organizers were concerned about the timeline and remaining agenda (MDE, 2013g). In consequence, the network participants agreed to increase by two hours the following two meetings⁶⁰, and scheduled an additional tentative meeting. The process originally was envisioned as eight meetings, but it was extended to ten. *Meeting Summary #10* (MDE, 2013k) reflects an abrupt conclusion of the project: stakeholders went over the list of unresolved issues, declared agreement on discrete issues, and made arrangements to communicate final positions, review the report draft, and agree upon the final version.

⁵⁹ Peter out (phrasal verb): to be reduced gradually so that nothing is left.

⁶⁰ Regular meetings lasted four hours. In an effort to complete the agenda, participants agreed to meet for six hours.

The facilitating team and the lead agency also acquired responsibilities (MDE, 2013k). The AFG network process ended with a commitment to honor the following timeline (MDE, 2013k):

- Immediately: Respond to network recommendations (State agencies).
- July 11-25, 2013: Drafting report (Stakeholders could continue to meet and discuss issues).
- July 26 - August 2, 2013: Reviewing report (Stakeholders). Constituent groups were requested to submit one document.
- August 5-7, 2013: Deadline for input; finalizing report; reviewing and approving report.
- August 9, 2013: Submitting report to MDE.
- August - September, 2013: Drafting regulations.
- Mid-September, 2013: Briefing Environmental Committee (MDE).
- By September 30, 2013: Finalizing regulations.

The *Final Report of the Workgroup on Accounting for Growth (AfG) in Maryland* (Workgroup for Accounting for Growth in Maryland, 2013) was the last document made available to the public, regarding the development of this policy. In addition to presenting the recommendations of the stakeholders, the final report indicated that regulations would be developed by December, 2013. However, the AFG policy was neither proposed nor implemented. A new administration took place in January of 2015, and it has yet to define a position regarding its strategy to account for growth.

Through the exploration of the remaining theoretical propositions, this research reaches a deeper level of understanding about the processes and approaches that contributed to the resolution of nearly 80% of the issues managed by the AFG

network. For the areas that remained unresolved, power issues and collaboration barriers were identified (see Section 6.4).

6.3.2 Proposition # 2: About Common/Mutual Understanding

This theoretical proposition stipulates that common/mutual understanding is reached through shared learning, which is characterized by the exchange and application of knowledge. As noted in the previous chapter, earlier publications of McGuire and Agranoff highlighted the relevance of shared learning, knowledge exchange and application, as means to achieve a common understanding. Common understanding, therefore, reflects the effective acquisition and application of knowledge in a collaborative manner. The following open-ended research question was used to determine if common/mutual understanding was achieved, and if so, which factors and processes contributed to it: If mutual understanding was reached between the AFG network stakeholders, how was it achieved?

At the general level, it was determined that effective communication, formal and informal interactions, educational sessions, and an emphasis on clear narrative contributed to the development of a common understanding about the topic and mutual understanding between stakeholders. The most abundant exchange of knowledge and information occurred during the first sessions, however, the process of learning continued throughout the ten meetings to inform stakeholders about the following dimensions of the project:

- The policy problem (water quality).
- The proposed policy solution (nutrient trading program).
- The broader policy system in place (related and potentially overlapping state programs).

- The positions and interests of affected stakeholders.

It was broadly acknowledged that an effective communication process, in which formal and informal interactions took place, was essential to achieve common and mutual understanding. In contrast to the unilateral and linear communication model that is traditionally utilized by government agencies to receive public input for proposed policies, this collaborative network setting provided the conditions for a more robust communication process to occur. During this process, all network participants had the opportunity to express an initial message through a face-to-face channel, have their message decoded if necessary (refined or reinterpreted by the professional facilitator in order to effectively convey the intended meaning), being heard by all receivers (network participants), and receive immediate feedback or acknowledgement. The ideal conditions in which this communication process transpired (a professionally facilitated environment that ensured a balanced and respectful exchange) allowed all participants to share their positions, concerns, and goals. The stakeholders referred to this process as a *learning experience*, as they were able to learn about the positions and interests of other stakeholders.

Under the traditional policy-making approach, this type of learning is not likely to occur, as communications are typically restricted to “one-way” messages from members of the public to the respective government agency. The facilitating team highlighted the benefits of a more inclusive and participatory approach.

Consider the following reflection (Anonymous Facilitator, content between brackets added for clarity):

A level of understanding and even empathy for each other’s starting positions was created by virtue of this process. In a traditional process, there would have been a couple of different drafts circulated, there would have been some public comment received, and there would have

been individual organizations providing foresight and meeting with the agency on the issues (...). [As a result of this collaborative network project], I think that each and every one of the participants walked out far more informed about the realities of creating a program like this and the realities of implementation (...). So, they all went so much further along in their understanding and empathy for the issue, and they also created compromises that, in the absence of a process like this, would have never occurred (...). Here, they were able to work together, understand each other, and develop compromise [positions].

Stakeholders agreed with the perception that they had developed empathy and a genuine sense of respect towards the positions of others. For those who had previously worked together, and under the assumption that they shared feelings of trust and respect, the process of reaching common and mutual understanding may have occurred in a more expedited manner. In addition to learning about each other's perspectives and positions, some stakeholders appreciated the opportunity to acquire technical knowledge from other members of the stakeholder group, as they perceived their peers as independent and reliable sources of information.

The physical point of reunion for the meetings, as a communication channel, also allowed for abundant informal interactions to occur. Participants indicated they had frequent side-conversations at different points of the meetings (before, during, and after). Stakeholders highlighted that the large size of conference rooms allowed people to temporarily separate from the formal group and have private conversations. Stakeholders indicated that informal communications also took place during break times, which was confirmed through audio recordings.

The formal educational sessions that occurred during the first meetings may have helped to balance the level of knowledge and understanding among participants. However, some participants found them only informational, as they had a working knowledge of the issue. Most stakeholders described the initial educational sessions

as a form of unilateral communication: the presenters conveyed knowledge and information to the participants, but the latter had no opportunity to emit feedback or engage in the exchange. As it will be discussed later in this chapter, concerns were also expressed regarding the purpose, quality and effectiveness of the formal educational sessions. Members from the advisory group also voiced concerns about the stakeholders group's interpretation of scientific and policy facts. This will be addressed as *misconstrued understanding* in Section 6.4.2.5.

Once stakeholders engaged in the stage of proposing and analyzing alternatives, there was an emphasis on the clarity and assertiveness of the narrative. As progress was being made (identifying alternatives, and pros and cons), the facilitating team made an effort to articulate all the information provided by the stakeholders and put it in a written form. By having a working document projected on the screen, all participants were able to acknowledge the content, provide additional feedback to optimize the information, and make sure it was aligned with the common understanding of all network participants. The document, previously introduced as *the matrix*, was utilized as a framework and tracking instrument throughout the process. Participants indicated it was helpful to have a log to guide subsequent progress and decisions.

Per recommendation of the facilitator, informal groups (subgroups) were encouraged to convene between meetings to advance the goals of the network. Two subgroups were acknowledged by the interviewees/respondents: the first one optimized the content of the matrix at an early stage of the process to ensure a complete and logical exploration of the policy topics, and the second (alternatively referred as the problem-solving subgroup), was leveraged to further discuss

problematic areas and propose potential solutions. Apparently, the dialogue and discussions that occurred during the meetings of the problem-solving subgroup were extremely efficient at improving the understanding between participants. The members of the informal problem-solving subgroup derived several benefits by working in this informal unit: they reduced the size of the group to presumably no more than nine individuals who were considered the most knowledgeable and engaged; they were able to involve members from the advisory group and gave them more freedom to speak and contribute than in the facilitated network environment (where they were constrained by the rules of the charter); and they exercised a higher level of autonomy in their decisions and recommendations, as they decided to adhere to or reject the guiding principles at their discretion.

The following subsection integrates these observations into a process, coined as *formal and informal learning*. All units of observation provided consistent evidence of the approaches described below.

6.3.2.1 Formal and Informal Learning Process

Learning was an effective method to reach mutual understanding, recognize the complexities of the context at-large, modify original positions, and develop the ability to formulate joint solutions. Active learning modes such as dialogue, discussions, and the application of tools were considered more effective than passive (unilateral) methods, such as formal presentations and readings.

As indicated previously, the work of the AFG network required familiarity with several knowledge areas, including the policy problem (water quality), the proposed policy solution (nutrient trading program), the broader policy system in place (related and potentially overlapping programs), and the positions and interests of

affected stakeholders. The latter aspect, in particular, would have remained unknown to others if the collaborative network approach had not taken place.

Most stakeholders had an adequate level of knowledge about the water quality issue; however, all of them admitted to have insufficient knowledge about the nutrient trading approach. The answers retrieved through interviews/questionnaires made apparent that only a minority of stakeholders were familiar with the policy system in place, whose context would influence and affect the design of the AFG policy. It was also noted that, at the beginning of the process, stakeholders only had broad assumptions regarding other people's positions and interests.

To promote the effective acquisition of the needed knowledge and information to engage in this collaborative process, a professionally facilitated network environment was established along with resources such as people, knowledge, technical expertise, information and tools. Knowledge and information exchange occurred through formal and informal activities that included formal education sessions; information dissemination; articulation of positions, interests, goals, concerns and overriding principles; questions and answers sessions; and informal interactions such as side-conversations, external networking, and subgroup meetings. The process of formal and informal learning is illustrated in Figure 6.2.

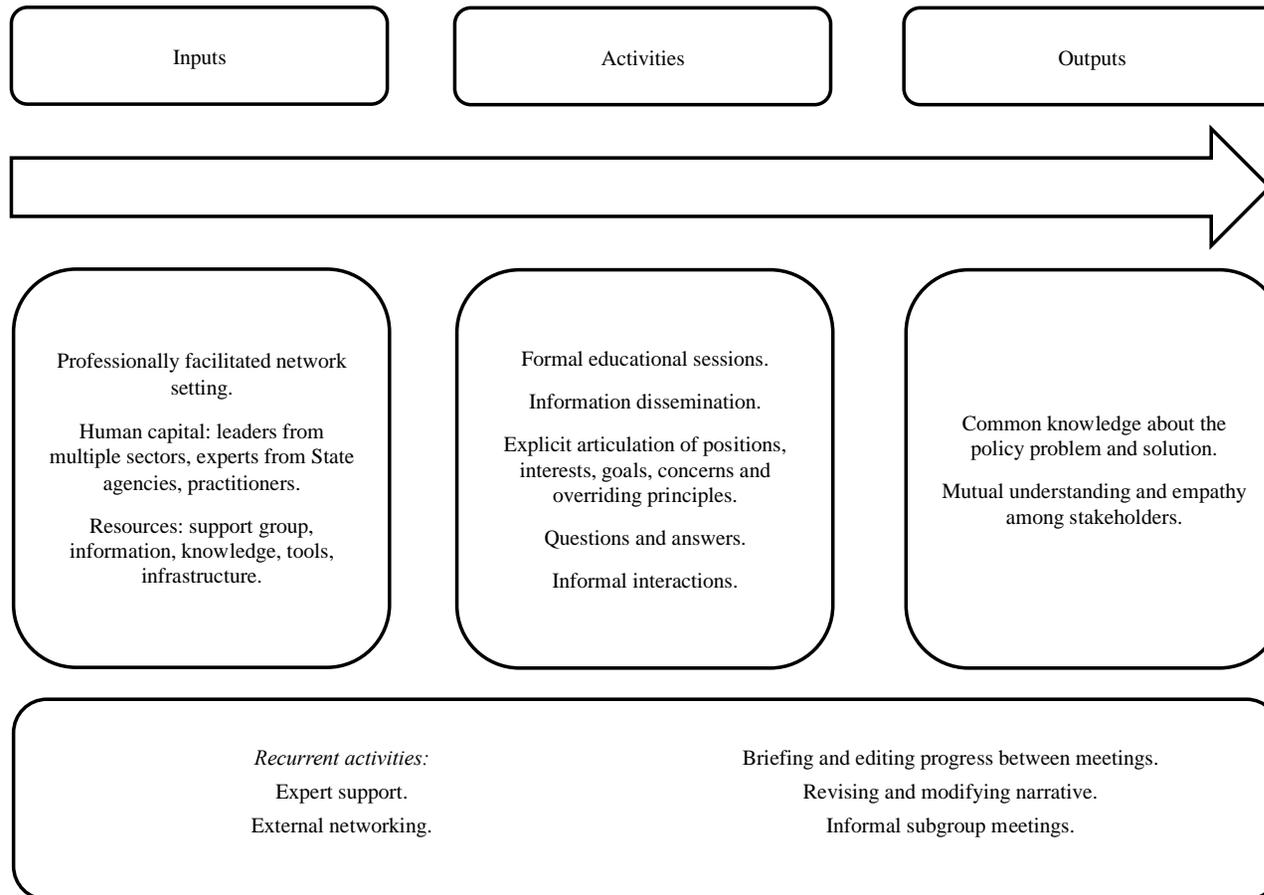


Figure 6.2. Formal and Informal Learning Process. Common knowledge and mutual understanding was achieved through formal and informal mechanisms of knowledge exchange.

For the stakeholders needing to increase the level of knowledge about the policy problem and the potential policy solution, the expert presentations, circulated materials (readings), and practical demonstrations (use of tools) were particularly helpful. One of the stakeholders, for example, indicated that he/she had allocated an average of ten hours of reading and strategizing per week, in preparation for the meetings. This demonstrates that the circulated materials were extremely valuable for some participants.

For the most part, the advisory group was responsible to identify the materials for dissemination and provide instruction about the topic: “It was important for everyone to be on the same page and to understand the facts and the data available, and the specific definitions” (Anonymous Advisor, personal communication). On a voluntary basis, stakeholders also made materials available to others. Some stakeholders indicated that a common set of materials and presentations was important to frame the formal conversations of the group.

While it is evident that stakeholders allocated a substantial amount of time to study the policy problem and solution approach, it is unclear to what extent formal consideration was given to related and potentially overlapping policies such as Total Maximum Daily Loads regulations, MDA’s Nutrient Trading Program, Maryland’s Stormwater Management Program, and Maryland’s Forest Conservation Act. By inference, it is apparent that the guiding policy principles provided at the beginning of the process suggested the policy context for AFG.

In regards to the acquisition of knowledge about other stakeholders’ positions and interests, participants indicated this occurred during the formal and informal discussions and negotiations. Stakeholders found vital to have a facilitator to promote

balanced participation, as dialogue and discussion were considered the most important mechanism to obtain critical information from others. Learning from and about other stakeholders' perspectives, goals, principles and concerns helped them to develop common understanding and empathy, which subsequently led to the modification of original positions and the co-creation of proposals. It is apparent that a favorable opinion of others (e.g., trust, respect and admiration towards senior professionals) could have functioned as a trigger for learning, as those who had a favorable perception of others were more receptive to their ideas and willing to give consideration to their thoughts.

6.3.3 Proposition # 3: About Network Agreement

The third theoretical proposition suggests that network agreement is reached through information dissemination, negotiation and deliberation, in a joint problem solving culture. McGuire and Agranoff (2014) indicated those aspects could be critical for success. Besides, the authors indicated that network agreement is more likely to occur in a "culture of joint problem solving", in which negotiation is conceived at the heart of collaboration (Agranoff & McGuire, 2001, p. 303; see also Bardach, 1998). The third proposition was assessed through the following open-ended research question: If agreement was reached during the work of the AFG network, how was it achieved?

Agreement upon courses of action occurred by means of two general processes coined as systematic problem solving and flexible and dynamic decision-making. The formal and informal learning process preceded problem solving and decision-making.

6.3.3.1 Systematic Problem-Solving Process

As part of the systematic problem solving process, the complexity of the nutrient trading policy was deconstructed and simplified, in order to propose and analyze potential solutions in an organized and comprehensive way. By breaking the complex topic into discrete pieces and arranging those into issues and sub-issues, stakeholders were able to define a framework to guide their work. The framework consisted in the identification of all possible alternatives for each element of the policy, assessment of pros and cons, and selection of alternatives (recommendations) by means of deliberation and negotiation. Public attendees, who are considered witnesses of this collaborative process, confirmed that using the matrix instrument and technical tools added efficiency to the problem solving process, as they were able to compare the impacts of different policy approaches.

By following the systematic problem-solving process (Figure 6.3), consensus over courses of action (recommendations) was found for several components of the policy at an early stage of the process. However, for the remainder of the issues, the participants had to engage in a subsequent process that was coined as *flexible and dynamic decision-making* by virtue of its characteristics (described in Section 6.3.3.2).

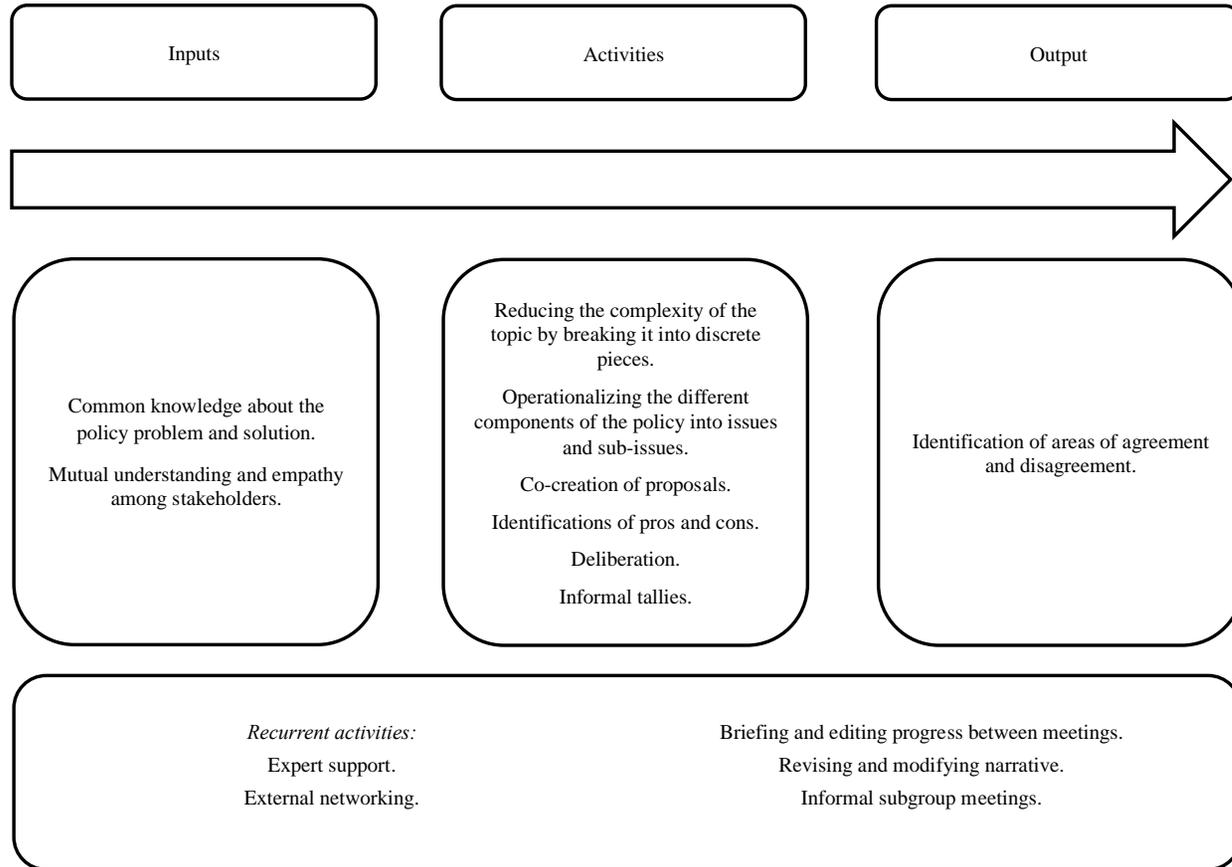


Figure 6.3. Systematic Problem Solving Process. Common and mutual understanding served as the foundation to engage in a process of systematic analysis and co-creation of alternatives. Substantial deliberation and informal tallies preceded the identification of areas of agreement and disagreement.

6.3.3.2 Flexible and Dynamic Decision-Making Process

In the context of the AFG network, decision-making referred to the selection and endorsement of the best alternatives that were ultimately submitted as consensus recommendations. The flexible and dynamic decision-making process used the areas of disagreement previously identified in the systematic problem-solving process, as the point of departure. Subsequently, topics and options were narrowed and refined by discarding weak proposals and focusing on the ones that enjoyed broader support. Stakeholders were not forced to make rushed decisions; therefore, some deliberations were postponed, perhaps in the wait for additional information. Negotiations were intricate, thus reflecting the complexity of the policy decisions. Many of the components of the policy were interrelated, and for this reason, the resolution of an issue often depended on the prior resolution of another. This situation gave place to an advocacy environment where coalitions were temporarily formed and abandoned, as they moved through the list of issues. The negotiations involved substantial bargaining and concessions between sectors. It is apparent that, in some cases, stakeholders changed their positions and withdrew previously made agreements, particularly when they perceived that other parts were not reciprocating with an equivalent level of compromise. Therefore, negotiations occurred in a recurrent manner that could be described as both flexible and dynamic. After deliberation, informal tallies were conducted to identify new areas of agreement. When consensus eluded the network, the facilitator encouraged the problem-solving subgroup to propose solutions. Figure 6.4 illustrates the flexible and dynamic decision-making process.

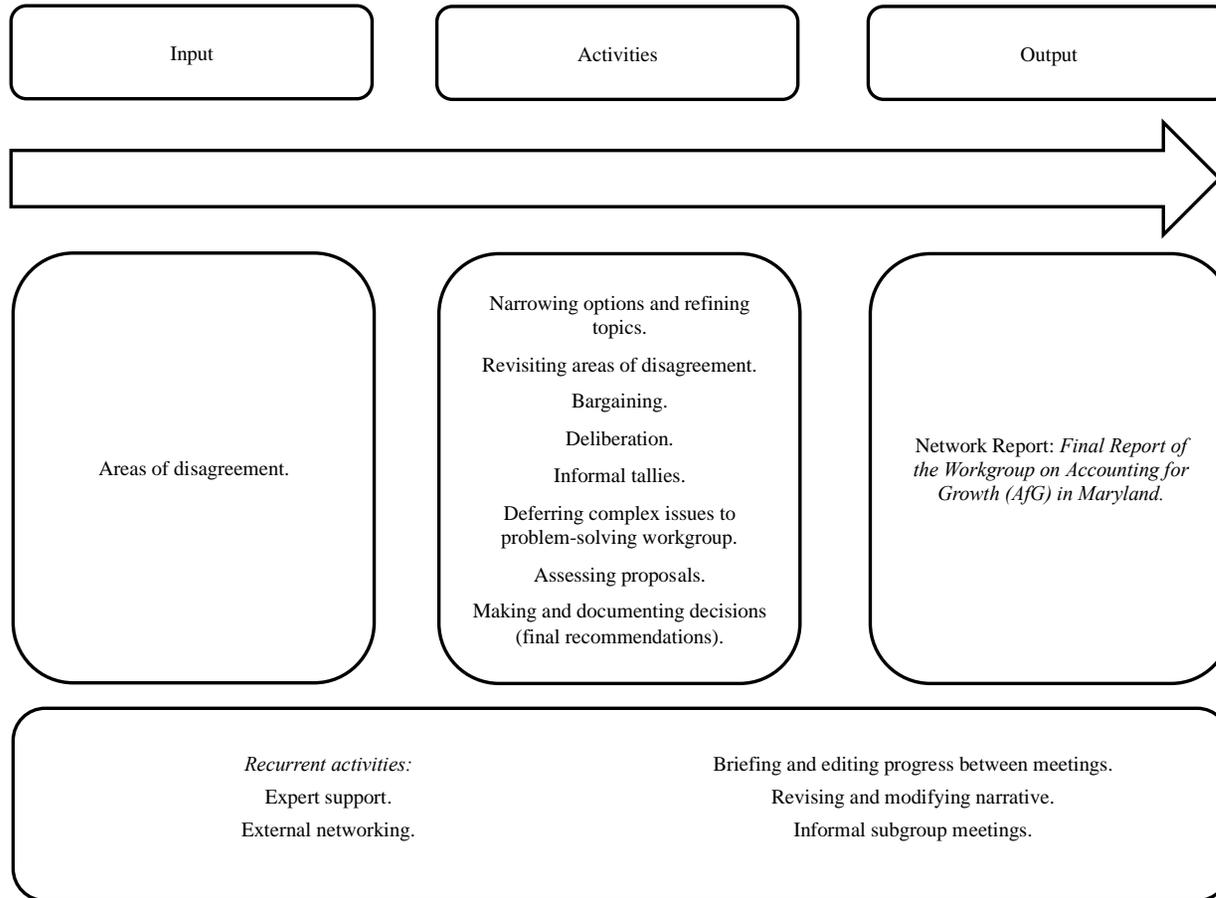


Figure 6.4. Flexible and Dynamic Decision-Making. Final decisions regarding policy recommendations were achieved through a recurrent process of further refinement, deliberation and assessment.

As noted in figures 6.2, 6.3 and 6.4, there were several approaches that were used throughout the whole management process to enrich and/or support the processes of learning, systematic problem-solving, and flexible and dynamic decision-making:

- An advisory group comprised by experts and practitioners from several institutions was available at all times to impart knowledge, answer questions, provide guidance and feedback, and when necessary, compile additional information to fill gaps and inform the decision-making process.
- Per recommendation of the facilitating team, network participants engaged in external networking for a variety of reasons: to import and export perspectives, to increase the scope of representation, to access resources (e.g., information), and to engage other interested parties in the process (in some cases to provide additional support).
- The facilitating team and the advisory group briefed the progress between meetings, and when necessary, refined or edited the narrative to maintain an accurate record of the process.
- The stakeholders often revisited the different sections of the document to review the narrative, ensure alignment, and guide future progress.
- The facilitator leveraged informal relationships in order to have key stakeholders addressing the most complex aspects of the policy. The problem-solving subgroup met several times in between formal meetings to address specific tasks.

The *Final Report of the Workgroup on Accounting for Growth (AfG) in Maryland* (Workgroup for Accounting for Growth in Maryland, 2013, p. 20-21) reflects the extent to which decision-making capacity (consensus decisions) was achieved:

In the face of an extremely complex and interrelated set of topics related to the development and implementation of an AfG program for Maryland, the Work Group successfully developed consensus recommendations for 28 of 36 issues that were discussed, including general recommendations. The remaining unresolved issues were not

without progress. Often, the universe of options related to those issues was substantially reduced.

By the end of the process, several issues remained unresolved. For this reason, stakeholders focused on explaining the rationale of independent recommendations and disclose the distribution of support for the different alternatives. While quantitatively speaking, the unresolved areas seemed minor, it is argued that those issues were the most critical and politically charged.

6.3.3.3 Joint Problem Solving Culture

The third theoretical proposition suggested that network agreement is reached through information dissemination, negotiation and deliberation, in a joint problem solving culture. Based on the evidence presented previously, it is apparent that information dissemination played a more important role for the achievement of common understanding, in contrast to reaching agreement. In the case of the AFG network, this is explained because information dissemination was a predominant component of the learning stage, which subsequently led to common understanding. Therefore, information contributed directly to agreement only when it satisfied knowledge gaps that precluded decision-making.

Exhaustive deliberation, which preceded and/or paralleled the process of negotiation, was considered the most important approach to reach agreement. Stakeholders valued the opportunity of expressing their positions and hearing other people's perspectives. The richness of views, including those of the government agencies was considered advantageous for the process. The role of the facilitator, keeping the process on track and setting the tone for the discussions was crucial to maintain the effectiveness of communications.

Negotiation was considered critical to reach agreement. Several stakeholders expressed that, given the complexity of the issues, it would have been ideal to allocate more time to this activity. While stakeholders felt they had reached a satisfactory level of agreement, the advisory group perceived they had only addressed peripheral aspects and left the most critical components unresolved: “Agreement was never reached. Up until the very end, I don’t think everyone realized this was a negotiation. If they did, they did a poor job of negotiating” (Anonymous Advisor, personal communication).

In contrast to the official negotiations that took place during the meetings, which were perceived as inefficient because of the recurrent and flexible character of the process and the inability of stakeholders to reach a broader level of consensus, most participants agreed that the informal negotiations of the problem solving subgroup were critical to advance the goals of the network. In the midst of a complex environment, the members of the subgroup were recognized as outstanding leaders who differentiated themselves through their actions: “The subgroup was determined on finishing the outcome, on finishing the project. They came to collaborate (...). They got together, formulated [proposals], came back, presented to the entire group, concurred” (Anonymous Advisor, personal communication, content between brackets added for clarity). Several participants also highlighted the role of professional lobbyists, who were perceived as catalyzers of the negotiations, given their experience in similar policy environments.

The majority of stakeholders perceived that their peers exhibited a problem solving attitude: high level of engagement, genuine desire to contribute to the resolution of the problem, willingness to work together, and empathy towards the

position of other stakeholders. However, the majority of advisors perceived that stakeholders failed to achieve a robust problem solving culture, or that such culture was only partially achieved. Among the limitations identified for the establishment of a problem solving culture, advisors mentioned issues of entrenchment, unwillingness to compromise, and incompatible understanding about the goals of the AFG policy.

Perceptions about the contribution of state agencies to the achievement of a joint problems solving culture were split. Some participants perceived that the government agencies contributed to the creation of a joint problem solving culture by involving public stakeholders in the policymaking process and providing the resources to develop a collaborative program. However, some stakeholders perceived that the agencies' contribution was insufficient, and referred to power issues and collaboration barriers that will be described in Section 6.4.

6.3.4 Proposition # 4: About the Relevance of Initial Principles and Guidelines to Support Decision-Making

The fourth theoretical proposition suggests that the early establishment of organizing principles and decision-making processes build up the network's decision-making capacity. Based on McGuire and Agranoff's (2014) observations, successful outcomes can be achieved as a result of early agreement and commitment towards organizing principles and decision-making processes. The following open-ended research question was explored to determine if decision-making capacity was achieved, and if so, which factors and processes contributed to it: If the AFG network stakeholders attained the capacity to make decisions, how was it achieved?

The experience of the AFG network did not match the pattern of the fourth theoretical proposition. The decision-making capacity of the AFG network was not

enhanced through the early establishment of organizing principles (network charter and organizing principles). In contrast, the decision-making capacity was negatively affected as a consequence of the rigidity of the decision-making procedure, which sought absolute consensus, and problematic guiding principles that were not fully accepted nor embraced. The establishment of rules, roles, goals, and guiding policy principles were helpful and important, but in the absence of shared agreement, they generated a high level of friction among participants, as noticed in audio recordings. The discussion of these issues will be resumed in Section 6.4.2.4, in the context of collaboration barriers.

Therefore, the ability to make choices and decisions that resulted into shared policy recommendations (consensus recommendations) was achieved primarily by virtue of the three general processes identified in this study: formal and informal learning, systematic problem solving, and flexible and dynamic decision-making, along with the recurrent activities that supported all processes, as illustrated in Figure 6.5. These processes included important approaches, such as active learning, systematic analysis, exhaustive deliberation, and flexible negotiations.

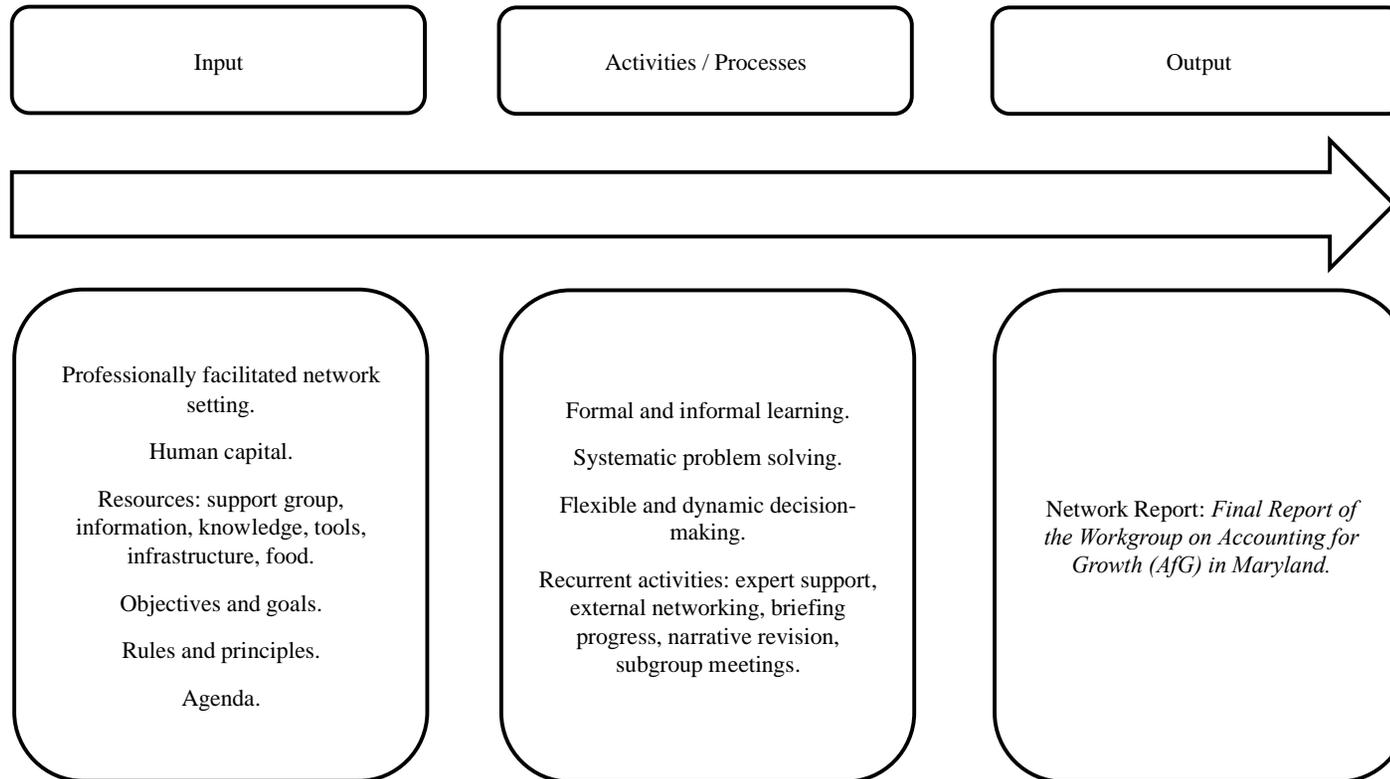


Figure 6.5. Summary of Processes and Approaches that Contributed to the Achievement of Decision-Making Capacity. The final report of the AFG network contains the policy recommendations formulated by stakeholders.

6.3.5 Proposition # 5: About the Relevance of Performance Outcomes to Support Decision-Making

The last theoretical proposition suggests that establishment of desirable performance outcomes informs and orients the decision-making process. Outcome-oriented performance measures are used to ensure the quality of collaborative decisions and the demonstration of network goal achievement (Agranoff & McGuire, 2001). According to Agranoff and McGuire (2001, p. 310), decisions made collaboratively aim for “agreed upon performance measures that capture the intent of policy objectives”. This theoretical proposition was assessed as an extension of the question presented in Section 6.3.4: If the AFG network stakeholders attained the capacity to make decisions, how was it achieved?

The data demonstrated that, while specific performance outcomes were not formally established as part of the framing process, participants solved this deficiency through the creation of a matrix instrument and confirmed that the decision-making process is optimized when specific metrics are defined. As noted by several participants, the process didn’t start in a very organized manner. Participants had clarity about their roles and the *general* expected outcome of “putting policies in place”; however, no *specific* performance outcomes, measures and goals to inform and orient the decision-making process had been defined. All participants had to guide their work were two general goals that encouraged them to:

- “Work to achieve outcomes that serve the best interests of Maryland’s economy, environment and its citizens” (MDE, 2012a).
- “Produce a set of recommendations by June for Accounting for Growth regulations to participating agencies that are created in a manner consistent with the processes and procedures set forth in this Charter” (MDE, 2012a).

In the absence of specific performance outcomes, measures and goals to inform and orient the decision-making process, a member from the advisory group (personal communication) took the initiative of organizing the content of the AFG policy and developing a workable document. The following quote illustrates his/her motivation:

We had gone through a couple meetings and I didn't feel that we were doing this in a way that was as organized as I like. So, I provided a matrix that contained the issues, the various potential solutions, pros and cons, and a call for final recommendations. I think that really helped people to have a focus and a choice. When you have an open discussion with approximately thirty people, it actually helps to get a resolution. I think that was probably my major contribution.

A meeting summary shows that the matrix was well received by the members of the network, and that a subset of the group was appointed to help to complete the instrument. Previously, this tactic was referred as the reduction of the complexity of the topic and operationalization of the components of the policy into a list of discrete issues and sub-issues. In other words, the development of the matrix instrument was an essential approach for problem solving, analysis, negotiation and decision-making.

The matrix instrument contained several elements that were subsequently interpreted as performance outcomes, measures and goals. Developing a final report with a set of recommendations was the outcome sought by stakeholders; achieving consensus or, alternatively, the maximum extent of agreement (majority positions) was their goal; and measuring the number of issues resolved over time was their metric. This last aspect was only possible because the matrix operationalized the components of the policy and turned them into tangible issues and sub-issues that could be classified as resolved, pending, or unresolved. This way, stakeholders made sure to address and develop recommendations for all the discrete aspects of the policy,

according to the timeline established for the AFG process. A clear sense of progress also allowed the network to make adjustments to the schedule when the end of the process was approaching (MDE, 2013g). For the purpose of illustration, Appendix H shows the status of the matrix at the end of the process (tenth meeting).

6.4 Indirect (Non-Anticipated) Findings

A large portion of data retrieved for this study illustrates the constraints experienced by the AFG network management process. As succinctly put by McGuire (2002, p. 602), network management “involves a complex sequence of moves and countermoves, adjustments and readjustments, actions and non-actions”. Power issues and collaboration barriers are countermoves that can truncate and potentially “kill” the collaborative process.

The findings from this case study suggest these negative traits could have precluded the network’s ability to reach collaborative advantage. Notably, the limitations experienced by the AFG network are not uncommon. This situation reinforces the perception that the management process needs to be holistically understood, in order to improve the predictive capacity of public policy networks. The following subsections describe the power issues and collaborative barriers identified by network participants.

6.4.1 Power Issues

When addressing the mechanisms to reach network agreement, Agranoff and McGuire (2001) suggested investigating how power issues are confronted. The multiple roles played by MDE during the process were considered a very problematic aspect. As observed in the *Accounting for Growth Work Group Charter* (MDE,

2012a), the lead agency was considered part of an advisory group (alternatively referred as support group), which was expected to “[p]articipate in discussions and provide perspective when appropriate”. However, at the difference of other government agencies, MDE played a more active role. The lead agency was directly involved in the planning and execution of the program, was the main author of the concepts developed beforehand, and had the ultimate and legitimate power to make regulatory decisions. As such, MDE was perceived as an entity that played multiple roles:

- Peer stakeholder (when behaving as a participant that advocated for specific policy approaches and engaged in one-to-one discussions with other stakeholders).
- Member of the advisory group (when imparting knowledge, information, and feedback).
- Facilitator or “defacilitator” (when their representatives apparently dominated the conversation and controlled⁶¹ the direction of the process).

Numerous observations provide evidence of the occurrence of power struggles, including the following example: “Toward the end of the process, [a] MDE staff [person] (...) voiced a bureaucratic view that led to the impression that the regulations would not be objective or reflect the majority views of the workgroup” (Anonymous Public Attendee, personal communication, content between brackets added for clarity). An audio recording provided proof of a tense discussion between a lead agency representative and the stakeholder’s group. This is not to imply that

⁶¹ As a result of these behaviors, some participants perceived the lead agency as authoritarian and non-receptive.

interactions were antagonistic at all times, but to emphasize that there could have been breaking points during the process that negatively affected the perceptions and level of satisfaction of network participants.

On the other hand, some opinions depicted MDE's multiple roles as beneficial to the process. A minority of participants thought it was a positive aspect to have MDE and other state agencies participating as peer stakeholders, since this is reflective of the way in which professional lobbyists interact with them outside the network environment. Instead of being considered heavy-handed, several participants perceived MDE as a fair and objective collaborator who provided honest feedback regarding the realities of implementation. And some participants thought the joint steering of the process between the facilitating team and MDE was efficient, informative and constructive. As noted in the following quote, the facilitating team was comfortable with the position adopted by the lead agency:

As a general matter, MDE was a participant. While they had the eventual responsibility for issuing and implementation of the program, they didn't place themselves in a different capacity in the context of the work to be done; so they were just a participant. Of course, they had a considerable amount of information, but I think in terms of promoting a collaborative environment, that fell to us as the facilitators. And I am assuming they routinely backed up comments that we made about how the process would work, and what the task would be after the process. So, I think in that regards, they promoted collaboration. But it is important to understand that they were a participant in the process, first and foremost (Anonymous Facilitator, personal communication).

The apparent perception of the lead agency as a non-neutral power center may have discouraged the spirit of collaboration, as participants inferred that the implicit purpose of the collaborative program was to obtain endorsement for the initial policy proposal: "The agencies, I think, made it clear that the developing compromise would never be accepted since it wasn't the proposal that they originally championed. That

meant that the non-participating parties felt no need to compromise” (Anonymous Stakeholder, personal communication). The perception of bias may have been extrapolated to other participating government agencies that, perhaps inadvertently, reinforced the perception of advocacy during the initial educational sessions. Some stakeholders felt that the objective of the formal educational sessions was to articulate why the original policy proposal was right, and why the stakeholder arguments were wrong.

Similarly, a minority of stakeholders perceived bias in the facilitation, suggesting they had steered the process beyond the traditional role of a facilitator: “There was a lot of concern about the facilitator, and whether or not they did a good job, if they were a hindrance or help” (Anonymous Stakeholder, personal communication). This situation didn’t seem to be constant throughout the process, although there may have been occasions when the lead agency and the facilitation group could have been perceived as a coalition.

These observations led a few to the conclusion that the collaborative network approach was probably mandated, and as such, flexibility, creativity, and autonomy - inherent characteristics of collaborative networks- were restricted. Consider the following statements provided by several anonymous stakeholders (personal communication): “It felt to me, from the outside, that MDE had been pushed into this collaborative process”, “It was an ad-hoc process”, “I actually don’t think there was any collaboration”.

Some stakeholders (i.e., institutions and sectors) were also perceived as power centers, by virtue of their influence in public policymaking and/or their ability to

contribute to political campaigns. The latter was frequently acknowledged as political conflicts of interest.

6.4.2 Collaboration Barriers

Despite the significant efforts to find a collaborative solution to a complex public problem, the AFG network was not able to reach 100% consensus for all of the policy elements. Some of the issues that remained unresolved (i.e., establishment of a baseline, and the cost of a fee-in-lieu) are extremely sensitive, as those would have significant economic repercussions. Moreover, decisions like these are intertwined with multiple variables, for which precise and sufficient information was not available. However, uncertainty and complexity were not the only reasons why the AFG was precluded from reaching a higher level of collaborative advantage. This case study collected a rich amount of data that revealed the existence of multiple collaboration barriers at different stages of the project. An effort was made to acknowledge virtually every observation and to integrate those into broader categories. The reader must be cautioned that, given the contested nature of the AFG project, the identified barriers may reflect the value judgments of specific sectors or participants. The following subsections describe the identified collaborative barriers.

6.4.2.1 Lack of Pragmatism: Unrealistic Expectations

As noted in the *Accounting for Growth Work Group Charter* (MDE, 2012a) and confirmed by the stakeholders, this process strived to reach consensus. Yet, the operational definition of consensus was not explicitly defined. To some people consensus meant “the sense of the group” (in which minority opinions are acknowledged but not equally treated). To others, consensus meant unanimous

decisions (100% agreement). Apparently, at the beginning of the process, the second interpretation prevailed, raising concerns and dissatisfaction among network participants.

The pressure to reach absolute consensus seemed to disregard a provision for disparate opinions: “If consensus decision methods are not feasible and/or consensus cannot be achieved on an issue, the meeting summaries will capture common ground achieved and all disparate opinion(s), along with the proffered rationale for each opinion(s), on matters considered by the Work Group” (MDE, 2012a). Participants expressed that, in contrast to what was articulated in the network charter, they were given the impression that absolute consensus was expected or required for their recommendations to be formally considered by the lead agency. Apparently, only when it became clear that absolute consensus was unrealistic, the process allowed the flexibility to acknowledge the different positions, as described in the charter.

Under the pressure of reaching absolute consensus positions, participants perceived that the process was predestined to fail by virtue of unrealistic expectations. This perception led to feelings of frustration, discouragement, and potentially disengagement. Consider the following opinion: “I think that people genuinely sought a resolution but there was no perception that a compromise had to be reached. The perception was that the department was simply going to go ahead with their proposal unless everyone reached a complete consensus - and that seemed so unlikely that it robbed any momentum” (Anonymous Stakeholder, personal communication).

Given the emphasis that was placed on consensus as a perceived precondition for the potential adoption of recommendations, some participants inferred that the process had been purposely hardwired or hijacked by obstructionists. The following

quote illustrates this perception: “Some groups may have been intentionally taking extreme positions in order to avoid coming to consensus” (Anonymous Advisor, personal communication).

It was also noted that some participants tried to manipulate the AFG policy to advance goals that felt outside the scope of the policy. The following comment illustrates this perception (Anonymous Facilitator, personal communication, content between brackets added for clarity): “A lot of people felt like killing two birds with one stone (...). There were times when there was a possibility of mission creep, beyond the focus of AFG. [Some participants tried to promote] a trading program embracing broader water quality objectives.”

6.4.2.2 Entrenchment

The adoption of extreme positions, articulation of unrealistic demands, and exhibition of intransigent behavior were perceived as forms of entrenchment that prevented a pragmatic approach towards the policy-making endeavor. Apparently, some parties refused to find common ground and insisted on making unrealistic demands. One of the participants articulated: “The process was ultimately unsuccessful because the perfect was made the enemy of the good” (Anonymous Stakeholder, personal communication). One of the stakeholders admitted that his/her entrenchment reflected a cultural trait of the organization he/she was representing: opposing political compromise to exalt the organization’s values and beliefs. As depicted in the following example, some members of the advisory group expressed frustration for the unwillingness of some stakeholders to give consideration to the ideas presented during the education sessions:

I think we were somewhat successful [leveling the knowledge about the topic] but the real problem was that there were specific people that had entrenched positions. So even if they had the knowledge, [they seemed to be saying]: *'Don't confuse me with the facts'*. It didn't matter what you wanted to say, they were not interested in hearing it (Anonymous Advisor, personal communication, content between brackets added for clarity; emphasis added).

Entrenchment and turf wars were also observed at the agencies' level. One of the most critical observations referred to the lack of alignment between agencies. The majority of stakeholders perceived some tension and infighting between the agencies. While the Bay Cabinet Agencies had worked together on this policy for an extensive period of time, it is apparent that they failed to reconcile fundamental differences and disparate data prior to the collaborative network process. The majority of stakeholders found the lack of alignment counterproductive for the process: "I think there was some power struggle between the different agencies, and so, we would wonder what was the administration's position? It is really hard for us, the stakeholders to come to agreement if the agencies cannot" (Anonymous Stakeholder, personal communication).

6.4.2.3 Perceptions of Bias

Participants alleged the AFG network project was envisioned with a preconceived outcome in mind (the original policy proposal promoted by government agencies). With frequency, stakeholders expressed that they felt *pushed* by the state agencies: "I think, at the beginning, the state officials had an outcome that they were trying to push us towards" (Anonymous Stakeholder, personal communication).

It is apparent that the educational approaches adopted during the first sessions inadvertently conveyed a perception of bias. Participants expressed negative reactions for a variety of reasons: apparently, the flow of communication was predominantly

unilateral; the content of the educational sessions was perceived as advocacy rather than facts; and it detracted from the ability of stakeholders to initiate a dialogue. The following comment illustrates one of these aspects:

This was a very complex matter. Imagine bringing together a bunch of English majors and having them work together to develop an algorithm to solve a calculus problem. That's what we had here. The first problem is that it took too long to realize that most of the workgroup participants needed lots of education. *Unfortunately, that education took the form of alternative proposals and position statements – so it was hard for folks to grasp the issue when the presenters had a point of view they were seeking to advance* (Unanimous Advisor, personal communication, emphasis added):

The following example also supports that the unilateral learning mode dominated and detracted from more active modalities: “The direction of the flow of information was generally from [the advisory group] to the members of the workgroup. When participants shared their particular knowledge with the group, it was very helpful, but this did not occur as freely or as often as I would have liked” (Unanimous Advisor, personal communication, content between brackets added for clarity).

6.4.2.4 Disagreement on Principles

Concerns were expressed about the lack of agreement on the guiding policy principles of the project (see Appendix G). Upon the onset of the project, some stakeholders may have interpreted the guiding policy principles as symbolic benchmarks, trusting that over time and through collaborative deliberation and analysis, the apparent lack of applicability of some principles would become obvious. In other words, several stakeholders trusted the process would evolve with a high level of flexibility, which would allow them to wave or modify the principles, upon

agreement. By deferring from openly opposing or strongly challenging the guiding policy principles from the beginning, a general sense of agreement or compliance was probably inferred.

The facilitating team thought they had effectively conveyed the meaning and relevance of the principles, and that by the second meeting, all network participants were aligned with the principles. However, based on responses of all other participants, it is unclear and contested to what extent stakeholders accepted and adhered to these principles. While some participants indicated that ample time and effort had been allocated to discuss the guiding principles and express commitment to the same, other participants perceived that not sufficient time and emphasis had been given to the understanding of principles at the kickoff of the process. It was, therefore, implied that prior to their application in practice, it was not fully understood how these principles would restrict the policy options, and consequently, their ability to formulate proposals. Consider this example that highlights disagreement upon the first principle:

We eventually realized, however, that people did not have a common understanding of the first guiding principle. Some thought the goal was additional pollution reduction, with the entire post-development load being offset. Others thought the idea was to make new development pollution neutral; that is, that new development would have to offset its pollution only to the extent that it exceeded the pre-development pollution load (Anonymous Advisor, personal communication).

The legitimacy of some of the principles was challenged for different reasons: the principles were perceived as imposed rather than created by the group, and to some extent, it was perceived that the guiding principles were inconsistent with the common sense of the group. As expressed by one of the stakeholders: “There was some debate about if those were appropriate, since the group had not come up with those

themselves” (Anonymous Stakeholder, personal communication). Therefore, these guiding principles lacked weight and were perceived by some participants as mere “attempts” to frame the process: “There were attempts to lay out the rules in terms of how the discussions would go on, and I recall a document that MDE had put together, talking about the kind of things that were up for discussion versus the things that were not for discussion” (Anonymous Stakeholder, personal communication).

In consequence, advisory members highlighted the relevance of fully understanding and embracing a shared goal and principles. As noted in the example below, the lack of agreement on fundamental principles created substantial tensions and collaborative barriers.

I think, with the organizing principles, you have to get real buy-in. Not just passing a piece of paper and say ‘this is how we are going to organize’. And that is what occurred. Later, when there was a difference in opinion, they tried to push this organizing principle. So, the group as a whole rose up and said ‘no, we are going to discard this and proceed forward, because we are reaching consensus and agreement through our dialogue and discussion’ (Anonymous Stakeholder, personal communication).

Therefore, some participants perceived the guiding principles had been imposed, barely understood, inapplicable, and illegitimate. According to the first meeting summary (MDE, 2013b), some stakeholders voiced their confusion and dissatisfaction, and requested amendments. On the other hand, the stakeholders who agreed and embraced the guiding principles proposed by the government agencies indicated those were essential to maintain alignment during the process. Supporters of the principles indicated those were frequently revisited to remind the group about the policy-making context, goals and objectives. One of the participants suggested this should have been done more often.

While the lack of agreement on the principles became a serious collaboration barrier, the facilitating team asserted that, by continuously realigning the process, final recommendations were consistent with the guiding principles. Some members of the advisory group, in contrast, perceived that a flexible interpretation of the principles gave place to a misconstrued understanding of the policy issue, which is addressed next.

6.4.2.5 Misconstrued Understanding

A distinctive collaboration barrier identified by the advisory group emerged from the potentially misconstrued interpretation of policy and science, which could have resulted from the insufficient knowledge of some stakeholders, the disparity and incompleteness of data, and the fragmented and shallow exploration of some issues. It is apparent that the high level of fragmentation inherent to this process may have contributed to a misconstrued interpretation of policy and science, especially in the context of incomplete and uncertain data.

As a consequence of the nature of public policy, AFG strictly delimited the policy context to the management of the nitrogen, phosphorus and sediments impacting the Chesapeake Bay Watershed that result from new growth. As explained by one of the experts, by focusing on these nutrients, the AFG policy left outside of its scope other considerations, such as other types of contaminants (also released by growth) and negative hydrological impacts. Then, an additional level of fragmentation was afforded as a negative externality of the systematic problem-solving approach (through which the complexity of the topic was substantially reduced by breaking the policy concept into discrete and manageable pieces). This level of fragmentation could have interfered with the ability of stakeholders to create a holistic, workable

solution. Consider the following opinion: “I thought the process was excellent and well managed. One problem, however, was that we focused on specific issues that could be evaluated separately and *sometimes the solutions to the individual issues did not mesh to reach the overall goal*. Stakeholders were reluctant to give up what they thought they had ‘won’ to reach a workable solution” (Anonymous Advisor, personal communication, emphasis added). The individual analysis of issues, in apparent disconnectedness with the broader policy and environmental contexts, could have encouraged paradoxical situations:

The science tells you that, when a farm field that is heavily loaded with nutrients is converted to development, many times, the loads from the development are much lower than the loads produced by the farm field earlier. Well, if a developer says ‘I am making the environment better because I am reducing loads’ [by converting agricultural land into construction], that begins to incentivize development over agriculture. And one of the principles [of the AFG policy] was to promote a sustainable agricultural community. So, one of the science outcomes was in conflict with one of the principles. That is one of the reasons why the issue of baseline is still unresolved (Anonymous Advisor, personal communication, content between brackets added for clarity).

Based on the perception of some members of the advisory group, the recommendations that were generated under these circumstances were conflictive, as they seemed to challenge the guiding principles stipulated by the state and didn’t add to a workable solution. Therefore, these barriers of interpretation may have precluded an objective understanding of the subject, and evidently, created a substantial divide between stakeholders and public officials. Moreover, members of the advisory group worried the resulting framing of the issue seemed beneficial for one of the sectors, at the expense of other interests and priorities.

6.4.2.6 Equity and Fairness

Maryland is perceived as a leader in water quality policymaking, regulation and implementation, compared to other jurisdictions. This leadership, while commendable from a public perspective, poses threats to the interests of regulated communities. As pointed by an anonymous facilitator (personal communication), “Sometimes, people were caught up in how far Maryland has to lead forward in comparison to other states, and how active they had to be, compared to the other states in the Chesapeake Bay”. Some stakeholders worried that, if Maryland policies would become exceedingly strict in comparison to other states, this would put some industries in a position of competitive disadvantage.

Concerns of equity and fairness were often depicted in the elaboration of this policy. Many participants perceived that the development industry is willing to take responsibility for the consequences of growth; however, it was recognized that quantifying and operationalizing “their share” could be a value judgment. Audio recordings illustrate that these concerns were considered in the context of cost-benefit analysis. Different sectors discussed the different social, economic and environmental variables that should be considered in a cost-benefit analysis, and it was emphasized that *someone will have to pay for it*. The different sectors were protective of the interests of their constituents.

6.4.2.7 Time Management

The allocation of time to develop the different stages of the project was also perceived as problematic. For instance, most participants believe the amount of time dedicated to formal educational sessions was excessive, and that it interfered with their ability to initiate a dialogue between stakeholders. The following opinion illustrates

this point: “I think that the best start would have been to give all participants an equal opportunity to express their views and preferences. The first two or three sessions should not have been reserved solely for agency participants to provide their viewpoints” (Anonymous Stakeholder, personal communication).

Moreover, participants perceived the time allocated to negotiations was insufficient. Consider this statement: “Maybe by the fifth or sixth meeting, we decided that we were not really getting into a discussion, the kind of discussion we needed, so, we just stopped [imparting knowledge]. We stopped the presentations and started to have discussions about the issues [geared towards decision-making]” (Anonymous Advisor, personal communication, content between brackets added for clarity). Therefore, it is apparent that the process was not planned in a strategic manner, or that the organizers lacked experience.

6.4.2.8 Quality and Timeliness of the Information

Concerns were expressed about the quality, interpretation, and use of information. It was noted, for example, that occasionally, state agencies provided disparate or incompatible data (e.g., estimated capacity of the agriculture sector to produce credits, and the estimation of the cost of an agricultural credit). Apparently, these contrasting scenarios triggered debates between sectors, as it gave participants an opportunity to substantiate their positions based on their perceptions of credibility.

Some members from the advisory group indicated that little moderation of content occurred during the formal sessions: “The process allowed people to expound upon their views, whether the facts they were presenting were correct or not. When people would present mistakes as facts, there wasn’t an allowance for people to say ‘I don’t believe you have the correct interpretation’” (Anonymous Advisor, personal

communication). Some stakeholders also expressed skepticism about the accuracy of the data, for instance, the Chesapeake Bay Model.

The facilitating team perceived they had virtually all the content tools needed for the process, but argued that it would have helpful to have more information, earlier in the process. It is apparent that retrieving all the requested information between meetings was time consuming and challenging. Other participants also perceived that, occasionally, the information wasn't provided with the promptness needed.

6.4.2.9 Poor Performance during Meetings

Several participants, excluding the members of facilitating team, stressed the deficiencies of some stakeholders in terms of knowledge, expertise and preparedness: "Some groups and representatives were not well prepared and some of their arguments were lazy, which meant that they sometimes did not even get legitimate points across" (Anonymous Stakeholder, personal communication). In contrast, the facilitating group manifested a favorable opinion about the performance of stakeholders during the meetings: "We were pleased that the group was as collaborative and constructive as they were, and we certainly felt that there were no serious impediments brought by the participants to reach consensus" (Anonymous Facilitator, personal communication).

Since the state had to demonstrate the balanced participation of a diverse and representative population (i.e., geographic regions, gender, and sectors), a concern existed regarding the merit or qualifications of some of the stakeholders to contribute to this network. In other words, the participation of several stakeholders was perceived as a formality to demonstrate diversity and inclusion.

Audio recordings and meeting agendas suggest that the contribution of some stakeholders was limited and/or potentially counterproductive. The attitude of several stakeholders was perceived as obstructionist given their lack of interest, lack of involvement, unwillingness to compromise, and frequent disruptions to the process: “There were people at the table who were not very interested. There were a couple people that were completely clueless. And there were a couple people that broke records bringing the same thing over and over again” (Anonymous Advisor, personal communication). Therefore, some participants were considered redundant.

The performance of some members of the advisory group was also criticized, as it was perceived that the representatives of a specific institution could have provided more support and guidance to the members of the network. The participants who acknowledged this concern deferred from making inferences about why those advisors declined to make more meaningful contributions.

6.4.2.10 Other Collaboration Barriers

At a general level, some attitudes and behaviors may have indisposed or irritated other network participants. While subtle and subjective, these types of situations may have influenced the level of motivation and/or satisfaction experienced by the participants. For instance, it is apparent that some stakeholders voiced legal threats if the resolution of issues was not satisfactory to their sectors. While some participants (e.g., professional lobbyists and senior public officials) are used to vociferous policy environments and understand that legal battles are common in the traditional policy-making approach, many participants felt uncomfortable with the display of threatening attitudes. Some members of the advisory group worried that those exhibitions of power may have intimidated a few stakeholders, thus reducing

their participation in the process. Popp et al. (2014) refer to this situation as the submission of “small stakeholders”, who sometimes leave the power, responsibility and accountability to larger organizations with the purpose of reducing risk (Popp et al., 2014, p. 64). The individuals who expressed legal threats were perceived as challengers rather than collaborators.

A second example referred to disingenuous attitudes. Apparently, in certain occasions, stakeholders refused to support good ideas unless they would derive direct or additional benefits: “That is a good idea, but what do we get from this?” (Anonymous Stakeholder, personal communication). In the context of this situation, it was perceived that some disingenuous stakeholders neglected the greater good of society. The participant who illustrated this situation admitted to have felt discouraged by the perception of disingenuous behaviors. Also in the context of negotiations, it was perceived that the presence of “savvy negotiators” at the table may have reinforced the exhibition of protective attitudes, as stakeholders refused to make concessions until absolutely necessary.

Some members of the advisory group disapproved certain aspects of the facilitation team. They were criticized for failing to include the service of formal minute taking in the contract, and failing to bring a civic perspective to the policy-making process. Some individuals observed that integration and consensus are not easily promoted by emphasizing the differences between sectors. Instead, they suggested that, at some point, all network participants should have been compelled to rise above their formal role and connect as citizens in the search of the greater good.

Frequently, participants highlighted the size of the network as a limitation to reach agreement. The literature observes that, indeed, “the more actors are involved in

interaction processes, the more difficult it becomes to reach agreement” (Kickert & Koppenjan, 1997, p. 53). Other perceived barriers include the imprecise or insufficient articulation of written matters, thus leading to unclear assumptions and lack of understanding. The issue of competing missions between the network and home organizations was also mentioned, as it was apparent that some stakeholders were trying to advance the interests of their home institutions.

6.4.2.11 Post-Network Barriers or Deterrents of Satisfaction

This dissertation focused on the collaborative aspects of the network management process that transpired during the course of ten meetings, where all participants were actively engaged. However, participants didn’t limit or disassociate their answers from the events that transpired afterwards, which include additional meetings between the lead agency and key stakeholders, the definition an official intermediate outcome based on the AFG network recommendations and post-network negotiations, and the failure or deferral to propose and implement an AFG policy.

As previously illustrated in Figure 6.1, after the conclusion of the AFG network project, the lead agency was expected to formulate a final policy position, propose official regulations, and implement the AFG policy. The successful achievement of this plan would have demonstrated compliance with federal regulations and would have contributed to the amelioration of the water quality of the Chesapeake Bay Watershed.

Public officials from the lead agency expressed that an official policy position was formulated by taking into account the recommendations included in the *Final Report of the Accounting for Growth (AfG) in Maryland* (Workgroup for Accounting for Growth in Maryland, 2013), as well as the results of post-network negotiations

with key stakeholders. Public officials indicated the final position tried to promote an intermediate solution, in order to balance the contrasting policy expectations of the different sectors. The official intermediate outcome defined the use of an Environmental Site Design (ESD) forest baseline and required the mitigation of phosphorus in impaired areas (Anonymous Advisor, personal communication).

Based on the input of several participants, the resulting official position was “very different” from the recommendations provided by the AFG network. While stakeholders understand that the lead agency had the authority to make final decisions, it was noted that the agency didn’t limit itself to the resolution of pending issues, and instead, made further changes to some of the stakeholders’ common recommendations. In doing so, stakeholders perceived that MDE had broken the balanced agreements that resulted from extensive deliberation and negotiation.

Several stakeholders alleged the resulting official policy position was weak, accommodating to the interests of a particular industry, and not sufficiently equipped to advance environmental goals. In other words, they worried that, if implemented, the policy would not have made a significant difference to the status quo, both in terms of regulation and environmental impact.

However, the ultimate barrier that prevented this project from achieving the expected outcome was the failure or deferral to propose and implement an AFG policy. Participants speculated that weak leadership and political conflicts of interest associated with an election year could have motivated MDE’s inaction. For instance, it was suggested that agency officials didn’t communicate enough with the past Governor, making thus apparent that top leadership was either absent or indifferent about the outcomes of this policy project.

It was apparent that, by not dictating regulations, the government was avoiding direct confrontation with powerful groups: “The regulated community is very powerful when it comes to the financial perspective. It didn’t come up often, but there definitely times when people showed the higher guns that were around the table. Not all the times, but it was reminded that it was an election year and that business interests could play differently” (Anonymous Stakeholder, personal communication). Therefore, the political context was perceived as an external force that shaped the design of the policy. See the following elaboration:

This issue was driven by two considerations: they had a policy issue, and I think all the stakeholders were genuinely trying to approach this from a practical policy-driven solution. Underline that, you had to be aware of the potential political ramifications. And this was an issue that was highly politically charged. Different stakeholders had different pressing points, both from the policy perspective, as well as the political perspective. There were certain things that MDE could not know outside of the organization, because those correspond to the governor aspirations and where they felt they were at, as a state (Anonymous Advisor, personal communication).

Presumably, the position of the government was to continue the work on AFG after the elections, trusting the Democratic Party would be reelected. However, that didn’t occur. An anonymous advisor (personal communication) described the presumed strategy:

We had an election for governor, and I think the department, because this is a very controversial policy, did not want to put this out during the election. So, they held off, and then the election went on a way that was unanticipated, at least for the people from the administration. A Republican governor was elected, and basically doomed that policy from coming out as it was. Had a Democratic candidate won, I believe MDE would have pushed out their final decision, which would have proven unpopular among several stakeholders, and possibly the public in general, but that would have happened. Instead, now, they will have

to start all over again, or more likely, read it and start building upon what we had agreed upon.

By the time this dissertation was undergoing revisions, the new administration issued a Water Quality Nutrient Trading Statement (Maryland, 2015; see Appendix I). The new government's position in regard to this issue seems assertive and pragmatic. The statement recognizes that regulations are needed to trigger a water quality market, thus fulfilling the purpose of previous initiatives such as the Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed adopted in 2008 and MDA's Guidelines for the Generation of Agricultural Nonpoint Nutrient Credits in the Chesapeake Bay Watershed. The Water Quality Nutrient Trading Statement (Maryland, 2015) has already defined critical variables, such as allowing cross-sector and interstate trading, establishing trading geographies, and allowing trading to meet current TMDL allocations. Those decisions were made with regard to market efficiency considerations. Future action includes developing a comprehensive water quality document that builds upon existing policies and programs, reconstituting and convening the existing stakeholder nutrient trading advisory group to review and refine materials, transforming the stakeholder group into an ongoing advisory committee to recommend future improvements to the trading infrastructure, and holding an outreach conference in mid-2016 (Maryland, 2015).

6.5 Conclusion

This research highlighted the applicability of case study methodology for complex contemporary phenomena, such as collaborative policy-making. As observed by Emerson et al. (2011, p. 2), this approach helped to “unpack the links between science, institutions, knowledge and power”. Case study methodology allowed the

researcher to conduct in-depth observations that unfolded a set of direct (anticipated) and indirect findings (non-anticipated) findings.

As part of the direct (anticipated) findings, this study concluded that the AFG network did exhibit the four management descriptors identified in the network management behaviors framework: activation, mobilization, framing, and synthesis (McGuire & Agranoff, 2014). Besides, the findings indicated that the AFG experienced a final stage, comparable to death or transformation, as postulated by Popp et al. (2014). The processes and approaches to reach nearly 80% of consensus decisions were also identified and organized into three general approaches that highlight the relevance of learning, systematic problem solving, and a flexible and dynamic decision-making attitude. Such information enriches the catalogue of empirical approaches to attain network goals.

Admittedly, when the researcher engaged in this research project, there was an expectation that the lead agency would propose and enact AFG regulations. Such scenario would have reinforced the value of the collaborative network approach as an example of participatory public policy making. Unfortunately, the lack of a final outcome is now perceived as a governance failure, where the collaborative network approach did not make a difference to promote the solution of a complex public problem. This conclusion will be expanded in the following chapter.

Consequently, the work of the AFG network was only partially successful. Stakeholders were able to learn from and about each other, increase their knowledge and understanding of the topic, establish a high level of common ground and agreement, and provide twenty-eight consensus recommendations for subsequent policy development. However, the failure to agree upon eight aspects of the policy

prevented the lead agency from comfortably bringing this policy to the Governor's attention (Anonymous Advisor, personal communication). Moreover, it seems that the lack of absolute consensus paralyzed the governance system, as no further action was pursued after defining an official intermediate outcome. Therefore, the failure of the network overlapped with the failure of the policy game (at the governance level), as suggested by Rethemeyer and Hatmaker (2008).

The indirect or unanticipated findings helped to explain the causes of AFG's incomplete achievement and reinforced the perception that the network management model needs expansion. In addition to the inherent complexity of aspects such as the baseline and the definition of nutrients for regulation, numerous power issues and collaborative barriers negatively affected the effectiveness of the network. In the aggregate, these negative traits and behaviors reflect the political and philosophical reality of the AFG network. Those negative traits derailed the management process, broke the whole equilibrium of the network, and prevented participants from reaching a higher level of collaborative advantage. When the management process was altered, effective leadership and management was needed to restore the functionality of the network as a whole.

Several of the situations that emerged as a result of negative traits were not easily classifiable within the four existing categories of McGuire and Agranoff's (2014) framework. As such, the network management behaviors framework was perceived as incomplete and not fully reflective of the management process of public policy networks. The perceived mismatch between practice and theory is further addressed in the following chapter. In order to better understand the operating reality of public policy networks, this research proposes the expansion of McGuire and

Agranoff's (2014) framework, to formally include contingent situations as network management descriptors.

The recent Water Quality Nutrient Trading Statement (Maryland, 2015) brings new hope for the restoration of the Chesapeake Bay. Hopefully this vision will be supported with energetic leadership. As stressed by Easton (1957, p. 395), no political system can yield positive change unless, "in addition to demands, supports find its way into the system". The concluding chapter will offer practical recommendations for future collaborative initiatives in the state of Maryland.

Chapter 7

CONCLUSIONS, CONTRIBUTIONS AND RECOMMENDATIONS

7.1 Introduction

This research concluded having accomplished more than originally envisioned. The experience of the AFG network unfolded many lessons, not only at the managerial level but also at the governance level. The way in which the research transpired also allowed the researcher to reflect upon the conceptual foundations of this study.

The conclusions of this research will be classified in three categories: the network management process, the policy game (broader governance system), and the conceptual framework. The extension of McGuire and Agranoff's (2014) network management behaviors is embedded in the management process conclusions. The remainder of the chapter highlights the contributions to theory, future research recommendations, practical contributions, practical recommendations, limitations of this study, and a final reflection.

7.2 Network Management Process Conclusions

This section presents the conclusions that were reached through the assessment of the research questions and theoretical propositions that guided this study.

7.2.1 The Network Management Behaviors Framework Needs Expansion

The candid information provided through interviews and questionnaires, along with a revision of public documents and audio recordings, allowed the reconstruction of the network management process, where “moves and countermoves, adjustments and readjustments, actions and non-actions” were clearly depicted (McGuire, 2002, p. 602). The data demonstrated that the AFG network experienced the four management descriptors proposed by McGuire and Agranoff (2014): activation, mobilization, framing and synthesis. However, many of the situations and events observed during the process could not be classified within the four categories of the network management behaviors framework. Those include the cessation of operation of the network and the events that preceded it, and the multiple instances when the management process was struggling with power issues and collaboration barriers.

While the literature provides ample description of the network management process and collaboration challenges, the conceptual integration of these areas is essential to reach a more robust understanding of the operating reality of collaborative public networks. Otherwise, fragmented or incomplete theoretical frameworks could inadvertently encourage practitioners to manage networks in a prescriptive manner, thus failing to prepare them to effectively respond to management threats that negatively affect the equilibrium of the network as a whole. In the case of public policy networks, where uncertainty, tensions and conflict are inherent characteristics of the process, it makes sense to assume these negative traits as given or expected variables.

A more comprehensive and representative network management model is also crucial to convey the essence of network management functions to network leaders and operators who may lack sufficient experience with these governance structures.

For example, in the case of the AFG network, the facilitators admitted that leading and managing collaborative public policy networks is not a frequent task in the context of in their daily practice. Likewise, it is unknown to what extent public servants are well versed in the art of collaboration; yet, they are often charged with the leadership of collaborative initiatives. As recognized by all participants, the skills to operate in network settings are different from those utilized in hierarchical environments. Consequently, clear and comprehensive management models could help practitioners to transition from hierarchical settings to collaborative ones, and vice versa.

Given the partial applicability of the network management behaviors framework to describe the management process in a public policy network, it is concluded that the model needs expansion to acknowledge contingent/reciprocal situations as management descriptors.

7.2.1.1 Expanded Network Management Model: Integrating Descriptors, Adjustments, and Proactive Actions

Under ideal circumstances, networks could achieve collaborative advantage and effectiveness by engaging in the processes of activation, mobilization, framing and synthesis, which include activities such as accessing resources, motivating participants, facilitating agreement and enhanced interactions (McGuire & Agranoff, 2014). However, as demonstrated in this research, the management process of policy networks rarely transpires in a smooth manner.

Public policy networks exhibit “a complex sequence of moves and countermoves, adjustments and readjustments, actions and non-actions” (McGuire, 2002, p. 602) as they try to solve multifaceted problems that go beyond the ability of single individuals and organizations to resolve. McGuire’s articulation of the network

management process suggested valuable elements for the expansion of the network management behaviors model.

The terms *moves* and *countermoves* are reciprocal: a countermove is a move or an action made in opposition to another. The expansion of McGuire and Agranoff's (2014) framework starts with the recognition that *for each management descriptor that leads to collaborative advantage, there is an opposite management descriptor that leads to inefficiency and potentially failure*. Therefore, the four existing categories are interpreted as moves and used as the foundation for the expansion of the network management model. Based on the experience of the AFG case study, *tentative language* is proposed to refer to the countermoves of the network management behaviors framework: *deactivation* is proposed as contrary to activation; *inertia* as contrary to mobilization; *detachment* as contrary to framing; and *rupture* as contrary to synthesis. These reciprocal management descriptors are explained below and are accompanied with examples from the case study.

If *activation* refers to the incorporation of persons and resources to operate as a network, *deactivation* refers to the disincorporation of persons, resources, and potentially the deactivation of the network as a whole. The literature suggests the selective deactivation of members is a standard function of management (Agranoff & McGuire, 2001; Schaap & Van Twist, 1997; Voets, 2014). However, network deactivation is not equally acknowledged in the literature. Instead, it is implied, assumed, or neglected. Popp et al. (2014) had warned about the scarcity of research on this area and highlighted the relevance of the acknowledgement of a terminal stage.

In the case of the AFG network, the awareness about the finite nature of the process allowed the network to prepare for the ceasing of operations, and to *make*

adjustments to accomplish the network's goals. Meeting summaries describe modifications made to the schedule and agendas, as participants agreed to increase the length of meetings and to extend the process from eight to ten meetings. The members of the problem-solving subgroup volunteered additional time to meet informally and to discuss alternative solutions and compromise positions. Modifications were also perceived at the behavioral level. Towards the end, a more mature collaborative attitude evolved. Participants were more focused and exhibited a greater willingness to compromise.

Per definition, *mobilization* is the process of making something capable of movement. In the context of the management behaviors framework, this refers to active and purposeful movement. In contrast, *inertia* reflects resistance or disinclination to motion, action or change.

By virtue of the effective facilitation and an intellectually stimulating environment, collaborative inertia was rarely observed in this process. However, there were times when entrenchment and the need for external input almost paralyzed the process. This was exemplified when the stakeholders were no longer able to make decisions due to the interdependency of the issues. Therefore, additional mobilizing behaviors were needed to break the inertia. For example, the problem solving subgroup was encouraged to meet and explore alternatives and stakeholders were asked to use their relational channels to seek additional input.

While this research didn't find an antidote against entrenchment, it was highlighted that exhaustive and potentially exhausting deliberation was effective to reach compromise positions. "Talking to death" was mentioned as an approach to reach agreement, either because it allowed stakeholders to modify positions, or

because it expedited the resolution of certain issues as a result of exhaustion. Therefore, mobilizing formal and informal knowledge was an effective adjustment to disrupt inertia.

If *framing* refers to the arrangements to hold a network together (both structurally and ideologically), *detaching/detachment* refers to the action of disengaging, separating, or disconnecting from the framework that holds the network together. The findings of this research proved that the structural framework of the network was not challenged, because participants adhered to the proposed charter. However, a large number of stakeholders rejected the guiding (ideological) principles proposed by the government agencies and refused to adhere to the same. *Meeting Agenda #1* depicts concerns about the principles at the initiation of the collaborative process (MDE, 2013b). Audio recordings also reflect the tensions around this issue. Occasionally, it was also perceived that stakeholders challenged the principles and/or obstructed the process as a result of unawareness about the broader policy system. As indicated in the previous chapter, it is unclear to what extent formal consideration was given to related and potentially overlapping policies such as Total Maximum Daily Loads regulations, MDA's Nutrient Trading Program, Maryland's Stormwater Management Program, and Maryland's Forest Conservation Act. Perhaps, time constraints prevented the exploration of this area, or maybe it was assumed that participants would acquire this knowledge on their own.

Regardless of the reasons that motivated dissatisfaction with the principles, some stakeholders detached from the ideological structure provided for the process. In doing so, it was perceived that an alternative ideological framework was established: "The more technically savvy members of the workgroup were able to frame the issues

and steer the process toward their interests. MDE inadvertently allowed the issue to be framed in a narrow way” (Anonymous Advisor, personal communication). This perception illustrates that, by detaching from the official principles and adopting a different set of ideological beliefs, some participants separated from the common understanding of the network at-large, thus splitting the network at a fundamental level.

The advisory group tried to reframe the process by engaging in a review of the guiding principles at a late stage of the process (MDE, 2013h). However, it is apparent that the efforts to reframe the process and obtain unanimous support for the guiding principles fell short. Presumably, additional mobilizing behaviors could have been needed.

If *synthesis* refers to the collaborative advantage that results from combining the art of collaboration with performance-oriented techniques, its respective countermove would be the *rupture* of the collaborative synergy. The findings of this research informed that a variety of power issues and collaboration barriers could have precluded collaborative advantage. Rupture, as a tangible network management descriptor, offers the possibility to integrate those observations into the flow of network management behaviors.

For example, the issue of multiple roles played by the lead agency was perceived as problematic. According to the charter (MDE, 2012a), MDE’s role was to “[p]articipate in discussions and provide perspective when appropriate”. However, participants perceived that the lead agency exercised the flexibility to perform as a stakeholder, as an advisor, and as a co-facilitator. While some participants perceived the general role of MDE as balanced and appropriate, some participants felt the lead

agency had trespassed boundaries, created power imbalances, and interfered with the collaborative process. Given these challenges, some hypothetical questions could be asked:

- If MDE needed to interact as a stakeholder, why did the charter limit its capacity to an advisory role?
- Did other government agencies feel the need to interact as stakeholders too?
- If MDE, MDA, MDP, and MDNR had engaged as a group of state government stakeholders (comparably to local government) would this have improved communications and furthered understanding?
- If the state agencies had been given the rightful opportunity to participate in deliberations and advocate their positions (as stakeholders), would this have reduced tensions and conflict?
- If the state agencies had been engaged as stakeholders with decision-making capacity, would this have improved the quality of the network's decisions?
- If the state agencies had participated as stakeholders rather than advisors, how would this have affected the structural design of the network?

Purdy (2012) warned that, when the convening organization acts as a network participant, attention must be paid to ensuring that they don't become a dominant force. To avoid tensions, some collaborative processes are designed in ways in which the convening organization remains as an outsider, in order to capture the input of the participants without interference (Daniels & Walker, 1996). The relationship between network configuration and the incidence of power imbalances may need further exploration.

Other collaboration barriers observed in this case study could be analyzed in the context of *rupture*. Through this exercise, a list of proactive actions could be

identified. For instance, it could be asked: *To what extent did certain collaboration barrier affect the ability of the network to achieve collaborative advantage?* If deemed important, it would be advisable to ask: *How could this collaborative barrier be managed and prevented?*

Having already defined a series of reciprocal behaviors (countermoves) and illustrated examples of adjustments and proactive actions in the context of the AFG network, a conceptual integration of the expanded model is offered in Figure 6.1.

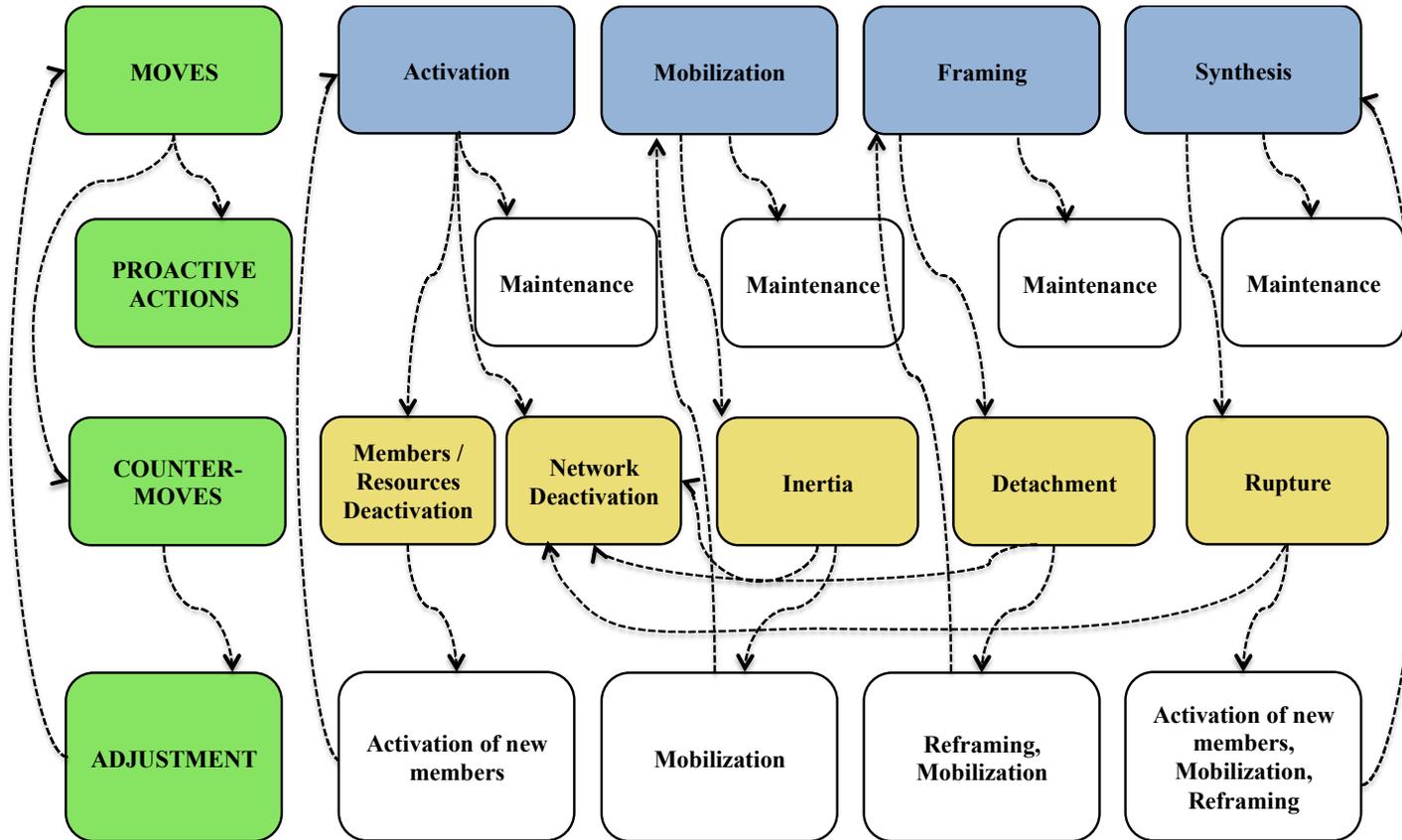


Figure 7.1. Network Management Descriptors (Moves and Countermoves), Proactive Actions and Adjustments. Expanded network management model, after McGuire and Agranoff, 2014.

The first tier of Figure 6.1 depicts the four management descriptors identified by McGuire and Agranoff (2014): activation, mobilization, framing and synthesis. These descriptors were not connected horizontally with lines because they can occur in any order and in an iterative manner. The logic model suggests that proactive, context-oriented actions could be implemented to prevent the derailing of the process, in an effort to maintain the equilibrium of the network. Those proactive (maintenance activities) are indicated in the second tier. As argued in this dissertation, power issues and collaboration barriers exist are extremely likely to occur. Therefore, the third tier reflects the situations that result when negative forces alter the process: deactivation, inertia, detachment, and rupture. The last tier suggests the adjustments that could be made if the management process experiences a countermove. The model proposes that, if adjustments are effective, the management process should revert to the original descriptors. In general, the rationales of the expanded model could be summarized in the following manner:

1. The effective implementation of activating, mobilizing, framing and synthesis behaviors leads to collaborative advantage and effectiveness* .
2. Proactive context-based actions could be implemented to maintain network effectiveness and prevent countermoves* .
3. Power issues and collaborative barriers could result on the deactivation of members.
4. Network deactivation could occur if the process was planned as finite, and/or the goals are successfully achieved, and/or the network fails* .
5. Activation of new members could follow deactivation, if needed.
6. Power issues and collaborative barriers could result on network inertia* .
7. Mobilizing actions could break network inertia* .
8. Power issues and collaborative barriers could result in detachment* .

9. Reframing and further mobilization may be needed to reestablish a structural and/or ideological framework.
10. Power issues and collaborative barriers could result in network's rupture.
11. All possible adjustments may be needed to repair network rupture.
12. Failure to revert countermoves to original descriptors may result in the deactivation of the network.

* Note: this research provided support for propositions one, two, four, six, seven, and eight.

The experience of the AFG network had a two-fold legacy. First, participants increased their knowledge about the policy issue and developed collaborative skills that will positively influence their professional practice in the future. Second, this case study provided the empirical evidence to contribute to the development of network management theory, through the expansion of the network management model.

7.2.2 Formal and Informal Learning Contributes to the Development of Common and Mutual Understanding

Learning was confirmed as an effective method to reach common and mutual understanding, recognize the complexities of the context at-large, modify original positions, and develop the ability to formulate joint solutions. The various approaches that facilitated the achievement of common and mutual understanding were integrated in the formal and informal learning process described in Section 6.3.2.1.

Participants expressed a preference for active and informal learning methods, in contrast to passive and unilateral approaches such as Power Point presentations. Dialogue and deliberations, which included expert-guided conversations, were considered essential to learn from and about each other. Specific knowledge and

information delivered per request of stakeholders was considered more valuable and objective than the initial set of facts imparted by state agencies. Likewise, the use of tools helped to transfer knowledge, thus improving decision-making processes.

In the case of AFG, the acquisition of knowledge was not an expected outcome of the project, but the means to an end. Learning served the purposes of empowerment, enlightenment, socialization, and to a certain extent, negotiation. As such, the case study data provided substantial support for the collaborative learning framework (one of the secondary theories formally considered in this research). To refresh, the collaborative learning approach is a “framework for improving natural resource policy decisions through systems-based public involvement” (Daniels & Walker, 1996, p. 81). This framework recognizes the importance of public involvement, better communication, and the complexity of public policy networks. The collaborative learning framework focuses on the achievement of a *temporarily shared culture* and *desirable and feasible change*. As it will be highlighted in subsequent sections, network management should focus on the achievement of those goals, as implicitly, they require the adoption of pragmatic decision-making approaches.

The relevance of continuous learning and knowledge application is broadly acknowledged in the literature (e.g., Agranoff & McGuire, 2001; Blatner et al., 2001; Daniels & Walker, 1996; Koliba, 2014; Pasternack & Viscio, 1998; Popp et al., 2014). Learning is linked to innovation, effectiveness, and network resilience (Popp et al., 2014). The acquisition of knowledge empowered the stakeholders to become critical thinkers. It is apparent that, once sufficient knowledge and expertise had been shared among participants, stakeholders were able to identify areas that required further

information, thought, and consultation. Arguably, through the collaborative work of the network, the conceptual quality of the AFG policy increased over time and narrowed the areas of disagreement.

The process of formal and informal learning was linked to mobilization, as it empowered stakeholders to become resourceful and legitimate decision-makers. Learning was also associated with synthesis because the application of knowledge resulted in enhanced decision-making capacity.

7.2.3 Effective Communication and Negotiation are Critical to Reach Agreement Over Courses of Action

It is concluded that effective communication (dialogue and deliberation) was the most critical approach to reach agreement, followed by flexible and dynamic negotiations. As basic as dialogue and deliberation may seem, these approaches were essential to reach common understanding, share knowledge and expertise, build relationships, bridge differences, negotiate, and make decisions. Deliberation and negotiations transpired in such a fluid and seemingly simultaneous manner, that they could only be delineated in theory but not in practice. Deliberation was a common feature of the systematic problem-solving process (Section 6.3.3.1) and the flexible and dynamic decision-making process (Section 6.3.3.2).

Effective facilitation was critical to promote balanced participation and guide stakeholders through complex negotiations. Continuous learning and mobilization (leveraging relationships and channels) were also important to reach agreement.

Arguably, if organizers could go back in time, the process could be planned differently to allow more time for deliberations, negotiations, and closure. Under ideal circumstances, the network could have used the additional time to resolve additional

issues, further the analysis of the most problematic aspects, and celebrate their contributions to a relevant public program.

7.2.4 Decision-Making Capacity was Achieved as a Result of all Collaborative Processes Identified in this Study

It is concluded that the ability to make choices and decisions that resulted into final policy recommendations was reached as a cumulative outcome of the three general processes identified in this research: formal and informal learning, systematic problem solving, and flexible and dynamic decision-making, along with recurrent activities that supported the three processes. It must be cautioned, however, that the AFG network was not required to take additional actions besides providing recommendations for a subsequent policy draft.

7.3 Policy and Governance Conclusions

As observed by Rethemeyer and Hatmaker (2008), policy networks are embedded within a broader governance system. As such, the operation of collaborative networks overlaps with higher-level governance arrangements. In this case, the AFG network was embedded in the context of the Bay Cabinet Agencies, and ultimately, the state's authority.

While the emphasis of this research was network management theory, the collected data revealed the AFG project had an important governance component. The literature on collaborative governance provides additional elements to understand network management. Moreover, the field of collaborative governance helps to explain the outcomes of the AFG project in terms of governance performance. This section offers conclusions about the policy game, with regard to the broader governance system.

7.3.1 The AFG Network was a Good Democratic Expression

Promoting public participation through the involvement of multiple stakeholders in an official collaborative project (the AFG network) was perceived as a legitimate democratic expression, which is considered desirable in the light of current governance trends (Sørensen, 2006). Meaningful public participation promotes the values of “legitimacy, justice and effectiveness of public action” (Fung, 2006, p. 74).

The literature on collaborative governance acknowledges that society is being governed in new ways (Sørensen, 2006). These new practices involve a higher level of public participation and rely on collaboration, deliberation and dialogue (Booher, 2004; Fung, 2006; Stringer et al., 2006). As succinctly explained by Ansell and Gash (2008, p. 543), collaborative governance “brings public and private stakeholders together in collective forums with public agencies to engage in consensus-oriented decision-making”. Public policy networks are examples of collaborative governance.

The practice of collaborative governance is not replacing government (Booher, 2004), but creating a synergy between civil society, political representatives, and public administrators to “yield more desirable practices and outcomes of collective decision-making” (Fung, 2006, p. 66). If genuinely embraced, the collaborative governance approach capitalizes from the contributions of public and private stakeholders to share knowledge, information, expertise, resources, and responsibility for societal change, thus promoting a sense of democracy and increased civic capacity (Hajer, 2003; Innes & Booher, 2004; Margerum, 2011; Sørensen, 2006; Stringer et al., 2006). Intrinsically, collaborative governance involves a redistribution of power (Ansell & Gash, 2008; Arnstein, 1969). More effective public participation is essential to overcome the inherent limitations of traditional policy-making approaches (Burger, 2011; Innes & Booher, 2004).

7.3.2 The Likelihood of Success of the AFG Network was Low

The literature on collaborative governance suggests the likelihood for success of the AFG network was low. More strictly, it is inferred that the collaborative network project should not have taken place as part of the formal strategies to develop AFG policies.

While public policy networks have the potential to solve “intractable public policy conundrums” (Booher, 2004, p. 43), the collaborative approach is not always an appropriate alternative. At a fundamental level, Booher (2004) identified eight conditions for successful participatory public policy making process:

1. Inclusion of all relevant stakeholders.
2. A meaningful task.
3. *Structural arrangements established by participants.*
4. Promotion of mutual understanding of interests and discouragement of positional bargaining.
5. Balanced participation and effective communication.
6. *A flexible and unconstrained self-organized process where the status quo and assumptions can be challenged.*
7. Accessible and shared information.
8. Exhaustive exploration of interests and alternatives prior to establishing consensus.

Either because of lack of experience with the collaborative governance approach, or as a consequence of hierarchical resistance, the design of the AFG network did not provide the necessary level of flexibility and autonomy for stakeholders to share power and build consensus. The power issues and collaboration barriers described in the previous chapter reflect that not being able to participate in the formulation of the structural and ideological framework of the network caused a

rupture that, arguably, was not possible to repair. Therefore, the AFG network did not meet the third condition. The sixth condition was not met either. Far from unconstrained, stakeholders felt the state was trying to obtain endorsement for a preconceived outcome (the original proposal). The content and direction of the formal education sessions made apparent that stakeholders were compelled to co-opt the position and the ideology of the state agencies. Moreover, the issue of multiple roles played by the convening agency substantially reduced the sense of autonomy and self-organization. While stakeholders challenged the assumptions (guiding principles), those claims didn't receive consideration. On the contrary, the state reinforced the validity and applicability of the principles, thus limiting the options for subsequent decision-making and negatively affecting the morale of participants.

Therefore, it is apparent that the traditional policy-making approach⁶² could have been a more appropriate mechanism to develop AFG regulations, since the state was not willing or prepared to change fixed variables, provide a higher level of autonomy to the network, and share its decision-making authority with stakeholders. Besides, the governance literature warned about multiple challenges that the AFG network would face. Those include time constraints, decision-making limitations, lack of competence, and institutional challenges.

Time is a critical variable to make collective agreements, and consequently collaborative governance is discouraged when agencies need to develop and

⁶² Under the traditional approach, the lead agency would have been responsible for addressing the concerns of the different sectors (previously expressed through public comment), and could have relied on the expertise of state agency professionals. Making decisions over value judgments would have been part of the lead agency's responsibility.

implement policy decisions in a short period of time (Ansell & Gash, 2008). A comparable collaborative initiative addressing water governance issues (Sacramento Water Forum, integrated by 40 stakeholders), took six years to build consensus on seven areas (Booher, 2004). Consequently, it was extremely unlikely for the AFG network to seek consensus on 36 policy components on the span of ten meetings, especially in the context of conflictive guiding principles.

While collaborative governance is theoretically framed as a participatory, consensus-building approach, the quest for absolute consensus seems an oxymoron in the context of public policy networks. Collaborative solutions should be reached through the pursuit of small, mutual gains (Ansell & Gash, 2008; Booher, 2004) and without forcing stakeholders to compromise core values (Daniels & Walker, 1996). In the case of AFG, participants expressed they were given the impression that absolute consensus was needed for their recommendations to be formally considered by the lead agency. Only towards the end of the process, when the timeline made imminent that consensus on critical areas would not be reached (i.e., selection of a baseline), the decision-making process turned its focus on majority positions. It must be highlighted that a strict consensus approach had a pervasive effect on participants. Stakeholders lost interest in the process, as they felt their individual input was not seriously valued and that, given the impossibility to share agreement on the whole proposal, their investment would go to waste. Unfortunately, either because of political conflicts of interest associated with an election year –as observed by participants, or because of the rigidity of the decision-making approach, the state declined to build upon the 28 consensus recommendations of the AFG network. Consequently, as stressed by Ansell and Gash (2008), in this case the collaborative governance approach caused

more harm than benefits, as the lack of a final outcome negatively affected the morale of participants and left a bad precedent for collaborative governance.

In addition to the limitations associated with the quest for absolute consensus, the decision-making process was negatively affected by an implicit, comprehensively rational policy-making approach, characterized by fixed preferences over outcomes and the quest for fundamental solutions (Jones, 1999; Lindblom, 1959). In contrast to more flexible collaborative approaches that build policies through a process of successive approximation (incremental change), the members of the AFG network were limited by rigid guiding principles (fixed preferences) the desire of producing a *perfect policy* that would yield the highest level of benefits (Jones, 1999). However, the public policy literature stresses that for situations with a high level of complexity, uncertainty, and cognitive limitations, *a comprehensively rational approach is not appropriate* (Jones, 1999; Lindblom, 1959). Precisely for these reasons, Lindblom (1959, p. 84) observed that “democracies change their policies almost entirely through incremental adjustments”. The lack of pragmatism of several stakeholders suggested lack of familiarity with this basic policy-making assumption, or otherwise, the overt use of power to advance personal/sectoral interests. By avoiding compromise and resisting a sub-optimal policy solution, stakeholders could have purposefully manipulated network outcomes (Popp et al., 2014). Perhaps inadvertently, network organizers disenfranchised a large number of participants who shared agreement on common issues, by emphasizing the need of consensus decisions. Therefore, by failing to promote an incremental policy approach, the AFG network was limited in its capacity to produce a solution that would be socially, environmentally, and politically acceptable.

Pluralistic perspectives suggest that members of the public are not sufficiently competent to effectively contribute to policy-making, either because of lack of technical capacity and/or lack of collaborative skills (Booher, 2004). An “unequal footing” (e.g., knowledge and expertise deficiencies) poses the risk of manipulation by dominant players (Ansell & Gash, 2008, p. 551). While only a couple stakeholders were not considered sufficiently capable or engaged, audio recordings, interviews and questionnaires supported the view that several stakeholders were not in tune with the collaborative approach. To solve this deficiency, collaborative projects are often preceded by formal training and education on collaboration (Booher, 2004; Keast & Mandell, 2014).

Finally, the AFG project seems to have experienced institutional challenges, which are understood as the clash of collaboration and hierarchy (Booher, 2004). This was first observed when members of the lead agency opposed to widely endorsed propositions of the stakeholder’s group, and when the lead agency declined to propose and enact AFG regulations, despite of the input provided by the AFG network. The absence of top-leadership involvement in the collaborative process (as inferred from the lack of communication reported by research participants) also suggests that the AFG did not enjoy support at the governance level.

In conclusion, from a collaborative governance perspective, the AFG network’s probability to succeed was limited. However, the failure to enact AFG policies was not exclusively influenced by shortcomings of the network; the governance system also precluded this initiative from reaching collaborative advantage. In the words of Sørensen and Torfin (2009, p. 235), “network performance depends on the societal context, the institutional design and the political struggles that

determine their form and functionality”. This case study illustrates that collaborative governance barriers can also preclude the potential of collaborative networks from bringing outcomes to fruition (Emerson et al., 2011). Perhaps inadvertently, the network’s governance potential was reduced to a traditional consultation process.

7.3.3 Leadership is Paramount to Promote Feasible and Desirable Change

Public policy networks are emergent governance structures that bring together people from multiple sectors to solve public problems. As such, public policy networks deal with a diversity of competing and potentially incompatible values, beliefs, perspectives, interests, and priorities (Booher, 2004; Daniels & Walker, 1996; Maser & Pollio, 2012). While people from different sectors and institutions may depend on each other to solve problems, they don’t necessarily share the same visions for the resolution of the issues. Therefore, in addition to effective management, leadership is paramount to promoting the creation of a *temporarily shared culture* that could yield *desirable and feasible change* (Daniels & Walker, 1996).

Collaborative public policy networks typically employ professional facilitators to mediate, guide and lead the process. As demonstrated in this case study, while leadership and management tasks tend to be distributed in networks, those are -for the most part, concentrated in the facilitator(s). Therefore, the role of professional facilitators goes beyond mediating communications; their role encompasses network operation and leadership. As highlighted in chapter two, to lead collaborative initiatives that revolve around environmental issues, practitioners are expected to understand the sustainability problem in a systemic way, make the concept accessible to others, and generate the vision and the authority to make progress (Friedman, 2008; Redekop, 2010). Besides, as suggested by Keast and Mandell (2014),

leaders/facilitators must help participants to transform their views and behavior, for them to embrace the collaborative approach.

Consequently, in addition to mastering collaborative and conflict resolution techniques, professional facilitators require in-depth knowledge of the policy issue and familiarity with the policy-making process. Such knowledge is critical to promote feasible and desirable policy solutions. In the case of the AFG network, further guidance could have been helpful to stress upon the need to promote a pragmatic policy to make simultaneous advances for water quality restoration, the creation of a robust nutrient trading market, and ensuring the viability of the regulated community. Participants needed to understand that a good policy is one that people can agree upon, despite of their differences regarding values (Lindblom, 1959). Part of what needed to be mediated was the conflict between a comprehensive rational approach and the need for an incremental policy that could have been improved over time, thus protecting everyone's interests. Presumably, this may have involved mediating a solution between the state and stakeholders, not just mediating the difference among sectors.

Arguably, promoting a flexible and incremental approach could have avoided many of the collaboration barriers experienced by the AFG network. However, since tensions and power imbalances should be expected as inherent characteristics of public policy networks, it is argued that familiarity with network management functions could help facilitators to lead and manage in a more efficient manner.

As pointed by Boohar (2004, p. 45), "changing traditional governance is still a daunting task". Professional facilitators are in a privileged yet challenging position to influence the effectiveness of public policy networks, and in doing so, maximize the opportunities for successful collaborative governance.

7.4 Conceptual Conclusions

This section describes the extent to which secondary frameworks supported the goals of this research. Additionally, it brings to attention an additional framework that could have been taken into account for research design, given the present understanding of the case study.

7.4.1 Two Secondary Frameworks showed Alignment with the Case Study

As described in chapters three and four, this research identified three theoretical frameworks that could be used to confirm, challenge, or extend the theoretical propositions that guided this research:

- Collaborative learning (Daniels & Walker, 1996).
- Composite theoretical model: process catalyst and strategic leveraging (Keast & Mandell, 2014).
- Network evolution (Popp et al., 2014).

Of these frameworks, the first and the third showed the highest level of alignment with the collected data. The collaborative learning framework was the most insightful, as it stresses alternative ways of conflict resolution, encourages active and systemic learning, and promotes incremental change. In the context of the extended model proposed in this dissertation, these approaches exemplify proactive actions and adjustments to maintain or restore the equilibrium of the management process. The theoretical premises of the collaborative learning framework were consistent with the processes adopted by the AFG network, although Daniels and Walker would probably have encouraged a higher level of flexibility for decision-making (not requiring consensus to deploy policy action).

The network evolution framework was considered second in relevance. The descriptors of this framework helped to elucidate perceptions about the participant's satisfaction with the AFG network process. The particular premise that by analogy suggests the end of a life cycle (death or transformation), paved the way for the confirmation of the existence of a final stage in public policy networks. While this finding may be considered trivial, there are management implications that need to be further acknowledged on the literature of public networks. In the case of the AFG network, for instance, adjustments needed to be made in order to ensure the completion of tasks. The deactivation of people, resources, and/or the network as a whole is now acknowledged as a countermove of activation. Following this logic, this study proposed three additional management descriptors: inertia, detachment, and rupture. Therefore, the network evolution framework played an important role in the expansion of the management model built after McGuire and Agranoff (2014).

While the data revealed that the strategic leveraging of relationships is a very important aspect of network management (e.g., encouraging the formation of the informal problem solving subgroup), Keast and Mandell's (2014) composite theoretical model didn't show as much alignment with the AFG network, compared to the other two frameworks. Being such a short process (only ten meetings from January to July, 2013), the AFG network had little opportunity to focus on the building and improvement of relationships. Moreover, no formal training was imparted to level or develop collaborative skills in preparation for the process.

A focus on relationships rather than tasks may be absolutely critical for long-term service and governance networks, where trust and reciprocity are necessary to advance program goals. However, using as example the AFG network (a short-lived

public policy network), a focus on relationships did not seem essential to create a temporary collaborative culture. The emphasis of the AFG was promoting balanced participation, effective communication, and critical analysis, in order to produce compromise positions.

Earlier in chapter four, it was explained that the use of secondary frameworks is a desirable methodological step to increase the validity of results (Yin, 2014). It was also clarified that the adoption of this methodological recommendation would not limit the scope of interpretation to the previously identified frameworks. By virtue of the findings of this case study, the researcher wishes to acknowledge an additional theoretical framework that could have been a good fit for this dissertation.

7.4.2 Ansell and Gash (2008) Model of Collaborative Governance Bridges Network Management with the Broader Governance System

By January, 2015, when the previous administration came to an end leaving unresolved the problem of unaccounted loads of pollutants from new growth, the failure of the AFG policy initiative turned into one of public governance magnitude. As previously discussed in Section 7.3.2, the collaboration and governance barriers observed in the AFG project yielded non-action, thus preventing the solution of a complex public problem.

As criticized by Rethemeyer and Hatmaker (2008), a deficiency of network management models such as McGuire and Agranoff's (2014) network management behavior's framework and the expanded version proposed in this dissertation, is the *conceptual isolation of the management process at the expense of a deeper understanding of the interconnectedness of network and the broader governance arrangements*. Upon completion of this research, after collecting, analyzing and

interpreting the data, the researcher agreed with the view of Rethemeyer and Hatmaker (2008). The disconnectedness between the network management process and the governance context that surrounds the network was depicted from a comment expressed by the facilitation team. According to an anonymous facilitator (personal communication), it would have been ideal to assist the lead agency after the cease of the operation of the AFG network, in order to ensure the *successful completion of the policy-making process*; however, that provision was not made in the contract. To refresh, the work of the collaborative AFG network concluded with a commitment to develop regulations by December, 2013.

The empirical evidence of the AFG network shows alignment with Ansell and Gash's (2008) model of collaborative governance, which identifies the most critical variables of collaborative governance. Ansell and Gash's framework has two advantageous features: it is the result of a meta-study that assessed 137 cases of collaborative governance, and it described in terms of contingency, thus encompassing negative traits that, as argued in this dissertation, should be expected in collaborative policy making processes. In essence, Ansell and Gash's (2008) model describes critical variables that are used to predict successful collaboration throughout the governance system. The model comprises starting conditions, institutional design, facilitative leadership, and the collaborative process. The first three components are considered context characteristics that affect the network process. The variables of the model include: prior history of conflict or cooperation, the incentives for stakeholders to participate, power and resources imbalances, leadership, and institutional design (Ansell & Gash, 2008). Then, the collaborative process is described in terms of face-to-face dialogue, trust building, and the development of commitment and shared

understanding (Ansell & Gash, 2008). This model highlights the relevance of incremental change, trust, commitment, and shared understanding (Ansell & Gash, 2008). Figure 6.2 provides a visual depiction of Ansell and Gash's (2008) model. Note that, in the context of collaborative governance models, the collaborative management process is embedded in a broader governance system that includes institutions, leadership, power, and authority.

With a mature understanding of the AFG case study, it is concluded that Ansell and Gash's (2008) model of collaborative governance could have been appropriate for this research. This is not to say that the contributions to theory reached through this study are meaningless or lack validity, as the expanded network management model proposed in this dissertation could effectively help practitioners to acquire essential knowledge regarding network management functions. However, it is foreseen that the expanded model could incorporate governance elements to further reflect the context that surrounds public policy networks.

Ansell and Gash's (2008) framework is particularly appropriate for studies that are concerned with the performance outcomes of collaborative governance. In the case of this research, those outcomes were still on the making at the outset of this academic exercise. In part for that reason, the study focused on the collaborative aspects of the management process.

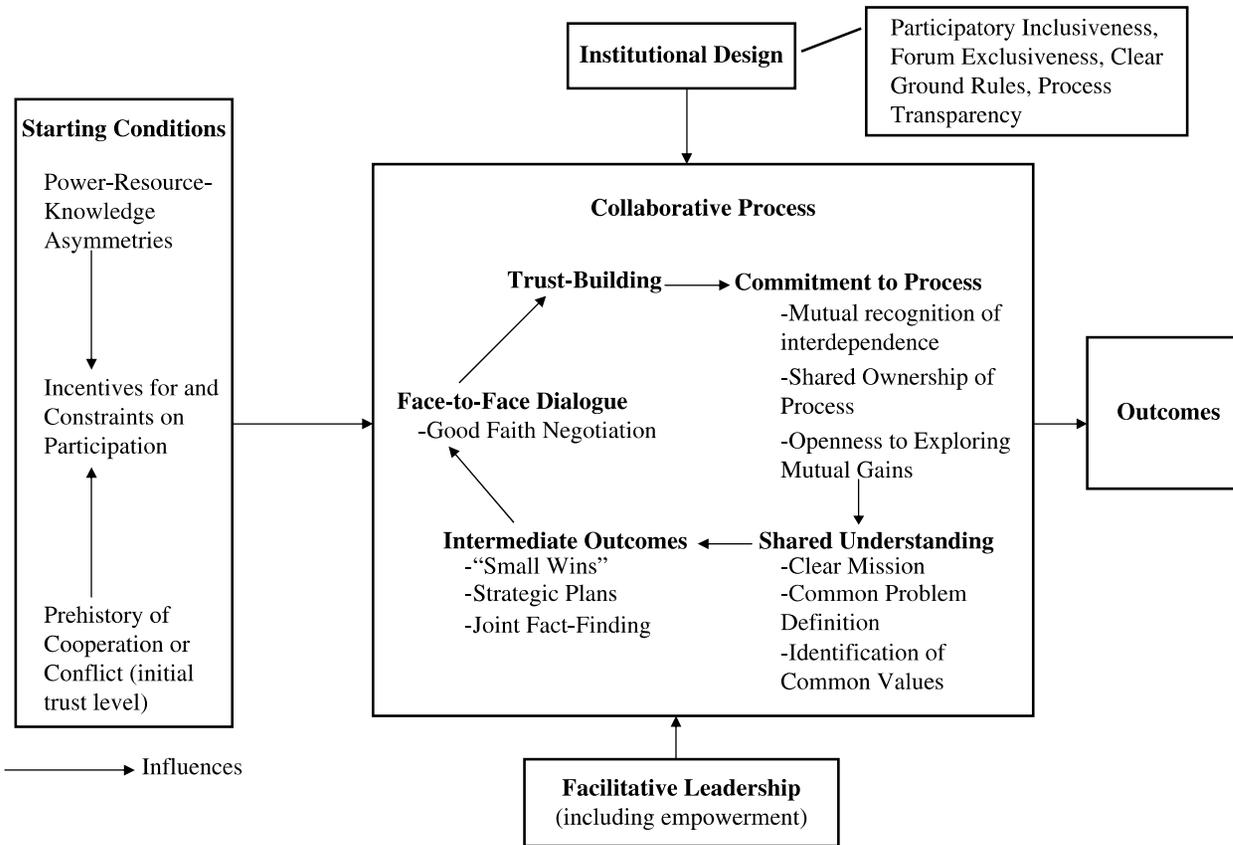


Figure 7.2. Model of Collaborative Governance. Source: Ansell and Gash, 2008.

7.5 Contributions to Theory

This research achieved the primary goal to attain of *analytic generalization* by means of integration and expansion of theory. Additionally, this case study provides a substantial amount of empirical data, which could be useful for future meta-studies.

The researcher does not claim that the expanded management model has fully captured all the variables that lead to network success, but that it provides a foundation for future theory development and empirical experimentation. As noted by Agranoff (2014, p. 205), new theoretical propositions have been the engine of the theory-building endeavor and have promoted “healthy discussion and debate”. From an academic perspective, the expanded model could also help to visualize best and worse management scenarios, and to understand the factors that contribute to network effectiveness rather than failure. Through the rigor of academic research, this study brought theory and practice one step closer together.

7.6 Future Research Recommendations

Future research is needed to confirm, challenge, extend, or reject the theoretical propositions included in the extended network management descriptors model and the inductive logic associated with it. Researchers are encouraged to rename these descriptors if more accurate terms could be found to express the essence of countermoves. Moreover, further research is recommended to bridge this model with the higher-level governance context.

Given the specific challenges experienced by the AFG network, it is recommended to identify new approaches to prevent and revert network management countermoves, to improve decision-making capacity, and to advice about appropriate

network configurations when the convening organization is a participant. Research is also needed to identify mechanisms to bridge fundamental differences at an early stage of the process. While the literature stresses that agreement upon principles and goals is essential for effective management, practitioners struggle to reconcile disparate perspectives. Practitioners would find extremely helpful the articulation of leadership skills to manage contingent situations.

Finally, the researcher invites scholars to further articulate the definition of the term *consensus* and discuss the value of the consensus-making approach. As illustrated in this study, the quest for consensus didn't serve the purpose of promoting a democratic solution to a public problem that needed to be addressed with urgency. On the contrary, the lack of absolute consensus served as a justification for non-action. Therefore, it is apparent that collaborative decision-making practices need to be aligned with democratic values of representations. More specifically, academia should promote an intellectual debate about the appropriateness of *consensus* in contrast to *majority decisions*, in the context of collaborative public policy networks.

7.7 Practical Contributions

The researcher made an effort to integrate theory and practice in a way that demonstrates academic rigor but maintains simplicity, for the expanded network management model to be perceived as succinct and applicable for practice.

The most important practical contribution of this research is the operationalization of “negative situations” as management descriptors. A simple logic suggests that, for each management descriptor that promotes effectiveness, there is one that threatens the management process and the equilibrium of the network as a whole. As such, the expanded network management model encompasses eight descriptors that

seek to raise awareness about the operating realities of collaborative public policy networks. This model seeks to trigger the exchange of applicable knowledge. By proposing a common language, it is hoped that practitioners may engage in conversations about management strategies to revert and prevent process countermoves.

The identified processes and approaches to achieve common understanding, agreement and decision-making capacity could also be beneficial for practitioners, along with the list of power issues and collaborative barriers. The experience of the AFG network reinforces that network managers and operators must be prepared to effectively respond to management and collaboration challenges.

7.8 Practical Recommendations

Maryland could continue to demonstrate its leadership by always incorporating some form of public participation that ensures a two-way communication with their citizenry. The extent and effectiveness of public participation allowed as part of traditional public policy making approaches (e.g., public comment and five-minute interventions at public meetings) are considered negligible under the collaborative governance paradigm. Moreover, those outdated practices have been broadly criticized by scholars. To improve policy-making processes, Maryland should continue to promote the active and early involvement of key stakeholders through formal and informal activities.

The conclusion provided in Section 7.3.2 was not meant to discourage the utilization of the collaborative governance approach. However, based on the experience of the AFG network, it must be stressed that prior to engaging in formal collaborative initiatives, thoughtful consideration must be given to determine if the

approach is suitable. Formal demonstrations of collaborative governance should only take place if endorsed by top-leadership; otherwise they would not be viable and would not be a responsible use of public resources.

Official programs should continue to engage professional facilitators, as recommended in the collaborative learning framework (Daniels & Walker, 1996). The findings of this research supported that contracting a third party was effective to promote a favorable environment for collaborative interactions.

Despite the shortcomings of the AFG network, the decision to engage in a collaborative policy-making process was celebrated and interpreted as a good democratic expression. Therefore, it is encouraged that MDE and other state agencies continue to promote collaboration, not only when interacting with public stakeholders, but when working with peer agencies. Interagency coordination and cooperation will not be sufficient to create solutions to complex public policy problems.

It is highly recommended that the new administration builds upon the legacy of the AFG network, especially to repair the negative perceptions left by the lack of an outcome. Moreover, a proactive policy attitude will be needed to comply with federal regulations and to address the negative externalities of growth. Government intervention continues to be needed to ensure that the cost of restoration that will result from additional growth does not continue to be passively transferred to the public at-large.

Informal yet effective dialogue and deliberation may substitute formal and expensive programs, as long as transparency is maintained. State agencies could reproduce mechanisms like the informal problem solving subgroup, which was considered one of the most effective leadership and management approaches to

achieve network goals. An informal atmosphere could provide state agency experts a greater level of flexibility to engage in conversations and deliberations without being perceived as biased and antagonistic. It is also encouraged to involve neutral experts in technical deliberations, such as members from higher education institutions.

Daniels and Walker (1996) would probably recommend a higher level of pragmatism and flexibility, in order to promote *feasible and desirable change*. Absolute consensus should not be pursued in policy environments, as this provides an unnecessary opportunity to obstruct the process. Instead, collaborators should be encouraged to seek majority or supermajority positions, while remaining truthful to their ideological principles and ethically accountable to the public. On the other hand, Keast and Mandell (2014) would probably encourage an emphasis on relationships. Politically and ideologically, the members of a policy network are predisposed to be divided. Network managers and operators are encouraged to find creative ways to trigger constructive relationships between seemingly incompatible stakeholders.

7.9 Limitations of the Study

The researcher regrets that a greater level of participation was not possible, given time constraints at both ends. Regarding the non-participation of prospective participants, this study may have failed to capture the responses from the individuals that held the highest level of apathy and dissatisfaction against the project. Given the limited availability and busy agendas of participants, several communication channels were enabled. It is recognized, however, that written responses were not as illustrative as interviews.

The aftermath of the AFG project made this case study attractive for policy analysis and governance studies. However, the original research design was not

conducive to explore these aspects in a deep and explicit manner. Privacy agreements, in particular, prevented the researcher from associating particular stakeholders with specific policy positions. While the researcher appreciates the actors of a policy network are not equal, the results of this research needed to be reported in the aggregate to avoid violations to the Institutional Review Board protocol.

7.10 Researcher's Reflection

The researcher feels thankful for the invitation to look at this process from a collaborative perspective. Highly motivated participants and committed members of society provided example and inspiration by virtue of their professionalism, charisma, and public-service orientation. Much gratitude needs to be expressed for the opportunity to learn from their experience, and for allowing the researcher to share these lessons.

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Appendix A

UNIVERSITY OF DELAWARE REVIEW BOARD LETTER: NEW PROJECT



RESEARCH OFFICE

210 HULLIHEN HALL
UNIVERSITY OF DELAWARE
NEWARK, DELAWARE 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

DATE: January 14, 2015

TO: Sonia Solano, MSc
FROM: University of Delaware IRB

STUDY TITLE: [703400-1] Reaching common understanding, agreement and decision-making capacity in a collaborative policy network

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: January 14, 2015

REVIEW CATEGORY: Exemption category # (3)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.

Appendix B

UNIVERSITY OF DELAWARE REVIEW BOARD LETTER: AMMENDMENT/MODIFICATION



RESEARCH OFFICE

210 HULLIHEN HALL
UNIVERSITY OF DELAWARE
NEWARK, DELAWARE 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

DATE: March 20, 2015

TO: Sonia Solano, MSc
FROM: University of Delaware IRB

STUDY TITLE: [703400-2] Reaching common understanding, agreement and decision-making capacity in a collaborative policy network

SUBMISSION TYPE: Amendment/Modification

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: March 20, 2015

REVIEW CATEGORY: Exemption category # (3),(4)

Thank you for your submission of Amendment/Modification materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.

Appendix C

LEAD AGENCY'S NETWORK BACKGROUND QUESTIONNAIRE

The purpose of this interview is to learn about the factors and processes that lead to the creation of the Accounting for Growth Charter Group (herein after referred as "Accounting for Growth network"), and the future activities of the Accounting for Growth Policy. You are being asked to participate as an interviewee because of your role as a public official and your knowledge about the background of the Accounting for Growth Network.

1. Scholars suggest that a collaborative, network-based approach is needed to devise "new strategies to bring public administration in sync with the multi-organizational, multisector operating realities of today's government" (Kettl, 2006, p. 17, cited by McGuire and Agranoff, 2014, p. 154). In the context of the Accounting for Growth Policy Project, does Maryland Department of the Environment (MDE) agree with this premise?
2. Based on public documents, I understand Maryland's Accounting for Growth policy project and the Accounting for Growth Network evolved in a collaborative, networked manner. Is this correct?
3. For the organization of the following questions, let's divide the Accounting for Growth policy project in three stages:
 - First, from the overall Accounting for Growth policy project inception to the creation of the draft that was discussed in public outreach meetings and was ultimately deemed problematic.
 - Second, the period of time during which the Accounting for Growth Network revised the document and prepared the 2013 Final Report of the Workgroup on Accounting for Growth (AfG) in Maryland.
 - Third, what has occurred and/or will transpire after the "2013 Final Report of the Workgroup on Accounting for Growth (AfG) in Maryland".

Please provide background information regarding the collaborative nature of the first stage:

- 3.a. Which agencies participated in the formulation of the first policy draft?
- 3.b. Were all interests and sectors taken into account?

- 3.c. How did you work together?
- 3.d. Were you satisfied with the outcomes of this stage, both in terms of the process and the quality of the formulated policy draft?
4. After public revision, it was concluded the initial policy draft was problematic. Which conclusions and practical implications were devised in that moment by the lead agency (MDE)?
5. If we could go back on time, would MDE do anything different to promote agreement and higher acceptance of the policy draft? For example, would MDE include more stakeholders during the policy formulation stage?
6. Let's now transition towards the creation of the Accounting for Growth Network. Public documents indicate this network was created with the purpose of finding common understanding, clarifying areas of disagreement, and providing recommendations for a subsequent policy draft. How did you identify and recruit the ideal persons and resources to undertake this task?
7. Which criteria were utilized for the selection of the network participants? (Advisory group, stakeholders group, and public attendees).
8. Were all critical interests and sectors identified and included in the network on the second stage?
9. How did MDE develop support and commitment for network processes from network participants and external stakeholders?
10. How did you define the rules, roles, values and other mechanisms to operate as a collaborative network?
11. How did you promote a collaborative environment conducive to productive interactions among network participants?
12. According to the documents, representatives from Council Fire facilitated the meetings of the network. Please explain the motivations to hire professional facilitators and the role they played in the process.
13. According to the meeting summaries, there was substantial variation in the membership of the network. For example, certain members of the advisory group supported specific meetings, but were absent in others. Some individuals, who were initially reported as public attendees, later became advisory group members. Also, there were many temporary and permanent substitutions in the Stakeholder's Group.

Was this variability a measure of flexibility and adaptability, or was this a result of time conflicts and commitment issues?

14. From the perspective of the lead agency, was the network approach effective to attain mutual understanding between stakeholders and participating agencies?

15. According to the Final Report of the Workgroup on Accounting for Growth in Maryland (2013, p. 20), “Work Group successfully developed consensus recommendations for 28 of 36 issues that were discussed”. Was this level of agreement considered a satisfactory outcome?

16. Did the final report satisfy the expectations of the lead Agency in terms of anticipated outcomes?

17. In addition to the final report, are there any other relevant outcomes or decisions made by the Accounting for Growth Network that will contribute to the future development of the policy?

18. From the perspective of the lead Agency, did the collaborative network approach achieve results that wouldn't have accomplished otherwise (i.e., by single organizations)?

19. In regards to the last stage of the policy project as a whole, which are the next steps?

20. Are you anticipating more collaborative approaches before the policy is completed?

Appendix D

NETWORK PARTICIPANTS QUESTIONNAIRE

The purpose of this questionnaire/interview is to learn about the specific processes and approaches that lead to mutual understanding, agreement, and decision making, as preconditions to attain network goals. Please see definitions below for reference.

- **Processes:** specific actions or steps taken in order to achieve a particular end.
- **Approaches:** conceptualization adopted to deal with a problem and accomplish a solution.
- **Mutual understanding:** shared knowledge and empathy towards other stakeholders' perspectives.
- **Agreement:** Reaching consensus regarding courses of action.
- **Decision-making capacity:** ability to make choices and decisions that result into final policy outputs/recommendations, or other preconceived outcomes.

You are being asked to participate as an interviewee because of your unique expertise as a relevant stakeholder and because you contributed in at least six of the ten meetings of the Accounting for Growth Charter Group (Maryland) between January 18, 2013 and July 19, 2013, herein after referred as the Accounting for Growth network.

1. Please describe how you were recruited to participate in the Accounting for Growth Network?
2. How would you describe your contribution to the process? Please refer to the uniqueness of your role as a network participant.
3. How satisfied were you with the process followed throughout the ten meetings?
4. How satisfied were you with your participation in the Accounting for Growth Network?
5. How did the lead agency (Maryland Department of the Environment) promote a collaborative environment conducive to productive interactions among network participants?

6. How was common/mutual understanding promoted between network participants?
7. Based on the meeting materials, it is apparent that network participants invested a substantial amount of time exchanging and applying knowledge. Which processes and approaches were particularly helpful to learn from each other?
8. Was the overall process of learning essential to reach common understanding between network participants?
9. Which processes and approaches were utilized to clarify areas of disagreement and generate network consensus regarding policy alternatives or courses of action?
10. Were information dissemination, negotiation and deliberation critical factors to reach agreement?
11. In your opinion, did the network exhibit a joint problem solving culture?
12. Which processes and approaches were utilized to make shared decisions and to deliver a final policy recommendation?
13. Did the network establish organizing principles and decision-making processes at an early stage to facilitate the process of making shared decisions?
14. Did the network establish expected performance outcomes, measures and goals to inform and orient the decision-making process?
15. Did you perceive any issues of power or any other collaboration barriers throughout the development of the network program? If so, how were they managed?
16. In your opinion, are leadership and management exercised differently in collaborative networks, compared to single, hierarchical organizations?
17. Did a single individual perform all the management tasks and roles, or were these distributed among several network participants?
18. Did a single individual perform all the leadership tasks and roles, or were these distributed among several network participants?

19. Do you recall any management and leadership processes and approaches that were particularly relevant or effective to attain network goals?
20. The lifespan of the Accounting for Growth Network can be considered the time period that transpired during the 10 meetings (January 18, 2013 - July 19, 2013). During this time, did the network experience all of the following stages?
 - Formation
 - Development and growth
 - Maturity
 - Death or transformation
21. As the end of the ten meetings program approached, were there any operational changes or special considerations in preparation for the conclusion of the project? For example, did you carry out any specific actions to wrap-up and ensure the demonstration of achieved outcomes?
22. The Accounting for Growth Network was formulated with the goal of reaching common understanding, clarifying areas of disagreement, and formulating policy recommendations. Do you think these outcomes were successfully achieved?
23. In your opinion, did the collaborative network approach achieve results that wouldn't have accomplished otherwise (i.e., by single organizations)?
24. What is, in your opinion, the main legacy of the Accounting for Growth Network in terms of collaboration?
25. Would you recommend me to interview someone else to learn more about the aspects we discussed in this interview?

Appendix E
CODING SCHEME

Table E.1. Categories, themes and codes. Different combinations of categories, themes and codes brought emphasis to different levels of interpretation. As such, terms are not mutually exclusive.

Categories	Theme	Codes
Achievements	Agreement, better outcomes, collaborative advantage, decision-making, efficiency, favorable public perception, network approach, output, final outcome, satisfaction.	Satisfactory level of agreement, stakeholders engagement, stakeholders involvement, subgroup, recommendations, results, final report, compromise.
Advocacy/endorsement	Power imbalances, power center, preconceived outcome, collaboration barrier.	Advocacy/endorsement, initial proposal, preconceived outcome, push.
Affirmative answer	Yes/no question.	Yes, for the most part.
Agreement	Achievements, agreement, bargaining, clarifying areas of disagreement, coalitions, efficiency, goal, learning, problem-solving culture, relationships, tallies.	Balanced agreements, satisfaction, crafting proposals, open mind, negotiation, subgroup, building coalitions, tools, reconciling differences, strategic leveraging, informal tallies, deliberation.
Balanced participation	All voices heard, effective facilitation, teamwork, network, participation.	Moderation, balanced/equal participation, equality, opportunity to express opinions, positions and concerns.

Table E.1. Continued.

<p>Collaboration barriers</p>	<p>Advocacy/endorsement, bias, communication barriers, counterproductive, inappropriate attitudes and behaviors, disregard for greater good, disparate positions and priorities, entrenchment, weak facilitation, home organization, intimidation, knowledge imbalances, lack of alignment, lack of trust, lack of knowledge, legal threats, poor stakeholder performance, physical discomfort, power center, power imbalances, unilateral communication, unrealistic expectations, insufficient institutional support, insufficient problem solving culture, weak leadership/representation, political conflicts of interest.</p>	<p>Preconceived outcome, defensive language, poor articulation, unclear assumptions, confusion, entrenchment, authoritarian approach, intransigence, biased educational sessions, lack of alignment within sectors, lack of alignment between agencies, no incentive to compromise, perfectionism, size of the group, disingenuous bargaining/negotiation, lack of responsiveness, organizational priority over collective, extreme statements, pasturing, turf wars, lack of credibility lack of expert knowledge, cold room, distraction, lack of focus, advocacy, lead agency's multiple roles, regret, unilateral communication, lack of moderation for content, non-proactive attitudes, bureaucratic approach, absolute consensus, legal threats, limited agency involvement, limited communication with Governor, lack of common understanding, misconstrued framing/understanding, protection of interests, savvy negotiators, power centers, science-policy paradox, stereotyping, compartmentalizing, strategic concessions, insufficient support, ability to influence political decisions outside of the network.</p>
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Table E.1. Continued.

Collaborative atmosphere	Ability to bring additional collaborators (support system), collaborative attitude, collaborative policymaking, satisfaction, appropriate venues, breaks, physical comfort.	External networking, opportunity to address concerns, effective facilitation, problem solving approach, resolution oriented process, willingness to work together, empathy, willingness to compromise, candid evolution, information dissemination, principles and procedures, large rooms, opportunity for informal interactions, physical point of reunion, face-to-face-conversations, free food.
Common and mutual understanding	Achievement, effective communication, engagement, learning, empathy.	Subgroup, neutral education, previous relationships, principles, rules of understanding, information, formal and informal knowledge, learning from and about each other, learning about the issue, learning about the context, dialogue, discussions, deliberations.
Complexity	Background, context, fragmentation, complex negotiations, interconnectedness of issues, policy challenge, sectoral interests, compromise.	Complexity/complex, difficult, no best way to address it, identification of middle ground, scales/dimensions of concern, learning curve, horse-trading, difficult positions, difficult process, intertwined process, opposite opinions, contrasting interest and values.
Consensus oriented decision-making	Agreement, decision-making, goal, collaboration barrier.	Consensus building, consensus as goal, inspiring, limitation, not pragmatic, unrealistic, collaboration barrier.

Table E.1. Continued.

<p>Contributions to the process</p>	<p>Engagement, education, experience, information, leadership, liaison, mission, opposition, representation, legitimacy, resources, support, technical competence, expertise, prior participation in AFG policy development.</p>	<p>Active engagement and participation, legitimate stake, imparting education, providing input from experience, sharing practical and technical expertise, information dissemination, preparing materials, leadership, mediating positions, meeting with leaders, promoting dialogue, promoting natural resource restoration, resist unsatisfactory political compromise, represent the specific organizations and institutions, contribute to discussions, support network participants, provide feedback, create and provide tools, knowledge of original policy draft, demonstrated capacity through public comment.</p>
<p>Deactivation activities and approaches</p>	<p>Adjustments to decision-making approach, final stage, finite process, extension of the program, focus on deliverable (final report), increased sense of urgency, increased efficiency, subgroup as critical approach.</p>	<p>Additional meetings, agreeing upon report, majority opinions, majority agreements, attention to timeline, consensus building, effort to summarize, explaining areas of disagreement, sense of urgency, support distribution, finite process, increased e-mail communications, informed and focused decision-making, reporting final positions, revising final document, subgroup meetings, increased reliance on subgroup.</p>

Table E.1. Continued.

Decision-making	Flexibility, reiterative process, autonomous decision-making, changes in decision-making strategy, compromise, effectiveness, informal tallies, matrix instrument, negotiation, feasibility, fairness/equity.	Autonomy, flexibility, reiterative/recurrent negotiation, super majority recommendations, compromise, quality of the compromise, acquisition of knowledge, matrix, principles, vote, subgroup, lobbyists as catalyzers, ranking system, tallies, learning process mutual understanding, fairness and equity.
Defacilitation	Lead agency' multiple roles, counterproductive, lack of alignment between agencies, resistance, rigidity.	Usurping moderation roles, attempts to reframe the ideas of the group, bureaucratic approach, lack of alignment between agencies.
Deficient facilitation	Biased, weak, lack of knowledge and expertise on specific policy issue, permissive, lack of civic perspective.	Recording and minute taking not included in the facilitation package/contract, hindrance or help, failure to manage personalities at the table, failure to promote civic attitude, no moderation for validity of content.
Deliberation	Agreement, common understanding, deliberation, learning.	Dialogue, deliberation, discussions, learning about others' interests and positions.
Dialogue	Common understanding, learning.	Dialogue, discussions, conversations, frank statements, politeness, learning about others' interests and positions.
Discussions	Common understanding, learning.	Polite discussions, heated discussions, discussion framework, formal and informal discussions, learning about others' interests and positions.

Table E.1. Continued.

Dissatisfaction	Partial achievements, no collaboration, advocacy, endorsement, collaboration barriers, defacilitation, educational sessions, frustration, inefficiency, no neutrality, weak participants, poor management, post-network activities, power imbalances, process, weak leadership, failure.	Missed potential/opportunity, ad-hoc process, education as advocacy, advocacy/endorsement, initial meetings unproductive, deficient process, poor management, grueling process, inefficient process, painful process, unnecessary process, wild process, vociferous comments, futile effort, weak leadership, authoritarian approach, waste of time, excessive flexibility, counterproductive renegotiations, no neutrality, knowledge imbalances, lack of expert knowledge, dissatisfactory official intermediate outcome, no final outcome, no regulations, no impact, failure, dissatisfaction.
Distributed leadership	Leadership, distributed, concentrated, subgroup members as outstanding leaders.	Distributed leadership, distributed among network participants, potentially concentrated in facilitator, subgroup leaders.
Distributed management	Management, distributed, concentrated.	Distributed management tasks, concentrated in facilitation team and agencies, specific tasks performed by participants.
Effective communication	Clarity of narrative, common understanding, communication, face-to-face interactions, politeness, informed positions.	Focus on narrative, clear articulation, editing, face-to-face interactions, further discussion, opportunity to express opinions, respect, dialogue, discussion, deliberation, unheated discussions, knowledge, information.

Table E.1. Continued.

Effective facilitation	Acceptable discourse, balanced participation, collaborative atmosphere, common understanding, decision-making, driver/operator, operational alignment, synthesis of information, satisfaction, neutrality.	Equal footing, keeping process on track, understanding multiple viewpoints, helpful, setting the tone, process alignment, facilitation, mediation, structural support, management of personalities, moderated discussions, third party, neutrality.
Empathy	Acknowledgment, common understanding, learning about others' interests and positions.	Understanding of context, awareness, fairness, equity, concerns, discussions, other people's shoes.
Engagement	Engagement, learning, subgroup, focus on deliverable (report/recommendations).	Active participation, commitment, time investment, motivation, preparation, performance orientation, subgroup.
Entrenchment	Collaborative barrier, official intermediate outcome, personality, power, preconceived outcome, unwillingness to compromise, lack of alignment, external entrenchment.	Extreme positions, extreme statements, intransigence, turf wars, lack of alignment, protective positions, opposition, stringent organizations.
Exhaustion	Exhausting conversations, exhaustive communication, lengthy and exhausting process, final stage.	Talking to death, discouragement, petered-out process, lack of closure, no celebration.
External networking	Agreement, briefing, support, representation, consultation	Importing and exporting information, briefing, consulting constituents.
Favorable collaboration approaches	Balancing power, external networking, face-to-face interactions, open mind, reducing external entrenchment, leveraging informal relationships, information dissemination, pragmatism.	Lead agency as peer stakeholder, early involvement of stakeholders, time between meetings, physical point of reunion, relationships, communication, modify positions, defining ex-ante holistic strategy, filling knowledge gaps, pragmatic attitude.

Table E.1. Continued.

Favorable perception of collaborative approach	Proactive policy-making, promising approach, robustness, superior approach, sense of ownership, reduced resistance.	Better outcomes, early identification of conflicts, stakeholders' involvement, integration, multiple viewpoints/perspectives.
Favorable perception of others	Trust, previous relationships, positive working relationships, positive attitudes.	Cooperative, good faith, maturity, respect, senior experience, trust, wisdom.
Focus on narrative and documentations	Matrix as log, focus on deliverable (report/recommendations), written records, assertiveness, clarity, alignment.	Matrix, documented guidelines and progress, documenting positions, briefing/ summarizing between meetings, editing, clear narrative, real time record keeping, final report.
Framing challenges	Conflictive principles, imposed principles, lack of clarity upon goals, lack of understanding.	Failed reframing attempts, complexity, poorly understood principles, lack of buy-in, conflictive/problematic principles, ground rules not followed, imposed/not shared principles, lack of emphasis and understanding, poorly articulated, lack of clarity upon goals, disparate understanding of goals.
Frustration	Formal educational sessions, biased framing (favorable to specific sector), no legacy, negative environmental impact, collaborative decisions disregarded, preconceived outcome inefficiency, political negligence.	Education as advocacy, underestimated participant's knowledge, no outcome, no regulations, no impact, inappropriate attitudes and behaviors, official intermediate outcome, pessimistic outlook, uncertainty, wasted time, unaccounted pollution, cost of restoration shifted to the public, Governor's limited involvement, weak leadership.

Table E.1. Continued.

Incomplete/incompatible information and data	Complexity, uncertainty, fragmentation, conflict, inefficiency, collaboration barrier.	Disparate/incompatible data, competing interests, incomplete information, fragmented information, misleading data/information, unproductive interactions.
Informal interactions	Agreement, collaborative atmosphere, common understanding, decision-making, face-to-face interactions, informal meetings, negotiation, satisfaction, relationships.	Informal meetings, breaks, size of the rooms, informal negotiations, side/informal conversations, time between meetings, behind the scenes negotiations, new and improved relationships.
Information dissemination	Learning, formal and informal knowledge, neutrality, informed advantage, reference for discussions, decision-making, resources, essential, relevant, not relevant.	Helpful, materials, information, strategic planning, subgroup, source of the information, presentations, readings.
Lack of alignment	Agencies, confusion, defacilitation, counterproductive, collaboration barrier.	Incompatible data, infighting, turf wars, fragmentation.
Lead agency's multiple roles	Collaboration barrier, problematic, power center, favorable.	Lead agency as: peer stakeholder, moderator, policy author, advisor, and regulator.
Lead agency's weak leadership.	No action, lack of authority, lack of receptiveness, negligence, failure, blame.	Political conflicts of interest, lack of experience, misconstrued framing of the issue, failure to make final decisions, failure to propose and enact policy.

Table E.1. Continued.

Learning	Formal modes, informal modes, informed advantage, improved negotiations, agreement, positive attitude, systematic thinking, common understating, enriched perspectives, dimensions (policy issue, policy solution, policy context, other people’s interests, goals, concerns, positions).	Information, knowledge, commitment, investment, open mind, willingness to think differently, informed advantage, educational sessions, presentations, power points, learning about others’ interests and positions, tools, learning curve, modify positions, systems, policy context, background, expressing/identifying stakeholders goals, identifying critical issues, learning from others, filling critical gaps, critical/essential for stakeholders, not essential for those who had expert/working knowledge of the issue.
Learning approaches	Active learning, applied learning, formal education, formal information, informal learning, informal interactions, leveling knowledge.	Tools, modeling, technical tutorials, assessing impacts, asking questions, requesting more information, fill gaps, reading materials, learning from others, exchanging information, case studies, strategizing, expert presentations, agency information, unilateral approaches.

Table E.1. Continued.

<p>Legacy of AFG network</p>	<p>Collaboration, common understanding, favorable public perception, improving likelihood of implementation, network, relationships.</p>	<p>Learning lessons, learning about others' interests and positions, favorable public perception, minimizing resistance/opposition, future goodwill, increased knowledge, relationships, network asset, friends, written report, expertise, identification of new collaborators, foundation for future discussion, foundation for future work, further consultation expected, good precedent for stakeholders, lessons on collaboration, common and mutual understanding, new collaborative efforts, perseverance, progress, final report, social and environmental responsibility.</p>
<p>Matrix instrument</p>	<p>Agreement, decision-making, network output, operationalization of the issue, reduced complexity, performance instrument, systematic problem-solving, written records.</p>	<p>Transparent method, instrument projected in screen, real time input, discrete pieces, manageable, designed by network members, centralized information, alternatives, options, choices, proposals, agreement areas, disagreement areas, decisions, log, metrics, tracking progress, platform for review, report format.</p>
<p>Misconstrued framing/understanding</p>	<p>Incorrect interpretation, science-policy paradox, discrete vs. holistic paradox, not valid proposal, concern.</p>	<p>Biased proposal, narrow framing of the issue, narrow/fragmented interpretation of science, not workable solution, incompatible with principles, favorable to only certain stakeholders, contested, manipulative reframing of the issue, misunderstanding.</p>

Table E.1. Continued.

Negative answer	Yes/no question.	No.
Negotiations	Agreement, decision-making, limited negotiations, complexity, creative process, autonomy, flexible, dynamic, reiterative, regret, dissatisfaction.	Propose alternatives, standard negotiation, bargaining, difficult negotiations, horse-trading, give and take, reiterative process, revisiting areas of disagreement, flexibility, postponing hard-issues, formal negotiations, informal negotiations, subgroup, regret (could, should, would), not taken seriously, missed opportunity, not pragmatic.
Network deactivation (Final stage)	Finite process, formal dissolution of the network, ceasing of operations, perception of death, perception of transformation.	Network no longer active, ten meeting process, sunset date, awaiting reactivation, dormant, dead, transformed (from formal to informal network).
No collaboration	Perception of failure, advocacy/endorsement, preconceived outcome, mandated collaboration.	No collaboration, failure to promote collaborative atmosphere, implicitly mandated collaboration, power struggles, rigidity, preconceived outcome.
No legacy	Failure. Uncertainty.	No final outcome, no regulations, no impact, dissatisfaction, yet to be defined, responsibility shifted to new government.
Obstructionism	Collaboration barrier, extreme positions, resistance, opposition.	Hardwiring/hijacking the process, resistance to change, opposition to progress, unnecessary interruptions, not adding value to the process.
Operationalization of the issue	Matrix instrument, reduced complexity, agreement, metrics, systematic problem solving, satisfaction.	Birth of the project, critical approach, list of issues, discrete topics, efficiency.

Table E.1. Continued.

Partial achievements.	Insufficient progress. Failure.	Peripheral aspects resolved, failure to produce a complete set of shared recommendations.
Partial satisfaction	Process, achievements.	Moderately satisfied, partially satisfied.
Performance orientation	Focus on deliverable (final report/recommendations), results, agreement.	Matrix, metrics, tracking progress, count of resolved vs. unresolved issues, timelines, deadlines.
Political conflicts of interest	Collaboration barriers, monetary donation to campaigns, political aspirations of leaders, lack of political will, weak leadership, power.	Election year, economic endorsement, manipulation, political agenda, politically charged process, no final decision, no action, weak leadership.
Poor stakeholder performance	Collaboration barrier, knowledge imbalances, lack of expertise, lack of preparation, lack of pragmatism, lack of collaborative skills.	Lack of knowledge, insufficient expertise, lack of preparation, lack of understanding, unrealistic demands, inappropriate attitudes and behaviors.
Post-network activities and decisions	Official intermediate outcome, dissatisfaction, frustration, failure.	Post report meetings, negotiations with key stakeholders, official intermediate outcome, official intermediate outcome not aligned with collaborative recommendations, no action, no final outcome, no regulations, no impact, dissatisfaction, frustration, failure.
Power center	Powerful groups, powerful sectors, powerful organizations, powerful agencies.	Heavy handed, economically influential, ideologically influential, authority.
Power imbalances	Collaboration barrier, power struggles, power centers, limits to participation.	Imbalanced power, lack of alignment, advocacy, push, dominant player, favoritism, exclusion, lead agency's multiple roles.

Table E.1. Continued.

Pragmatism	Systems approach, informed position, incremental change, ability to identify critical areas, middle ground, realism.	Understanding of the topic, understanding of the policy process, background, understanding of fixed vs. flexible policy variables, compromise, willingness to improve policy over time, realistic expectations.
Recruitment	Appointed, voluntary, recruited by agencies, representation, legitimate stake, tensions.	Appointed, in charge of (related) program(s), ability to contribute, qualifications, technical expertise, previous experience, self-proposed, not invited, aggregators (middlemen) excluded.
Reframing	Alignment, clarifying areas of disagreement, common understanding, ideological framework.	Clarifying goals and principles, revisiting goals and principles, attempts to get commitment to principles.
Regret	Missed opportunity, lack of pragmatism, entrenchment, unproductivity.	Intransigence, negligence, regret (could, would, should), perfectionism, lack of focus, missed opportunity.
Relationships	Collaborative atmosphere, formal relationships, informal relationships, common understanding, outcome, synergistic relationships, future collaboration.	Previous relationships, respect, favorable opinion of others, getting along, working together, building relationships, improving relationships, friendship.
Representation	Scale of representation, values, ideology, expertise, legitimacy, external networking.	Representing specific communities and organizations, provide minority voice, authentic public voice, citizen perspective, independent voice, technical and policy expertise, protecting the environment, protecting the interests of constituents.

Table E.1. Continued.

Satisfaction	Extent of agreement, achievements, process, autonomy, collaboration, favorable perception of others, coordination, objectivity, final report, legacy.	Satisfactory level of agreement, patience, clarity of roles and expectations, balanced power, alignment between agencies, favorable perception of lead agency's role, well run process, well organized process, important process, worth the time, final/written report.
Skills	Agreement, collaborative attitudes and behaviors, decision-making, external networking, representation.	Consensus building, crafting proposals, synergistic relationships, leveraging relationships, external networking, effective communication, politeness, ability to listen, willingness to broaden perspectives, willingness to compromise.
Social and environmental responsibility	Concern for federal compliance, concern for accountability, concern for environmental impact.	Attention to timeline, responsibility and cost of restoration, unaccounted pollution, negative impact.
Structural arrangements	Rules, principles, procedures, ideological framework, evolution of structural arrangement.	Rules, ground rules, rules of understanding, policy goals and principles, organizing principles, legitimacy of principles, agenda, timeline, decision-making strategy changed over time.
Subgroup	Critical approach, agreement, common understanding, decision-making, delegation, effectiveness, efficiency, engaged, productive, neutral environment, resolution-oriented, technical competence, expertise, leadership, distributed leadership.	Behind the scenes negotiation, brokers, caring, committed, motivated, engaged, interested, invested, open minded, technical expertise, mutual respect, informal meetings, crafted/created proposals, recommendations, efficiency, results.

Table E.1. Continued.

Systematic problem solving	Agreement, disagreement, analysis, common understanding, decision-making, flexible, dynamic, reduced complexity, systems approach, active learning, information dissemination.	Crafting proposals, focus on main proposals, formulate/identify alternatives, informal tallies, narrowing/refining topics and proposals, lumping and hybridizing proposals, one-by-one evaluation, discussion, dialogue, deliberation, low hanging fruits first, focus on thornier issues, evaluation of pros and cons, assertiveness, clarity of narrative, briefing and summarizing between meetings, matrix, systematic analysis, revisiting issues, requesting more information, filling knowledge gaps.
Uncertainty	Administration change, new Governor, legacy.	Change, skepticism, new administration, new Governor, political philosophy, learning curve.
Unsure	Yes/no questions	Not sure, yet to be determined.

Appendix F

ACCOUNTING FOR GROWTH WORK GROUP CHARTER DRAFT JANUARY 2012

Process

To ensure balance, equity, consensus building, and a structured approach to the process and individual meetings, rules of engagement including Member and Support Team roles, responsibilities, decision-making protocols, and other important elements of the effort have been established. This Charter supports flexibility, forward thinking, respect and innovation among Work Group Members and Support Team as well as providing a productive working environment.

Work Group Principles

The Members of the Work Group and Support Team unanimously agree to abide by the following principles:

- Work to achieve outcomes that serve the best interests of Maryland's economy, environment and its citizens.
- Abide by the concept that disagreement does not equal disrespect and treat all other Members of the Work Group and the Support Team, as well as all others participating in the process, with respect, honor, fairness and dignity.
- Bring any and all matters falling within the purview of the Work Group, as described herein, to the Work Group for consideration and resolution prior to pursuing the matter in other venues, including the media.

- Maintain an open mind and consider all perspectives before reaching a conclusion on a Work Group matter.
- Consider and strive to develop recommendations that meet the “Guiding Principles” set forth by the participating government agencies with responsibilities related to the Accounting for Growth Program.

Responsibilities

The Members of the Work Group unanimously agree to meet the following responsibilities:

Between meetings:

- Review and be prepared to discuss all relevant topic and agenda information including all meeting materials and other communications delivered before each meeting.
- Maintain all provided information in a binder provided to each Work Group Member.
- Contact a member of the Support Team as soon as you discover that you are unable to attend a meeting.

During Meetings:

- Always act in accordance with Work Group Principles.
- Be on time and committed to engage and participate in meetings.
- Work to follow the agenda and process of each meeting.

Work Group Meeting Procedures

The following meeting procedures shall guide the Work Group's activities:

- A quorum of Members is necessary to hold Work Group meetings. A simple majority of appointed Work Group Members shall constitute a quorum.
- Work Group decisions shall be made as follows:
 - Members shall work together to reach a recommendation on each topic and Members may offer a position on any matter before the Work Group.
 - Recommendations shall be made through a consensus building process where mutually acceptable and beneficial conclusions are first sought.
 - A “straw poll” (a facilitator-conducted verbal survey of Work Group Members in attendance) may be used to assess the degree of preliminary support for issues before the Work Group finalizes recommendations. Straw polls may lead to subsequent work by the group to revise the text of a recommendation and continue to explore ways to reach consensus.
 - If consensus decision methods are not feasible and/or consensus cannot be achieved on an issue, the meeting summaries will capture common ground achieved and all disparate opinion(s), along with the proffered rationale for each opinion(s), on matters considered by the Work Group.
- Work Group Members may bring others to assist them, but only Work Group Members and Support Team members shall be seated at the table.

- Other attendees will have an opportunity to provide comments to the group during a designated time at the end of each meeting.
- Meetings will be open to the public and posted on the MDE website.

Support Team

A Support Team, comprised of personnel from Council Fire, MDE, MDA, DNR, DBED, MDP and EPA has been established and will conduct the following activities in support of the Work Group process:

Council Fire Team will:

- Facilitate the Work Group by ensuring adherence to agendas and this Charter, and promoting an exploration of the diversity of member opinions. Council Fire Facilitator will help the group discover ways to identify common groups and build consensus around issues and topics.
- Allocate meeting time to accommodate discussions; prepare and distribute meeting agendas, meeting summaries and working documents; arrange for meeting space; and secure necessary materials and/or resources for meetings.
- Assist in the communications and logistics between Work Group Members and constituents, as appropriate.

MDE, DNR, MDA, MDP, DBED, EPA and advisors will:

- Prepare and present the Guiding Principles for the Work Group process.
- Provide technical support, information and consultation regarding technical issues.
- Participate in discussions and provide perspective when appropriate.
- Interpret the Guiding Principles and provide context as needed.

Work Group Process Goal

The Work Group's objective is to produce a set of recommendations by June for Accounting for Growth regulations to participating agencies that are created in a manner consistent with the processes and procedures set forth in this Charter.

The Accounting for Growth Work Group's recommendations will be submitted to the relevant agencies and for consideration by the Bay Cabinet.

Source: MDE, 2012a.

Appendix G

MARYLAND ACCOUNTING FOR GROWTH (AFG) GUIDING PRINCIPLES

1. Just as the Watershed Implementation Plan requires that existing loads of nitrogen, phosphorus and sediment must be reduced to meet the allocations in the Chesapeake Bay TMDL, it also requires that loads from population increase and economic growth that do not have load allocations under the TMDL be offset by an Accounting for Growth program.
2. The Accounting for Growth program cannot undermine other important state policies such as growing the economy, preserving agricultural and forest land, revitalizing communities, conserving energy, and addressing climate change.
3. The AfG program will encourage developers to plan and locate their developments to minimize pollution, and will require developers to offset the remaining pollution by securing reductions elsewhere.
4. Offsets must last as long as the new load exists, but the specific practices producing the offsets may change and the responsibility for maintaining the offsets may be shifted to another entity with its consent.
5. The AfG program needs to minimize market restrictions and barriers to participation while maximizing accountability and transparency.
6. Verifiability and enforcement are critical components to the AfG program.
7. A nutrient trading program will be established to offset new and increased loads and to spur innovation, accelerate pollution reductions, and reduce the overall cost of restoring and maintaining a clean Bay.
8. The AfG program will establish a platform for trading with sufficient predictability and stability to satisfy the reasonable expectations of buyers, sellers and investors, and encourage innovation and a robust market.

9. Maryland's point and nonpoint trading policies and procedures will be fully integrated, with low transactional costs and manageable administrative burdens for the participants and the implementing agency.

Source: MDE, 2013a.

Appendix H

OPTION MATRIX

Table H.1. Option Matrix, Meeting 10.

Concept	Alt #1	Alt #2	Alt #3	Work Group
I. Applicability – THRESHOLD				
A. Triggers -- What types of activities are subject to the offset policy unless they fall below the threshold or are specifically				
1. Construction that causes a change in land use from the land use category of forest, agriculture, or other undeveloped land (e.g., barren) to developed land (urban and suburban) – <i>low priority</i>				
2. The alteration of land, or construction or alteration of a structure that <i>creates a disturbed area equal to or above the threshold limit and</i> (1) increases the waste water load, or (2) increases the nonpoint source pollution coming from the parcel. Change in land use alone does not trigger the offset policy. Changes in agricultural activities such as changes (other than buildings/structures) in crops do not trigger the offset policy.	✓	✓	✓	✓
3. Exclude most agricultural activities in particular changes in crops and acreage filled year to year – <i>MDA response needed</i>				
4. Exclude agricultural activities unless the new category has a higher loading rate (e.g., crop) than the previous category (e.g., pasture) – <i>MDA response needed</i>				
B. Thresholds – what size of development has so little impact that it should be excluded for coverage by the policy –				
1. No threshold, but provide a simplified payment in lieu for projects less than one acre				
2. 1 acre (43,000 square feet) of disturbed land	✓		✓	
3. 20,000 square feet of disturbed land				
4. 5,000 square feet of disturbed land		✓		Consensus: However, reduced fee offered for disturbed land between 5000 sq. ft. to acre; <i>need to define reduced fee.</i> Acre and above is full compliance; talk about addressing county delegation
5. Any new construction that adds an additional dwelling unit or commercial structure to the property				
C. Exceptions – what kinds of beneficial projects should be excluded from coverage by the offset policy – THRESHOLD				
1. General rule for exceptions	✓		✓	
2. Case-by-case exception process administered by MDE - eliminate				
3. Installation of BMPs – stormwater	✓		✓	
4. Upgrading or maintenance of BMPs – stormwater	✓		✓	
5. Stream Restoration – stormwater	✓		✓	
6. Upgrading WWTPs without increase in hydraulic capacity – waste water				
7. Upgrading WWTPs simultaneously with increasing hydraulic capacity – waste water				
8. Exceptional public benefits projects that further social, economic and environmental sustainability, e.g., a park, community center, library				
9. Broad exemption for public works projects, conceivably including transportation projects (define or create a list of the types of public works projects, both local and state-level, that would be exempt)				

Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
A. Available or not, under what circumstances – THRESHOLD				
1. No fee-in-lieu – NOT VIABLE OPTION				
2. No fee in lieu except for projects affecting less than 1 acre				
3. Fee in lieu only established (subject to these provisions) if private nutrient credit market has not generated purchase opportunities. - Fee-in-lieu can only be made available if adequate capacity to implement offset BMP within a defined period of time (1 year?) is not available in the watershed. - Fee-in-lieu funds only be spent on BMP implementation (with a defined limit on administrative costs). - MDE implements BMP to offset load within a defined period (1 year).				
4. Fee-in-lieu available for N and P, payable to the BRF, based on a conservative cost estimate (including O&M for a set time frame) of an urban BMP at a 2 to 1 ratio.				
5. Fee-in-lieu available for N and P, payable to the BRF. - Based on a conservative cost estimate (including O&M for a set time frame) of an urban BMP at a 2 to 1 ratio. - Developer must meet hardship criteria demonstrating that: minimization and on-site mitigation have been exhausted to the maximum extent possible; credits from the private market are unavailable. - Projects are completed in advance using developer-sponsored bond that is repaid through FIL contributions. - FIL is statutorily required to sunset after a period of three years. FIL shall represent a specified declining share of all offset transactions between program initiation and sunset.				
6. Establish a fee-in-lieu for N, payable to the BRF for septic upgrades				
7. Fee in lieu with a 5-year sunset, with the possibility of renewal upon demonstration of program success		✓		
8. Fee-in-Lieu is permanent option	✓		✓	✓
B. Payable to whom, and for what purposes – Dependent				
1. Establish a fee-in-lieu for N, payable to the BRF for septic upgrades				
2. Fee-in-lieu available for N and P, payable to the BRF for projects that reduce N and P				
3. Establish a fee-in-lieu (language on what fee-in-lieu is/how it is used/deterrant/safety valve) for N and P with first right of refusal to local governments (to run program) based on set of criteria on how/when funds are used; should have checks and balances in place for how/when fees are used to offset load (using permanent or temporary BMPs); whoever runs program is responsible for offsetting loads with BMP practices and maintaining practices; money would be reverted to BRF if not used based criteria; timeframe (needs to be defined) of when responsible party must have practices in place; local water impairment situations have to be addressed by program; goal is to get nutrient reduction on the ground as fast as possible to offset any increases in load; provision for periodic review of price; establish fee-in-lieu committee	✓	✓	✓	✓
4. Fee goes to a dedicated County or Municipality fund for projects that reduce nutrients and sediment				
C. Setting the cost of the Fee-in-Lieu – Dependent				
1. Base fee on the average fully loaded cost (including the cost of design, contract administration, O&M for a set time frame, etc.) of an urban BMP. The fee is likely to be considerably higher than the average nutrient market price and thus is unlikely to impede the development of a nutrient trading market.	✓	✓	✓	

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Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
2. Based on weighted average cost, (including O&M for a set time frame) of a range of permanent (urban OR all) BMPs; price is adjusted based on 3 year average costs				
3. Based on \$3000 fee-in-lieu cost				Developers, MACo, MML
4. Based on \$3500 fee-in-lieu cost				South River Fed, CBF, CBC
5. 3 year review; price is adjusted based on continuous 3 year rolling average actual costs on permanent practices (credit generation or WIP compliance projects) that will begin starting in Year 3; establish FIL Work Group				✓
IV. Which Pollutants – THRESHOLD; Sets the scope of program				
1. Nitrogen, phosphorus and sediment statewide		✓		
2. Nitrogen and phosphorus statewide				
3. Nitrogen statewide and phosphorus if in a watershed with a local phosphorus TMDL	✓			
4. Nitrogen statewide and phosphorus and/or sediment if in a watershed with a local phosphorus and/or sediment TMDL			✓	YES
V. Calculating the Post-Development Load – Dependent				
A. Stormwater				
i. Stormwater Loading Factors – Scale, EOS and Delivered Loads				
1. Use statewide average loading rates for Delivered Load				
2. Use statewide weighted average loading rates for Delivered Load				
3. Use 5 basin loading rates for Edge of Stream and Delivered Load				
4. Use 5 basin EOS loading factors for locally-impaired watersheds. Use 5 basin EOS loading factors, followed by 8-digit watershed Delivery factors in all other sub-watersheds.				
5. Use 5 basin EOS loading factors, followed by 8-digit watershed Delivery factors				
6. Use 5 basin EOS loading factors, followed by Land River Delivery factors. Use Edge of Stream loading factors where there is a locally impaired segment for the TMDL-based impairment (N, P, or TSS).			✓	MACo, Developers, MML, Agricultural Community, SH, Bevin, CBF
6a. Use 5 basin EOS loading factors, followed by Land River Delivery factors. Use Edge of Stream loading factors where there is a locally impaired segment for the impairment (N, P, or TSS).			✓	
7. 8-digit watershed weighted average EOS loading factors				
8. Use Edge of Stream Loads		✓		South River Fed
9. Use Edge of Stream Loads <i>where there is a locally impaired segment (TMDL)</i>			✓	✓
ii. Stormwater Loading Factors – Adjustments for on-site stormwater BMPs				
1. Default – 50% reduction of nitrogen and 60% reduction of P for ESD to the MEP	✓	✓	✓	✓
2. Recognize additional reduction if developer opts to demonstrate the use of more effective BMPs, using EPA’s efficiencies	✓	✓	✓	✓
3. Use Expert Panel on performance standards for new development <i>or default</i>	✓	✓	✓	✓
B. On-Site Disposal Systems (OSDS)				
i. OSDS Loading Factors – Location				
1. Use statewide average EOS (edge of stream) loading rate of 42.5%				
2. Use area specific EOS loading rate based on 3 zones (80% in CA, 50% within 1,000 feet of a stream but not in CA, 30% for all others)	✓	✓	✓	✓
ii. OSDS Loading Factors Adjustments for efficiency of Nitrogen removal at Edge of Field				
1. Default – 50% nitrogen reduction				
2. Use MDE, field verified nitrogen reduction credits based on type of BAT system installed.	✓	✓	✓	✓

Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
3. Use landscape position of OSDS to determine the amount of nitrogen that may be delivered to the stream system				
iii. Wastewater going to WWTP				
1. If ENR WWTP has capacity within its allocation, no offset needed		✓		
2. If ENR WWTP has no capacity within its allocation, calculate loading at the N and P limits in the WWTP's permit (would require modification of WWTP's NPDES Permit)				
3. If ENR or BNR (took out non-ENR) WWTP with capacity within its allocation, no offset required.				
4. If BNR and/or Secondary Treatment, some offset needed				
5. If BNR, ENR and/or Secondary Treatment with capacity, no offset needed	✓		✓	YES
Cathy comment - shouldn't be reallocation of wastewater capacity without agreement from affected jurisdiction; doesn't forbid county from making rules more stringent				
iv. Atmospheric Deposition				
1. Default – use census tract population density to calculate increase in load by household				
2. Eliminate Atmospheric Deposition calculations from the calculations	✓	✓	✓	✓
3. Use data on historic increases in VMT due to development to estimate increase in load per household				
v. What Allocation, if any, should be given to the Post-Development Load (The difference between the Post-Development Load and the Allocation for the Post-Development Load equals the Offset Needed)				
A. Stormwater				
1. Zero Allocation		✓		
2. Forest Load Allocation				CBF, Sierra Club
3. The lower of the Bay TMDL or Local TMDL allocation for the pre-development land use	✓			
4. Pre-development land use load using 2010 Progress Run			✓	
5. The lower of the Bay TMDL or Local TMDL allocation for the post-development land use				
6. The lower of the post-development TMDL load or the predevelopment load				
7. Bay TMDL pre-development load or actual pre-development land use load, whichever is more restrictive				
8. Ag is hay/pasture				
9. MACo Proposal - The offset = (the actual post-development load for the sector) minus (the allocation in the 2025 WIP for the pre-development land use). Except: Active farmland (assessed as ag use) - use statewide average for pasture load, except that if the result is a negative number, it resets to zero under ag land. Redevelopment - Offset requirements for 20-40% impervious could be based on a sliding scale while higher levels of impervious surface could have either a minimal offset or no offset (total exemption) Infill - minimal or no offsets for infill projects that do not include large pervious surface areas; some offset required for large pervious surface areas for infill - DEFINE Forest - forest baseline				Support (w/ more work on infill def.): MACo, MML, Developers, Steve H., Jon L. Farm Bureau Does Not Support: CBF and Sierra Club, South River Fed Not Yet Determined: 1000 Friends, CBC
10. Erik Proposal - Baseline equals pasture load at 2025 TMDL target for any agricultural land - Use most restrictive of pasture load range (3.72 lbs which is most restrictive) (EPA guidance - use lower number or individual basin number) o Use 8.7 lb statewide average if restrictions in trading geographies - For forest use 2025 TMDL target (use statewide average (3 lbs)) § For urban development use 2025 TMDL target				

Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
11. "Lynne" Amendment § Baseline equals the load determined through onsite assessment tool (NTT) provided that the number is between the pasture load and the 2025 TMDL target at the basin level for agricultural land.				
12. Ag Amendment – Use 2025 pasture load at basin level can be substituted for "the allocation in the 2025 WIP for the pre-development land use" - Use land/river segment delivery ratios instead of basin average				
B. On-Site Disposal Systems (OSDS)				
1. Default is zero				
2. Allocation should equal the load from any existing OSDS, adjusted as if they had been upgraded to BAT	✓	✓	✓	✓
C. Atmospheric Deposition				
1. Zero Baseline Load				
2. Existing Atmospheric Deposition				
3. Do not require offsets for Atmospheric Deposition (concession by ENGOs)	✓	✓	✓	✓
VII. How can the Post-Development Load be permanently offset – THRESHOLD				
1. Offsets must be definably permanent and O&M for offset must be guaranteed in perpetuity		✓	✓	YES
Offsets must be definably permanent and O&M for offset must be guaranteed for a 10 year period				
2. Offsets to last for a minimum of 30 years; broker or aggregator can guarantee the term with approval of MDE with financial and other assurances				
3. Offsets to last for a minimum of 30 years; broker or aggregator can guarantee the term with approval of MDE with financial and other assurances; during 30 years, the development could be exempt from or receive credit toward the local jurisdiction's stormwater utility fee. After 30 years, the development pays the utility fee and the local jurisdiction, which assumes the responsibility for the offsets. Local government would have to have a stormwater utility fee in place				
4. Offsets must be definably permanent (easement or covenant); credits to last for a minimum of 30 years; broker or aggregator can guarantee the term with approval of MDE with financial and other assurances; during 30 years, the development could be exempt from or receive credit toward the local jurisdiction's stormwater utility fee. After 30 years, the development pays the utility fee and the state, which assumes the responsibility for the offsets.				
5. Offsets to last for a minimum of 30 years; broker or aggregator can guarantee the term with approval of MDE with financial and other assurances; with option of local gov't to take over responsibility; with some solution of who takes over responsibility for the load if the local gov't declines	✓			
VIII. Post-Development Load – Dependent				
A. When do the Post-Development load offsets have to be in place - Dependent				
1. Require that all the offsets be in place before construction of the development begins				
2. Require that all the offsets (gap b/t what the developer is able to mitigate onsite and off-site credit acquisition) be in place for defined phases of the development before construction of that phase can begin	✓	✓	✓	✓
B. When do the Post-Development load offsets have to be made public - Dependent				
1. At an early stage in the process (TBD), the developer must propose the amount of offsets needed.	✓	✓	✓	✓
IX. Encouraging Sustainable Development Patterns – Dependent				
A. Definitions				
1. Define redevelopment as pre-development parcel having at least 40% Impervious cover				
2. Include in redevelopment parcels having pre-development impervious cover of between 20% and 40%, and provide a sliding scale of amount of offset needed	✓		✓	

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Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
3. Definition of infill - NEEDS MORE DISCUSSION AND DEFINITION				
4. Certain size developments within PFAs would shift responsibility of load to county if the county chooses to pick up load				
B. Exemptions				
1. No exemptions (based on triggers)		✓		
2. Exempt redevelopment from any stormwater offset				
3. Exempt infill from any stormwater offset				
4. Provide no exemptions but set target load for redevelopment at existing site condition.				
C. Recognize other impacts of sprawl development – Using ratios to reflect the overall impact				
1. Require multiples of offset requirement for less sustainable patterns				
X. Trading and Offset Reduction – THRESHOLD				
A. Credit Generation -				
i. On-site Credit Management				
1. Enhanced site design reduction practices, such as, fingerprinting of layout				
2. Preservation of forest practices beyond the requirements of the Forest Conservation Act.				
3. Reforestation/afforestation practices beyond the requirements the Forest Conservation or local riparian buffer requirements				
4. Credit for on site stream restoration. Would need to be approved by local jurisdiction to assure that it fits in with local policy and restoration efforts				
5. Refer to section V (Expert Panel)				
6. List of acceptable on-site credits with process for adding additional ones				
7. Approval process that streamlines additional/new BMPs for credit generation, including 1-6; extension of stormwater manual (by reference); provision for BMP practices as used in Bay Model (MDE’s accounting for stormwater document)	✓	✓	✓	✓
ii. Off-Site Credit Management				
1. Credit for capturing offsite drainage and providing treatment (retrofit). Credit based on loading to the new facility and the type of facility installed using the CBP document on stormwater retrofitting credits				
2. Expand and convert a SWM facility that is immediately adjacent to the project, would need land on the project to achieve the expansion				
3. Conversion of existing stormwater facilities for greater pollutant removal. This would need to be approved by local jurisdictions, but would probably involve the conversion to privately owned facilities				
4. Installation of denitrifying OSDS systems. Need to be sure it does not conflict with local TMDL requirements. Have owners register their systems as available for installation				
5. Possibility for a variety of offsite reforestation offsets				
6. Generate credits through exceeding the requirements for redevelopment by installing greater SWM or planting. Maybe not available for revitalization projects				
7. Other project identified by a local jurisdiction for urban credit options (connection of package treatment plant to WWTP with ENR, installation of spray irrigation for land application of treated wastewater, etc.)				
8. Refer to section V (Expert Panel)				
9. List of acceptable on-site credits with process for adding additional ones				
10. Approval process that streamlines additional/new BMPs for credit generation, including 1-9; extension of stormwater manual (by reference); provision for BMP practices as used in Bay Model (MDE accounting for stormwater document)	✓	✓	✓	✓
B. Credit Certification, Verification and Transparency				

Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
1. Establish independent audit controls (that are qualified, knowledgeable and truly independent); additional checks and balances to avoid conflict of interest	✓	✓	✓	✓
2. Use existing MDA verification policies	✓	✓	✓	✓
3. All trades to be in a publicly accessible, on-line database established by State (MDE and MDA) and used to calculate progress.	✓	✓	✓	✓
4. MDE is ultimately responsible for verification, enforcement and transparency of permitting process and market trading program. MDA is responsible for certification verification of ag credits. MDE is responsible for certification verification of urban credits.	✓	✓	✓	✓
5. MDA works with interested WG stakeholders as well as MDE to create lessons learned and best practices from MDA program to create urban C, V and T program	✓	✓	✓	✓
C. Regulation of Brokers and Aggregators				
1. None				
2. Third party review	✓	✓	✓	✓
3. Qualifications and best practices (bonding, certified, percentage of reserve and more); do more research on what other state's do	✓	✓	✓	✓
D. Restrictions on Trading Geographies				
1. Interstate	✓			
2. Statewide; 3 year review to assess trading scale impact on local water quality	✓			
3. Interstate when available, but limited to trading within the basin				✓
4. 3 regions				
5. 5 major basins				
6. County-wide				
7. Limit trading to within the local jurisdiction, unless the development occurs on nutrient impaired local segment, then offsets must come within this smaller watershed				
8. Limit trading to within the Maryland basin, unless the development occurs on a nutrient impaired local segment, then offsets must come within this smaller watershed (segment)		✓		
9. Use a hierarchical trading geography - basin first expanding ultimately to State if no credits are available; offset is required at local level if there is a local impairment; 3 year review to assess trading scale impacts				Agricultural community, Stephen H., *South River Federation, CBC, Sierra Club, 1000 Friends
10. Within impaired watershed				
11. Limit trading to statewide, unless the development occurs on a nutrient impaired local segment, then must be offset at local level for that nutrient; county has option to limit trading to smaller scale if they wish to do so; review to assess trading scale; *IF 3 year policy review is in place			✓	MACo, MML, Developers, *CBF,
E. Credit Stacking				
1. Allow/encourage the “stacking” of additional (e.g., forest conservation, wetlands mitigation, carbon sequestration credits, etc.) for BMPs				Horizontal-yes, vertical - not yet
2. Need more information	✓	✓	✓	
F. Cross-sector Trading for TMDL Compliance				
1. Allow any sector (primarily urban sector/local jurisdictions) to trade with another sector (primarily agricultural sector) to more cost effectively meet their TMDL load allocation within trading jurisdictions	✓			
2. Allow any sector (primarily urban sector/local jurisdictions) to trade in time with another sector (primarily agricultural sector) to provide more time for planning and funding				

Table H.1. Continued.

Concept	Alt #1	Alt #2	Alt #3	Work Group
3. Allow any sector (primarily urban sector/local jurisdictions) to trade with another sector (primarily agricultural sector) to more cost effectively meet their TMDL load allocation within the county		✓		
4. Once an individual's TMDL requirements are met, allow any sector (primarily urban sector/local jurisdictions) to trade (buy credits) with another sector (primarily agricultural sector) to more cost effectively meet their TMDL load allocation within trading jurisdictions with county option			✓	didn't have enough discussion; needed so WG doesn't endorse or prohibit issue moving forward
XI. Ratios to increase margin of safety and accelerate Bay restoration – Dependent				
1. Require that the load be offset at a 1.1:1 ratio, with a 10% retirement ratio.	✓	if permanency	✓	
2. Require a retirement ratio of 10% to 15% for all trades				
3. Require that the load be offset at a higher than 1.1 ratio to provide for a margin of safety (1.5: 1, or 2:1)				
4. Require a higher ratio (3:1, or 4:1) if the Bay TMDL is not achieved by 2025				
5. Allow for innovation in the type of BMPs/ practices eligible to participate				
6. Require a higher ratio for non-approved Bay Program BMPs (oysters, etc.)	✓	✓	✓	
7. Require that the load be offset at a 1:1 ratio, with a 10% retirement ratio				YES

Source: MDE, 2013n.

Appendix I

MARYLAND WATER QUALITY NUTRIENT TRADING POLICY STATEMENT

Introduction

The Chesapeake Bay is the nation's largest estuary and a complex ecosystem. The Bay's vast watershed stretches across some 64,000 square miles and encompasses parts of six states and the entire District of Columbia. The cumulative impact of human activities throughout the watershed has caused increasing pollution from an overabundance of nutrients, primarily nitrogen and phosphorus, resulting in serious degradation of the waters of the Bay and the many rivers, streams, and creeks that flow into it.

Nutrients come from a variety of sources, including agriculture, wastewater treatment plants, septic systems, urban stormwater run-off, and atmospheric deposition. Although agriculture contributes the largest amount of nutrients, population growth and related development have made stormwater runoff the fastest growing source of Bay pollution. Despite extensive restoration efforts by the Bay states, the lack of significant progress prompted the U.S. Environmental Protection Agency to establish the Chesapeake Bay Total Maximum Daily Load, or TMDL, setting annual limits for nutrient and sediment loads and providing accountability through individual state Watershed Implementation Plans detailing targeted reductions from all sectors.

Achieving these reductions and maintaining the loading caps while accommodating continuing economic and population growth will be both challenging and expensive. Total cost estimates for adopting best management practices and/or installing controls to reduce nutrient discharges are enormous and vary widely from sector to sector. Since the costs of meeting the TMDL will be borne by all segments of society and all levels of government, it is imperative to identify and implement strategies to lower those costs.

Nutrient trading has emerged as a promising strategy for introducing cost-effectiveness and market-driven efficiency to the realization of nutrient reductions. Under this approach, sectors are given the flexibility to meet their load limits by purchasing credits or offsets generated from load reductions elsewhere. The likelihood that this option will be selected increases if the credit purchase is less expensive than other alternatives and the purchased reduction is deemed credible and verifiable.

Accordingly, attention has shifted to the agricultural community and other sources where compliance may be accomplished and exceeded at a much lower cost per pound than pollution reduction on site. The Maryland Departments of Agriculture (MDA) and the Environment (MDE) have been working collaboratively to establish a voluntary, market-based program to promote the use of trading as a viable option for achieving the State's nutrient reduction goals. This program envisions trading not only between sectors ("cross-sector trading") within Maryland, but ultimately between Maryland and the other Bay states ("interstate trading").

Guiding Principles

The State of Maryland is committed to a new cross-sector water quality nutrient trading program that

- Accelerates the restoration of the Chesapeake Bay while reducing the costs of implementation
- Maintains consistency with the federal Clean Water Act, Maryland law and regulation, and any other applicable requirements
- Offers competitive alternatives for accomplishing both regulatory and environmental goals
- Protects local water quality
- Uses the best available science and appropriate metrics to estimate and/or measure pollution reductions, manage risk, and ensure the validity of credits
- Provides accountability, transparency, and accessibility for all interested parties
- Includes necessary compliance and enforcement provisions
- Creates incentives for investment, innovation, and job creation
- Fosters collaborative partnerships between public and private entities and among diverse stakeholders
- Positions Maryland to participate in interstate trading activities

Cross-Sector Trading: The Time is Now

Maryland recognizes that the primary drivers for water quality trading are the regulatory programs that require pollutant reductions. MDE opened the door to trading, offsets, and the generation of nutrient credits in the point source sector under the auspices of the Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed adopted in 2008. Given the advances made by MDA in developing a web-based suite of tools to support trading, it is time for the State to implement policies that will broaden the availability of trading among sectors.

A number of studies have shown that the potential cost savings from trading increase substantially when regulated stormwater sources can participate and the scope and scale of trading expand. Under Maryland's new cross-sector trading program, trades

may occur between point sources, including for the first time, Municipal Separate Storm Sewer System (MS4) permit holders, and between point sources and nonpoint sources, such as between MS4s and agricultural operations. Maryland's new policy will also allow MS4 jurisdictions to enter into cross-sector trading to meet a portion of their Bay TMDL requirements.

The trading framework for Maryland will facilitate trading by point and nonpoint sources for total nitrogen, total phosphorus, and suspended solids. Cross-sector trading will be permitted in Maryland within three geographic areas: (1) the Potomac River Basin; (2) the Patuxent River Basin; and (3) the combination of the remainder of the Western Shore, the Eastern Shore, and the Susquehanna River Basin. Interstate trading will be developed incrementally to build capacity within Maryland and ensure reciprocity between Bay state programs.

Private Sector Role

The development of a public marketplace for nutrient trading provides new employment opportunities for individuals and organizations offering services to support an emerging environmental restoration economy. Beyond the benefit of retaining and creating agricultural jobs and generating supplemental farm income, the assessment and verification of credits, the need for annual inspections, the design and installation of structures and systems, and the acquisition, management, and re-sale of credits are expected to be sources of revenue for consultants, technical advisors, engineers, contractors, aggregators, and brokers.

Next Steps

To put a cohesive, credible, and transparent Water Quality Trading Program into place, Maryland plans to take the following steps:

- Develop a comprehensive Water Quality Trading document that builds on previous MDE Point Source Cap Management Policy and MDA's "Maryland Guidelines for the Generation of Agricultural Nonpoint Nutrient Credits in the Chesapeake Bay Watershed" and Credit Certification regulations.
- Reconstitute and convene the existing, stakeholder trading advisory group to review and refine the draft materials. The initial tasks of this group will be to finalize a guidance document and identify any needed amendments to State law or regulation and any other necessary actions to implement trading. The group's final report will be issued by spring 2016 and will be used to initiate trades within Maryland at the earliest possible date. This group also will continue as an ongoing advisory committee to provide direction to the overall trading program and oversee any further development or enhancement of the trading infrastructure.

- Hold a conference in mid-2016 to familiarize all interested parties with the guidance document and begin an exploration of interstate trading opportunities.

Conclusion

Nutrient trading offers an attractive alternative to more traditional approaches for reducing water quality problems and can often achieve results faster and at a lower cost. Maryland's new trading program provides expanded opportunities for all point and nonpoint sources to access the water quality marketplace as a means to secure for every Marylander the health, economic, and recreational benefits that come from the protection and restoration of the State's water resources.

Source: Maryland, 2015.