# AN ANALYSIS OF KEY INDICATORS FOR SUCCESSFUL COLLABORATION TO ADDRESS BAY-DELTA RISK

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Department of Public Policy and Administration

Abstract

of

AN ANALYSIS OF KEY INDICATORS FOR SUCCESSFUL COLLABORATION TO ADDRESS BAY-DELTA RISK

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Kristyne Elizabeth Van Skike

California has been preparing for an impending catastrophic natural disaster for more than fifty years. Climate change adds additional threat and complexity—causing unpredictable weather patterns, drought, fire, and sea-level rise. Yet despite over 50 years of planning efforts by multiple agencies and thousands of experts, the California Bay Delta (the Delta) continues to face unmitigated risk. As the disaster probabilities continue to grow at an unprecedented rate, multiple attempts at collaboration have failed to protect the ability to transfer fresh water or to protect over 750 species of plants and animals, thousands of acres of farmlands, and many small, disadvantaged communities. As a result, California continues to face an increasing and unmitigated threat to the economy, infrastructure, and fresh water supplies for over 27 million Californians.

This thesis builds on existing literature to identify important indicators that may be critical to successful collaboration and stakeholder engagement to address risk in the Delta. Research related to this study includes efforts to understand how effective engagement is measured and what principles of collaboration and consensus building are critical for participatory decision making. To further examine both strengths and

weaknesses of past efforts to collaborate in the Delta, I surveyed stakeholders to determine what criteria affected their past collaboration efforts and to identify any engagement obstacles they believe may have impeded a successful outcome.

Findings in this thesis suggest leaders in government agencies will be more effective if they focus on creating and maintaining relationships with local stakeholders. Facilitation and project management professionals can provide stakeholder mapping and other tools to help leaders learn from past efforts to address misunderstandings and develop shared expectations moving forward. This requires information sharing and engaging subject matter experts early in the process to minimize conflict and establish project management plans to improve the engagement process. Building relationships, trust, and avenues of communication will take time and effort with Delta stakeholders because of the past failed efforts.

These findings may provide decision makers an opportunity to evaluate current stakeholder engagement efforts and identify what might be done moving forward to address the needs of the Delta, mitigate risk, and move from planning to project implementation.

_____, Committee Chair
Sara McClellan, Ph.D.

_____
Date

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# Chapter One

## INTRODUCTION

California is one of the most likely places to have a catastrophic flood event in the nation (Green, 2015). The impacts of climate change, unpredictable weather patterns, drought, fire, and sea-level rise are causing communities and local leaders to look to state and federal agencies for support. In the center of California's water systems lies the California Bay Delta (the Delta) (See Appendices A, Figure 3. Map of the Delta

State Plan of Flood Control -Central Valley Flood Protection Project This fragile ecosystem is home to over 750 species of plants and animals, thousands of acres of farmlands, and small, disadvantaged communities living behind one-hundred-year-old levees that protect them from the constant threat of the Pacific Ocean (Delta Stewardship Council, 2013). California's fragile, aging water delivery infrastructure system transfers water through the Delta and covers thousands of miles supporting nearly 27 million residents and over 6 million acres of agricultural land from Northern California to Southern California (Mount, et al., 2018). Our state is facing a foreseeable threat to the Delta that will affect our economy, infrastructure, and our ability to deliver fresh water and protect our ecosystem (Green, 2015). Despite over 50 years of planning and collaboration efforts by multiple agencies and thousands of experts, we have made little to no progress on resolving these threats. This thesis examines what we can learn from collaboration indicators in policy literature as well as from what happened over the years of planning efforts and existing collaboration work in the Delta. My research may

provide further understanding of key collaboration indicators for stakeholders currently working on this problem, especially when the outcome is critical to protecting lives, structures, our economy, and the ability to deliver fresh drinking water through the Delta.

In this thesis, I examine literature on collaboration and stakeholder engagement and then apply it to past Delta collaboration efforts for both improving water delivery as well as advancing local projects to protect the ecosystem (Del Beccaro, 2018). Looking forward, I will also explore what factors might improve the likelihood of successfully mitigating risk in the Delta to develop and improve sustainable stakeholder engagement. Based on existing literature, indicators of beneficial collaboration may include methods to establish clear governance, such as creating voluntary agreements and joint powers authorities. Other important factors include sharing data, engaging local projects, and providing facilitation and project management expertise to coordinate funding and timing. To test the importance of these indicators to regional efforts in the Delta, I distributed a survey to gather perspectives from stakeholders. I analyzed the data collected from this survey to determine which key indicators stakeholders identified as critical components of collaboration. More specifically, I am interested in learning how respondents are associated with the Delta, what type of agency they represent, how they identify with past problems, and which collaboration components they identify as most critical to potential Delta solutions in the future. The results of the survey identify stakeholders' preference for actions that might be taken in the region, including building a large water conveyance structure or focusing on smaller projects. These findings will

add to the body of knowledge on collaboration efforts surrounding the Delta and provide a resource for leaders to improve efforts and overcome past obstacles that stakeholders identified.

## Key Terms

An important part of this research is to define key concepts and definitions. There are many ways to define this critical area in central California. For this research project, 'The Delta' specifically refers to the California Delta, San Francisco, San Pablo, and Suisun Bays and the entire watershed and its tributaries, as well as communities dependent upon access to water supply south of the Delta. In addition, the term 'Risk' refers to the systems, species, land, economy, and the most vulnerable populations that will suffer substantial loss if a catastrophic disaster harms the Delta (California Department of Water Resources, 2017). Another term, 'Governance' is defined as the decision-making power that resides in the way people live and work closely together in a community as a group to solve problems, provide services, and administer programs that benefit that locality (NDreu, 2016).

# Chapter Two

## LITERATURE REVIEW

This study of collaboration and stakeholder engagement surrounding the Delta begins with research to identify key collaboration indicators that experts recognize as critical to successful stakeholder engagement. A large volume of literature exists in the field of collaborative governance relating to indicators that are used to evaluate the effectiveness of efforts to collaborate. These success indicators vary among authors; however, several of the common concepts appear to align with issues identified by Delta stakeholders and will be the focus of this thesis. First, I will review the key concepts of power and leadership in engagement efforts and briefly touch on organizational culture surrounding control agencies. Next, I will focus on the importance of engaging the right stakeholders in order to increase the likelihood of collaboration success. Further, I identified critical components of positional bargaining including methods for finding common ground to bring stakeholders with oppositional positions closer together. This often requires engaging a neutral party to provide participatory facilitation and effective project management. Sharing information and ensuring transparent communication is part of this process. In the next section, I will investigate literature to further understand these four key concepts as they may apply to the Delta: trust and power, stakeholder engagement, positional bargaining, and opportunities for collaboration assessment.

## Collaboration Assessment

This literature review begins with a closer look at research on collaborative governance and assessing the effectiveness of stakeholder engagement efforts. In my research, I found three different studies that identified common practices in groups that collaborate and possible ways to evaluate their impact on the success of that group. First, Lydia Marek et al. (2015) developed an assessment tool to evaluate collaboration for effectiveness and applied it to a program in Pennsylvania called Community Cares. They narrowed the criteria down to a seven-factor tool to identify and measure collaboration and perceived coalition success, called the Collaboration Assessment Tool (CAT) (See Table 1 below). The research behind this tool included extensive outreach to local community coalitions to measure key indicators that may help to evaluate collaboration efforts and included 77 coalitions that had clearly specified collaboration goals and protocols (Marek, Brock, & Savla, 2015). Although this is a very small application of the assessment tool, this tool could be applied to other complex engagement areas such as the Delta in California. Although it is extremely difficult to measure the effectiveness of collaboration, my research found that these CAT indicators also aligned with many of the issues found in the Delta. The CAT study developed a framework of seven categories that the authors theorized as essential for effective collaboration when groups are formed to make decisions. The table below evaluated data collected from 456 respondents for 77 coalitions. The composite data applied to the 7-factor framework is shown in the table below as a percentage of success confidence:

**Table 1.** Collaboration Assessment Tool (CAT)

| **Correlation of Factors with Composite Score of Success** | **Success Confidence** |
|---|---|
| Context - Shared history or common ground | .36 |
| Membership – Key stakeholders | .46 |
| Process – Process and decision making | .48 |
| Communication – Formal and informal | .54 |
| Function – Clearly articulated goals and objectives | .54 |
| Resources – Financial and human | .45 |
| Leadership – Skilled and effective leaders | .54 |

(Marek, Brock, & Savla, 2015)

These factors in the CAT study can be applied to efforts of collaboration in the Delta as well. Here I have aligned the CAT with issues in the Delta. The first of these is *Context* which addresses function and role in the community including a shared history, and legitimacy as leaders. The Delta includes many strong leaders and groups. This area of collaboration also aligns closely with *Membership*. *Membership* is where key community members develop mutual respect of ownership (governance) to accomplish common goals. This allows groups to achieve results by clearly establishing roles and responsibilities. The next factor is *Communication*—both internal and external—which must be timely, accurate, and frequent. Research in the Delta shows that communication is an area of ongoing concern (Marek, Brock, & Savla, 2015). Most importantly, Marek, Brock and Savla (2015) find that clear *Leadership* may be the most critical indicator of effective collaboration. Leaders must possess the essential skills for collaboration and relationship building.

Other studies focus on similar criteria. For example, the study by the Center for Collaborative Policy developed critical indicators for collaboration similar to the CAT model, and Mount et al. (2018) identified similar priorities as important to Delta stakeholder engagement (Mount, et al., 2018). Other experts, including Emerson, Nabatchi, & Balogh (2012) further identified the need for resources and effective strategies to be in place for addressing risk management. This study identified similar process elements essential for effective collaboration including: governance, administration, organizational autonomy, mutual trust and reciprocity (Emerson, Nabatchi, & Balogh, 2012).

Finally, another study of successful collaboration described by Straus (2002) identifies critical components of successful agreements. This author identified certain fundamental principles that must be in place to move forward. These principles include having a common mission, including a shared understanding, goal alignment, and project ownership in the process. Key stakeholders must develop a process to build consensus and adapt while ensuring transparency and public engagement (Straus, 2002). Researchers have identified many critical indicators that are essential to effective collaboration, so for this thesis, I take a deeper dive to focus on three common themes that cut across much of the literature: leadership and power, stakeholder engagement, and communication and information sharing. In the next section, I focus on leadership and power and how these factors influence the collaborative process. In the Delta, large

agencies enter the collaboration arena with primary control of the decision-making processes in engagement efforts.

**Leadership & Power**

Here, I will explore leadership in greater depth since organizational and collaborative literature suggests governance and power is a foundational collaborative element. First, Denhardt et al. (2015) provide a discussion about organizational leadership and the decision-making process during efforts to collaborate. Government agencies and other organizations can improve engagement by increasing communication and interaction with other participants. According to Schein (2016), it is difficult to lead without consistent, open communication both up and down the chain of control According to these authors, success is more likely when a common set of goals are clearly defined at the beginning of the process. This requires group leaders to consult experts and ensure that biases and assumptions are addressed, so that the decision-making process includes critical stakeholders' values and priorities (Bolman & Deal, 2013). Power and leadership are critical components in collaboration efforts both within and between organizations. Differing management styles, top-down management philosophies, fear, risk aversion, and the desire to remain influential and significant in a changing world affects decision making at all levels (Davis, 2018; Harper, 2015; Magee, 2014).

Leadership on California Delta issues has traditionally come from engineering experts focused on the mathematical processes of design and development of major projects using command-control, top-down leadership (Innies, Connick, Kaplan, & Boojer, UC Berkeley, 2006). This approach may cause project managers to disregard externalities that can make-or-break the success of the project. This is because engineering is a specialized degree that requires a high-level of individual effort that is not necessarily conducive to collaboration. Critical infrastructure projects in California are traditionally managed in a top-down manner and decision making is not shared (Innes & Booher, 1999). In the past, and in certain circumstances, this method of leadership is appropriate (Kim, 2015). For instance, in emergencies, the State Emergency Management System and Incident Command System required a methodological deployment of resources (Davis, 2018). For the last 100 years, primarily engineering firms had the expertise, knowledge, funding, support, and therefore, power, for most infrastructure projects and decision making concerning the Delta. Working with these lead agencies to engage stakeholders and cooperate with local agencies requires excellent leadership. In the next section, I will provide further discussion about including stakeholders by effectively planning and through efforts to develop relationships and establish trust.

**Engaging Stakeholders**

Next, engaging stakeholders and ensuring that the decision-makers are at the table is another critical indicator of collaboration success. This requires effective leadership and trust and perhaps facilitation well before the first meeting. Several facilitation experts

provide different types of planning  tools and resources for planning and management of collaborative processes (Reed, et al., 2009; Fisher, Ury, & Patton, 2011; Kaner, 2014; Emerson, Nabatchi, & Balogh, 2012). This requires planning and outlining participants who must be included to proceed, as well as identifying those who are most likely to oppose collaboration efforts or outcomes. Ensuring critical stakeholders are at the table requires identifying key actors through stakeholder mapping or other tools to identify the primary parties. Those who are identified should include parties affected by the decisions made as well as those willing to participate. One mapping tool introduced by Reed, et al. (2009), includes an analysis of both passive and active stakeholders to ensure that relationships and influencers are identified and evaluated (Reed, et al., 2009). In addition, effective collaboration can be improved considerably through engaging a neutral facilitator to guide the approach and assist with designing outreach, addressing the balance of power, selecting a venue, and establishing expectations of the group as they work toward agreements (Kaner, 2014). These efforts can help to mitigate the outcome often caused by lack of inclusion resulting in costly litigation and policy actions (Bobker, Miller, & Maharg, 2017).

Effective stakeholder communication begins with developing a trusting and open relationship from the beginning. Successfully implementing a project or plan begins with addressing resistance by involving the people who must make the change in the planning process (Schein, 2016). In addition, recent advancements in information technology have made including and sharing complex documents, plans, prints, and other decision-making

tools much easier using SharePoint or other online collaboration sites (Teper, 2018). Stakeholder communication requires organizations to engage stakeholders in a new, participative way. The process of *principled engagement* takes time. Organizations learn an ever-changing technological environment by engaging in the process. This can be done in many ways including face-to-face, virtual, network data sharing, private and public meetings, and other engagement efforts (Emerson & Nabatchi., Collaborative Governance Regimes, 2015).

Advances in information and communication technologies have also created a new paradigm for government agencies to engage the public to meet the requirements of being transparent and accountable (Denhardt, Denhardt, & Blanc, 2014). This requires additional outreach efforts to involve stakeholders to understand more clearly how the change will affect the way they work together and engaging them in developing solutions, assuming the risks, and sharing in the rewards.

**Communication & Information Sharing**

A large body of knowledge surrounds communication and information sharing in collaborative efforts. This work is especially relevant to a changing organizational culture where adapting to new technology and innovation requires a component of change management. Organizations in traditional roles can be resistant to sharing information and communications with other stakeholders and agencies since this may involve losing an element of power. Magee & Frasier (2014) discuss the difficulty of addressing power and status, especially when introducing new ways of engaging or collaborating include

innovative technological changes (Magee, 2014). Recent events related to the COVID-19 pandemic have emphasized the importance of using Zoom, Office365, Teams, Skype, SharePoint, and other information sharing platforms that are key to future success beyond 2020. Organizational structure influences how information flows and which stakeholders engage in information sharing and decision making. Duhigg (2017) discusses the dynamics of resistance to sharing information in organizations, especially the unique "engineering model" and describes a culture composed of engineering experts with similar mindsets and backgrounds. Duhigg (2017) describes this *bureaucratic model* as top-down complex organizational structures overburdened by middle managers and staff without decision making authority. Bolman and Deal (2013) also describe how conflict often arises between innovators and traditionalists as well as those who approach changes through different frames.

As a result, public organizations may have difficulty moving out of traditional roles from the past and adjusting to accept new technology and information sharing from other stakeholders or engagement partners. Therefore, organizations and decision makers that control engagement efforts must typically make significant changes in their behavior, daily activities, data management, communications, and interaction with the public in order to support effective collaboration. Most importantly, these experts agree that it is important to recognize that each stakeholder represents a unique perspective on the problem and possible solutions according to their area of expertise. Technology can help by providing team-based sharing platforms that engage stakeholders in new transparent

and integrated work environments (Teper, 2018). In addition, legislation and new executive leadership are driving innovation that provides a culture to engage a new generation in the workforce. This is most effective when it is implemented using a project management approach to establish an effective communication plan, task-driven-objectives, training, and the difficult task of reevaluating existing business processes to embrace change. More importantly, a new culture open to engagement may effectively address the difficulty of positional bargaining and resistance to change.

## Collaboration in the Delta

This next section examines more specifically how these critical collaboration factors apply to efforts in the Delta. Over fifty years of literature provides a common theme around stakeholders fighting over environmental resources such as water and endangered species, as well as related socio-economic activities (Benjamin, 2005). Today, the most critical issue to address in the is a problem of institutions, agencies, management, individuals, and organizations failing to cooperate. Conflicts among agriculture, water supplier, regional, environmental, private, state, and federal interests result in stalling and litigation (Bobker, Miller, & Maharg, 2017; Lund et al., 2007, 2010; Hanak et al., 2011; Madani & Lund, 2012). A summary of the literature surrounding collaboration in the Delta will include early efforts to develop the Delta, connecting the federal and state water systems, and addressing local risk factors.

These conflicts have been around for centuries. In the early 1960's, California's Department of Water Resources (DWR) completed a "Trans-Delta System" in the form

of a peripheral canal around the Delta, connecting water supplies from northern California's State Water Project to the growing population in the San Joaquin Valley and Southern California (CalWater, 2018). The development of a major water infrastructure project led to a peripheral canal which became the State Water Project (SWP) (Lohan, 2017). This project represented one of the largest public water and power utilities in the world and today provides drinking water to more than 27 million people (Environmental Protection Agency, 2019). The diversion of water from the Delta to the SWP reduced the amount of water in the Delta which impacted the levees designed to protect fresh water from seawater intrusion and put endangered species at-risk (Environmental Protection Agency, 2017). Final construction of the SWP connected northern California water sources to the federal Central Valley Project (CVP), California's main water supply system providing for the urban and agricultural needs in the San Joaquin Valley (Water Education Foundation, 2019).

This vulnerable and aging system continues to be threatened by natural events that include drought, flood, land subsidence[1], earthquakes, and changing climate and may damage our existing water delivery structures causing a disruption in our ability to transfer water. The California Earthquake Authority reports that there is a 76% likelihood of a major earthquake in the Delta along the San Andreas fault system—the major

[1] Land subsidence occurs when large amounts of groundwater have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rocks falls in on itself. www.usgs.gov/.../science/land-subsidence

geologic boundary between the North American and Pacific tectonic plates (California Earthquake Authority, 2019). Feasibility studies to reinforce the system and mitigate earthquake risk have been ongoing multi-stakeholder efforts since the early 1970's. The economic consequence of potential levee failures in the Delta is estimated to be upwards of several $ billion dollars due to water delivery disruptions (Benjamin, 2005).

**Delta Engagement Efforts**

In 1994, the Bay Delta Accord was signed by multiple stakeholders as a voluntary agreement that led to the creation of the California Bay Delta Authority (CALFED) to lead the collaboration effort for the Delta. This effort provided a framework for more than 23 federal, state, and local agencies to work together through coordinated reporting and sharing of data resources to orchestrate over $1 billion dollars in funds directed to support Delta improvements (Innies, Connick, Kaplan, & Booher, UC Berkeley, 2006). The objective was to align efforts surrounding the Delta and provide oversight to projects and plans, but this effort was ultimately unsuccessful as it failed to obtain support for projects that affect local or private stakeholders such as farmers, landowners, businesses, and conservation groups (Bobker, Miller, & Maharg, 2017). Agencies formed CALFED to address decision-making gridlock that needed adaptive and innovative solutions and coordination of multi-agency coordination (Innies, Connick, Kaplan, & Booher, UC Berkeley, 2006). The first agency efforts formed the CALFED JPA in 1994 but it was not until 2000 that thirteen-member agencies signed a formal Record of Decision. By 2005, then Governor Schwarzenegger made the decision to refocus the effort in response to

negative public pressure and ongoing Little Hoover Commission and Department of Finance investigations (CalWater, 2018).

After CALFED was dissolved, other efforts were initiated beginning with the Bay Delta Conservation plan (2006) which provided guidance for State Water project facilities permitting processes (Poole K. , 2015). In addition, the Sacramento-San Joaquin Delta Reform Act (2009) addressed issues that impacted the Sacramento-San Joaquin Rivers. CalWaterFix (2015) and the current Delta Conveyance project (2017) intend to mitigate the risk of losing the ability to transfer fresh water in the Delta (CalWater, 2018). CalEco Restore also became a premier effort backed by the science community to ensure a critical component of the state's plan includes science-based decision making and habitat restoration (Hanak, Gray, Lund, & al., 2014).

Stakeholders in the Delta have no shortage of collaboration efforts. I found at least fifteen different large, but separate, planning efforts, most with similar goals, agency participation, and meeting agendas. As one example, Figure 2 in Appendices A, illustrates the complexity and many levels of agencies engaged in the Delta Science Governance Core Network (Delta Stewardship Council, 2013). This is just one of many stakeholder engagement efforts found in my research. Many plans have overlapping agency authority, objectives, and funding mechanisms that often result in conflicting goals. It is clear the communities and decision makers for the Delta do not agree on which plan to develop, on what project priorities should be addressed, who should have authority, and where the money will come from (Delta Stewardship Council, 2013).

**Addressing Risk in the Delta**

Literature about the Delta follows the major impacts caused by changes in water usage, land transformation, farming, biological impact, and litigation. The complex nature of the Delta's ecosystem has required organizations to develop a somewhat unified vision of effective scientific consensus (Bobker, Miller, & Maharg, 2017). Many agencies have worked together to provide a stronger connection between credible scientific information and political decision-making processes (Delta Stewardship Council, 2019). Unfortunately, the most common approach to protect salmon, smelt, and other endangered species is to organize and move forward with extensive, and expensive, litigation. For example, in 2017, 21 conservation and fishing groups, 30 water agencies, 12 counties and cities, Delta farmers, and the Winnemem Wintu Indian Tribe filed multiple lawsuits to challenge any attempt to build a water conveyance structure based on many legal issues (Bobker, Miller, & Maharg, 2017). This may look like collaboration as stakeholders bond together in opposition of a large conveyance project, but, as collaboration experts advise, this type of positional bargaining and litigation will take extra time and not actually get the work done to address Delta risk (Fisher, Ury, & Patton, 2011; Hanak, Gray, Lund, & al., 2014).

Californians also recognize that the impact of climate change on these aging systems creates an unprecedented challenge putting the Delta further at risk (Poole K. , 2015). A warming climate, intense drought and wildfires, rise in sea level, and seasonal flooding challenge agencies to support California's growing population expected to

increase to 50 million in the next fifty years (Sommer, 2017). In addition, lack of investment in California's infrastructure makes the current water system unsustainable (Del Beccaro, 2018; Delta Stewardship Council, 2013; California Department of Water Resources, 2017; Taylor-Silva, 2018). Del Beccaro (2018) calculated unmet needs for water investment at over $187 billion dollars in 2017. He emphasized that this risk does not include more than 678 dams in California that have been identified as falling into a *high hazard* category (Del Beccaro, 2018). The health of California's watersheds and aging infrastructure depends upon the ability of agencies to work together productively to address the critical risks and need for mitigating projects in 2020 and beyond (Taylor-Silva, 2018). It is critical to examine how research can provide guidance for these efforts moving forward.

**Power and Governance in the Delta**

Literature on power dynamics in the Delta dates to the time California settlers rushed to transform the abundant landscape and seek ownership of its valuable resources. This caused a cross-hash of environmental, legal, and transformative economic policy decisions that changed the Delta from a marsh-like natural waterway to mixed-ownership with separate tracts defined by levees and man-made boundaries (Plater, Abrams, & Goldfarb, 1994). These political boundaries cross critical habitats, significant water ways, endangered ecosystems, private, state, federal, and public lands (Environmental Protection Agency, 2017). Bolman and Deal (2013) introduce classic literature by Richard Cyert and James March (1963) to understand how organizations form coalitions

to distribute power and decision making. This research applies to the Delta because the decision-making process requires developing relationships to integrate different cultures and goals to reach agreements. Developing constructive relationships can be challenging because attitudes and behavior can cause difficulty working with other stakeholder groups and agencies due to bureaucracy. For this reason, voluntary agreements can establish protocol as criterion for cooperation (Wilson, 1991). By coordinating their efforts, these entities can combine resources to provide services and share equipment. In addition, regional programs also have a closer connection to local issues by creating coordinated efforts of local agencies while meeting statewide objectives. Examples of water related regional programs in the Delta include the Delta Stewardship Council, Integrated Regional Watershed Programs, Sustainable Groundwater Agencies, Association of Governments, and many types of volunteer agreements and Joint Powers Authorities.

There are also disadvantages to these multi-party agreements. For example, it may be difficult to build mutual trust and cooperation when agencies have their own goals, strategies, and politics. Member agencies volunteer to take part in cooperative efforts, but frequent changes in organizational leaders or financial pressures outside of the agreement may cause lack of cohesion (Cypher & Grinnel, 2007). Experts caution forming Voluntary Agreements without recognizing the importance of establishing relationships to build trust and gain understanding about complex systems (DeSousa, 2016). Hiring consultants and facilitators can help groups understand multi-party points-of-view and

promote engagement to help parties work together to solve specific, identified problems (Schein, 2016; Lewis, 2007; Bolman & Deal, 2013).

**Positional Bargaining in the Delta**

Research on collaborative indicators also references several authors who discuss negotiation and positional bargaining issues relevant to the Delta. Often, issues of power and governance become a dividing point as stakeholders negotiate their positions. These authors emphasizes the importance of facilitation to address these positions and create common ground (Fisher, Ury, & Patton, 2011). Some of the positional arguments surrounding the Delta include: Northern California vs. Southern California; Federal vs. State; Agricultural vs. Urban; Private vs. Public and many others (Bobker, Miller, & Maharg, 2017). Positional stand-offs in this region most often end up in court. One of the most frequently found issues in the Delta appears to be a positional standoff between the science community and the large water contractors and control agencies (Delta Council, 2019). This next section will take a closer look at how interactions in the science community are critical to successful collaboration in the Delta.

Negotiation and addressing positional bargaining is a key indicator of successful collaboration. Legal issues make these negotiations even more complex. Arguments that include private and public balance of land and resource rights are more difficult as decisions must be provided in a legal framework. As described by Plater et al. (1994) when planning a project, the quantifiable value of environmental impacts are difficult to

measure. In negotiations about natural resources, the consideration of the *economy of nature* must be included as the value of resources being neglected, harmed, or placed at higher risk due to inaction (Plater, Abrams, & Goldfarb, 1994). The science community provides an important position in negotiations to protect the endangered and threatened species, advance ecosystem restoration efforts, ensure nature preservation, and support other non-structural efforts to protect the Delta and its resources (Delta Stewardship Council, 2013). It is critically important to include the science community and recognize their efforts by incorporating recent biological opinions formed by a multi-agency, peer reviewed process that engaged federal, state, and local formalized decision-making processes (Mount, et al., 2018). The Delta Stewardship Council coined the term *One Science, One Delta* to demonstrate this nexus. Projects that fail to recognize science in terms of ecological negative impacts or evaluate this risk will not succeed (Delta Stewardship Council, 2013).

Recently, Governor Newsom also provided direction in a science-based framework for voluntary agreements between federal, state, and local agencies with conservation groups to improve habitat and water flows in the Delta (Resources Agency, 2019). Over the past several decades, populations of salmon and other native fish that migrate through or inhabit the Delta have declined dramatically, while other species have been brought to the brink of extinction. Multiple factors contribute to these declines, and there is a clear need to improve environmental conditions to promote recovery of these species. Failing to incorporate science-based decision making and restoration efforts for

Delta ecosystem and species will likely result in disengagement and litigation. Therefore, the 2020 Governor's Resilience Portfolio outlines a strategy to better coordinate efforts between various state, federal, and local agencies to execute existing plans and improve communication with local leaders (Governor's Water Resilience Portfolio, 2020). Federal participation in decision making around the Delta has also reached a critical turning point since a large portion of the state's water infrastructure relies on these federally controlled structures (Courthouse News Service, 2020).

Other positional issues tend to surround the state water contractors and the transfer of water from the north, where 75% of rainfall in California occurs, to the south, where 80% of the water demand comes from (Water Education Foundation, 2020). Divisive issues also exist around urban water supply management and the agricultural needs of land throughout California that depend on water-transfers in this large, fragmented, complicated network of supply and delivery structures and agreements (Mount, et al., 2018). The issue surrounding the planning and implementation of a large water transfer infrastructure project has been contentious for decades. It is impossible to research collaboration efforts in the Delta without finding many articles and literature that directly address the primary debate of two main groups: those who believe a structure is necessary to protect the system and those who think investment should be made in conservation and other alternatives to a structure. Kasler and Sabalow (2019) emphasize the difficulty of coordinating the allocation of resources and the management of risk, especially when stakeholders are divided (Kasler & Sabalow, 2019). The most current

action includes Governor Newsom's 2018 CalWaterFix effort to investigate alternatives to the proposed project, but critics claim that these alternatives did not consider other projects such as levee reinforcement before forming voluntary agreements for the Delta Conveyance Authority (Courthouse News Service, 2020).

At the federal level, the US Environmental Protection Agency is also addressing rural water issues that apply to the Delta. The issue of environmental justice both at the state and local level is important for developing implementation plans for a critical program: California's Human Rights to Water. This cooperative program focuses on a framework to address disadvantaged communities in rural areas (California Office of Environmental Health Hazard Assessment, 2019). Population growth in California has impacted the most vulnerable communities surrounding the Delta and increased their exposure to risk in the event of a disaster. These communities can be at a higher risk because language barriers for many migrant workers limit their ability to prepare for, respond to, and recover from disasters (Donner & Rodriquez, 2011).

## Conclusion

Collaboration effectiveness is difficult to evaluate in the Delta and more research and local engagement is needed to understand how to proceed. This chapter included a general overview of the background surrounding Delta stakeholder engagement and important indicators for assessing collaboration effectiveness. I also examined four key collaborative success factors more deeply, examining leadership and power, engaging

stakeholders, and communication and information sharing. In the next section, I describe my methods for disseminating this information which included developing a survey to understand the types of collaboration indicators and challenges recognized by stakeholders in the Delta.

# Chapter Three

# METHODOLOGY

To further understand the application of collaborative indicators specific to Delta efforts, I wanted to reach out to stakeholders and ask which collaborative indicators they view as particularly important and what issues may have affected their past collaboration efforts. To do this, I created a survey to collect and analyze stakeholder perspectives on the common themes and indicators I identified as potential barriers. I also examined which of these indicators were important to Delta stakeholders and whether responding stakeholders represented a local agency or interest (Local), or a state or federal agency (Statewide)[2]. I will further describe the methods I used to identify these interests in the next section. My hypothesis based on my research of the Delta is that there is a disconnect between what local groups identify as important for collaboration and what statewide agencies recognize as important. I am particularly interested in learning whether stakeholders might be able to apply indicators to future collaboration efforts to successfully complete projects more efficiently to mitigate risk in the Delta.

## Survey Design and Dissemination

Evaluating the effectiveness of collaboration requires understanding more clearly why certain efforts to engage stakeholders fail to meet their initial goals yet others prove

[2] The grouping of Statewide include stakeholders that represent state or federal agencies. These agencies often have legislative priorities for funding, policy, and other decision-making power/influence beyond regional or local efforts.

successful. My research narrowed the field to the collaborative indicators I identified as applying directly to the efforts in the Delta based on the literature about past Delta struggles. The following section describes my approach to survey design, stakeholder distribution, and how I grouped the responses by agency and issue to understand more clearly what stakeholders identify as important.

First, I focused on the indicator related to the impact of leadership and power. Several authors emphasized the importance of considering the influence that organizations may have on the ability for stakeholders to effectively engage (Davis, 2018; Harper, 2015; Schein, 2016; Magee, 2014; Plater, Abrams, & Goldfarb, 1994; Wilson, 1991). These experts place a large emphasis on the responsibility of the organizations that control resources or decision-making authority to understand the impact of their power on the group. In my research, I found that power and leadership in the Delta most frequently is represented in the "control agencies", i.e. State and federal agencies that have the funding resources and authority to drive the process.

Second, the next most prominent collaboration indicator is the process of engaging stakeholders. Having the right decision makers at the table is imperative for a successful outcome (Duhigg, 2017; Cypher & Grinnel, 2007; Delta Council, 2019; Emerson, Nabatchi, & Balogh, 2012; Hanak, Gray, Lund, & al., 2014; Marek, Brock, & Savla, 2015; Mount, et al., 2018; Straus, 2002). A tremendous amount of effort and resources can go into planning and engagement that results in little-to-no productive output. This is because true collaboration requires the right people to be included in the

process from the beginning. Experts provide evidence that efforts that omit essential stakeholders will most likely result in lawsuits and resistance to the effort, no matter what it is. Facilitators and collaboration experts will typically invest a considerable amount of time and resources to develop a stakeholder list that results in the most inclusive process possible (Kaner, 2014; Reed, et al., 2009; Straus, 2002).

To address leadership distribution in groups and engage the right stakeholders, communication and information sharing is also critical. Experts in collaboration cannot emphasize enough the importance of information sharing and communication in any stakeholder engagement effort (Delta Council, 2019; Fisher, Ury, & Patton, 2011; Teper, 2018; Innies, Connick, Kaplan, & Booher, 2006). Organizational challenges may drive problems with past collaboration efforts in the Delta because large organizations with the most power were ultimately responsible for sharing data, providing timely and necessary information, and providing stakeholders transparent and clear communication (CalWater, 2018; Cypher & Grinnel, 2007; Delta Council, 2019).

**Key Indicators for Delta Collaboration**

My research surrounding Delta engagement efforts included in the literature examined different collaborations and planning efforts representing multiple stakeholders including local groups and government agencies covering water delivery, environmental, agricultural, and urban concerns (Sommer, 2017; Water Education Foundation, 2019; Innies, Connick, Kaplan, & Booher, 2006; CalWater, 2018). These groups have worked together and separately to address actions in the Delta to develop plans and projects to

mitigate risk. I organized my research into categories based on collaboration indicators in the literature and constructed a survey to test my hypothesis by asking stakeholders in the Delta about past collaboration practices and barriers.

**Power and Governance in the Delta**

To further identify how power and governance has affected Delta collaboration efforts, my survey asked respondents to identify areas where they believe collaborating agencies failed to ensure critical stakeholders were at the table. Power and governance also relates to the general control of planning outcomes. Literature often indicated there are too many planning efforts with competing goals and interests surrounding the Delta (Emerson & Nabatchi, 2015; Hanak, Gray, Lund, & al., 2014). These findings suggest a lack of coordination of partners at different levels of government (federal, state, local, tribal). Since resources depend on this coordination, projects may stall due to lack of sufficient and/or coordinated funding from different levels of government and water contractors (Cypher & Grinnel, 2007; DeSousa, 2016). Questions in the survey help to identify whether these factors or others were concerning to respondents. Next, I created questions related to positional bargaining and conflicting goals.

**Positional Bargaining in the Delta**

I developed the survey by creating questions to ask about concern over the lack of coordination in planning efforts and the struggle over conflicting goals create legal battles and oppositional stakes between competing interests of water users and suppliers in different geographical locations as discussed in Chapter 2. i.e.: north vs. south;

agricultural vs. urban; fish vs. farms. This leads to difficulty in obtaining support for projects that affect local or private stakeholders, such as farmers, landowners, and businesses. Most importantly, exclusion of the science and ecology communities was a frequent finding in my research (Delta Stewardship Council, 2013; Environmental Protection Agency, 2017). Many planning efforts failed to incorporate science-based decision-making and groups that represent restoration efforts for Delta ecosystem and species protections. Communicating with and including these groups ensures that critical information is considered and shared. This leads to the other important criteria included in my survey.

**Communication and Information Sharing**

It is impossible to evaluate planning efforts without finding evidence of communication issues, including the inability of agencies to share information in a timely manner with those stakeholders who need it most. This includes allowing participation in the planning development and process, providing transparent access to data, and ensuring that critical timing issues are aligned. In the survey, I asked respondents to rate whether timing is an issue and whether project planning goes too fast or too slow to allow appropriate level of review/engagement. This includes the permitting and regulatory process where appropriate timeslines help ensure projects do not get *stuck* in permitting and other legal challenges.

After organizing and developing the collaboration indicators I identified as relevant to my Delta research, I then reorganized these response categories into what I

hypothesized would be critical to success moving forward. The survey also asked respondents to identify and rank the following solution indicators:

- Data & Transparency: Shared Data/Sharing platform such as SharePoint
- Communication: Includes planning efforts and engagement and that a project management plan is in place
- Authority: Clear Governance authority of entities responsible for efforts
- Local: Engagement with those closest to the problem. Local/private stakeholders, such as farmers, landowners, and businesses
- Facilitation: Professional facilitation
- Financing: Established financing authority

Once I completed the draft of my survey, it was reviewed and approved for circulation by the University Internal Review Board, my thesis advisors, the legal counsel at DWR, my deputy director for Integrated Water Management, and my mom.

**Survey Summary**

In the survey (see Appendix D) I included introductory questions to determine what geographic location respondents were from and the type of entity they represent in the Delta. To understand more clearly whether respondents recognize that the Delta is at risk, I asked whether they agreed that a natural disaster could damage the Delta and compromise our ability to transfer fresh water and damage the ecosystem. There are two different questions here. First, I wanted to understand if stakeholders recognize the risk to our water infrastructure and if they are likely to support a tunnel-conveyance project. The

second question asks specifically about non-structure actions: Do you think the ecosystem is at risk and therefore should we invest to protect it? The literature tends to represent this as a very divided topic: build the tunnels or save the fish and most of the litigation surrounds these two issues. There are extensive articles about the difficulty of facilitating and bringing these disconnected stakeholders together.

In addition, the survey explores which of these indicators stakeholders in the Delta identify as most challenging in relationship to their past stakeholder engagement efforts. These challenges may continue to limit the ability to successfully complete projects as risk to the Delta continues to increase. Collaborative indicators relate to appropriate project management, timing, funding, data availability, goal alignment, and many other factors. I am investigating which of these indicators Delta Stakeholders recognize as essential for successful collaboration The survey included open-ended comment fields after every question to encourage respondents to elaborate on their answers.

**Stakeholder Distribution**

On February 1, 2020, I distributed this online survey via direct email, newsletters, social media, and requests to Delta groups. Maven's Notebook published a request for survey responses in a news blog that reaches more than 5,500 subscribers. I also sent a request to several recognized Delta committees and agencies to distribute to their subscribers. This included: Delta Protection Commission, Delta Conservancy, Central Valley Flood Protection Board, Ag Council, State Water Contractors, SJ Flood Control

Agency, and the California Farm Water Coalition. I published links to the survey three times per week on social media including via Facebook, LinkedIn, Twitter, and Instagram.

When I closed the survey on March 15, 2020, I had received 40 responses with 1 response omitted because it was submitted blank. The total number of observations I analyzed was 39. In several instances, two or three answers were skipped so I evaluated the remaining observations. It is important to recognize that these findings do not represent a complete sample for the population so they can only be analyzed as a tool to further understand the issue because of the relatively low response rate. It is also important to note that a low response rate can result in a sampling bias because I may not have equally reached out to responsive groups so there may be a nonresponse bias (Statistics How-to, 2015).

The responses provided me an opportunity to organize the results in several different groupings. I organized responses from large state or federal agency respondents to compare to local interests and whether they identified information sharing, and governance issues as a problem. In Chapter four, I discuss survey findings and analysis of responses. In Chapter five, I provide insight on potential ways that policymakers might consider chainging collaborative efforts surrounding the Delta and share guidance for further research.

# Chapter Four

## RESULTS

In this chapter, I discuss the results of the survey and the participant responses to compare how respondents' perspectives on Delta collaboration align with the research on critical collaboration indicators. This chapter also examines which collaboration efforts may have been impeded by a lack of effective collaboration practices. The survey results provided anonymous feedback about type of agency respondents represented, where they lived in California, and most importantly, what they identified as issues they may have experienced in Delta collaborations in the past, and what they identified as most important to consider in the future. In addition, I analyzed over 70 individual comments. Below, I provide a summary of respondents and their overall assessment of risk to the Delta. Next, I summarize the key items that respondents identified as problem areas in the Delta and indicators of solutions moving forward. Lastly, I provide an overview of the respondents' comments. Final analysis and discussion of these indicators will be presented in chapter five.

I analyzed the data for 39 out of 40 responses; one response was blank. These survey respondents represented locations in California that included six main categories as shown in Table 2 below. 31% of the respondents also represent disadvantaged communities identified as those facing social and economic characteristics that may limit their ability to protect themselves from harm (Donner & Rodriquez, 2011).

**Table 2.** Location - Survey Response

| California Areas | Observations | Percent |
|---|---|---|
| Sacramento Region | 15 | 38% |
| Davis | 6 | 15% |
| Northern California | 4 | 10% |
| Bay Area | 8 | 21% |
| Los Angeles Region | 5 | 13% |
| San Joaquin Valley | 1 | 3% |
| **Total** | **39** | **100%** |

A map of respondents' coordinates is included in Appendix B: Figure 4. One response from the North Coast would be considered an outlier because that area is not connected to the Delta.

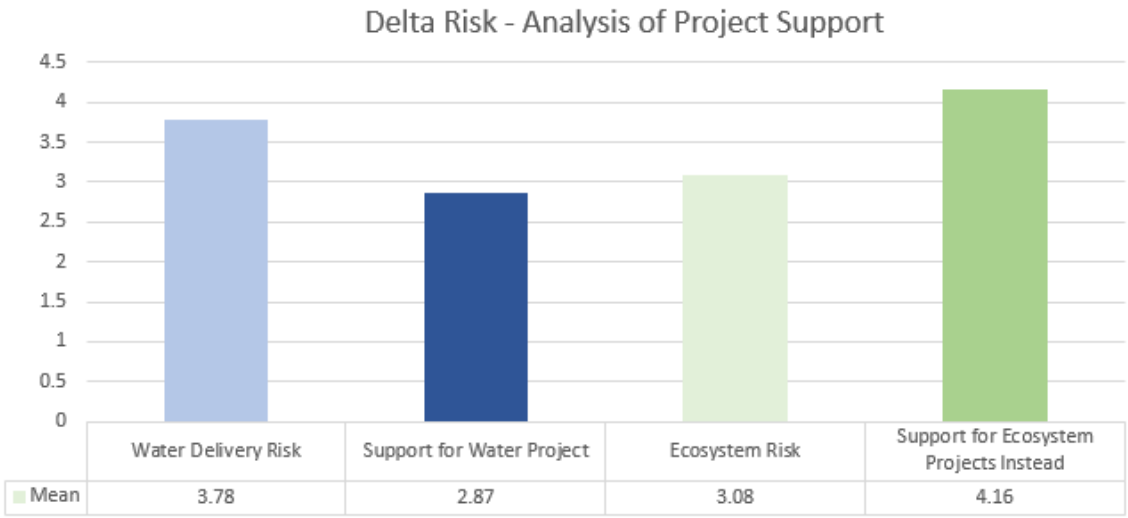
**Summary of Risk vs Project Support**

I asked respondents to rank their support of two main approaches to mitigating risk in the Delta: (a) Do they support a large conveyance water project? Or, (b) would they prefer smaller, targeted projects that directly address ecosystem support. I began by asking about level of risk, both in terms of the ability to transfer fresh water and in the potential negative impact to the ecosystem in the Delta. Then, based on their understanding of potential risk, I asked how strongly respondents supported building a water conveyance system and/or implementing projects to protect natural resources and restore the Delta.

For these questions, respondents recognized the need for projects benefiting the ecological needs of the Delta even though they were less concerned about ecological risk. The ecosystem risk mean was lower than the delivery risk, yet respondents' results for

supporting ecosystem projects showed the highest mean at 4.16. On the other hand, risk to the ability to transfer water was recognized, but support for a water conveyance project was not as strong. In this case, the mean response for risk to water conveyance was higher at 3.78, the mean for support of a project was lower at 2.87. Table 3 below shows the mean comparison for the observations recorded graphically.

**Table 3.** Delta Risk - Analysis of Project Support

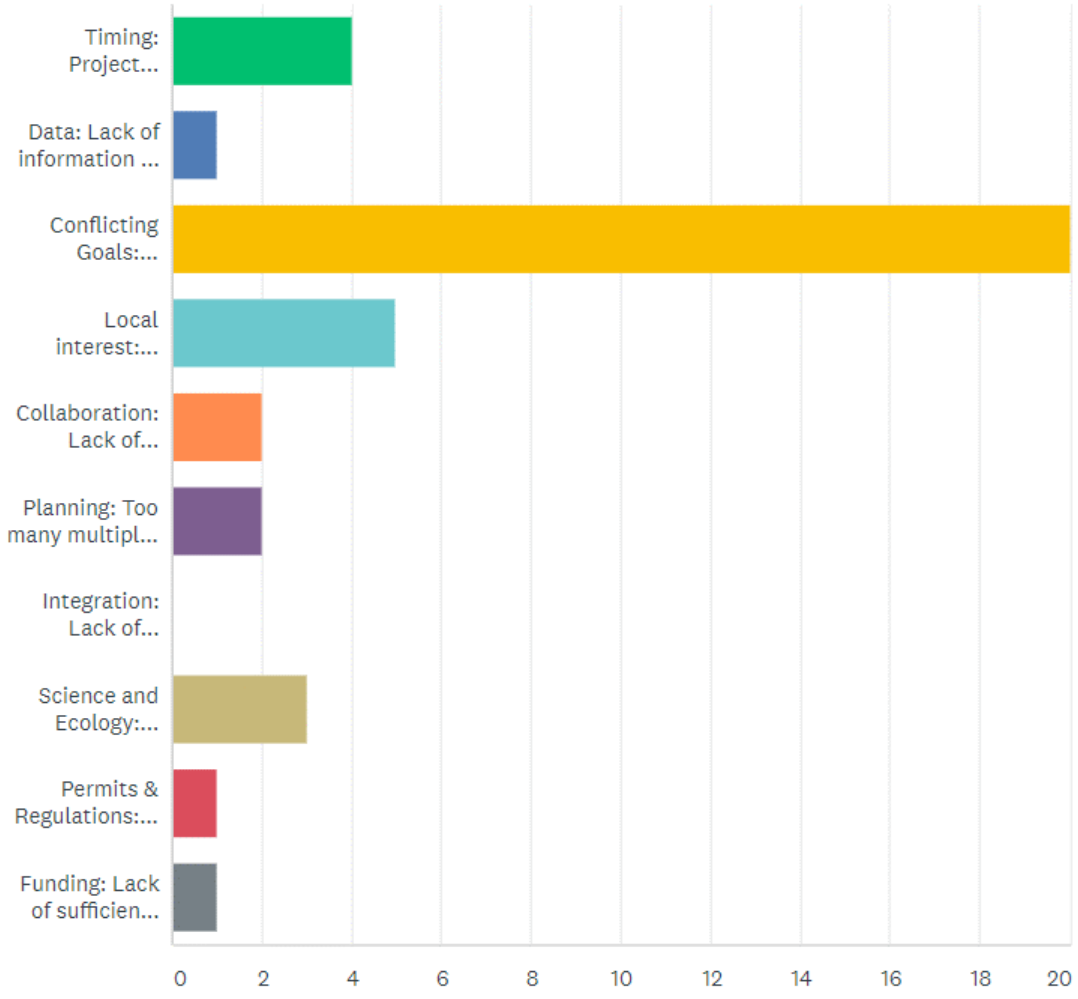



Since the survey findings show support for ecosystem projects, it appears likely that water delivery projects that include ecosystem considerations may be more successful by engaging a discussions of feasible alternatives to a large water project and evaluating these alternatives with support from local agencies.

**Primary Problem Identified: Conflicting Goals**

For the problem factors, 20 out of 39 respondents chose the indicator of Conflicting Goals as their number one issue that caused difficulty in the past. Conflicting goals describes competing interests of water users and suppliers in different geographical locations. For example: north vs. south; agricultural vs. urban; fish vs. farms. Table 4 below demonstrates the distribution of criteria.

**Table 4**. Problem Type by Indicator




It is clear from the research in chapter two as well as the sample response provided from the survey that conflicting goals is a contentious issue for stakeholders in collaboration efforts. Stakeholder concerns over specific goals can often lead to positional bargaining. Success will require an understanding of multi-factored problems, as well as multi-benefit solutions for stakeholders to work toward collaborative success.

Literature about positional bargaining as described by Fisher, Ury, & Patton (2011) and other authors encourages finding common ground before tackling the more difficult problems (Fisher, Ury, & Patton, 2011). Incentives to cooperate must come from an understanding of mutual benefit for all. Continuing my analysis, I divided the responses received from the survey into two main categories based on the agency respondents indicated they represented.

**Local vs. Statewide Interests**

I began the survey with a question to identify the type of agency that the respondents represented including federal, state, local, tribal, and non-governmental or private with the most frequency as represented in table 4 below. For further analysis, I labeled these categories to represent two broad groups. I grouped state and federal agencies as "statewide" to indicate the decision making and financial interest that is usually not local. These organizations represent broad programs and policies that apply to the entire state. The other agencies I grouped as "local" to represent stakeholders that are closest to the project impact, decision making, and multi-purpose efforts that broaden the spectrum of benefits to that locality.

**Table 5**. Type of Agency - Survey Response

| Agency Grouping | Observations | Percent |
|---|---|---|
| **Statewide Interests** | **15** | **39.0%** |
| Federal Government | 3 | 7.3% |
| State Government | 12 | 31.7% |
| **Local Governance** | **24** | **61.0%** |
| Tribal Government | 1 | 2.4% |
| City, County, or Local Government | 5 | 12.2% |
| Regional Agency | 3 | 7.3% |
| Non-Profit Organizations | 8 | 22.0% |
| Private | 7 | 17.1% |
| **Total** | **39** | **100.0%** |

In addition, respondents described their organizations with more detail including real estate, MWDSC, Delta Community Member, Retired Farmer, Retired member of the community, two members of academia and a former water agency stakeholder. These organizational categories help to understand the data as it is presented as local or statewide.

I also grouped the problem indicators into two primary categories. The collaboration indicators that represent information sharing, including data, local interests, and science-based decision making are grouped into 'Information Sharing' and 'Governance Issues' categories as shown below in Table 6. Governance is the decision-making power that resides in the way people live and work closely together in a community as a group to solve problems, provide services, and administer programs that benefit that locality (NDreu, 2016). Issues surrounding governance include those that are often led by statewide efforts including competing interests, conflicting goals, funding,

permits, and timing issues that make it difficult for local agencies to engage. Both agencies under statewide and agencies under local categories placed more than twice the emphasis on problems with governance issues than with information sharing.

**Table 6.** Problem Indicators Criteria – Local vs State & Federal

| | | Agency Type | |
|---|---|---|---|
| | | **Local Governance** | **Statewide Governance** |
| **Type of Problem** | **Observations** | | |
| **Information Sharing** | **11** | **8** | **3** |
| Collaboration | 2 | 1 | 1 |
| Data | 1 | | 1 |
| Local interest | 5 | 4 | 1 |
| Science and Ecology | 3 | 3 | |
| **Governance Issues** | **28** | **16** | **12** |
| Conflicting Goals | 20 | 9 | 11 |
| Funding | 1 | 1 | |
| Permits & Regulations | 1 | 1 | |
| Planning | 2 | 1 | 1 |
| Timing | 4 | 4 | |
| **Total Sample:** | **39** | **24** | **15** |

This data suggests that lack of information, data, and science-based decision making may not be among the most significant problems. As indicated in the literature, the primary problems in the Delta appear to be related to power and governance. Organizational stakeholders struggle with conflicting goals and other governance issues that stand in the way of success.

In addition to recognizing past obstacles, I also asked respondents to rank possible collaboration indicators in priority order to apply to possible solutions moving forward.

Respondents prioritized climate change and information sharing as the highest-ranked priorities. Financing issues also rose to the top in respondent rankings. When I analyzed local vs. statewide respondents, I also recognized that state and federal agencies chose authority and data as the highest priority and facilitation as the lowest priority. Facilitation was rated much lower by statewide respondents than by local stakeholders.

**Survey Comments and Responses**

In addition to checking boxes on a lengthy survey, respondents provide over 70 comments. Although the sample set is small, these comments reflect the current problem and highlight many of the issues collaborative literature identifies as obstacles to productive collaboration. Respondents shared comments that I categorized in similar ways as Table 5 above. I categorized the comments according to the main topic of concern in the statement and whether respondents were commenting on a collaborative effort issue or a common problem issue that needs to be solved. This coding allowed me to also sort and analyze the comments these stakeholders identified and summarize primary themes. Comments indicate these stakeholders are passionate about the Delta and they also provide insight into the frustrations respondents may have in common. One respondent wrote:

> *If you have been around California water for any period of time, you realize that more than four decades have been spent trying to promote various versions of improved Delta Conveyance. From ag interests who oppose spending money on it to cities like Los Angeles that bury their head in the sand about the need for*

*imported supplies to scientists battling scientists over stream flows. even if you get these interests to the table, I do not believe the willingness to truly collaborate is present. We need new people involved in these issues.*

Respondents reported being frustrated with overall collaborative efforts, referencing lack of inclusion, planning issues, trouble with positional bargaining, and other similar issues. Table 6 shows the breakdown of comments based on these common themes.

**Table 7.** Survey Comments – Collaborative Efforts and Common Issues

| Qualitative Category | Observations |
|---|---|
| **Collaborative Efforts** | **41** |
| Lack of Inclusion | 13 |
| Planning | 7 |
| Positional Bargaining | 7 |
| Competing Interests | 7 |
| Trust | 4 |
| Local Interests | 3 |
| **Common Issues** | **31** |
| Statewide Governance | 8 |
| Funding | 7 |
| Science | 7 |
| Tunnel Vision | 4 |
| Timing Problems | 3 |
| Sharing Data | 2 |
| **Total** | **72** |

The summary of these comments brought two key issues to light. I was able to group them into two general categories. First, the issue of difficulty collaborating. Chapter 2 introduces several experts on collaboration who stress the importance of fundamental problem solving and application of key principles to gaining consensus through a facilitated process. The comments and ratings from Delta stakeholders indicate

that effective practices surrounding communication, trust, engagement, and other critical relationship-building components may be missing from prior efforts. Without these critical practices and relationships, any effort to make-decisions or develop consensus may be nearly impossible (Reed, et al., 2009; Fisher, Ury, & Patton, 2011; Kaner, 2014; Emerson, Nabatchi, & Balogh, 2012).

Another difficulty respondents consistently identified is the lack of integration and collaboration of key Delta stakeholders in the planning process—especially stakeholders who are required to implement the outcome of that effort. Over 55% of the comments addressed lack of inclusion and other collaborative engagement issues. In addition, respondents recognized common issues that could be solved through effective collaboration. This includes a lack of coordinated funding, timing, and leadership. Several comments included recommendations for streamlining permitting, regulatory, and other requirements at the state and federal level. Respondents commented that the planning efforts, especially at the state level, were "dysfunctional" and "silo-ed" recognizing that the planning groups make separate and competing decisions in stand-alone exercises and that this creates a "battle" with local interests. Other comments referenced lack of inclusion with the community or local interests; lack of available and timely information; and the "giant agency" vs. the "little guy" scenario. Finally, respondents also mentioned that planning efforts only considered the large tunnel project (Tunnel Vision) without considering the alternatives of levee integrity, water storage,

estuary management or other options that may be accomplished in a five-year time frame rather than a twenty-plus year project implementation.

Second, survey respondents expressed that common, largely agreed upon issues need to be solved. These common issues are why collaboration is so critical. Developing common ground is another key principle in collaboration. Most respondents identified that these common issues are obstacles to moving forward with any effort to organize stakeholders. Researchers and Scholars suggest that addressing issues by developing clear governance, and creating agreements to coordinate funding, critical science, timing, data, and sharing information will improve the success of future collaborative efforts (Bobker, Miller, & Maharg, 2017;  Schein, 2016; Lewis, 2007; Bolman & Deal, 2013).

In summary, the findings in the survey aligned with the literature in several ways. The analysis of project support shows that most respondents recognize risk in the Delta to both water delivery and the ecosystem, but do not seem to support a tunnel project. Many respondents also identified the primary problem as the conflicting goals among statewide vs local interests. The data coding grouped questions into two categories: Information Sharing and Governance Issues. Finally, the survey comments mentioned many of the key indicators with particular attention to frequent mentions of difficulty collaborating and other common issues that many respondents are in agreement on that need to be solved. Chapter 5 will provide further analysis and conclusion.

# Chapter Five

# ANALYSIS AND CONCLUSION

In this chapter I provide an overview of findings as well as implications from this research. Understanding how collaborative indicators may provide insight into Delta efforts requires an overarching look at the conflicting goals and competing interests of stakeholders. The two main categories that stood out based on survey responses are issues related to collaboration and stakeholders' inability to work together to solve problems. In the Delta, problems identified included lack of communication, lack of engagement, endless litigation, and the worst enemy of all: time. Below I will address study limitations and review the current-day planning and Delta stakeholder engagement issues I found.

## Summary Analysis

Looking forward, stakeholder engagement and collaboration efforts in the Delta should consider the following findings highlighted in this research. Several key issues stand out. Because literature suggests addressing governance issues by establishing a clear authority through voluntary agreements or other efforts. Survey respondents also noted the importance of engaging local agencies and authorizing those closest to the work to lead the effort. I recommend actively engaging local and private stakeholders, such as farmers, landowners, and businesses. Improving collaboration is necessary for this critical work and numerous studies suggest the importance of addressing common problems such as lack of inclusion, positional bargaining, lack of trust, and overall failure to communicate (Duhigg, 2017; Cypher & Grinnel, 2007; Delta Council, 2019; Emerson,

Nabatchi, & Balogh, 2012; Hanak, Gray, Lund, & al., 2014; Marek, Brock, & Savla, 2015; Mount, et al., 2018; Straus, 2002).. Facilitators, project managers, and expert organizations are available to create a process to facilitate leadership and figure out where to go from here. Working on collaboration with expert guidance may help provide an opportunity to solve some of the common issues frequently mentioned by survey respondents. Research suggests facilitators may be valuable in supporting stakeholders with establishing clear governance as stated above, but also getting the funding, timing, permitting, and other implementation items aligned (Schein, 2016).

Findings from this study and prior literature suggest leaders in government agencies will be more effective if they embrace the important role of creating and maintaining relationships with local stakeholders. Effective collaboration relies on developing a strategic and structured approach that includes engagement and action to initiate and sustain relationships over time (Schein, 2016; Duhigg, 2017; Straus, 2002). Stakeholder mapping and other tools are available to help leaders learn from past efforts to address misunderstandings and develop shared expectations (Reed, et al., 2009; Kaner, 2014). Finally, survey responses suggest information sharing must be improved. Engagement of stakeholders both inside and outside the organizations is critical. Information sharing is typically most successful when teams are created to ensure collaboration and engagement that enables access to data, documents, and reports (Straus, 2002). This process can often be expedited by using shared workspace environments and technology to improve transparency including SharePoint and other online platforms

(Teper, 2018). New technologies provide an opportunity to engage and support transparent and collaborative workspaces with both internal and external stakeholders, improving efficiency and accountability. Taking these important factors into account will likely improve future collaboration efforts.

**Study Limitations and Implications for Future Research**

One limitation of this study is a relatively low response rate. There are many stakeholders in and around the Delta who participate in many of the planning and engagement efforts and have been around for many years. The survey did not evoke the response from the potential population that I hoped to capture. Moving forward, to understand collaborative indicators necessary to bring together stakeholders, I recommend reaching out to the recently formed groups to understand more clearly why they formed their own group instead of joining another already existing group. This research could lead to a deeper exploration into why the silo-driven engagement in the Delta is still focused on positional bargaining and not collaboration. It is important to recognize that these survey findings do not represent a complete sample for the population, so they can only be analyzed as a tool to further understand the issues found in this research.

**Conclusion**

In Chapter one, I introduced the need for improved collaboration in the Delta. This included looking at past efforts of more than fifty years to understand lessons learned to identify priorities moving forward. In Chapter two I provided a review of the

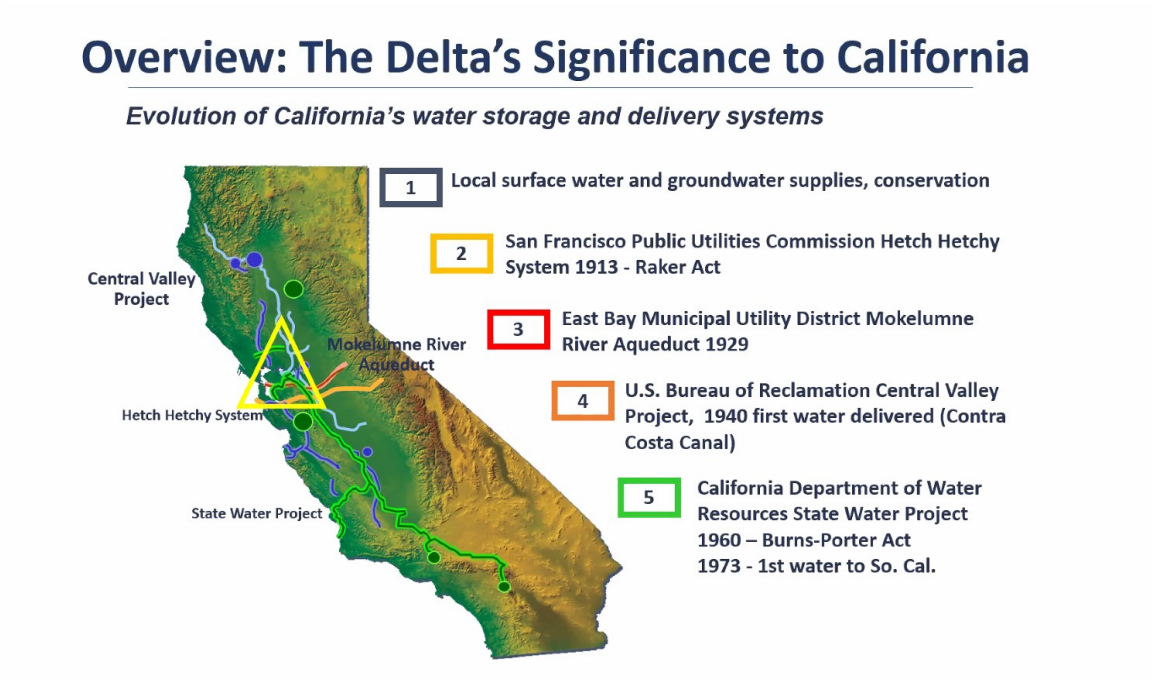
literature. After conducting research, I found that there are common principles of collaboration that are critical for success. I then applied these collaboration indicators to literature surrounding the Delta, including issues of authority, information sharing, stakeholder engagement, and conflicting goals. In Chapter three, I described my methodology for this paper. For the purposes of this paper I used the literature in Chapter two and a survey distributed to water stakeholders via listservs, social media posts, and direct emails to many local organizations in the Delta. In Chapter Four, I evaluated the collaborative criteria survey responses to identify stakeholders' preferences for actions that might be taken in the region, including building a large water conveyance structure or focusing on smaller projects and asked what collaborative indicators they believe may help improve these efforts for the future.

These findings add to the body of knowledge on collaboration efforts surrounding the Delta and provide a resource for stakeholders who seek to improve efforts and overcome past obstacles. In summary, organizational collaboration may be improved by hiring neutral collaborators, facilitators, specialists, and academic institutions to engage stakeholders with a focus on moving the effort forward. In addition, it is necessary to consider alternatives and to plan for unanticipated events or unresolved issues. In the past, failing to consider alternatives may have resulted in litigation, negative media, or oppositional campaigns that impeded engagement progress with critical, local stakeholders. This study provides project leaders with guidance on the importance of identifying and engaging critical stakeholders, minimizing conflict, and establishing

project management plans to improve the engagement process. Building relationships, trust, and avenues of communication will take time and effort with Delta stakeholders because of the past failed efforts. This is an opportunity to learn from the past and look toward successful collaboration by engaging stakeholders, sharing information, and creating relationships to move forward in Delta project work in the future.

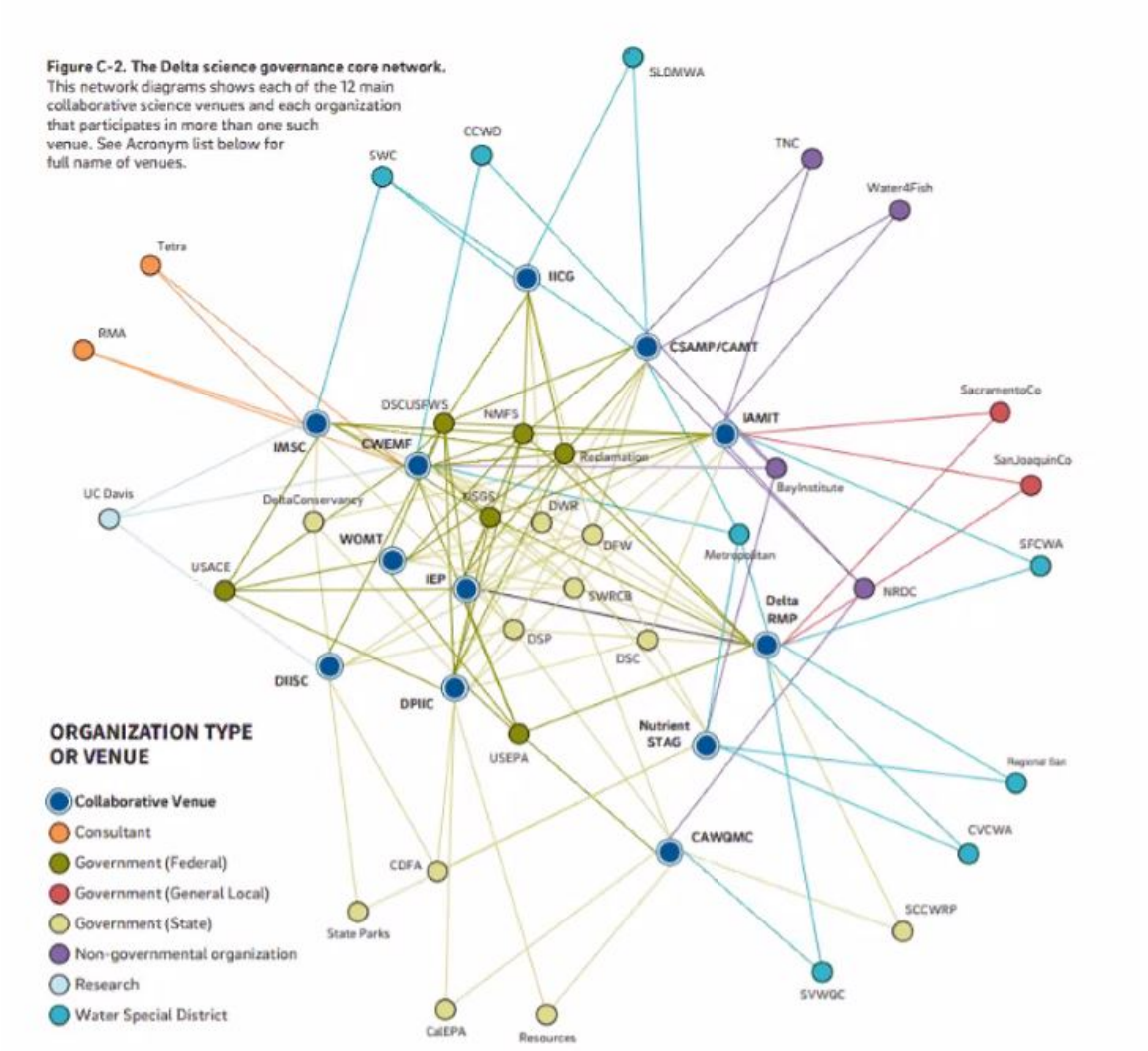
## Appendix A. A Closer Look at the Delta

Figure 1: Overview of the Delta




(Delta Stewardship Council, 2013)

Figure 2. Delta Science Core Network




(Delta Stewardship Council, 2013)

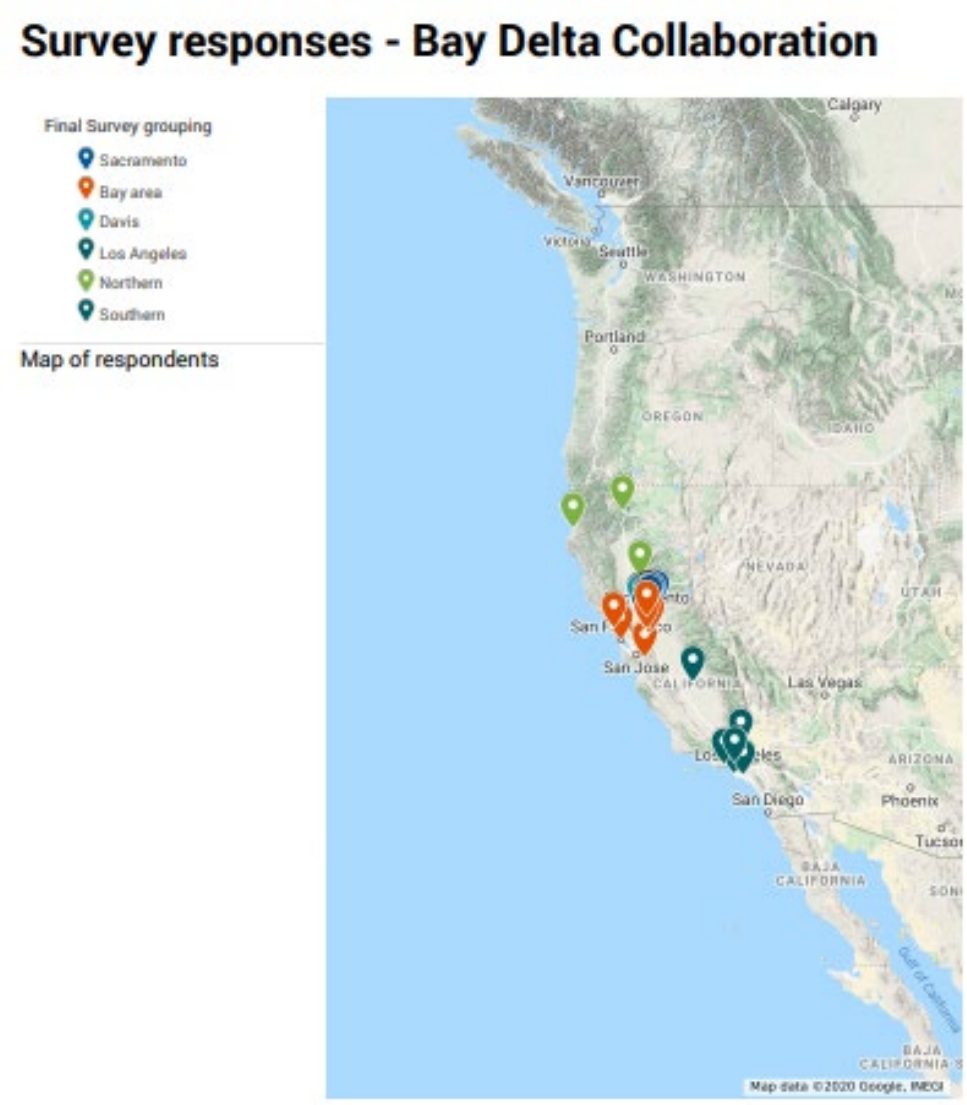
Figure 3. Map of the Delta

*State Plan of Flood Control -Central Valley Flood Protection Project*


(California Department of Water Resources, 2017)

## Appendix B. Survey Responses and Locations

Figure 4. Map of Survey Respondents




(Source: Responses from Survey)

## Appendix C. Survey Form

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Collaboration Indicators of Stakeholder Engagement Surrounding Delta Risk

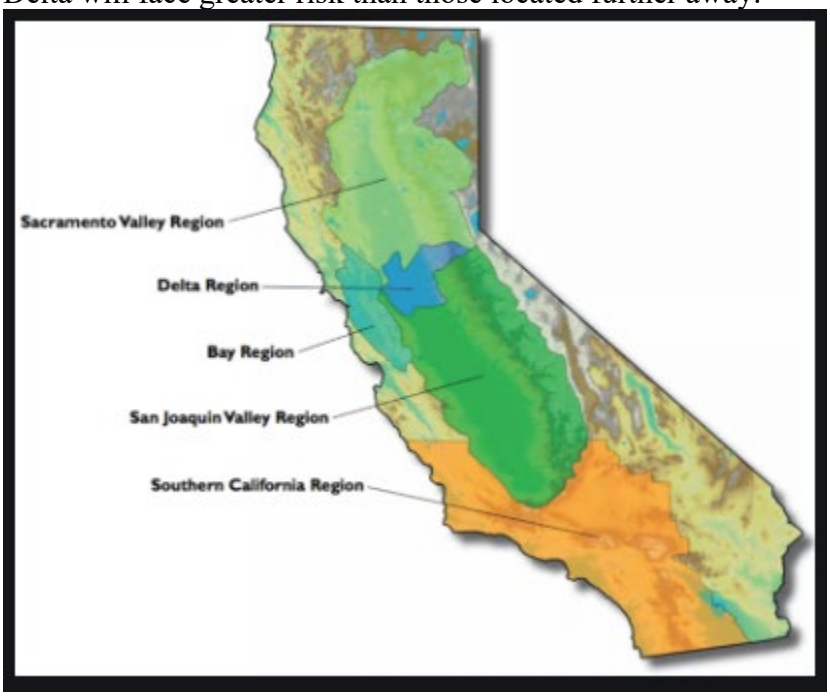
### Key Points and Definitions

**For the purpose of this survey:** I am interested in your individual opinion about what the obstacles have gotten in the way up to this point in our efforts as a community to collaborate for solutions that could lower this risk. I am researching how the Delta (defined below) can be improved if we work together to solve problems and how, as community, we can apply some of the important factors required for successful collaboration to complete some of these important problems to reduce the risk.

**Risk:** For this research project, risk refers to the systems, species, land, economy, and most vulnerable populations that will suffer substantial loss if a catastrophic disaster occurs around the Delta.

**Stakeholder:** For this research, any responder is a stakeholder. I am interested in learning who responds and what area of the state they are from.

**The Delta:** Refers to the California Delta, San Francisco, San Pablo, and Suisun Bays and the entire watershed and its tributaries, as well as communities dependent upon water access to water supply south of the delta. Those respondents in closer proximity to the Delta will face greater risk than those located further away.



**Thank you very much for your time today. Please answer the following questions:**

**Introductory Questions**

**1. Please enter your zip code: _____**

**2. Which of the following best describes your entity or involvement in the Delta?**

- Federal government
- Tribal government
- State government
- Local government
- Regional government agency
- Nongovernmental organization
- Private Industry
- Other

*In response to this survey, please consider all the different ways you or your entity may have worked with other entities on projects such as water quality improvement, ecosystem restoration, planning, agriculture, small systems, permitting, technical assistance, monitoring and other water activities directly related to the Delta.*

**3. Do you agree that a natural disaster could damage the delta and compromise our ability to transfer fresh water?**

- Yes
- No

**4. Do you agree that a natural disaster could damage the delta and compromise our ability to protect the ecosystem: home to more than 750 plant and animal species?**

- Yes
- No

**5. How strongly would you support measures to protect and restore the Delta?**

- Strongly supportive
- Somewhat supportive
- Somewhat unsupportive
- Not at all supportive
- Do not know

**6. How strongly would you support measures to build a water conveyance system to protect freshwater delivery in the Bay Delta.**

- Strongly supportive
- Somewhat supportive
- Somewhat unsupportive
- Not at all supportive
- Do not know

**<u>CHALLENGES:</u> I am interested to learn what you think may have limited collaboration in the past and/or what our efforts as stakeholders could consider going forward.**

*The following is a list of possible challenges that may limit our ability to successfully complete projects that provide important protection against Delta Risk. Thinking about you or your entity's experiences in group efforts in the Delta, how much of a challenge, if at all, do you think the following pose to the successful completion of these important projects to increase protection to the Delta?*

| **Factor** | Challenges that May Limit successfully completing projects to reduce Delta Risk | Very great challenge | Great challenge | Moderate challenge | Somewhat of a challenge | Slight/Not at all a challenge | Do not know/Not applicable |
|---|---|---|---|---|---|---|---|
| 1 | Timing: Too fast or too slow to allow appropriate level of review/engagement. | | | | | | |
| 2 | Data: Lack of information or access to critical data to inform decision making. | | | | | | |
| 3 | Conflicting Goals: Competing interest of water users and suppliers in different geographical locations. For example: north vs. south; agricultural vs. urban; fish vs. farms | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | Local interest: Failing to obtain support for projects that affect local or private stakeholders, such as farmers, landowners, and businesses. | | | | | | |
| 5 | Collaboration: Lack of collaboration effort to ensure critical stakeholders are at the table. | | | | | | |
| 6 | Planning: Too many multiple planning efforts with competing goals and interests surrounding the Delta. | | | | | | |
| 7 | Integration: Lack of coordination of partners at different levels of government (federal, state, local, tribal). | | | | | | |
| 8 | Science and Ecology: Failing to incorporate science-based decision making and restoration efforts for Delta ecosystem and species. | | | | | | |
| 9 | Permits & Regulations: Getting "stuck" in the regulatory processes of CEQA, NEPA or other permitting & legal challenges | | | | | | |
| 10 | Funding: Lack of sufficient funding from different levels of government and water contractors. | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11 | Anything else? | | | | | | |
| | | | | | | | |

7. **Thinking about your entity's experience in the Delta, which three factors from the above list do you think poses the greatest risks to the long-term overall success of collaboration in the Delta.**
   **Factor #1: (click to select)**

   Why do you think this factor poses one of the greatest risks to the long-term overall success of a collaboration projects to address Delta Risk? Please use the space provided to elaborate in as much detail as possible and include illustrative examples:

   **Factor #2: (click to select)**

   Why do you think this factor poses one of the greatest risks to the long-term overall success of a collaboration projects to address Delta Risk? Please use the space provided to elaborate in as much detail as possible and include illustrative examples:

   **Factor #3: (click to select)**

   Why do you think this factor poses one of the greatest risks to the long-term overall success of a collaboration projects to address Delta Risk? Please use the space provided to elaborate in as much detail as possible and include illustrative examples:

**Success Indicators**

*The following is a list of indicators that contribute to successful collaboration (REFs) Literature from experts in public policy, facilitation, economics, collaboration, and community engagement provide that these indicators, along with many others, are critical components of successful collaboration. I am interested in learning which of these indicators you think are most important for creating a successful collaboration for completing important projects that will help reduce Risk in the Delta.*

8. **Please rate the following as to how critical this component is considering your experience with collaboration in Delta efforts in the past. in order of importance.**

| | **Success Indicators** | **Most Important (7)** | **Very Important (6-5)** | **Somewhat important (4-3)** | **Slight or Not at all important (2)** | **Do not know/Not applicable (1)** |
|---|---|---|---|---|---|---|
| **1** | Data & Transparency: Shared Data / Sharing platform such as SharePoint | | | | | |
| **2** | Communication: Planning efforts and engagement A Project Management Plan in place | | | | | |
| **3** | Authority: Clear Governance authority of entities responsible for efforts. | | | | | |
| **4** | Local: Engagement with those closest to the problem. Local/private stakeholders, such as farmers, landowners, and businesses. | | | | | |
| **5** | Facilitation: Professional facilitation. | | | | | |
| **6** | Financing: Established financing authority | | | | | |

| Is there anything else that you would like to add? |
| --- |
| |

Thank you for your time. The results of this survey will be published in my thesis:
AN ANALYSIS OF KEY INDICATORS FOR SUCCESSFUL COLLABORATION TO ADDRESS BAY-DELTA RISK

Sacramento State University
School of Public Policy and Administration

SACRAMENTO STATE
*Redefine the Possible*

Kristyne Van Skike
MPPA 2020

# REFERENCES

Benjamin, J. (2005, June). *Preliminary Seismic Risk Analysis Associated with Levee Failures in the Sacramento-San Joaquin Delta*. Retrieved from the California Bay Delta Authority: https://water.ca.gov/LegacyFiles/floodmgmt/dsmo/sab/drmsp/docs/Delta_Seismic_Risk_Report.pdf

Bobker, G., Miller, J., & Maharg, E. (2017, September 25). *Lawsuit Challenges California Permits for Delta Tunnels to Harm Endangered Salmon, Smelt*. Retrieved from Center for Biological Diversity: https://www.biologicaldiversity.org/news/press_releases/2017/delta-tunnels-09-25-2017.php

Bolman, L. G., & Deal, T. E. (2013). Reframing organizations: Artistry, choice, and leadership, 5th Edition. San Francisco: Jossey-Bass.

California Climate Change Center. (2009, August). Department of Water Resources. Retrieved from Research Gate: https://www.researchgate.net/publication/267418517_USING_FUTURE_CLIMATE_PROJECTIONS_TO_SUPPORT_WATER_RESOURCES_DECISION_MAKING_IN_CALIFORNIA

California Department of Water Resources. (2017, August). *California Water Library*. Retrieved from CVFPP-SPFC: https://cawaterlibrary.net/wp-content/uploads/2017/10/CVFPP-SPFC-DescriptiveDoc-Aug2017-compiled.pdf

California Earthquake Authority. (2019). Retrieved from California Earthquake Risk Map: https://www.earthquakeauthority.com/California-Earthquake-Risk/Faults-By-County

California Legislative Information. (2018). *Government code 6500-6599.3 Joint Exercise of Powers*. Retrieved from Ca Leg: https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=7.&title=1.&part=&chapter=5.&article=1.

California Office of Environmental Health Hazard Assessment. (2019, October 14). *The Human Right to Water in California*. Retrieved from California Office of Environmental Health Hazard Assessment: https://oehha.ca.gov/water/report/human-right-water-california

CalWater. (2018). *History of CALFED Bay-Delta Program*. Retrieved from CalWater: http://www.calwater.ca.gov/calfed/about/History/Detailed.html

Courthouse News Service. (2020, January 22). *Newsom Dives into Decades-Long California Water Fight*. Retrieved from Santa Clarita Valley News: https://scvnews.com/newsom-dives-into-decades-long-california-water-fight/

Cypher, T., & Grinnel, C. (2007, August). *California State Legislature: Governments Working Together: A Citizen's Guide to Joint Powers Agreements*. Retrieved from Senate Governance and Finance Committee: https://sgf.senate.ca.gov/sites/sgf.senate.ca.gov/files/GWTFinalversion2.pdf

Davis, A. (2018, March 23). *Top-Down Management May Be Out of Style. But Here's Why It's Still Relevant and Effective*. Retrieved from Inc Magazine: https://www.inc.com/alison-davis/top-down-management-may-be-out-of-style-but-heres-why-its-still-relevant-

Del Beccaro, T. (2018, April 19). *The Top Four Reasons California is Unsustainable*. Retrieved from Forbes: https://www.forbes.com/sites/thomasdelbeccaro/2018/04/19/the-top-four-reasons-california-is-unsustainable/#162ae83b3a23

Delta Stewardship Council. (2019, June). *Delta Science Plan. Vision, Principles, and Approaches for Integrating and Coordinating Science in the Delta*. Retrieved from Delta Stewardship Council: https://www.deltacouncil.ca.gov/pdf/2019-delta-science-plan.pdf

Delta Stewardship Council. (2013). *The Delta Plan*. Retrieved from: The Delta Stewardship Council: https://deltacouncil.ca.gov/pdf/delta-plan/2020-03-10-amended-chapter-7.pdf

Denhardt, R., Denhardt, J., & Blanc, T. (2014). *Public Administration: An Action Orientation*. 7th ed. Boston, Ma: Wadsworth, Cengage Learning.

DeSousa, P. (2016). *The Ins and Outs of Joint Powers Authorities in California*. Retrieved from BB Knowledge: https://www.bbknowledge.com/general/the-ins-and-outs-of-joint-powers-authorities-in-california/

Donner, W., & Rodriquez, H. (2011, January 8). *Disaster Risk and Vulnerability: The Role and Impact of Population and Society.* Retrieved from: Population Reference Bureau https://www.prb.org/disaster-risk/

Duhigg, C. (2017). *Smarter, Faster, Better: The Transformative Power of Real Productivity*. New York: Random House.

Emerson, K., & Nabatchi. (2015). *Collaborative Governance Regimes*. Washington: Georgetown University Press.

Emerson, K., Nabatchi, T., & Balogh, S. (2012, January). *An Integrative Framework for Collaborative Governance. Journal of Public Administration Research and Theory*. Volume 22, Issue 1,, pp. 1–29. Retrieved from https://doi.org/10.1093/jopart/mur011

Environmental Protection Agency. (2017, January 19). *San Francisco Bay Delta: What are the Challenges?* Retrieved from the Environmental Protection Agency: https://www.epa.gov/sfbay-delta/what-are-challenges

Environmental Protection Agency. (2019, April 16). *Identifying and Prioritizing Environmentally Impacted and Vulnerable Communities*. Retrieved from the Environmental Protection Agency: https://youtu.be/1gsI4oIEb0U

Fisher, R., Ury, W., & Patton, B. (2011). *Getting to Yes; Negotiating Agreement Without Giving In*. New York: Penguin Group.

Governor's Water Resilience Portfolio. (2020, January). *Governor's Water Resilience Portfolio*. Retrieved from California Water Resilience: http://waterresilience.ca.gov/wp-content/uploads/2020/01/California-Water-Resilience-Portfolio-2019-Final2.pdf

Green, E. (2015, June 15). *Are We There Yet? The Many Attempts and Failures to Fix the Bay Delta.* Retrieved from KCET: https://www.kcet.org/redefine/are-we-there-yet-the-many-attempts-and-failures-to-fix-the-bay-delta

Hanak, E., Gray, B., Lund, J., & al., e. (2014, March). *Paying for Water in California*. Retrieved from Public Policy Insititute of California: https://www.ppic.org/content/pubs/report/R_314EHR.pdf

Harper, M. (2015, January 3). *Business Administration and Management: Top-Down vs. Bottom-up Management Styles.* Retrieved from Touro University: http://www.tuw.edu/content/business/top-down-bottom-up-management/

Innes, J., & Booher, D. (1999). *Collaborative Policymaking: Governance through Dialog. Deliberative Policy Analysis; Understanding Governance in the Network Society.* Retrieved from Google Scholar.

Innies, J., Connick, S., Kaplan, L., & Booher, D. (2006). *Collaborative Governance in the CALFED Program: Adaptive Policy Making for California Water.* Retrieved from UC Berkeley: https://iurd.berkeley.edu/wp/2006-01.pdf

Kaner, S. (2014). *Facilitator's Guide to Participatory Decision-Making* (3rd ed.). New Jersey: John Wiley & Sons.

Kasler, D., & Sabalow, R. (2019, June 14). *Gavin Newsom officially kills twin Delta tunnels, eyes downsized CA water project.* Retrieved from Sacramento Bee: https://www.sacbee.com/news/politics-government/capitol-alert/article229949089.html

Kim, e. a. (2015, December 12). *Fragment Local Governance and Water Resource Management Outcomes.* Retrieved from CSUS Library: https://www-sciencedirect-com.proxy.lib.csus.edu/search/advanced?docId=10.1016/j.jenvman.2014.12.002

Lee, D. (1999). *Institutional and technical barriers to risk-based water resources management: A case study.* Journal of Water Resources Planning and Management, 125(4), 186-193.

Lewis, L. (2007). *An Organizational Stakeholder Model of Change Implementation Communication.* Retrieved from Communication Theory, 17(2), 176-204: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2885.2007.00291.x

Lohan, T. (2017, November 16). *The Long History of California's Delta Tunnels Plan*. Retrieved from News Deeply: https://www.newsdeeply.com/water/articles/2017/11/16/timeline-the-long-history-of-californias-delta-tunnels-plan

Madani, K., & Lund, J. (2012, March). *California's Sacramento-San Joaquin Delta Conflict: From Cooperation to Chicken*. Journal of Water Resources Planning and Management, p. 99.

Magee, J. F. (2014). *Status and Power: The Principal Inputs to Influence for Public Managers.* Public Administration Review Vol. 74, Issue 3, pp.307-317.

Marek, L., Brock, D., & Savla, J. (2015, February 19). *Evaluating Collaboration for Effectiveness: Conceptualization and Measurement.* Retrieved from ResearchGate: https://www.researchgate.net/profile/Donna_Brock/publication/262685097_Evaluating_Collaboration_for_Effectiveness/links/561fbe5108ae70315b551054/Evaluating-Collaboration-for-Effectiveness.pdf

Morris, J., & Baddache, F. (2012, January). *Back to Basics: How to Make Stakeholder Engagement Meaningful for Your Company.* Retrieved from Business for Social Responsibility: https://www.bsr.org/pdfs/events/Back%20To%20Basics%20-%20How%20to%20Make%20SHE%20Meaningful%20for%20your%20Company(1).pdf

Mount, J., Chappelle, C., Gray, B., Hanak, E., Gartrell, G., Kimmerer, W., . . . Moyle, P. (2018, November). *The Sacramento-San Joaquin Delta.* Retrieved from PPIC Water Policy Center: https://www.ppic.org/wp-content/uploads/californias-water-the-sacrament-san-joaquin-delta-november-2018.pdf

NDreu, A. (2016, May). The Definition and Importance of Local Governance. Retrieved from Research Gate: https://www.researchgate.net/publication/309688773_the_definition_and_Importance_of_Local_Governance

Plater, Z., Abrams, R., & Goldfarb, W. (1994). *Environmental Law & Policy: Nature, Law, and Society*. Boston, Ma: West Publishing Company.

Poole, K. (2015, October 29). *California is Failing to Protect Water Quality in the San Francisco Bay-Delta.* Retrieved from Natural Resources Defense Council: https://www.nrdc.org/experts/kate-poole/california-failing-protect-water-quality-san-francisco-bay-delta

Rainey, H. (2014). *Understanding and Managing Public Organizations,* 5th Edition. San Francisco, Ca: Jossey Bass.

Reed, M., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., . . . Stringer, L. (2009). *Who's in and Why? A Typology of Stakeholder Analysis Methods for Natural Resource Management.* Journal of Environmental Management, 1933-1940.

Resources Agency. (2019, July 1). *Voluntary Agreements to Improve Habitat and Flow in the Delta and its Watersheds* Retrieved from the California Natural Resources Agency: https://resources.ca.gov/Initiatives/Voluntary-Agreements

Schein, E. (2016). *Humble Consulting: How to Provide Real Help Faster*. Oakland, Ca: Berrett-Koehler Publishers, Inc.

Sommer, L. (2017, February 29). *With Climate Change, California is Likely to See More Extreme Flooding.* Retrieved from WBUR News: http://www.wbur.org/npr/517495739/with-climate-change-california-is-likely-to-see-more-extreme-flooding

Statistics How-to. (2015, October 11). *Non-Response Bias: Definition, Examples*.Retrieved from Statistics How-to: https://www.statisticshowto.com/non-response-bias/

Straus, D. (2002). *How to Make Collaboration Work: Powerful Ways to Build Consensus, Solve Problems, and Make Decisions*. San Francisco: Berrett-Koehler Publishers.

Taylor-Silva, A. (2018). *Central California Water Stories*. Retrieved from the Monterey Resource Conservation District: https://www.rcdmonterey.org/images/Central_CA_Water_Stories_and_Recommendations_2018.pdf

Teper, J. (2018, May 21). *SharePoint Innovations: Transform Content Collaboration with Mixed Reality and AI.* Retrieved from Microsoft 365: https://www.microsoft.com/en-us/microsoft-365/blog/2018/05/21/sharepoint-innovations-transform-content-collaboration-with-mixed-rea

Water Education Foundation. (2019). *The State Water Project*. Retrieved from the Water Education Foundation: https://www.watereducation.org/aquapedia/state-water-project

Water Education Foundation. (2020). *Water Issues Overview.* Retrieved from the Water Education Foundation: https://www.watereducation.org/aquapedia/california-water-issues-overview

Wilson, J. Q. (1991). *Bureaucracy: What Government Agencies Do and Why they Do It*. New York: Basic Books Classics.