

**Water Transfers in Northern California:  
Analyzing the Termination of the San Francisco-Modesto Irrigation  
District Water Transfer**

By

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## **ABSTRACT**

From 2011 to 2012, the Modesto Irrigation District (MID) and the San Francisco Public Utilities Commission (SFPUC) attempted to broker a deal that would transfer water from the rural Central California district to the metropolitan Bay Area. With a contract length of 50 years, it represented the type of long-term agricultural-to-urban water deal many experts had long anticipated occurring in Northern California, and might open the door for larger transfer deals in the region. Such transfers had been extolled for years by economists, policymakers, and even some environmentalists as an optimal way to manage scarce water resources among a variety of interests. This optimism was countered by those fearing potential social, economic, and environmental harm that such deals would bring upon those not directly involved in the negotiation, known as “third parties,” and literature suggested these third-party concerns were a major hurdle in completing transfer deals.

The SFPUC-MID proposal fell through in September of 2012, and this thesis set out to explore the key factors in its collapse using an institutional framework. Analyzing data collected through detailed interviews and primary sources, this thesis concluded that third-party concerns played only a tertiary role in the termination of the negotiations. Far more consequential factors were rifts within the MID, caused in large part by the election of a board member adamantly opposed to the transfer, and the threat of legal action by the city of Modesto, already engaged in a contract with the MID. These spheres of conflict—within the negotiating agency, among contractual partners, and outside by third parties—combined to scuttle the deal. As a result of the failed transfer, the two agencies are taking two very different paths forward, with the SFPUC considering a similar water deal with a different irrigation district while the MID, after an overhaul of personnel, will tackle its challenges with a completely new management approach. The thesis concludes with recommendations for those in the water management field, the most significant regarding the importance of dry year arrangements and the capacity of institutional leveraging.

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## **ABOUT THE AUTHOR**

I approached this research from both within and from without. Within, because I am a native Californian, born and raised in Southern California, and recently living several years in the San Francisco Bay Area. Water has always been a fascinating element to me, growing up in a place where signs and stories convey how this crucial force means so much to so many different people. My research also comes from without, as I developed this thesis while at school in Massachusetts and, other than a month spent in California conducting interviews, composed the entirety of the work on the east coast. New England is an environment that experiences water, and rights to water, much differently, which has permitted me to understand water management with a more nuanced perspective. Combined with experiences living and working in diverse places such as Chile, Thailand, Haiti, and Ghana, I have learned firsthand the importance of well-managed water, and seek to integrate this into my future endeavors.

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## **ACRONYMS AND ABBREVIATIONS**

af	acre-feet
ARTDA	Amended Restated Treatment and Delivery Agreement
BAWSCA	Bay Area Water Supply and Conservation Agency
CA	California
CEQA	California Environmental Quality Act
DWR	Department of Water Resources
EIR	environmental impact report
FERC	Federal Energy Regulatory Commission
GM	General Manager
mgd	millions of gallons a day
MID	Modesto Irrigation District
OID	Oakdale Irrigation District
NRC	National Resource Council
PEIR	Program Environmental Impact Report
PAC	Public Action Committee
SFPUC	San Francisco Public Utilities Commission
SPUR	San Francisco Planning & Urban Research Association
SWRCB	State Water Resources Control Board
TID	Turlock Irrigation District
TRT	Tuolumne River Trust
UCSB	University of California at Santa Barbara
WSIP	Water System Improvement Program

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## CHAPTER 1: INTRODUCTION

California has a complicated relationship with water that only looks to grow more challenging in the years ahead. The mix of a growing population, land development, ecosystem decline, and a changing climate—bringing with it increased drought and less reliable snowmelt—has only increased the tension among water’s many stakeholders in California. Debate persists and decisions continue to be postponed regarding the management of this precious resource involved in agriculture, energy, industry, fishing, tourism and recreation, as well as domestic consumption.

This thesis focuses on a proposed solution for grappling with water conflicts in California, and its complications in one particular scenario. Water transfers, in which water rights are leased on short-term and long-term contracts or sold entirely from one user to another within a water market, are becoming a more appealing prescription by not only economists but policymakers and even environmentalists. Indeed, ever since the severe drought of the late 1970s, California has made the facilitation of water exchanges through a water market part of its official policy. Though the amount of water exchanged each year has climbed to over 1 million acre-feet, this represents only 3% of the water used in the state among municipalities, industry, and the agriculture sector.<sup>1</sup> Furthermore, it is the policy of the state that the domestic use of water is its highest beneficial use, followed next by agriculture.<sup>2</sup> Surprisingly, a minority of market transactions has involved cities acquiring agricultural water, particularly in regards to long-term transfers.

For this reason, a proposed transfer between the Modesto Irrigation District and the San Francisco Public Utilities Commission in 2012 garnered much attention, as it had the potential to usher in a new era of large, long-term transfers of water from irrigation to urban use. This was the type of transfer many water experts had long predicted might occur, as rural areas with an abundance of water looking to generate revenue would sell to wealthy urban centers looking to bolster their water supply. Few precedents existed in California, and San Francisco had never engaged in a water transfer before. Though the transfer initially had momentum and appeared to be a foregone conclusion, talks between the two parties stalled and faltered before abruptly being terminated. Exploring the reasons for this water deal’s failure in the context of California water management will be the focus of this thesis.



**Figure 1: Where SF gets its water, also showing the Tuolumne River and Modesto (Source: SF Chronicle)**

Historical overview of water reallocation in California

In California, water rights were established during the Gold Rush era using the “first in time, first in right” approach that emerged among mining operations on public land.

Whoever claimed the water first and used it earned the right to the water. This system of prior appropriation required that water be put to a “beneficial use”—physically diverted from its course for an economic purpose—in order for claimants to establish and maintain their water rights.<sup>3</sup> Many of these early rights, and the incentives to divert water or else risk losing it, continue today.

The landscape of California’s surface water network changed significantly after the passage of the 1902 federal Reclamation Act. It subsidized the construction of massive infrastructure projects across the nation including major dams and aqueducts.<sup>4</sup> California in particular benefitted from this new wave of construction, as a federal agency rivalry between the U.S. Army Corps of Engineers and the Bureau of Reclamation resulted in an extensive network of channels through the middle of the state that helped deliver water from the mountains in the North to the arid Central Valley and facilitated the growth of an enormous agricultural industry.<sup>5</sup>

Meanwhile, fast-growing cities Los Angeles and San Francisco pursued controversial projects to secure plentiful water supplies for their booming populations. In addition to tapping into the Colorado River to the east, Los Angeles made one of history’s most notorious water grabs when it bought the rights to all of the water in the Owens River Valley (by acquiring the adjacent land) and then rerouted the river over 200 miles through aqueducts and over mountains in the 1910s.<sup>6</sup> Around the same time, the city of San Francisco battled and eventually defeated John Muir and supporters within his Sierra Club to dam the Tuolumne River in Yosemite’s scenic Hetch Hetchy Valley, creating a consistent supply of water for San Franciscans so fresh it surpassed EPA drinking standards and flowed to the city through a system that relied solely on gravity.<sup>7</sup> The legacy of these

projects, particularly the specter of the parched Owens River Valley, continue to reverberate in disputes over water and have left many skeptical about additional reallocations of water across the state.

### Contemporary California water transfers

Against the backdrop of a severe drought in the late 1970s, California as a matter of policy proposed water markets as a means of managing its water crisis. Both the governor and the legislature strongly endorsed water marketing, and changes were made to the *California Water Code* to better facilitate water transfers.<sup>8</sup> This coincided with a broader movement nationwide to see greater protection and preservation of the natural environment. Another drought in the 1990s and an ecological crisis in the Sacramento-San Joaquin Delta sparked an increase in water transfers to help restore instream flows, primarily through purchases by government agencies.

Still, the amount of activity within California's water market is far less than many had predicted, particularly when looking at long-term transactions. The University of

1	2	Year	State	Quantity of Water Transferred						Prices				Transfer Length				Transfer Type						
				Minimum Annual Acre-Ft	Average Annual Acre-Ft	Maximum Annual Acre-Ft	Committed Minimum Acre-Ft	Committed Average Acre-Ft	Committed Maximum Acre-Ft	Total Price	Inflation Adjusted Total Price	Inflation Adjusted Price per Acre-Foot	Inflation Adjusted Price per Commitment Acre-Foot	Sale	Lease	Exchan	Lease Duration	Ag-to-Ag	Ag-to-Urban	Ag-to-Env	Urban-to-Ag	Urban-to-Urban	Urban-to-Env	Env-to-Ag
241	1997	CA	8,852	8,852	8,852	175,694	175,694	175,694	\$85,333	\$60,398	\$7	\$0	0	1	0	100	0	0	0	0	0	0	0	0
242	1987	CA	250	250	250	4,871	4,871	4,871					0	1	0	75	0	0	0	0	0	1	0	0
243	1991	CA	15,000	15,000	15,000	273,839	273,839	273,839					0	1	0	50	0	1	0	0	0	0	0	0
244	1987	CA	130,000	165,000	200,000	2,310,859	2,310,859	3,554,814	\$1,848,000,000	\$1,310,000,000	\$7,931	\$446	0	1	0	45	0	0	0	0	0	0	0	0
245	2003	CA	0	3,000	6,000	0	51,477	102,955					0	1	0	40	0	1	0	0	0	0	0	0
246	2001	CA	25,200	62,800	100,000	412,830	1,025,025	1,637,419					0	1	0	35	0	1	0	0	0	0	0	0
247	2001	CA	1,200	1,200	1,200	19,849	19,849	19,849					0	1	0	35	0	0	0	0	0	0	1	0
248	1991	CA	0	2,500	5,000	0	39,507	79,013					0	1	0	32	0	1	0	0	0	0	0	0
249	2006	CA	7,500	7,500	7,500	115,293	115,293	115,293	\$193,725,000	\$109,162,500	\$14,555	\$947	0	1	0	30	0	0	0	0	0	1	0	0
250	2007	CA	7,500	7,500	7,500	115,293	115,293	115,293	\$193,725,000	\$105,554,991	\$14,073	\$916	0	1	0	30	0	0	0	0	0	1	0	0
251	2007	CA	7,500	7,500	7,500	115,293	115,293	115,293	\$193,725,000	\$105,554,991	\$14,073	\$916	0	1	0	30	0	0	0	0	0	1	0	0
252	2006	CA	120,000	120,000	120,000	1,844,694	1,844,694	1,844,694	\$103,320,000	\$58,220,000	\$485	\$32	0	1	0	30	0	0	0	0	0	1	0	0
253	2007	CA	2,400	2,400	2,400	36,894	36,894	36,894	\$61,992,000	\$33,777,597	\$14,073	\$916	0	1	0	30	0	0	0	0	0	1	0	0
254	2006	CA	4,000	4,000	4,000	120,000	120,000	120,000	\$23,760,000	\$13,368,571	\$3,547	\$112	0	1	0	30	0	0	0	0	0	1	0	0
255	1993	CA	0	6,925	13,850	0	106,454	212,908					0	1	0	30	0	0	0	0	0	1	0	0
256	2007	CA	5,000	5,000	5,000	76,862	76,862	76,862					0	1	0	30	0	0	0	0	0	1	0	0
257	1992	CA	0	1,150	2,300	0	17,878	35,757					0	1	0	30	1	0	0	0	0	0	0	0
258	2007	CA	2,000	2,000	2,000	30,745	30,745	30,745					0	1	0	30	0	1	0	0	0	0	0	0
259	2003	CA	1,807	1,807	1,807	24,704	24,704	24,704					0	1	0	30	0	1	0	0	0	0	0	0
260	2008	CA	40,000	40,000	40,000	40,000	40,000	40,000	\$15,000,000	\$7,788,539	\$195	\$195	0	1	0	27	0	1	0	0	0	0	0	0
261	1997	CA	0	20,000	40,000	0	281,879	563,758	\$45,000,000	\$31,900,000	\$1,593	\$113	0	1	0	25	0	1	0	0	0	0	0	0
262	1998	CA	0	718	1,432	0	10,091	20,183	\$1,500,000	\$1,045,399	\$1,460	\$104	0	1	0	25	0	0	1	0	0	0	0	0
263	1999	CA	0	11,000	22,000	0	155,033	310,067	\$237,600	\$162,013	\$15	\$1	0	1	0	25	0	1	0	0	0	0	0	0
264	1999	CA	0	11,000	22,000	0	155,033	310,067	\$204,930	\$139,736	\$13	\$1	0	1	0	25	0	1	0	0	0	0	0	0
265	1999	CA	0	6,500	13,000	0	91,611	183,221	\$121,875	\$83,103	\$13	\$1	0	1	0	25	0	1	0	0	0	0	0	0
266	1995	CA	0	6,875	13,750	0	96,896	193,792					0	1	0	25	0	1	0	0	0	0	0	0

Figure 2: Screenshot of Water Transfer Level Dataset maintained by UCSB (Source: UCSB 2010)

California at Santa Barbara, through the Bren School of Environmental Science and Management, compiled a comprehensive account of all water transfers in the 12 Western

states (see Figure 2). Created as a public service and available at the school's [website](#),<sup>9</sup> the spreadsheet allows researchers to compare transfers based on price, volume, type of transaction, duration, and other relevant categories (when available). Notable California transfers listed in this table include a 2001 purchase by the Metropolitan Water District of Southern California from the Palo Verde Irrigation District, a series of sales from Poseidon Resources Corporation to local water districts, and the 1997 transfer from the Imperial Irrigation District to the San Diego County Water Authority worth nearly \$2 billion total.

For the purposes of comparison to the case profiled in this thesis, the water transfer database was first filtered to only California transactions. From 1987 to 2010, the spreadsheet had data for nearly 700 transactions. The transfers were then sorted according to the duration of the contracted agreement, so that the longest leases showed first. According to the database, 46 transfers took place with a duration of 10 years or more, and only 3 had durations of 50 years or more (though hundreds of transfers did not have a recorded duration). (See Appendix A for table of transfers sorted by duration). This shows just how exceptional the SFPUC-MID transfer, with a contract length of 50 years, would have been.

Transfers could also be arranged by size of the transfer, measured in annual acre-feet of water (see Appendix B). Looking at all 692 recorded California water transfers, 512 reported a volume of committed annual acre-feet<sup>1</sup> greater than the 2,240 af (or 2 mgd for a year) amount proposed in the SFPUC-MID transfer. This would have placed the SFPUC-MID

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<sup>1</sup> Committed annual acre-feet, according to the UCSB database, was a measurement developed to show that long-term leases transfer greater volumes of water than one-year transfers. This variable discounts the flow of water over time into the year the water was first transferred. For more information, please visit [http://www.bren.ucsb.edu/news/water\\_transfers.htm](http://www.bren.ucsb.edu/news/water_transfers.htm)

transfer in the 26<sup>th</sup> percentile—showing it to be relatively small in volume. For comparison, the larger 25,000 af transfer, which the SFPUC was considering in the near future, would have been in the 67<sup>th</sup> percentile (232 out of the 692 reported volumes larger than 25,000 af). The SFPUC-MID transfer would have been considered an agricultural-to-urban transfer. Looking again at the database, there are 115 recorded agricultural-to-urban transfers in California thus far, representing about 17% of the total. This is the third-most common transfer typology, behind agricultural-to-agricultural and urban-to-urban (though more common than other types such as agricultural-to-environmental and urban-to-environmental).

	Duration	Volume	Type
<b>Proposed SFPUC-MID transfer</b>	<b>50 years</b>	<b>2,240 af</b>	<b>Ag-Urban</b>
Compared to existing CA transfers	99th percentile	26th percentile	3rd most common

*Figure 3: How the initial SFPUC-MID transfer would have compared to existing CA transfers*

### The allure of water markets and transfers

The theory of developing markets for water transfers evolved through the 1970s and 1980s, spreading from academia to the realm of water management.<sup>10</sup> Though there had long been short-term transfers and temporary rentals, only in recent decades have large-scale transfers gained popularity among water managers. Some environmentalists have joined a chorus of economists in advocating water markets as a sound solution in cases where the demand for fresh water appears to overwhelm the supply. Proponents of water markets, in which water rights are treated as a tradable good, believe they can address both economic inefficiencies and the wasteful use of water.<sup>11</sup>

Advocates of water transfers within a water market claim many benefits, including:

- they allow the user to be properly reimbursed for the amount of water they consent to trade
- they can improve the bargaining power of farmers
- they create incentives for all users to save water because of the higher cost of water
- they allow water to be used for a higher-value purpose and thus potentially generate more overall revenue
- they better protect traditional water rights than volumetric pricing
- they encourage private financing of water infrastructure and reduce the public subsidization of capital and operating expenses
- they provide maximum flexibility when demand dramatically shifts across sectors and geographic regions<sup>12</sup>

Markets for water transfers have emerged in various corners of the world, from Chile to Australia.<sup>13</sup> In California, water transfers hold particular allure for those who seek to see water shifted from an agricultural sector consuming over half the state's water to urban centers with burgeoning populations, and for those willing to sell valuable water to environmental groups seeking to restore aquatic ecosystems.<sup>14</sup>

### Resistance to water transfers

Water transfers do not escape scrutiny or even outright opposition. Some question the very applicability of developing an economic market for transfers of water in the first place, owing to the difficulty in handling water as either a strict private commodity or a

pure public good.<sup>15</sup> An overview of the possible arguments against transfers relevant to the case in California includes:

- Economic concerns:
  - steep increases in the cost of water for the users of the purchasing agency
  - fallowed farm lands which result in declines in production and job loss
  - indirect impacts on rural economy due to fallowed fields
- Environmental impacts:
  - ecological impacts resulting from stream flow changes and possible deterioration in water quality
  - hydrological changes across entire water basin
  - excessive groundwater pumping to offset surface water reductions
- Equity issues:
  - wealthier communities purchasing water rights may not face the same conservation restraints as less wealthy communities selling water
  - drought years causing particular hardship for a community already committed to selling water by contract
  - concern that a transfer, if only for a limited time or a single transaction, would not qualify as a “beneficial use” and forfeit a claimant’s future water rights
  - difficulty in reclaiming water rights by original holders after they have been traded, even if only on a temporary basis<sup>16</sup>

Some of the aforementioned concerns are known as “third-party” impacts, because they affect an entity or individuals that are not directly participating in the water transfer



(i.e. neither the buyer nor seller). It is possible for these impacts to be both positive and negative, though negative third-party impacts are more commonly brought up in water transfer discussions. At times, third parties are brought into negotiations, and they can be compensated for a perceived loss. The environment itself has been deemed a third party and is entitled to certain protections, particularly in California, from harm that may arise from transfers.<sup>17</sup>

The very existence of potential third-party impacts can create high uncertainty during the negotiations, driving up transaction costs or scuttling a deal outright. Literature and prior cases suggest that concerns regarding third parties are a considerable obstacle for water transfers in.<sup>181920</sup> One objective of this thesis is to determine the relative degree to which the predicted third-party impacts—and the uncertainty surrounding them—played a role in the eventual termination of the San Francisco-Modesto water deal. Third-party impacts will be assessed alongside other factors that arose in this scenario, such as uncertainty surrounding water deliveries in dry years and complications with pre-existing contractual obligations.

### **Conceptual Framework**

The proposed water transfer between the San Francisco Public Utilities Commission (SFPUC) and the Modesto Irrigation District (MID) was selected as a case study for several reasons. It marked the first time San Francisco would diversify its water supply through a substantial water transfer. The exceptional length of the contract, as previously indicated, would make it one of the longest transfers in California history. As an agricultural-to-urban transfer in the north part of the state, it had the potential to open the floodgates for a

deluge of similar transfers, which water experts had anticipated for years. This case was particularly intriguing because it occurred so recently, with the plan terminated in September 2012, providing the possibility of ample data collection.

Though the case in question involved agencies within 100 miles of each other, the stakeholders acted within a much larger water network in the West. Communities in the Western United States (and Mexico) share not only long rivers, vast infrastructure, and overdrawn aquifers, but also the pressures of a changing climate that brings with it increased drought and decreased reliability. San Francisco observed metropolitan areas to the north and south pursuing costly desalination projects to secure their water supplies, while Modesto saw neighboring farmers in the Central Valley fallowing lands after cutbacks in their water deliveries. The climate therefore created an important context for the SFPUC-MID negotiations. Although Northern California was not in a drought when negotiations formally began in mid-2011, dry conditions began to emerge at the end of the year and by March 2012, much of the state was experiencing “severe drought” according to University of Nebraska Drought Monitor data.<sup>21</sup> Stakeholders representing diverse interests all understood the importance of a reliable water supply; securing additional water for drought protection was the reason the SFPUC pursued this transfer in the first place. The uncertainty regarding water in dry years also galvanized the opposition, which sought to protect against the risks that might come with a prolonged drought. How water deliveries would be handled during dry years would be an important element of this case.

This case is also valuable to study because it has important lessons to be extrapolated for future water management decisions. (Indeed, as of early 2013, the SFPUC continues to explore other possible water transfers.) The generalizability of the SFPUC-MID

case lies in the fact that the proposal involved the two most anticipated participants in a water transfer: an urban area (typically large and wealthy) purchasing from a rural district (often facing financial hardship). The case involved a typical third party, the environment, due to the fragile ecosystem of the Tuolumne River. It would occur in a region where there is access to groundwater, susceptible to increased pumping to offset transferred surface water. The Modesto Irrigation District has a strong agricultural base, which could feel its economic activity threatened by a perceived reduction in water supply or reliability. In addition, this transfer was geographically situated among many different water users who would be interested in the implications of a transfer's success or failure.

As this thesis reveals, the SFPUC-MID water transfer proposal went from a potentially groundbreaking transaction to a failed water deal. Acting out of an institutional structure that simultaneously created constraints for water transfers and attempts to facilitate them, the negotiating agencies found themselves contending with variety of interest groups. As Islam and Susskind write, "The complexity of water resource management is the result of the presence of a great many stakeholders with competing needs who interact on multiple levels and scales simultaneously."<sup>22</sup> Stakeholders in this case ranged from Central Valley farmers to residents of the city of Modesto to environmental organizations to Tea Party activists to Bay Area water retailers.

At the core of this deal's dysfunction lay the conflict between the stakeholders, and this is the prism through which the negotiation has been analyzed. The conflicts could be categorized as those internal to the Modesto Irrigation District, those connecting the MID to its previously contracted partner (city of Modesto) and pending partner (SFPUC), and those between the MID and concerned third-party interests. The combination of these three

spheres of conflict provides a framework to understand how this transfer arrangement eventually fell apart.

### **Research Questions and Methods**

Using the proposed San Francisco Public Utilities Commission-Modesto Irrigation District transfer as a case study, this thesis explores the following questions: What were the different factors, and their magnitude of impact, that contributed to the termination of SFPUC-MID water transfer? Were there concerns about third-party impacts, as are commonly experienced in water transfers, that disrupted this particular deal? Was this deal complicated by factors aside from third-party impacts? Do the explanations by various parties for the termination of the proposed water transfer differ?

Based upon a review of the literature, but before a collection, synthesis, and analysis of the relevant data for this particular case, answers to these questions could be conjectured. Knowing this was a controversial water transaction that encountered strong opposition, I anticipated that explanations for the collapse would vary significantly. The literature suggested that the main reasons for the breakdown of negotiations would be perceived third-party impacts.<sup>232425</sup> Specifically, reductions in surface water delivery could lead to disruption of the agricultural economy, groundwater overdraft—already a problem in the region—and environmental harm to the river. Beyond common third-party impacts, one could speculate on the recent history of environmental regulation and cutbacks to deliveries of water to farmers in California’s Central Valley as also playing influential roles.

In order to answer my questions, I first investigated the institutional framework created within California that facilitates and oversees water transfers. This begins at the

federal level and works all the way down to the regional water districts. I assessed the background policies and documents, such as the *California Water Code*, that impacted the two negotiating parties. I also inspected the various documents created through the proposal, including different drafts of the actual contract, to incorporate in the analysis. Because this deal was terminated in September of 2012, I was able to trace the course of events through close media coverage archived online, in addition to collecting outreach material generated by various organizations closely following the transfer.

To dig deeper into the factors behind the water transfer deal's collapse, I arranged interviews with individuals connected to the proposal. I sought at least one person from each relevant party, including the SFPUC, the MID, the city of Modesto, the agricultural community, and environmental groups. Interview subjects were selected based on their roles in the actual negotiations, their positions within their organization, and/or existing quotes in the media that established their familiarity with the deal. In some cases, additional interviewees were selected based on snowballing techniques, as individuals would be recommended as useful sources of information.

Semi-structured interviews were conducted with each of the subjects, in person whenever feasible and on the phone when necessary. Interviewees were asked specific questions based on their particular role, but every interviewee was asked to attempt an explanation for the transfer's collapse and to name important factors. These revealed reasons were assembled and coded (see Appendix C). They were then synthesized with other data collected.

Through analysis of the data, I was able to answer my research questions. Using the explanations provided and the primary source documents, I also developed the most likely

explanation for the transfer deal's collapse. This theory was presented in the conceptual framework of conflict points that persisted among the many stakeholders. I then assessed the present state of the two parties engaged in the negotiation and where they are heading in the near future. The thesis concludes with key takeaways that should be applied not only by the agencies involved in the proposed transfer, but others with an interest in complex water management issues. My findings are summarized, and suggestions for possible future lines of research are provided.

## **CHAPTER 2: INSTITUTIONAL FRAMEWORK**

Water transfers occur within a context of policies, laws, and regulations that various government agencies have established and facilitate. Institutional actors have at times made specific decisions to deliberately shape California's water market (such as the 1978 Governor's Commission to Review California's Water Rights Law), while at other times extensive policies based on other concerns have tangentially impacted water transfers (such as the Endangered Species Act).

In this chapter, I will begin dissecting the institutional framework at the federal level (as it pertains to water transfers) and scale down to the level of the local agencies and organizations involved in the analyzed transfer. Important government agencies with the capacity to influence, or take part in, transfers will be introduced. Influential legislation at the state and federal level will be highlighted, alongside policies enacted to promote water markets. Elements with a direct bearing on the case under scrutiny will be presented, such as the re-licensing of dams or court cases establishing precedent. Fundamental to any discussion of water institutions is an understanding of water law, presented through California's unique blend of riparian and prior appropriation water rights, relevant sections of the *California Water Code*, and definitions within the state constitution. The chapter will conclude with an introduction to the stakeholders involved in the proposed transfer, starting with the two negotiating agencies and concluding with interested third parties.

## Federal Government

In California, federal agencies have historically played an important role in water management, though this role is shifting. Decades ago, the Bureau of Reclamation and U.S. Army Corps of Engineers constructed dams, aqueducts, and other infrastructure that proved crucial in facilitating the transfer of large volumes of water across vast distances in California. Now these agencies continue to participate in water reallocation, although less through the construction of infrastructure and more through oversight and management. The Bureau of Reclamation must review all water transfers that would utilize their infrastructure. Additionally, the Bureau of Reclamation and agencies such as the Fish and Wildlife Service will occasionally purchase or lease water directly with the express purpose of restoring natural habitats for riparian species.<sup>26</sup>

The 1970s brought attention to a host of environmental crises, resulting in the passage of federal (and state) acts that gave activists strong legal tools with which to protect natural resources and habitats. Much of this legislation impacts water transfers. The federal Endangered Species Act can restrict transfers in river basins with vulnerable species; the National Environmental Policy Act requires an environmental impact statement in the case of significant impacts on the environment from a federal project; and the Clean Water Act protects water quality, which is often affected by water transfers.<sup>27</sup> Specifically, Section 404 of the Clean Water Act is used to protect wetlands, and could be used by the federal government as a means to regulate the many water transfers that would impact wetlands (though thus far it has elected not to do so).<sup>28</sup>

The 1913 Raker Act permanently altered California's physical landscape in addition to water and power dynamics. San Francisco had been trying for years to dam the Hetch



Hetchy Valley within Yosemite in order to both create a vast reservoir for storing high quality drinking water and to develop a source of hydroelectric power. After failing several times to overcome opposition spearheaded by John Muir and supporters within his Sierra Club, in 1913 U.S. Representative John Raker of California introduced legislation during a hasty summer session of Congress to execute the Hetch Hetchy Reservoir and succeeded in its passage.<sup>29</sup> The so-called Raker Act gave San Francisco the water rights (as well as rights to the hydroelectric power) created by the Hetch Hetchy Reservoir, provided it did not sell them for profit (Raker Act 1913).<sup>30</sup> This reservoir in the Sierras grants San Francisco pre-1914 water rights on the Upper Tuolumne River, which it diverts through a complicated pipe system to deliver to Bay Area users. The act specifically impacts water transfers, including the proposed SFPUC-MID transfer. It specifies particular conditions under which San Francisco can divert additional water at the reservoir, and it limits the amount of acreage the MID can serve through its entitled water rights.<sup>31</sup>

An element at the national level that impacts water use in California, and which played a major role in the debate surrounding the SFPUC-MID transfer, is the re-licensing of dams. Any dam that produces hydroelectric power is under the jurisdiction of the Federal Energy Regulatory Commission (FERC). Dams are operated under long-term licenses that eventually must be renewed, and when this renewal occurs it is an opportunity for FERC to consider the viability of committing a certain portion of the public's river resources to generating power. Under the Federal Power Act, FERC must balance additional considerations beyond power generation, including protection of fish and wildlife and other environmental quality aspects.<sup>32</sup> During the re-licensing process,

many parties have an opportunity to comment on the license and propose possible alternatives.

In California, the Don Pedro Reservoir, created along the Lower Tuolumne River that supplies the Modesto Irrigation District, will need to be re-licensed by 2016. Many predict that, due to ecological considerations, the dam might be required to release additional amounts of water into the Tuolumne, thus reducing its storage capacity and the amount of water that can be delivered to MID customers.<sup>33</sup> Though this is not a foregone conclusion, many feel that to preserve its claim to as much water as possible (and discourage the government from demanding increased releases to the river), the MID needs to demonstrate a need for its entire water allocation.<sup>34</sup> By this reasoning, a water deal with San Francisco would signal that the MID has excess water, and that the MID would therefore be asked to give up more water in the FERC re-licensing of the Don Pedro Reservoir. Conversely, the re-licensing process will cost the MID at least \$30 million whether it transfers the water or not, a steep expense that proponents argue could be paid through revenue raised from the water sale.

### State government

The determination of water rights in California is crucial to understanding the institutional framework for water in the state and its subsequent impacts. Writes Wescoat, “The diffusion of water rights institutions is linked with, but by no means fully determined by, large-scale patterns of land and water development and their associated environmental and social impacts.”<sup>35</sup> Categorically, groundwater and surface water are treated differently. Groundwater is governed by common law, it is left to local governing bodies to manage,

and it requires no state water right permit to use.<sup>36</sup> Surface water is far more regulated, and a more defined infrastructure exists for managing the exchange of surface water. The laws and policies described below apply solely to surface water, beginning with water rights.

California water law requires all water claimed by rights holders be put to “beneficial use.” In the past, this involved diverting the water from its watercourse and applying it in a manner such as irrigation or industry, but in recent years has come to include uses for the environment as well. Unlike most states, California recognizes both categories of water rights—riparian and appropriative. Riparian rights, more common to the east coast, apply to “the reasonable and beneficial use” of water on land adjacent to a watercourse.<sup>37</sup> These rights have historically been tied to location, and have had their uses constrained through recent permitting. Because they are less common in California, are poorly documented, and are not under the jurisdiction of the water agency controlling transfers, riparian rights are typically not exchanged.<sup>38</sup>

More relevant to water transfers are appropriative rights. These are governed by the “first in time, first in right” rule that provides seniority to those who claimed the rights first.<sup>39</sup> In California, the 1913 Water Commission Act determined a specific framework for appropriating water that had been absent until that point, applying to all appropriative rights made after 1914.<sup>40</sup> Thus, appropriative rights in California are specified as either pre-1914 or post-1914, and this has important implications for water transfers. Post-1914 water rights that are involved in water exchanges fall under the jurisdiction of the State Water Resources Control Board, which must approve the exchange, while pre-1914 transfers do not.

A key component of water law common among Western states that recognize prior appropriation is the no injury rule, which forbids any change in the way water is used that would impair its use by other water rights holders (NRC 1992).<sup>41</sup> This doctrine was established through case law in California as early as 1862 and is considered more extensive than those of other Western states, particularly in regards to protection extended to the environment.<sup>42</sup> It presents the greatest potential to protect third parties from negative consequences of water transfers. Additionally, in the case of the SFPUC-MID transfer arrangement, a previously contracted party—the City of Modesto—could point to potential legal injury created by a SFPUC-MID contract. (Which it in fact did in a letter to the MID threatening a lawsuit).<sup>43</sup> Such a legal injury created tremendous disruption in the negotiations, far more than a potentially compensable injury claimed by an affected third party.

In addition, California has an area-of-origin protection law to provide priority to an area exporting water to another watershed importing the water, and reserves water for the original county to meet all future development needs.<sup>44</sup> Along with Oregon, California has developed water salvage laws to encourage those who conserve or prevent the loss of water through investments, awarding any salvaged water to the saver instead of to its original user. This occurred during a water transaction in Southern California, and may have come into play had the SFPUC-MID deal gone through, as the MID reportedly intended to use money from the sale to directly reinvest into infrastructure and reduce water loss.

Thus, over many decades a unique water tradition evolved in California, mixing riparian and appropriative rights. In it, “the water must go with the land,” as George Davidson claimed years ago.<sup>45</sup> The tradition prioritized place of use over time of use, as

where the water was put to use mattered most. Scholars such as A. Dan Tarlock point to a recent revival of this territorial connection between water and land, particularly as regions face growing demands on water from land use shifts and global climate change.<sup>46</sup> The influence of the water-land tradition was borne out in the debates surrounding the SFPUC-MID proposal, as many Modestans opposed the transfer particularly because of **where** the water would be transferred and used.

Several important court cases in California have established legal precedent for water use and its reallocation among users. Paramount among these is the *National Audubon Society v. Superior Court of Alpine County* decision. In this 1983 case, the Supreme Court stated the public trust doctrine applied in protecting the recreational uses and the ecological integrity of Mono Lake from increased diversions by Los Angeles through acquired water rights.<sup>47</sup> Earlier in 1978 an important U.S. Supreme Court Decision in the *United States v. California* case upheld “California’s authority to regulate the operation of a federal project to ensure environmental protection objectives,” signaling a shift in the interaction between state and federal agencies in managing water in the West.<sup>48</sup>

The *California Water Code* plays a key role in influencing water management decisions, particularly in regards to transfers. Broadly speaking, the two principal guidelines for water transfers as expressed in the *Water Code* are that the seller must possess rights to the water, and the water must be actually available--“wet water” as opposed to “paper water.”<sup>49</sup> Such “wet water” comes from surface storage and excess surface water—not common in water-constrained California—and the more commonly exchanged conserved surface water and groundwater.

The *Water Code* is continually undergoing revisions and amendments, at times to deliberately facilitate a market for water exchanges. The Modesto Irrigation District referenced a particular paragraph of the code to assure its customers that a transfer of water did not mean a transfer of rights: Section 1040 states that the transfer of water shall not be the basis for the loss of water rights, nor qualify as evidence of “unreasonable use” that might put the right at risk.<sup>50</sup> In fact, MID officials believed a transfer to urban users would **ensure** protection of their water rights, according to Section 106 of the *Water Code*: “Domestic use is the highest use of water in the state, seconded by irrigation” (MID March 2012).<sup>51</sup> On the other hand, opponents of the transfer conscious of an existing contract between the MID and the city of Modesto pointed to Section 1014, which stated that any water transfer should not cause the loss or reduction of any contractual right to use that water, as they feared the SFPUC deal could result in reduced water deliveries.<sup>52</sup>

The *Water Code* also allows expedited review of short-term or temporary transfers of post-1914 appropriative rights, exempting them from CEQA requirements. In addition to the *Water Code*, the *California Code of Regulations* has specific “Titles” which pertain to water use and transfers, including Title 14 (Natural Resources) and Title 23 (Waters).

The California Department of Water Resources (DWR) is one of several important statewide organizations involved with water management. The DWR has long been involved in water projects, most famously through its construction and management of the massive infrastructure running through the state known as the State Water Project. For water transfers that intend to use this infrastructure, the DWR must review the application.<sup>53</sup> Fortunately for the SFPUC, the proposed water transfer with the MID would not use state or federal infrastructure but its own existing pipe network.

Overseeing water transfer applications specifically is the State Water Resources Control Board (SWRCB), which administers water rights, laws, and regulations. Typically, transfers involving post-1914 appropriative rights water require SWRCB approval, in which a public hearing is hosted and concerns are expressed.<sup>54</sup> The SWRCB can determine whether or not a proposed transfer might unreasonably affect a local economy or negatively impact instream uses.<sup>55</sup> Other organizations involved in water transfers are the California Department of Fish and Game and the relevant Regional Water Quality Control Board, which receive maps and preliminary information from an applicant petitioning for a transfer in addition to holding meetings to discuss potential environmental impacts.

Just as the federal government enacted important legislation to protect the environment in the 1970s, California implemented statewide regulation as well. The California Endangered Species Act and California Environmental Quality Act (CEQA) paralleled similar federal acts. CEQA is particularly important because all long-term water transfers are subject to its requirements, which can include the creation of a full environmental impact report (EIR).<sup>56</sup> The SFPUC had to complete an EIR when it initially conceived of a possible 2,240 af (or 2 mgd) water transfer, and it will need to complete a separate EIR should it ever decide to go forward with a 25,000 af transfer. In addition, regulation helped to not only shape water transfers but to stimulate them. Beginning in the 1980s, California departments such as the DWR joined federal agencies in making direct purchases of water to support environmental programs, which helped spur the growth of the California water market.<sup>57</sup>

California began promoting water transfers directly through policy. In response to a severe drought at the end of the 1970s, governor Jerry Brown convened a blue ribbon

panel known as the 1978 Governor's Commission to Review California's Water Rights Law. It recommended amendments to the *Water Code* to promote water transfers, including ease of access to infrastructure and the protection of water rights for those engaging in transfers.<sup>58</sup> Through the 1992 Central Valley Project Improvement Act, prompted by dwindling native fish populations in the Sacramento-San Joaquin Delta, a mechanism was established to allow the Central Valley Project to purchase additional water for environmental purposes, on top of mandates that more than 1 million acre-feet of water be returned to help restore the environment.<sup>59</sup> Thus, not only did transfers increase as the state government began to directly purchase water for the environment, its mandated cutbacks on farmers dependent on Central Valley Project water led them to pursue water transfers themselves as a means of making up for the diminished deliveries. Two years later the Monterey Agreement was brokered, making it easier for contractors to transfer water among themselves within the State Water Project. In 2000, California collaborated with the federal government to launch a program of water purchases for the fragile Delta ecosystems called the Environmental Water Account that preserved agricultural and urban water supplies.<sup>60</sup>

A more indirect policy that has increased the pressure for municipal water transfers, including the proposed SFPUC-MID transfer, are the 2001 Senate Bills 610 and 221. Nicknamed the "show me" water bills, they require local governments to demonstrate available water supplies before allowing additional development.<sup>61</sup> Certain Bay Area municipalities at the limit of their water allocation are desperately seeking additional water supply to allow for more growth and have explored water transfers as an option, as



in the case of Brisbane. This helped create an impetus for the SFPUC-MID transfer negotiations.

### County and municipal government

At a local level, counties have limited power to influence water transfers. The most common policies are developed in regards to groundwater, due to the lack of state-level regulation. They are known as groundwater protection ordinances, put in place to counteract water transfers that lead to the unsustainable mining of groundwater in place of surface water.<sup>62</sup> Though intended initially to restrict transfers that create groundwater pumping, some ordinances have been framed to essentially block any type of water transfer. Stanislaus County, where the Modesto Irrigation District is situated, does not currently have such an ordinance, though it is currently considering through a committee a proposal that would ban both groundwater and surface water exports.

Cities are even less likely to develop specific policies or rules regarding water transfers. However, as the SFPUC-MID case demonstrates, cities as institutions play an important role in transfers. The city of Modesto had a profound influence on the transfer negotiations due to potential legal complications with a preexisting contract it had signed with the Modesto Irrigation District for treated water. In fact, in order to amend the 2005 Amended Restated Treatment and Delivery Agreement (ARTDA) between the MID and city of Modesto (and thereby bypass legal conflicts), the changes would have needed approval from the Modesto City Council—representing another layer of institutional complexity (Marsh interview 2012).<sup>63</sup> In San Francisco, other city agencies attempted to discourage the San Francisco Public Utilities Commission from pursuing additional water from the

Tuolumne River (as the proposed transfer would have done), including the Board of Supervisors and the Planning Commission.<sup>64</sup> These discouraging words did not carry any legal threat and could not prevent the SFPUC from eventually moving ahead with attempts at a 2 mgd transfer involving Tuolumne River water.

### Special water districts

Though a variety of agencies, regulations, and policies exist at the federal, state, and county level, water in California is not managed along these boundaries. Instead over 600 water districts that cross county and even city lines deliver water to urban and rural users, residents and businesses alike. These are what are known as special districts in California, governing bodies separate from counties or municipalities that deliver a specific service to a local area. Services range from police protection to waste disposal, but the most common special districts in California are water utility districts.<sup>65</sup> In fact, the Modesto Irrigation District (MID) and the neighboring Turlock Irrigation District (TID) were the very first special districts in California, founded in 1887 to guarantee reliable water delivery to farmers in the area at all times of the year.<sup>66</sup>

## The stakeholders in the negotiation

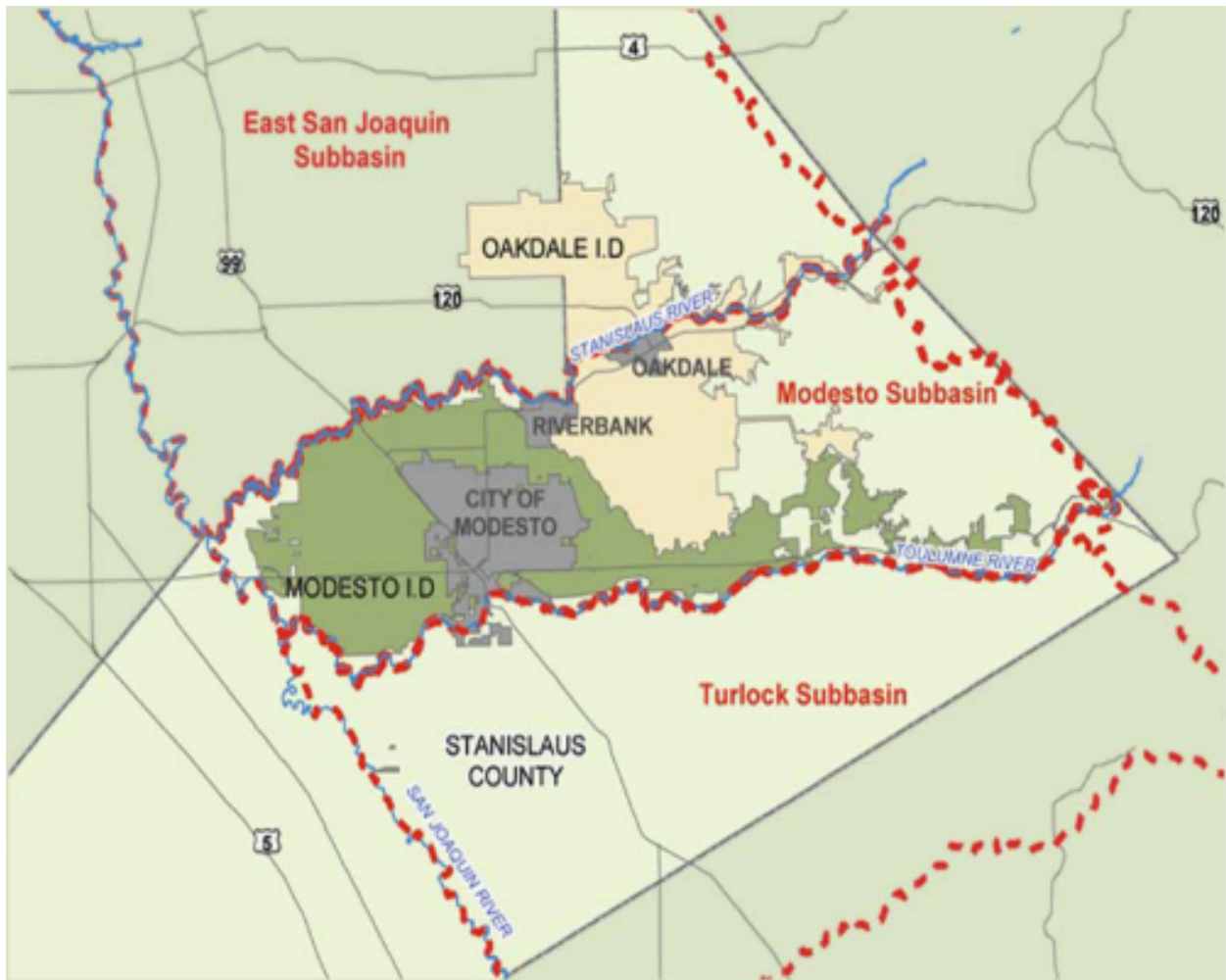
STAKEHOLDERS	INTERESTS	INSTITUTIONAL BASIS
<b>San Francisco Public Utilities Commission</b>	SFPUC sought to acquire 2,240 af for immediate protection against droughts, and to open the pathway for future discussions for an additional 25,000 af	Raker Act; Fourth Agreement; PEIR; Phased WSIP
<b>MID Management staff</b>	MID management saw the transfer as a means to pay for needed infrastructure upgrades and other expenditures while protecting its water rights	Raker Act; Fourth Agreement; PEIR; Water Code
<b>MID Board member Larry Byrd</b>	Byrd fundamentally opposed any transfer of water outside the region. He named numerous issues with the particular proposal with SFPUC, and actively sought to defeat it as soon as he was elected to the board	
<b>MID Board member Nick Blom</b>	Blom was not initially opposed to the transfer, but had concerns about the length and nature of the contract. He eventually switched to opposing the transfer, largely because of SFPUC's refusal to negotiate on first right of refusal	
<b>Modesto Residents in favor</b>	Modestans supporting the transfer did not feel that the relatively small initial amount threatened their water supply, and they did not want to see water rates go up or bonds floated to fund needed infrastructure upgrades	
<b>Modesto Residents against</b>	Many Modestans vocalized their opposition for a variety of reasons, which included a fear of losing water rights, a lack of trust in MID, and concerns about having to make cutbacks in dry years, all of which galvanized them to attend MID public hearings and pen letters to the <i>Bee</i>	
<b>City of Modesto leaders (Mayor &amp; City Council)</b>	The City of Modesto formulated a possible legal case against the proposal because it could violate specific language in a 2005 contract with MID and might jeopardize the ability of MID to deliver water to Modesto in dry years	Lawsuit based on 2005 ARTDA, violation of Section 1014 of Water Code
<b>Bay Area Water Supply &amp; Conservation Agency</b>	BAWSCA was interested in seeing the transfer go through because they depended on the SFPUC for much of their water and did not want to have to face severe cutbacks in dry years	Contract with SFPUC
<b>Modesto-area farmers</b>	Farmers mostly opposed the transfer because they feared sending the message to state regulators that there was "excess" water in the district, and because of the legacy of using water locally for agriculture. They felt if any water could be transferred, it should go to neighboring farmers within the region	FERC re-licensing process; local environmental restoration programs

<b>Stanislaus County Farm Bureau</b>	The Bureau did not take an initial position, but eventually came out officially opposed. It had concerns about groundwater pumping to offset water cutbacks, FERC re-licensing that could require additional diversions, and issues with fulfilling dry year deliveries to all MID customers	Specific water transfer policy; FERC re-licensing process
<b>StopMIDinsanity.com</b>	As its name suggests, this Public Action Committee was founded to block the water transfer in large part because of its mistrust of MID management. It felt the estimates for infrastructure improvements were overblown while MID projections for the amount of available water to transfer were miscalculated	Special election recall; referendum based on provision in Water Code Section 20204
<b>Stanislaus Taxpayers Association</b>	This group had a fundamental belief in the importance of water in the local economy and culture that the water transfer would threaten. It also had concerns with MID's management approach and doubted its economic models for the transfer	Lawsuit based on city's obligation to provide water to its citizens
<b>Tuolumne River Trust</b>	This environmental organization already felt the ecology of the Tuolumne River was endangered, and it opposed any actions which would take additional water out of the river. It also believed the deal would make poor economic sense for the City of San Francisco, and that options such as conservation and efficiency would be better for the environment and be more cost-effective	Outstanding SFPUC obligations for environmental studies; Analysis of impact on 36-mile stretch of Tuolumne; FERC re-licensing
<b>Modesto Bee newspaper</b>	Originally the Bee favored proceeding with the initial 2,240 af transfer, but when the City of Modesto threatened legal action against MID, its main priority became seeing the two public entities refrain from any lawsuits. It advised MID to form an advisory committee (which it did) to consider its options.	

*Figure 4: A Table breaking down the various stakeholders in the SFPUC-MID deal*

The negotiating agencies

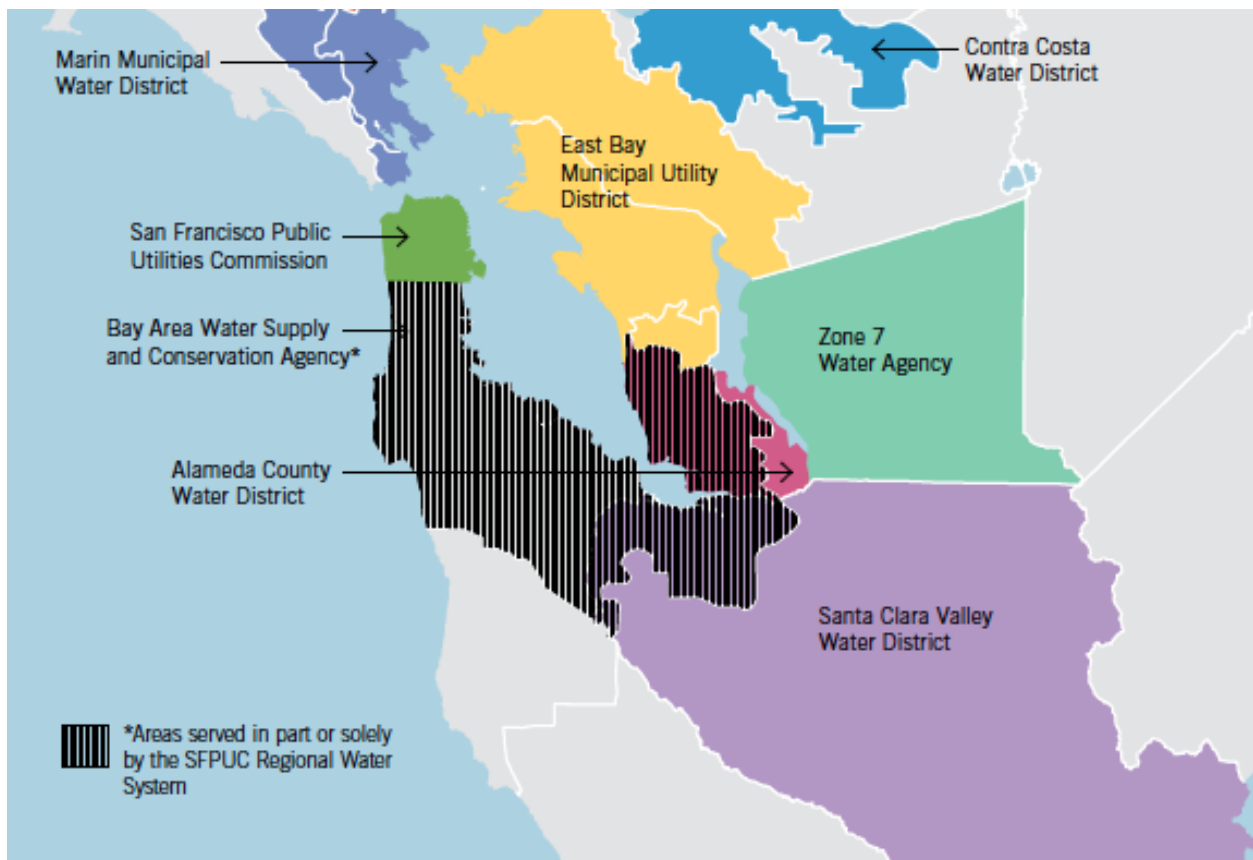
**The Modesto Irrigation District** serves agricultural land surrounding the city of Modesto, as well as urban customers in Modesto. The district lies between the Tuolumne and Stanislaus Rivers, 100 miles east of San Francisco (Figure 5). The MID has a management team and staff that pursue infrastructure improvements and financing, and



*Figure 5: The boundaries of the Modesto Irrigation District, shown in dark green (Source: OID)*

major projects like a water transfer must be approved by a majority of the five-person board. Board members represent distinct geographic divisions of the irrigation district, and they are elected by registered voters in their area to serve four-year terms; this would prove important during the negotiation process. The objectives of MID management and the board are not always in unison, as the water transfer deal was to make apparent.

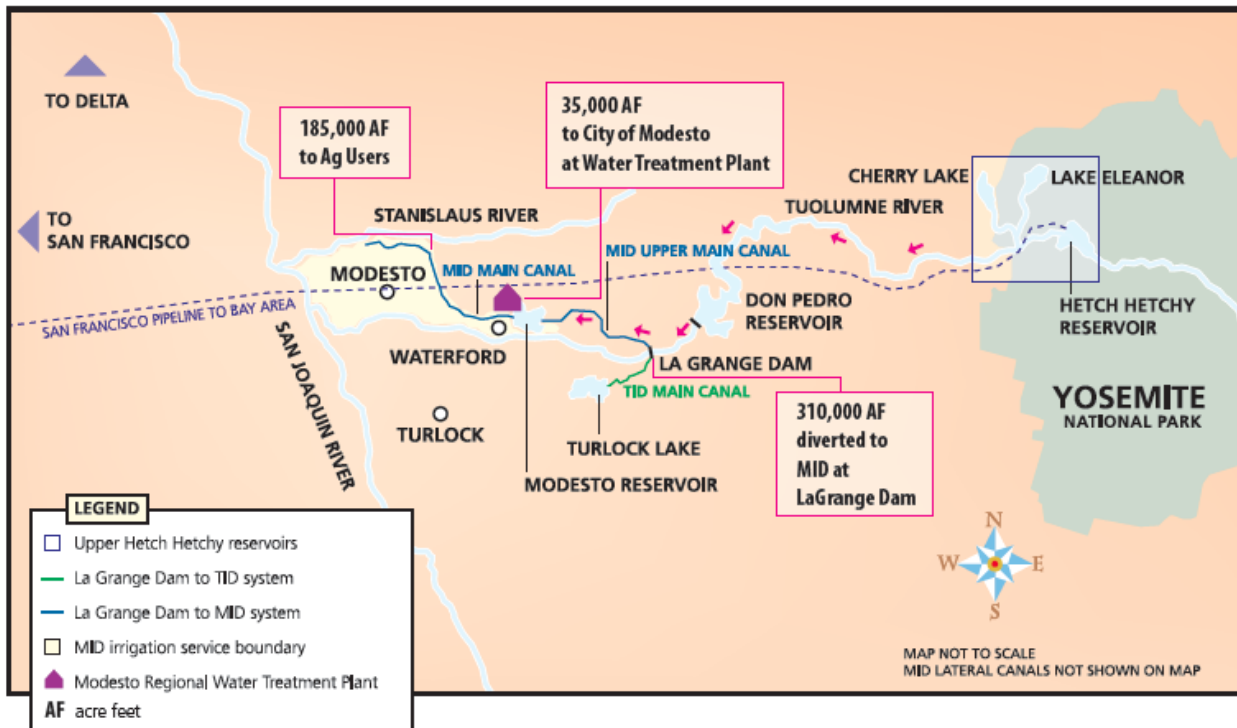
**The San Francisco Public Utilities Commission** sat on the other side of the negotiating table with a much different history and constituency. Staff from the SFPUC represented and brokered the deal on behalf of the City and County of San Francisco. The SFPUC provides water to customers within San Francisco (whose city and county lines are the same), and then sells additional wholesale water to retailers throughout the Bay Area, most notably to the Bay Area Water Supply and Conservation Agency (Figure 6). The



*Figure 6: Major Bay Area water agencies, also showing SFPUC's retail customer base (Source: SPUR)*

Commission was created when the city of San Francisco purchased the privately owned Spring Valley Water Company, which controlled much of the regional watershed, in 1930.<sup>67</sup> Like the MID, the SFPUC has an approving body (the “Commission”) of five members, which would need to vote on a water transfer agreement once finalized. Unlike the MID, these five

members are selected by city government—approved by the SF Board of Supervisors after being nominated by the mayor—and are thus insulated from public elections.



**Figure 7: Water infrastructure surrounding the MID, including Hetch Hetchy (Source: MID)**

San Francisco and the Modesto Irrigation District, along with the Turlock Irrigation District, possess pre-1914 water rights to the Tuolumne River. As earlier noted, San Francisco gained access to Tuolumne River water by constructing a dam in Hetch Hetchy Valley and engineering an advanced pipe network that delivered this snowmelt directly to the city through the passage of the 1913 Raker Act. Within the language of the Raker Act lay specifications limiting the eventual acreage that both the MID and TID could serve to 300,000 acres—a limit currently maxed out.<sup>68</sup> Further down the Tuolumne River, the 1919 Don Pedro Project created the Don Pedro Reservoir, under whose terms the Modesto Irrigation District split the yield of the reservoir with the Turlock Irrigation District, guaranteeing it deliveries of 300,000 acre-feet a year.<sup>69</sup> Figure 7 reveals this infrastructure

as well as the piping San Francisco uses to access Tuolumne River water. Due to the fact that the Hetch Hetchy Reservoir lies many miles upstream from the Don Pedro Reservoir, over the years the three parties sharing the Tuolumne River have brokered agreements to guarantee consistent deliveries. In 1966, the three parties created the important *Fourth Agreement Between the City and County of San Francisco and the Turlock Irrigation District and Modesto Irrigation District* in order to create a water bank account.<sup>70</sup> Noted MID's General Counsel Tim O'Laughlin, the account allows the SFPUC "to meet the senior water rights entitlements of TID and MID, while maximizing the use of water from the upstream Hetch Hetchy Project to meet the water needs of San Francisco's customers. Basically, San Francisco deposits water into the water bank account whenever the inflow to Don Pedro Reservoir exceeds the TID and MID entitlements; conversely, San Francisco debits from the water bank account whenever it diverts or stores Tuolumne River water that would otherwise be within the entitlements of TID and MID."<sup>71</sup>

### Secondary actors

Key stakeholders who were directly linked to the negotiating agencies had interests in this deal as well. An important customer of the Modesto Irrigation District is the **city of Modesto**, which receives treated Tuolumne River water. In 2005, the two reached an agreement that promised the city 30 mgd of water, an amount that would double with the expansion of the treatment plant. Significantly, Section 17.1 of the 2005 Amended Restated Treatment and Delivery Agreement states that MID's obligation of providing treated water to the city "shall be met before any subsequent water transfers for delivery of water outside of (the) district's boundaries."<sup>72</sup> Whether or not a transfer agreement with San



Francisco would violate MID's commitments to Modesto through this contract would become a bone of contention throughout the negotiation process. It would be up to the city's mayor and councilmembers to decide how to handle a potential lawsuit and what might be the new terms for an amended agreement with the MID.

The SFPUC had an obligation to serve an important constituency through contractual obligation as well. **The Bay Area Water Supply and Conservation Agency** (BAWSCA) is a conglomeration of 24 cities and water districts plus two private utilities south of San Francisco (see Figure 6). Its customer base spans three counties and includes businesses, organizations, and 1.7 million people.<sup>73</sup> The multi-county agency recently completed a Water Supply Agreement with San Francisco, which specified long-term levels of service and water reliability BAWSCA could expect in its purchases from the city. According to multiple interviews, it became clear that the SFPUC felt it needed to pursue additional supplies of water in part to satisfy obligations the agency had to BAWSCA, particularly in drought years.<sup>74,75</sup> There were even indications that BAWSCA was calling on the SFPUC to acquire enough water so that even under extended drought conditions, in which 20% rationing would be take effect in San Francisco, BAWSCA agencies would only have to cut back 10%.<sup>76</sup> How much influence BAWSCA exerted on the SFPUC in pursuing this water transfer varies according to the source, but they clearly represented an interested party—particularly in encouraging the SFPUC to initially pursue a transfer.

### Third parties

In addition to the primary and secondary stakeholders involved in the water deal, several key third parties anticipated impacts from this transfer. **Residents of Modesto**

voiced their opinions about the transfer from the moment of its announcement. No one can say whether they represented the majority, but those residents opposed to the transfer were undeniably more vocal, filling public meetings and penning letters to the local paper.<sup>77</sup> Their animated opposition persisted before, during, and after the city threatened the MID with a lawsuit, and many were angry when legal action was never taken.<sup>78</sup> Those opposed feared a transfer to San Francisco would jeopardize local water rights or unfairly force Modestans to cut back water consumption even further in dry years.

The customer base of the MID is traditionally **Modesto-area farmers**. Some farmers individually expressed issues they had, such as the complications of selling “excess” water with looming FERC re-licensing or a desire to see water transferred instead to neighboring farmers.<sup>79</sup> Many of the 3000 farmers served by the MID are represented by the Stanislaus County Farm Bureau.<sup>80</sup> Importantly, in 2008 the Farm Bureau adopted an explicit policy in regards to water transfers. It specified that if certain criteria were met, the Farm Bureau could support water transfers on a case-by-case basis (which it did in some circumstances). The policy required that no transfer should impair or lead to the depletion of groundwater, that a contract should ensure protections for any takings to increase instream flows over the life of the contract, and that the transfer must protect in-district agricultural water deliveries during dry years.<sup>81</sup> It would fall to the leadership of the Farm Bureau to determine whether the SFPUC-MID contract met the criteria of its policy, and whether to throw its support in favor or in opposition to the transfer. However, long before the Farm Bureau publicized its opinion of the proposal, numerous farmers in and around Modesto had made their positions on the water transfer clear.

The environment, as represented by various organizations, also presented a so-called “third party” that could be adversely impacted by the water transfer. Thus, groups such as the **Tuolumne River Trust** became engaged in the water transfer controversy as well. The Tuolumne River Trust (TRT), whose mission entails protecting and restoring the river through stewardship efforts, was wary of any activity that could threaten the environmental health of the river, which was already experiencing dwindling salmon counts and impaired water quality.<sup>82</sup> The group had a history of engagement with the SFPUC, which derives much of its water from the Tuolumne. In 2006, the TRT threatened legal action against the SFPUC for its neglect in completing a required study to accompany increased diversions of the Tuolumne back in the 1980s for hydropower purposes, and to avoid litigation the SFPUC promised to meet this obligation in 2009.<sup>83</sup> The TRT also became engaged when the SFPUC began long-term planning for its water system in the 2000s and considered increasing diversions from the river to enhance supply.

San Francisco had been investigating means to expand its water supply since at least the year 2000. At that time the San Francisco Public Utilities Commission released its Water Supply Master Plan, which spelled out long-range plans for the water system.<sup>84</sup> In 2008, the SFPUC considered a Water System Improvement Program (WSIP), outlining future steps to improve and secure the delivery of water to SFPUC customers in the decades ahead. Though per capita use in the Bay Area had declined, the SFPUC calculated it would need roughly 25 million gallons a day to meet future growth and to account for water lost to regulatory agencies requiring increased flow for the environment.<sup>85</sup> The Tuolumne River Trust formed the Bay Area Water Stewards with other environmental groups to fight these recommendations to pursue a large expansion of new water supplies.

They successfully convinced the SFPUC to table long term planning till 2018, and the SFPUC adopted a "Phased WSIP" instead.<sup>86</sup> Rather than expanding water supply by diverting an additional 25 mgd, this version called for increased diversions of only 2 mgd "in order to meet the delivery and drought reliability elements through 2018."<sup>87</sup> The SFPUC completed the required Environmental Impact Report for this 2 mgd transfer in October of 2008. Thus, the stage was set for San Francisco to pursue for the very first time a long-term water transfer—albeit at a relatively small volume by transfer standards.

### **Summary**

Understanding the institutional framework explains in large part the approach to this water transfer. Existing infrastructure, existing agreements, and existing relationships would simplify the transaction from a regulatory perspective, as did the nature of the pre-1914 water rights. An approved EIR for the 2 mgd transfer had been included in a previously completed SFPUC master water plan, obviating the need for additional state or federal approval. Therefore, the SFPUC and MID framed their proposal based on sections of the *Water Code* and policies from the state designed specifically to encourage more water transactions and to address any fears of losing water rights. They acted with prompting by one contracted partner—BAWSCA—and facing pressure from another—the city of Modesto. California law and court precedents had established significant protections for the environment and other third parties, and the SFPUC and MID felt the proposed transfer satisfied all needed requirements. Of course, this didn't guarantee all third parties or those fearing the transfer's repercussions would embrace the proposal. They too would turn to

water institutions, ranging from the no injury rule to portions of the state *Water Code*, leveraging them as grounds for challenging the water deal.

## CHAPTER 3: THE TRANSFER CASE

A complex institutional framework had evolved over decades to create the backdrop for a possible water transfer between the San Francisco Public Utilities Commission and the Modesto Irrigation District. The negotiations involved two very different agencies, and drew the attention of a variety of interest groups and individuals. The proposal was born in San Francisco, whose public utility commission sought to enhance its water supply, and died with the board of the Modesto Irrigation District, which voted to end the negotiation process. The following chapter will navigate the reader chronologically through the key events in the process, beginning with the conception of the idea and concluding with the termination of talks between the agencies. This will set up the exploration and analysis of the key factors in the deal's collapse in the ensuing chapter.

### Origins of the deal

The San Francisco Public Utilities Commission approached the Modesto Irrigation District as the source for the water transfer for a number of reasons. From a technical standpoint, it was the simplest arrangement. The SFPUC and the MID (along with the Turlock Irrigation District) share the Tuolumne River through historic water rights. No new aqueducts or conveyance facilities would need to be constructed to divert water from one party to the other, nor would state or federal water project infrastructure need to be involved. Thus the physical infrastructure was in place, as was an institutional framework: the *Fourth Agreement* between the agencies spelled out how these parties shared and could potentially exchange water on this watercourse.<sup>88</sup> Because the water involved was

assessed as pre-1914 appropriative rights water, the State Water Resources Control Board would not need to provide approval.<sup>89</sup> In addition, the two parties already had a working relationship, having collaborated on energy projects and restoration efforts.<sup>90</sup>

The SFPUC also perceived the MID as a receptive trading partner because of what was happening in Modesto at the time. Rather than calculating future shortfalls in water supply, the MID projected a need for additional revenue. MID management determined its water delivery system required a variety of projects to maintain and improve service, which, when totaled together, would cost over \$100 million.<sup>91</sup> In addition to these infrastructure improvements, the MID would be required to pay millions more in the re-licensing process for the Don Pedro Reservoir. MID management saw this water deal as a means of generating the necessary capital for these expenditures, thereby protecting its customers from rate increases and avoiding money borrowing.<sup>92</sup>

For both parties, timing also played a factor. The MID sought to begin its infrastructure upgrades right away, and preferred to fund this through the sale of water rather than other financing options. In addition, with the FERC re-licensing process beginning in the next few years, the MID worried that it might be forced to give up some of its water for environmental purposes—without any compensation. It felt that by selling water to an urban user—the highest beneficial use possible—it was in fact securing these water rights and making them less likely to be forfeited.<sup>93</sup> On the other side, the SFPUC wanted to start the negotiations in part because they knew how long such a process could take.<sup>94</sup> Even more important, they saw a window of opportunity for making this deal that might not remain open forever. The staff of the SFPUC had a good working relationship with the MID management, whom they felt they would be receptive to executing the water

deal.<sup>95</sup> The 5-person board of the MID (which would ultimately have to approve the measure), also appeared to view a water transfer favorably, although the complexion of the board could change with upcoming elections.

Thus, the stage was therefore set for the two parties to take what had informally been an idea in years past to an actual agreement that could be drafted, approved, and put into effect within a matter of months. By late 2011, rumors of a possible arrangement between the City and County of San Francisco and the Modesto Irrigation District were confirmed by a public announcement from the MID.



## TIMELINE OF EVENTS (Figure 8)

▶ SEPTEMBER 2011	<ul style="list-style-type: none"><li>•MID announces through local paper that talks have begun for a water transfer with San Francisco</li></ul>
▶ OCTOBER 2011	<ul style="list-style-type: none"><li>•4 separate public meetings are held by MID regarding proposed transfer, in which opposition begins to be vocalized</li></ul>
▶ NOVEMBER 2011	<ul style="list-style-type: none"><li>•Campaigning against water transfers, Larry Byrd defeats John Duarte in election for MID board seat, and Nick Blom wins other seat</li></ul>
▶ JANUARY 2012	<ul style="list-style-type: none"><li>•MID board votes to continue negotiations with SFPUC on transfer 4-1, with only Larry Byrd voting to stop talks</li></ul>
▶ MARCH 2012	<ul style="list-style-type: none"><li>•TRT sends a letter to SFPUC expressing concern over transfer's impact on river, forcing SF to conduct an investigation and delaying release of drafted contract</li></ul>
▶ APRIL 2012	<ul style="list-style-type: none"><li>•Draft of contract for proposed transfer is released</li></ul>
▶ MAY 2012	<ul style="list-style-type: none"><li>•City of Modesto sends MID letter expressing concern with transfer, indicating possibility of legal action due to potential conflict with prior contract</li><li>•MID board postpones vote on contract and instead holds public hearing</li></ul>
▶ JUNE 2012	<ul style="list-style-type: none"><li>•Vote by MID board again postponed</li><li>•Revised draft of contract is released and vote by MID board again pushed back</li></ul>
▶ JULY 2012	<ul style="list-style-type: none"><li>•MID staff meet with City of Modesto officials in attempt to resolve conflicts, though no formal agreement is reached between two sides</li><li>•MID board delays vote for fourth time and puts talks with SFPUC on hold</li></ul>
▶ AUGUST 2012	<ul style="list-style-type: none"><li>•MID reopens discussions with SFPUC, sending them potential revisions to current draft</li></ul>
▶ SEPTEMBER 2012	<ul style="list-style-type: none"><li>•SFPUC responds that certain changes would not be acceptable</li><li>•MID board votes to suspend negotiations on deal with SFPUC on 09/18/12</li></ul>

## The announcement

The MID's management publically announced the start of water deal negotiations via local media in the fall of 2011. According to a leading opponent of the transfer, nurseryman John Duarte, it was only after he came forward at a board meeting of the MID in late summer of 2011 and inquired about rumors of a water deal that the MID made the news public.<sup>96</sup> In September of 2011, the MID went to the editorial staff of the local paper, and the next day the story was published in the *Modesto Bee*.<sup>97</sup> A couple weeks later the MID General Manager announced on a Sacramento TV channel's news the possibility of a deal. To answer questions and to begin to outline the possible deal to its customers, the MID held four public meetings in October 2011.<sup>98</sup> Though the responses ranged from positive to negative, it was clear from the comments that a fervent group opposed any water deal involving San Francisco.

While the MID was unveiling its tentative proposal for a water sale, the election races for two of the five MID board seats were coming to a close. This forced the water sale into the election debates, and several of the candidates came out on record as opposing a water sale to San Francisco. They included Nick Blom, who won the predominantly agricultural 5<sup>th</sup> Division, and Larry Byrd, who narrowly edged out the equally fervent opponent to the water sale, John Duarte, to win the 1<sup>st</sup> Division. The newly elected members had an immediate opportunity to exhibit their stance, as the MID board voted in January 2012 whether or not to permit the MID staff to continue negotiations on the water deal.<sup>99</sup> Only Larry Byrd voted to cease the negotiations at that moment, outnumbered 4 to 1, while Nick Blom drew the ire of some critics by voting to proceed with the negotiations.

The transition on the MID board also coincided with a shift in California’s climate. Though the entire state was experiencing normal weather patterns with adequate precipitation when the negotiation discussions began in the fall of 2011, on the final day of 2011 Northern California was determined by climate data to be “abnormally dry.”<sup>100</sup> By January 2012—during the first MID board vote on the negotiations—both San Francisco and Modesto were experiencing moderate drought conditions, and on March 13 both areas reached a peak of D2 “severe drought.”<sup>101</sup>

In San Francisco, the water deal progressed with much less fanfare. The SFPUC did not come to the papers or local media to publicize the deal, and the media in turn did not publish stories on the deal. Unlike their Modesto counterparts, San Francisco residents did not speak out either in favor or in opposition against the deal, at this point or at any other stage.<sup>102</sup> The SFPUC General Manager had expressed his backing of the transfer but took little direct part in the negotiations, unlike his MID counterpart. The negotiations were left in the hands of veteran members of the SFPUC staff that already had a working relationship with the MID. These staff members were negotiating with prior approval by the SFPUC commissioners for a 2 mgd transfer, confirmed in the completed EIR.<sup>103</sup> SFPUC staff remained in communication with the Commission, which took a much less active part in the negotiations than its counterpart, the MID board of directors.

While the MID staff continued to generate content for the media and publicize the transfer, the negotiators from the SFPUC and MID quietly hammered out the details of a draft agreement behind closed doors. They were preparing to release a full version of the contract towards the end of March 2012 when they encountered a stubborn source of resistance: the Tuolumne River Trust. The TRT sent a March 28 letter to the SFPUC that

outlined its issues with the transfer and set the table for possible legal challenges.<sup>104</sup> Their primary concern was the stretch of the Tuolumne between where San Francisco would make its additional diversions high in the Sierras and the 36 miles downstream the river had to flow with this deficit until reaching the MID. Though the 2008 WSIP had approved an EIR for an additional 2 mgd transfer, the TRT felt this was based on outdated baseline data and that the impacts on the 36-mile stretch in particular had not been adequately assessed.<sup>105</sup> Additionally, the aforementioned study from the 1980s that the SFPUC had promised to execute in 2009 had still not been completed, and the TRT felt it was irresponsible to consider additional releases while this outstanding study remained long overdue. Finally, The TRT believed the pursuit of increased supply to be unnecessary and wasteful in light of declining Bay Area water use trends.<sup>106</sup>

The TRT won a small victory as the SFPUC and MID agreed to delay the release of the draft agreement while a firm was hired to investigate potential environmental impacts of the proposed transfer.<sup>107</sup> The firm issued a 30-page report finding no threat posed to the river by the transfer.<sup>108</sup> The TRT did not move forward with legal action, but continued to speak out against the transfer at public hearings and through an internet campaign.<sup>109</sup> The SFPUC and MID meanwhile proceeded and released a draft of the transfer at the end of April 2012, with a vote on the contract scheduled for May by the MID board. If approved, diversions from the river could begin as early as July 1 of that year.

### The first draft

There were a variety of reactions to the drafted transfer agreement, which had many of the elements that had already been raised in public discussion sessions and media

releases. Over 100 people packed into the MID board room after the draft had been released for public comment, with many vocalizing strong opposition.<sup>110</sup> However, the most significant response came later from the city of Modesto, whose elected officials indicated that they had concerns about the deal and might consider legal action to prevent it.

The basis for Modesto's legal action against the MID stemmed from the 2005 contract for the delivery of treated water to the city of Modesto. The transfer draft agreement might jeopardize the ability of the MID to provide Modesto's full allotment, because San Francisco would be guaranteed its entire portion through the "first right of refusal."<sup>111</sup> This would entitle San Francisco to take its entire allotment in years of extreme drought even if the MID had to make cutbacks in its deliveries. Through the Amended Restated Treatment and Delivery Agreement (ARTDA) between the city of Modesto and the MID, agricultural customers and the city distribute any reductions equally.<sup>112</sup> Therefore, the proposed SFPUC-MID transfer appeared to specifically violate language in the 2005 ARTDA promising Modesto its water "before any subsequent water transfers."<sup>113</sup> Additionally, Modesto believed this transfer potentially violated the *California Water Code*, whose Section 1014 stated that any water transfer should not cause the loss or reduction of any contractual right to use that water.<sup>114</sup> The MID in turn replied that the 2,240 af promised in the transfer—a relatively small amount—already was available, so that even in dry years San Francisco and all MID customers could receive their respective allotments.<sup>115</sup>

Modesto was not convinced by MID's assurances, and in May of 2012 hired attorneys mailed a letter to the MID expressing the city's position and setting the grounds for potential litigation before the board voted on the sale. Modesto mayor Garrad Marsh

said he responded to issues raised by Modesto residents and the city council, and authorized the city to hire attorneys to express in the letter concerns that the water transfer might violate terms of the previous contract.<sup>116</sup> Councilman David Geer even signed an online petition opposing the transfer, and vocalized a sentiment held by many when he expressed a lack of confidence in the MID to negotiate a deal that was in the best interest of MID customers, from farmers to Modesto city residents.<sup>117</sup>

Modesto's threat of legal action forced the MID board to postpone its vote on the water sale. Instead of voting on May 22, 2012, the MID agreed to hold an informal session on the sale that day open to the public. The comments heard at the May 22 meeting were mostly from opponents of the sale, particularly from members of the agricultural community.<sup>118</sup> Still, the MID forged ahead and scheduled a new date to vote on the water transfer in late June. Until then, staff would work on amending the presently drafted contract to address concerns about priority of water in dry years and other issues.

The local paper the *Modesto Bee*, which had been closely following the news of the possible deal and even broke the story in late 2011, by May had formulated an editorial position on the transfer and began to feature more editorials and op-eds as debate heated up. The official position of the *Bee* in mid-May was that the initial 2,240 af transfer should proceed, but that the larger 25,000 af transfer should undergo rigorous review and analysis paid for by the SFPUC—as the contract specified.<sup>119</sup> Over the next several weeks, the *Bee* featured concise opinion pieces by leaders in the community expressing their arguments for or against the deal, and as months went by the *Bee* itself became more involved in editorial pieces which criticized the negotiation process and offered recommendations for ways to proceed to the MID—recommendations that were often adopted.

Also around mid-2012, opponents of the transfer began to organize. Some approaches were more moderate, such as calls for increased water rates (supported by many farmers in fact) or the creation of an advisory committee to assess MID's water system. Others took more drastic measures. In June of 2012, John Duarte, the nurseryman defeated by Larry Byrd in the MID board elections, formed a Public Action Committee with agriculturalist Reed Smith to block the water sale. They raised thousands of dollars, hoping to mount a petition drive in which a voter referendum could overrule a possible MID vote on the sale, based on a section of the *Water Code* that permits voters to petition for a repeal of an ordinance.<sup>120</sup> In addition, they hoped to fund a special election to recall those they saw as vulnerable members of the board. They even hired lawyers to consider filing a lawsuit in regards to possible third-party impacts. While raising funds for these efforts, the group worked to spread awareness of the pitfalls of a water sale via alternative media channels and rally others who might step forward in opposition to the water deal. They approached groups such as the Stanislaus County Farm Bureau and convinced them to support their position.<sup>121</sup> The Stanislaus Taxpayers Association came forward as well, threatening to sue on the grounds that the agreement would imperil an obligation the city had to provide water to its citizens.<sup>122</sup>

### The second draft

Behind the scenes, the authors of the contract struggled to accommodate competing interests as they drafted a new version of the agreement. A revised draft was expected by the end of May, but it did not arrive until late June of 2012. Key changes included a clause stating that the MID would meet its obligations to the city of Modesto, language indicating

both parties would share the cost of defending the agreement in the face of a lawsuit, and the ability for the MID to leave the deal before the 50-year term was up.<sup>123</sup> Responding to public pressure and following the recommendation of a *Modesto Bee* editorial, the MID board pushed back its vote on this revised draft to late July to allow for more review and public comment.

The public certainly commented, as did those close to the proceedings—namely MID board member Larry Byrd. Byrd had been vocal about the proposed transfer as soon as it had been announced—while running as a candidate for the board, upon being elected, and throughout the negotiation process he was consistently opposed to it. In the local Modesto newspaper, Byrd published a thorough op-ed detailing his many points of contention with the draft agreement.<sup>124</sup> The main issue was San Francisco’s entitlement to first right of refusal, restricting the MID’s ability to deliver water to the city of Modesto or to engage in other water sales within the river basin.<sup>125</sup> Other vocal opponents of the proposal penned op-eds in the *Modesto Bee*, including the president of the Stanislaus Taxpayers Association. The Stanislaus County Farm Bureau formally disclosed their position opposing the transfer in its current state through the paper, citing elements of its water transfer policy which it felt the MID violated.<sup>126</sup> Those willing to express their support of the transfer publically also wrote in to the paper, such as the chairman of the school board who feared the impact of potentially higher water rates on school budgets.<sup>127</sup>

While public debate about the possible water transaction roiled, key officials met quietly to discuss one of the most problematic elements of the deal: obligations to the city of Modesto. In spite of modifications to the contract, Mayor Garrad Marsh noted he still had issues with it, saying, “I am not satisfied with the way it is now. I don't think the language is



something I'm comfortable with."<sup>128</sup> At a July 2012 meeting prompted by the Modesto Chamber of Commerce, the MID general manager and the mayor discussed the creation of a drafted agreement between the MID and the City of Modesto to guarantee delivery of the water promised to the city from the 2005 ARTDA.<sup>129</sup> The public continued to apply pressure for more drastic action, however. Opponents of the sale urged a special meeting of the Modesto City Council to initiate legal action before the MID board could vote on the sale, while supporters lobbied the city council and asked that they permit the transaction to move ahead.<sup>130</sup>

With time running out before the scheduled July 24<sup>th</sup> vote on the water sale, criticism increasing from all sides, and talks about a possible agreement on the side with Modesto unresolved, the MID board elected for the fourth time to delay its vote on the water sale. MID staff focused on constructing a side agreement with the city of Modesto, and direct talks between the MID and SFPUC were put on hold. These were all, coincidentally, recommendations found in editorial pieces of the *Modesto Bee*,<sup>131</sup> raising the likelihood that through its editorial arm the paper may have had some influence on MID decisions.

### The state of negotiations

In August, the MID reinitiated discussions with the SFPUC. After productive sessions between MID management and city of Modesto officials, the MID sent the SFPUC a number of concerns on behalf of the MID board and the city of Modesto, which it hoped could be addressed through a revision of the contract.<sup>132</sup> Though no new agreement had been reached between the MID and city of Modesto, they hoped adjustments to the contract

would alleviate their concerns. According to the Modesto mayor in a later interview, one proposal was to have Modesto and San Francisco experience equal cutbacks in cases of extreme drought.<sup>133</sup> Larry Byrd of the MID board meanwhile sought further modifications on the first right of refusal and the MID's flexibility in leaving the contract.<sup>134</sup>

Many weeks went by while the MID awaited a response from the SFPUC. During this time, members of the MID board felt pressure mounting to terminate the deal, from within and without. John Duarte continued to apply pressure on the MID board, threatening a special election to recall certain members but also setting up lunch meetings to discuss the water transfer with board members in calmer terms.<sup>135</sup> Outsiders speculate that within the MID board, Larry Byrd cajoled and coerced the board members one by one into opposing the transfer.<sup>136</sup>

As the SFPUC staff considered the proposed revisions of the MID, it found certain elements unacceptable. Because of the high price it would pay for the water, and because it was pursuing this water as drought insurance, it was not willing to reduce its allotment of the 2 mgd during dry years.<sup>137</sup> They were also uncomfortable with a proposal that would allow the MID to terminate the agreement at any time, which could endanger its water supply.<sup>138</sup> The SFPUC finally responded in September 2012 to the MID, indicating their objections to these particular recommendations.

The MID responded swiftly and definitively. Larry Byrd held a closed session with the MID board, and forced a vote on whether or not to suspend negotiations with the SFPUC on September 18, 2012.<sup>139</sup> When the votes were tallied, the decision was a unanimous 5 to 0 in favor of suspending negotiations, effectively terminating the water transfer deal.

## **Summary**

The MID board had come a long way from its 4 to 1 vote in January, when only one member voted to cease negotiations on the deal. The resumption of talks between the parties is highly unlikely at the time of this writing. Thus, the prospects for a water deal between the MID and the SFPUC appeared to have stopped with the MID board.

Understanding the motivations for the change of the board's position is paramount to answering the research questions of this thesis and getting to the heart of why this deal fell apart.

## CHAPTER 4: THE ANALYSIS

This thesis set out to explore why the proposed water transfer between the San Francisco Public Utilities Commission (acting on behalf of the City and County of San Francisco) and the Modesto Irrigation District did not go through. It combines a hypothesis investigating the congruity of assorted parties' explanations for the deal's collapse with research questions exploring the nuances of this failure. These research questions are answered in this chapter through a synthesis of the data collected. I then posit a framework through which to understand the breakdown of the negotiation: three spheres of conflict—internal, contractual, and external—which, when unresolved and combined together, thwarted the deal.

### Interview results

Interviews were conducted with a variety of individuals involved both directly and indirectly in the negotiation process, and with those who had closely followed the deal from its inception. The subjects included at least one representative from the MID, from the SFPUC, from the city of Modesto, from the agricultural community, and from the environmental groups concerned about the Tuolumne River. The thesis benefitted by gaining access to one of the key negotiators of the drafted contract and one of the influential members of the MID board. Interviewees divulged factors they felt most pivotal to the deal's collapse through open-ended questioning, and they were encouraged to succinctly explain in their own words the reason for the termination. Though the review of the interview responses was qualitative, a tabular spreadsheet was created to code and align the varying explanations and factors provided (See Appendix C). All interviewee

responses, in addition to information gathered from published articles, meeting minutes, and recorded public statements, provided a wealth of data used to answer the questions posed at the outset of this thesis.

<b>REPORTED FACTORS IN TRANSFER'S COLLAPSE</b>	<b>NUMBER OF INTERVIEWEES REPORTING</b>
Pressure on MID board from varied opposition	7
Culture averse to exporting irrigation water to SF	7
Right of first refusal could not be negotiated	6
Concern with meeting all dry year obligations	5
Threat of legal action from city of Modesto	4
Nature of swing vote on MID board	4
Leadership issues within MID	4
Long term of contract with no opt-out for MID	3
Fear of larger water deal down the line	3
FERC re-licensing / exhibiting "excess" of water	2
Doubt about need and costs of retrofits	2
Concern about losing water rights permanently via deal	2
Lack of trust in MID	2
PAC pressure on specific board members	1

*Figure 9: Factors as reported by nine interviewees, in order of recurrence*

**Null hypothesis: Based on the accounts of various parties, the explanations for the termination of the proposed water transfer are generally in agreement**

At a fundamental level, the SFPUC-MID water deal failed simply because the MID board voted to end negotiations. No individual familiar with the case would deny this fact. However, digging deeper into the motivation for this vote and why it came about brings us to more nuanced and diverse theories from the individuals interviewed. When asked the basic question: “Why did this deal collapse?” interviewees proposed a number of factors,

some of which were entirely different from each other. Based on the interview responses and an analysis of the available data, the key factors have been organized into a table, shown in Figure 10. Some interviewees brought up factors almost entirely unique from others. In other instances, even individuals on opposite sides of the negotiating table agreed on key sticking points, such as the first right of refusal for San Francisco. Still, though there were areas of overlap, no two respondents used the same set of factors to explain the transfer’s collapse. Thus, the null hypothesis can be rejected.

<b>KEY FACTORS IN TRANSFER'S COLLAPSE</b>	
<b>INTERNAL ISSUES</b>	Adamant opposition led by single member of MID board
	Inability of board president to create unity among board members
	Growing distrust and tension between MID staff and members of board
<b>CONTRACTUAL CONFLICTS</b>	Existing contract between MID and Modesto could be breached by SF deal
	SFPUC unwilling to negotiate on first right of refusal
	Three parties could not find satisfactory arrangement for dry year situations
	Length of deal with no opt-out concerned some in MID
<b>THIRD-PARTY CONCERNS</b>	Fear of cutbacks during dry years due to transfer
	Doubt about needs and costs of retrofits
	Concern from Modestans about permanently losing water to SF
	Desire to keep water local among Modestans and boost agricultural economy
	Worries about environmental regulation

*Figure 10: Key factors as determined through analysis, grouped by sphere of conflict*

What were the different factors, and their magnitude of impact, that contributed to the termination of the SFPUC-MID water transfer?

The interviewees may not have agreed universally on the explanation for the deal's collapse, but they highlighted some of the same important factors. Several respondents brought up the leadership and character of the MID board members. Peter Drekmeier, who followed the negotiation process closely as the Bay Area Program Director for the Tuolumne River Trust, credits MID board member Larry Byrd as the primary reason the water deal did not go through.<sup>140</sup> Byrd's steadfast refusal to support the transfer from the very beginning, combined with his ability to apply internal pressure on board members sitting on the fence, were unparalleled by any advocate of the deal.<sup>141</sup> Conversely, the editor of the Modesto Bee opinion pages, Judy Sly, adamantly believed that it was a lack of leadership from the MID board's president or any other board member in favor of the deal that eventually led to its termination.<sup>142</sup> No one could counter Byrd's resolute opposition and motion to vote early on the deal when a majority of the board may have supported it. Sly, along with other respondents, also pointed to the swing vote on the board, Paul Warda, as a key figure. The aging Warda was in poor health and planned to step down at the end of his term, and interviewees believe these factors led him to choose the path that would be least controversial as he retired.<sup>143</sup>

Indeed, a desire by the board to avoid controversy was cited by nearly all interviewees as a key reason for MID's vote to suspend the process. As 2012 progressed, filled with testy public meetings and prolonged negotiations, the board members likely realized they would experience a much greater backlash should they vote in favor of the water transfer than against it. Deciding to vote against a controversial deal might seem

hardly worth mentioning as a factor, except that the counterpart in the deal—San Francisco—frequently did just the opposite. Ed Harrington, the former General Manager of the San Francisco Public Utilities Commission, noted that officials in San Francisco were used to controversy and battles, but their MID counterparts were not. He said, “the board [of MID] just had no interest in having that kind of political fight on their hands.”<sup>144</sup>

The water transfer proposal stoked controversy for a number of reasons, but one nearly all interviewees agreed upon: its potential conflict with an existing city of Modesto contract. Because the city of Modesto had reason to believe the SFPUC-MID deal could breach specific language in its 2005 contract with the MID for treated water deliveries, the city threatened legal action.<sup>145</sup> This got the attention of the MID and derailed some of the momentum of the deal as the MID postponed its vote on the contract several times in an attempt to avoid litigation.

Of course, legal action by the city of Modesto may have been more of a bargaining tactic than a realistic threat, as an actual lawsuit could cost these two agencies millions of taxpayer dollars. Indeed, Modesto asked to sit at the table directly with the SFPUC to consider different options, and when this was not possible they sent a proposal of modifications to the drafted contract.<sup>146</sup> They never filed a lawsuit. Modesto Mayor Garrad Marsh, involved in these discussions, believes the city of Modesto may have accepted a modified proposal and dropped threats of legal action against the MID if its concerns were addressed by the SFPUC.<sup>147</sup>

The SFPUC could not accept the revisions proposed by the city of Modesto, alongside other modifications recommended by the MID board. Because of the high price it was offering and because of the need for water in drought years, the SFPUC was not willing to



budge on its insistence for the first right of refusal, according to a key negotiator from the SFPUC.<sup>148</sup> When the SFPUC informed the MID that it would not negotiate on the first right of refusal, Larry Byrd called it “the game breaker.”<sup>149</sup> Above all else, he cited this demand as the pivotal reason the water transfer fell through when interviewed.<sup>150</sup> He responded in September 2012 by calling the hasty vote that ultimately scuttled the whole deal.

Beyond a potential lawsuit, the water deal stoked controversy because it aroused strong antagonism from a variety of interest groups, factions, and individuals. One respondent likened it to a revolt, and another called it turmoil.<sup>151</sup> However it was described, the pressure that the opposition put on the MID board was the most frequently cited key factor in interviews. Certain organizations were excellent at mobilizing their constituents and making their disapproval felt. John Duarte, the area farmer who lost the MID board seat to Larry Byrd and who founded a PAC to combat the water transfer, embodied organized. In an interview, he produced numerous documents and records tracing the actions of the MID and the story of the proposed water transfer. When asked to explain why the deal fell through, Duarte said simply, “We made it too hot”—referring to the pressure the PAC created on the board, the momentum behind its campaign for a special election, and the awareness it spread to other potential critics.<sup>152</sup> The Stanislaus County Farm Bureau came out publically against the drafted arrangement, composing an editorial in the local paper to highlight its main concerns, as did the Stanislaus Taxpayers Association.

Several interviewees pointed out that the potency of the opposition was not necessarily due to the number of voices opposing, but to the volume of the outcry. Ed Harrington of the SFPUC frankly stated, “I’m not sure there was a lot [of opposition]. There

was a very vocal opposition... you always hear from the same five people.”<sup>153</sup> Mayor Garrad Marsh reiterated this, calling the opposition an extremely vocal but small faction of people and citing them as “a major factor.”<sup>154</sup>

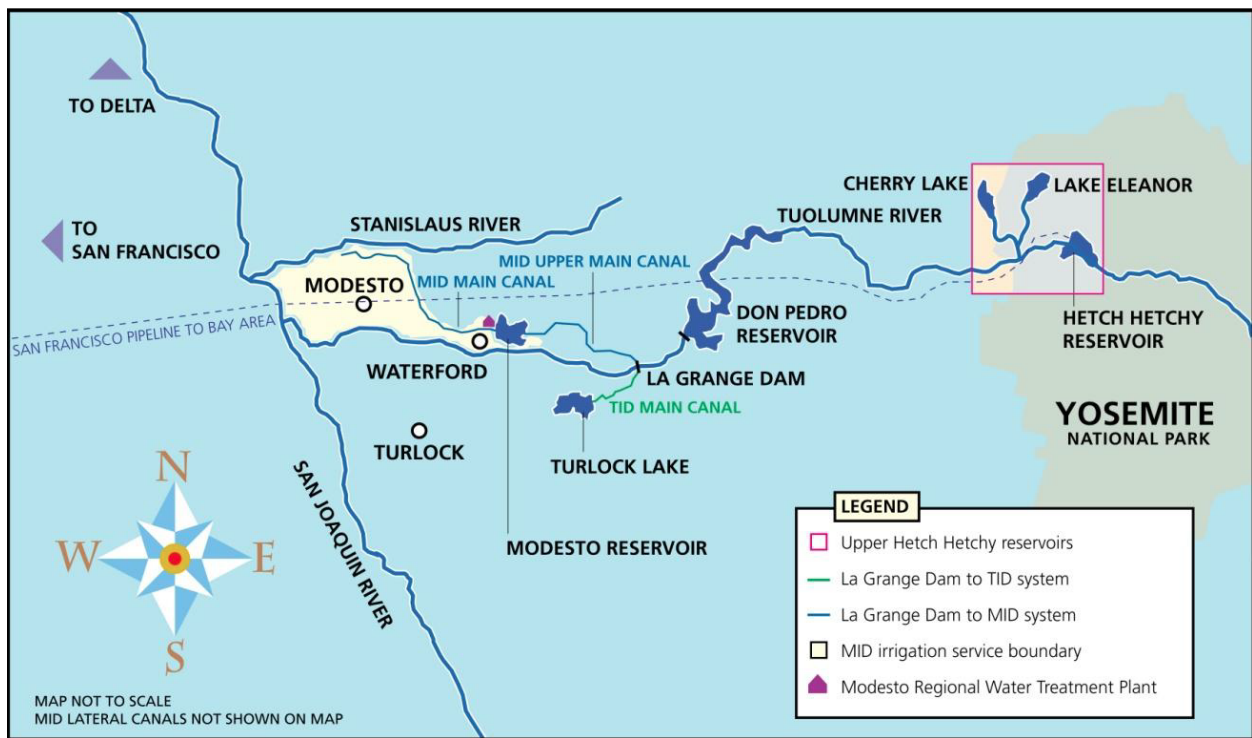
Though not as vocal, advocates of the proposed transfer did exist. These individuals came to public hearings and penned op-eds in the local paper to express their support for the deal. High profile members of the community, such as the school board president, were attacked for publically advocating the deal. However, no stakeholder organizations publically came out in favor of the deal, nor did interested individuals mobilize to lobby as a unified front for negotiations to continue.

The opposition may not have been large, but it was varied. Central Valley farmers, San Francisco Bay Area environmentalists, rural Tea Party organizations, city of Modesto residents (including city councilmembers), and an MID board member all opposed the transfer. So just what was it about this transfer that united such disparate groups? This question can be answered in part by returning to the concept of third-party impacts.

Were there concerns about third-party impacts, as are commonly experienced in water transfers, that disrupted this particular deal?

Third-party impacts are those effects, typically negative, that a water transfer inflicts upon those not directly engaged in the arrangement. These effects can generally be categorized as environmental, social, and economic. The most common impacts occur when one water rights holder sells water to another, and the seller accounts for the reduced water by either pumping additional groundwater or cutting back on a productive activity (often by fallowing fields), thereby having a ripple effect on the local economy.

Possible environmental changes from water transfers draw particular scrutiny. In this particular instance, environmental organizations led by the Tuolumne River Trust were most concerned about the stretch of river between the SFPUC point of diversion at its upstream reservoir and the point at which the MID would make the river whole again, 36 miles downstream (see Figure 11). Reduced flows for this 36-mile stretch caused an alarm



**Figure 11: SFPUC's diversion point on the Tuolumne River is upstream from the MID (Source: MID)**

because the river already suffered from diminished water quality, faltering salmon counts, and other indicators of poor ecological health.<sup>155</sup> For this reason, environmentalists were determined to fight the transfer. The TRT pressured the SFPUC into hiring a private firm to investigate the environmental impacts of the transfer on the 36-mile portion of the river. The firm determined that there would be no significant harm by the transfer, and the SFPUC proceeded. Though the TRT continued to attend public hearings, develop an

internet campaign against the transfer, and spread awareness among environmental allies, it conceded that it likely had a minimal impact on the eventual outcome of the deal.<sup>156</sup>

For Modesto area farmers, environmental issues posed a possible threat to their livelihood, which this water transfer could compound. Concerns regarding the health of rivers, endangered species, and the water system at large had prompted action by the state government. Most infamous were the cutbacks in aqueduct deliveries to Central Valley farmers in an attempt to prevent the extinction of an endangered fish species in the Sacramento-San Joaquin Delta. Stanislaus County farmers believed further actions by the government, including the proposed San Joaquin River Instream Flow Standards and the San Joaquin River Restoration Program, might force the MID to reduce the amount of water it diverts from the Tuolumne River (a tributary of the San Joaquin). On behalf of Modesto farmers, the Stanislaus County Farm Bureau therefore argued against transferring water out of the district. With regulators potentially demanding more water in the future on behalf of the environment—combined with the very real possibility of diminished river flows due to a changing climate—the Farm Bureau doubted MID’s ability to deliver its full water allotments to farmers should it sign a 50-year contract with the SFPUC.<sup>157</sup> A complex argument based on a number of hypotheticals, it nonetheless captured a concern of a possible impact on the region’s agricultural economy.

Indeed, third parties and their representatives could only speculate as to the impacts from this hypothetical transfer. Unlike many traditional water transfers, in which the water sold must be accounted for by usage changes on the part of the seller, this deal was not supposed to disrupt the deliveries the MID provided to its customer base (a claim disputed by many critics). Theoretically all MID customers could continue to use water as

they already did, whether it was farmers irrigating, Modesto businesses consuming water at work, or residents using water at home. The real debate centered around what would occur during a drought. The MID promised it would have enough water to fulfill its obligations to its customers in dry years even after the additional 2 mgd transferred to the SFPUC.<sup>158</sup> However, skeptics doubted these water estimates, with vocal opponents such as John Duarte providing estimates of their own revealing otherwise.<sup>159</sup>

What could not be denied was a line in the contract promising San Francisco first right of refusal, meaning it received its full allotment even if other MID users experienced cutbacks in exceptionally dry years. This scenario, which ranged from uncommon to highly unlikely, nonetheless animated many of MID's critics. Nonetheless, should the MID fail to deliver its contractual amount to the City of Modesto and require cutbacks to all its users—agricultural and urban alike—while still delivering all of the SFPUC's 2 mgd, there could theoretically be environmental, social, and economic impacts.<sup>11</sup> The city of Modesto proposed variations to the SFPUC's insistence on the first right of refusal, such as proportional cutbacks by all parties, but the SFPUC felt drought security was the whole crux of the agreement.<sup>160</sup> Both Larry Byrd of the MID and Steve Ritchie of the SFPUC concurred that this was a crucial sticking point in the negotiations.<sup>161162</sup>

Hypothetically speaking, if the MID reduced water deliveries to its customers--while still providing all 2 mgd to the SFPUC--in a dry year, its customers might respond in a number of ways. The city of Modesto, which has begun to replenish its aquifers after years of severely overtapping its groundwater, could again return to groundwater pumping.<sup>163</sup>

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<sup>11</sup> It should be noted that in extreme drought scenarios, there could be cutbacks across all sectors by MID, with or without the 2 mgd transferred.

Farmers with access to the aquifer could do the same, opting to increase groundwater withdrawals to make up for the deficit in surface water delivery during the dry year. The Stanislaus County Farm Bureau cited this as another reason for its opposition to proposed transfer, as the MID could not ensure against increased groundwater demand.<sup>164</sup> Though MID users would not experience any absolute water shortage, increased pumping of groundwater for an extended time can have significant environmental impacts.

Withdrawing groundwater faster than it can recharge lowers the water table, eventually beyond the reach of existing water pumps; this jeopardizes the reliability of the water and can lead to scarcity. Over time the porous aquifer layers can compact, making recharge even more difficult (and sometimes causing disastrous land subsidence), thereby having long-term implications for the local water supply.<sup>165</sup>

If water deliveries by the MID were reduced to its customers and groundwater was not pumped to account for the difference, a variety of social and economic impacts could transpire. Farmers without their regular volume of water might have to fallow fields and reduce production, having a ripple effect on the local, agriculture-based economy. City users in Modesto might be forced to undertake conservation measures that would restrict their regular water use. These cutbacks would occur while the SFPUC customers in the Bay Area would not see any reductions in their deliveries. Some residents felt they were already restricted in their usage, and questioned why they would have to reduce water usage while Bay Area residents would not, raising issues of equity.<sup>166</sup>

Bay Area environmentalists also noted an inequitable economic impact of the transfer. The SFPUC would pay for the transfer every year whether it used the water or not. The cost of this transfer would be shared by SFPUC customers in San Francisco and

wholesale customers throughout the Bay Area Water Supply and Conservation Agency, with San Franciscans paying about a third of the \$15 million over 10 years.<sup>167</sup> However, due to reduced demand, continued conservation efforts, and drought calculation formulas, San Francisco would very likely use little of the transferred water in a drought, while the BAWSCA users would consume the vast majority.<sup>168</sup> San Franciscans would therefore subsidize much of the water used by BAWSCA retail customers. This was unfair in the eyes of environmentalists because San Francisco did a superb job of using water efficiently—85.6 gallons per capita daily<sup>169</sup>—while BAWSCA users consumed far more.<sup>170</sup> The argument was that if BAWSCA users consumed water more efficiently, there would be no need to seek additional water supply through transfers (subsidized mostly by San Francisco) in the first place.

Some critics looked at the implications further down the line of selling water to San Francisco. They brought up a fear that surfaces in other third-party impact cases: the loss of water rights. “Don’t sell our water, and don’t sell our grandchildren’s water rights,” pleaded one Modesto resident.<sup>171</sup> Though the MID and SFPUC assured users that this was not a transfer of rights, and that selling water to a city qualified as a beneficial use, some skeptics feared this deal would jeopardize the MID claims to the water. They wondered if a proposed water transfer signaled to government agencies like the Department of Fish and Wildlife—often looking to improve river conditions through increased flow—that the MID had water it did not need, which would be forfeited to the state on the grounds that it was not being put to beneficial use.<sup>172</sup> This was not likely, as water expert Ellen Hanak explained, because water—but not the right—would be transferred in this proposal, and transferring water qualified as a beneficial use.<sup>173</sup>

Third-party impacts include not only activities that must be scaled back or forfeited, but future opportunities lost. Some farmers opposed the water transfer not simply because it might force reductions in surface water deliveries during dry years, but because it restricted the possibility for expanding the agricultural economy of the area. Even if the MID could no longer annex additional acreage to serve with its water due to limitations from the Raker Act, they felt it should sell the water to neighboring farmers or irrigation districts instead of to San Francisco.<sup>174</sup> That the MID deemed such transactions neither cost-effective nor presently feasible due to infrastructure constraints was of little importance.<sup>175</sup> To local farmers, keeping the water within the greater river basin and in the farm economy could help grow the regional economy and bring additional industry and jobs connected to a thriving agricultural sector (and prevent the economic decline occurring west of Modesto where water reductions were felt hardest).<sup>176</sup> Relaying a sentiment of farmers he spoke to, reporter John Holland said in an interview that people began to feel, after the recent economic downturn, agriculture should remain the core of the Modesto economy.<sup>177</sup> Thus, agriculturalists like John Duarte did not necessarily oppose water transfers in general, but wanted to see the water remain in the region.





*Figure 12: Sign welcoming visitors to downtown Modesto (Source: rocor<sup>178</sup>)*

Was this deal complicated by factors aside from third-party impacts?

Keeping the MID water within the greater region had an economic foundation, but it also touched on a more elemental reason for opposing the water transfer. Modestans and those in the area identified with water, and with farming. After all, the Modesto Irrigation District was the earliest special district in California (along with the TID), formed to provide reliable irrigation water for area farmers.<sup>179</sup> The district acquired early appropriative water rights preceding the 1913 Water Commission Act, and these were further solidified and protected with later agreements. In a modern riparian gesture,

Modestans were confirming a time-honored tradition of connecting the use of water to its location—and recoiling when the water did not “go with the land.” John Holland noted that locals felt water was something precious not to be fooled with, and that it had become a part of the culture.<sup>180</sup> After all, visitors to downtown Modesto are greeted by a sign that reads: “WATER WEALTH CONTENTMENT HEALTH” (see Figure 12), and much of the history and identity of Modesto stems from the Tuolumne River it sits next to. Ed Harrington of the SFPUC identified the feeling as: “Water is what makes us,”<sup>181</sup> and this eventually became a big hurdle in the negotiation process when many people were unwilling to support a sale of water in any fashion.

It is an important consideration, because to an observer removed from the process, the uproar over the transfer could appear quite out of proportion to the relatively small amount of water involved. The 2 million gallons per day transferred, equaling 2,240 acre-feet (af) of water per year, was roughly 1.6 percent of the MID’s deliveries, and less than 1% of the river’s annual flow.<sup>182</sup> MID board president Tom Von Groningen called it “literally a drop in the bucket.”<sup>183</sup> Realistic calculations from both sides agreed that the MID should be able to satisfy all its customers while still transferring 2 mgd to the SFPUC. Even Peter Drekmeier of the TRT admitted that the initial 2 mgd transfer was a relatively small amount to divert from the river.<sup>184</sup>

However, Drekmeier and other opponents of the proposed transfer understood the importance of nipping this deal in the bud. Because behind this small 2,240 af transfer lurked a much greater 25,000 af transfer between the two parties in the near future. Within the proposed contract for the initial 2,240 af transfer was language directing the two parties to begin consideration of a larger future transfer.<sup>185</sup> Some saw the first transfer as a

foot in the door, or as one Modesto resident put it, “the camel’s nose under the tent.”<sup>186</sup> The ramifications and potential impacts of this 25,000 af transfer were what truly frightened those close to the issue. John Duarte, Larry Byrd, and other opponents familiar with the MID water supply disputed the estimates and charts produced by the MID explaining how it could deliver both the 2,240 af initially and then the 25,000 af in the future.<sup>187</sup> With over 25,000 af promised to San Francisco, many felt economic, environmental, and social impacts on Modesto were unavoidable. From the perspective of the SFPUC, the two transfers were not one and the same, and a larger transfer would require years of environmental impact reviews and assessments—to address many of the opponents’ concerns—before it could take place. They felt the two transfers had unfairly been conflated by those opposed to selling any water to San Francisco and it became impossible to simply negotiate for the initial 2,240 af amount.<sup>188</sup>

Many of the deal’s opponents feared that the San Francisco negotiators would get the best of their Modesto counterparts in whatever water deal was brokered. This reflected a suspicion towards San Francisco, but even more so a local mistrust and lack of confidence in the MID that had developed in recent years amidst its customers. Judy Sly called this mistrust of the MID the greatest factor in the negotiations’ collapse.<sup>189</sup> When vocalizing opposition to the transfer, MID customers also decried the agency’s “tyranny” and accused it of years of mismanagement, which drove it to a debt this water transfer was being used to fill.<sup>190</sup> Citizens, along with board member Larry Byrd, also took issue with the manner in which the MID management handled the water transfer negotiations. Byrd vocalized his disgust with the MID management’s approach by likening it to a “propaganda” campaign, rather than an open dialogue with the public.<sup>191</sup>

In addition to skepticism towards the estimates of surplus water available for transfer, both John Duarte and Larry Byrd believed the cost projections for necessary infrastructure upgrades were overstated.<sup>192</sup> The Stanislaus County Farm Bureau felt similarly, wanting to explore exactly which expenditures were truly necessary and whether less expensive options might be available; they might then consider accepting higher water rates to cover such costs.<sup>193</sup>

In dealing with San Francisco, MID customers dreaded the agency would somehow lose their water permanently. These were some of the earliest water rights in California, which Modestans protected according to both a “riparian” tradition and with an awareness of the increasing demand for water security in the West. As previously noted, they feared either transferring water rights that could never be reacquired, or they feared selling water to a wealthy party that they could never compete with.<sup>194</sup> And though government agencies would likely not confiscate MID water rights simply for attempting transfer negotiations, there was still the matter of FERC re-licensing to consider. Transferring water to San Francisco might embolden regulators to request greater releases from the Don Pedro Reservoir because the MID was demonstrating it had a surplus, went the argument.<sup>195</sup> After the re-licensing process, if the MID did in fact have to increase releases for instream flows, critics argued that the MID would then want to make use of its estimated “surplus,” rather than transferring it beforehand.

So much of the opposition appeared to stem from the basic principle that MID water should remain within the district that one might question whether there were any specific issues with the technical language of the contract. Larry Byrd had several. In addition to the previously discussed first right of refusal and the MID’s inability to opt out of the contract,

Byrd objected to the length of the contract, the inability of the MID to sell water to other districts, the right of San Francisco to terminate the agreement at any time, and a clause stating that “MID will be solely responsible for all costs, compliance with all laws, agreements with third parties, liability and in all other respects to make water available for transfer under this Agreement” (Section II.C1 (ii) 2012).<sup>196</sup> These issues “stuck in my craw,” as Byrd put it.<sup>197</sup> As noted by outside observers, Byrd wielded a significant amount of influence with the board, and his obstinacy with these half-dozen points forced the MID management to continuously return to the negotiating table.<sup>198</sup>

If these issues had been dealt with, could Byrd and the rest of the board have accepted the proposal? In an interview, he said that he would have considered it, and he is certain the rest of the board would have voted in favor.<sup>199</sup> Certainly if he had relented in his opposition, other board members would have found it easier to support the transfer. When pressed about how he would have voted, had all of his conditions been met, he replied, “I can’t answer that, I don’t know,” though he was certain the SFPUC was not going to budge from certain demands.<sup>200</sup> Gauging by the fervor with which he opposed the transfer—attempting to terminate talks back in January and not relenting until he finally got the desired result in September—it is likely that Byrd would have contested the transfer in any form. The same connection to water felt by so many Modestans resonated with Byrd, who said, “That’s the most precious commodity we have. There’s no question. That’s what makes this whole county, this whole San Joaquin Valley, tick.”<sup>201</sup>

In the eyes of at least one observer, this sentiment ultimately doomed the deal between the two agencies. When asked to identify key factors that scuttled the deal, former SFPUC GM Ed Harrington suggested, “That visceral, much more emotional response: ‘Oh my

god, some one is taking our water' is a huge thing for people, and they weren't willing or able to overcome that. And I can understand that."<sup>202</sup> Though this sentiment cannot fully explain the collapse of the transfer, its importance should certainly not be discounted.

### **One explanation: Spheres of Conflict**

After combing through the explanations provided by interviewees, the chronicled events, and the data compiled, I have come to my own conclusion as to why the transfer ultimately did not succeed. When discussions began between staff of the two water agencies, there was great optimism that a deal could be completed. However, the negotiation process soon grew complex as additional stakeholders and actors became involved. The various goals, personalities, and approaches of competing interests created intense points of conflict. These conflicts occurred within three spheres: within the Modesto Irrigation District, between the MID and its contractual partners, and from external third parties combatting the MID. Had the MID been able to manage and resolve issues stemming from one or even two of these spheres, a deal may have been possible; but conflict brewing in all three spelled disaster for any agreement.

#### **Internal conflicts**

By the end of 2012, when the board voted to suspend the negotiations, it was apparent that fractures had developed between various board members and that a severe rift existed between the board and MID management. When talks began in mid-2011, MID management staff went to negotiate a water deal with San Francisco with the support of their board, but the elections of Larry Byrd and Nick Blom in November irrevocably altered the board dynamics. Byrd fulfilled promises on the campaign trail to combat the proposed

transfer, creating tension within the board by dissenting from his four colleagues in an attempt to halt negotiations in January 2012. Nick Blom, who had wavered between opposing and supporting the deal, likely felt pressure from Byrd, but also expressed specific issues with the deal and eventually sided against it. A division among the board had become apparent, and the board president was unable to lead them to consensus.<sup>203</sup> This left the MID management staff in the uncomfortable position of attempting to broker a deal which it could not be certain its own board would approve, and it had to relay requests for revisions to the contract by individual board members to the SFPUC. Larry Byrd had meanwhile grown increasingly distrustful and antagonistic towards the MID staff attempting to execute the deal, accusing them of spreading propaganda and calling them out publically in the local paper. When MID staff could not get the SFPUC to revise the drafted contract to accommodate his various demands, it provided him with the window of opportunity to terminate the talks.

### Contractual conflicts

Even if there had been complete harmony within the MID, the agency would have still have faced a significant obstacle when attempting to sell water to the SFPUC. The 2005 contract the MID had signed with the city of Modesto contained language that appeared to directly prevent the MID from transferring water outside the district's boundaries.<sup>204</sup> In spite of the low likelihood that the proposed transfer of 2 mgd would ever imperil the MID supply of treated water to the city, Modesto officials nonetheless threatened legal action. Such threats likely influenced board members on the fence, particularly Nick Blom and the aging Paul Warda, who sought to avoid controversy in the last year of his term and

provided the key swing vote.<sup>205</sup> Importantly, no lawsuit was ever filed by Modesto, and they were even willing to amend their agreement with MID to allow the transfer to go through, as long as certain conditions were met. Such conditions would have involved altering parts of the newly drafted contract the SFPUC held dear—namely the first right of refusal for the SFPUC and guarantees that there would be no reductions in delivery in drought years. Thus, the two entities the MID was dealing with—the city of Modesto and the SFPUC—could not reach accord on a key element of the transfer, which Larry Byrd leveraged to vote on terminating the negotiations.

### Third-party conflicts

As reported in interviews, opposition from interest groups outside the negotiations also disrupted the deal. One can speculate as to whether threats by the Stanislaus Taxpayers Association to sue the MID or the StopMIDinsanity.com campaign to hold a special election to block the sale had any merit. One can likewise question whether pleas from environmentalists regarding the health of the river or concerns by Modestans about permanently losing water rights to San Francisco had any sway over the MID board. The conclusion of this thesis is that these acts in isolation had little impact on the ultimate collapse of the deal. But when this amalgamation of concerns snowballed into a chorus of angry citizens, farmers, environmentalists, Tea Partiers, civic leaders and more, it became a powerful lobby that the MID could not ignore. Though likely not influential enough on its own to stymie the deal, this adamant opposition provided Larry Byrd with causes and momentum as he persistently lobbied each board member to join him in voting against the proposed SFPUC-MID transfer.



## **Summary**

Ultimately, Larry Byrd and other antagonists of the water deal succeeded in preventing an agreement from ever being finalized between the SFPUC and MID. Why the MID board voted to suspend negotiations before they arrived at this point lies at the heart of the research questions of this thesis. While individuals familiar with the episode are unable to fully agree on the factors that brought about the deal's termination, it is hoped that the analysis of this chapter has shed light on a possible theory for the failure of the negotiation. The implications of this failure will be the subject of the next chapter.

## CHAPTER 5: CONCLUSION

The MID board unanimously voted to suspend negotiations between MID management and the SFPUC on September 18, 2012. Talks have not resumed between the two parties, nor do those within or without the negotiations expect them to anytime soon, and thus a direct 2 mgd transfer between the SFPUC and MID is effectively off the table. What does this mean for the two parties going forward, and what can they—as well as others considering future water transactions—learn from this case? This thesis will conclude by pursuing these inquiries.

### Future for San Francisco

San Francisco may not be planning a 2 mgd transfer directly through the MID, but it is in fact investigating the possibility of a 2 mgd transfer with a water district adjacent to the MID. In exploratory talks with the Oakdale Irrigation District (OID), the SFPUC would purchase the same 2 mgd or 2,240 af, only in this case the deal would start with a one year contract.<sup>206</sup> Coincidentally, the deal would need to involve the Modesto Irrigation District, which sits between the OID and the Tuolumne River that the SFPUC would again divert water from. In such a scenario, the water that the OID would transfer to the MID to account for water diverted earlier upstream by the SFPUC would be tail water already leaving the system.<sup>207</sup> Thus, the MID could still wind up transferring water to the SFPUC, only it would be receiving low quality water in return.

The SFPUC remains interested in both a 2,240 af transfer and is considering a larger 25,000 af transfer down the line, but by the end of 2012 it was holding pat. With drought

conditions receding by late 2012 and a wet year upcoming, there seemed no need to rush a deal as the agency would be flush with water.<sup>208</sup> Though the OID has already gone public about its discussions with the SFPUC and the item has been included on the board agenda several times, at the moment both sides are waiting till after this year of wet weather.<sup>209</sup> By 2013, SFPUC General Manager Ed Harrington had stepped down, but the SFPUC's key water negotiators remain on staff and continue to investigate ways to secure a future water supply.

#### Future for the Modesto Irrigation District

Whether the MID takes on another water transfer in the near future is not clear, though it is unlikely that it would involve a distant recipient such as San Francisco, considering the backlash against the recent proposal. In interviews, staunch opponents of the SFPUC transfer, such as Larry Byrd and John Duarte, indicated they could be open to water transfers within their region.<sup>210</sup> The Stanislaus County Farm Bureau, while coming out against the SFPUC deal, made note of its support of transfers that met its list of criteria.<sup>211</sup>

The possibility of future water transfers will be taken up by an advisory committee set up by the MID. The creation of the committee was a strong recommendation by the *Modesto Bee* editorial staff, and the MID appears to have listened. Considered by some to be long overdue, the committee will investigate the present challenges faced by the MID and possible solutions.<sup>212</sup> Near the top of the committee's list of priorities will be deciding where to come up with the millions of dollars still required for infrastructure repairs—and which repairs are necessary to pursue—plus FERC re-licensing fees. The Stanislaus County

Farm Bureau is one of the proposed constituents of the water advisory committee, along with the city of Modesto, the Tuolumne River Trust, and the Stanislaus Taxpayers Association (among others). One suggestion the Farm Bureau has already put forward is the possibility of charging MID customers more for irrigation water to raise revenue.

The creation and involvement of this committee in MID decision-making could signal a shift in how the MID operates. In recent years, MID management has had a reputation for conducting its operations with little input from the public in major decisions.<sup>213</sup> However, this modus operandi may be changing with a turnover in personnel. General Manager Allen Short, who attempted to broker the controversial deal with the SFPUC, retired at the end of 2012. The board dynamics are shifting as well. The newest two members of the MID board—Larry Byrd and Nick Blom—are now vice-president and president of the board, respectively.<sup>214</sup> The complexion of the board will continue to change after elections in November 2013, when the three other board positions will be voted upon.

### **Lessons learned**

Whether one views the outcome of the proposed SFPUC-MID transfer as a victory for aggrieved stakeholders or a tragedy for well-intentioned negotiators, certain lessons can be learned from the episode. These are lessons that hopefully have been applied by the stakeholders involved in the negotiations as they look ahead to future water challenges, but they are applicable to others with a stake in how water is managed, in California and beyond.

### Internal management

**Pursue public input early and often.** A water agency, especially one with a dedicated constituency that values its water, should allow for public input **before** drawing up drafted versions of a deal. Modestans did not like the fact that a contract appeared to be preliminarily drafted between the SFPUC and MID before they had even been officially informed. An advisory committee, including representatives from various stakeholder groups, is an excellent way to involve a broad constituency, reduce points of conflict, and develop alternative ideas when considering a controversial water decision. Having an insular management approach, in which a public agency makes many of its important decisions in private, will quickly erode the confidence of the people it is seeking to serve. The MID learned this lesson the hard way, and the OID is attempting to avoid these mistakes by reaching out to the public early on in its possible deal with the SFPUC.

### Brokering contracts

**Focus on the details of dry year arrangements.** Unsurprisingly, how agreements handle water deliveries in dry years may determine in large part whether or not the parties can come to a consensus. Drought and decreasing water reliability are primary drivers for water deals in the first place. As the SFPUC-MID case showed, however, when dry years strike is when agreement can become difficult, and the inability to come to a mutually acceptable arrangement for the three parties was a major factor in the deal's collapse. Because of their contentiousness, it may make sense to structure contracts in distinct ways that have specific clauses for dry years. In this particular case, the SFPUC might have

explored additional options for dry years, such as paying more to have the right of first refusal in those years or pursuing unique arrangements devised in places like Colorado.

**Use all of the institutions available to you.** Though the SFPUC-MID case might contain plenty of examples of negotiation approaches to avoid, the city of Modesto exemplified protecting one's existing interests. They did so using an institutional framework. The fact that the proposed transfer with San Francisco could violate Modesto's existing ARTDA with the MID concerned officials within the city. They pinpointed not only the precise language that might breach their contract, but found a section of the *California Water Code* to support their claim. Rather than dive straight into a costly lawsuit, the city sent a letter to the MID indicating the possibility of legal action while seeking a compromise. Though the SFPUC was unwilling to renegotiate certain terms that Modesto indicated it might be receptive to, the city did not have to pursue litigation because the MID board suspended talks (likely in part because of the SFPUC's inflexibility towards Modesto's concerns). Thus, the city protected itself from legal injury without having to sue the MID.

### Third parties

**Build coalitions.** One fascinating element of this case is the fact that so many interest groups from diverse backgrounds came out to vocally oppose the transfer. Farmers, urban residents, environmentalists, Tea Partiers, businessmen and city officials all publically came out against the deal and became involved in varying degrees in opposing it. On the one hand, third-party opponents appeared to show some unity and coordination. The PAC [stopMIDinsanity.com](http://stopMIDinsanity.com) united agriculturalists concerned about the transfer and provided

information to foment opposition from other stakeholders. On the other hand, it seemed disparate interest groups such as the Tuolumne River Trust and the Stanislaus County Farm Bureau felt simply fortunate to find themselves on the same side. This would not always have been the case, and environmentalists were unsure what position farmers would take. Out of this case, Peter Drekmeier of the TRT remarked that his agency would like to start working more with the agricultural community to build bridges and identify common causes they can collaborate on.<sup>215</sup> Forging bonds now will allow separate interest groups to avert certain conflicts in the future, while remaining aware of another stakeholder's interests in a future negotiation might allow groups to form unforeseen alliances.

### **Opportunities for future research**

There is no shortage of tributaries for further study of this topic. To start, a more thorough analysis of the negotiation dynamics could be conducted using specialized tools. This would include a robust stakeholder analysis, a coalitional analysis, a two-level game analysis, and joint fact finding.<sup>216</sup> Alternatively, a study could isolate the economics of the failed SFPUC-MID water deal, to determine more specifically how purchased water—which would only be used during certain years—compared with other means of securing water, including desalination, water recycling, efficiency measures, and demand reduction. Adding a further nuance to an economic analysis would be a study of the ecosystem services provided by the Tuolumne River, specifically the 36-mile stretch the Tuolumne River Trust feared to be endangered by the proposed transfer, and how these might be factored into water deals. A particularly focused comparative study, making use of the UCSB database,

could contrast the approach towards dry year arrangements in this contract's language with that of alternatives in places like Colorado.

In addition, new courses of study can be followed due to the dynamic nature of the recently terminated deal. The pursuit of San Francisco to enhance its water supply with an additional 2,240 af transfer continues at the time of this writing, and one could potentially follow the events as they unfold between the OID and SFPUC. Independent but related to the discussions between the OID and SFPUC is an attempt by the Bay Area municipality of Brisbane to directly purchase water from the OID, which could be another topic to explore. One could also choose to closely study the decisions made by the MID moving forward, now that it has brought additional stakeholders into the fold through an advisory committee, or investigate the feasibility of more local transfers between the MID and its neighbors, as some had proposed instead of the SFPUC deal. Such an investigation should further explore one of the key factors cited by interviews that this thesis could not fully delve into—the personal and territorial connection felt by those towards water and its influence on water management decisions.

### **Final thoughts**

Though the chapter may have closed on a direct transfer between the Modesto Irrigation District and the San Francisco Public Utilities Commission, the book on water management in California continues to be written—particularly for these two agencies as they look ahead to disparate and complex challenges. Out of the ashes of the terminated agreement, many in Modesto hope a new strategy will be forged—with input from the advisory committee—that grapples with water management dilemmas by the MID, which



will feature an entirely new board and new general manager by the end of 2013. The San Francisco Public Utility Commission will not experience so dramatic an overhaul, but its staff seeks to apply lessons they learned from the MID experience in a potential new arrangement with other irrigation districts. Indeed, the terminated SFPUC-MID deal has implications for all of us with a stake in how water is managed in the future.

## APPENDIX A: Sorted California water transfers, by duration

Year	Quantity of Water Transferred		Prices	Length	Seller	Buyer
	Average Annual Acre-Feet	Committed Average Acre-Feet	Total Price	Lease Duration		
1997	8,852	175,694	\$85,333	100	Bureau of Reclamation	Gary Lodge Wildlife Management Area
1987	250	4,871		75	Plumas County Flood Control and Water Conservation	The Founders at Grizzly Ranch, LLC
1991	15,000	273,839		50	Yuba County Water Agency	H.D. Perrett, Developer
1997	165,000	2,932,722	\$1,849,000,000	45	Imperial Irrigation District	San Diego County water authority
2003	3,000	51,477		40	Woodbridge Irrigation District	City of Lodi
2001	62,600	1,025,025		35	Palo Verde Irrigation District	Metropolitan WD Of Southern CA
2001	1,200	19,649		35	Kern County Water Agency	Western Hills Water Dist.
1991	2,500	39,507		32	Sonoma County WA	Marin County WD
2006	120,000	1,844,694	\$103,320,000	30	Poseidon Resources Corporation	Rincon del Diablo Municipal Water District
2006	7,500	115,293	\$193,725,000	30	Poseidon Resources Corporation	Valley Center Municipal Water District
2007	7,500	115,293	\$193,725,000	30	Poseidon Resources Corporation	Rainbow Municipal Water District
2007	7,500	115,293	\$193,725,000	30	Poseidon Resources Corporation	Wallecitos Water District
1993	6,925	106,454		30	Bureau of Reclamation	Central Coast Water Authority
2007	5,000	76,862		30	Poseidon Resources Corporation	Olivenhain Municipal Water District
2006	4,000	120,000	\$23,760,000	30	Cawelo Water District	Alameda County Flood Control and Water Conservation
2007	2,400	36,894	\$61,992,000	30	Poseidon Resources Corporation	Sweetwater Authority
2007	2,000	30,745		30	Poseidon Resources Corporation	Santa Fe Irrigation District
2003	1,607	24,704		30	Nickel Family LLC	Newhall Land and Farming Co.
1992	1,150	17,678		30	Bureau of Reclamation	Tuolumne Regional WD
2008	40,000	40,000	\$15,000,000	27	Semitropic-Rosamond Water Bank Authority	San Diego County Water Authority
1997	20,000	281,879	\$45,000,000	25	Arvin-Edison Water Storage Dist.	Metropolitan Water Dist. Of Southern CA
2000	12,000	169,127		25	Placer County Water Agency	Northridge Irrigation District
1999	11,000	155,033	\$237,600	25	Bureau of Reclamation	(i) Sacramento County Water Agency
1999	11,000	155,033	\$204,930	25	Bureau of Reclamation	Sacramento County Water Agency
1995	6,875	96,896		25	Bureau of Reclamation	Central Coast Water Authority
1999	6,500	91,611	\$121,875	25	Bureau of Reclamation	San Juan Water Dist.
2000	6,260	88,228		25	Mercy Springs WD	(i) Pajaro Valley WD (ii) Westlands Water
1991	4,000	56,376		25	LA County Sanitation D #2	Central Basin Municipal WD
2005	2,289	32,261		25	City of Compton	Metropolitan Water District
1989	1,500	21,141		25	Chevron Corp.	ARCO
1998	716	10,091	\$1,500,000	25	Grasslands Irrigation District	Bureau of Reclamation
1999	500	7,052		25	(i) Irr. Dist. (ii) Irrigators (iii) Water contractor	(i) Irr. Dist (ii) Irrigators (iii) CA Dept. of Fish and Game
1990	11,250	140,200	\$9,000,000	20	City of Thousand Oaks	Pleasant Valley County WD
2007	2,912	36,290		20	City of San Diego	Otay Water District
1999	3,500	36,329	\$315,000	15	Byron Bethany Irrigation District	Alameda County Flood Control and Water Conservation
1993	2,500	25,949	\$437,500	15	Areias Dairy Farms	Metropolitan WD of Southern CA
1990	1,400	14,532	\$175,980	15	Shasta County WA	Clear Creek Community Services District
2008	300	3,114		15	City of Sand City	California-America Water Company, Inc.
2005	130,000	1,003,826		10	Yuba County Water Agency	California Department of Water Resources
2004	35,000	270,261		10	Semitropic Water Storage District	Castaic Lake Water Agency
1999	30,000	231,652	\$1,650,000	10	(i) Oakdale Irrigation District (ii) South San Francisco	Stockton East Water Dist.
1999	20,000	154,435	\$126,500,000	10	Imperial Irrigation District	San Diego County Water Authority
2001	20,000	154,435	\$30,000,000	10	San Bernardino Valley Municipal Water	Metropolitan Water Dist. Of Southern CA
1997	10,000	77,217	\$2,500,000	10	Western Water Co.	Santa Margarita Margarita Water Dist.
1997	10,000	77,217	\$700,000	10	(vii) San Joaquin Exchange Contractors	Bureau of Reclamation
1996	4,000	30,887	\$5,800,000	10	Elsimore Valley Municipal WD	Western Water Co.

The table above is a snapshot of some of the longer transfers in recent California history, measured by duration of lease. This is not a complete list, showing only deals with leases of 10 years or greater (46 leases total). The full table can be found at the UCSB website: [http://www.bren.ucsb.edu/news/water\\_transfers.htm](http://www.bren.ucsb.edu/news/water_transfers.htm)<sup>217</sup>

\*Note: several columns were hidden when this table was included.

## APPENDIX B: Sorted California water transfers, by size

Year	Quantity of Water Transferred		Prices	Length	Seller	Buyer
	Average Annual Acre-Feet	Committed Average Acre-Feet	Total Price	Lease Duration		
2004	200,000	4,000,000			United States Filter Corporation	Imperial Irrigation District
1997	165,000	2,932,722	\$1,849,000,000	45	Imperial Irrigation District	San Diego County water authority
2006	120,000	1,844,694	\$103,320,000	30	Poseidon Resources Corporation	Rincon del Diablo Municipal Water Dis
1998	74,715	1,494,300	\$4,856,475		Delta Land Reclamation Dist.	(iii) Kern County Water Agency
1989	73,113	1,462,260	\$1,316,034		Multiple WD's and Water Storage D's	Multiple WD's and Water Storage D's
1998	65,355	1,307,100	\$4,248,075		Delta Land Reclamation Dist.	(i) Metropolitan WD Of Southern CA
2001	62,600	1,025,025		35	Palo Verde Irrigation District	Metropolitan WD Of Southern CA
2005	130,000	1,003,826		10	Yuba County Water Agency	California Department of Water Resou
1989	45,479	909,580	\$1,104,685		Wheeler-Irrigation Districtge-Maricopa	Westlands WD
1999	41,000	820,000	\$47,150,000		Wheeler-Irrigation Districtge-Maricopa	Castaic Lake Water Agency
1998	39,683	793,660	\$2,579,395		Delta Land Reclamation Dist.	(iv) other water agencies
2007	35,453	709,060			Private Entities	Private Entities
2003	144,000	623,445	5339376	5	i)International Boundary and Water Com	City of Tijuana, Baja CA, Mexico
2004	30,873	617,460			Various Mojave Basin water users	Various Mojave Basin water users
1996	25,000	500,000	\$25,000,000		Berrenda Mesa WD	Mojave Water Agency
1997	24,664	493,280			Eastern Municipal WD	various Irrigators
1996	22,167	443,340	\$1,751,193		Eastern Municipal WD	Ag and municipal entities
1998	20,156	403,120	\$1,310,140		Delta Land Reclamation Dist.	(ii) Coachella Valley WD/ Desert Water
2008	60,000	387,793	30900000	8	Yuba County Water Agency	California Department of Water Resou
2003	125,000	340,406		3	Kern County Water Agency	Department of Water Resources
2002	16,972	339,440			Various agencies and Individuals/irrigati	Various agencies and Individuals/irriga
2005	16,000	320,000	\$48,000,000		Berrenda Mesa Water District	Coachella Valley Water District and De
2000	282,305	282,305	2174113	1	CA Dept. of Water Resources	5 SWP Contractors
1997	20,000	281,879	\$45,000,000	25	Arvin-Edison Water Storage Dist.	Metropolitan Water Dist. Of Southern C
2009	14,000	280,000	\$73,500,000		Dudley Ridge Water District	Mojave Water Agency
1991	15,000	273,839		50	Yuba County Water Agency	H.D. Perrett, Developer
2004	35,000	270,261		10	Semitropic Water Storage District	Castaic Lake Water Agency
1991	12,700	254,000			Department of Water Resources	Castaic Lake WA
2004	12,216	244,320			Western Water Company and Private er	Town of Apple Valley, Apple Valley Rai
1999	237,904	237,904	1882632	1	CA Dept. of Water Resources	5 SWP Contractors
1999	30,000	231,652	\$1,650,000	10	i)Oakdale Irrigation District ii)South San	Stockton East Water Dist.
2004	11,197	223,940			Various agencies and Individuals/irrigati	Various agencies and Individuals/irriga
1995	219,756	219,756	\$14,833,530		12 WD's and agencies	15 WD's and agencies
2005	50,000	216,474		5	San Joaquin River Exchange Contractor	Bureau of Reclamation, San Luis & De
1991	215,000	215,000	\$37,625,000		State Water Bank	Metropolitan WD of Southern CA
1992	10,000	200,000			San Joaquin Exchange Contractors	Fish and Wildlife Service
2001	10,000	200,000	\$10,000,000		BelIrrigation Districtge Water Storage D	Alameda County Flood Control and W
1995	183,027	183,027		1	Bureau of Reclamation	Central Coast Water Authority
1997	8,852	175,694	\$85,333	100	Bureau of Reclamation	Gary Lodge Wildlife Management Area
1993	93,000	172,925	11532000	2	Irrigators	Metropolitan WD of Southern CA
2000	12,000	169,127		25	Placer County Water Agency	NorthIrrigation Districtge Water Dist.
2001	160,000	160,000	11600000	1	Sacramento River Settlement Contracto	Westlands WD
1998	8,000	160,000	\$8,000,000		Berrenda Mesa WD	Western Hills WD
2007	8,000	160,000	\$32,000,000		Natomas Central Mutual Water Compan	City of Folsom
1994	159,023	159,023	10734053	1	State and Federal water contractors	State and Federal water contractors
2002	157,050	157,050	11778750	1	Yuba County Water Agency	CA Dept of Water Resources

Above is a table similar to Appendix A, only here all the California transfers have been arranged in order of size. The size is determined by the committed average of acre-feet transferred per year, a useful calculation when looking at longer-term transfers because it discounts the flow of water over time into the year the water was first transferred. Here, the table indicates that the top 46 transfers in terms of committed average acre-feet are not necessarily the longest transfers. Instead, only 10 transfers with terms of 10 years or more—transfers from the previous table—make it into this list (these are highlighted in yellow). Again, the full table can be found at the UCSB website:

[http://www.bren.ucsb.edu/news/water\\_transfers.htm](http://www.bren.ucsb.edu/news/water_transfers.htm) <sup>218</sup>

\*Note: several columns were hidden when this table was included.

## APPENDIX C: Interview responses

FACTORS IN TRANSFER'S COLLAPSE	INTERVIEWEES								
	#1	#2	#3	#4	#5	#6	#7	#8	#9
Pressure on MID board from varied opposition	X	X		X	X	X	X		X
Culture averse to exporting irrigation water to SF	X		X	X		X	X	X	X
Right of first refusal could not be negotiated		X	X	X	X		X	X	
Concern with meeting all dry year obligations		X	X	X	X		X		
Threat of legal action from city of Modesto		X		X	X		X		
Nature of swing vote on MID board	X	X			X		X		
Leadership issues within MID	X	X			X				X
Long term of contract with no opt-out for MID			X	X			X		
Fear of larger water deal down the line			X	X	X				
FERC re-licensing / exhibiting "excess" of water							X	X	
Doubt about need and costs of retrofits		X					X		
Concern about losing water rights permanently via deal			X					X	
Lack of trust in MID	X		X						
PAC pressure on specific board members		X							

COLOR KEY
YELLOW = DIRECT FACTOR ON NEGOTIATION
RED = FACTOR WHICH DROVE THE OPPOSITION

The above table of factors was compiled **based upon responses by the interviewees**. They were responses to open-ended questions, such as “What were the key factors in the termination of the water deal?” and “Can you prioritize the most important factors that led to the board’s vote?” Responses varied, and therefore this table simplifies the wording of factors such as ‘Concern with meeting all dry year obligations’ in an attempt to create a general bucket for multiple, parallel answers to fall into. To provide anonymity, the respondent’s names have been removed from this table. The color-coding was done by the author in order to differentiate between factors that galvanized the opposition and factors that had direct impacts on the negotiations (one of which was the pressure caused by the opposition itself).

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