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 10 Central Delta Water Agency, Lafayette Ranch,  
 11 Heritage Lands, Mark Bachetti Farms  
 and Rudy Mussi Investments L.P.

12  
 13 [ADDITIONAL PARTIES AND COUNSEL LISTED ON FOLLOWING PAGE]

14 **STATE OF CALIFORNIA**

15 **STATE WATER RESOURCES CONTROL BOARD**

16  
 17 Hearing in the Matter of California  
 18 Department of Water Resources and  
 19 United States Department of the Interior,  
 20 Bureau of Reclamation Request for a  
 Change in Point of Diversion for  
 21 California Water Fix

22 **REBUTTAL TESTIMONY OF DR.**  
**JEFFREY MICHAEL, PART 2**

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I, Jeffrey Michael, do hereby declare:

## I. INTRODUCTION

I am Executive Director of the Center for Business and Policy Research and Professor of Public Policy at the University of the Pacific. Economic and policy issues in the Delta have been a major focus of my research and the Center's work since I came to Pacific in 2008, both

1 because of its importance to the regional economy that is the Center's focus and its fit with my  
2 own educational and research background in agricultural and resource economics and economic  
3 development. I received my Ph.D. in Economics from North Carolina State University in 1999,  
4 and my dissertation was one of the first empirical studies of the economic effects of the  
5 Endangered Species Act. I received a National Needs Fellowship from the U.S. Department of  
6 Agriculture to support my Ph.D. studies in the economics of natural resource management. I  
7 have published articles on environmental economics and policy in journals such as the *Journal*  
8 *of Law and Economics*, *Ecological Economics*, *Environmental Science and Policy*, and *Energy*  
9 *Economics*. My Delta research experience includes being Principal Investigator of the Delta  
10 Protection Commission's Economic Sustainability Plan in 2011-12, and benefit-cost studies of  
11 the BDCP tunnels in 2012 and WaterFix in 2016 that are the only economic analysis of the  
12 project that is consistent with the assumptions in SWRCB-102 - the WaterFix Final  
13 Environmental Impact Report/Environmental Impact Statement (EIR/EIS) - and this petition.  
14 Last month, I received the Carla Bard Environmental Education Award from the Bay Institute.

15 Most of this rebuttal testimony responds to the direct testimony of Gwen Buchholz  
16 (DWR 1010) who provided the general project description and the only direct testimony by  
17 Petitioners on the topic of economics and the public interest. Ms. Buchholz's project description  
18 lacks credibility because it is not backed up by a financial feasibility analysis, and as a result, the  
19 project description is unstable. My rebuttal of Ms. Buchholz's testimony focuses on these topics:

- 20 • Statements about economic benefits and public interest are irrelevant without  
21 consideration of costs, and are not supported by the EIR/EIS.
- 22 • Project description differs substantially from the project description utilized for WaterFix  
23 financial analyses and decision-making.
- 24 • Statements about benefits to agriculture are incorrect in light of recent developments in  
25 the WaterFix financial strategy.

26 In addition, the final section of this rebuttal testimony responds to the testimony of Dr. Michael  
27 Shires (WWD-18) on the economic impact and related social benefits of Westlands Water  
28 District. Dr. Shires exaggerates the economic and social importance of agriculture in the



1 Westlands Water District, and my rebuttal points out several instances of incomplete or  
2 misleading displays of data, and misinterpretation and overstatement of results.

3  
4 **II. Ms. Buchholz's statements about WaterFix being in the economic public interest are**  
5 **unsupported.**

6 Ms. Buchholz reviews three areas of public interest in her overview testimony,  
7 concluding with the following statement:

8 "Overall, implementation of CWF H3+ will improve water supply, ecosystem  
9 conditions, and economics of the state of California." (DWR 1010, page 13, lines  
10 8-9.)

11 ~~However, Petitioners only provided subject matter expert panels on two of these three areas of~~  
12 ~~public interest: water supply and ecosystem conditions. Ms. Buchholz's testimony was just an~~  
13 ~~overview, and detailed questions and support for her conclusions were directed to other experts.~~  
14 ~~On the critical issue of economics, DWR did not provide any expert testimony. Thus, Ms.~~  
15 ~~Buchholz's testimony on economics is not an overview, it is the only evidence provided. Ms.~~  
16 ~~Buchholz is a civil engineer with no education, experience or other professional qualifications~~  
17 ~~in economics. (See DWR-32.) During cross examination (for example, see Transc., Vol. 4,~~  
18 ~~February 23, 2018, page 55, lines 6-11), Ms. Buchholz stated that she is not an economist, and~~  
19 ~~the basis for all her statements about economics in her testimony was the Socioeconomics~~  
20 ~~chapter of the EIR/EIS (SWRCB 102, chapter 16).~~

21 ~~The socioeconomic analysis in the EIR/EIS is focused on a few narrow regional~~  
22 ~~socioeconomic effects and does not address the economic public interest of the WaterFix~~  
23 ~~project, and does not support the statements Ms. Buchholz made in her testimony. In fact, the~~  
24 ~~EIR/EIS itself is clear on this issue. The EIR/EIS states,~~

25  
26 ~~"DWR's *Economic Analysis Guidebook* provides guidance regarding the~~  
27 ~~economic assessments that should be conducted from project formulation~~  
28 ~~through implementation. These include cost effectiveness, benefit cost,~~  
~~socioeconomic impacts, risk and uncertainty, and financial analyses. This~~

1 ~~chapter of the EIR/EIS reports the estimated socioeconomic impacts...The other~~  
2 ~~economic analyses outlined in the DWR guidebook were not conducted as part~~  
3 ~~of the NEPA/CEQA compliance documentation.” (SWRCB 102, chapter 16,~~  
4 ~~pages 34-35)~~

5  
6 ~~In addition, the EIR/EIS received multiple comments about costs and these other~~  
7 ~~economic and financial assessments, but they were dismissed in the response to~~  
8 ~~comments as being outside the scope of the EIR/EIS.~~

9 ~~“The issue related to the cost estimate or financial viability as raised by the~~  
10 ~~commenter addresses the merits of the project and does not raise any issues with~~  
11 ~~the environmental analysis provided in the EIR/S.” (SWRCB 102, Final EIR/EIS~~  
12 ~~—Comments and Responses to Comments, Comment Letter: 2570-2599, page~~  
13 ~~199)~~

14 ~~Thus, the EIR/EIS is clear that it does not evaluate whether the WaterFix is in the~~  
15 ~~economic public interest of the State of California, and that other economic analyses,~~  
16 ~~including benefit-cost and financial analyses, should be conducted for this purpose. Ms.~~  
17 ~~Buchholz’s testimony completely ignores the issues of cost and finance, and yet states~~  
18 ~~unsupported conclusions about economic public interest and inaccurately claims they are~~  
19 ~~substantiated by the EIR/EIS. Ms. Buchholz’s testimony on economics severely~~  
20 ~~misrepresents the EIR/EIS.~~

21 **III. The WaterFix project description in the petition differs substantially from the**  
22 **project description being used for financial decision making on the WaterFix.**

23  
24 The WaterFix would be the most costly water infrastructure project in California  
25 history, and thus the economics and finance of the project are obviously critical to the public  
26 interest. Petitioners avoided these topics in their case for this hearing, and put forward a  
27 project description that was not and is not supported by a financial feasibility analysis. Outside  
28 of this proceeding, there are extensive current developments about financing this project which



1 reveal changes and inconsistencies in the project description. There is considerable public  
2 interest in ensuring that a consistent project description is used in deliberations regarding  
3 environmental permitting, water rights, and finance.

4 As has been extensively reported in the press, the Central Valley Project (CVP) is no  
5 longer financing its anticipated 45% share of the project, and the Metropolitan Water District  
6 of Southern California (MWD) has decided it is in its best interest to fill the financial gap.  
7 With MWD now financing the vast majority of the WaterFix, MWD's project description and  
8 its expectations for project operations and water supply are of extreme public interest. In a  
9 March 27, 2018 MWD board meeting (SDWA 315, SDWA 316) in which staff presented their  
10 assessment of the benefits and costs of financing the majority of the WaterFix, the MWD staff  
11 description of the project differed substantially from the project description in Ms. Buchholz's  
12 testimony (DWR 1010). The following two differences are of greatest significance.

- 12 • MWD staff excludes key operating criteria from their project description, boosting their  
13 projected water supply benefits.
- 14 • MWD staff includes a "Master Agreement" between DWR and MWD regarding the  
15 operation of 3,000 cfs "unsubscribed capacity" that is not part of the Petitioner's project  
16 description.

### 17 *III.A. Inconsistencies in WaterFix operating criteria.*

18 Ms. Buchholz's testimony states that the WaterFix consists of three components:  
19 facilities, environmental commitments, and operating criteria. With respect to operating  
20 criteria, her testimony states that these are described in the Final EIR/EIS (SWRCB 102) and  
21 the biological opinions. (SWRCB 105, SWRCB 106). Among the most significant of these  
22 operating criteria are new Delta outflow criteria and Old and Middle River (OMR) flow criteria  
23 that are not in the No Action Alternative and are the basis for Petitioners' modeling that  
24 compares CWF H3+ to the No Action Alternative. The Final EIR/EIS and biological opinions  
25 are very clear that these new operating criteria are in response to expected changes from the  
26 proposed action, and thus only apply after the WaterFix is operational. (SWRCB 102, page 3-  
27 263, 3-271 Table 3-34, 3-271 lines 27-31) (SWRCB 106, page 12, Operational Criteria for  
28 existing Delta facilities)

1 In contrast to Petitioners' project description, MWD staff describes WaterFix  
2 components in a white paper prepared for its board as including facilities, environmental  
3 commitments, adaptive management, and real-time operations with no mention of spring  
4 outflow or OMR criteria as a project component. (SDWA 279, page 6) Instead, the MWD  
5 white paper describes the OMR criteria and spring outflow as an assumption made for  
6 environmental documents while emphasizing that actual operations will be determined by  
7 adaptive management and real-time operation. In contrast to the Final EIR/EIS and Biological  
8 Opinions that state these operating criteria only apply after the WaterFix is operational, the  
9 MWD white paper describes the OMR and spring outflow criteria as equally likely to be  
10 implemented with or without the project:

11 "it is assumed that future regulatory restrictions could include further reductions  
12 in direct diversions, as regulated using Old and Middle River flow, as well as  
13 increased outflow, as measured by outflow or X2. To approximate a future  
14 without California WaterFix, Alternative 4A without the proposed north Delta  
15 diversions was used in this report. This approach is consistent with DWR's  
16 planning activities, as evidenced by its 2015 DWR Delivery Capability Report  
17 (Capability Report), which used the same approach to estimate future regulatory  
18 constraints on SWP and CVP pumping for its Existing Conveyance High Outflow  
19 (ECHO) and Existing Conveyance Low Outflow (ECLO) scenarios." (SDWA  
20 279, page 10)

21 More recent documents and discussion confirm that MWD and DWR economic and financial  
22 analysis is based on the assumption that operating criteria for existing Delta facilities is the  
23 same with and without the WaterFix. The most recent economic analysis prepared for  
24 Petitioners in February 2018 states that it is based on comparing water supply from the  
25 California WaterFix to "Existing Conveyance with California WaterFix Operating Criteria."<sup>1</sup>  
26 (SDWA 317, page 4)

27 <sup>1</sup> While this economic analysis was done for the staged implementation proposal, it is the most recent analysis  
28 conducted for the Department of Water Resources and was done after the Final EIR/EIS and analysis submitted  
for Part 2 of this hearing.



1 In the March 27, 2018 Board meeting, MWD staff restated their view that operating  
2 criteria for existing Delta facilities would be the same with and without WaterFix.

3 “there is a range of water supply benefits that could come out of the project, and  
4 what we’ve done is analyze changing regulations that would apply both with and  
5 without the project, so no one knows whether regulations will become tighter in  
6 the future, but if they do, these things kind of move together...so that’s the 1.3  
7 million acre feet of incremental water supply improvement that we’ve talked  
8 about for a long time here and we still think that’s a pretty good estimate of the  
9 difference between with and without the project.” (SDWA 316, page 5)

10 These differing assumptions about operating restrictions on the existing Delta facilities have a  
11 dramatic impact on water supply estimates, and the evaluation of the environmental and  
12 economic public interest of the WaterFix. As shown in the March 27, 2018 MWD Board  
13 meeting presentation (SDWA 315, slide 9) MWD’s assumptions regarding future conditions  
14 without the WaterFix project increases the project’s water yield by more than 1 million acre  
15 feet compared to the Petitioners’ assumptions.

16 This is not an abstract point because MWD staff indicates that this operating criteria  
17 assumption that differs from this Petition will play a critical role in allocating water supplies  
18 after the WaterFix is operational. MWD staff have indicated that initial OMR and spring  
19 outflow criteria are included in the no-project baseline when they specify water supply benefits  
20 that will be received by those who invest in the WaterFix, even though those criteria are not in  
21 the No-Action Alternative baseline used for this Petition, the Final EIR/EIS or the Biological  
22 Opinions. For example, MWD’s March 27, 2018 Powerpoint shows that increasing the SWP  
23 share from 55% to 67% shifts 156,000 af of water exports from the CVP to the SWP. (SDWA  
24 315, slide 10) This calculation is inconsistent with the water supply modeling in this  
25 proceeding, and thus the Petition does not accurately consider public interest water supply  
26 impacts of the project. In section IV, I will expand on the harm that would result to agriculture  
27 from this change to water supply.

28 *III.B. Metropolitan’s control of an additional 33% share of WaterFix capacity governed by a  
future “Master Agreement” is a substantial new change to the project with large impacts on*



1 *economic costs, benefits and the determination of the public interest because the financial*  
2 *arrangements will drive where the water flows.*

3 In recent months, the WaterFix project description has changed substantially from  
4 when Ms. Buchholz and other DWR witnesses prepared their testimony, and thus Ms.  
5 Buchholz's testimony uses an outdated and inaccurate project description. The new financial  
6 plan changes the control and access of the facilities in ways that significantly change the  
7 environmental, water supply and economic impacts of the WaterFix.

8 The CVP is no longer financing or participating in the WaterFix due to cost, so the  
9 SWP share of the project is now 67%, with an additional 33% "unsubscribed capacity" that  
10 will be financed and controlled by MWD. MWD says it hopes to lease this capacity back to  
11 CVP contractors, but assuming any leasing of this capacity by agricultural contractors is highly  
12 speculative given that they have declined to invest in the project directly under more favorable  
13 terms. In its March 27, 2018 Board Meeting, MWD staff describe a "Master Agreement" that  
14 would describe the new terms and conditions that would govern operation of the 3,000 cfs  
15 capacity.<sup>2</sup> During the meeting, Roger Patterson of MWD described the future Master  
16 Agreement in the following way,

17 "First and foremost, we believe, and DWR is agreeable, that if we purchased and  
18 financed the unsubscribed 33% of the project, we would have a new separate  
19 agreement with the Department of Water Resources here. We're calling it the  
20 Master Agreement. But the objectives of this contract would be to cover that  
21 acquisition, lay out the terms on what we can do with it, be very clear that DWR  
22 has assigned to us, Metropolitan, and any other investors the interest in the  
23 capacity at the 33% level. So that's ours to manage and make decisions on. And  
24 DWR would also agree to utilize that part of the project to maximize the benefits,"  
25 (SDWA 316, page 9)

26 In further comments and response to questions, MWD staff made it clear that the CVP would  
27 have no access to WaterFix capacity unless they fully compensated MWD for all costs

28 <sup>2</sup> As of July 2, 2018, the Master Agreement is not available, so I have to rely on the March 27, 2018 board  
meeting for a description of its expected terms. The Powerpoint of the meeting describes the terms that MWD  
expects to be in the Master Agreement. (SDWA 315, slides 20, 21)

1 associated with the capacity. (SDWA 316, page 10.) Without full compensation, the CVP  
2 could only divert from the Jones Pumping Plant as constrained by the WaterFix operating  
3 criteria described in this Petition. MWD staff said that this could reduce the ability of the CVP  
4 to fulfill their obligations to the exchange contractors and wildlife refuges in some years.  
5 (SDWA 316 page 11, 18, 24.) MWD staff estimate that financing this additional 33% capacity  
6 would provide the SWP with an additional 150,000 af of water supply if the CVP did not lease  
7 back the unsubscribed capacity. (SDWA 320, page 6) If this new Master Agreement turns out  
8 to be as MWD staff describe, it will clearly have significant impacts on all areas of public  
9 interest being examined in these proceedings, including economics and finance, because the  
10 public interest analyses depend on who receives the water from the WaterFix project.  
11 However, it is impossible to fully evaluate the public interest benefits at this time, because the  
12 Master Agreement is not yet available and thus it is uncertain where the additional water  
13 supply provided by the WaterFix, if any, will flow. The project description is incomplete  
14 without this Master Agreement for the 3,000 cfs unsubscribed capacity.

15 *III.C. The Board could support the public interest by taking actions to increase consistency in*  
16 *the project description and analysis.*

17 The Board can take action to ensure consistency and protect environmental and  
18 economic public interest from the harm created by the changing project description and  
19 shifting no-WaterFix baseline. First, the Board could require the Petitioners to present the final  
20 “Master Agreement” for the unsubscribed 3,000 cfs capacity along with an analysis of its  
21 impacts on the water supply, environmental and economic public interests. Second, the Board  
22 could require Petitioners to present financial feasibility and benefit-cost analyses to show that  
23 the project description in the Petition is feasible and supports the economic public interest.  
24 Finally, the Board could require Petitioners to analyze all the public interest effects of applying  
25 the WaterFix operating criteria using modeling that applies operating criteria without the  
26 WaterFix that is similar to the ECHO and ECLO scenarios (this could be called ECH3+) in a  
27 manner consistent with the assumptions made by the water agencies that are paying for the  
28 project.



1 **IV. Ms. Buchholz's claims that agriculture will benefit from the WaterFix are incorrect**  
2 **due to the new financial strategy.**

3 Ms. Buchholz's testimony inaccurately claims that agriculture will benefit from CWF  
4 H3+ because of increased water supply reliability. (DWR 1010, p. 13:2-4.) It is shortsighted  
5 for her to conclude as much without any examination of the costs to agriculture, especially in  
6 light of the fact that it was widely reported in the press prior to her testimony that agricultural  
7 CVP contractors had voted not to participate in WaterFix due to its high costs. Furthermore,  
8 the water supply modeling for CWF H3+ shows CVP south-of-Delta water deliveries are  
9 slightly lower with the proposed project than the No Action Alternative (SWRCB 108, page  
10 141, Figure 14).

11 The impacts to CVP agricultural water supplies are made far worse by the new  
12 financial strategy under which SWP increases its funding share to 67%, and MWD finances the  
13 33% unsubscribed capacity. As discussed above, MWD staff asserts that this financial plan  
14 would not allow the CVP to receive any of the 1.3 maf future water deliveries that MWD staff  
15 claims are due to the implementation of the CWF. The table below is derived from the March  
16 27, 2018 MWD board meeting in which MWD staff explained the water supply impacts of the  
17 forthcoming "Master Agreement" governing the 33% unsubscribed share. MWD staff's  
18 estimate of 5,000,000 af of annual water deliveries is higher than the 4,898,000 estimated  
19 under CWF H3+ in this hearing. Thus, this table is based on MWD staff's characterization of  
20 the WaterFix and differs from the modeling results in this Petition. According to the MWD  
21 staff presentation, 1.3 maf of the expected 5.0 maf of Delta exports under the  
22 67%SWP/33%CVP WaterFix scenario would be allocated to funders based on the share of  
23 WaterFix costs they paid, and the other 3.7 maf would be allocated according to the historical  
24 55% SWP/ 45% CVP split. The bottom row in the table shows the likely case where CVP does  
25 not lease back the 33% capacity. According to the MWD staff analysis, the CVP water supply  
26 benefit would be 433,000 af lower than if they leased the 33% capacity, and the SWP would  
27 gain 150,000 af in annual average water supply. Total Delta exports under this likely scenario  
28 would be just over 4.7 million acre feet, nearly identical to the No Action Alternative.



Table 1. Estimated Average Annual Water Deliveries South of the Delta Under NAA and 2 WaterFix scenarios under a Master Agreement where MWD finances 3,000 cfs unsubscribed capacity. Derived from MWD March 27, 2018 staff presentation (SDWA 315, slides 9-10), and MWD July 10, 2018 board meeting packet (SDWA 320, page 6).

	CVP	SWP	Total
No Action Alternative	2,115,000	2,585,000	4,700,000
CWF (67% SWP/33% CVP)	2,094,000	2,906,000	5,000,000
CWF (67% SWP/33% MWD)	1,665,000	3,056,000	4,721,000

As shown in the table, CVP water deliveries are lower than the No Action Alternative even under the best case water supply scenario in which the CVP leases back all the 33% unsubscribed capacity from MWD. In the most likely scenario, where CVP farmers do not lease back any capacity from MWD, the CVP water deliveries are reduced by an average of 450,000 af per year compared to the No Action Alternative, SWP deliveries are increased by a similar amount, and total water supply exported from the Delta are virtually the same as the NAA. Thus, as a result of this new financial plan, the main water supply effect of implementing the WaterFix could be a large reallocation of water exported from the Delta from the primarily agriculture serving CVP to the SWP's primarily urban agencies. These results are strongly at odds with Ms. Buchholz's testimony that agriculture would benefit from increased water supply reliability from the proposed project.

**V. Dr. Shires' testimony is irrelevant to the Petition, and includes some misleading data and inaccurate interpretations of Westlands Water District's estimated economic impact.**

Dr. Shires' testimony (WWD 18) includes the results of an economic impact analysis of Westlands Water District (WWD), a discussion of socio-economic data in Fresno and Kings Counties, and a discussion that attempts to link WWD's agricultural production with issues of national concern such as obesity and national security. Dr. Shires does not analyze the anticipated effects of this Petition on WWD. His testimony is just a general discussion of the economic contribution of WWD. In response to cross-examination questions, Dr. Shires correctly noted that many of his conclusions were not unique to WWD, Fresno and Kings

1 Counties, and similar benefits would result from agriculture in all areas of California, including  
2 the Delta itself. (Transcript, March 12, 2018, pages 74-88)

3 While Dr. Shires' testimony does not directly address the WaterFix project, it is indirectly  
4 relevant because, when applied to Petitioners' water supply results, it is clear that the WaterFix  
5 project would not yield the public interest benefits within and without the WWD service area  
6 that Dr. Shires describes. For example, Dr. Shires states "Rising water prices or restricted  
7 supplies, for example will result in fewer crops." (WWD-18, page 14, line 10) WaterFix will  
8 clearly cause large increases in the price of water for Westlands if it leases the "unsubscribed  
9 capacity" from MWD. As discussed in the previous section, the new WaterFix financial plan  
10 will result in restricted supplies for CVP South of Delta Agricultural contractors such as WWD  
11 if, as seems likely, WWD does not lease unsubscribed capacity from MWD due to cost. Thus,  
12 the implication of Dr. Shires' analysis is that WaterFix will result in fewer crops and reduced  
13 economic benefits from farming in WWD, just as I have discussed in the previous section.

14 In addition, there are many instances in Dr. Shires' testimony where he exaggerates the  
15 economic importance of WWD by presenting misleading data or misinterpreting the model  
16 results. Dr. Shires' economic impact calculation is a standard application of the IMPLAN model,  
17 and there is nothing remarkable or problematic in the estimates of direct, indirect and induced  
18 jobs, income and output that Dr. Shires generated with the model and data on agricultural  
19 production in WWD. However, Dr. Shires' discussion of the model results overstates the  
20 potential effect of water supply reductions. For example, Dr. Shires argues incorrectly that  
21 IMPLAN multipliers underestimate the indirect and induced effects of reduced farm production  
22 by stating, "At some point, much as is the case with farmers, there comes a tipping point where  
23 the entire firm goes out of business. When this happens, the overall impact on employment is  
24 much greater than the marginal impacts identified in the regional impact models because the  
25 entire staff becomes unemployed." (WWD-18, page 9, lines 14-17) This interpretation is  
26 incorrect; this effect is completely captured within the IMPLAN model. If a supplier firm closed  
27 due to decreased demand, any residual demand previously satisfied by the firm would shift to  
28 other firms in the region and offset their individual losses. The total effect from a reduction in



1 demand is the same whether that reduction is concentrated in a single supplier firm or distributed  
2 across many.

3 While agriculture is undoubtedly important to the economies of Fresno and Kings  
4 Counties, Dr. Shires' tendency to exaggerate its role and underestimate the resilience of the  
5 economy to water supplies shows in the presentation of other data in his testimony as well. For  
6 example, Dr. Shires' testimony shows that fallowing in WWD was at record highs in 2014, 2015,  
7 and 2016. However, the economic and census data Dr. Shires displays does not include any data  
8 from 2015 and 2016, even though 2016 census data was available to the public in September  
9 2017, 2.5 months before Dr. Shires submitted his testimony to the board. The theory and analysis  
10 put forward by Dr. Shires suggest that 2014-2016 drought and fallowing would lead to severe  
11 economic impacts, decreasing incomes and rising unemployment in Fresno County. SDWA 318  
12 and 319 contain more recent economic data that Dr. Shires did not include in his testimony. The  
13 data show a statistically significant increase in incomes and declining unemployment during the  
14 period in which WWD fallowing was at record highs. Clearly, the economy in these counties is  
15 more diverse and resilient, and not as reliant on WWD water supplies as Dr. Shires states.

16 Dr. Shires' statements about obesity and national security and WWD are not supported  
17 by any rigorous empirical or theoretical work, and are even less credible than his exaggerated  
18 analysis of the WWD water supply on the economy. Speculation about these broad national  
19 policy implications is inappropriate for an economic impact study. Of course, if Dr. Shires'  
20 conclusions in this area are considered credible, they are not necessarily supportive of WaterFix.  
21 As discussed above, one can reasonably infer from the WaterFix financial plan and Dr. Shires'  
22 testimony that WaterFix will reduce agricultural production in WWD, and thus will result in  
23 increased obesity and reduce national security in the U.S. However, I do not believe this section  
24 of Dr. Shires' analysis to be credible, and thus do not recommend the Board consider the  
25 potential of WaterFix to increase obesity and reduce national security in its evaluation of the  
26 Petition.



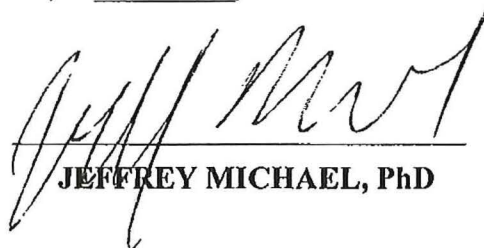
1 **VII. Conclusion**

2 As discussed above, Ms. Buchholz's testimony on the economic public interest is  
3 inaccurate and inadequately supported. Similarly, Dr. Shires' testimony on the economic  
4 contributions of WWD is mostly irrelevant to this Petition, and makes several exaggerated  
5 conclusions about the contribution of WWD.

6 In addition, there are important inconsistencies between the Petition project description  
7 as summarized by Ms. Buchholz and the WaterFix project description and assumptions utilized  
8 by MWD and others for economic and financial analyses. Most of the inconsistencies are in the  
9 critical areas of operating criteria and the no-project baseline. Given these inconsistencies, and  
10 other issues mentioned above, Ms. Buchholz's statements regarding the economic benefits of the  
11 WaterFix project lack credibility and are of little value. It is not possible for the Board to  
12 properly evaluate whether the WaterFix project is in the public interest with such different  
13 project descriptions and no-project assumptions utilized in the two critically important public  
14 decision-making venues regarding the WaterFix. The Board could support the public interest by  
15 taking actions to increase consistency in the assumptions, project description, and analysis  
16 between the Petition and other WaterFix decision-making and planning efforts that support  
17 project financing.

18  
19 I declare under penalty of perjury under the laws of the State of California that the  
20 foregoing is true and correct.

21 Executed on the 9<sup>th</sup> day of July 2018, at SACRAMENTO, California.

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25 JEFFREY MICHAEL, PhD  
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