

1 Trent W. Orr, State Bar No. 77656
A. Yana Garcia, State Bar No. 282959
2 EARTHJUSTICE
50 California Street, Suite 500
3 San Francisco, CA 94111
torr@earthjustice.org
4 ygarcia@earthjustice.org
Tel: (415) 217-2000
5 Fax: (415) 217-2040

6 *Attorneys for Protestant Restore the Delta*

7
8 **BEFORE THE**
9 **CALIFORNIA STATE WATER RESOURCES CONTROL BOARD**

10
11 HEARING IN THE MATTER OF
12 CALIFORNIA DEPARTMENT OF WATER
13 RESOURCES AND UNITED STATES
14 BUREAU OF RECLAMATION REQUEST
FOR A CHANGE IN POINT OF DIVERSION
FOR CALIFORNIA WATERFIX

**TESTIMONY OF BARBARA BARRIGAN-
PARRILLA**

1 I, Barbara Barrigan-Parrilla, Executive Director of Restore the Delta, do hereby declare:

2 **INTRODUCTION**

3 1. I have over twenty-years of experience developing and leading community-based
4 organizations, convening hundreds of events for the environment, community food banks, union
5 activities, and the arts. For each large-scale organizational project I work on, I achieve a command
6 of the subject matter at hand and develop a thorough understanding of the community with which I
7 engage. Each event I organize advances community education, outreach, and advocacy.

8 2. I work and reside in the secondary zone of the Sacramento-San Joaquin Delta, as
9 designated under the Delta Protection Act. My involvement with the Delta community, in both the
10 primary and secondary zones, cuts across all demographic groups, from wealthy landowners to
11 community members in need.

12 **SUMMARY OF TESTIMONY**

13 3. In my testimony, I first summarize my understanding of the relationships of
14 environmental justice issues to the policy requirement in California that water decisions serve the
15 public interest. Next, I describe the poor public outreach effort by Petitioners throughout the BDCP
16 and California WaterFix processes, which are made all the more disappointing by the fact that both
17 BDCP and CWF environmental reviews found adverse effects on environmental justice
18 communities—and yet no environmental justice communities have been adequately informed of
19 these adverse effects.

20 4. I then proceed to describe who Delta environmental justice communities are and
21 where they are found, by county: which minorities are represented, where and to what degree
22 impoverished neighborhoods are found in the Delta, and the extent to which populations face
23 language barriers in various Delta communities, based on data from the 2014 American Community
24 Survey conducted by the U.S. Census Bureau. I then describe their recognized beneficial uses of
25 water from the Bay-Delta Water Quality Control Plan of 2006, as well as yet-to-be-recognized
26 beneficial uses of water now under consideration by the State Water Resources Control Board for
27 tribal cultural and subsistence fishing, as well as others' subsistence fishing uses.

1 5. My testimony adds to this picture a description of indicators of economic and health
2 distress that affect Delta environmental justice communities, particularly in metropolitan Stockton. I
3 also describe near-term economic prospects for growth in jobs and output in metropolitan Stockton
4 and identify potential threats from operation of Petition Facilities (as I will refer to the facilities that
5 the petition here is intended to allow) to Stockton’s drinking water supplies, quality, and
6 affordability. Finally, my testimony offers a reasonable estimate of a population range of
7 subsistence fishing activity using available data sources¹ and describes risks to subsistence anglers
8 from hydrodynamic factors that may contribute to increasing occurrence of harmful algal blooms
9 from operation of Petition Facilities in the Delta.

10 **ENVIRONMENTAL JUSTICE AND ANTI-DISCRIMINATION POLICY**

11 *Environmental Justice in Federal Law and Policy*

12 6. It is my understanding that environmental justice—the potential for public decisions
13 to avoid or mitigate disproportionate or discriminatory environmental impacts (including water-
14 related impacts) to minority and low-income people and populations—is a solemn and vital
15 consideration in the deliberations of state and federal agencies. They must simultaneously consider
16 environmental justice concerns in the framework of the public interest, “the greatest public benefits,”
17 and protection of public trust resources.

18 7. It is also my understanding that the California Water Code provides that the people of
19 California have a paramount interest in the use of all the water of the State and that the State shall
20 determine what water, either surface or ground water, can be converted to public use or controlled
21 for public protection. (California Water Code [C.W.C.] Sec. 104.) It is also my understanding that
22 all the water within the State is the property of the people of the State, but the right to the use of
23 water may be acquired by appropriation in the manner provided by law. (C.W.C Sec. 102.) This
24 section does not qualify or modify the phrase “in the manner provided by law” and suggests strongly
25 that statutes beyond the California Water Code can, may, and should affect how water is acquired for
26 beneficial use in California, such as environmental justice and anti-discrimination statutes. It is my
27 understanding that this means that the right to appropriate water, which is sought through the subject

28 _____ ¹ I was assisted in preparation of this subsistence fishing estimate by Tim Strohane, RTD’s policy analyst.

1 Petition before the Board, should be scrutinized sufficiently to ensure that anti-discrimination and
2 environmental justice concerns are taken into account in decisions about water diversion, including
3 the reasonableness of the method of diversion, the amount of diversion, actual water use, and export
4 in relation to area of origin needs.

5 8. It is my further understanding that in California’s Water Code, protection of the
6 public interest is of vital concern in the development of the State’s water resources, and the State is
7 authorized to determine in what way all the water of the State should be developed for the greatest
8 public benefit. (C.W.C. Sec. 105.)

9 9. While neither “public interest” nor “the greatest public benefit” are defined in the
10 water code, it is my understanding that the code designates domestic use of water for drinking,
11 bathing, cooking, and cleaning as the highest use of water in California. (C.W.C. Sec. 106) Recently,
12 a “human right to water” was added to the water code, stating that “every human being has the right
13 to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and
14 sanitary purposes.” (C.W.C. Sec. 106.3(a).)

15 10. It is my understanding that federal and state laws require government agencies to
16 consider environmental justice and to prohibit discrimination in their decision making processes.
17 Title VI of the Civil Rights Act of 1964 and related statutes require that there be no discrimination in
18 federally assisted programs on the basis of race, color, national origin, age, sex, or disability
19 (religion is a protected category under the Fair Housing Act of 1968) and that, “No person in the
20 United States shall, on the ground of race, color, or national origin, be excluded from participating
21 in, be denied the benefits of, or be subjected to discrimination under any program or activity
22 receiving Federal financial assistance.”

23 11. Federal Executive Order (EO) 12898 (1994) requires federal agencies, including the
24 U.S. Bureau of Reclamation, to make environmental justice part of their mission and to develop
25 environmental justice strategies. (RTD-202, Sec. 2-2.) This Order further requires that each federal
26 agency may, whenever practicable and appropriate, translate crucial public documents, notices, and
27 hearings relating to human health or the environment for limited English speaking populations.
28 (RTD-202, Sec. 5-5(b).) As important, the Order also states that “Each Federal agency shall work to

1 ensure that public documents, notices, and hearings relating to human health or the environment are
2 concise, understandable, and readily accessible to the public.” (RTD-202, Sec. 5-5(c).)

3 12. The Bureau of Reclamation observes U.S. Department of the Interior goals. The
4 Interior Department’s 1995 Goal 1 states that “The Department will involve minority and low-
5 income communities as we make environmental decisions and assure public access to our
6 environmental information.” (RTD-203, p. 13.) For its 2012-2017 Environmental Justice Strategic
7 Plan, the Interior Department added a new goal to its environmental justice commitments, that it will
8 “identify and address environmental impacts that may result in disproportionately high and adverse
9 human health or environmental effects on minority, low-income, or tribal populations.” (RTD-203,
10 p. 14, pp. 18-21.)

11 ***California Anti-Discrimination and Environmental Justice Policy***

12 13. The State of California defines “environmental justice” as: “the fair treatment of
13 people of all races, cultures, and incomes with respect to the development, adoption,
14 implementation, and enforcement of environmental laws, regulations, and policies.” (Cal. Gov.
15 Code Sec. 65040.12, subd. (e).) The State Attorney General’s office states that “fairness in this
16 context means that the benefits of a healthy environment should be available to everyone, and the
17 burdens of pollution should not be focused on sensitive populations or on communities that already
18 experience its adverse effects.” The State Attorney General adds, “environmental justice requires an
19 ongoing commitment to identifying existing and potential problems, and to finding and applying
20 solutions, both in approving specific projects and planning for future development.” (RTD-204,
21 p. 1.)

22 14. California’s anti-discrimination statute states:

23 No person in the State of California shall, on the basis of race, national origin, ethnic
24 group identification, religion, age, sex, sexual orientation, color, genetic information,
25 or disability, be unlawfully denied full and equal access to the benefits of, or be
26 unlawfully subjected to discrimination under, any program or activity that is
27 conducted, operated, or administered by the state or by any state agency, is funded
28 directly by the state, or receives any financial assistance from the state.

(California Government Code [C.G.C.] Sec. 11135(a).)

1 15. The State Attorney General’s office states that, while this policy does not expressly
2 include the phrase “environmental justice,” in certain circumstances it can require agencies to
3 undertake the same consideration of fairness in the distribution of environmental benefits and
4 burdens called for in the state’s definition of environmental justice. In addition, the State Attorney
5 General’s office notes that agencies “should evaluate whether regulations governing ‘equal
6 opportunity to participate’ and requiring ‘alternative communication services’ (e.g., translations)
7 apply. (See Cal.Code Regs., tit.22, secs. 9801, 98211.)” (RTD-204, p. 2.) Given federal
8 involvement with the California WaterFix project, they do.

9 *Argument*

10 16. It is my opinion, based on the foregoing anti-discrimination and environmental justice
11 policies, that disproportionate impacts from government projects to minority, low-income, and tribal
12 communities—as well as communities facing language barriers—should be fully mitigated or
13 avoided. “Addressing” impacts on human health and environmental effects on environmental justice
14 communities must be substantive, not simply window dressing.

15 17. A complete operations plan (or lack of one, as Tim Stroshane’s testimony, RTD-10,
16 has identified) is a central problem for Petitioners and their project and directly affects the public
17 interest. Regarding this problem, Contra Costa Water District wrote in 2014 about BDCP (and their
18 2015 comments maintained this view):

19 The failure to give adequate consideration to the changes to existing facilities that
20 would necessarily occur due to implementation of the BDCP creates flaws in the
21 analysis of water supply, water quality, and fisheries impacts....[I]f reoperation
22 increases export levels, [Delta] outflow at some time must be reduced, thereby
23 increasing salinity levels in the Delta. The BDCP Draft EIR/EIS fails to disclose these
24 potential impacts by failing to describe likely reoperation of reservoirs. The public is
25 left in the dark. This is not a minor omission given the hundreds of thousands of
26 people who rely on the Delta as their sole source of drinking water.

27 (RTD-153, p. 6.)

28 18. Despite their obligation to comply with these federal and state policies, Petitioners
29 failed to develop an adequate survey of and public outreach effort to environmental justice
30 communities that would be affected by Petition Facilities within the five-county Delta region and
31 consequently failed to show that they will not be harmed as legal users of water by the Petition

1 Facilities. Moreover, Petitioners failed to complete broad-based outreach to and adequately
2 communicate with residents living in language isolation from significant impacts of Petition
3 Facilities.

4 **PETITIONERS' PUBLIC OUTREACH EFFORTS ON BEHALF OF PETITION**
5 **FACILITIES WERE POOR.**

6 19. Petitioners' public outreach on environmental justice issues as far back as the BDCP
7 process has been inadequate. It is my understanding that environmental justice policy and
8 implementation has two elements: a process element concerning outreach to potentially affected
9 environmental justice communities; and a substantive element concerning the potential for
10 disproportionate and adverse effects. This section of my testimony addresses the poor record of
11 outreach by Petitioners in the environmental review process to date. The rest of my testimony
12 addresses the substantive adverse effects of constructing and operating Petition Facilities on Delta
13 region environmental justice communities.

14 *Environmental Justice Outreach Efforts by Petitioners*

15 20. Outreach efforts by Petitioners for Petition Facilities began with Bay Delta
16 Conservation Plan efforts. The BDCP Steering Committee Outreach Work Group wrote to the
17 BDCP Steering Committee in mid-2007 summarizing an overall strategy for "early and consistent
18 outreach to the public on the development of the BDCP in an attempt to get broader public input on
19 the various conservation and conveyance options that are being considered." (RTD-241, p. 1.) Their
20 scope of work included preparation of BDCP, the BDCP EIR/EIS, and public involvement and
21 outreach. (RTD-241, p. 2.) The public involvement and outreach program would become the
22 subject of a Request for Qualifications and was to include thirteen tasks, from work plan, schedule,
23 and budget to arranging and coordinating community presentations and event participation to media
24 relations and "collateral material." (RTD-241, p. 2.) "These tasks should be conducted in
25 accordance with the adopted Environmental Justice Policy of the California Resources Agency...and
26 other applicable policies and procedures." (RTD-241, p. 2.) Exhibit A of this memorandum contains
27 the California Resources Agency's Environmental Justice Policy. (RTD-241, PDF page 7.)
28

1 21. The BDCP Steering Committee received a “BDCP Delta Workshop Report”
2 concerning a series of public workshops held in September 2009 in the Delta communities of
3 Brentwood (approximate attendance 53), Stockton (approximate attendance 133), Walnut Grove
4 (approximate attendance 87), and West Sacramento (approximate attendance 39). (RTD-242, p. 1.)

5 The overview of this report noted that:

6 Many workshop participants disagreed with the validity of the BDCP’s ecosystem
7 and water supply objectives based on what they saw as the absence of Delta
8 community needs in the planning process and the similarity of BDCP’s draft eastern
9 conveyance alignment to earlier conveyance proposals.

10 (RTD-242, p. 1.) These workshops provided early and apparently vehement feedback to the BDCP
11 Steering Committee Outreach Work Group about the conveyance project:

12 Impacts to Delta Communities

13 Workshop participants expressed dismay over what they saw as an imbalance of
14 benefits to water exporters in other parts of the state with impacts borne solely by
15 Delta communities. They had specific concerns about what they saw as lasting and
16 irreversible impacts to the local economy, water quality, flood protection and overall
17 multigenerational quality of life from the construction and operation of Two-Gates,
18 new water intakes and conveyance facilities, and habitat restoration. This includes
19 impacts to agricultural, local business, boating, and recreational fishing communities.

20 Community Assurances and Governance

21 Delta workshop participants identified as a key issue the need for assurances to keep
22 Delta communities whole as unintended consequences of plan implementation
23 become known, both now and over time. They cited past practices (such as past
24 failures to meet water quality standards, lack of consistent funding, and lack of
25 intergovernmental coordination) in combination with the adaptive management
26 element of the BDCP as reasons to increase the transparency and enforceability of
27 commitments made to Delta communities during the planning process, environmental
28 review, and over the course of the plan’s implementation. Many workshop
participants expressed the desire for the state to commit to a willing-seller approach
to habitat restoration.

(RTD-242, pp. 1-2.)

22 22. Specific comments described in the report also reflect skepticism from Delta residents
23 of the proposed BDCP at the time. Concerning “near-term outflows,” the report stated that Delta
24 workshop participants said that “salt water intrusion is already a problem and BDCP will make the
25 problem worse; salt water species are already moving into areas where they have never been before
26 (e.g., up to Martinez).” (RTD-242, p. 5.)

1 23. Having attended the Stockton event, I specifically recall that the diversity of the Delta
2 community was not reflected in the audience. Attendees were all or almost all English-speakers,
3 white, and aware of Delta water issues.

4 24. Subsequent to this 2009 BDCP report, the California Department of Water Resources
5 undertook a survey to elicit a broader and more systematic understanding of the public’s attitudes on
6 environmental justice and water issues in the Delta and in the service areas of the SWP and CVP.
7 (RTD-243.) The survey used a qualitative method, including representatives from farm bureaus,
8 chambers of commerce, as well as community/faith-based organizations, elected officials, and
9 representatives of ethnic group organizations. (RTD-244.) The response rate for the original
10 sampling approach is barely acceptable for usability of results, reporting 19 percent (260 of 1400
11 total identified), but was actually more like 17 percent (231 of 1400) when some who agreed to be
12 interviewed ultimately declined. (RTD-243, p. 1-2.)

13 25. DWR survey authors acknowledged early in the summary that “these interviews
14 allow for a detailed exploration of various key topics, but do not provide data that is statistically
15 representative of a larger population.” Sometimes their sample size was just too small to generalize
16 from. (RTD-243, p. 1-3.) “Instead, the information obtained through these interviews is considered
17 descriptive and informative only,” they state concerning the survey method’s limitations. They
18 further state (problematically) that their results “should be considered as representative of the wide
19 range of opinions that may exist among communities throughout California.” (RTD-243, p. 1-3.) It
20 is my understanding that sound social science methodology would indicate instead that their results
21 should *not* be considered as representative of the wide range of opinions that may exist among
22 environmental justice communities throughout California. For example, their survey sample
23 response rate was relatively low at 17 percent, and their method for surveying environmental justice
24 informants did not rely on randomized selection approaches. “Participant Identification” was
25 accomplished as follows:

26 A database was developed to serve as the foundation for identifying the target survey
27 participants. Included in the database were a number of key environmental justice
28 stakeholders, including public interest associations, ethnic associations, local
governments and interested community members and activists. Efforts were made to
ensure that the database included a broad cross-section of potentially impacted

1 minority and low-income stakeholders so that the responses represented as broad a
2 view as possible.

3 ...

4 The 231 survey respondents represent the environmental justice stakeholders based
5 upon their status as community leaders, and/or their direct involvement and/or access
6 to information about low-income and ethnic communities. Survey questions were
7 designed to solicit unique insights into underserved communities; of particular
8 interest was the way in which area residents use the Delta.

9 To clearly define concerns expressed by those interviewed, six categories of
10 participants were identified. Each respondent was assigned to one of the following
11 categories:

- 12 • Agriculture: Representatives from farm bureaus throughout the state.
- 13 • Business: Business owners, chambers of commerce, economic development, and
14 employment organizations.
- 15 • Community or Faith-based: Non-profit organizations and foundations,
16 government- funded assistance programs, school districts and churches/places of
17 worship.
- 18 • Ethnic: Organizations specializing in outreach to minority communities.
- 19 • Government or Elected officials: Government employees, local and statewide
20 elected officials.
- 21 • Public Interest or Environmental: Water districts, environmental advocacy groups.

22 1.3 Methodology

23 Telephone interviews were conducted by professional community outreach
24 consultants. A questionnaire was used to guide discussions with interviewees;
25 however, respondents were encouraged to explore additional non-scripted related
26 topics that arose during the exchange of dialogue in order to examine other areas of
27 interest not accounted for in the survey questions.

28 (RTD-243, pp. 1-2 to 1-3.)

29 26. Based on this evidence, I conclude there was no effort to include and contact
30 environmental justice community residents in the field about their experiences engaged in activities
31 discussed in the survey, such as subsistence fishing or the quality of their drinking water supplies.

32 (RTD-243, Appendices; RTD-244.)

33 27. The survey authors made geographical errors, locating several cities in incorrect
34 counties. They called Alameda County part of the “North Bay” when it and Contra Costa County
35 are part of the East Bay. They ignore environmental justice communities north of the Delta in the
36

1 Sacramento Valley and in the Sierra Nevada regions north and east of the Delta, despite the fact that
2 BDCP water transfers would affect these communities.

3 28. Most of the other questions reported in the summary are broadly worded, intended to
4 elicit from respondents their level of knowledge of the Delta, what they use it for (if they use it at
5 all), and what community events, services, and programs members of the EJ communities access.
6 (RTD-243, Appendix B “Survey Call Script and Questions.”)

7 29. Nearly half of those they talked to in the survey were “elected/government officials.”
8 (RTD-244.) It is my experience as a community organizer that while this group may be expected to
9 know the views of their communities to some degree, they are not reliable guides to community
10 sentiment or activities concerning environmental justice issues. “Agricultural” and “business”
11 respondents appear to be drawn from Farm Bureau or Chamber of Commerce or other organized
12 business groups. (RTD-243, Appendices.) About 35 percent each were drawn from
13 “community/faith-based” groups and “ethnic” groups, representatives of whom are defined as
14 primarily representing specific ethnic groups in each region.

15 30. Aside from the exclusion of “areas of origin” north of the Delta (e.g., Sacramento
16 Valley and Sierra Nevada) from the EJ survey method, it also appears to use different questions for
17 In/Near Delta, Central Valley (actually San Joaquin Valley without Stanislaus County) and North
18 Bay respondents as compared with all other geographic region respondents, or “service area
19 respondents” (e.g., urban South Bay, southern California, and Central Coast respondents). (RTD-
20 243.) For the service area respondents, DWR’s survey team asked a series of questions under the
21 rubric of “Understanding Water Issues.” These questions included : Do you believe your city has
22 water quality, water availability, or water affordability issues? Does your city have any type of
23 water conservation program that you know of? Do you know where your drinking water comes
24 from? Specifically do you know where your water provider gets their water? Do you think water
25 quality, reliability, availability are issues to your community? Would the people of your community
26 be able to afford an increase to their water costs if it meant higher quality or a more reliable source
27 of water?

1 31. These questions either were not asked of or were not reported for the in/near Delta,
2 “north Bay,” or “Central Valley” respondents participating in the survey. Responses to the water
3 affordability question strongly suggested that in the service areas outside the Delta the cost of water
4 was a concern for environmental justice informants.

5 32. “South Bay” officials: “Four of [all] six respondents did not think their communities
6 able to afford an increase to their water bill if it meant higher quality or a more reliable source. The
7 two respondents who feel that their communities may be able to afford it, think a small increase may
8 be affordable, but not 10, 25, or 50 percent.” (RTD-243, p. 6-5.)

9 33. “Southern California” officials: 5 of [all] 14 respondents think their communities
10 could afford an increase to their water costs if it meant higher quality or a more reliable source of
11 water. (RTD-243, p. 7-28.) Three of the 5 thought they could afford a 10 percent increase. One of
12 five felt their community could afford a 25 percent increase in rates. None of the five felt their
13 community could afford a 50 percent increase in water rates. (RTD-243, p. 7-28.)

14 34. “Central Coast” officials (the wealthier region outside of Santa Clara County) had
15 two respondents total. “One respondent said his community could afford a modest increase, but a
16 recent ballot initiative to increase rates was recently defeated. The other respondent said his
17 community would not be able to afford an increase, as they already pay high rates.” (RTD-243, p. 8-
18 5.) The latter was from the Santa Barbara area. Neither of these respondents answered the questions
19 about 10, 25, or 50 percent rate hikes being affordable or not. (RTD-243, p. 8-5.)

20 35. Chapter 28 of the Draft BDCP EIR/EIS includes the 2010 DWR environmental
21 justice community survey report among its references, which is how the Environmental Water
22 Caucus, Environmental Justice Coalition for Water, and Restore the Delta learned of its existence.
23 (SWRCB-4, p. 28-105.)

24 36. A brief description of environmental justice outreach efforts was provided by
25 Petitioners in Chapter 32 of the BDCP Draft EIR/EIS. (SWRCB-4.) It states: “During the document
26 preparation process, public outreach activities were conducted that considered minority and low-
27 income populations.” No mention is made of communities where language barriers contribute to
28 social or media isolation. The 2010 survey sought “to assess possible impacts and identify future

1 outreach opportunities.” (SWRCB-4, p. 32-7.) This section stated further that Petitioners’ outreach
2 activities would include:

- 3 • Providing notification and announcements of scoping meetings in ethnic
4 newspapers [and] on ethnic radio stations.
- 5 • Conducting scoping meetings within affected communities during evening hours
6 in an effort to involve low-income and minority communities outside of working
7 hours.
- 8 • Providing translators at public scoping meetings.
- 9 • Providing the BDCP Website in Spanish.
- 10 • Providing a multilingual information hotline for project information in English,
11 Spanish, Tagalog, Vietnamese, or Chinese (Mandarin). (SWRCB-4, pp. 32-7 to
12 32-8.)

13 Prior to the release of the Draft EIR/EIS, additional public outreach efforts were
14 targeted to minority and low-income communities to make them aware of the
15 document availability and contents. Activities included briefings with leaders of
16 affected communities, translation of materials, and notification of document
17 availability in ethnic media.

18 (SWRCB-4, p. 32-8.)

19 37. Petitioners’ environmental justice outreach efforts were also summarized in Appendix
20 32A of the BDCP Draft EIR/EIS as having no entries; a title for “Environmental Justice” is included
21 but this chapter contains no description of Environmental Justice-related outreach activities by
22 Petitioners, not even the 2010 DWR environmental justice community survey. (SWRCB-4, p. 32A-
23 2, Section 32A.1.2.4.) Later, this appendix presents actual promotional materials created by
24 Petitioners to support broader public outreach efforts. However, none of the mentions of the phrase
25 “environmental justice” indicates any effort by Petitioners to address environmental justice issues
26 meaningfully in Appendix 32A. (SWRCB-4, Appendix 32A, PDF pages 56, 80, 174, and a glossary
27 entry on page 184.) All materials included in Appendix 32A were presented in English only. No
28 translations of these materials, let alone of the environmental impact documents, into other
languages were included. (SWRCB-4, Appendix 32A.)

38. A coalition of environmental justice and community groups wrote a letter to
Petitioners in May 2014 on behalf of their communities to request a restart and extension of the
public comment period for BDCP:

1 to provide meaningful access and participation of California limited English speakers,
2 including Delta limited English speakers attempting to engage with the Draft Bay
3 Delta Conservation Plan and draft EIS/EIR. In particular, we request that the
4 agencies hold public hearings and provide interpreters; translate vital documents such
as, at the very least, the Executive Summary of the draft EIS/EIR; and provide
affordable access to documents to allow the thousands of low-income and limited
English speakers to have meaningful participation in the process.

5 (RTD-245, p. 2.) This letter described that a majority of Spanish, Cambodian, and Hmong speakers
6 had not been made aware of the 47 significant, unavoidable, and adverse impacts identified in the
7 Draft EIS/EIR summary “that will have a direct impact on residents of the five Delta counties.”

8 (RTD-245, p. 3.) The letter further noted that the interviews conducted as part of the DWR
9 environmental justice community survey, all were conducted in English. (RTD-245, p. 4.)

10 39. The letter stated that all public open house meetings for BDCP were completed and
11 that for these most recent meetings during the public comment period no translation or interpretation
12 services were offered to the public. Attendees of these open house meetings have noted back to us
13 that no interpretation series were advertised at these meetings. Furthermore, a Lexus-Nexus search
14 for Bay Delta Conservation Plan meeting notices shows only four stories in languages other than
15 English discussing the proposed plan, with those stories appearing only between February 2010 and
16 April 2011, with not one reporting on the public comment period for the BDCP. There is no record
17 of media outreach to limited English speakers throughout California, let alone limited English
18 speakers in Delta communities that will bear the brunt of the impacts for this project, or media
19 outreach to non-English speaking communities regarding the release of the public draft of the plan
20 and its EIS/EIR or the public meetings held in the early months of this comment period. (RTD-245,
21 p. 3.)

22 ***2015 CWF translation of public relations materials into other languages***

23 40. For two open houses held in Sacramento and Walnut Grove in July 2015, which Tim
24 Strohane and I attended, Petitioners made available short promotional materials translated into
25 several languages, including Spanish and Asian languages. However, a search of the California
26 WaterFix web site on August 22, 2016 for the term “translation” returned “nothing found” as the
27 search result. Similarly, searches on terms “Spanish,” “Tagalog,” “Vietnamese,” “Chinese,”
28 “Hmong,” and “Lao” each yielded the result, “nothing found” at the California WaterFix web site.

1 During 2015, non English speakers who worked with Restore the Delta organizers did call the
2 Spanish translation number listed on the California Water Fix Website; calls were returned days later
3 by a translator who indicated that they could “get answers” to questions, but who could not provide
4 any written materials describing the project or its impacts. The California WaterFix web site evinces
5 the Petitioners’ lack of attention to documenting, let alone carrying out environmental justice
6 outreach requirements, even when they actually did produce translations of promotional materials
7 for the proposed project.

8 ***Conclusion***

9 41. It is my opinion, based on the evidence presented in my testimony, that Petitioners
10 failed to carry out a robust and inclusive public outreach effort among environmental justice
11 communities of the Delta region from the onset of BDCP to the current California WaterFix
12 proposal contained in the Petition.

13 **PETITIONERS’ ENVIRONMENTAL REVIEWS FOUND ADVERSE EFFECTS OF
14 PETITION FACILITIES, MAKING PUBLIC OUTREACH EFFORTS ALL THE
15 MORE DISAPPOINTING.**

16 ***Environmental justice impacts addressed in the BDCP Draft EIR/EIS***

17 42. The BDCP Draft EIR/EIS found that its Conservation Measure 1 (Alternative 4)
18 would result in disproportionate effects on minority and low-income communities resulting from
19 land use, socioeconomics, aesthetics and visual resources, cultural resources, noise, and public
20 health issues. (SWRCB-4, pp. 28-75:11-13.) Mitigation and environmental commitments were
21 available to reduce these effects, though the EIR/EIS stated that “effects would remain adverse. For
22 these reasons, effects on minority and low-income populations would be disproportionate and
23 adverse.” (SWRCB-4, pp. 28-75:13-15.)

24 43. Specifically, the land use effects of the project were found in the Draft EIR/EIS to
25 result from construction impacts to lands where members of environmental justice communities
26 either reside or are employed, as well as the effects of dividing communities, such as the small
27 community of Hood, via the construction of Petition Facilities. (SWRCB-4, pp. 28-64:22-41, 28-
28 65:1-14.) Because construction activities would also convert some agricultural land temporarily and

1 permanently and reduce the supply of farmland in production, agricultural jobs would be lost, mostly
2 to Latino/Hispanic farm workers.

3 While a net increase in employment would result during construction because of new
4 construction jobs, these jobs would not likely be filled by displaced agricultural
5 workers because the skills required are not comparable. This effect would, therefore,
6 remain adverse because job losses would disproportionately accrue to a minority
7 population.

8 (SWRCB-4, p. 28-65:39-43, 28-66:18-21.)

9 44. Bromide and disinfection byproduct concentrations were found to increase as a result
10 of the operation of Alternative 4 in the Draft EIR/EIS, an adverse public health effect of the project,
11 identified primarily for the Barker Slough North Bay Aqueduct intake. (SWRCB-4, p. 28-74:17-19.)

12 45. Water quality analysis was not brought forward into the environmental justice section
13 on grounds that “where these effects are relevant to public health issues, they are carried forward for
14 analysis in this chapter [Chapter 28]. Relevant impacts from Chapter 25, Public Health are analyzed
15 in detail.” (SWRCB-4, p. 28-22:15-17.) However, it is my understanding that water quality issues,
16 particularly salinity increases, can directly affect irrigation and drinking water quality. The BDCP
17 Draft EIR/EIS omitted any analysis of the impacts of salinity increases on a farmer’s crop choice and
18 thus agricultural output and employment in the Delta. RTD witness Michael Machado’s testimony
19 provides such an analysis and shows that employment and output effects of salinity changes in the
20 south Delta are significant and adverse. (RTD-30.)

21 ***Environmental justice impacts addressed in the California WaterFix RDEIR/SDEIS***

22 46. The Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS) stated that
23 Alternative 4A (the Petition Facilities) would result in disproportionate effects on minority and low-
24 income communities from land use, socioeconomics, aesthetics and visual resources, cultural
25 resources, noise, and public health effects. Despite mitigation and environmental commitments,
26 these effects “would remain adverse” and the effects on environmental justice communities in the
27 Delta would be “disproportionate and adverse.” (SWRCB-3, p. 4.3.25-8:28-32.)

28 47. Specifically, the RDEIR/SDEIS states that the extent of land use and socioeconomic
changes attributable to Alternative 4A would be the same as those disclosed for BDCP Alternative 4.
(SWRCB-3, p. 4.3.24-1:26-33, 35-39; p. 4.3.24-2:1-17.) The RDEIR/SDEIS also states that, distinct

1 from the public health effects of disinfection byproducts (including increased bromide) resulting
2 from BDCP Alternative 4, Alternative 4A would have a public health effect of mobilizing or
3 increasing constituents “known to bioaccumulate as a result of *construction, operation or*
4 *maintenance* of the water conveyance facilities.” (SWRCB-3, p. 4.3.24-7:10-11, emphasis added.)

5 In the vicinity of the three north Delta intakes:

6 If mercury is sequestered in sediments at water facility construction sites, it could
7 become suspended in the water column during construction activities, opening up a
8 new pathway into the food chain. Construction activities (e.g., pile driving and
9 cofferdam installation) at intake sites or barge landing locations would result in a
10 localized, short-term resuspension of sediment and an increase in turbidity that may
11 contain element or methylated forms of mercury....

12 (SWRCB-3, p. 4.3.24-7:25-29.)

13 48. The RDEIR/SDEIS also addressed the potential for increased fish contamination from
14 mercury for humans engaged in subsistence fishing and found the effects to be adverse:

15 Because some of the affected species of fish in the Delta are pursued during
16 subsistence fishing by minority and low-income populations, this increase creates the
17 potential for mercury-related health effects on these populations. Asian, African-
18 American, and Hispanic subsistence fishers pursuing fish in the Delta already
19 consume fish in quantities that exceed the US Environmental Protection Agency
20 reference dose of 7 micrograms (µg) per day total (Shilling et al. 2010:5). This
21 reference dose is set at 1/10 of the dose associated with measurable health impacts
22 [citation]. The highest rates of mercury intake from Delta fish occur among Lao
23 fishers (26.5 µg per day, [citation]). Increased mercury was modeled based upon
24 increases modeled for one species: largemouth bass. These effects are considered
25 unmitigable (see Chapter 8, Water Quality, Mitigation Measure WQ-13).

26 The associated increase in human consumption of mercury caused by these
27 alternatives would depend upon the selection of the fishing location (and associated
28 local fish body burdens), and the relative proportion of different Delta fish consumed.
Different fish species would suffer bioaccumulation at different rates associated with
the specific species, therefore the specific spectrum of fish consumed by a population
would determine the effect of increased mercury body burdens in individual fish
species. These confounding factors make demonstration of precise impacts on human
populations infeasible. However, because minority populations are known to practice
subsistence fishing and consume fish exceeding US EPA reference doses, any
increase in the fish body burden of mercury may contribute to an existing adverse
effect. Because subsistence fishing is specifically associated with minority
populations in the Delta compared to the population at large this effect would be
disproportionate on those populations for Alternative 4A. This effect would be
adverse.

29 (SWRCB-3, p. 4.3.25-8:6-26.)

1 **Conclusion**

2 49. Based on the evidence provided in my testimony, Petitioners' scant environmental
3 justice outreach efforts are all the more disappointing and dangerous because they have identified
4 adverse employment, disinfection byproduct, and fish contamination effects of the proposed project.
5 All of these effects are acknowledged by Petitioners to be adverse, significant, and unavoidable
6 impacts of the Petition Facilities, yet most members of Delta environmental justice communities
7 continue to be unaware of them.

8 **WHO AND WHERE ARE DELTA ENVIRONMENTAL JUSTICE COMMUNITIES?**

9 *Many of the Delta region's residents are people of color.*

10 50. Low income communities and communities of color comprise a significant number of
11 residents throughout Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties. Although
12 distributed throughout the Delta, many of these communities are more densely represented in
13 northern, eastern, and southern census blocks. (SWRCB-4, Chapter 28, Figure 28-1.) Within these
14 counties, the most significant concentrations of non-white populations occur in Antioch (45 percent),
15 Pittsburg (60 percent), Fairfield (47 percent), Suisun City (59 percent), Lathrop (44 percent),
16 Manteca (25 percent), Sacramento (45 percent), Stockton (50 percent), Tracy (33 percent), and West
17 Sacramento (30 percent). (RTD-205.)

18 51. Even in smaller communities throughout the Delta region, non-white residents make
19 up substantial portions of the rural populations of Freeport (40 percent), Hood (33 percent),
20 Courtland (43 percent), and Isleton (24 percent). (RTD-205.)

21 52. The presence of Black or African-American residents, for example, is significant in
22 some notable Delta cities, like Antioch (21 percent), Pittsburg (21 percent), Sacramento (16
23 percent), Stockton (14 percent), Fairfield (18 percent), and Suisun City (25 percent), exceeding both
24 county-wide and national population levels. (RTD-205.)

25 53. American Indian and Native Alaskan populations throughout the Delta region are also
26 significantly larger than their corresponding county-wide and national averages in Antioch (2.1
27 percent), Pittsburg (2.1 percent), Bethel Island (3.3 percent), Oakley (4 percent), Discovery Bay (1.9
28 percent), Sacramento (2.5 percent), Hood (28.6 percent), Isleton (1.9 percent), Lathrop (3.2 percent),

1 Manteca (2.2 percent), Stockton (3.3 percent), Tracy (3.1 percent), Fairfield (1.8 percent), Rio Vista
2 (2 percent), Suisun City (2.2 percent), Clarksburg (2.5 percent), and West Sacramento (3.4 percent).
3 (RTD-205.)

4 54. The concentration of Asian residents exceeds county-wide and national averages as
5 well in the cities of Antioch (14.5 percent), Pittsburg (19.3 percent), Brentwood (11.6 percent),
6 Oakley (10.9 percent), Discovery Bay (6.6 percent), Sacramento (21.5 percent), Walnut Grove (8.1
7 percent), Isleton (5.9 percent), Lathrop (23.3 percent), Manteca (9.8 percent), Stockton (24.4
8 percent), Tracy (18.8 percent), Fairfield (19.4 percent), Rio Vista (8.5 percent), Suisun City (24
9 percent), and West Sacramento (13.7 percent). (RTD-205.)

10 55. Native Hawaiian and Other Pacific Islander populations are larger relative to their
11 share of either county or United States population in Antioch (2.1 percent), Pittsburg (2.9 percent),
12 Brentwood (0.8 percent), Oakley (0.8 percent), Discovery Bay (1.4 percent), Sacramento (2.3
13 percent), Walnut Grove (0.3 percent), Lathrop (2.2 percent), Manteca (1.5 percent), Stockton (1.4
14 percent), Tracy (2.5 percent), Fairfield (2.3 percent), Suisun City (2.9 percent), and West
15 Sacramento (3.2 percent). (RTD-205.)

16 56. Delta-area residents self-identify as “Some Other Race” in census tract data at rates
17 higher than the national average in Antioch (14.2 percent), Pittsburg (21.8 percent), Brentwood (6.2
18 percent), Oakley (9.4 percent), Sacramento (9.7 percent), Freeport (39.7 percent), Courtland (37.1
19 percent), Hood (22.5 percent), Isleton (18.3 percent), Lathrop (14 percent), Manteca (13.5 percent),
20 Stockton (14.5 percent), Fairfield (14.3 percent), Suisun City (14.2 percent), and West Sacramento
21 (12.9 percent). (RTD-205.)

22 57. Finally, the Hispanic or Latino community, comprised of residents of any race, is
23 significantly higher than the corresponding county or national averages in Antioch (34 percent),
24 Pittsburg (40.2 percent), Brentwood (25.8 percent), Byron (41.9 percent), Oakley (36.9 percent),
25 Sacramento (27.6 percent), Freeport (39.7 percent), Courtland (39 percent), Hood (65 percent),
26 Walnut Grove (29.8 percent), Isleton (34.6 percent), Lathrop (43.1 percent), Manteca (39.9 percent),
27 Stockton (41.3 percent), Fairfield (27.3 percent), Suisun City (25.1 percent), Clarksburg (18
28 percent), and West Sacramento (31.9 percent). (RTD-205.)

1 ***Many of the Delta region's population are low-income and impoverished communities,***
2 ***particularly in San Joaquin County.***

3 58. The western, northern, central, and southern parts of the Delta in particular are home
4 to a high concentration of low-income residents. (SWRCB-4, Chapter 28, Figure 28-2.) The most
5 significant concentrations of people and families whose incomes in 2014 were below the federally-
6 recognized poverty level occur in Antioch, Pittsburg, Clarksburg, Sacramento, Stockton, and West
7 Sacramento. (RTD-206.)

8 59. In Contra Costa County, the poverty rates for families, children (persons under 18
9 years), adults (18 years and over), and seniors (65 and over) are below the national rate. The poverty
10 rate among all people in the county is 10.7 percent, about two-thirds the 15.6 poverty rate for the
11 U.S. (RTD-206.) In Antioch, about 10.5 percent of all families, 21 percent of those under 18 years,
12 and 12.4 percent of those 18 years and over are considered impoverished. Poverty rates among
13 Antioch seniors 65 years and over was 7.9 percent, exceeding the County's senior poverty rate of 6.5
14 percent. In Pittsburg, about 14.6 percent of all families, 26.9 percent of all children, and 15 percent
15 of all adults 18 years and over were considered impoverished. Poverty among Pittsburg seniors was
16 9.4 percent, also exceeding the County's senior poverty rate and equaling the nation's. In Oakley,
17 about 10.1 percent of all adults and 13 percent of all seniors are considered impoverished. (RTD-
18 206.)

19 60. In Sacramento County, poverty rates for families, children, adults, and seniors exceed
20 the national poverty rate. The County's poverty rate among all people in the county is 19.4 percent,
21 compared with 15.6 percent for the U.S. (RTD-206.) In the city of Sacramento, about 17.7 percent
22 of all families, 31.7 percent of all children, 19.3 percent of all adults, and 11.7 percent of all seniors
23 are considered impoverished. In Courtland, 30.3 percent of all adults, and 52.7 percent of all seniors
24 are considered impoverished. In Isleton, 17.9 percent of all families, 48 percent of children, and
25 18.7 percent of adults are considered impoverished. In Walnut Grove, 14.1 percent of adults and
26 13.6 of seniors are considered impoverished. (RTD-206.)

27 61. In San Joaquin County, poverty rates for families, children, adults, and seniors exceed
28 the nation's. County-wide, poverty is concentrated in the city of Stockton, where about 21.4 percent

1 of families, 35.3 percent of children, 21.8 percent of adults, and 12.9 percent of seniors are
2 considered impoverished. (RTD-206.)

3 62. In Solano County, poverty rates for families, children, adults, and seniors are below
4 the nation's. In Rio Vista, poverty rates exceed county and national levels for related children under
5 5 years of age, and adults 18 to 64 years. In Suisun City, 19.4 percent of children under 18 years are
6 considered impoverished, exceeding both the county's and nation's poverty rates. (RTD-206.)

7 63. In Yolo County, poverty rates for families and children under 18 are below the
8 national poverty rates. (RTD-206.) However, Yolo County's poverty rates for adults 18 years and
9 over and seniors exceed the nation's. In West Sacramento, 15.6 percent of all families, 29.1 percent
10 of children under 18, 17.8 percent of adults, and 14 percent of seniors are considered impoverished.
11 In Clarksburg, 11.5 percent of families, nearly half (49.2 percent) of children under 18, 13.8 percent
12 of adults and 11.2 percent of seniors are considered impoverished. (*Id.*)

13 ***Many residents of the Delta region face isolating language barriers.***

14 64. There is a significant concentration of linguistically isolated residents who experience
15 daily language barriers in Antioch, Pittsburg, Lathrop, Fairfield, Tracy, Stockton, Sacramento, and
16 West Sacramento. (RTD-207.)

17 65. In Contra Costa County, the 33.5 percent of the population 5 years and older that
18 speaks languages other than English (categorized in the American Community Survey as Spanish;
19 other Indo-European; Asian and Pacific Islander; and "other" languages) exceeds that of the nation's
20 population (20.1 percent). Of the non-English language speakers in the county, the share of those
21 people 5 years or older speaking English less than "very well" exceeds the national average of 8.7
22 percent. Delta region populations of those speaking a language other than English and that speak
23 English less than "very well" that exceed the national rate occur in Antioch, Pittsburg, Byron, and
24 Oakley. Delta region populations of those speaking English less than "very well" that exceed both
25 the national and county rates occur only in Byron. (RTD-207.)

26 66. In Sacramento County, 31.3 percent of the population 5 years and up speak languages
27 other than English, exceeding the national average. Of the non-English language speakers in the
28 county, the share of those people 5 years or older speaking English less than "very well" exceeds

1 that of the nation by more than 50 percent (13.6 to 8.7 percent). Residents of the cities of Hood,
2 Isleton, Sacramento, and Walnut Grove, in particular, report speaking a language other than English,
3 and indicate that they speak English less than “very well,” in numbers that also significantly exceed
4 national and county average rates. (RTD-207 [showing that residents in Hood report at a rate of 33.3
5 percent; residents of Isleton report at a rate of 22.8 percent; and Sacramento and Walnut Grove
6 residents report at a rate of 16.1 percent and 16 percent respectively].)

7 67. In San Joaquin County, 40 percent of the population 5 years and up speak languages
8 other than English, exceeding the national rate. Of the non-English language speakers in the county,
9 the share of those people 5 years or older speaking English less than “very well” exceeds that of the
10 nation by nearly 200 percent (40 to 20.1 percent). Delta region residents that speak a language other
11 than English, that speak English less than “very well,” and that exceed the national rate occur in
12 Manteca and Tracy. Delta region populations of those speaking a language other than English and
13 that speak English less than “very well” and meet or exceed the national and county rates occur in
14 Lathrop (18.1 percent) and Stockton (21.5 percent). (RTD-207.)

15 68. In Solano County, 29.5 percent of its population 5 years and up speak languages other
16 than English, exceeding the national rate. Of the non-English language speakers in the county, the
17 share of those people 5 years or older speaking English less than “very well” exceeds that of the
18 nation (11.2 to 8.7 percent). Delta region populations that speak a language other than English, that
19 speak English less than “very well,” and that exceed the national rate occur in Suisun City (9.8
20 percent). Delta region residents of those speaking a language other than English and that speak
21 English less than “very well” and meet or exceed the national and county rates occur in Fairfield
22 (13.2 percent). (RTD-207.)

23 69. In Yolo County, 35 percent of its population 5 years and up speak languages other
24 than English, exceeding the national rate. Of the non-English language speakers in the county, the
25 share of those people 5 years or older speaking English less than “very well” is nearly double that of
26 the nation (15.1 to 8.7 percent). Delta region populations of those that speak a language other than
27 English, that speak English less than “very well,” and that meet or exceed the national and county
28 rates occur in West Sacramento (18.2 percent) and Clarksburg (16.4 percent). (RTD-207.)

1 70. Within specific language categories of the American Community Survey, there are
2 numerous Delta region cities and communities where the percentage of non-English speakers that
3 speak English less than “very well” exceeds the national and county rates. (RTD-207.)

4 ***These environmental justice communities, not adequately identified in the petitioners’***
5 ***documents, beneficially use water in ways both recognized and yet-to-be recognized by the***
6 ***State Water Resources Control Board in the Bay-Delta Estuary.***

7 71. Most of the Delta region’s environmental justice communities are concentrated in its
8 largest cities: Antioch and Pittsburg in the western Delta; Fairfield, Suisun City, West Sacramento,
9 and Sacramento in the northern Delta; and Stockton in the southern Delta, where the most distressed
10 environmental justice communities reside. Environmental justice residents of these cities drink
11 water from the Delta and use it for food preparation and sanitation. Some have jobs that rely on
12 Delta water to grow crops or process raw materials into finished commodities, some sold to
13 environmental justice communities in the Delta region. Some fish the Delta for sustenance. Restore
14 the Delta witness Esperanza Vielma provides examples in her testimony of environmental justice
15 community entrepreneurship and other businesses expanding access to local agriculture with
16 linkages to other sectors that provide jobs and healthful affordable food to poor and minority
17 residents in the Stockton area. (RTD-40.) Relative to their respective counties and to the United
18 States, environmental justice communities are disproportionately represented in the Delta region’s
19 population.

20 ***Established Beneficial Uses Pertain to Environmental Justice Communities***

21 72. It is my understanding that the State Water Resources Control Board’s 2006 Water
22 Quality Control Plan established numerous beneficial uses to be protected by water quality
23 objectives. It is also my understanding that they directly pertain to and reflect common linkages of
24 environmental justice communities with employment, business, non-profit, and leisure pursuits.
25 These beneficial uses include municipal and domestic supply; agricultural supply; groundwater
26 recharge; navigation; contact water recreation; non-contact water recreation; shellfish harvesting;
27 commercial and sport fishing; warm freshwater habitat ; cold freshwater habitat; migration of
28 aquatic organisms; spawning, reproduction, and/or early development of aquatic organisms;

1 estuarine habitat; wildlife habitat; and rare, threatened, or endangered species. (SWRCB-27, pp. 8-
2 9.)

3 ***Beneficial Uses Now Under Consideration by the Board***

4 73. The Board is presently considering designation of beneficial uses for tribal traditional
5 and cultural purposes, tribal subsistence fishing, and subsistence fishing uses of water. (RTD-209,
6 pp. 3-4.) In so doing, the State Water Board acknowledges that “tribes have cultural practices and
7 ways of life that they wish to preserve and pass on to future generations.” (RTD-209, p. 4.)
8 Degradation of state waters, along with new sources of contamination and pollution to those waters,
9 creates “distinctive changes to the tribes and their members.... Providing beneficial use categories
10 and descriptions designed to protect Native American uses of waters is an important step in ensuring
11 that tribes have the opportunity to continue to practice their culture.” (RTD-209, p. 4.) RTD witness
12 and Winnemem Wintu tribal member Gary Mulcahy addresses these concerns in his testimony for
13 RTD. (RTD-50.)

14 74. Subsistence fishing, the Board also acknowledges, is practiced by both Native
15 American and other cultures and individuals throughout California. (RTD-209, p. 4.) For many
16 non-native cultural communities, subsistence fishing is also an integral cultural tradition preserved
17 when these communities emigrated to the United States. Many are from Southeast Asia. They and
18 other individuals and families may engage in subsistence fishing to provide food when low incomes
19 make buying fish unaffordable. Many such subsistence fishers may also face language barriers, as
20 the American Community Survey suggests. (RTD-209, p. 4; RTD-207.) The Board acknowledges
21 that “in areas where bioaccumulatives have built up in fish tissue to unsafe levels to support
22 subsistence fishing, most of the public is unaware of the dangers associated with consuming large
23 amounts of fish and steps are not being taken to either reduce the contaminants in the fish or to
24 educate the public.” (RTD-209, p. 4.)

25 75. The Petitioners have failed to conduct quantitative or qualitative surveys of
26 subsistence fishing within the Delta.

1 ***Delta region residents of color and low income residents, including those with language***
2 ***barriers, live in quantifiably distressed areas.***

3 76. The presence of environmental justice communities does not tell the full story of the
4 economic and public health challenges some of the most vulnerable Delta-area residents face. To
5 help fill in that story, a recent study uses a “Distressed Communities Index” (DCI) that combines
6 indicators of educational attainment (i.e., no high school degree), housing vacancy rate, adults not
7 working, poverty rate, median income ratio (i.e., the ratio of community median income to that of
8 the state), and changes in employment and business establishments between 2010 and 2013. (RTD-
9 211, p. 5.) The DCI draws from seven indices of social and economic conditions using currently
10 available data from the American Community Survey of the U.S. Census Bureau and other
11 government data. They were chosen, according to this study, because:

12 Distress manifests itself in a lack of residential investment, in shuttering businesses,
13 and in disappearing job opportunities; prosperity the inverse. A high school diploma
14 is the entry-level ticket to opportunity in the economy, and they remain scarce in
15 many struggling neighborhoods.

16 Low rates of adult employment identify communities where connections to the labor
17 market have frayed; prospering communities, on the other hand, draw people back
18 into the labor market with job opportunities. Poverty rates differentiate well-off from
19 struggling communities too. And neighborhood median income relative to state
20 median income sizes [i.e., measures] earnings differentials while controlling for
21 differences in cost of living across the country.

22 ...The DCI does not surmount...inherent challenges [of the indicators used], but the
23 index approach does mitigate their individual biases.

24 (RTD-211, pp. 6-7.)

25 ***Distress Scores***

26 77. Distress scores are calculated, according to the study, “based on a geography’s rank
27 on each of the seven equally weighted variables. The ranks are then averaged and normalized to be
28 equivalent to percentiles, resulting in distress scores between 0 and 100. The higher the distress
score, the greater the distress.” (RTD-211, p. 7.) The study used states, counties, cities with
populations of 50,000 or more, and zip codes as its geographic units.

78. Among Delta region counties, Contra Costa County has the lowest distress score of
8.1, while San Joaquin County has the highest distress score at 58.5 (out of a possible 100). The
study estimated that 43 percent of San Joaquin County’s population resides in distressed zip codes.

1 (RTD-212.) The City of Stockton ranked sixth nationally among the most distressed large cities
2 with a distress score of 95.2; 70.2 percent of the city’s population lives in distressed zip codes.
3 (RTD-211, p. 26, Figure 16.) Four of Stockton’s zip codes had distress scores exceeding 90 (95202,
4 95203, 95205, and 95210); three more had distress scores exceeding 80 (95204, 95206, and 95207).
5 The zip code for French Camp, adjacent to Stockton, had a distress score of 95.4. (RTD-212, PDF p.
6 2, Distress Score Column.)

7 79. Of the Delta cities measured in the study, Stockton had the highest distress score
8 (95.2), while Sacramento had a distress score of 77.5. The study also included Antioch (distress
9 score of 77.0) and Pittsburg (67.6). (RTD-212, PDF p. 2.)

10 ***Adults with no high school degree***

11 80. California’s overall rate of adults without a high school degree is 19 percent. San
12 Joaquin County exceeds this rate, at 22 percent, and a number of Delta communities significantly
13 exceed, or at best, match the state-wide rate. Twenty-five percent of Stockton’s adult population has
14 no high school degree, compared with 23 percent in Pittsburg (zip code 94565), 17 percent in
15 Sacramento, and 16 percent in Antioch (94509). Stockton-related zip codes have much higher rates:
16 47 percent in East Stockton (95205), 39 percent in the South Delta (95206), 37 percent in downtown
17 Stockton (95202), 29 percent in East Hammer (95210), 28 percent in the Port/West Downtown
18 (95203), 19 percent in the Country Club area (95204), and 43 percent in more rural French Camp
19 ((95231). (RTD-212, PDF p. 3, No High School column.)

20 81. Zip code communities of central and southern Sacramento with very high rates of
21 adults without high school degrees include: 40 percent in Parkway-South Sacramento (95824), 32
22 percent in Discovery Park area (95815), 27 percent in Florin (95828), 26 percent in Parkway
23 (95823), 21 percent in the Sacramento City College area (95822), 18 percent in North Oak Park
24 (95817), and 17 percent in downtown Sacramento (95814). (RTD-212, PDF p. 3.)

25 82. Other Delta zip codes have high rates of adults with no high school degree, including
26 31 percent in Freeport/Meadowview (95832), 24 percent in Northwest Sacramento (95605), and 20
27 percent in the Isleton area (95641). (RTD-212, PDF p. 3.)

1 ***Housing vacancy rates***

2 83. California had a 2014 housing vacancy rate of 6 percent state-wide, while Delta
3 counties had vacancy rates ranging between 5 (Contra Costa) and 7 percent (Sacramento, San
4 Joaquin, and Solano) overall, with many Delta region zip codes far exceeding these state and county-
5 wide rates. In 2014, downtown Stockton’s housing vacancy rate was 31 percent (zip code 95202).
6 The Locke/Walnut Grove area experienced a housing vacancy rate of 22 percent in the same year
7 (zip code 95690), while Courtland experienced a 21 percent vacancy rate (zip code 95615).
8 Downtown Sacramento had a housing vacancy rate of 15 percent (zip code 95814), and the Isleton
9 area also had 15 percent vacancy rate (zip code 95641). (RTD-212, PDF p. 4, Housing Vacancy
10 Rate column.)

11 ***Adults not working***

12 84. Forty-four (44) percent of California adults were not working in 2014. Except for
13 Contra Costa County at 41 percent, the other Delta counties ranged from the state’s rate (Yolo
14 County), up to 48 percent of adults not working in San Joaquin County. Forty-nine (49) percent of
15 adults were not working in Stockton, while 45 percent were not working in Sacramento, 46 percent
16 in Antioch, and 43 percent in Pittsburg. Zip code communities with the largest shares of adults not
17 working include French Camp (73 percent), downtown Stockton (69), east Stockton (53), south
18 Delta, Port/West Downtown Stockton, Lincoln Village, East Hammer (each 52), and Country Club
19 area (49). (RTD-212, PDF p. 5, Adults Not Working column.)

20 85. Among Sacramento zip code distressed communities, all exceeded 50 percent of
21 adults not working, ranging from 51 percent (Florin and Parkway) to 56 percent (Parkway-South
22 Sacramento). (RTD-212, PDF p. 5.)

23 86. Other Delta zip code communities exceeded the state’s rate of non-working adults,
24 ranging from 47 percent (Courtland) to 56 percent (Isleton area) of their adult populations, except for
25 the Locke/Walnut Grove area (42 percent). (RTD-212, PDF p. 5.)

26 ***Median income ratio***

27 87. Among Delta counties, Contra Costa had the highest median income ratio (county
28 median income:state median income, 130 percent), and San Joaquin the lowest (87 percent). Among

1 Delta cities, Stockton had the lowest median income ratio at 74 percent, followed by Sacramento
2 (81), Antioch (88), and Pittsburg (91). Among zip code communities, downtown Stockton had the
3 lowest median income ratio at 24 percent, followed by seventeen zip code communities whose
4 median income ratios ranged from 46 percent (Parkway-South Sacramento) to 74 percent (Florin).
5 Only two interior Delta zip codes exceeded 90 percent of the state median income: Locke/Walnut
6 Grove (91 percent) and the Courtland area (96 percent). (RTD-212, PDF p. 7, Median Income Ratio
7 column.)

8 ***Employment growth***

9 88. California saw growth in employment of 6.8 percent between 2010 and 2013.
10 Among Delta counties, only Contra Costa exceeded this rate at 6.9 percent, while Sacramento saw 6
11 percent, Solano and Yolo each 5.6 percent, and San Joaquin just 3.5 percent growth in employment
12 among its residents. (RTD-212.) Among Delta region cities, employment growth was negative for
13 Pittsburg (-4.7 percent) and Antioch (-3.4) and only slightly positive for Stockton (2.7 percent) and
14 Sacramento (2.4). (RTD-212.) Among Delta zip code communities, three saw double-digit
15 decreases in employment among their residents (Isleton area [-13.6 percent], East Hammer [-12.6]
16 and Port/West Downtown [-11] in Stockton). Another seven zip codes saw single-digit employment
17 declines or no employment growth, ranging from 0 percent for Courtland area to -8 percent for
18 French Camp, with northwest Sacramento, downtown Sacramento, Country Club in Stockton,
19 Locke/Walnut Grove, and Parkway-South Sacramento areas seeing intermediate declines. (RTD-
20 212, PDF p. 8.) Zip code communities with positive employment growth ranged from 2.8 percent
21 (Sacramento City College area) to 16.4 percent (downtown Stockton) with eight other zip code
22 communities filling out this range. (RTD-212, PDF p. 8.)

23 ***Growth in business establishments***

24 89. California saw a 2.9 percent growth in business establishments between 2010 and
25 2013. (RTD-212, PDF p. 9, Percent Change in Businesses column.) Among Delta counties, Contra
26 Costa, Yolo, and Sacramento saw positive growth below the California rate (2, 1.9 and 1.4 percent
27 respectively), while Solano and San Joaquin counties lost businesses (-1 and -1.5 percent
28 respectively). Among Delta cities, only Sacramento saw positive growth in business establishments

1 of 1.3 percent during this period, while Antioch (-7.5 percent), Stockton (-4.3), and Pittsburg (-0.1)
2 all saw declines. (RTD-212.) Among Delta zip code communities, only one zip code nearest the
3 legal Delta saw positive growth of businesses, Freeport/Meadowview (95832, 21.2 percent). (RTD-
4 212.) Generally, most Delta zip code communities saw declines in business establishments.
5 Stockton zip codes were among those hardest hit, ranging from a -10.1 percent decrease for
6 downtown Stockton to -2.9 percent for the south Delta area (95206). Sacramento area zip codes saw
7 decreases in business establishment of -9.3 for downtown Sacramento to -0.2 percent for the
8 Sacramento City College area. Hardest hit among Delta zip codes included Locke/Walnut Grove (-
9 14.1 percent) and the Isleton area (-13.6). (RTD-212, PDF p. 8.)

10 ***Food deserts add to economic distress and unhealthy outcomes in the Delta region,***
11 ***including the Stockton Area.***

12 90. The economic distress faced by environmental justice communities in the Stockton
13 region includes food insecurity and “food deserts,” where entire districts and neighborhoods are no
14 longer served by grocery stores making available healthy, fresh food choices to residents at easily
15 accessible locations. Low income neighborhoods are at high risk of low access to grocery stores
16 selling fresh, healthful foods. The U.S. Department of Agriculture Economic Research Service
17 maps illustrate the census tract neighborhoods in the Delta region that face low access to healthy
18 food options. The standard “food desert” definition is the absence of a grocery store within a 1-mile
19 radius of residents in an urban census tract and a 10-mile radius for rural census tracts.

20 91. Many of the neighborhoods overlap with zip code neighborhoods that exhibit
21 economic distress. (RTD-212.) Significant portions of Stockton, Manteca, Lodi, Pittsburg, Antioch,
22 Delta islands in Contra Costa County (south side of the San Joaquin River), Suisun City, Fairfield,
23 Vacaville, Davis, and south Sacramento have low income census tracts whose residents have low
24 access to grocery stores. (RTD-238.)

25 92. Fifty-four percent of the five Delta counties’ census tracts are low income and have
26 low access to grocery stores serving healthful fresh food. (RTD-239.) Over half of Sacramento and
27 San Joaquin counties’ census tracts are low income and low access. (*Id.*) Solano County has the
28 highest share (17.1 percent) of the total number of census tracts in the Delta region meeting these

1 characteristics, followed by Contra Costa and Sacramento counties. (*Id.*) However, urban census
2 tracts in Delta counties face a severe shortage of grocery stores, to the point where there are fewer
3 and fewer within even a half mile of residents, which is the measure of “low access” for urban areas
4 in U.S. Department of Agriculture food access data. In the Delta, 58 percent of low income and low-
5 access census tracts lack grocery stores within one-half of a mile in urban census tracts and 10 miles
6 in rural, led by Yolo County (74 percent), San Joaquin County (65 percent), and Sacramento County
7 (57 percent). (*Id.*) Across the Delta, about one-sixth of census tracts have sizable low-income and
8 low food access populations without vehicle access to facilitate grocery shopping. (*Id.*)

9 93. The lack of affordable healthy food choices that are also accessible can contribute to
10 poor health outcomes in low-income environmental justice communities. A 2013 San Joaquin
11 County health assessment found that 10 county zip codes had obesity rates exceeding the state
12 average (24.8 percent). Three zip codes were found to have food deserts meeting the federal
13 definition in which at least 500 people and/or 33 percent of the population live more than one mile
14 (urban) or 10 miles (rural) from a supermarket or large grocery store. (RTD-240, pp. 34-35.) None
15 of the 10 zip codes had a farmers’ market located within the zip code boundary at the time. (*Id.*)
16 The County-wide adult obesity rate in 2016 was 29.1 percent, compared with the state average of
17 22.3 percent. (RTD-246, p. 15.)

18 **WHILE DISTRESSED, THE STOCKTON METROPOLITAN REGION HAS**
19 **PROSPECTS FOR GROWTH AND SUSTAINABILITY IN JOBS AND ECONOMIC**
20 **DEVELOPMENT, AT LEAST SOME OF WHICH DEPEND ON PROTECTING**
21 **AND IMPROVING DELTA REGION WATER QUALITY.**

22 *Water quality is important to agricultural and urban economic development in the Delta*
23 *region.*

24 94. With enough time, whatever land saline water touches can turn salty, unless there is
25 enough water to leach out salts. (RTD-213; RTD-148.) Uses of water in the Delta depend largely
26 on the quality of water available, rather than the quantity, but if quality degrades it may become
27 unusable. (RTD-215, p. 101.) About one-fifth of Stockton’s urban water supplies will rely on
28 groundwater, a source that is connected to Delta surface water percolation. (RTD-225; RTD-226.)
The region is at risk of salinity incursion regionally from the west due to increased salinization of the

1 Delta. (RTD-146; RTD-147.) These connections and risks are addressed in Tim Stroshane's
2 testimony for Restore the Delta. (RTD-10.)

3 ***The Stockton region is poised for growth in the near future.***

4 95. The Delta region, and especially metropolitan Stockton, is poised for employment
5 and income growth. According to the University of the Pacific Eberhardt School of Business May
6 2016 forecast:

7 Recent years have seen substantial economic growth and recovery in the Stockton and
8 Fresno MSAs [Metropolitan Statistical Areas, identified by the U.S. Office of
9 Management and Budget] to the surprise of many. As its largest city, Stockton, fell
10 into bankruptcy in 2012 many predicted doom and stagnation for the Stockton MSA
11 (San Joaquin County). Instead, the Stockton MSA is in the process of posting its 4th
12 consecutive year of job growth above 3 percent, led by a booming logistics sector that
13 has added more than 6,000 warehousing and trucking jobs in the last year as Amazon
14 and other fulfillment centers have flocked to its strategic location as the closest part of
15 the Central Valley to the booming Bay Area. Most of this expansion has been in the
16 southern half of San Joaquin County (i.e. Tracy, Lathrop, Manteca) but it has also
17 provided an employment and economic boost to Stockton city residents. The
18 economic gains are especially impressive since the devastated residential construction
19 industry has only begun to recover and remains one-fourth its pre-recession size as
20 housing demand and costs rise. There is substantial room for additional growth and
21 we project the Stockton MSA will lead Northern California in job growth in 2016 and
22 2017 before slowing down.

23 (RTD-216, p. 7.)

24 96. Between 2016 and 2020, per capita income in the Stockton MSA is projected to grow
25 from an estimated \$38,400 at the end of 2015 to about \$45,200 at the end of 2020, a nearly 18
26 percent increase. Total employment is forecast to rise from 222,300 non-farm jobs at the end of
27 2015 to about 241,200 jobs by the end of 2020 (an 8.5 percent increase over the five-year period),
28 while the region's unemployment rate is forecasted to fall from 8.6 percent at the end of 2015 to
about 7.5 percent at the end of 2020.

97. Delta agriculture continues as the region's economic base, and irrigation water quality
is the foundation for the sustainability of that future growth. The relationship between salinity
changes and agriculture in the Delta region are developed more fully in Michael Machado's
testimony for Restore the Delta. (RTD-30.) Below, I describe threats to beneficial uses of water by
environmental justice communities in the Stockton region, where the largest and most distressed
environmental justice communities are found.

1 **THREATS TO ENVIRONMENTAL JUSTICE COMMUNITIES’ BENEFICIAL**
2 **USES FROM PETITION FACILITIES**

3 98. Delta environmental justice communities are isolated from more mainstream levels of
4 prosperity by language barriers, low educational attainment rates, and lack of economic opportunity.
5 Since environmental justice communities are closely linked to issues raised by Petition Facilities like
6 drinking water quality, agricultural, land use, and socioeconomic issues, and fish contamination
7 issues, their residents are made more vulnerable by the disproportionately distressed conditions in
8 which they live. Adverse water quality impacts from construction and operation of Petition
9 Facilities would be environmental blunt trauma to a region on the threshold of recovery and
10 sustainable prosperity, if water quality in the Delta and underground water sources can be improved.

11 99. In my testimony I have summarized the presence of environmental justice
12 communities in the Delta region, quantified the economic distress in which they live, and identified
13 the beneficial uses of water they enjoy. I have also presented evidence that the Delta region’s
14 economy has prospects for improving income, employment, and economic opportunity generally in
15 the near future.

16 100. In this section, I provide more detailed evidence concerning the need to protect
17 crucial beneficial uses of drinking water for predominantly low-income Stockton customer service
18 areas and public health concerns for human use of Delta waters related to subsistence fishing, due to
19 the current presence of long-term contaminants and the potential for increased frequency of harmful
20 algal blooms due to operational effects of Petition Facilities.

21 ***Operation of Petition Facilities would degrade water quality in Delta channels, which***
22 ***would in turn degrade raw water diversions and, via deep percolation, the eastern San***
23 ***Joaquin County groundwater basin, both of which serve as sources of drinking water for***
24 ***Stockton metropolitan area residents.***

25 101. For this section, my testimony’s water quality analysis relies on that provided by Tim
26 Strohane’s testimony for Restore the Delta about Contra Costa Water District’s and Stockton’s
27 drinking water sources. (RTD-10, p. 32:21-24, p. 33:¶ 105.) The two largest suppliers of urban
28 drinking water are the City of Stockton Municipal Utilities Department and California Water Service

1 Company (CWSC). (RTD-217.) Both suppliers recently prepared urban water management plans.
2 (RTD-218; RTD-219.)

3 ***Urban Water Supplies and Demand of Stockton's Environmental Justice Communities***

4 102. CWSC delivered about 22,090 acre-feet to its Stockton District customers in 2015.
5 (RTD-219, p. 67, Table 6-8; RTD-225.) To meet these supplies, CWSC purchased 15,350 acre-feet
6 (69.5 percent) from Stockton East Water District (SEWD) and pumped 6,740 acre-feet (30.5
7 percent) of local groundwater in 2015. (RTD-219, p. 67, Table 6-8; RTD-225.) CWSC projects that
8 by 2040 its customers will increase demand to 30,740 acre-feet per year, a 39 percent increase over
9 the next 25 years, although an absolute increase of just 8,650 acre-feet. (RTD-225.) Total urban
10 water supplies for Stockton delivered by these two water suppliers in 2015 came to 46,933 acre-feet.
11 (RTD-225.)

12 103. Both water suppliers disclosed how much water their low-income customer
13 households use. These customers live in census blocks where the median income is less than 80
14 percent of the state median income. They comprise about 43 percent of housing stock in the City's
15 water service areas in north and south Stockton, according to the City's recent general plan housing
16 element. (RTD-218, p. 3-7.) Their water use in the City's service area is estimated at 10,300 acre-
17 feet per year. (*Id.*)

18 104. CWSC reports that, for purposes of estimating water demand of lower income
19 households, the City's general plan housing element indicated that 47 percent of CWSC's service
20 area would qualify as lower income households. (RTD-219, p. 36.) In 2015, lower income
21 household customer demand was about 5,475 acre-feet of water use. By 2040, lower income
22 household customer demand is projected to be about 8,213 acre-feet. (RTD-219, pp. 36-37.)

23 105. Total low-income household water use amounts to about 15,775 acre-feet annually at
24 present in Stockton. Together, the City and CWSC project about 18,500 acre-feet of low-income
25 household demand by 2040. For purposes of this testimony, this is approximately the drinking water
26 demand for Stockton's environmental justice communities.

1 *Urban Drinking Water Quality in Stockton*

2 106. Each year, urban water suppliers release a summary water quality report based on
3 samples of their treated drinking water. Both the City of Stockton and CWSC water quality reports
4 distinguish their reporting results by groundwater versus surface water sources. (RTD-227; RTD-
5 228.) In Stockton’s case, surface water quality sampling distinguishes between treated water
6 supplies purchased from SEWD and the Delta Water Treatment Plant (which originated from the
7 Stockton Delta Water Supply Project (DWSP)). (RTD-227, p. 3.) At present, the only primary
8 water quality standard violation Stockton experienced during 2015 concerned total trihalomethanes
9 in surface water, which reached as high as 84 micrograms per liter (µg/L), in just one sample at
10 Westchester Circle (the maximum contaminant standard is 80 µg/L). (RTD-227, p. 3, 4, footnote 8.)

11 107. CWSC suffered one primary water quality standard violation in 2015 when its
12 purchased water supplier (SEWD) did not meet the total organic carbon (TOC) compliance standard.
13 (RTD-228, p. 15.) TOC provides a medium for formation of disinfection byproducts like
14 trihalomethanes and halo-acetic acids. According to CWSC’s water quality report, SEWD is now
15 meeting the TOC standard in 2016. (RTD-228, p. 15, footnote 5.)

16 108. Both the City and CWSC report a somewhat elevated presence in their water samples
17 of total dissolved solids (TDS), which is a secondary drinking water matter (addressing water’s
18 discoloration or odor). Stockton reports a TDS range in its groundwater of 210 to 560 milligrams
19 per liter (mg/L) and an average of 358 mg/L, while its surface water sources have generally lower
20 ranges and annual average concentrations of TDS. (RTD-227, p. 5.)

21 109. CWSC’s groundwater has TDS concentrations that range higher than the City’s
22 groundwater but has a lower overall average TDS for groundwater than the City. CWSC’s surface
23 water TDS averages 160 mg/L, while Stockton’s Delta water averages about 216 mg/L, and its
24 purchased Stockton East water averages about 151 mg/L. (RTD-228, p. 16; RTD-227, p. 5.)

25 110. As RTD witness Tim Stroshane describes in his testimony, Contra Costa Water
26 District (CCWD) commented on carcinogens, of which bromide is a precursor to the formation of
27 disinfection byproducts (which include bromate, bromoform, and other brominated trihalomethanes,
28 and halo acetic acids). All of these constituents are potentially harmful to human health through

1 municipal water supplies. (RTD-153, p. 56.) CCWD commented further that neither environmental
2 review of Petition Facilities is adequate, first because tallying just the number of days the bromide
3 objective is violated fails to disclose the magnitude of the excess bromide. Similarly, the percent
4 change in concentration also obscures human health risks of increased bromide levels. The absolute
5 magnitude is directly related to the level of health risk from bromide due to its contribution to
6 carcinogen production during the water treatment process. If the bromide analysis looks only at the
7 number of days or percent change in which a threshold is exceeded, it obscures the human health
8 impact of the exceedance. (RTD-153, p. 57.)

9 111. Such contaminants accumulating in Delta water channels would have to be treated
10 prior to distributing drinking water supplies obtained therein. CCWD further commented that:

11 Conventional water treatment plants are not capable of removing many of these toxic
12 and noxious algal byproducts and could require costly upgrades to handle increases in
13 these compounds. CCWD's two water treatment plants (Bollman and Randall-Bold)
14 have ozone treatment systems that are capable of removing current levels of algal
15 byproducts at the proper ozone dosage and pH level. However, the expected increase
16 in algal byproducts caused by the BDCP would require a corresponding increase in
17 ozone dosage; the amount of such an increase is limited by the requirement not to
18 increase bromate formation to levels that exceed the bromate maximum contaminant
19 level, established to prevent the potential carcinogenic effects of excess bromate in
20 drinking water....

21 CCWD provides treated water to its customers from the Bollman water treatment
22 plant in Concord and Randall-Bold water treatment plant in Oakley. Both water
23 treatment plants use flocculation, sedimentation, filtration, ozonation, and
24 chloramination to produce high quality drinking water. CCWD relies on ozone
25 application to reduce tastes and odors but the effectiveness of the treatment is limited
26 by pH and regulated disinfection byproduct limits. Increased cyanobacteria in Delta
27 waters would necessitate more frequent changes of filtration materials and increase
28 chemical usage (ozone and sulfuric acid) to control pH, disinfection byproducts
[citation], and noxious tastes and odors.

(RTD-153, p. 62.)

112. Based on the array of treatment techniques identified by CCWD, and other evidence
presented here in my testimony, I maintain that the City of Stockton would likely have to raise water
rates on top of those increases identified in its 2016 water rate study, in order to ensure distribution
and delivery of safe and clean drinking water in its service area for the long term.

1 *Stockton’s efforts to protect its drinking water supplies and its protest of the Petition*

2 113. The City informed the State Water Resources Control Board in January 2016 that it
3 sought to develop the DWSP to protect regional groundwater from increasing overdraft and to
4 reduce its draw on groundwater because of that source’s higher TDS content. (RTD-223,
5 Attachment 2, p. 2.) The City stated:

6 Groundwater levels improved over the past few decades in the Stockton vicinity, but
7 if groundwater must be relied upon more extensively as a result of the proposed
8 action, groundwater levels will be expected to decline, and TDS levels in potable
9 supplies and wastewater discharges will increase. Indirect groundwater-related
10 effects of this nature would be inconsistent with the Sustainable Groundwater
11 Management Act or its goals.

12 (RTD-223, Attachment 2, p. 2, and Attachment 4, p. 1.) The City also stated, in protest of the
13 Petition, that:

14 ...the City’s economy, and the health and well-being of City residents, are dependent
15 on the health of the Delta, including water quality and fish and wildlife resources, and
16 Delta agriculture.

17 (RTD-223, Attachment 2, p. 1.)

18 114. It is my understanding that the City’s DWSP was developed under a California Water
19 Code section that provides that a municipality discharging water into the San Joaquin River “may
20 file an application for a permit to appropriate an equal amount of water, less diminution by seepage,
21 evaporation, transpiration or other natural causes between the point of discharge and the point of
22 recovery, downstream from said disposal plant and out of the San Joaquin River or the Sacramento-
23 San Joaquin Delta.” (Cal. Water Code § 1485.) The DWSP now appropriates Delta water supplies
24 to serve some 47,000 residential, commercial, and industrial customers with an estimated service
25 population of 170,000 people in the City’s service area. (RTD-221, p. 1.) The City expressed grave
26 concerns that Petitioners have ignored City water rights, quality, and supply, as these would be
27 affected by Petition Facilities, during the BDCP environmental review process in 2013-2014 as well
28 as the California WaterFix environmental review process during 2015. (RTD-221; RTD-222.) The
City’s attorney, Kelley Taber, elicited from modeling panel testimony that Petitioners’ modeling
team was unfamiliar with or did not recall seeing the City’s comment letters, or responded to one or
both of them only in the context of preparing responses to comments for the Petition Facilities’ Final

1 EIR/EIS. (Cross examination of Modeling Panel, August 25, 2016, morning session.) Ms. Taber
2 also elicited testimony from the modeling panel stating that the modeling team did not model
3 Stockton's Empire Tract intake for its DWSP. This contrasts with the modeling team's inclusion of
4 modeling results for urban drinking water intakes at Banks and Jones Pumping Plants, Contra Costa
5 Water District's Rock Slough Intake for the Contra Costa Canal, and the City of Vallejo's municipal
6 intake in the north Delta. (*Id.*) The modeling team, according to this testimony, indicated that they
7 relied upon conversion equations applied to water quality modeling results derived from water
8 quality stations near to Stockton's wastewater treatment plant and water treatment plant intake. (*Id.*)
9 The nearest of these water quality stations was, as Petitioner witness Parviz Nader-Tehran stated, "a
10 few miles" away from Stockton's discharges and intakes.

11 115. The City, representing its service area customers and its economic base, commented
12 that water quality effects on agriculture and urban water supplies are also connected to the City's
13 future prospects:

14 There is no analysis of the relative effect on the City's economy, despite its role as a
15 major center of agricultural-dependent business in the Delta. There are many
16 agricultural processing, packing and shipping, and other (e.g., insurance) businesses
17 within the City that could be adversely affected as a result of the impacts to
18 agriculture from the BDCP (loss of agricultural production in areas surrounding the
19 City). The BDCP could have adverse socioeconomic impacts as a result of adverse
20 effects to agriculture-dependent businesses, agricultural recyclers, and their labor
21 force who reside in the City. There is a trend of agricultural industries leaving the
22 City, and the BDCP could exacerbate this trend. Reduced economic activity will
23 result in empty buildings, decreased investment, reduced tax revenues, which will
24 further constrain the City's ability to maintain public infrastructure, and therefore
25 physical blight through deterioration of physical and aesthetic conditions within the
26 City.

27 (RTD-221, p. 50.)

28 [A]griculture in the Delta will be harmed from increased levels of salinity resulting
from the operation of the Delta tunnels. The DEIR/EIS water quality chapter claims
that BDCP impacts on salinity will be minimal based on the BDCP's modeling, but
these results are strongly disputed. Furthermore, the state has repeatedly violated
current water quality standards in the Delta or relaxed standards in dry years such as
2014 [and 2015]. Given this history of weak enforcement in the current system, the
tens of billions of dollars borrowed to build the isolated conveyance system, and the
fact that this debt will be repaid from revenues of water sales from the Delta, the risk
of the BDCP actually operating differently than described in the DEIR/EIS and
serious degradation of Delta water quality through excessive North Delta diversions
is great.

(RTD-221, p. 52.)

1 116. In its comments on California WaterFix in October 2015, the City reminded the
2 Petitioners that their 2014 comments “identified numerous problems with BDCP and DEIR/DEIS”
3 and stated that “to the City’s surprise and dismay, none of the problems [we] identified...were
4 addressed by the changes to the Project or the revised environmental documents.” (RTD-222, p. 2.)

5 ***Water affordability in Stockton***

6 117. The City of Stockton and its residents are under financial pressure to pay down debt
7 incurred to develop the DWSP. The City announced in May 2016 water rate increases for 2016 and
8 2017 of 18 percent and 11 percent, respectively, with 3 percent increases projected for future years,
9 according to its recent water rate study. (RTD-224, p. 4, 58.) It is my understanding that Petition
10 Facilities, should they be permitted, would have a construction period as long as 14 or 15 years.
11 (SWRCB-3, p. 4.3.8-18:7, p. 4.3.8-25:20, p. 4.3.8-41:1, 37, p. 4.3.12-1:8, p. 4.3.16-1:11; cross-
12 examination of John Bednarski, Engineering Panel, August 9, 2016.) Meanwhile, water quality
13 impacts (including increased risk of turbidity, salinity, and mobilization of mercury, methyl mercury,
14 and selenium from Delta channel sediments) from the construction and operation of these facilities
15 could result in increased treatment costs beyond those contemplated in Stockton’s water rate study.
16 These upward pressures on local water costs could further disproportionately burden Stockton’s
17 environmental justice communities’ drinking water supplies with higher water rates over the next 15
18 years, and beyond. Petitioners have failed to demonstrate that Stockton’s water rights at DWSP and
19 the City’s urban drinking water customers would not be injured by construction and operation of
20 Petition Facilities.

21 ***Petition Facilities’ potential to degrade water quality would affect subsistence fish***
22 ***consumption by environmental justice communities in the Delta region, should the***
23 ***frequency of environmental conditions that foster toxic algal blooms increase.***

24 118. Petitioners acknowledge occurrence of subsistence fishing and risks of adverse effects
25 to people consuming fish caught from Delta channels when Petition Facilities would operate. It is
26 my understanding that there has never been a census of Delta subsistence anglers, despite the
27 potential health risks of catching and consuming fish routinely from Delta channels. Using publicly
28 available data from the California Department of Fish and Wildlife (DFW), Restore the Delta
estimates through two distinct methodologies that there are, on any given day, between 66 and 110

1 licensed subsistence anglers from distressed communities fishing Delta water ways. (RTD-229, p. 2;
2 RTD-230.) Our methodologies rely on both an angling hours survey and county-level fishing
3 license data from DFW. Assumptions are spelled out in our exhibits detailing how we arrived at our
4 estimates. (RTD-229; RTD-230.) Our methods conservatively assume that each angler fishes just
5 once a year, which very likely underestimates total subsistence fishing activity in the Delta. Despite
6 this limitation of our methods, we estimate between 24,000 to 40,000 subsistence fishing visits
7 annually in the Delta from local residents of distressed communities. We offer no estimate of the
8 mass of fish nor the number of persons actually consuming those fish.

9 119. Delta region subsistence anglers have been found to fish along both the Sacramento
10 and San Joaquin Rivers, despite the latter being an impaired water body for a number of
11 contaminants. (RTD-231, p. 335, Figure 1.) Delta region subsistence anglers are known to catch
12 and consume a variety of native and introduced fish species, including American shad, bluegill, carp,
13 catfish, crappie, Chinook salmon, largemouth bass, pike minnow, Sacramento split tail, Sacramento
14 sucker, steelhead/rainbow trout, striped bass, sturgeon, and sunfish. (RTD-231, p. 336, Table 1;
15 RTD-232, p. 69, Table 2.)

16 120. Many fish caught and consumed by subsistence anglers consume prey from the
17 bottom of river channels where contaminants can accumulate. Other fish consumed by subsistence
18 anglers feed on prey consumed in open water or other parts of river channels. In the course of
19 consuming prey, these species may also consume contaminants such as mercury, pesticides,
20 selenium, and other chemicals that accumulate in prey tissues and that are regulated via Total Mean
21 Daily Loads adopted by the State Water Board and Central Valley Regional Water Quality Control
22 Board. Consequently, environmental justice communities are at risk of heightened exposure to
23 health risks associated with consuming fish caught through subsistence angling in the Delta. (RTD-
24 231; RTD-232; RTD-235.)

25 121. In addition, such fish may be vulnerable to disease and death from exposure to toxins
26 released by harmful algal blooms, such as microcystin, a hepatotoxin (toxic to liver tissue and skin)
27 produced by *Microcystis*, a common cyanobacterium found in the Delta since 1999. (RTD-236, p. 4;
28 RTD-237, p. 142.) Key factors believed by scientists to drive algal blooms that cause harm in open

1 water ways include water temperature, sunlight irradiating water, water clarity, a stratified water
2 column coupled with long residence times of water; availability of nitrogen and phosphorus, and
3 salinity. (RTD-236, p. ii, pp. 21-33.)

4 122. Two of these factors would be directly affected by operation of Petition Facilities:
5 residence time of water and salinity. (RTD-10, p. 37: ¶ 114-115, pp. 38-40: ¶ 118-123.) Increased
6 residence time of water decreases the loss rate of cyanobacteria from a water body. (RTD-236, p.
7 33.) Increased residence time of water also influences inversely the stratification of the water
8 column; the slacker the flow of water the more the upper levels of a water column can warm to an
9 optimal growth temperature range for *Microcystis*, between 25 and 35 degrees Celsius (77 to 95
10 degrees Fahrenheit). (RTD-236, p. 31, 33; RTD-237.) Such conditions may occur mainly in late
11 summer months, but climate change effects may shorten California's winter wet season and
12 contribute to extending the season during which harmful algal blooms may occur. (RTD-236, p. iii,
13 32, 48, 51.)

14 123. Operation of Petition Facilities would also increase residence time of water in the
15 Delta. (RTD-10, p. 37: ¶ 114-115.) When such increased residence time is combined with reduced
16 flows and increased salinity, also caused by Petition Facilities, the period of time during which
17 environmental conditions favor algal blooms could increase significantly.

18 124. The environmental justice effects of increased harmful algal blooms would include
19 increased contamination of fish populations locally from microcystin uptake and accumulation and
20 increased risk of illness and death for environmental justice community members and pet dogs they
21 may take with them fishing, due to contact with water while engaged in subsistence fishing. As we
22 have demonstrated in my testimony, these effects would be borne disproportionately by racial and
23 ethnic minorities, people in poverty, and people challenged by language barriers. These
24 disproportionate effects would accumulate with the economic distress already prevalent in their
25 communities and would undermine long-term growth in jobs, economic output, and sustainable
26 economic development in the Stockton region.

27 125. It is my understanding that Petitioners bear the burden to prove that legal users of
28 water, including members of the environmental justice communities, will not be harmed by the new

1 north Delta points of diversion. Based on evidence in my testimony, I maintain that, while the
2 RDEIR/S attempts to bury, dismiss, and lessen significant water quality impacts, it should be
3 remembered that the RDEIR/S states the following regarding the Delta's significant environmental
4 justice community impacts:

5 Alternative 4A would result in disproportionate effects on minority and low-income
6 communities resulting from land use, socioeconomics, aesthetics and visual
7 resources, cultural resources, noise, and public health effects. Mitigation and
8 environmental commitments are available to reduce these effects; however, effects
9 would remain adverse. For these reasons, effects on minority and low-income
10 populations would be disproportionate and adverse.

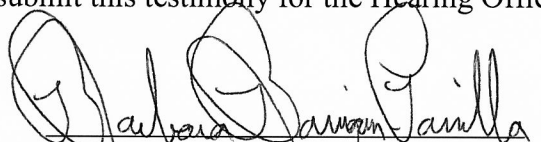
11 (SWRCB-3, p. 4.3.24-8 [PDF page 1,202].)

12 **CONCLUSION**

13 126. Restore the Delta and its membership are deeply concerned that Petitioners have
14 failed to demonstrate that Petition Facilities' operations would not increase the residence time of
15 water, its temperature, and its salinity from tidal incursion, thus increasing the frequency of toxic
16 algal blooms. We are further concerned that Petition Facilities will decrease flows and degrade
17 water quality, thereby injuring environmental justice communities. We have also provided evidence
18 indicating that the needs for information about and representation in the Petitioners' planning
19 process have been scant, disappointing, and even dangerous. While the Petition Facilities'
20 environmental review documents have identified several adverse impacts of the proposed project,
21 they have ignored or downplayed health risks to safe drinking water and subsistence fishing,
22 including Stockton's drinking water source, and the risk of increased carcinogens that can be
23 generated from disinfection byproducts as well as harmful algal blooms. These communities depend
24 on access to a safe, good quality drinking water supplies and on consumption of local fish. These
25 are critical components of an accessible and healthy diet for these economically disadvantaged
26 communities. As such, they should not be put at risk.

27 Thank you for the opportunity to submit this testimony for the Hearing Officers'
28 consideration.

DATED: August 30, 2016


BARBARA BARRIGAN-PARRILLA

1 **STATEMENT OF SERVICE**

2 **CALIFORNIA WATERFIX PETITION HEARING**
3 **Department of Water Resources and U.S. Bureau of Reclamation (Petitioners)**

4 I hereby certify that I have this day submitted to the State Water Resources Control Board
5 and caused a true and correct copy of the following document(s):

6 **[title]**

7 to be served **by Electronic Mail** (email) upon the parties listed in Table 1 of the **Current Service**
8 **List** for the California WaterFix Petition Hearing, dated August 25, 2016, posted by the State Water
9 Resources Control Board at [http://www.waterboards.ca.gov/waterrights/water_issues/programs/](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/service_list.shtml)
10 [bay_delta/california_waterfix/service_list.shtml](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/service_list.shtml)

11 I certify that the foregoing is true and correct and that this document was executed on
12 August ____, 2016.

13 Signature: _____

14 Name: John W. Wall

15 Title: Litigation Assistant

16 Party/Affiliation: Protestant, Restore the Delta

17 Address: Earthjustice
18 50 California Street, Suite 500
19 San Francisco, CA 94103