MATTHEW L. EMRICK (SBN 148250)
LAW OFFICES OF MATTHEW EMRICK
6520 Lone Tree Blvd., #1009
Rocklin, CA 95765
Telephone: (916) 337-0361
Facsimile: (916) 771-0200
matthew@mlelaw.com

Attorneys for Protestant,
City of Antioch

BEFORE THE STATE WATER RESOURCES CONTROL BOARD

HEARING IN THE MATTER OF CALIFORNIA DEPARTMENT OF WATER RESOURCES AND UNITED STATES BUREAU OF RECLAMATION REQUEST FOR A CHANGE IN POINT OF DIVERSION FOR CALIFORNIA WATER FIX	**City of Antioch's CLOSING BRIEF** [Phase 1 - California WaterFix Petition for Change Proceeding]

Introduction

The Department of Water Resources ("DWR") demonstrated by its own evidence during Phase 1 that the California WaterFix Project ("CWF") will put the drinking water supply of over 100,000 Antioch citizens in peril. As further described in this Closing Brief, the evidence shows the CWF will increase chloride and bromide levels at Antioch resulting in less usable days of water for the City. These increased salinity levels will result in the City having to increase its purchases of substitute water and increase the City's treatment costs.

The CWF's impacts are not mitigated by any attempted compliance with D-1641 criteria because DWR will not operate the CWF to comply with M&I criteria at Antioch. The fixed term of the City's 1968 Agreement with DWR expires in 2028 and does not address any impacts of bromides or harmful algae blooms nor does it address the

Bureau of Reclamation's operations. DWR makes no attempt to comply with the requirements of the Delta Reform Act by reducing reliance on the Delta.

Under applicable law, it is not up to Antioch to demonstrate injury from the CWF. Rather the burden of proof rests on DWR, and yet, DWR's own case-in-chief demonstrates the likelihood of harm to Antioch from the CWF.

Standards for Determining Injury from the CWF

1. Injury to Legal User

Water Code section 1702 establishes the standard by which the SWRCB may approve a proposed change in a water right over which the Board has jurisdiction:

> Before permission to make such a change is granted, ***the petitioner shall establish***, to the satisfaction of the Board, and it shall find, that the change ***will not operate to the injury of any legal user of the water involved***

The rule established is often referred as the "no injury" rule. The rule is broad and prohibits any change to an existing water right that will "injuriously affect the right of others [water rights holders]." *Butte T. M. Co. v. Morgan* (1862) 19 Cal. 609, 616; *Lester v. Doestch* (1935) 7 Cal.App.2d 551, 555; *Craig v. Crafton Water Co*. (1903) 141 Cal. 178, 183; *Kidd v. Laird* (1860) 15 Cal. 162.

> Thus, in determining whether the petitioned changes to the licenses of the irrigation districts would cause "substantial injury" to or would "unreasonably affect" riparian and appropriative users in the Delta, the Board properly focused on ***the effect of those changes on the rights of those users***. *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674.

During Phase 1, DWR has failed to meet its statutorily mandated burden of proof as further set forth in this Closing Brief.

2. Compliance with D-1641

DWR's case-in-chief is based primarily upon the concept that compliance with D-

1641 somehow equates to meeting the burden of proof to demonstrate no injury to Antioch. DWR argues that its modeling demonstrates that the CWF will be able to comply with current SWRCB Decision 1641 ("D-1641") municipal standards (150/250 mg/L chlorides at Table 1). DWR however admitted during Phase 1 that is has not operated the State Water Project to meet D-1641 M&I standards at Antioch and will not do so when operating the CWF. And so, DWR cannot rely on D-1641 to attempt to show no injury to Antioch.

3. Compliance with the co-equal goals of the Delta Reform Act is required

The "co-equal" goals of the 2009 Delta Reform Act are statewide standards that apply to all projects impacting the Delta. Water Code section 85020 et seq. The co-equal goals are now a specific criterion to be used for determining ***injury*** to a beneficial use of water in the Delta. DWR has offered the Delta Reform Act into evidence during Phase 1 as DWR 108 thus demonstrating DWR's awareness that the CWF must meet the requirements of that Act. The co-equal goals as set forth by Public Resources Code 29702 require the CWF to provide a more reliable water supply (including for in-Delta water users) and to protect, restore and enhance the Delta:

> The legislature finds and declares that the ***basic goals of the state for the Delta*** are the following:
> (a) Achieve the two coequal goals of providing a *more reliable water supply* for California ***and*** *protecting, restoring, and enhancing the Delta ecosystem*. The coequal goals ***shall be achieved*** in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

As discussed further in this Closing Brief, the CWF fails to meet the co-equal goals in part because DWR has failed to show that increased salinity at Antioch will somehow "enhance and protect" the Delta or make in-Delta municipal water supplies more reliable.

4. Uncertainty created by the CWF is a Legal Injury

In re Waters of Long Valley Creek Stream System (1979) 25 Cal.3d 339, the California Supreme Court held that a water right that creates uncertainty as to other water rights is an unreasonable use of water. The Court explained:

> Uncertainty concerning the rights of water users has pernicious effects. Initially, it inhibits long range planning and investment for the development and use of waters in a stream system… Uncertainty also fosters recurrent, costly and piecemeal litigation… Finally, uncertainty… also affects the ability of the Board to set meaningful terms and conditions to provide effective enforcement and protection of statutory water rights."

As discussed *infra*, DWR's evidence and testimony create substantial uncertainty as to the viability of municipal water rights within the Delta upon the operation of the CWF.

Antioch is a legal user of water in the Delta

As set forth in Antioch's Case-in-Chief, Antioch is a legal user of water rights superior to those relied on by DWR. *Town of Antioch v. Williams Irrigation District et al*. (1922) 188 Cal. 451, 455 (the California Supreme Court recognizes the validity of Antioch's pre-1914 appropriative water rights); DWR in fact acknowledges Antioch's water rights and their priority over DWR's in the 1968 Agreement. (See Exhibit 304, recitals. p. 1.[1])

The Evidence during Phase 1 demonstrates that the CWF will injure Antioch

DWR failed to meet its burden of proof to demonstrate no injury to Antioch from the operation of the CWF under section 1702. DWR's own evidence and modeling in

[1] The Supreme Court further recognized that Antioch's rights extended to both San Joaquin and Sacramento River flows. The City presently diverts water for municipal and industrial purposes. Statement of Diversion and Use #S009352).

fact demonstrated during Phase 1 that Antioch will be adversely impacted by increased levels of chlorides and bromides resulting from the CWF (e.g. DWR 66 and DWR 5-errata). This increased salinity will result in less usable days of water for Antioch increasing the cost incurred by the City to purchase substitute water and to construct additional treatment facilities.[2] (See testimony of Susan Paulsen, Antioch 200 and 202 errata.)

1. DWR own evidence establishes injury to Antioch from the CWF

In assessing injury to Antioch from the proposed CWF, it is important to understand that DWR's current operations presently impact Antioch's water supply. The 1968 Agreement between the City and DWR (discussed in more detail *infra*) acknowledges Antioch's water rights are already injured by the operation of DWR's present water diversion facilities. The recitals to the 1968 Agreement (see page 2 of DWR Exhibit 304) provide as follows:

> In the future the average number of days per year that usable river water will be available to the City will be caused to decrease, and ***such decrease will be due in part to the operation of the State Water Resources Development System*** . . .

In addition, as previously noted *supra*, DWR does not operate its facilities to meet D-1641 (SWRCB 21) municipal water quality objectives at Antioch to mitigate do DWR's current operations - and will not do so if the CWF is approved (see August 18, 2016 Transcript, cross-examination of John Leahigh, pp. 94-95). Such objectives (Table 1 in D-1641, 150/250 mg/L) are only "met" by DWR upstream of Antioch at

---

[2] As noted in D-1641: *United States v. State Water Resources Control Board* (1986) 182 Cal.App.3d 82, holds that "Whatever final conclusion is to be drawn from Antioch regarding the nature and extent of common law . . . ***rights to salinity control, existing constitutional and legislative authorities encompass the [SWRCB's] obligation to protect the quality of Delta waters***."

Contra Costa Canal Pumping Plant #1 (PP#1). As a result, the principal basis of DWR's attempt to show "no harm" from the proposed CWF via a "promise" to operate to D-1641 standards has no direct application to Antioch.

With respect to impacts of increased chlorides from the proposed CWF, DWR's own modeling results (see DWR 513, pg. 4, fig. CL1) show chloride levels increasing over baseline conditions in 7 out of 12 months (October – March, June) just upstream of Antioch at PP#1 (the closest D-1641 municipal compliance point to Antioch). DWR expert witness, Dr. Nader-Tehrani testified about the increased chloride levels at the Contra Costa canal:

> At Contra Costa Canal the results are mixed. (Exhibit DWR-513, p. 4, Figure CL1.) For Boundary 1, ***chloride concentrations are higher than those for the NAA*** for the months of October through March… (See Opening Testimony of Dr. Nader-Tehrani, DWR-66 pp. 6-7.)

This rise in chloride levels just upstream of Antioch at the Contra Costa Canal is shown in graphic form in Dr. Nader-Tehrani's Opening PowerPoint presentation, (see DWR 5 errata, Slide 61; DWR 513, p. 4). The result is that despite the use of long term averaging which masks impacts, DWR has demonstrated by its own evidence that chloride levels at Antioch are likely to increase significantly over existing conditions during the operation of the CWF.

In addition, bromides (a potential carcinogen) are also shown by DWR to significantly increase at Antioch as the direct result of the CWF. Dr. Nadar-Tehrani stated in his Opening Testimony that Antioch is one of three municipal locations in the Delta "where bromides may be of concern." (See DWR-66, p. 7, lns 17-21). Dr. Nader-Tehrani's statement regarding bromides as a concern at municipal locations in the Delta is based in part on the modeling and analysis in the CWF RDEIR ("CWF EIR"

– SWRCB-3). The CWF EIR establishes thresholds for bromides in order to determine adverse impacts to water quality in the Delta (e.g. 50, 100, 300 µg/L). The CWF EIR then finds that the CWF will exceed those thresholds at Antioch:

> multiple interior and western Delta assessment locations would have an increased frequency of exceedance of 50 µg/L, which is the CALFED Drinking Water Program goal for BROMIDE as a long-term average applied to drinking water intakes… These locations [include] San Joaquin River at Antioch… Similarly, these locations would have increased frequency of exceedance of 100 µg/L, which is the concentration believed to be sufficient to meet currently established drinking water criteria for disinfection byproducts… ***The greatest increase in frequency of exceedance of 100 µg/L would occur at Franks Tract (6% increase) and San Joaquin River at Antioch*** (4-5% increase depending on operations scenario). (See for example, the CWF RDEIR/SDEIS at Chap 4; p. 4.3.4-9 at SWRCB-3.)

Notably, DWR witness John Leahigh testified that DWR itself tests for bromides at its own Delta diversion due to concerns by municipalities that receive delivery from State Water Project. (See Phase 1 Transcript August 18, 2016, cross-examination of John Leahigh, pp. 100, lns 17-25.)

Based on the foregoing, DWR's case-in-chief demonstrates injury to Antioch.[3]

2. <u>Antioch established the CWF will likely result in injury to Antioch's water supply</u>

Antioch's analysis of DWR's modeling also concludes that the City will experience higher levels of chlorides and bromides as the result of the CWF resulting in injury to Antioch.

a. Chlorides

During Antioch's Case-in-Chief, Dr. Susan Paulsen discussed how DWR's own

[3] Significantly also is what DWR's evidence and case-in-chief ***<u>fails</u>*** to demonstrate. DWR's case-in-chief fails to address any probability of injury from any constituent other than salinity – such as harmful algae blooms. This is confirmed in the August 25, 2016 Phase 1 Transcript (at p. 81, lns 11-18). On cross-examination, by Ms. Taber, Dr. Nader-Tehrani, confirmed that DWR's case-in-chief is limited to chloride levels only.

modeling demonstrated the probability of adverse impacts to the City's water supply due to higher chloride levels. Dr. Paulsen concluded that DWR's modeling indicates that the CWF: "will result in increased salinity at Antioch's intake and will increase the number of days that Antioch must purchase water from other sources." (Antioch 202 errata, p. 37, Opinion 4). Dr. Paulsen explained the basis for the foregoing conclusion included reliance on DWR's own model results:

> ***DWR's model results*** were also used to compute the number of days per year that water at the City's intake is usable, consistent with the 1968 Agreement as detailed in Section 3.5. As shown in Table 3, the number of days in which water is not usable is greater under the B1 scenario than under current conditions. (Antioch 202 errata, p. 37, section 8.1)

Dr. Paulsen testified further regarding the CWF's adverse impacts on Antioch:

> The modeled salinity at the City's intake shows the clear potential for significant impacts on the City's diversion and treatment operations. Implementation of the WaterFix Project, particularly under Scenario B1***, is simulated to lead to significant water quality degradation.*** As shown in Section 8.1 [Antioch 202], water would be "usable" at the City's intake for fewer days under the B1 scenario relative to existing conditions (EBC2) and relative to the NAA scenario. Currently, the City diverts water at its intake to the City's treatment facility if the chloride concentration is less than 250 mg/L. (See Antioch 202 errata, p. 40, section 8.2.)[4]

Dr. Paulsen additionally discussed some of the resulting economic injury to Antioch's water supply from increased chloride levels due to the CWF:

> When the water at the City's intake is too saline, the City must purchase water from CCWD. Water is purchased from CCWD either to replace

[4] Exponent inadvertently used an inappropriate electrical conductivity (EC) to salinity conversion factor in calculating D-1641 compliance with the 250 mg/L chloride threshold at PP#1 in Antioch-202. Using the appropriate conversion factor, Exponent confirmed that the CWF Boundary 1 scenario still results in a substantial increase in salinity in the western Delta. Dr. Paulsen maintains her conclusion that CWF "will result in increased salinity at Antioch's intake and will increase the number of days that Antioch must purchase water from other sources." (Antioch 202 errata, p. 37, Opinion 4). The results continue to show a clear trend of increasing salinity in at PP#1 pursuant to the CWF and Dr. Paulsen's conclusions remain unchanged.

> water that cannot be diverted from the City's intake or to provide fresh water for blending with water that is diverted from the City's intake but is too saline to use alone. The City blends water from its intake with purchased water in order to minimize customer impacts.
>
> In 2028 dollars, Antioch expects to pay an additional $66 million over the 50 years following construction of the WaterFix project (Scenario B1) in addition to the $436 million they expect to pay under the existing condition scenario resulting from the impacts of present DWR operations. (See Antioch 202 errata, pp. 41-42.)

In sum, the CWF will result in higher chloride levels at Antioch.

b. Bromides

Antioch's analysis of the CWF modeling determined that bromides are also a concern with respect to the City's water supply. Dr. Susan Paulsen, testifying on the City's behalf stated:

> In addition to increases in chloride concentrations (i.e., salinity), the City is concerned about increases in bromide concentrations that will be caused by the proposed project. As discussed in Section 3.2, the concentration of bromide in Delta waters has been found to correlate positively and linearly with the concentration of chloride, such that the ratio of bromide to chloride is relatively constant throughout the Delta (Exhibits Antioch-206; Antioch-224; Antioch-225). Thus, an increase in chloride levels at the City's intake indicates that similar increases in bromide levels will occur. Bromide, like chloride, may form carcinogenic disinfection byproducts… Brominated disinfection byproducts are suspected to pose a greater health risk than chlorinated disinfection byproducts, and their presence in drinking water intake supplies is a significant concern. (See Antioch 202 errata, pp. 43-44.)

As discussed *supra*, DWR's own thresholds of significance for bromides established by the CWF EIR (e.g. 50, 100 and 300 µg/L)[5] will in fact be exceeded by the CWF. The CWF uses chloride levels of 150/250 mg/L to comply with in-Delta M&I standards. However, using DWR's own chloride-to-bromide conversion formula (see DWR 509), DWR demonstrates that the CWF will far exceed the bromide thresholds

[5] Keep in mind these are bromide thresholds were established by DWR.

established by the CWF EIR. Dr. Susan Paulsen demonstrated this as follows:

> DWR has stated that the bromide concentration can be computed as bromide [mg/L] = 0.0035*Cl [mg/L] + 0.033 (Exhibit Antioch-206). Thus, a chloride concentration of 250 mg/L is equivalent to a bromide concentration of 0.88 mg/L (**880**); chloride concentrations of 150 mg/L and 100 mg/L are equivalent to bromide concentrations of about 0.53 mg/L (530 µg/L) and 0.35 mg/L (350 µg/L), respectively. (See Antioch 202 errata, pp. 7-8.)

The increased bromide levels resulting from the CWF will have adverse economic impacts on Antioch. Dr. Paulsen's Phase 1 testimony discussed the economic impacts to the City from increased bromides:

> Although certain advanced water treatment processes (e.g., those used for desalination) can remove or enhance the removal of bromide from drinking water supplies prior to disinfection, these processes are not part of Antioch's water treatment facility and would have significant capital and operational costs if they were added… The City has been working with engineers to estimate the cost of such a treatment facility, and the preliminary information available to the City indicates that a water treatment plant with 6-8 mgd capacity would have a capital cost on the order of $150 million. (See Antioch 202 errata, p. 44.)

In sum, the evidence presented during Phase 1 establishes that the CWF will cause bromide levels to increase at Antioch exceeding the thresholds set by DWR itself.

3. <u>DWR's attempt to undermine the results of its own modeling fails</u>

During the rebuttal and sur-rebuttal portions of Phase 1, Dr. Nader-Tehrani offered certain testimony challenging the validity of Antioch using Boundary 1 when judging potential harm from the CWF (see DWR 79 Rebuttal of Dr. Nader-Tehrani, Sections II-VII Opinions b and f). Dr. Nader-Tehrani also characterized the results of modeling showing injury to Antioch as being "not real" (see DWR 79 Rebuttal of Dr. Nader-Tehrani, Sections VIII-X Opinions b).

With respect to Dr. Nader-Tehrani's rebuttal testimony regarding Boundary 1 as not

properly reflecting the impacts of the CWF (because of the absence of X2), DWR expert witness Jennifer Pierre stated in her written testimony that boundary scenarios were used in order to fully evaluate the effects of the CWF on legal users of water:

> These boundaries are sufficiently broad so as to assure the State Water Board that any operations considered within this change petition proceeding have been evaluated with regard to effects on legal users of water. These boundaries are described below as boundary 1 and boundary 2. (See DWR 51, Testimony of Jennifer Pierre, p. 10, lns 11-14.)

In addition, Ms. Pierre specifically testified upon cross-examination that Protestants such as Antioch should use Boundary 1 in particular to determine potential injury to water rights (see July 29, 2016 Phase 1 Transcript, cross-examination of Jennifer Pierre by Tim O'Laughlin, p. 152). And that is exactly what Antioch and many other Protestants did in response to Ms. Pierre's testimony. It is fundamentally prejudicial and unjust for DWR to direct Protestants to use Boundary 1 to determine injury, and then after Protestants spend literally hundreds of thousands of dollars analyzing Boundary 1, have DWR attempt to minimize the showing of injury under the Boundary 1 because DWR does not like the results.

As for Dr. Nader-Tehrani's purported rebuttal testimony that the modeling results showing exceedances are somehow "not real," then DWR is essentially testifying that its modeling cannot be relied on to show either harm or lack of harm to water users in the Delta. And as a result, DWR's entire case-in-chief fails and must be disregarded by the SWRCB as unsupported conjecture and speculation.

It would appear fundamentally unreasonable to determine DWR has somehow met its burden of proof as to a lack of injury via the testimony of a witness contradicting their own modeling results. Certainly, it is unreasonable to put the drinking water supply of over 500,000 in-Delta citizens at risk based on a statement that DWR's own

modeling results are somehow not real.

4. Other Evidence of injury to Antioch from the CWF

a. *The CWF causes Uncertainty*

In the present case, the CWF is being designed, built and operated upon a foundation of uncertainty. The project has yet to be completely designed, the use of upstream reservoirs is uncertain, water diverters directly impacted by the construction of the project have not been contacted, and the impacts shown by the DWR's own models are described by DWR as being "not real" (see DWR 79 Rebuttal of Dr. Nader-Tehrani, Sections VIII-X Opinions b). DWR has not yet fully disclosed final proposed terms of approval, proposed mitigation, or specific operating and flow criteria (as least not during its case-in-chief for Phase 1).

DWR admitted on cross-examination that it has not done any analysis whatsoever regarding the cumulative impacts of the CWF in connection with other planned DWR (and BOR) projects such as the South Delta Improvement Program, the 2-Gates Project, and the Frank's Tract Project - all upstream of Antioch (see Phase 1 Transcript August 18, 2016, cross-examination of John Leahigh, pp. 101-103). DWR's failure to perform such cumulative analysis precludes DWR from making any conclusions at this point about the full operational impacts of the CWF.

In sum, how can a City of 100,000 residents with rights superior to DWR operate and plan for its future drinking water supply when so much about the CWF remains unknown? Even with respect to mitigation, it is nearly impossible to know exactly what mitigation is necessary when the full extent of the CWF impacts remain unknown

b. *The CWF violates the Delta Reform Act requirements*

The CWF does not meet the co-equal goals of the Delta Reform Act. Evidence presented by DWR and Protestants during Phase 1 shows that drinking water quality at Antioch, Stockton and Brentwood would be degraded by the CWF – thus creating a less reliable water supply for up to about 500,000 citizens living in the Delta. Further, DWR has failed to demonstrate that increased levels of chlorides and bromides will somehow "protect and enhance" the unique cultural, recreational, natural resource, and agricultural values of the Delta at Antioch.

In addition, Water Code Section 85021 provides that it is state policy to ***reduce*** reliance on the Delta in order to achieve the first of the co-equal goals (e.g. water supply reliability). DWR Operations Manager, John Leahigh admitted during cross-examination that the CWF will not result in reduced reliance on the Delta (see Phase 1 Transcript August 18, 2016, cross-examination of John Leahigh, pp. 99-100). The CWF will reduce (not increase) flows of low salinity Sacramento River water into the Delta:

> Because the new NDD intakes are located on the Sacramento River in the northern part of the Delta, water exported from these locations will consist almost entirely of Sacramento River water, reducing the amount of Sacramento River water available in the Delta for use by other water users. In this scenario, the composition of water available for export for downstream users would change, generally including higher proportions of water from other sources, including the San Joaquin River and agricultural return flows. (See testimony of Dr. Susan Paulsen, Antioch 202 errata, p. 22.)

Further, Water Code Section 85022 (d)(6) requires that new projects in the Delta such as the CWF "improve" water quality in the Delta to protect human health. Given the projected increases in salinity at Antioch from the CWF (by DWR's own modeling), water quality at Antioch will not improve to protect human health.

The 1968 Agreement does not mitigate harm to Antioch nor release DWR

Antioch and DWR entered into an Agreement in 1968 to partially mitigate the

impacts from the pre-CWF State Water Project on Antioch. The Agreement only partially reimburses Antioch ***one-third*** the City's cost to purchase substitute water from Contra Costa Water District ("CCWD") in certain years based on a designated formula based on a threshold of 250 ppm chlorides (DWR Exhibit 304). The original 40 year fixed term expired in 2008. In 2013, Antioch and DWR extended the fixed term of 1968 Agreement to 2028 (DWR Exhibit 310). After 2028, the Agreement continues on a year to year basis but is terminable by either party (DWR Exhibits 304, 310). DWR has refused to continue the fixed term beyond 2028 and has refused to guarantee that it would not terminate the Agreement after that time. (See Phase 1 Transcript, May 23, 2017, rebuttal testimony of Susan Paulsen, cross-examination by Mr. Berliner, pp. 141-146). The BOR is not a party to the 1968 Agreement. The 1968 Agreement addresses only chlorides; it does not address bromides, harmful algae blooms, or any other pollutant. (See generally the Rebuttal Testimony of Susan Paulsen, Antioch 300, pp. 12-14.)

Based on the foregoing, DWR's contention that the 1968 Agreement mitigates for the CWF is simply not the case.

Further, during Phase 1, DWR attempted to imply that Section 7 of the 1968 Agreement releases DWR from liability to Antioch from the CWF. This again is not true. As noted, the Agreement addresses chlorides only – no other injury. BOR is not a party and there are no guarantees preventing termination after the fixed term in 2028 (prior to the projected starting date for the CWF).

Additionally, DWR is presently in breach of the 1968 Agreement. Section 10 of the 1968 Agreement (known as the "me-too" clause) requires DWR to compensate Antioch at essentially the same terms granted by DWR to any other entity diverting

from the Delta. In 2016, DWR entered into an agreement with Contra Costa Water District ("CCWD") with substantially better terms than Antioch's 1968 Agreement. The terms of the CCWD 2016 Agreement provide that: 1) the fixed term of the agreement continues for the life of the CWF (Antioch's 1968 Agreement ends in 2028); 2) water to CCWD has a guaranteed water quality of 30 mg/L chlorides (Antioch's 1968 Agreement provides no guaranteed water quality and uses a 250 mg/L threshold); 3) CCWD's water supply is protected from organic carbons as a constituent covered by the agreement (Antioch's 1968 Agreement does not include mitigation for organic carbons); and 4) DWR will construct certain new facilities to convey water to CCWD at DWR's sole expense (Antioch's agreement contains no such condition compensating the City for the construction of new conveyance facilities).

Antioch has made demand on DWR to honor Section 10 of the Antioch 1968 Agreement, but DWR has refused (see Transcripts Dec. 8, 2016 pp. 8-9; Phase 1 Transcript, May 23, 2017, rebuttal testimony of Susan Paulsen, cross-examination by Mr. Berliner, pp. 141-146). Antioch has in fact been forced to bring an action against DWR to enforce Section 10 of the 1968 Agreement to grant Antioch similar terms granted by DWR to CCWD in 2016 (*Antioch v DWR*, Sac. Sup. Court No. 34-2017900218154).[6] DWR's refusal to honor Section 10 of Antioch's 1968 Agreement deprives Antioch of the mitigation it negotiated for 50 years ago. It also prevents DWR from any attempt to invoke Section 7 because DWR as a breaching party cannot enforce provisions of an agreement it favors while refusing to honor provisions of an agreement it disfavors (Civil Code section 1439).

[6] Antioch requests the SWRCB take judicial/administrative notice of this litigation involving the 1968 Agreement.

Based on the foregoing, the 1968 Agreement will not mitigate the impacts of the CWF.

Antioch's Responses to the September 29, 2017 SWRCB Ruling (2C)

1. What is the appropriate historic baseline and what are "natural flows" and "natural conditions"?

Historically, water was fresh at Antioch as demonstrated by Antioch during Phase 1. Antioch in conjunction with CCWD spent several years reviewing this exact issue. See generally Antioch-210 "Historical Fresh Water and Salinity Conditions in the Western Sacramento-San Joaquin Delta and Suisun Bay"; and Antioch 231 – "Testimony of the City of Antioch during the 2010 SWRCB flow criteria proceeding." Those documents together with the Testimony of Dr. Susan Paulsen (Antioch 202 errata) establish the following historic baseline from a water rights perspective at Antioch.[7]

- Prior to 1917 or so, freshwater (≤250 mg/L chloride) was almost always available at Antioch's intake at least during low tide.
- These historic "natural conditions" resulted in lower salinity for longer periods of time prior to 1917 (see slide 21 of Antioch-231 for example) than has occurred since 1917.

[7] Antioch's analysis is generally limited to the historic conditions at Antioch. Antioch was settled in 1850 and incorporated in 1872. The record of water quality generally goes back to about 1867 and establishes that the water at Antioch was historically fresh for drinking water purposes prior to about 1917, when upstream diversions on the Sacramento River increased dramatically. Flows remained fresh at Antioch even after the San Joaquin River had been nearly entirely diverted upstream of the Delta prior to 1900 due to the generally much fresher outflow and hydrodynamic effect of the Sacramento River. Historically, fresh water from the Sacramento River acted as tributary flow to the western Delta via Three Mile and Georgiana Sloughs, and the Sacramento River historically and today comprises most of the water at the City's intake location. (Antioch 202,210, 231).

- Between 1918 and the late 1930s, salinity at Antioch increased significantly due to drought conditions (the 1930s included a period of extreme drought), upstream water diversions (new large diversions for rice along the Sacramento River), and extensive channelization in the Delta. In contrast to DWR's assertions that the salinity levels observed in the Delta in the 1920s and 1930s correspond to pre-CVP and pre-SWP conditions and thus are the appropriate "historical condition," salinity levels during these two decades were artificially high as a result of the actions of man. This human caused, high salinity condition is the mis-characterization the City fought so hard against, and warned against, during its litigation in the case of *Town of Antioch v. Williams Irrigation District et al*. (1922) 188 Cal. 451. Shasta Dam and other facilities were required to operate to control this human-caused salinity incursion, and conditions did improve somewhat at certain times of year after Shasta Dam came on line – but salinity levels never returned anywhere close to the naturally occurring freshwater condition.

While the overwhelming facts establish the foregoing as the historical condition for Delta flows and salinity, the City is not necessarily advocating for the implementation of operations to achieve this natural condition. Given the existence of the projects, channelization, upstream urbanization, runoff and discharge, it would be unrealistic (and likely unachievable) to attempt to restore these historic conditions. Nevertheless, Antioch believes that it is important for the SWRCB to consider that the Delta at Antioch was historically much fresher than present conditions.

2. Are the water quality objectives set forth in the Bay-Delta Plan adequate to protect water right holders from injury? If not, what is the level of water quality that is necessary to protect water right holders in the Delta from injury, and what is the basis for any higher level of protection that may be warranted?

- The standards set forth in D-1641 are intended to protect municipal and industrial beneficial uses, but they are not achieved at Antioch, since DWR chooses to meet the D-1641 objectives instead at PP#1. As noted above, the 1968 Agreement reimburses the City for only one-third of the cost of water it must purchase when water at its intake is too saline for use and the fixed term of that agreement will expire at just about the time the CWF becomes operational Thus, the objectives as currently interpreted and implemented are not protective of Antioch's water right.
- DWR currently has the option of meeting the 150 mg/L chloride threshold at PP#1 or at Antioch, and DWR chooses to meet this threshold at PP#1. When this objective is met at PP#1 but not at Antioch, DWR can claim that it complies with D-1641 objectives, even though water quality is not always suitable for municipal and industrial purposes at Antioch during these times. Thus, DWR "technically" complies with water quality objectives in D-1641 even though significant salinity increases have been allowed to occur at Antioch. (See generally Section 9.3 of Antioch 202.)

3. To what extent are parties who have entered into contracts with petitioners protected under the terms of their contracts from changes to water quality that may occur as a result of the proposed changes?

As discussed above, Antioch is not protected from the impacts of the CWF by the 1968 Agreement because that Agreement: 1) has a fixed term that expires in 2028 before the operation of the CWF begins, and the Agreement is then terminable by DWR (or the City) with twelve months' notice; 2) fails to protect the City from the operational impacts of the Central Valley Project facilities, or of other diversions and exports of

water by other parties; and 3) fails to protect the City from pollutants other than chloride, such as bromide, harmful algae blooms, and other pollutants.

4. What conditions, if any, should be included in any approval of the change petition to protect legal users from injury due to changes in water quality?

Potential mitigation for the adverse impacts of the CWF on Antioch could potentially be straightforward. One possible condition, which already exists under D-1641, would be to require DWR to meet M & I standards at Antioch instead of PP#1 (Rock Slough) - rather than leaving it as an option as currently authorized. Another potential condition could be for the SWRCB to require DWR to grant Antioch water quality guarantees similar to those granted to CCWD in 2016.

Under any circumstances, it would be fundamentally unreasonable for SWRCB to approve DWR's Petition without requiring DWR ensure the safety, quality, and long-term sustainability of in-Delta municipalities to continue to supply drinking water to their citizens. Nothing presented by DWR during Phase 1 has come close to indicating that no harm will result to these municipal water supplies from the operation of the CWF. Instead, DWR has shown a general disinterest and disdain towards in-Delta municipalities throughout this process. DWR did not even attempt to meet with such municipalities in an attempt to better understand their operations, water quality requirements, and potential injury.

Conclusion

Injury to Antioch from the CWF has been conclusively demonstrated during Phase 1, and therefore, DWR's Petition for Change cannot be granted – at least not without fully mitigating any adverse impacts to Antioch.

Dated: Nov. 7, 2017

/s/ MATTHEW EMRICK

_____

Matthew Emrick, Special Counsel to Antioch