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Mr. Phil Isenberg, Chair  
Delta Stewardship Council  
980 Ninth Street, Suite 1500  
Sacramento, CA 95814

May 31, 2011

Dear Chair Isenberg:

The City of Antioch would like to take the opportunity to submit follow-up testimony to the Delta Stewardship Council regarding the City's panel discussion testimony of May 12, 2011. The City of Antioch has diverted water from the Delta for domestic and municipal purposes for nearly 150 years, and firmly believes that understanding Antioch's history and the history of the Delta is critically important for decision-making related to the Delta ecosystem, water quality, and the cultural history of the Delta.

- 1. Antioch's testimony to the DSC was intended to correct commonly held misunderstandings regarding baseline conditions in the Delta, not to advocate for a return to historical flows.**

The City has provided detailed and extensive data and information to the State Water Board and to the BDCP process to document historical salinity and flow conditions. Attached to this letter is the testimony provided by the City of Antioch and Dr. Susan Paulsen to the State Water Resources Control Board during the March 2010 hearings on flow criteria (Attachment A). Also attached is a report title Historical Fresh Water and Salinity Conditions in the Western Sacramento-San Joaquin Delta and Suisun Bay. A summary of historical reviews, reports, analyses, and measurements, which was prepared by the Contra Costa Water District (CCWD) with assistance from Antioch's experts (Attachment B). The findings of these reports are summarized briefly below.

Prior to 1918, freshwater was almost always available at Antioch at least at low tide. Only during dry years and high tide conditions did salinity at Antioch become brackish. Between 1918 and the late 1930s, drought conditions, upstream water diversions, and channelization increased the salinity of water at Antioch with respect to conditions prior to 1918. Even though the drought had receded by 1940, salinity at Antioch remained elevated, and salinity has continued to increase in recent years, such that the fraction of time that water at Antioch was available for use has declined significantly in recent years. Further, while it is true that the Delta experienced significant variability in flows and salinity in the past, overall the Delta was significantly fresher than it is currently, especially in spring and early summer months, with variability occurring generally much further to the west than present conditions.

A critical fact often overlooked when attempting to reconstruct historical salinity conditions

in the Delta is the fact that Antioch has been able to use freshwater from the Delta since about 1850 and from its present diversion point since about 1867. Antioch's ability to divert freshwater has declined steadily since the development of upstream diversions occurring during the first part of the 20<sup>th</sup> Century and increasing with the development of the export projects. The number of days per year when daily average salinity at Antioch is below established salinity thresholds<sup>1</sup> has declined from about 70% in the late 1960s to about 40% during the recent period. Even in above-normal water years like 2000, water exceeded diversion salinity thresholds during the entire day for four months and during high tide for an additional three-and-a-half months.

Although it may be difficult to determine the most important of the many ecosystem and flow changes—including alterations to Delta channels, loss of marshlands, alterations to sedimentation and transport patterns, diversions of flow upstream of the Delta, and diversions/exports of flows from the Delta and from Delta channels—the collective consequence of these changes is that Delta flows (including outflows) currently have significantly more importance for the physical habitat and water quality of the Delta than in the past.

Antioch recognizes that it is not possible to turn back the clock and to restore Delta channels and flows to historical, pre-1918 conditions and that is not what the City is seeking. Nonetheless, these historical conditions are the conditions to which the ecosystem and biota of the Delta were adapted historically, and we would encourage the DSC and others to explore and document the significance of the changes in flow and salinity regimes, and to incorporate this knowledge into the process of establishing policies and plans for the Delta. Antioch believes that historic water quality baseline conditions illustrate that in fact the water quality needs of the City essentially mirror those of the Delta ecosystem.

We therefore ask that the DSC seriously consider the City's water use history and incorporate this knowledge in order to document the significance of the changes in flow and salinity regimes leading to the current degraded condition of the Delta, in order to inform your process of establishing policies and plans for the Delta.<sup>2</sup>

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<sup>1</sup> The 1968 agreement between the City of Antioch and the Department of Water Resources (DWR) establishes a salinity threshold of 250 mg/L chlorides. This threshold is roughly equivalent to 1000 uS/cm. See Attachment A for more detail.

<sup>2</sup> Other purported historic salinity studies have ignored the City's existence and its history of water diversions in the Delta. The City has not been approached by any other group performing such studies and therefore such studies lack some of the most critical and important factual evidence relating to historic Delta salinity. This is rather like doing a study on Historic Northern California earthquakes and ignoring San Francisco.

**2. Antioch promotes a “Do No More Harm” approach with respect to the Delta Plan and with respect to the BDCP**

Antioch supports the Delta Reform Act goals of restoring the Delta. A significant part of that restoration must be to not make water quality any worse than present conditions, which is what we mean by “Do no more harm.” As discussed above, the City has noted a pronounced increase in salinity at its intake and in the Western Delta. Numerous experts and panels have found that the decreased flows that result in increased salinity in the Western Delta are likely one of the most important factors in observed declines in native Delta species (see The State Water Resources Control Board’s flow criteria document *Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem*, August 2010). It stands to reason, that any future declines in flows (and corresponding increases in salinity) would move the ecosystem further from its native, natural condition, and would cause additional harm.

Antioch is known as the “Gateway to the Delta,” and Delta recreation such as fishing and boating are important to our economy and our identity as a City and as part of the Delta region. We hope to ensure that the future Delta is ecologically viable and rich, and that the recreation and wildlife habitat functions of the Delta are perpetuated and strengthened. For this reason, we strongly advocate for a future condition that increases Delta outflows. It is our firm belief that restoration will require salinity to move closer to its historic baseline (i.e., westerly) rather than to an even more easterly location as has been predicted by BDCP effects analysis modeling.

**3. Antioch has attempted to promote potential regional solutions to potentially benefit numerous in-Delta water users and the ecosystem.**

After Antioch’s presentation to the DSC, the DSC commented about Antioch’s perceived “Center of the World” approach. This is unfortunate and simply not true. Rather than drawing a line in the sand, Antioch has been one of the few agencies that have sought to promote potential regional physical solutions. Such potential solutions have included but not been limited to substitute water agreements, regional in-Delta intakes, and desalination. Unfortunately, for the most part this discussion has been somewhat one-sided. To Antioch’s knowledge, no state agency or exporter has seriously discussed potential in-Delta solutions to mitigate the potential adverse impacts of any new proposed Delta export facility.

Certainly, it is Antioch’s preferred outcome to improve Delta water quality and to continue to be able to use its nearly 150-year-old diversion point in the Western Delta. This is Antioch’s preferred position not only from a water supply standpoint, but from an economic, cultural and public trust standpoint, as all of these rely on a freshwater Delta. However, Antioch has a duty to its 103,000 residents to ensure a reliable water supply. For that reason, Antioch has been open to discussing potential solutions. The important point is that Antioch has not adopted a “center of the world” approach and has been nearly alone in its attempts to find potential regional and physical solutions via the various Delta related processes over the past 5 years.

**4. Antioch fully understands the concepts of reasonable use and public trust, and was instrumental in development of both doctrines.**

During Antioch's testimony to the DSC, comments were made regarding the doctrines of reasonable use and the public trust. Antioch is perhaps more familiar with these doctrines than most. Almost 100 years ago, Antioch argued for the restoration of Delta flows and water quality in the 1920 California Supreme Court case of *Antioch v. Williams Irrigation District*. That case, which invoked the principles of Public Trust and reasonable use (8 years prior to the constitutional amendment), began a nearly 50-year state policy that any flows of a river reaching the ocean were wasteful and unreasonable (see also *Gin S. Chow v. City of Santa Barbara* (1933) 217 Cal. 673)). That unfortunate policy of course led to catastrophic impacts to stream systems, fish, and public trust resources within the state - and within the Delta in particular.

Thankfully, this misguided era has ended and both modern case law (see for example the 2006 *State Water Board Cases*) and modern legislation (see the Delta Protection Act and the Delta Reform Act) have recognized the critical importance of inflow and outflow necessary to protect the Delta, its beneficial uses, and public trust resources. Given the toll taken on the Delta by upstream diversions and exports over the past 80 years, the presence of endangered species and the millions of people who rely on water quality within the Delta, it is hard to imagine that any further degradation of in-Delta water quality by exporters could ever be deemed "reasonable" by any stretch of the imagination.

For its part, water conservation and wise use are at the core of Antioch's municipal water supply system. The City's conservation efforts include but are not limited to: enacting a water conservation ordinance; using recycled water; water survey programs for residential units; on-going water main replacement program to reduce water loss; metering; large landscape conservation programs and incentives; school and community information programs relating to water conservation; and updating its rate structure.

In conclusion, Antioch's testimony to the DSC on May 12, 2011 was intended to provide a verifiable factual history of historical salinity conditions within the Delta. We provided this information in an effort to better inform the DSC's decision-making process. In attempting to make any decisions relating to the co-equal goals, reasonable use, and the public trust, it is critical to understand historic baseline conditions within the Delta - and to perhaps understand the historic misapplication of these doctrines in order to prevent further degradation of the Delta ecosystem in the future.<sup>3</sup>

We hope this discussion clarifies any misunderstandings the DSC may have had regarding the intent and scope of Antioch's comments. We also hope that the DSC will better understand that Antioch's historic water diversion from the Delta is a historic verifiable fact as it relates to

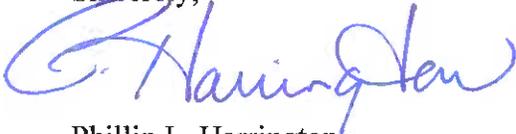
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<sup>3</sup> "Those who cannot remember the past are condemned to repeat it." Philosopher George Santayana's often cited quote may be over used and perhaps cliché - but it seems particularly applicable to the Delta and Delta water quality.

salinity and its variability within the Delta. Legislative findings, modeling, and theories cannot substitute for such facts.

Thank you for your consideration and please do not hesitate to contact us if you have any questions or would like to discuss these matters further.

Sincerely,



Phillip L. Harrington  
Director of Capital Improvements/Water Rights

C: Ann Spaulding, Consultant  
Dr. Susan Paulsen, Flow Science  
Matt Emrick, Legal Counsel

# ATTACHMENT A



February 16, 2010

Division of Water Rights  
State Water Resources Control Board  
Attn: Phillip Crader  
P. O. Box 2000  
Sacramento, CA 95812-2000

Note: City of Antioch's full written testimony to the State Water Resources Control Board and associated exhibits are available at the following link:  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/deltaflow/antioch.shtml](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/antioch.shtml)

## Re: Delta Flow Criteria Informational Proceeding

Dear Mr. Crader:

The City of Antioch has been diverting Sacramento River water for drinking water use from the western Delta since the 1860s, and as such, has information and data directly relevant to the SWRCB's current proceedings to establish Delta flow criteria. The City, because of its position in the western Delta, is also concerned with the ecological health of the Delta and the long-term viability of the City's historic freshwater fishing and recreational opportunities.

Please find attached the City of Antioch's exhibits and supporting documents describing the historical salinity conditions at Antioch. The City of Antioch believes that it is vitally important to consider historical salinity and flow conditions when establishing flow criteria and water quality standards that will affect the future biological and ecological integrity of the Delta, and we believe that the SWRCB should not allow flow to be reduced below, or salinity to be increased above, levels currently allowed by both D-1641 and X2 requirements. In fact, the City asks the SWRCB to establish flow and salinity standards in line with the Delta's historic fresh condition.

We appreciate your consideration in this matter. Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink, which appears to read "Phil Harrington".

Phil Harrington  
Director of Capital Improvements and Water Rights  
City of Antioch

## ATTACHMENT B

# Historical Fresh Water and Salinity Conditions in the Western Sacramento-San Joaquin Delta and Suisun Bay

A summary of historical reviews, reports,  
analyses and measurements

Note: Contra Costa Water District's full written testimony to the State Water Resources Control Board and associated exhibits are available at the following link:

[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/deltaflow/ccwd.shtml](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/ccwd.shtml)

**Water Resources Department**

**Contra Costa Water District**

**Concord, California**

February 2010

Technical Memorandum WR10-001