
From: Joseph_Rizzi <Joseph_Rizzi@sbcglobal.net>
Sent: Friday, October 30, 2015 10:56 AM
To: BDCPcomments
Subject: Natural Desalination to Add Trillion of gallons for CA at low Cost
Attachments: Natural Desalination 2015.docx; Natural Desalination Presentation 2015.ppt

See attached comment and backup documentation.

I look forward to seeing the feedback, and hopefully DWR and water agencies will consider ADDing trillions of gallons at low cost and 100% nature driven and environmentally friendly renewable water from the sea. SeaSpringNow.com is moving the process to prototype despite Water agency lack of support.

Thanks
Joseph Rizzi
707-208-4508
Email: Joseph_Rizzi@sbcglobal.net

KEARC 2563

Zero power desalination & conveyance

Natural Desalination

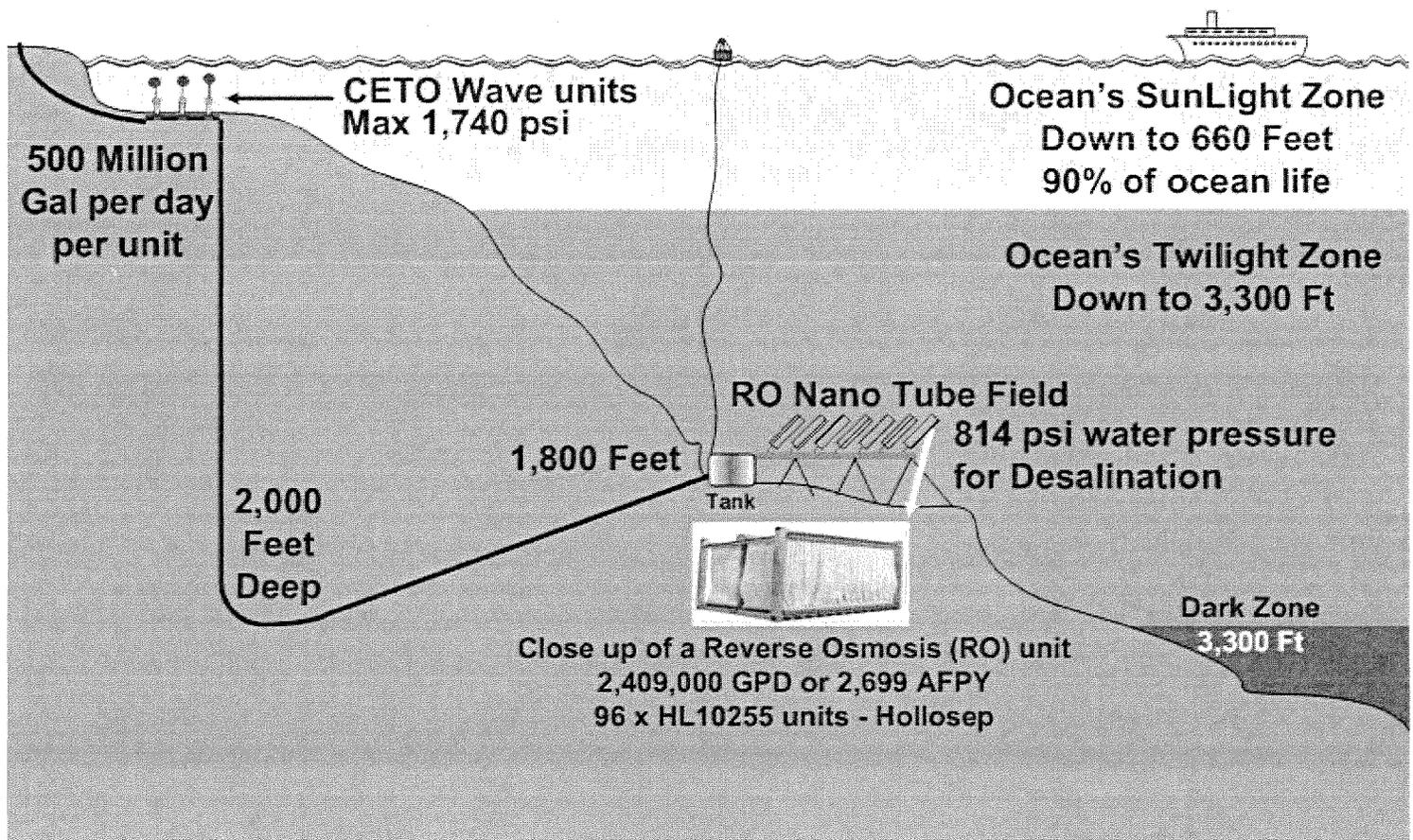
By Joseph Rizzi 707-208-4508 Joseph_Rizzi@sbcglobal.net

Newly discovered "**Natural Desalination**" process uses only nature's power to desalinate new **RIVERS** of fresh water from the ocean, gravity conveyance of the **RIVERS** of water to shore and wave power to bring the water up for use.

Traditional Desalination has many draw backs in that it uses lots of expensive energy to force water through Reverse Osmosis (RO) tubes, the costal land for desalination and power plants is costly and obtrusive in many ways, and the brine concentrate upsets the coastal waters balance. "**Natural Desalination**" eliminates all these problems and more.

Natural Desalination uses **ZERO** man made energy to desalinate and with gravity & wave power conveys the new **RIVERS** of water with no environmental issues. Endless supply of **Trillions** of gallons of fresh water all year long.

- Ocean water needs 800 psi to desalinate using Reverse Osmosis (RO).
- Off shore at 1,800 feet under the water you get 814 psi for the outside of a RO tubes.
- A small flexible pipe from the surface down to the RO system, brings 0 psi pressure down to the inner part of RO tubes and help water flow downhill 2 to 5 miles back to shore using gravity conveyance.
- The difference between the RO outside pressure and inside pressure gives a constant 814 psi, naturally at ZERO cost.
- Constant free trickle of salt FREE water into the inner part of the RO tubes. (Like HoloSep by Toyobo)
- Check valves would be strategically places to automatically close the flow of water if there was a break in the system.
- Water from the tubes would flow downhill to a collection chamber using gravity conveyance.
- Gravity would continue to carry the water down hill to the pipe or tunnel and back to the shore.
- Once at shore the water would be lifted using CETO Wave power for use or put in aqueduct or pipelines.



Natural Desalination advantages are:

R2C4R02563

- Supply all of California with drought resistant water supply for crops and people.
- No brine because only water is taken from the ocean, located far off shore and near the ocean floor helps too.
- Extended life of RO tubes, which would be cleaned by the ocean currents and not need pre filters.
- RO trains (Collection of Tubes) would cost a fraction because the containment vessel is not desired.
- Located off shore offers large areas (miles) for RO system for expansion with no impact to coastal residents.
- Little to no impact to ocean, plants or sea creatures; and no shipping hazard, due to location and design.
- Side benefit of increased water would be more farming, increased economic, more oxygen, cleaner air, etc..
- No Drought issues, Healthy Delta, great water quality, reduce sea level rising and many other water problems can be decreased or eliminated.
- And much, much more!

100% nature powered new endless source of water. Just think of it, new rivers like Sacramento or Colorado rivers of water for the San Joaquin and for southern California. Peripheral canal or tunnels to divert the Sacramento River would not be needed. There would be more fresh water to give better health to the Delta. More water for crops which feed people, increase our economy, improve our air, and help fish with more run off.

All proven concepts - individually but never brought all together until now?!

- RODSS submarine test RO using water pressure to desalinate sea water. <http://tinyurl.com/qcvxmdm>
- Horizontal Drilling to allow water to flow downhill to shore using gravity conveyance.
- CETO Wave power lifts water up to surface and up hills for gravity conveyance. <http://tinyurl.com/nzkfuza>

Educational Opportunities:

- **RO membranes clogging** – hollow fiber offers 10 times the surface area than spiral round which means less clogging. Locating at sea in the Twilight zone means exposure to less than 10% of ocean life as well as suspended from the ocean floor which allows for sea creatures to crawl under RO field. No clogging of filters due to no life growing on it. With RO hollow fibers exposed to open ocean waters allows for heavier particles' and salt to continue on down the canyon via gravity with little to no build up on the fibers. Ocean current mixing helps in the natural cleaning with fibers rubbing against one another. Reverse water pressure can also be used to clean the membranes.
- **Robots for Maintenance** – Working off shore and not on land is scary for most, but look at the energy industry which routinely uses robotics at much deeper waters. Elimination of pretreatment and chemical cleaning makes the RO process simple with less maintenance. Robots with buoyancy would install or replace units as needed. Also Robots can manually, using a duster like device, brush the fibers clean, use a pressure amplifier to shoot water at the RO membranes like a car wash, or hook to the air tank at the bottom and shoot compressed air to help agitate and remove any debris.
- **Pump water to surface** – CETO Wave pumps have more than enough to harness the natural wave power to pump the water to the surface and uphill to continue its journey to the State and Federal aqueducts less than 70 miles from Coast. As a reference water is lifted 3,244 feet in its trip from Sacramento over the Grape Vine and the Tehachapi lift is 1,926 feet by itself. BDCP Twin tunnel proposal is 2 x 35 miles long 40 foot diameter, which will add zero water. CETO wave is currently in operation off the coast of Australia, desalinating water using traditional RO plant, but just getting the water pressure from the wave power.

4 other options to end California's water shortages are 1) Benicia Salinity Control Gates to add 7 MAF in dry years now! 2) CETO wave desalination – more expensive than Natural Desalination but proven and eco-friendly. 3) Solar Distillation desalination on or near Aqueducts using WaterFX or other company. 4) State recycling of water – Toilet to Farm.

More details available upon request.

Joseph Rizzi -- 707-208-4508 -- Email: Joseph_Rizzi@sbcglobal.net or NaturalDesal@att.net

Natural Desalination

Zero energy for desalination and conveyance to shore

by Joseph Rizzi

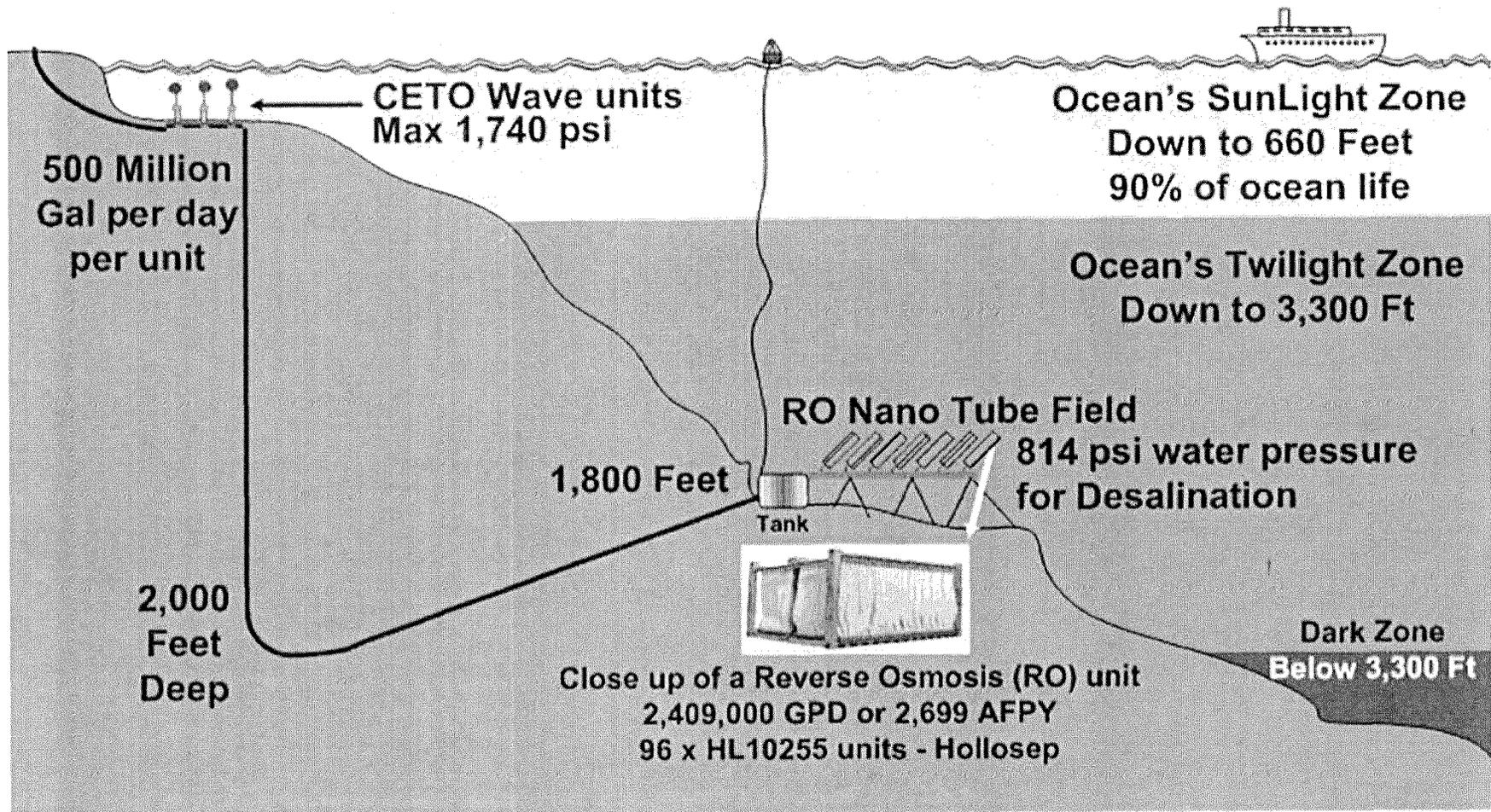
Joseph_Rizzi@sbcglobal.net

707-208-4508

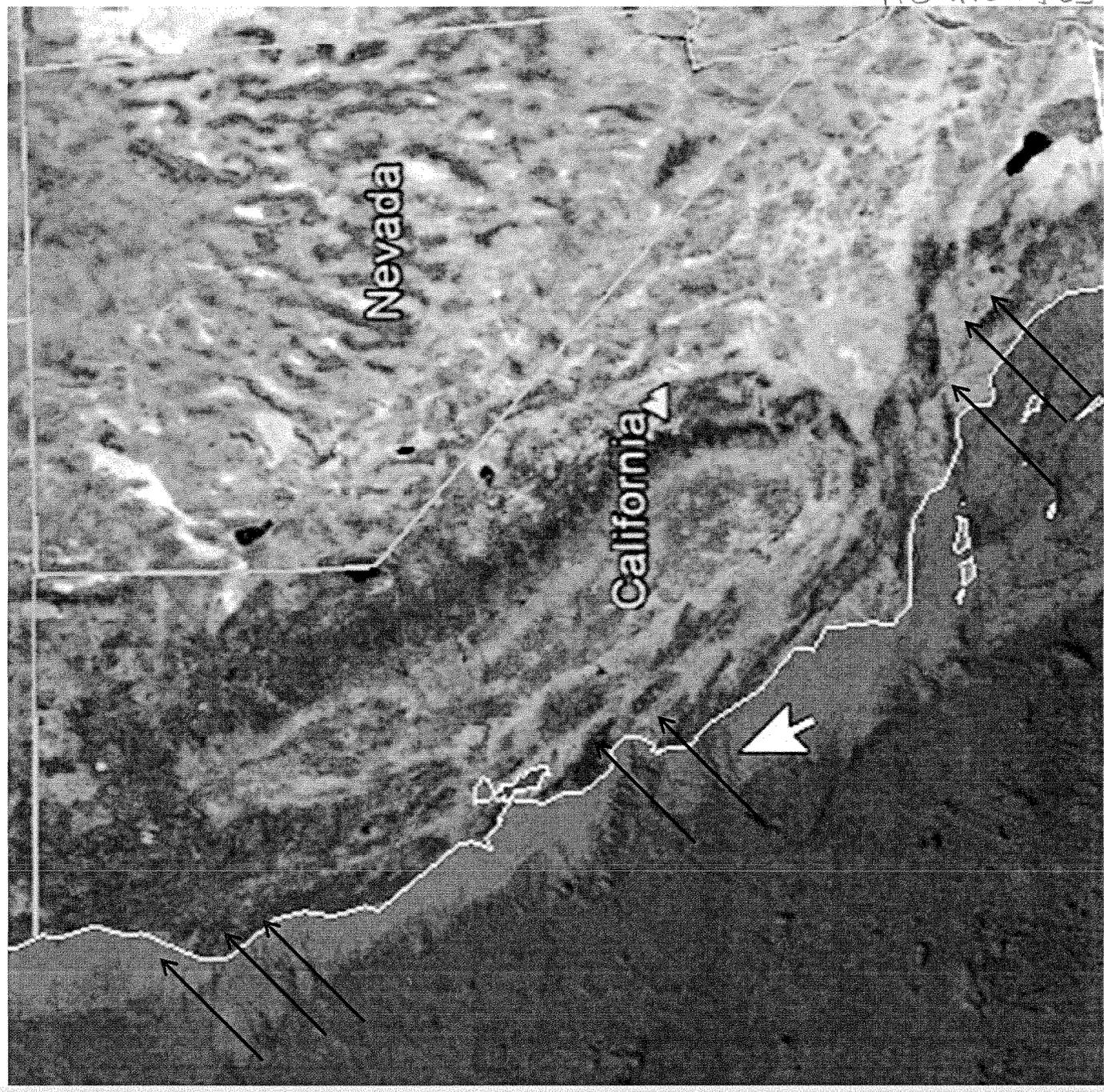
- New endless supply fresh water
- End Droughts forever (save Delta)
- Under **\$20** per acre foot operating cost
- Environmentally friendly
- Easily expandable and repeatable
- Many great Locations available

Natural Desalination System

New Endless water supply @ ~\$20 per Acre foot

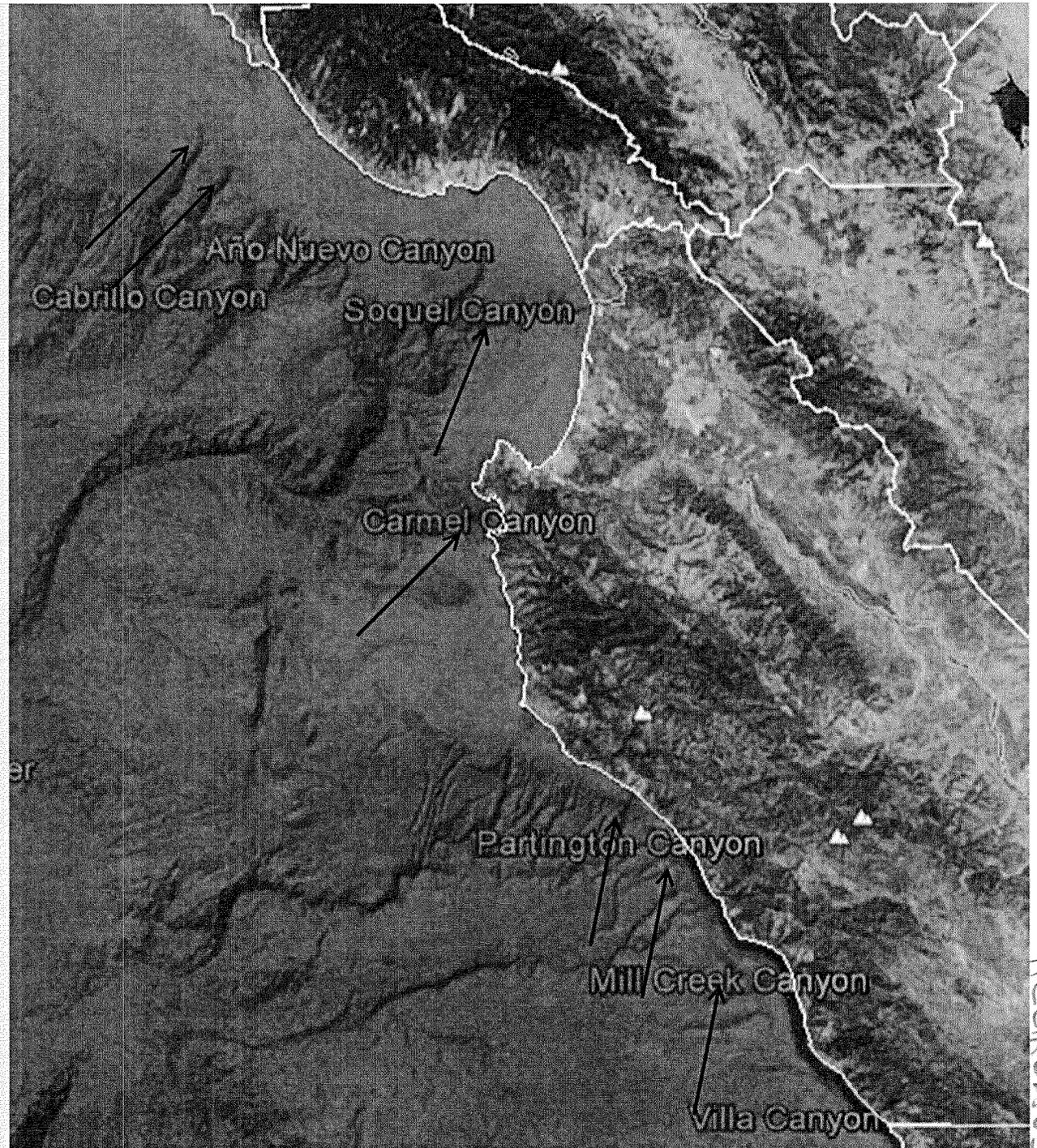


RECIRC 2563

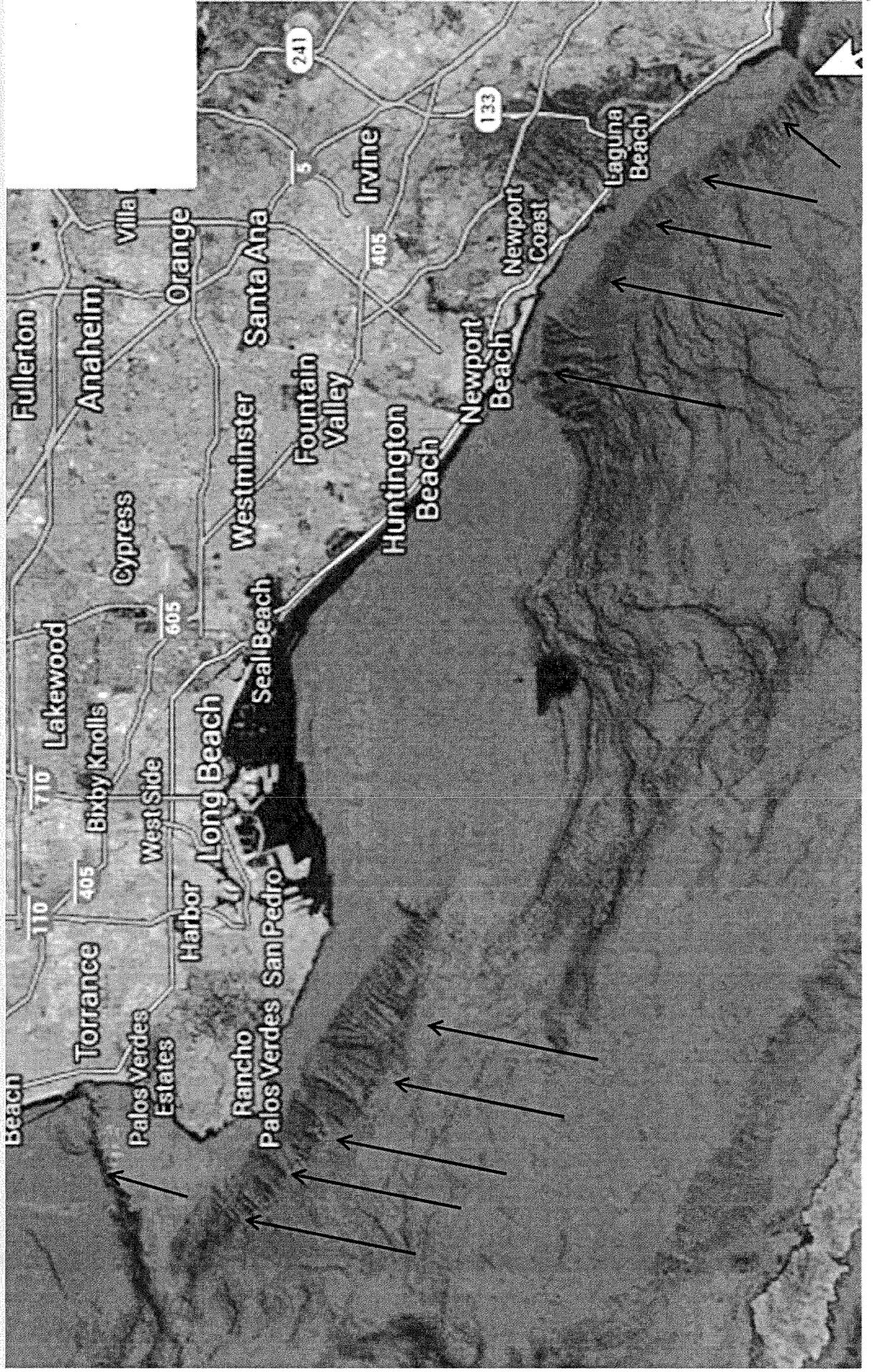


California
locations
for
Natural
Desalination

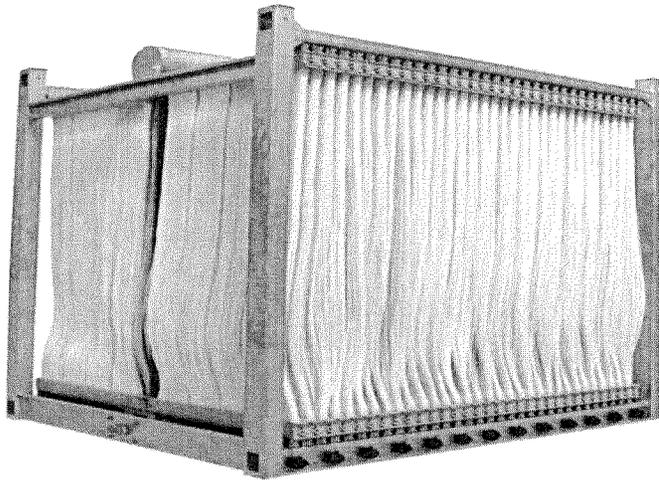
Northern
California
has several
locations
north and
south of
Monterey
for Natural
Desalination



LA area locations for Natural Desal.



Nano Tube - Reverse Osmosis (RO)



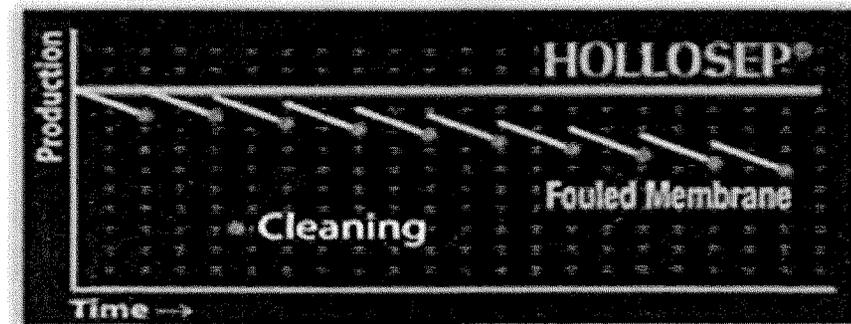
ZeeWeed – RO Config. example

- This is the type of installation for “Natural Desalination” units but using the Hollosep RO type of tubes instead of the nano-filtration (0.04).
- ZeeWeed is great to require for water intakes to SWP and old style desalination plants to only take in what needs to be further processed or used.

"HOLLOSEP®" is a reverse osmosis membrane module that allows production of high purity water (99.6%).

Hollow fiber membrane elements provide about 10 times the surface area compared to spiral wound elements.

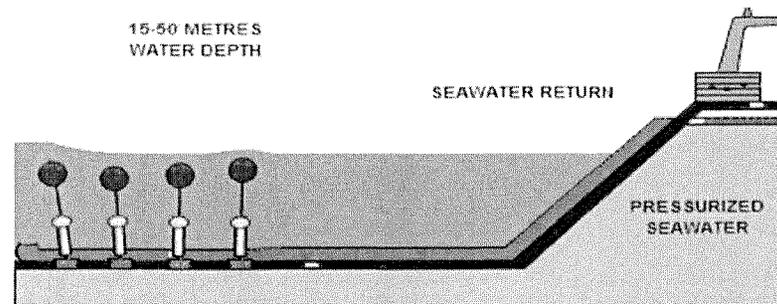
This greater surface area is a key factor to better tolerate potential fouling in the RO module. If the same amount of fouling material is present in the feed water, the much larger surface area of hollow fiber type membrane will be subjected to much less surface fouling than the spiral wound type membrane.



PEARL-2563

Options for Lift on shore

- Ocean power by CETO Wave Power to pump desalted water to surface. Up to 1,740 PSI of pressure.
- 528 million gal per day



The CETO Technology produces zero-emission power & water from the ocean's waves

- Other Wave, Wind, Solar and Tidal power are also readily available to make conveyance from sea shore to city water processing plants or to other conveyance like delta aqueduct totally green and renewable.

Reliable endless supply – no droughts

- Located miles from shore makes the water supply less polluted by man kind.
- Constant supply year round.
- Transported to shore and/or inland via FREE gravity conveyance via horizontal well bore(s). Wells connected for long distances.
- Terrorist resistant by being under water.
- **Unlimited drinking water can be supplied.**

Environmentally Friendly

- Construction offshore, so site is easy to find and procure.
- No Visual Blight. 
- Using horizontal drilling eliminates or reduces environmental issues.
- No concentrated salt (brine) issues, since only water is extracted from sea water. Large quantity for dilution.
- Farming could increase with added endless water supply, which in turn would reduce green house gasses.
- New supply means healthier water ways & deltas.
- Fish and other ecosystems improve due to less diversions.
- Public health improves with consistently better water.

Low operating cost < \$20 /Acre Foot

- Lift only “Fresh water” for use as wanted.
- Totally automated, few moving parts (valves).
- Maintenance of RO filters yearly or longer.
- CETO Wave, Wind power all would only have minimal maintenance costs for operation.
- Suspended near the Ocean floor at about ½ mile down and being off shore more than 1 mile removes Environmental mitigation costs and gives expansion opportunities.
- Robotics' used for RO filter replacements.
- Automated fault (high volume) shut off valves.

Easily expandable and repeatable.

- Standard Nano-Reverse Osmosis (RO) units.
- Connect as many RO units for volume desired.
- Zero energy costs for desalination.
- Ocean is constant & quality consistent.
- Horizontal drilling has been around & accurate.
- Automatic valves can insure quality by shutting off flow if excess water flow in pipes (by leaks).
- Flexible air pipe to surface, that helps create pressure differences, is not a shipping hazard since it would move aside if hit.

SWP Facts

- Water is lifted 1,926 ft (587 m) over the Tehachapi Mountains. ***Approx. lift needed for Natural Desalination.***

- California Aqueduct is 701 miles long from Sacramento to LA. http://en.wikipedia.org/wiki/California_State_Water_Project

Approx. 66 miles from Seashore to Aqueducts for ND.

Pump Name	Feet Lifted
Banks	244
Dos Amigos	118
Buena Vista	205
Teerink	233
Chrisman	518
Edmonston	1,926
Total	3,244

- SWP costs average \$145 per acre foot \$45 for Agriculture to \$298 for cities.
- Proposed twin tunnels in Sacramento are 40 feet in diameter and would go 35 miles each. Estimated to cost \$xx billions with ZERO added water for California.

RECIPIENTS

From: Joseph_Rizzi <Joseph_Rizzi@sbcglobal.net>
Sent: Friday, October 30, 2015 10:56 AM
To: BDCPcomments
Subject: Benicia Salinity Control Louvers - Add 2 trillion gallons for CA
Attachments: Benicia Salinity Control Louvers.doc

See attached comment and backup documentation to request Full study of Salinity Louvers.

I look forward to seeing the feedback, and hopefully adding more than 2 trillion gallons of water for CA and meet our co-equal goals at only million instead of billions.

Thanks

Joseph Rizzi
707-208-4508
Email: Joseph_Rizzi@sbcglobal.net

Joseph Rizzi -- Cel: 707-208-4508 -- Email: Joseph_Rizzi@sbcglobal.net

Benicia Salinity Control Louvers

Add 2+ Trillion Gallons for CA

By Joseph Rizzi 707-208-4508 Joseph_Rizzi@sbcglobal.net

Saltinity Control Louvers is the best and least costly way to add trillions of gallons of FRESH water for the environment and for export and an ideal way to meet the **Co-Equal Goals** as required by law. Studied before as a dam, which I agree is a bad option for the environment, but not studied for Salinity control leaving a section always open for the environment. Can be installed in months for millions (not billions) and adds 7 to 46 MAF available for export based on drought or wet year.

Comment: New study is needed on controlling the Salt water intrusion at the Benicia location, with a Safety lock installed for deep water ship passage by bridges, and keeping one section never controlled (always open) for the environment and using Louvers that will always leak and never shut out 100% of the water like a barrier or gate would. In a DWR dam study in 1931 it stated that 1.3 MAF is needed to naturally hold back the salt water intrusion and we should put in a requirement that minimum flow be set at 2 MAF for the fish and environment.

Pros and Cons:

- **Costs** — Benicia Salinity Control Louvers would cost hundreds of millions to add more than 2 trillion gallons of fresh water by adding the louvers at the base of the new Benicia bridge. Whereas 15 Billion is needed for the considered proposed “Water Fix” which is not going to add any additional water as proposed. I would recommend the export intakes be moved to Sherman Island instead of the current location and ZeeWeed type filter be used, which would add cost to the overall project, but not require for study.
- **Water Quantity** - 2 trillion gallons or in other words the exports can increase to 10 million acre feet exported in dry years (like 2014) if “Salinity Control Louvers” are added to Benicia bridge or that area to slow (not stop) the seawater incursion. Water fix is not suppose to supply any more water than today, but the public is skeptical since each tunnel can carry more than 15 million acre feet a year or a total of **30 MAF** instead of the current 5 MAF being exported south.
- **Ship Lock needed NOW!** — Safety is needed for all 3 of the bridges now, per my conversations with tug boat captains. Adding a Lock system for these ships should be installed in the shipping channel regardless of this salinity study requested for the safety of the ships, bridges and the environment. Blocking off this deep portion of the channel with a lock system will slow the salinity incursion into the Delta all by itself. The one section under the newer Benicia Bridge should be blocked off with a shipping lock. The lock would be closed at one side or the other at all times, unless water flows volumes are high enough to need the lock open to avoid flooding in Delta.
- **Brackish Salt Water** — Salt in the Delta is harmful to much of the eco system and water exports. It is easy to add saltwater back to areas in the Delta that environmentalist want or feel is needed for fish like the Delta Smelt by simply adding a pipeline from the bay to any and all points in Suisun Bay and Delta areas the salt water is desired in the quantities wanted. CA can take control of the SALT instead of letting it spoil the Delta.
- **Location** — After careful consideration of many locations Benicia’s new bridge offers a good structure to easily add the Louvers on to with little stress to the bridge and the area’s water depth is relatively shallow. Carquinez bridge area is way too deep and there are not existing supports in between land. Antioch Bridge area would require 2 Louver structures and you have 2 shipping channels to deal with as well as making difficult to manage water flow without causing issues with the Delta flows. Benicia’s location is ideal because there is a large volume of water between the Salinity control point and the Delta’s Sherman Island.
- **Dams added Water** — Salt is a major reason for letting out fresh water from the northern dams, to hold back the salt intrusion and to channel the fresh water naturally in stream from the Sacramento area to the Tracy pump area. With the Salinity Louvers to hold back the Sea Salt intrusion instead of added quantity of fresh water will allow CA to hold more fresh water storage in it’s existing dams for later use.

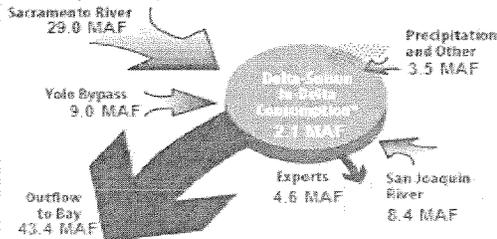
Benicia Salinity Control Louvers

11/21/2007

- **Co-Equal Goals** – Ships will have easier passage, small boats and fish will have an always open passage between fresh and salt water areas, Delta will have less to no salt incursion, environment will have Salty areas added to those areas needing more salt in the Delta area pied in, Double or more the water quantity available for export in dry and wet years, more water stored in Dams to the north to extend water supply, Colder water for fish, more life in Delta because fresh water marshes support more life than Brackish marshes, helps endangered fish, helps farmers in Delta, adds ability to have more crops in south which will add employment, clean air, add food and much more.
- **Louvers** – Not (Dam, Gate or barriers). Louvers 2 to 4 feet wide with each individually controlled to be horizontal to allow for water free flow or vertical to block most of water flow. Closing the lower louvers stops more of the salt incursion which is heavier than the fresh water that is lighter. Having the louvers computer controlled and connected to sensors in the Delta the measure Salinity and water level. This allows for the louvers to be opened to keep the flow and control the salt all year long. The lower louvers can be opened and directed downward to clean out the sediment too.
- **Min. Water for Delta** – DWR studied Dams across the straights in 1931 which failed on environmental concerns due to fish migration issues and not clearing out sediment and effluence from the Delta. Per this DWR study in 1931 1.3 MAF is needed to naturally keep the salt water out of the Delta and in the Bay, which I would recommend being rounded up to 2 MAF as required for the environment to keep the Delta healthy.

Type of Year	Available	Max. Export	Min. To Bay and Sea
Dry Year	12MAF	10MAF	2MAF
Wet Year	48MAF	46MAF	2MAF

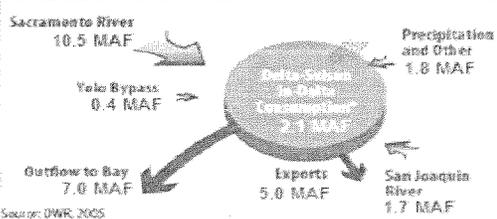
Delta Exports Vary from Year to Year



<http://tinyurl.com/l3npwmg>

This is a view of the water flows in and out of the Delta area.

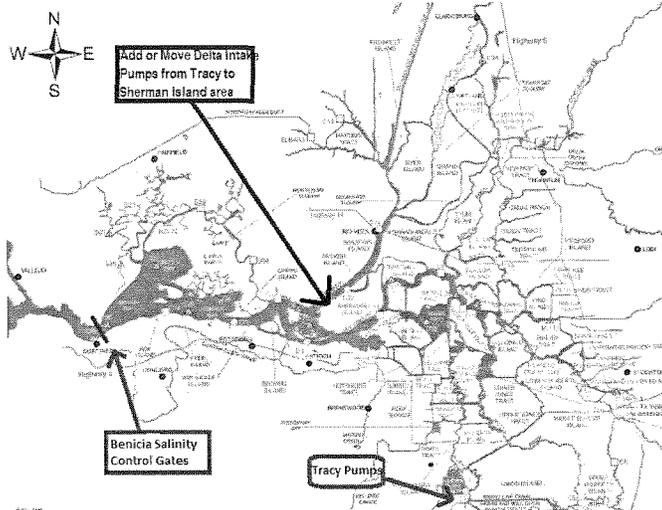
This also shows how much FRESH water can be exported if we can control the Salt intrusion into the Delta area.



This also shows that the location of intakes is bad for the Delta because the San Joaquin river does not have the volume to export all the water wanted in Summer, without reversing the Delta flows.

<http://tinyurl.com/ktkv6hj>

Benicia is the ideal location to Control Salinity, and it is clearly shown in the picture to the right that there is a great amount of water between the control point to the new proposed intake at Sherman Island.





Coalition for a Sustainable Delta

October 30, 2015

VIA E-MAIL

Mr. Mark Cowin, Director
California Department of Water Resources
Mr. David Murillo, Regional Director
U.S. Bureau of Reclamation
BDCP/California WaterFix Comments
P.O. Box 1919
Sacramento, CA 95812
BDCPComments@icfi.com

Re: Partially Recirculated Draft Environmental Impact Report/Supplemental Draft
Environmental Impact Statement for the Bay Delta Conservation Plan/California
WaterFix

Dear Mr. Cowin and Mr. Murillo,

The Coalition for a Sustainable Delta (Coalition) appreciates the opportunity to review the Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the Bay Delta Conservation Plan/California WaterFix (Project).

The Coalition is a California nonprofit corporation comprised of agricultural, municipal, and industrial water users, as well as individuals in the San Joaquin Valley. The Coalition and its members depend on water from the Sacramento-San Joaquin Delta (Delta) for their continued livelihood. Individual Coalition members frequently use the Delta for environmental, aesthetic, and recreational purposes; thus, the economic and non-economic interests of the Coalition and its members are dependent on a healthy and sustainable Delta ecosystem.

The need for a reliable water supply cannot be overemphasized. The agricultural community in particular has suffered for years from the lack of reliable water supplies. Indeed, this year, several public water agencies that contract for water from the State Water Project and Central Valley Project received water allocations of less than 20 percent; some even received zero percent of their allocations. These water cutbacks are devastating to employees in the agricultural sector, the communities in which they farm, and the economy of the state. The current statewide water delivery system is antiquated and simply was not built to manage the

growing demands of California's residents, farms, and businesses. It also remains vulnerable to seismic events and floods.

For these reasons and others, the Coalition strongly supports the Project as a way of improving water supply reliability, while also enhancing the Delta ecosystem. Specifically, the Coalition supports the proposed pipeline conveyance system, which will isolate and protect water supplies and help restore natural flow patterns in the Delta for the benefit of native species. The Coalition also supports the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation's (Bureau) recognition that changing conditions in the Delta will require ongoing scientific review and real-time monitoring so that water operations can be effectively adapted over time in response to emerging science and the evolving ecosystem.

To ultimately be successful, however, the Project must not only improve the overall reliability of water supplies and protect the Delta ecosystem, but it must do so in a way that is affordable. The proposed Project must be a sound investment for the public water agencies and farmers that will provide the funding for it.

With the goal of improving the viability of the Project, the Coalition has identified a few issues that should be addressed prior to issuance of the final environmental impact report (EIR)/environmental impact statement (EIS). These include:

1. Ensuring that the baseline analysis is consistent with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA);
2. Addressing potentially unworkable operational criteria, including the relationship of the criteria with real-time operations and adaptive management;
3. Clarifying certain aspects of the analyses, including with respect to levees and impacts on sturgeon;
4. Taking into account new, high quality scientific information, and
5. Ensuring that the analyses are presented in a neutral, non-biased manner, including with respect to outflow.

The Coalition encourages DWR and the Bureau to consider these concerns, which are discussed in further detail below, as it moves forward in preparing the final EIR/EIS.

I. Baseline Analysis.

The Coalition recognizes that there are fundamental differences between the original Project alternatives and the new proposed alternatives. As a result, the alternatives analysis in the current RDEIR/SDEIS is analytically different from the analysis set forth in the draft EIR/EIS issued in December of 2013 (Draft EIR/EIS). It is important to fully explain the reasons for such differences.

October 30, 2015

Page 3

For example, in the RDEIR/SDEIS, the No Action Alternative includes as part of the baseline implementation of Yolo Bypass improvements and habitat enhancements, as well as 8,000 acres of tidal habitat restoration. RDEIR/DEIS at 4.1-15. In the Draft EIR/EIS, however, these restoration efforts are not included in the baseline and are part of the proposed Project. Draft EIR/EIS at 3-44. The Coalition recommends providing additional details regarding how this approach is consistent with CEQA/NEPA.

Specifically, with respect to CEQA, it would be useful to explain that the lead agency is responsible for developing the project description. CEQA Guidelines, §§ 15124, 15378. While a project description may not give conflicting signals about the nature and scope of the project, it may provide the flexibility needed to respond to changing conditions and events, provided that the description contains information sufficient to evaluate and review the project's environmental impacts. *Citizens for a Sustainable Treasure Island v. City and County of San Francisco*, 227 Cal.App.4th 1036, 1055 (Cal. Ct. App. 2014). As it appears that the Project description in the RDEIR/SDEIS is consistent with this approach, the Coalition recommends providing additional details to avoid any confusion in this regard.

Similarly, with respect to NEPA, it would be helpful to explain that a lead agency has discretion both to determine the purpose and need for a proposed action, as well as the alternatives to be analyzed. 40 C.F.R. §§ 1502.13, 1502.14. Thus, the Coalition recommends providing additional details regarding how the lead agencies' approach satisfies this "rule of reason" standard.

Other areas of the RDEIR/SDEIS could also benefit from additional explanation, including the alternatives analysis as respects aquatic resources. Pursuant to section 15125 of the CEQA Guidelines, the baseline for a CEQA analysis should ordinarily reflect existing conditions at the time the Notice of Preparation was prepared. In several instances in the alternatives analysis, however, the RDEIR/SDEIS concludes that a comparison to the existing conditions baseline "may not offer a clear understanding of the impact of the alternative on the environment." See, e.g., RDEIR/SDEIS at 4.3.7-110, 4.3.7-253, 4.3.7-364 (relating to Alternative 4A); *id.* at 4.4.7-78, 4.4.7-85, 4.4.7-160 (relating to Alternative 2D); *id.* at 4.5.7-48, 4.5.7-82, 4.5.7-131 (relating to Alternative 5A). Instead, the RDEIR/SDEIS concludes that a comparison between the alternatives and the NEPA No Action Alternative is a "better approach," and ultimately concludes that impacts would be less than significant. *Id.*

The RDEIR/SDEIS should be revised to explain that, despite deviating from the typical existing conditions baseline, the approach in the RDEIR/SDEIS is nonetheless consistent with CEQA. This is because section 15125 of the CEQA Guidelines provides that existing conditions will only "normally" constitute the CEQA baseline. It thus follows that, in certain circumstances, an existing conditions baseline may not be appropriate. For example, in an appropriate situation, a lead agency may instead use a baseline that reflects conditions as they will exist when a project goes into operation. *Neighbors for Smart Rail v. Exposition Metro Line Constr. Auth.*, 304 P.3d 499, 509 (Cal. 2013).

In sum, the Coalition recommends that the RDEIR/SDEIS be revised to provide additional details confirming that the baseline analyses are consistent with CEQA/NEPA.

II. Operational Criteria.

The operational criteria currently set forth in the RDEIR/SDEIS appear overly stringent, such that they restrict operations even when take of listed fish species is not expected to occur. The Coalition is concerned that these criteria may prove unworkable from a water supply perspective. RDEIR/SDEIS at 4.1-8. For example, for south Delta operations in January, February, and March, the criteria require: “[Old and Middle River (OMR)] flows will not be more negative than an average of 0 cfs” during wet or above-normal years, as applicable. The requirement of “an average of 0 cfs” is more stringent than any requirement imposed pursuant to the 2008 and 2009 biological opinions, or any other regulatory scheme. Thus, the Coalition requests that this be revised to provide to provide for less stringent operating criteria.

Similarly, the operational ranges currently set forth in Table 4.1-2 include a maximum negative OMR flow of -5000. RDEIR/SDEIS at 4.1-8. In certain circumstances, when the risk of entrainment of listed fish is low, it may be appropriate for water project operations to result in OMR flows more negative than -5000, as occurred in 2011 (when OMR flows reached -6100). See Case No. 1:09-cv-00407, Doc. 842. The Coalition therefore requests that the ranges currently set forth in the RDEIR/SDEIS be revised so as to not preclude the relaxation of operational requirements when the potential for take of listed fish is low.

In addition, certain criteria set forth in Table 4.1-2 contemplate use of Real Time Operations (RTO) and the Adaptive Management Process (AMP), while others do not reference these processes. RDEIR/SDEIS at 4.1-7-10. Moreover, other sections suggest that all of the operational criteria are subject to RTO and the AMP. *Id.* at 4.1-13, 4.1-18. As a result, it is unclear when and how the RTO and AMP processes are to be implemented, and whether there is any overlap between the two. This could create confusion, and does not allow for full realization of these mechanisms. The operational criteria should be revised to clearly explain the role of RTO and AMP. The operational criteria should also be revised to include a statement clarifying that RTO and AMP will be implemented in such a way as to maximize water supplies. Finally, the RDEIR/SDEIS should be revised to clarify that the public water agencies that are expected to fund the Project will have a prominent role in the RTO and AMP.

The Coalition requests the foregoing revisions in order to improve operational flexibility, while also protecting the Delta’s ecosystem.

III. Clarification of Analyses.

It is important for the facts in the SDEIS/RDEIR to be closely connected to the conclusions made by the lead agencies. See *Motor Vehicles Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983); see also *Friends of Endangered Species, Inc. v. Jantzen*, 760 F.2d 976, 986 (9th Cir. 1985) (agency must engage in “a reasoned analysis of the evidence before it”).

In a few instances, the analyses in the SDEIS/RDEIS should be revised to clarify the relationship between the facts and the related conclusions. For example, certain conclusions in the RDEIR/SDEIS relating to green sturgeon and white sturgeon do not appear fully consistent with the facts. Specifically, with respect to the effects of water operations on migration conditions for green sturgeon and white sturgeon, the RDEIR/SDEIS concludes that, in general, effects will not be adverse. RDEIR/SDEIS at 4.3.7-299-301, 4.3.7-322-325 (relating to Alternative 4A); *id.* at 4.4.7-174-177 (relating to Alternative 2D); *id.* at 4.5.7-170-173 (relating to Alternative 5A). However, in the discussion, the RDEIR/SDEIS emphasizes the uncertainty associated with the analyses, concluding that certain correlations relating to sturgeon migration are “not known at this time.” *Id.* The Coalition recommends that the analyses be revised to address this apparent uncertainty, in order to clarify that the conclusions are consistent with the facts.

Certain conclusions relating to levees should also be revised to clarify that they are consistent with the facts. For example, the RDEIR/SDEIS describes in detail the risks associated with levee failure and the likelihood that such failures could occur in the future. RDEIR/SDEIS at 4.2-5-7 (acknowledging that “the risk of levee failure in the Delta is significant”). Yet, in the geology and seismicity section of the alternatives analysis, the RDEIR/SDEIS concludes that the impact of “loss of property, personal injury, or death from landslides and other slope instability during operation of water conveyance structures” would be “less than significant.” It appears to be the agencies’ position that the risk of failure will be less than significant only with respect to the new embankments and levees that will be impacted during construction of the conveyance facility. The Coalition therefore recommends that this analysis be revised to clarify the agencies’ intent, such that the conclusions are supported by the facts.

In sum, the Coalition recommends that the agencies’ revise certain analyses to clarify that the conclusions in the RDEIR/SDEIS are supported by, and consistent with, the facts.

IV. New Scientific Information.

NEPA requires that information contained in an EIS be of “high quality.” 40 C.F.R. § 1500.1(b). Agencies must “insure the professional integrity, including scientific integrity, of the discussions and analyses in [an EIS].” 40 C.F.R. § 1502.24. Similarly, CEQA requires information in an EIR to be sufficient to allow the EIR to perform its information disclosure function. *See City of Long Beach v. Los Angeles Unified Sch. Dist.*, 176 Cal. App. 4th 889, 898 (Cal. Ct. App. 2009); *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 150 P.3d 709, 723 (Cal. 2007).

Here, the Coalition wants to encourage DWR and the Bureau to consider all readily available, relevant, and high quality scientific information. For example, while the delta smelt analysis set forth in Section 4 (RDEIR/SDEIS at 4.3.7-25 to 4.3.7-27) includes recent analyses such as Manly et al. (2015) and Feyrer et al. (2015), there is no reference to certain other recent publications such as Murphy and Hamilton (2013). The Coalition recommends that all relevant scientific information be taken into account, including the publications set forth in the attached Exhibit A.

V. Neutral Analyses.

In order for the Project to ultimately be successful, it must be implemented in a transparent, neutral, and science-driven manner. The Coalition is concerned that certain aspects of the RDEIR/SDEIS do not reflect this goal of neutrality.

For example, the RDEIR/SDEIS states that water operations for Alternative 4A “would be limited to operations within the range of Scenario H3 and H4.” RDEIR/SDEIS at 4.3.4-1; *see also id.* at 4.3.7-1. Notably, Section 3 of the Draft EIR/EIS includes other scenarios, including Scenario H1 and H2, as well as a decision tree process that would facilitate implementation of those scenarios. Draft EIR/EIS at 3-202-209. It is unclear why Scenarios H1 and H2 and the decision tree process are not included in Alternative 4A. This could be perceived as eliminating an element of transparency and neutrality, which the decision tree process was intended to achieve.

As another example, the analysis relating to Impact AQUA-5 (effects of water operations on rearing habitat for delta smelt) does not appear to reflect the state of the science in a neutral manner. RDEIR/SDEIS at 4.3.7-25-27. The RDEIR/SDEIS states that “to inform this current impact assessment, the analysis of rearing habitat effects on delta smelt relies on a technique based on the method of Feyrer and coauthors (2011) which estimates the extent of abiotic habitat for delta smelt in the fall ... as a function of changes in X2 ...” *Id.* at 4.3.7-26. Yet, the RDEIR/SDEIS expressly acknowledges the significant scientific disagreement surrounding Feyrer et al. (2011). *Id.* To use Feyrer’s analysis, despite acknowledging that it is scientifically questionable, suggests that the analysis may not be entirely neutral and unbiased.

The Coalition requests that the RDEIR/SDEIS be revised to ensure that all analyses are presented in a neutral and even-handed manner.

VI. Conclusion.

In sum, the Coalition urges DWR and the Bureau to address the foregoing items prior to issuance of the final EIR/EIS. We would be happy to discuss these issues further at your convenience.

Sincerely,



William D. Phillimore
Board Member

Exhibit A

Relevant Publications

Glibert, Patricia M., Deborah C. Hinkle, Brian Sturgis & Roman V. Jesien, *Eutrophication of a Maryland/Virginia coastal lagoon: a tipping point, ecosystem changes, and potential causes*, 37 *Estuaries and Coasts* S128–S146 (2014). DOI: 10.1007/s12237-013-9630-3.

Glibert, Patricia M., Francis P. Wilkerson, Richard C. Dugdale, Alexander E. Parker, Jeffrey Alexander & Sarah Blaser, *Phytoplankton communities from San Francisco Bay Delta respond differently to oxidized and reduced nitrogen substrates — even under conditions that would otherwise suggest nitrogen sufficiency*, *Frontiers in Marine Sci.* (2014) DOI: 10.3389/fmars.2014.00017.

Glibert, Patricia M., Todd M. Kana & Karlena Brown, *From limitation to excess: consequences of substrate excess and stoichiometry for phytoplankton physiology, trophodynamics and biogeochemistry, and implications for modeling*, 125 *Journal of Marine Systems* 14–28 (2013). DOI: 10.1016/j.jmarsys.2012.10.004.

Glibert, Patricia M., *Ecological stoichiometry and its implications for aquatic ecosystem sustainability*, 4 *Current Op. in Envtl. Sustainability* 272–77 (2012). DOI: 10.1016/j.cosust.2012.05.009.

Glibert, Patricia M., *Long-term changes in nutrient loading and stoichiometry and their relationships with changes in the food web and dominant pelagic fish species in the San Francisco Estuary, California*, 18 *Reviews in Fisheries Sci.* 211–232 (2010). DOI: 10.1080/10641262.2010.492059.

Hammock, B. G., J. A. Hobbs, S. B. Slater, S. Acuña & S. J. Teh, *Contaminant and food limitation stress in an endangered estuarine fish*, *Sci. of The Total Env't* 532 (2015) 316–326.

Kammerer, B. D., T. Hung, R. D. Baxter & S. J. Teh, *Physiological effects of salinity on Delta Smelt, *Hypomesus transpacificus**, *Fish Physiology and Biochemistry* (2015). DOI 10.1007/s10695-015-0131-0.

Maunder, M.N., & R. B. Deriso, *A state–space multistage life cycle model to evaluate population impacts in the presence of density dependence: illustrated with application to delta smelt (*Hypomesus transpacificus*)*, *Can. J. Fish. Aquat. Sci.* 68: 1285–1306 (2011).

Merz, Joseph E. , Paul S. Bergman, Jenny F. Melgo & Scott A. Hamilton, *Longfin smelt: spatial dynamics and ontogeny in the San Francisco Estuary, California*, 99(3) *California Fish and Game*, 122-148 (2013).

Merz, Joseph E., Scott Hamilton, Paul S. Bergman & Bradley Cavallo, *Spatial perspective for delta smelt: a summary of contemporary survey data*, 97(4) California Gish & Game 164-189 (2011).

Miller, William J., Bryan F. J. Manley, Dennis D. Murphy, David Fullerton & Rob Roy Ramey, *An investigation of the factors affecting the decline of delta smelt (*Hypomesus transpacificus*) in the San Francisco-San Joaquin estuary*, 20(1) Reviews in Fisheries Sci. 1-19 (2012).

Murphy, Dennis D., & Scott A. Hamilton, *Eastward Migration or Marshward Dispersal: Exercising Survey Data to Elicit an Understanding of Seasonal Movement of Delta Smelt*, 11(3) San Francisco Estuary & Watershed Sci. 1-20 (2013).

Murphy, Dennis D. & Paul S. Weiland, *Science and structured decision making: fulfilling the promise of adaptive management for imperiled species*, 4 Journal of Env'tl. Studies and Scis. 200-207 (2014). DOI: 10.1007/S134-014-0165-0.

Murphy, Dennis D. & Paul S. Weiland, *The use of surrogates in the implementation of the federal Endangered Species Act - proposed fixes to a proposed rule*, 4 Journal of Env'tl. Studies and Scis. 156-162 (2014). DOI: 10.1007/s13412-014-0167-y.

Murphy, Dennis D. & Paul S. Weiland, *The Route to Best Science in Implementation of the Endangered Species Act's Consultation Mandate: The Benefits of Structured Effects Analysis*, 47 Env'tl. Mgmt. 161-172 (2011). DOI: 10.1007/s00267-010-9597-9.

Weston, Donald P., Da Chen & Michael J. Lydy, *Stormwater-related transport of the insecticides bifenthrin, fibronil, imidacloprid, and chlorpyrifos into a tidal wetland, San Francisco Bay, California*, Sci. of The Total Env't 527-528C: 18-25 (2015). DOI: 10.1016/j.scitotenv.2015.04.095.

From: Remillard, Ashley J. <aremillard@nossaman.com>
Sent: Friday, October 30, 2015 11:01 AM
To: BDCPcomments
Cc: Poole, Melissa; Remillard, Ashley J.; Weiland, Paul S.
Subject: Coalition for a Sustainable Delta - Comments on the RDEIR/SDEIS for the BDCP/California WaterFix
Attachments: Coalition for a Sustainable Delta - Comments on RDEIR_SDEIS for the BDCP_California WaterFix.pdf

On behalf of the Coalition for a Sustainable Delta, please find attached a comment letter regarding the Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement for the Bay Delta Conservation Plan/California WaterFix. We appreciate your consideration of the attached comments.

Best regards,

Ashley Remillard

Ashley J. Remillard

Attorney at Law
NOSSAMAN LLP
18101 Von Karman Avenue
Suite 1800
Irvine, CA 92612
aremillard@nossaman.com
T 949.833.7800 F 949.833.7878
D 949.477.7635



PLEASE NOTE: The information in this e-mail message is confidential. It may also be attorney-client privileged and/or protected from disclosure as attorney work product. If you have received this e-mail message in error or are not the intended recipient, you may not use, copy, nor disclose to anyone this message or any information contained in it. Please notify the sender by reply e-mail and delete the message. Thank you.