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Delta Conveyance Project ("DCP") EIR Scoping Comment Letter
Subj: SolAgra Water Solution ("SWS") a viable alternative to DCP

The SolAgra Water Solution is a viable alternative to the Delta Conveyance Project. SWS evaluation under NEPA and CEQA, as well as the Clean Water Act is required.

SolAgra has previously submitted details of the SolAgra Water Solution as a viable alternative to the BDCP and the CWF. Both of those projects failed and have been abandoned, but in both cases the analysis of alternatives that would meet water supply needs without damaging the Delta environment and communities was NOT included in the environmental review as required by law. Our July 29, 2014 comment letter provided a detailed discussion of the legal requirements to consider alternatives including the SolAgra Water Solution, but all alternative solutions that proposed intakes in the west Delta were summarily dismissed without further analysis or consideration. All of the comments made in our comment letter continue to apply in the context of the new Delta Conveyance Project EIR. It was a legal error for the CWF RDEIR/S to omit consideration of the SolAgra Water Solution.

An additional basis for consideration of the SolAgra Water Solution is for purposes of determining the Least Environmentally Damaging Practicable Alternative ("LEDPA"). (See 33 U.S.C. § 1344(b)(1).) USACE regulations provide, "[N]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem." (40 C.F.R. § 230.10(a).) USACE regulations specifically require the applicant to identify possible practicable alternatives especially including those alternatives that do not involve the discharge of fill material. (40 C.F.R. § 230.10(a)(i).) The SWS does NOT involve discharge of fill materials.

The project purpose and need of DCP can be met by the SolAgra Water Solution. In particular, diversions from the Delta under the SolAgra Water Solution can occur in a manner that "minimizes or avoids adverse effects to listed species, and allows for the protection, restoration and enhancement of aquatic, riparian and associated terrestrial natural communities and ecosystems." Due to the location of the SolAgra intakes on Sherman Island in the western Delta, diversions can also "[r]estore and protect the ability of the SWP and CVP to deliver up to full contract amounts when hydrologic conditions result in the availability of sufficient water." Even in the case of insufficient available water quantities, as California has experienced during the most recent five

year drought, the SolAgra Water Solution would augment the available water supply by providing an additional 1 Million Acre-Feet/ year ("MAF") of **newly created water** via a brackish water desalination plant on Sherman Island. Using state-of-the-art desalination technologies, this water supply would be drought proof and would be immune to droughts and projected sea level rise.

The SWS project would include rebuilding and raising the height of the Sherman Island levees to harden and protect the new infrastructure from the effects of sea level rise. The desalination plant would be constructed on approximately 100 acres of elevated pad (built from tunnel material mined as part of this project) that would additionally protect the plant from future sea level rise. The solar power plant that will provide renewable energy to operate the desalination and pumping plants will be built with elevated solar arrays using SolAgra Farming® - a patented technology protected by U.S. Patent Number 10,615,738 and other patents pending.

The SolAgra Water Solution is a practicable alternative that would have a less adverse effect on the aquatic ecosystem than the currently proposed DCP. In particular, the SWS requires only one 19-mile long mile tunnel instead of a 38.5-mile long tunnel, PLUS the SolAgra tunnel would have a 28-foot diameter, appreciably smaller than the 40-foot diameter tunnel proposed in the DCP. Moreover, since the SolAgra tunnel would run primarily south of the Delta from Sherman Island to the SWP facilities at Bethany Reservoir, NO WATERS OF THE UNITED STATES/ WETLAND fill would be necessary. DCP proposes more than 15 million cubic yards of tunnel excavation/ fill material to be deposited in pristine areas of the Delta, the SolAgra Water Solution would deposit less than 1.5 million cubic yards of fill material, and this material would all be deposited on Sherman Island to improve levees and to build an elevated pad for the desalination plant. Any additional material would be deposited in areas that are currently upland grazing areas (not wetlands). This fill material would be beneficial to the environment by increasing levee height and stability and by offsetting the land subsidence that has occurred on Sherman Island over many years. When graded and compacted, the fill area that is not beneath the desalination plant can be seeded and returned to grazing with no impact to the environment. The SWS produces less than 10% the amount of fill material (tunnel boring spoils) as the DCP. The SWS tunnel path uses existing easements and rights of way beneath existing state highways (SR-160 & SR-4) so that no private lands must be purchased or "taken" by eminent domain. Due to the location of the SolAgra tunnel, approximately 50% of the material removed from the tunnel will be rock that is sourced from beneath the foothills of Mt. Diablo. This rock will be used to rebuild Sherman Island levees and to build the fish-screening permeable levee sections that allow fresh and brackish water to be brought onto Sherman for processing and desalination.

The total tunnel length proposed in the DCP is more than 38.5 miles. This is twice the length of the SolAgra tunnel shown in the attached SolAgra Exhibit 2. The SolAgra plan would be constructed near existing high capacity powerlines and ultimately be powered in large part by a SolAgra Solar Power plant that can be built on existing grazing land on

Sherman Island. Thus, the upcoming LEDPA determination that will occur with the USACE review provides an additional basis for full consideration of the SolAgra Water Solution.

SolAgra Corporation has a better alternative and requests that it be heard and given serious consideration. The SWS is a reasonable and superior alternative to the DCP. Law requires that it be fully and fairly evaluated.

A description of the SWS was previously submitted as a superior alternative to the many potential project configurations considered in the BDCP's Draft EIR/EIS. As explained in our prior communiques, the SWS is designed to better accomplish the tasks for which the BDCP/CWF and the now rebranded "Delta Conveyance Project", was designed.

State and federal endangered species acts and environmental review statutes require that every project must fully consider alternatives to minimize take of endangered species and investigate means to avoid significant environmental impacts. The SWS accomplishes these tasks without the un-mitigatable economic, environmental and social impacts of the DCP.

The DCP tunnel plan to divert up to 6,000 cfs of freshwater from the upper Sacramento River at Clarksburg would produce unacceptable water quality in the lower Sacramento River. This plan also increases salinity downstream of the Clarksburg intakes thus violating basic clean water requirements by moving X2 upstream. This was confirmed in the letter by the U.S. Environmental Protection Agency during the environmental processing for the BDCP. The DCP's impacts to fish in the northern Delta are one of the main reasons that the former BDCP project could not be permitted as a 50-year conservation plan, and it was ultimately abandoned and replaced by the California Water Fix which also failed and was later abandoned.

Water from SolAgra's proposed Sherman Island water processing and desalination plant is NOT vulnerable to drought or projected sea level rise. It will provide greater reliability to ensure more water and higher quality water than proposed by the DCP.

The SolAgra Water Solution can be built in less time and at less cost both financially and environmentally. (See attached Exhibit 2 for project specifics.)

The water quality in the Sacramento River at Sherman Island is similar to the water that could be drawn at Clarksburg by the DCP. The desalinated water produced by the Sherman Island Desalination Facility will be 99% pure and far superior to Sacramento River water. Therefore, the blended output from the Sherman Island Desalination Facility will exceed the water quality that can be sourced by the DCP from diversion of the Sacramento River at Clarksburg.

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1. **The SWS provides a superior alternative to DCP. The comparisons are undeniable.** Since the beginning of construction of the State Water Project ("SWP") in the 1950s, California has relied upon high risk "serial engineering". Each new engineering solution attempts to remediate the disastrous conditions created by the previous "solution." This is also the case with the currently proposed DCP. The SWS will better restore Sacramento River flow pathways and volumes, resulting in significant benefits to native fish species and other wildlife in the Delta. It will also benefit fishermen, local residents and farmers. SWS would source the SWP's entitlement through intakes on Sherman Island using land that is already owned by the State of California.
2. SWS would increase the SWP's capabilities to export water to the rest of California. In fact, the SWS is the only alternative with the capability of generating up to **1 million acre-feet of "new" drinking water each year** by filtering and desalinating brackish water arriving on the tides from Suisun Bay. **The SWS provides this capability irrespective of drought conditions and sea level rise.**
3. SWS would employ a Public-Private partnership similar to the business structure that was used by our Joint Venture Partners, IDE Technologies to design and build the largest seawater desalination facility in the Western Hemisphere in Carlsbad, California – just north of San Diego. Desalinating brackish water from the southern tip of Sherman Island, with only 2-4% the salinity of seawater, can be up to 25 times more efficient and far less power intensive than desalinating 100% seawater as is being successfully done in Carlsbad, CA today.

The SWS would produce the same volume of water (2.4 Million AF/year) at Sherman Island than is currently pumped from the south Delta at the Banks Pumping Plant ("Banks") during a "normal-water year". However, our use of desalination produces higher quality water than is pumped at Banks. **This very high-quality water provides significant benefits to the State Water Contractors that purchase water from the State Water Project.** The water production and pumping to the SWP is accomplished using renewable energy. Banks currently uses 11 – 26,000 horsepower pumps to pump water from the Clifton Court Forebay up to Bethany Reservoir, where it enters the SWP. This is a vertical rise of 244 feet. The SWS would pump directly from Sherman Island to Bethany Reservoir using pressure created by the desalination plant to pump water to Bethany Reservoir, thereby bypassing Banks. This allows the current renewable WAPA power used at Banks to become available for other uses while Banks is on standby, and it makes Banks available for a better use.

In high-water years when water is plentiful and significant hydroelectric power is available to power Banks, that pumping plant would be used, as needed, to create surge pumping capacity that has never before existed. This accomplishes the "Big Gulp" aspired to in the BDCP/CWF and DCP, and it does so with renewable energy.

- The SWS would provide this increased surge capacity. This capacity combined with the prudent design and construction of additional high capacity "plumbing"

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could move large quantities of water during the infrequent flood stages when reservoirs throughout the state are releasing water to avoid overtopping. This "Big Gulp" flow can be used to recharge aquifers and the excess stored in Tulare Lake for later redistribution to the San Joaquin Valley water districts. **The needs of the Central Valley Project ("CVP") can be addressed by this side of the equation.** This provides a complete, environmentally superior alternative to the DCP.

- The SWS would be powered by renewable energy from SolAgra's proposed Sherman Island Solar Power Plant. When required, that solar power could be augmented by wind power from the existing nearby Rio Vista wind farms. All power would be delivered via existing power corridors. No additional easements or rights of way would be required.

The SWS would create a dual-plant, interconnected water processing system on State-owned land at Sherman Island. Plant #1 filters and processes incoming fresh water from the Sacramento and San Joaquin rivers via multiple fish-screened intakes around Sherman Island. Plant #2 intakes brackish water through fish-screened intakes on Sherman Lake and Mayberry Slough and desalinates this brackish water very efficiently due to the low salinity (when compared to sea water). After processing, desalinated water from Plant 2 is blended with fresh, filtered water from Plant 1. The combining of fresh water with the treated and desalinated brackish water will replace the 2.4 million Acre-Feet/year of lower quality fresh water that is currently conveyed through the SWP in a "normal water year." The water produced at Sherman Island will be of higher quality than the water that is pumped from the Clifton Court Forebay in the south Delta via Banks because it will be **processed** at Sherman Island, not just screened and pumped. This means the State Water Contractors that receive the water from the SWP will receive higher quality water than they currently receive from Banks, OR they would receive from the DCP tunnel. **The SWS is the <u>ONLY</u> alternative that processes and desalinates the water before supplying it to the SWP.**

- The SWS can augment the low flow of fresh river water in years of reduced river flow due to drought or other issues. The output volume of the desalination plant can be increased to provide additional desalinated water to make up for reduced quantities of available fresh water caused by drought or sea level rise.
- The separation of processing functions into two discrete, but interconnected plants, allows both plants to operate at peak efficiency, while still accomplishing the end result of producing 2.4 Million Acre-Feet/year of fresh water for the SWP **irrespective of drought** conditions.

The new fresh water that is produced at Sherman Island will be pumped through a single, 28-foot ID pressure tunnel that is only 19 miles long (see Exhibit 2). This is far superior to the 40-foot tunnel that is 38.5 miles long proposed by the DCP.

Since the incoming water to Sherman Island will be fish-screened by long, low-velocity intakes via permeable levees as it enters the island, and it will be pressurized via the

filtration and desalination processes, it can completely bypass the Clifton Court Forebay and the Banks Pumping Plant. It can be pumped directly to Bethany Reservoir, where it will begin its gravity flow into the SWP's California Aqueduct.

The principle objectives and benefits of intake relocation to Sherman Island as proposed in the SWS:

- By placing the Banks Pumping Plant on standby, the 2.4 Million Acre-feet/year ("MAF") being drawn into the Banks' intakes would instead be permitted to once again flow completely through the Delta. This would restore natural flows as they occurred before the State Water Project began operations in 1960. After flowing completely through the Delta, 1.4 MAF is brought onto Sherman Island and added to 1.0 MAF of new desalinated water that is sourced from brackish water in Sherman Lake on the south end of Sherman Island. The additional 1.0 MAF of river-flow fresh water that is not brought onto Sherman Island continues its flow into the San Francisco Bay/Delta Estuary ("SFBDE"). This additional flow supports the retention of X2 at its historic range OR moves it further west. This improves water quality in the SFBDE and facilitates the recovery of natural breeding and feeding grounds for aquatic species of concern. This meets the recommendations for increased minimum Delta outflow that the EPA; State of the Estuary Report; State Water Resources Control Board and many other analyses have clearly shown are necessary to restore the Bay-Delta and its fisheries.
- Improves both in-Delta and export water quality, rather than improving export water quality at the expense of in-Delta water quality.
- The SWS tunnel passes near Los Vaqueros reservoir which would allow a portion of the new high-purity water to be stored in Los Vaqueros or distributed to water agencies in Contra Costa County, the Cities of Antioch, Pittsburg and to directly serve Zone 7 (Silicon Valley water agencies). This would provide badly needed new water supply to supplement the Contra Costa Canal that has limited water intake possibilities at Mallard Slough and Rock Slough with the increase in salinity along the Antioch/Pittsburg waterfront. These intakes are limited to a few months per year and without desalination they will become completely unusable with additional sea level rise that is occurring now.
- The high elevation of Las Vaqueros would also provide the opportunity for pumped hydro energy storage and power production that could additionally serve the Sherman Island desalination plant at night.
- Avoids significant impacts to the Sacramento Region, including North Delta communities, farmers, water supplies and flood control facilities.

The SolAgra Water Solution is a viable alternative which could accomplish a greater task in less time and at less cost than the DCP.

This new capability can be created by SolAgra using renewable energy, with no need to build additional fossil fuel power plants, nuclear plants, or to import "brown" power from

other states. The SolAgra philosophy is fully consistent with groundbreaking statewide efforts to reduce greenhouse gas emissions.

The power easements and water conveyance rights-of-way currently exist. No additional purchases of easements or rights-of-way are required. The State of California Department of Water Resources owns 8,776 acres on Sherman Island. This is much more land than needed for the facilities that are proposed by the SolAgra Water Solution. No additional land must be condemned or acquired. No Delta property owners must be displaced or have their lives and/or farming operations temporarily or permanently ruined.

The SolAgra Water Solution better restores Bay-Delta ecosystems than the alternatives to be studied in the DCP-EIR/S while exceeding the water quantities projected by the DCP with less cost, in less time and without environmental impact. This reduces or eliminates expensive environmental mitigation requirements. Under the SolAgra plan, Sherman Island can become the center of the "California Water Solution."

One of the benefits attributed to the BDCP and CWF were "improved reliability through redundancy". The twin tunnels were touted as having increased reliability due to the redundancy of two tunnels. The single tunnel configuration of the DCP has no such redundancy. The SolAgra Water Solution has the significant benefit that the existing water pathways through the Delta leading to the Clifton Court Forebay and the Banks Pumping Plants will remain in standby awaiting "Big Gulp" opportunities, but also providing reliability in the event of damage to the SWS tunnel from Sherman Island to Bethany Reservoir.

The SolAgra Water Solution would preserve natural river flows and maintain water quality in the Delta while simultaneously improving reliability of the water supply. It would also minimize or completely avoid many of the significant environmental impacts that will be identified in the DCP - EIR/S. The SWS is the drought-proof solution that has been desperately needed in California for more than 50 years. This Plan **IS** the necessary alternative to the "serial engineering" that has been plaguing California since the creation of the CVP and the SWP. The SWS is a practicable and superior alternative to the DCP. **It must be fully evaluated.**

We welcome the opportunity to discuss the SolAgra Water Solution in greater detail. We have all invested significant resources to find the best solution to California's longstanding water issues. California recently experienced the longest drought in its history. The minimal rainfall in the 2019-2020 winter may signal the beginning of another drought. With climate change exacerbating the long-term weather, it is essential that we find the most sustainable and best solutions to resolve California's water issues that have precipitated the California Water Wars for more than half a century.

Recent scientific studies published current research that show the western United States and particularly California may be entering a Mega-Drought that hasn't been seen in 400 years since a 28-year drought ended in 1603. The article may be accessed here.

No matter the outcome of the analysis of the DCP, it must be clearly understood by all parties that this project and similar projects that preceded it have one thing in common – they all propose to move existing water from north to south but they produce

NO NEW WATER!

Even in abundant rain and snow years in California, the reservoirs and the snowpack can only store so much water. The population of the State is exploding. More potable water is needed for people, agriculture, fish and wildlife. The only solution is to make more water. The Peripheral Canal, BDCP, CWF and now the DCP still produce

NO NEW WATER!

Even if the State elects to move forward with the DCP, the SolAgra Water Solution is the only solution that can produce up to One Million Acre-Feet of new water every year **irrespective of scientifically predicted drought**, climate change or other natural disasters and efficiently deliver that water to the State Water Project for distribution throughout the State.

Please let us know when we may schedule an appointment to discuss the benefits of the SolAgra Water Solution so that you may obtain the information needed to understand and adequately review this superior alternative to the DCP.

Sincerely,

Barry Sgarrella
Chief Executive Officer
SolAgra Corporation

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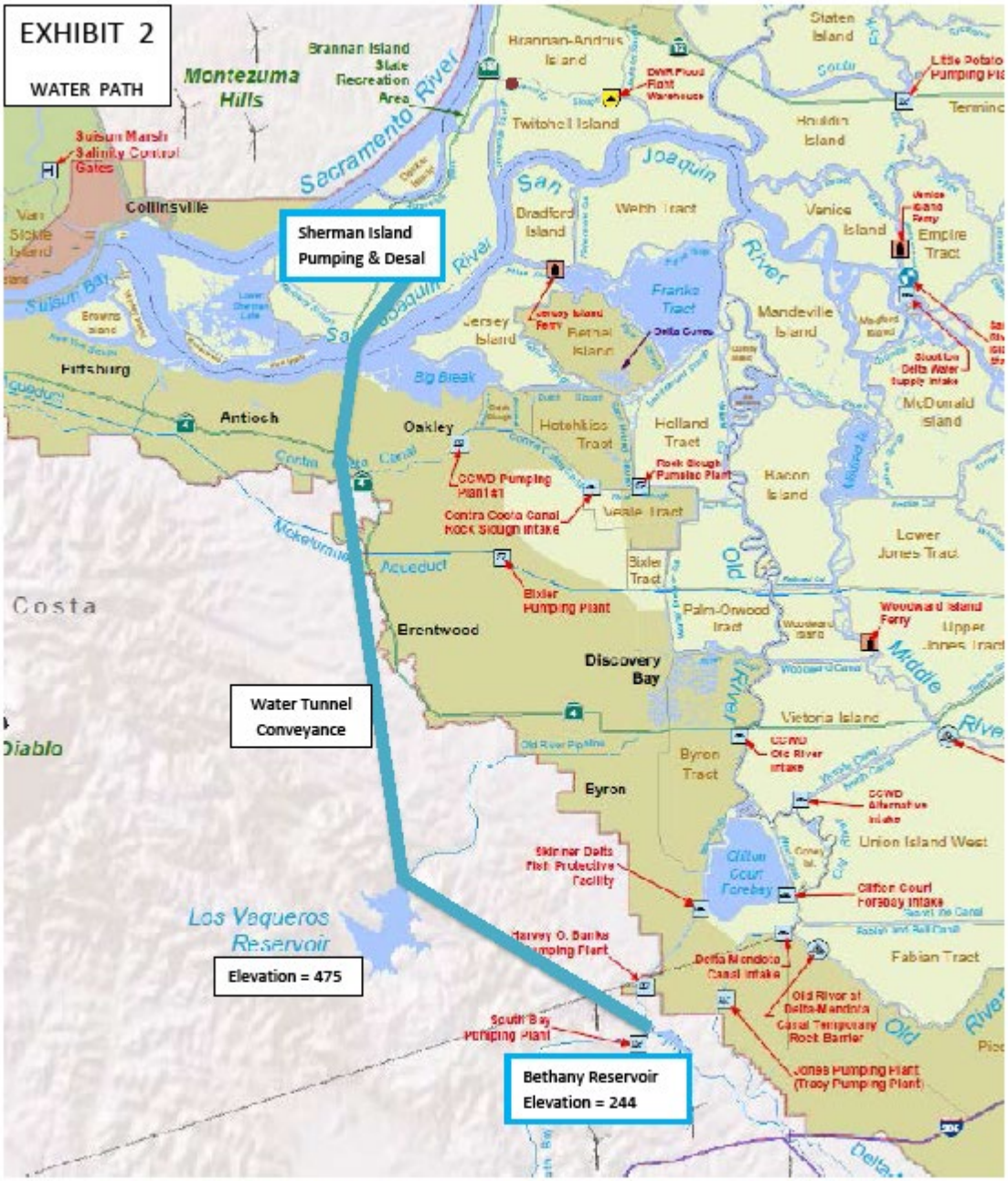

SHERMAN ISLAND to BETHANY RESERVOIR

Water Tunnel Conveyance