September 17, 2018

SENT VIA EMAIL (WaterFixComments@icf.com) AND PERSONAL DELIVERY

WaterFix Comments 2018
P.O. Box 1919
Sacramento, CA 95812

RE: Comments of Friends of Stone Lakes National Wildlife Refuge on California WaterFix Draft Supplemental Environmental Impact Report/Statement

Dear Staff:

These comments are submitted to the Department of Water Resources ("DWR") in relation to the California WaterFix ("Project") Draft Supplemental Environmental Impact Report/Statement ("DSEIR/S")[1] on behalf of the Friends of Stone Lakes National Wildlife Refuge ("FSL"), a California non-profit public benefit corporation. FSL is a volunteer organization dedicated to the conservation, protection, enhancement and promotion of the Stone Lakes National Wildlife Refuge ("Refuge"), whose members actively engage in reviewing the Project through its many iterations.

The DSEIR/S, which largely mirrors the Final Impact Report/Statement ("FEIR/S") in structure, fails as an informational document for myriad reasons. The DSEIR/S picks only selected impact areas to analyze, while entirely ignoring other resource areas, despite the effects of the Project's new and/or different impacts in these other areas. DWR's flawed approach to the DEIR/S creates gaps in the DSEIR/S that prevent it from serving as an informational document as required by the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ["CEQA"]).

[1] The Bureau of Reclamation has not yet circulated the document pursuant to NEPA. When that occurs, FSL intends to submit comments to Reclamation.

The DSEIR/S Fails to Show the Congressionally Approved Boundary for Stone Lakes National Wildlife Refuge

The DSEIR/S contains a significant flaw that taints the entirety of its analysis with respect to impacts on the Refuge. Maps in the DSEIR/S and elsewhere do not show the Congressionally approved boundary of the Refuge, as approved in 1992.[2] For instance the Design Refinements Fact Sheet (Exhibit 1) and the Recreation maps **(**DSEIR/S, Figure M15-4, sheet 1) fail to properly depict the Refuge's *legal* boundaries. Instead of showing the boundary approved by Congress (see Exhibit 2 [Excerpt and Map from Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan]; see also Exhibit 4 [Project Overview Map]), these maps only show the areas of the Refuge that are already in public ownership. All lands within the Refuge boundary may be managed to carry out the approved purposes of the Refuge, and thus could be potentially bought for public ownership. (See Exhibit 3 [Stone Lakes National Wildlife Refuge website]; see also Exhibit 2.)

Encroachments, development and disturbances within the Refuge boundary undermine Congressionally approved directives as well as the ability to carry out the Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan. Permanent conversion of land within the Refuge's legal boundary by the Project prevent the future use of Refuge lands for wildlife conservation. All analysis of impacts on the Refuge must begin with a correct boundary, not a truncated partial map as utilized by the DSEIR/S. The failure to include a correct map of the Refuge boundary renders the DEIR/S inadequate as an informational document.

The Underlying Assumptions of the DSEIR/S are Flawed

The analysis provided in the DSEIR/S is predicated on the premise that the FEIR/S provided a greater level of analysis than needed for the current iteration of, and the changes to, the project. The DSEIR/S also claims that a reduced footprint for certain impacts is inherently less damaging and therefore needs no additional analysis. (See DSEIR/S, Chapter 4.) This approach does not properly consider that the Project area is not a homogeneous landscape and that changes such as moving structures, facilities, muck (a.k.a. "reusable tunnel material") sites, and safe haven work sites to new locations, even though the overall number of those structures or facilities may be reduced, could result in different impacts requiring analysis in the DSEIR/S.

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[2] See 57 Fed.Reg. 33007 (July 24, 1992).

For example, the Project changes will result in an increase in acreage affected by noise impacts. (DSEIR/S, p. 23-1.) The DSEIR/S includes significant changes in where muck (a.k.a. "reusable tunnel material") will be disposed and a completely new plan for forebay construction in the South Delta. (DSEIR/S, p. 3-1.) Both of these changes would affect truck traffic routes and frequency, as well as in heavy equipment usage, which in turn would create different noise impacts than what is discussed in the FEIR/S. However, the DSEIR/S only discusses noise impact changes in relation to residences. (DSEIR/S, pp. 23-3 to 23-7.)

The DSEIR/S does not calculate the relationship between increased truck trips to new muck disposal locations, the changed noise impacts in these new areas, or the biological resources that could be affected by these changes. Irreplaceable biological resources, such as the Greater Sandhill Crane, may be flushed from roosting or foraging sites by increased stress from noise in new locations. (See DSEIR/S, p. 12-30 to 12-31.) This flushing, in turn, would increase the likelihood of power line strikes and abandonment of habitat. (*Ibid*.) Yet the DSEIR/S leaves the public in the dark regarding these potentially significant impacts. Changes to the location of Project impacts requires additional analysis with respect to impacts on Stone Lakes, and throughout the Project area.

Moving the Tunnel Alignment Causes Potential Hydrologic and Groundwater Impacts to Stone Lakes National Wildlife Refuge

The DSEIR/S claims that changes to the Project footprint of the water conveyance facilities will cause the tunnels to "avoid crossing under the community and to avoid affecting municipal water wells." (DSEIR/S, p. 3-7.) Yet the DSEIR/S fails to provide any information supporting this determination, or to address whether the newly proposed tunnel alignments and the Project changes may result in different impacts to other waterbodies and groundwater resources. (See DSEIR/S, pp. 7-1 to 7-3.) Moreover, the DSEIR/S includes no analysis of the hydrogeologic effects caused by the Tunnels on wells in the area surrounding the newly aligned proposed tunnels and associated facilities. (*Ibid*.) The failure to provide this information and analysis precludes any basic threshold analysis of the effects of the Project, in its currently proposed alignment, on groundwater resources in the Project area.

FSL is particularly concerned about Project changes that bring the tunnels closer to the Refuge. (DSEIR/S, Figure 3-1, M3-4: Sheets 1 and 2.) Moving the tunnels closer to the Refuge may negatively impact South Stone Lake, as the tunnels could obstruct groundwater flow in the area. (See Exhibit 5 [explaining how tunnels may impede flow

of groundwater]; see also Exhibit 6 [explaining how Sacramento River surface water discharges to groundwater]; Exhibit 7 [conceptual groundwater model].) South Stone Lake is very close to the proposed new alignment, and the Refuge also operates a well in that area for wildlife enhancement purposes. (See Exhibit 8 [Well Map].)

The new tunnel alignment would potentially obstruct groundwater flow and reduce water availability for both South Stone Lake and nearby wells. Additional analysis is necessary to fully disclose potential impacts on important water and wildlife resources from the proposed new alignment. If it was necessary to move the tunnels alignment away from Hood to protect that community's wells, that indicates that the lead agencies believe that the tunnels do have the potential to obstruct groundwater movement. In addition, none of the mitigation proposed for groundwater impacts (e.g., Mitigation Measures GW-1 and GW-2) mitigate these impacts to the extent feasible as required by CEQA.

Moving the Shaft Locations on Staten Island Creates New Crane Impacts

Comparing the DSEIR/S shaft location on Staten Island (DSEIR/S, Figure M- 3: Sheet 5 and 6 of 12, Proposed Project) with those from the FEIR/S (FEIR/S, Figure M3- 4: Sheet 6-7 of 15, Modified Pipeline/Tunnel Alignment [Alternative 4, 4A]) indicates that the southern shaft has been eliminated, the northern shaft has been moved further south, the northern safe haven work area has been moved north, the southern safe haven work area has been moved to the west, and a proposed temporary surface impact area has been added a bit north of where the southern shaft location was originally located. Underground it appears that the tunnel swings to the west in the southern portion of the island. (DSEIR/S, Figure M-3: Sheet 5 and 6 of 12.) At first glance this might appear to be an improvement since there are one fewer shafts, but a closer inspection and consideration uncovers potential impacts that are likely worse.

One of the most concerning of these potential impacts is the new location of the northern shaft. (DSEIR/S, Figure M-3: Sheet 5 and 6 of 12.) Here are cranes photographed in that location:

In the approved Project, the shaft was placed fairly close to the eastern levee right where the island begins to widen. (FEIR/S, Figure M3-4: Sheet 6-7 of 15.) To understand the concern, it is important to understand what the dimensions of the shaft will be.

Using the design drawings from the Conceptual Engineering Report ("CER") we see that shafts are supposed to be 25 to 35 feet above sea level. (2018 CER, Volume 2, sheets 67-71.)[3] Staten Island is below sea level, so the shaft would be taller still from the existing ground. (2018 CER, Volume 2, sheet 7.)

Using the Bouldin Island shaft as a surrogate sample, the center area of the top of the shaft structure is 2(113' + 85') +121' = 517' by 517' by 283' and then it slopes down at 3:1 or 5:1. (2018 CER, Volume 2, sheets 67-71.) Basically, the shaft would be a huge structure plunked down in the middle of the crane preserve. The new placement puts it right on top of the northern temporary roost site on Staten Island. (DSEIR/S, Figure M-3: sheet 5 and 6 of 12.)

The sheer size of the shaft is quite problematic when one remembers that Greater Sandhill Cranes prefer to roost in areas that have long sight lines (Exhibit 9, Pearse et al 2017, p. 2). The original placement of the northern shaft was significantly closer to the eastern levee. (FEIR/S, Figure M3-4: Sheet 6-7 of 15.) The height of the

[3] References that are listed as references in the FEIR/S or the DSEIR/S, such as Biological Opinions and Conceptual Engineering Reports, are not being resubmitted as exhibits with this comment letter since those materials are already part of DWR's files.

levees on Staten Island reduces sight lines and it is rare to see Greater Sandhill Cranes roosting close to them.

The proposed new placement of the shaft would have an impact on sight lines for any cranes that might roost to the north of the shaft on the east side of the road. Originally, this sight line impacted area to the north of the shaft was much smaller and since it was also close to the levee, that original shaft location was not as desirable a spot for cranes to roost to begin with. The new placement puts the shaft right in a prime temporary roosting spot. Cranes are likely not going to want to roost near it, so the much larger area to the north of the shaft is likely to be avoided for roosting, and the cranes will likely want to roost much further to the south as well to minimize sight line issues.

So, moving the northern shaft to the south would likely have significant additional impacts to one of the most frequented temporary roost sites on Staten Island. The presence of the shaft has the potential to impact crane roosting near it such that a large area is no longer suitable for them, an area that is an order of magnitude larger than the shaft. An argument that since the roost site is just a flooded agricultural field and other fields farther away can be flooded to make up for this one being impacted does not address the fact that a significant area of temporary roosting on the most important single piece of land for Greater Sandhill Cranes in the Delta would be rendered unusable for roosting.

The DSEIR/S indicates that there will be an increase in losses of temporary roosting and forage habitat from the changes contemplated in this iteration of the Project, which is a 640 acre increase in impacts; this is over a nine times increase from that disclosed in the FEIR/S. (FEIR/S, p. 12-26:29–33.) There is no indication that the permanent loss of temporary roosting and forage from the new shaft location (because of the sight line issue) on Staten Island was even considered, nonetheless analyzed. This habitat loss was not included in the additional 640 acres of impacts to temporary roost and forage habitat, which renders the impact analysis inadequate.

The DSEIR/S Transmission Line Assumptions and AMM's are Flawed

According to the DSEIR/S:

> All new transmission lines constructed as a result of the project would be fitted with bird diverters, which have been shown to reduce avian mortality by 60%. By incorporating *AMM30 Transmission Line Design and*

> *Alignment Guidelines* and one or a combination of the measures to greatly reduce the risk of bird strike described in *AMM20 Greater Sandhill Crane*, the construction and operation of transmission lines under the proposed project would not result in an adverse effect on greater sandhill crane.

(DSEIR/S, p. 12-31.) The avoidance and minimization approach that continues to be relied upon in the DSEIR/S is flawed, and take of Greater Sandhill Crane will occur. The flaw is threefold in that the likely number of bird strikes is not well understood, the efficacy of the flight diverters is at question, and bird strikes due to birds flushed by construction was not properly considered.

No consideration was given in the DSEIR/S to the increased likelihood of birds being flushed by construction activities and then impacting existing and new power lines. Nor was there any mitigation suggested for this "take" of Greater Sandhill Crane, which is a designated "no take" species by virtue of its California Fully Protected Species status. (See Fish & G. Code, § 3511; see also California Department of Fish and Wildlife Incidental Take Permit ("ITP") (No. 2081-2016-055-03) for Construction and Operation of Dual Conveyance Facilities of the State Water Project (California WaterFix).) Mitigation for this "take" included the placement of flight diverters on an equal length of existing power lines as the length of the new lines within the crane wintering landscape within the project area that are of the same or higher bird strike risk for Greater Sandhill Cranes. (2017 Mitigation, Minimization, and Monitoring Program ("MMRP"), pp. 4-32 to 4-39.)

Flight diverters were offered as a solution for both cranes striking new temporary lines used during construction, and cranes striking permanent power lines. The logic offered was a "no net increase" of cranes striking power lines because the cranes that hit the new lines would be compensated for by the number of cranes being saved from hitting existing lines. This logic, however, is flawed because the Greater Sandhill Crane is a fully protected species under California Fish and Game Code section 3511. Since no ITP was issued for Greater Sandhill Cranes, "no net increase" of cranes striking power lines is not the applicable standard, and zero take is allowed. Even if the diverters did prevent an *increase* in the number of cranes taken by the Project, cranes would nonetheless be taken. Thus, the taking of the Cranes due to power line strikes would be impermissible, even if mitigation measures are implemented that result in "no net increase."

In addition to take under operational conditions, "take" of cranes from power line strikes may occur as a result of being flushed from construction activities. The Delta

Tunnels avoidance and minimization measures do not reasonably protect Greater Sandhill Cranes from collisions with power lines. The DSEIR/S likewise ignores Project increases the likelihood of power line strikes on both the existing and the new temporary and permanent lines as a result of increased flushing, both off of roosting and foraging habitats as a result of construction activities.

Flight Diverters Provide Limited Protection for Greater Sandhill Cranes

DWR's claims that the flight diverters and the avoidance and minimization approach used in the FEIR/S are adequate (Exhibit 10, [SWRCB Water Rights Change Petition Hearing Transcript, March 8, 2018; see also Exhibit 11 [Earle Written Testimony]) are as inapplicable to the DSEIR/S as they were to the FSEIR/S and the previously approved Project. DWR has asserted that "The primary minimization measure, installing bird flight diverters on power lines to further diminish collision risks, is a widely implemented strategy with high effectiveness at averting collisions" (Exhibit 11, p. 9), claiming that "Based on the bird strike analysis . . . placement of bird strike diverters is expected to reduce mortality by approximately 60%" (Exhibit 11, p. 12). This assertion relies heavily on the 1995 Brown and Drewein study that was conducted in the San Luis Valley, near the town of Alamosa, in Colorado.

The 2013 Public Draft Bay Delta Conservation Plan ("BDCP"), Attachment 5J.C, page 18 explains the methodology for take applied to Greater Sandhill Cranes for the Project:

> Using this approach, an average population size was determined for each line segment, which was then multiplied by 130 days (the mean number of days that greater sandhill crane spend in the Delta wintering area) and by four flights per day (birds going between foraging areas and roost sites twice a day, crossing the lines twice in the morning and twice in the evening). Based on the assumption that the probability of flying out of the roost in a given cardinal direction is 25%, this number was then divided by four, resulting in a crossing estimate for each segment and for the total line (Table 9 2.). The number of crossings was then multiplied by collision mortality rates that were calculated for greater sandhill crane in the Rocky Mountains of Colorado (Brown and Drewien 1995). These data were used because local or regional data are not available. Brown and Drewien (1995) estimated that annual collision mortality of greater sandhill crane at unmarked lines was between 2.5 x 10-5 (low estimate) and 30.4 x 10-5 13 collisions per crossing (high estimate). For the purposes of this analysis,

> the high estimate was used to ensure that all potential impacts were captured. Because lack of visibility is one of the most commonly implicated causes of collision mortality, live or ground wires can be marked to increase their visibility. While it has not been studied, the efficacy of bird flight diverters are likely diminished with reduced visibility associated with the new moon or fog. However, it is reasonable to assume that bird flight diverters still reduce mortality. Other markers also include dampers, hanging plates, and spheres. Marking lines has been shown to decrease collision risk substantially. Brown and Drewien (1995) estimated that annual collision mortality rates of birds at marked lines were reduced by 62 and 66% for two types of markers, and it is likely that birds found dead in these studies were also flying at night. Morkill and Anderson (1991) indicated a 54% reduction in crane mortality at marked lines. In addition to the risk map derived above, collision risk and mortality in the Plan Area were estimated relative to the proposed powerline locations. This was done for both marked and unmarked lines.

It is important to note several things in this characterization of the Greater Sandhill Crane power line avoidance and minimization strategy. The first is that the calculation considered flights to and from roost sites in the morning and the evening, but not flights from birds flushed from roost or forage sites. (2013 Public BDCP, Att. 5J.C, p. 18:5-6.) And it is reasonable to assume that Cranes that are flushed will fly off in more a stressed state (fight or flight) than Cranes who are embarking on their routine trips to foraging or roosting grounds. None of this was reflected in the way the bird strike numbers were calculated. (2013 Public Draft BDCP, Att. 5J.C, p. 17:35.)

In any case, the FEIR/S assumption that flight diverters would reduce bird strikes by 60 percent means that the 40 percent of the cranes that would potentially collide with new power lines would still do so, as well as at least an equivalent percentage of flushed cranes for new and existing power lines. It is also within reason to assume that given the increased stress level for flushed birds, the bird strike incidence for flushed birds would be higher than for Cranes taking routine flights. It is important to note here again that all of these transmission line strikes for Cranes are “take” of a California Fully Protected Species with “no take” status, except within the confines of a NCCP, which the Delta Tunnels project is not.

Further, relying on the 1995 Brown and Drewien study raises issues of its applicability to the Delta. The fog regimes between the Delta and the San Luis Valley vary dramatically. According to the Western Regional Climate Center, fog is common in

the Delta between November and February. On average 38 of 120 days between November and February have fog in the Delta. (Exhibit 12 [Western Climate Center 2017, Average Number of Days with Heavy Fog]; see also Exhibit 13, Yee 2008, p. 12 [using 2007 data].) By contrast, in the San Luis Valley there is dramatically less fog with occurrences of only 4 days in 90. (Exhibit 12 [data for Pueblo, Colorado].)

As described in the 2013 Public Draft BDCP, Attachment 5J.C., page 18: "Because lack of visibility is one of the most commonly implicated causes of collision mortality, live or ground wires can be marked to increase their visibility. While it hasn't been studied, the efficacy of bird flight diverters are likely diminished with reduced visibility associated with the new moon or fog." Since flight diverters are designed to make power lines more visible, conditions that impair sight by *definition* have a negative effect on cranes' ability to see the diverters. And, the more foggy days impairing vision, the greater the increase in bird strike incidence. What a study of bird strikes during new moon and/or in the fog would demonstrate is how much of an increase there is in occurrences of strikes. Therefore, relying on the 60 percent effective assumption for flight diverters from clear skies San Luis Valley, Colorado exaggerates likely flight diverter effectiveness in the often very foggy Delta.

A recent study by Murphy (2016) on crippling and nocturnal biases in a study of Greater Sandhill Crane collision with transmission lines shows that historical studies of crane collisions with transmission lines have underestimated crane collision because prior studies relied on searching for carcasses instead of combining carcass searches with remote sensing with night vision optics. (Exhibit 14, Murphy 2016.) Anyone who has spent time observing cranes in the Delta can recount the many times they have seen coyotes looking for feeding opportunities in close proximity to Cranes. Given this, it is easy to understand why so few carcasses are in evidence under transmission line in the Delta, and why relying on carcass retrieval is likely a very ineffective way to assess the effectiveness of flight diverters, or the actual level of danger posed by transmission lines for cranes. The effectiveness of a flight diverter would be inflated, while the incidence of strikes would be under counted.

In Study on the Effectiveness of Bird Diverters, Yee admitted that: "This study appears to be the first in California to assess bird collisions with distribution lines and to assess mitigation aimed at reducing collisions with distribution lines by installing diverters. It is also the first study to assess the value of using bird flight diverters in an area that experiences dense fog events during a high proportion of the winter months, when bird use is highest." (Exhibit 13, p. 2.)

Further, Yee states:

> This study's reported estimates of fatalities did not account for biases due to searcher efficiency, scavenger removal, habitat, and crippling. Therefore, it is likely that they are conservative and that the total number of collisions occurring with the power line is considerably higher than reported here. Based on combined searcher and scavenger removal trial and carcass decomposition and removal observations (Table 2), this study concludes that the number of birds that may have gone undetected as the result of searcher inefficiency or scavenger removal may be considerable, indicating that the study may be severely underestimating the total collision estimate. Rigorous bias studies are needed to determine, with greater accuracy, the total mortality due to collision with power lines Without them it will not be possible to accurately determine crane or other bird mortality due to collision with powerlines.

(Exhibit 13, p. 27.)

Barrientos' article regarding the "Meta-analysis of the effectiveness of marked wire in reducing avian collisions with power lines" further brings into question how one could confidently state that flight diverters are "a widely implemented strategy with high effectiveness at averting collisions." (Exhibit 15, Barrientos 2011.) Similarly, the study by the Avian Power Line Interaction Committee's 2012 report, "Reducing Avian Collisions with Power Lines: The State of the Art in 2012" provides a far more recent assessment of flight diverter effectiveness compared to the Avian Power Line Interaction Committee's report that was relied upon for the Delta Tunnels FEIR/S. (See Exhibit 16.)

The table in Exhibit 17 compares the various studies on flight diverter effectiveness and presents a range of effectiveness spanning from less than 10 percent to 81 percent. This extremely large range, the inherent problems in determining both flight diverter effectiveness and transmission line incidence, questions brought up about flight diverter effectiveness in recent publications, and the lack of applicability of the 1995 Brown and Drewien study to conditions in the Delta, support skepticism (at best) as to whether and how the Delta Tunnels measures for transmission lines may be protective. What is abundantly clear, though, is that Delta Tunnels would result in the "take" of Greater Sandhill Crane, a California Fully Protected Species.

The "no net increase" rationale is inapplicable to a Fully Protected Species, such as the Greater Sandhill Crane. The accuracy of the calculations for Crane strikes and the efficacy of flight diverters have also been brought into question by more recent scientific studies. In addition, no consideration was given to an increase in crane strikes due to flushing from construction activities. "No take" is an absolute, and it is clear that Delta Tunnels measures cannot achieve this standard. The only way to ensure "no take" due to transmission line strikes is to underground all lines associated with Project construction and operation. In addition, flight diverters must be added to all existing lines near any construction in the Project area, even if those lines do not serve the Project.

Locating New Transmission Lines along Existing Right-of-Ways ("ROWs") Will Be Ineffective in Preventing Take

The NEPA effects and CEQA conclusions for transmission lines (DSEIR, p. 12-29) suggest that activities, "such as placing new lines immediately adjacent to existing transmission lines when it would minimize effects on sandhill cranes," will result in no take of cranes. It is incorrect that locating new transmission lines along existing ROWs will somehow prevent take. The idea of locating new transmission lines along existing ROWs might appear on initial consideration to be a way to help minimize the impact of new and/or temporary transmission lines because they would be added to an alignment that already had power distribution lines. (FEIR/S, Appen. 3C, p. 11.) This understanding does not consider the problematic physical reality inherent in introducing different, larger structures on existing ROWs.

The new lines to be added for the project would be of a larger physical size and capacity than those of the existing 12 kilovolt ("kv") distribution lines and other transmission lines. In order to provide 69 kv of power for the tunnel boring machines, existing distribution and transmission lines would be replaced by much larger dual circuit 69 kv transmission lines with a 12 kv underbuild for power distribution. The three new higher capacity pairs of lines would be positioned at higher elevations than the existing lines. What this means is that rather than having one set of distribution lines that need to be avoided at a single height, a total of three bands of transmission lines and one band of distribution lines at multiple heights extending higher into the air would need to be avoided, creating an effect that is more net-like than the existing configuration.

Cranes attempting to fly over the existing transmission lines now would, post-project, have to avoid multiple rows of lines that are higher than existing lines. In

configurations where high capacity lines are run alone (without distribution), cranes may have the ability to fly below them or above them. Under a with-project scenario, only the birds able to fly above all of the new high capacity lines would avoid peril. And, given the substantial height of the high capacity lines (FEIR/S, Ch. 3, p. 3-152:29) there are obvious concerns about cranes having the ability to fly over them when taking off from a short distance away; that is a lot of altitude to gain in what might amount to a short distance. Placing larger power transmission and distribution structures on existing ROWs introduces new possibilities for "take" of Greater Sandhill Cranes and these were not addressed in the environmental documents.

The DSEIR/S and prior Project documents continue to fail to adequately describe the power supply plan for the Refuge. In any case, at the SWRCB Water Right Change Petition hearing, DWR's witness confirmed that a mockup of what adding additional 69 kv lines to the existing Lambert Road distribution lines would potentially look like, was accurate. (See Exhibit 18, Hearing Transcript Excerpt, March 8, 2018, p. 14:7-9; see also Exhibit 19 [Images shown to Bednarski].) As to whether this new configuration of lines along existing ROWs would constitute an increased threat to Cranes, over the current configuration, Dr. Earle responded that his review of the literature "did not indicate that this question had really been investigated." (Exhibit 18, Hearing Transcript Excerpt, March 8, 2018, p. 14:23-2.) Dr. Earle went on to say that: "you could argue that . . . there's a greater risk of collision." But he further stated that: "you also could argue that this is considerably more visible from a distance than the existing 12 kilovolt line." (Exhibit 18, Hearing Transcript Excerpt, March 8, 2018, p. 15:11-14.)

Given that bird strikes on transmission lines are far more likely in poor visibility conditions like fog and during the nighttime, the argument that additional lines are "considerably more visible" makes little sense, whereas the counterargument that there is a "greater risk of collision" is obvious. Under the Project, there would be more transmission lines at different heights to fly into when it is difficult to see if any transmission lines are present.

The DSEIR/S Does Not Address New or Different Noise Impacts on Wildlife from Changes to the Project Footprint

The DSEIR/S seems to rely solely on the Noise Abatement Plan (see Appendix 3B, Environmental Commitments, AMMs, and CMs) that would be in place during construction to avoid or minimize adverse effects. The DSEIR/S points to Supplementary Information for the EIR/EIS: BDCP (California Department of Water Resources 2010) includes approaches to designing mitigation, which are taken into account in the

discussion of mitigation measures in this chapter and are incorporated into the Noise Abatement Plan as appropriate. (DSEIR/S p. 23.3.3.)

The DSEIR/S includes significant changes in the tunnel alignment, where muck will be disposed, and changes to noise impacts with the new forebay construction at Byron Tract. The DSEIR/S, however, only discusses impacts to residences. (DSEIR/S, Chapter 23.) Moving the muck to different places on the landscape would result in impacts to wildlife from the noise of trucks rumbling through their habitats filled with muck, and the sounds of heavy equipment moving muck around in the storage sites as well as loading that muck up to go to other storage sites. There is no discussion in the noise chapter about the change in the nature of truck trips and what that might portend on specific geographies in the landscape. There were no calculations depicting the relationship between increased truck trips to muck disposal locations and the resultant noise impacts to specific different parts of the landscape, and what those new noise impacts might be to those specific areas with their specific biological resources.

Appendix 23A of the DSEIR/S includes Figure 23A-4, Proposed Project—Project Alignment Construction Noise Contours. This figure clearly shows that the noise (50 dba and louder) generated by construction related activities would penetrate the Stone Lakes National Wildlife Refuge boundary, and will nearly blanket a third to a half of Staten Island. These two areas are incredibly important habitat areas for numerous species and their respective geographies are going to take a direct hit from the construction noise of what is arguably the largest construction project in our region in modern history. The Avoidance and Mitigation Measure 20 ("AMM20"), and the relevant mitigation measures included in the Project, do not appear that they will be able to relieve the sheer scale of the noise problem. The areas impacted are so large, and the areas that will be impacted are so biologically important, that the only sure way to avoid significant and unavoidable impacts will be to limit construction in those sensitive habitats when species are not present. But, species will always be present.

When avian species like the Greater Sandhill Crane get flushed off of their roost or forage sites, they risk hitting power lines, and even if they do not hit a power line, there may be increased stress on their system. (Exhibit 20, Hearing Transcript Excerpt, March 8, 2018, pp. 16:2–19:9.) The lack of new analysis of the noise impacts on wildlife, and the reliance on the work done for the FEIR/S, ignores the important reality that impacts have been moved around the landscape, and that landscape is not homogenous and new impacts are likely, both in nature and scale, that were not analyzed in the FEIR/S.

Tunnel Alignment Is Now Much Closer to Stone Lakes National Wildlife Refuge and Will Result in Increased Impacts to Recreation in the Refuge

The northern alignment has been moved to the east and would now be within a couple hundred feet of the Stone Lakes National Wildlife Refuge. (DSEIR/S, Sheet M15-4.) As explained above, this would result in noise impacts penetrating significantly deeper into the Refuge. The increased closeness of construction activity would have significant additional impacts on recreation opportunities in the Refuge that are not adequately captured in the FEIR/S' reliance on analysis that only considered such impacts that were 1200 – 1400 feet away. (FEIR/S, pp. 15-259, 15-26-, 15-468.)

Impacts to Wetlands Continue To Be Historic in Magnitude

Impacts to wetlands and waters continue to be massive and unacceptable, as well as improperly mitigated. The change in the DSEIR/S of constructing a new forebay adjacent to Clifton Court Forebay as opposed to dredging out the existing Clifton Court forebay appears to result in a significant reduction of the total wetlands impacts. (DSEIR/S, Ch.1, p. 1-4:16.) Specifically, "[t]he proposed project would result in 2,208 fewer acres of impacts on tidal perennial aquatic than the approved project . . . [due] to [changes in] construction at Clifton Court Forebay." (DSEIR/S, p. 12-4:6.)

Wetland and other aquatics features provide many functions, such as providing habitat, storing and conveying water, and trapping sediment. (See Exhibit 21, Excerpt of California WaterFix USACE Permit Application 2015.) But not all wetland and other aquatics features have the same functional value. (See Exhibit 21.) For example, tidal channels, lakes, emergent, forest, scrub-shrub, depressions, alkaline wetlands and vernal pools that are relatively undisturbed have a high functional value. (Exhibit 21, p. 5.) On the other hand, agricultural ditches, seasonal and emergent wetlands within agricultural fields, and Clifton Court Forebay were classified as having a low functional value. (Exhibit 21, p. 5.) What this means in practical terms is that the forebay waters are not one of the high quality natural habitats that we are trying desperately to save in the Delta. (Exhibit 21, p. 5.) The existing Clifton Court forebay is essentially an artificial holding tank in the ground set up for the purpose of conveying water to another part of the state. The Project changes in the DSEIR/S therefore do not include an appreciable reduction in the impacts to natural wetland habitats or habitats established to provide the ecological values of wetlands. (California WaterFix USACE Permit Application 2015, p. 23.)

Impacts to Sandhill Cranes in SDEIR/S Would Likely Be Greater Under the Revised Project

While temporary foraging impacts would be less, a 640-acre increase in impacts on temporary roosting habitat would occur under the revised project. (DSEIR/S, pp. 12-27 to 12-28) Table 12-20: Impact on Greater Sandhill Crane modeled habitat, (DSEIR/S, p. 12- 27) does not include impacts of moving the northern shaft on Staten Island and the resultant permanent loss of temporary roosting habitat situated to the north of the new placement because of impacted sight lines for roosting Cranes rendering that area unsuitable. This increase in impacts on crane roosting habitat is very concerning given the already large scale of impacts to this crane population.

Both the NEPA effects and CEQA conclusions include this quote: "Construction activities would not be expected to result in greater sandhill crane take because foraging and roosting individuals would be expected to temporarily avoid the increased noise and activity associated with construction areas." (DSEIR/S, p. 12-28.) Once again, Cranes flushed by increased construction traffic and activity were not considered. This quote assumes that avoiding "construction areas" would result in avoidance of impacts. This is clearly not true given that large truck and heavy equipment trips could happen at any time for numerous reasons, including emergencies, and this means that "construction areas" potentially extend throughout the entire project area and are not limited to "construction areas." Our concerns with the flushing of birds from construction activity, that they risk hitting power lines, is discussed above.

The treatment of the power line impacts and the NEPA effects and CEQA conclusions continue to claim that flight diverters reduce avian mortality by 60 percent. The inherent uncertainty of the reduction of avian mortality was addressed in this comment letter. The NEPA effects and CEQA conclusions for transmission lines (DSEIR/S, p. 12-29) suggest that activities, "such as placing new lines immediately adjacent to existing transmission lines when it would minimize effects on sandhill cranes," will result in no take of Cranes. The increased likelihood of cranes hitting co-located lines is addressed above.

The noise impacts are still severe (DSEIR/S, p. 12-30) and the NEPA effects and CEQA conclusions states that: "effects of noise and visual disturbance could alter the suitability of habitat for greater sandhill crane. This would be a significant impact. AMM20 Greater Sandhill Crane would include requirements to minimize the effects of noise and visual disturbance on greater sandhill cranes and to mitigate impacts on affected habitat." (DSEIR/S, p. 12-30 to 12-31.) Two of the available measures in

AMM20, the creation of new temporary roost sites and enhanced foraging opportunities near the new temporary roost are experimental techniques that are not substantiated in the literature. (MMRP, pp. 4-34 and 4-36.) This was a problem in the original FEIR/S, and it continues to be a problem in the DSEIR/S.

The concerns and issues discussed above also apply equally to the impacts discussed in the SDEIR/S for Lesser Sandhill Crane.

Conclusion

The revised Project continues to have unacceptable and inadequately mitigated impacts on biological and other resources within the Refuge, on Staten Island, and the within the Project area. The DSEIR/S fails to adequately disclose the impacts associated with the changes to the Project that are currently proposed, and fails to provide adequate mitigation under CEQA. In addition, DWR's own documents reveal that the Project would impermissibly lead to take of the fully protected Greater Sandhill Cranes that FSL and others have worked so diligently to protect in our region. The DSEIR/S must be revised and recirculated to correct these deficiencies prior to any action being taken on the Project by DWR.

Sincerely,

Chris Tooker, President
Friends of Stone Lakes National Wildlife Refuge

Attachments (sent via personal delivery only):
Note: Corresponding SWRCB CWF exhibit identification provided in red below.
Exhibit 1, Department of Water Resources, Design Refinements Proposed Handout (July 2018) **DWR-1303**

Exhibit 2, Project Overview Map **LAND-3**

Exhibit 3, Stone Lakes National Wildlife Refuge, About the Refuge – Stone Lakes, available at: https://www.fws.gov/refuge/Stone_Lakes/about.html. **SOSC-90**

Exhibit 4, Excerpt from Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan **FSL-6, p. 9**

Exhibit 5, Written Testimony of Josef Tootle for SWRCB Water Right Change Petition Hearing **LAND-35 ERRATA**

Exhibit 6, Written Testimony of John Lambie for SWRCB Water Right Change Petition Hearing **SJC-223**

Exhibit 7, Hydrological Conceptual Model of Impacts to Groundwater Recharge **SJC-227**

Exhibit 8, U.S. Fish & Wildlife Service, Stone Lakes National Wildlife Refuge Well Map **SJC-330**

Exhibit 9, Pearse et al. 2017. Sandhill crane roost selection, human disturbance, and forage resources: Roost Selection in Sandhill Cranes. The Journal of Wildlife Management. 81. 10.1002/jwmg.21215 **SOSC-83**

Exhibit 10, SWRCB Water Right Change Petition Hearing Transcript, March 8, 2018, pp. 21-26

Exhibit 11, Written Testimony of Christopher Earle for SWRCB Water Right Change Petition Hearing **DWR-1014**

Exhibit 12, Western Climate Center, Average Number of Days with Heavy Fog (2017) **SOSC-58**

Exhibit 13, Yee, M. L. 2008. Testing the effectiveness of an avian flight diverter for reducing avian collisions with distribution power lines in the Sacramento Valley, California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2007-122. **SOSC-59**

Exhibit 14, Murphy, R. K., E. K. Mojica, J. F. Dwyer, M. M. McPherron, G. D. Wright, R. E. Harness, A. K. Pandey, and K. L. Serbousek. 2016. Crippling and nocturnal biases in a study of Sandhill Crane (Grus canadensis) collisions with a transmission line. Waterbirds 39(3):312-317. 2016a **SOSC-44**

Exhibit 15, Barrientos, R., J. C. Alonso, C. Ponce, and C. Palacin. 2011. Meta-analysis of the effectiveness of marked wire in reducing avian collisions with power lines. Conservation Biology 25:893-903. **SOSC-30**

Exhibit 16, Avian Power Line Interaction Committee (APLIC). 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C. **SOSC-27**

Exhibit 17, Comparison of Study Results for Effectiveness of Bird Diverters on Transmission Lines **SOSC-60**

Exhibit 18, SWRCB Water Right Change Petition Hearing Transcript, March 8, 2018, pp. 11-16

Exhibit 19, Images of Existing Power Lines, Future Power Lines, and Bird Diverters **FSL-48**

Exhibit 20, SWRCB Water Right Change Petition Hearing Transcript, March 8, 2018, pp. 16-19

Exhibit 21, United States Army Corps of Engineers Application **LAND-121**