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BEFORE THE STATE WATER RESOURCES CONTROL BOARD

HEARING IN THE MATTER OF CALIFORNIA DEPARTMENT OF WATER RESOURCES AND UNITED STATES BUREAU OF RECLAMATION REQUEST FOR A CHANGE IN POINT OF DIVERSION FOR CALIFORNIA WATERFIX

OPENING STATEMENT OF THE NATURAL RESOURCES DEFENSE COUNCIL, THE BAY INSTITUTE, AND DEFENDERS OF WILDLIFE IN PART 2 OF THE HEARING

I. Introduction:

The evidence presented in Part Two of this hearing will demonstrate that the State Water Resources Control Board ("SWRCB") should deny the water rights petition for the California WaterFix project ("Petition") for three reasons. First, the best available science demonstrates that granting the Petition will cause unreasonable impacts to fish and wildlife and worsen water quality in the Delta for multiple beneficial uses. Second, granting the petition is not in the public interest and is inconsistent with the SWRCB's Public Trust obligations, at least in part because improved water use efficiency, increased water recycling, and other alternative water supplies are available and economically feasible to Petitioners. Third, granting the Petition is contrary to law because State law requires Petitioners to reduce reliance on the Delta and the proposed project violates the substantive requirements of the California Endangered Species Act and federal Endangered Species Act.

Should the SWRCB decline to deny the Petition, the SWRCB should adopt the terms and conditions proposed by NRDC et al to ensure that: (1) appropriate flow criteria will minimize and avoid unreasonable impacts on fish and wildlife from the California WaterFix project, and (2) the Central Valley Project ("CVP") and State Water Project ("SWP") improve water use efficiency and regional water management in order to reduce reliance on the Delta and significantly reduce diversions from the estuary while sustaining the economy.

II. Granting the Petition Would Cause Unreasonable Impacts to Fish and Wildlife

Protestants NRDC et al will demonstrate that granting the Petition would cause unreasonable impacts to fish and wildlife. This will be shown through the direct testimony of Dr. Jon Rosenfield and through cross examination of witnesses, including witnesses from state and federal agencies who are subpoenaed by NRDC et al.

First, it is important to recognize that current operations of the CVP and SWP are causing unreasonable impacts to fish and wildlife. The SWRCB is obliged to do more than merely prevent the extinction of salmon and other native species under CESA and the ESA. Instead, the SWRCB must also protect the Public Trust to the extent feasible, must ensure that flows below dams are sufficient to maintain native fish in "good condition," must ensure that flows are

sufficient to achieve the narrative salmon doubling objective in the Bay Delta Water Quality Control Plan (and related provisions of state and federal law), and must ensure flows provide adequate protection of estuarine habitat and other fish and wildlife beneficial uses.

The abundance of Delta Smelt, several Chinook salmon runs, longfin smelt, and other native fish species generally have continued to decline in recent years, and their decline accelerated during the recent drought. In 2016, the U.S. Bureau of Reclamation reinitiated consultation under section 7 of the Endangered Species Act, because current operations were jeopardizing the continued existence and recovery of listed species and because new scientific information demonstrated that current protections were inadequate. Unreasonable impacts under the status quo are caused by both operations in the Delta (e.g., inadequate Delta outflows) as well as upstream operations (e.g., temperature control at Shasta Dam, inadequate instream flows in the Sacramento River that significantly reduce salmon survival). Because the California Department of Water Resources and the U.S. Department of the Interior have petitioned the SWRCB for the change in point of diversion permit, they have necessarily triggered the SWRCB's obligations under the Public Trust doctrine. The SWRCB must consider the full range of impacts of coordinated operations of the CVP and SWP with WaterFix in setting appropriate flow criteria as required by section 85086 of the Water Code, and to comply with the Public Trust doctrine.

Second, despite the degraded ecological conditions in the estuary, the evidence presented will show that WaterFix would worsen conditions for fish and wildlife in the Bay-Delta watershed, including species listed under the ESA and CESA. Analyses and modeling presented in the biological opinions under the ESA and incidental take permit under CESA demonstrate that as compared to the degraded status quo, WaterFix will worsen conditions in the estuary, including reducing the abundance and/or survival of salmon, Delta Smelt, longfin smelt, and other species. Moreover, the biological opinions and incidental take statements underestimate the adverse effects of WaterFix on these and other species (like fall run Chinook salmon and Delta Smelt) because they fail to use the best available science and fail to synthesize other adverse effects that are identified. In addition, the adverse impacts of WaterFix would be far greater if proposed

operating rules are waived or weakened during future droughts;[1] during the recent drought, waivers of water quality standards and ESA protections led to the near extinction of many of these species. Instead of providing assurances that such waivers would not occur in future droughts, WaterFix's environmental analyses suggests that future waivers are likely.

Finally, evidence presented during Part Two of this hearing is also likely to show that granting the Petition could cause unreasonable impacts to birds and terrestrial species within and South of the Delta. This includes impacts to millions of birds that migrate along the Pacific Flyway, giant garter snakes (which are listed as threatened under the federal ESA and CESA), and other wetland dependent species that rely on managed wetlands south of the Delta.

A. Winter run Chinook salmon, spring run Chinook salmon, and fall run Chinook salmon:

Modeling and analyses presented in the NMFS biological opinion and incidental take permit under CESA demonstrate that WaterFix would reduce the survival of juvenile salmon migrating through the Delta. The survival of juvenile salmon through the Delta is already unsustainably low, yet WaterFix would significantly reduce survival through the Delta. The biological opinions demonstrate that the adverse impacts from construction and operation of the new North Delta Diversion facility under WaterFix more than offset benefits from the proposed reduction in reverse flows in the South Delta in wetter water year types. Any reduction in through Delta survival is contrary to the improvements in through Delta survival identified in the NMFS recovery plan, and would also prevent achievement of the necessary improvements in through Delta survival necessary to achieve the salmon doubling objective in the Bay Delta Water Quality Control Plan. The proposed bypass flows are inadequate to prevent unreasonable impacts to salmon. The biological opinions and incidental take permit assume the use of real time

[1] Similarly, if coordinated operations of the CVP and SWP after construction of WaterFix do not result in less negative Old and Middle River ("OMR") flows in wetter water year types (as proposed), the adverse impacts of WaterFix on fish and wildlife would be far greater. Our testimony and this opening statement assumes that operations would result in less negative OMR flows as analyzed in the biological opinions, notwithstanding ambiguous language in the biological opinions and incidental take permit suggesting that WaterFix would not reduce OMR reverse flows.

operations to protect salmon (called Unlimited Pulse Protection), yet even assuming these real-time operations were 100% accurate, the biological opinion demonstrates that salmon survival through the Delta would decline because of inadequate bypass flows under WaterFix. However, the proposed real-time operations and Unlimited Pulse Protection are inadequate because Unlimited Pulse Protection rules would not protect fall run Chinook salmon (only ESA listed salmon), NMFS admits monitoring programs are inadequate for these purposes, and pumping restrictions based on real time operations under the existing biological opinions generally have not been implemented in a timely manner.

Moreover, NMFS' biological opinion and other evidence will demonstrate that the biological opinion underestimates the adverse effects of WaterFix on salmon in the Delta. NMFS' analysis is largely based on the reduction in flows in the lower Sacramento River below the new intakes. Yet WaterFix will also reduce survival of migrating juvenile salmon because of impingement on the fish screens, increased predation at the new intakes, reduced Delta outflow during the winter and spring months, and reduced turbidity and sediments caused by North Delta diversions.

WaterFix would also maintain or increase unreasonable impacts on salmon upstream of the Delta. First, the WaterFix biological opinion assumes implementation of the revised Shasta RPA, but the Bureau of Reclamation has not agreed to implement that revised RPA. NMFS biological opinion also only analyzes temperature impacts through the year 2030, even though WaterFix would not be fully constructed and operational until several years later and despite NMFS' admission that climate change is likely to exacerbate temperature dependent mortality in future years. At other upstream reservoirs, operations under WaterFix would result in significant temperature dependent mortality and redd dewatering. Second, WaterFix would maintain or worsen inadequate instream flows in the Sacramento River, which recent scientific studies and peer reviewed research demonstrates is significantly reducing juvenile salmon survival in all but wet years.

In order to avoid unreasonable impacts to salmon from WaterFix, including coordinated operations of the CVP and SWP, the SWRCB must impose terms and conditions that: (1) increase bypass flows for the North Delta Diversion (and which do not rely on real time operations during

the November to May time period); (2) reduce temperature dependent mortality and redd dewatering below upstream reservoirs; and, (3) increase flows in the Sacramento River and through the Delta to improve survival of juvenile salmon.

B. Longfin Smelt:

Modeling and analyses presented in the incidental take permit demonstrates that WaterFix is likely to further reduce the abundance of longfin smelt, notwithstanding the record low levels of abundance of this species in recent years, and will prevent the recovery of this species. The best available science demonstrates that juvenile longfin smelt abundance is driven by the volume of Delta outflow from January to June, yet WaterFix proposes to reduce Delta outflow below currently impaired levels during the winter and spring months. Evidence will demonstrate that there is no sound scientific basis for allowing reductions in spring outflow when outflows are higher than 44,500 cfs; this was identified as a threshold where flows are likely to result in a more than 50% chance of population growth, yet the outflow: abundance relationship is essentially linear and higher flows are likely to result in higher abundances. Similarly, evidence will show that there is no scientific justification for allowing WaterFix to reduce Delta outflows in the winter months (December to February), and that the California Department of Fish and Wildlife has admitted that January to June Delta Outflows are essential to maintaining and restoring longfin smelt abundance.

Moreover, the methods and analyses in the incidental take permit understate the adverse effects of WaterFix on longfin smelt. For instance, the models fail to account for prior abundance in assessing the population response to different levels of Delta outflows, thereby underestimating the risk of extinction from sequential dry years and underestimating the need for multiple years of higher outflow for the population abundance to significantly increase from the current low levels. In addition, the analyses of the effects of reduced Delta outflow on abundance fail to consider other adverse effects of WaterFix on longfin smelt, such as the adverse effects of reduced turbidity as a result of sediment entrainment at the new North Delta Diversion. For instance, reduced turbidity in combination with climate change will increase the frequency and intensity of harmful algal blooms, which is likely to harm longfin smelt. Modeling of longfin smelt

abundance also does not account for changes in entrainment of longfin smelt, and modeling shows that juvenile entrainment is likely to increase in Below Normal, Dry, and Critically Dry years compared to the status quo. Finally, reductions in Delta outflow are likely to reduce the abundance of prey species in the low salinity zone, as there are strong outflow: abundance relationships for several zooplankton species that are prey for longfin smelt.

In order to avoid unreasonable impacts to longfin smelt from WaterFix (including coordinated operations of the CVP and SWP), the SWRCB must impose terms and conditions that significantly increase Delta outflow from January to June. Increased Delta outflow during these months will also reduce or avoid unreasonable impacts to green and white sturgeon, several zooplankton species and other pelagic prey, and starry flounder.

C. Delta Smelt

Testimony in the proceeding will demonstrate that construction and operation of WaterFix will cause unreasonable harm to Delta Smelt and that the incidental take permit and biological opinion failed to use the best available science regarding the impacts of WaterFix on Delta Smelt. First, evidence will show that Delta outflow during the fall, spring, and summer months has significant effects on the survival and abundance of Delta Smelt, and that greater outflow during these months is necessary to prevent the extinction of this species. This evidence includes modeling and analyses by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service which demonstrate the effects of outflow on Delta Smelt survival and abundance, as well as recommendations and requirements by these agencies to increase summer outflow. However, WaterFix proposes to maintain or worsen Delta outflow conditions during these months. Inadequate Delta outflow during these months is likely to reduce the abundance of zooplankton and other prey species for Delta Smelt in the low salinity zone. Second, WaterFix will significantly reduce sediment supply to the Delta and reduce turbidity, yet the environmental analyses and permits fail to properly account for the adverse effects of reduced turbidity on Delta Smelt, as well as the infeasibility of reducing this impact. Third, WaterFix is predicted to result in increased frequency and magnitude of harmful algal blooms, because of increased water clarity, increased residence time, and increased water temperatures under WaterFix. Increased

harmful algal blooms is also likely to harm Delta Smelt, as well as impairing other beneficial uses.

In order to avoid unreasonable impacts to Delta Smelt from WaterFix (including coordinated operations of the CVP and SWP), the SWRCB must impose terms and conditions that increase Delta outflow (in the spring, summer and fall months), and reduces entrainment of sediment in the North Delta Diversion.

III. Granting the Petition is Not in the Public Interest and is Contrary to Law

In addition to causing unreasonable impacts to fish and wildlife, granting the Petition is not in the public interest and is contrary to law. First, testimony in this proceeding, including the testimony of Doug Obegi, will demonstrate that Petitioners have significant opportunities to improve agricultural and urban water use efficiency and increase regional water supplies, thereby reducing demand for water from the Bay-Delta and allowing for higher instream flows than WaterFix proposes. This testimony is relevant to the SWRCB's determination of whether granting the petition is in the public interest, as well as to demonstrate that greater protections for fish and wildlife beneficial uses are feasible under the Public Trust doctrine. Second, testimony in this proceeding will show that granting the petition is contrary to law because: (1) WaterFix does not meaningfully reduce reliance on the Delta, as required by State law; (2) permits issued for construction and operation of WaterFix do not comply with the requirements of CESA and the ESA; and (3) the environmental review does not comply with CEQA.

In order to protect the public interest and Public Trust, should the SWRCB decline to deny the Petition, the SWRCB must impose terms and conditions that require significant improvements in urban and agricultural water use efficiency, water recycling, and urban stormwater capture in the CVP/SWP service areas that participate in WaterFix.

IV. Proposed Terms and Conditions Should the SWRCB Grant the Petition

Protestants NRDC et al urge the SWRCB to deny the petition. However, if the SWRCB declines to deny the Petition, the following terms and conditions should be imposed to reduce unreasonable impacts to fish and wildlife, ensure reduced reliance on the Delta, ensure the

reasonable use of water, and protect Public Trust resources. Because WaterFix is a joint petition of the State Water Project and Central Valley Project, these proposed terms and conditions would apply to the water rights of the Central Valley Project and State Water Project that are at issue in this proceeding, and would apply to each of the projects' contractors who participate in the WaterFix project (including funding construction or operation of the WaterFix project).

1. Proposed Terms and Conditions for Operation of California WaterFix (Appropriate Flow Conditions):

	Proposal	**Justification / Notes**
NDD Bypass flows	Minimum bypass flow of 35,000 cfs from November 1 to June 1 From October 1 to October 30, and from June 1 to June 30, 35,000 cfs bypass flow would be required based on real time operations and monitoring.	The NMFS biological opinion demonstrates that bypass flows above 35,000 cfs will generally avoid causing reverse flows at Georgiana Slough, and minimizes reductions in salmon survival below the intake based on acoustic tag data. The NMFS biological opinion and other evidence demonstrates that real time operations for bypass flows are not adequately protective. As such, it would be a calendar based rule for Nov 1 to June 1. For the periods of October 1 – October 30 and June 1 – June 30, the 35,000 cfs bypass flow would be triggered by the presence of salmon (any run) at Knights Landing. The bypass flow would continue that month until additional monitoring shows 3-5 consecutive days of no salmon observed at Knights Landing or in the lower Sacramento River below the intakes. The bypass flow would also be triggered in June if monitoring shows Delta Smelt in the vicinity of the intakes.
Delta outflow		
December to February	67-75% unimpaired flow	Necessary to protect longfin smelt. Provides significant benefits to salmon and other species.
March to June	67-75% unimpaired flow	Necessary to protect longfin smelt. Provides significant benefits to salmon, sturgeon, Delta Smelt, pelagic food webs, and other species.
July to August	7,100 cfs	Necessary to protect Delta Smelt.

September to November	11,400 cfs in Wet & Above Normal water year types. 7,400 cfs in Below Normal, Dry, and Critically Dry water year types.	Necessary to protect Delta Smelt.
South Delta operations (OMR)	OMR requirements analyzed in the NMFS biological opinion and CDFW ITP[2]	Proposed Delta outflow rules will frequently control over OMR criteria, and Delta outflow requirements directly address the need for additional outflow throughout the year.[3]
Other criteria		
Turbidity	Operations will not reduce entrainment of sediment by > 5%	Before operating, must demonstrate that operational criteria will not cause reductions in sediment and turbidity greater than 5% on average due to entrainment (this performance metric could not be met through reintroduction of sediment from sediment basins).
Carryover storage	Revised Shasta RPA implemented	Protect winter run Chinook salmon.
Floodplain inundation	Yolo bypass RPA acreage criteria achieved. Floodplain acreage inundated in 50% of years.	Protect salmon. Likely benefits to other species.

Notes Regarding Proposed Delta Outflow Operational Terms and Conditions:

1) These appropriate flow conditions would only apply to the water rights of the CVP and SWP as petitioners in this water rights proceeding. Nothing herein affects other users' water rights. If Delta outflow or other operational terms and conditions are not being achieved, then the CVP and SWP must pass all Delta inflow except for limited pumping necessary for health and safety or to meet Level 2 refuge water supply.

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[2] As noted above, this references the less negative OMR flows in wetter water year types analyzed in the biological opinion, ITP, and CEQA/NEPA document, instead of the footnote and text that were inserted into these permits, which potentially would not require any reductions in OMR reverse flows using real time operations and/or adaptive management.

[3] OMR requirements, such as those analyzed in Appendix 5E of the final EIS/EIR, are another way to achieve improvements in Delta outflow.

2) However, these appropriate flow conditions do not necessarily require that CVP and SWP are the only water users that must reduce diversions to meet these Delta outflow standards in the future. During the estimated 18-year period for the design and construction of WaterFix, the SWRCB will adopt updated water quality standards for the Bay-Delta and may require that other water rights holders must reduce diversions to meet updated water quality standards.

3) Operational criteria are intended to achieve SMART biological criteria and abundance targets. The SWRCB should require the adoption of SMART biological criteria and abundance targets within one year of adoption of this order. The SWRCB may revise these operational terms and conditions in the future, if it shown that both (a) the biological criteria are being achieved and (b) revision of the operational terms and conditions will not prevent attainment of other biological criteria.

4) In order to improve Delta outflow while avoiding water temperature impacts, the CVP and SWP shall implement the revised Shasta RPA. In addition, the CVP and SWP shall release water from reservoirs to meet Delta outflow standards, provided that doing so would not significantly increase temperature dependent mortality below upstream reservoirs and would not violate the revised Shasta RPA.

2. Proposed Terms and Conditions to Ensure Reduced Reliance on the Delta and the Reasonable Use of Water

1) **Water recycling:** By the year 2030, require that wastewater discharges to oceans and bays within the service area of water districts served by WaterFix be reduced to 50% below 2015 levels, through investments in wastewater recycling and improvements in urban water use efficiency that reduce wastewater flows;

2) **Urban water use efficiency:** By the year 2030, require that urban water use within the CVP and SWP service areas participating in WaterFix improve urban water use efficiency in an amount equivalent to achieving the following targets:

   a. **Indoor water use budget:** 45 GPCD

   b. **Outdoor water use budget:** An updated MWELO standard that uses a ETo factor of 0.55 for outdoor landscape areas in 2030.

c. **Commercial, Industrial, and Institutional ("CII") water use:** require installation of dedicated irrigation meters on all CII landscapes larger than 500 square feet by 2024, and establish performance based metrics for major CII water use categories (such as cooling towers) by 2025.

d. **Water Loss budget:** standard to be adopted by 2020 per SB 555.

These targets would be used to calculate an overall water use efficiency requirement, and the CVP and SWP (and their contractors) could choose how best to achieve this overall requirement, rather than having to achieve the individual targets. There would be no exceptions from this water efficiency requirement for recycled water or local sources of water.

3) **Agricultural water use efficiency:** By the year 2030, require that water districts served by California WaterFix achieve a 15% increase in agricultural water use efficiency compared to current levels during Above Normal, Below Normal, Dry, and Critically Dry water year types, as measured by Crop Consumptive Use Fraction ("CCUF") at the water supplier scale.

4) **Urban Stormwater capture:** By the year 2030, require urban water suppliers within the service area of water districts served by WaterFix to increase stormwater capture by at least 420,000 acre feet per year above current levels, under average annual precipitation.

Operation of new conveyance should not be permitted until these terms and conditions are fully implemented and achieved.

V. Conclusion

The SWRCB should deny the WaterFix Petition because the project would cause unreasonable impacts to fish and wildlife, is not in the public interest, and is contrary to law. Should the Petition be granted, the SWRCB must impose terms and conditions that: (1) ensure that appropriate flow criteria, as proposed in our opening statement and testimony, are implemented and will adequately protect fish and wildlife; and (2) ensure that Petitioners will reduce reliance on water supply from the Delta, improve water use efficiency and regional self-reliance, and will help sustain local economies despite significant reductions in diversions from the Delta.

Respectfully submitted,

Dated: November 28, 2017

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