INYO/LOS ANGELES STANDING COMMITTEE

Dedicated to the advancement of mutual cooperation

MEMORANDUM

Date May 26, 2021

Subject: Documentation of Actions Taken by Standing Committee at the March 1, 2021 Meeting.

The Standing Committee's policy is to document any actions taken by the Committee in a memorandum at the subsequent meeting. Standing Committee members present at the March 1, 2021 video conference meeting hosted by Inyo County were: for Inyo County; Supervisor Matt Kingsley, Supervisor Rick Pucci, Water Commissioner Teri Red Owl & Randy Keller, County Administrative Officer Clint Quilter, County Counsel Marshall Rudolph, and Water Director Aaron Steinwand, and for Los Angeles; City Councilman Mitch O'Farrell, Commissioners Susana Reyes & Nicole Neeman Brady, Director of Water Operations Anselmo Collins, Aqueduct Manager Adam Perez, and Deputy City Attorney David Edwards.

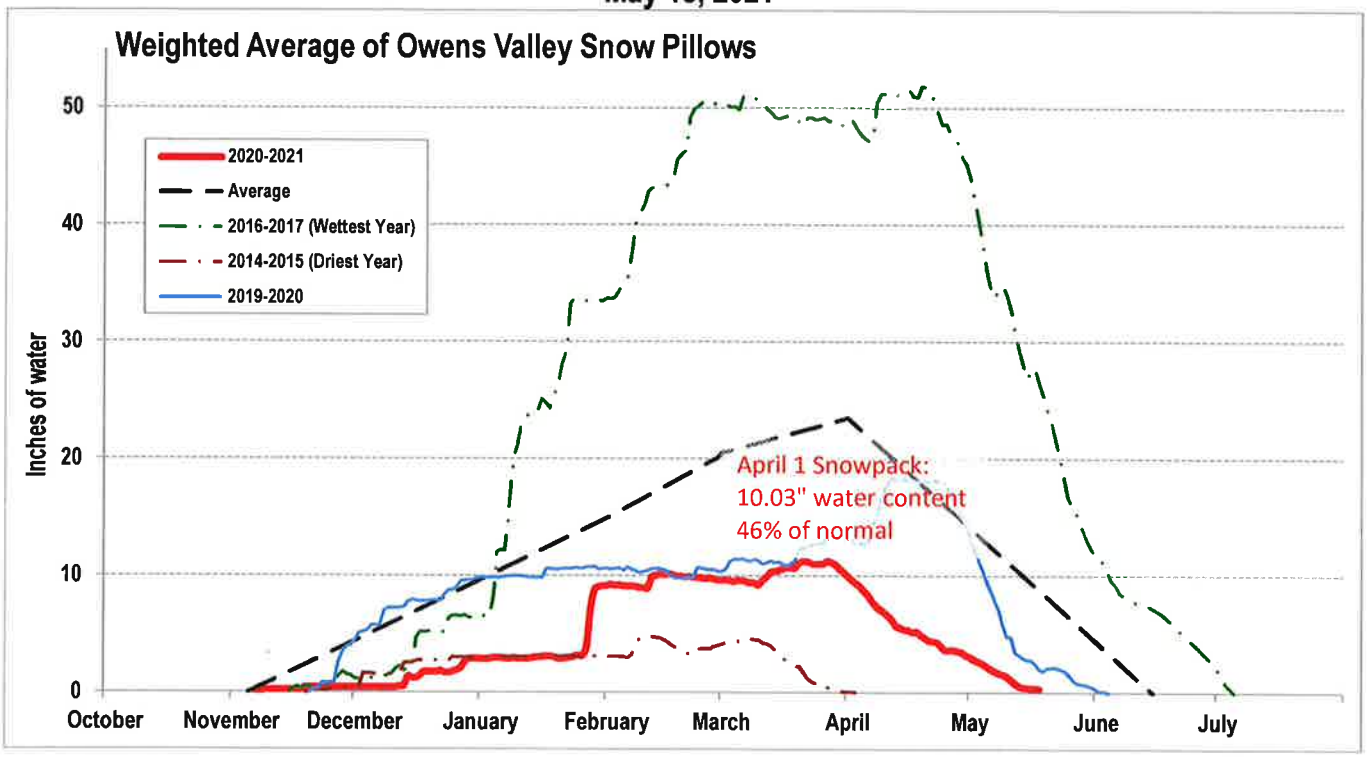
Action taken at the March 1, 2021 meeting, considered by the Committee:

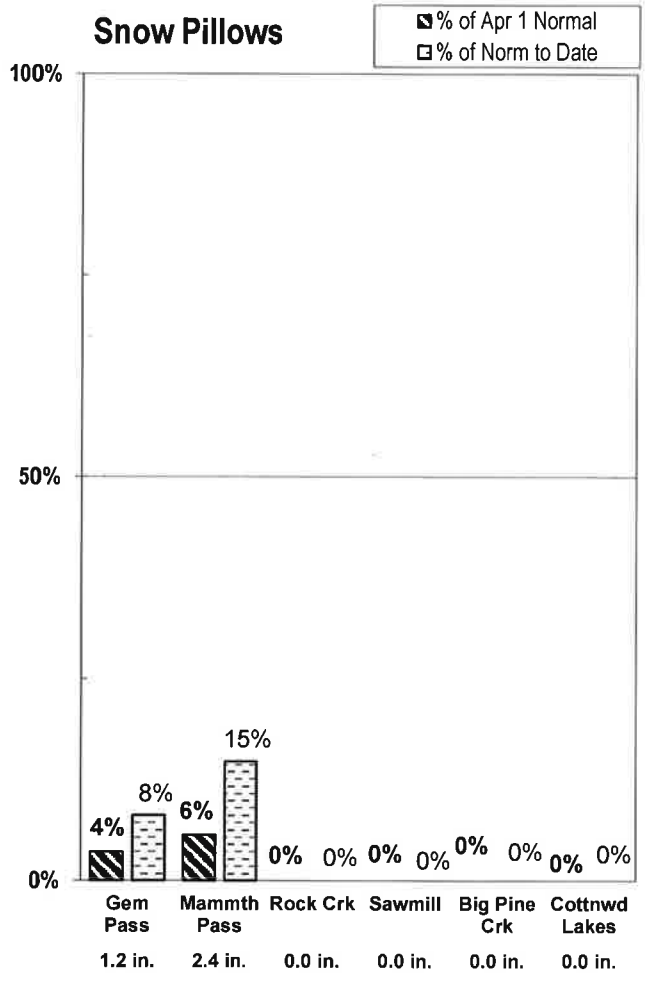
Agenda Item #1 - Approval of documentation of actions from the October 15, 2020 meeting

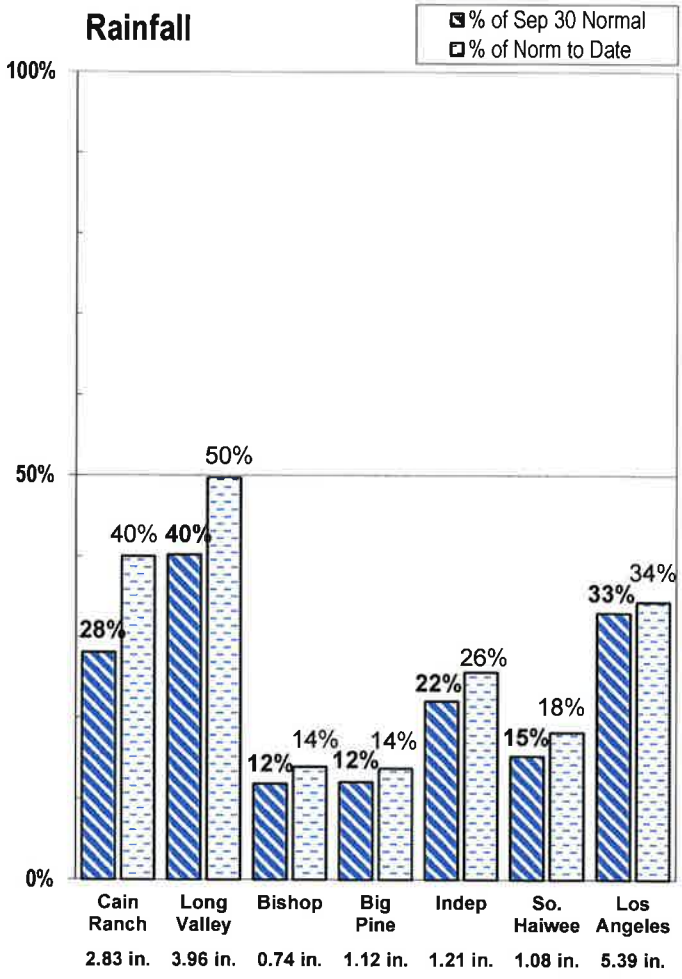
The Standing Committee approved the March 1, 2021 memorandum entitled: Documentation of Actions Taken by Standing Committee at the October 15, 2020 meeting

AGENDA ITEM #2

EASTERN SIERRA
CURRENT PRECIPITATION CONDITIONS
May 18, 2021







Measurement as Inches Water Content; Precipitation totals are cumulative for water year beginning Oct 1

2021 EASTERN SIERRA RUNOFF FORECAST
April 1, 2021

APRIL THROUGH SEPTEMBER RUNOFF

	MOST PROBABLE VALUE (Acre-feet)	MOST PROBABLE VALUE (% of Avg.)	REASONABLE MAXIMUM (% of Avg.)	REASONABLE MINIMUM (% of Avg.)	LONG-TERM MEAN (1966 - 2015) (Acre-feet)
MONO BASIN:	**53,900**	**53%**	66%	41%	100,782
OWENS RIVER BASIN:	**144,900**	**48%**	62%	35%	299,885

APRIL THROUGH MARCH RUNOFF

	MOST PROBABLE VALUE (Acre-feet)	MOST PROBABLE VALUE (% of Avg.)	REASONABLE MAXIMUM (% of Avg.)	REASONABLE MINIMUM (% of Avg.)	LONG-TERM MEAN (1966 - 2015) (Acre-feet)
MONO BASIN:	**68,800**	**58%**	71%	44%	119,103
OWENS RIVER BASIN:	**226,800**	**55%**	68%	43%	409,199

NOTE - Owens River Basin includes Long, Round and Owens Valleys (not incl Laws Area)

MOST PROBABLE - That runoff which is expected if median precipitation occurs after the forecast date.

REASONABLE MAXIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average once in 10 years.

REASONABLE MINIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average 9 out of 10 years.

2021/2022 RUNOFF YEAR PUMPING TOTALS

(ACRE FEET)

	BISHOP	LAWS	BIG PINE	TABOOSE-ABERDEEN	THIBAUT-SAWMILL	INDEPEN.-OAK	SYMMES-SHEPHERD	BAIRS-GEORGES	LONE PINE	TOTAL
APR	1,406	1,208	941	829	813	818	84	105	125	6,329
MAY										0
JUN										0
JUL										0
AUG										0
SEP										0
OCT										0
NOV										0
DEC										0
JAN										0
FEB										0
MAR										0
TOTAL	1,406	1,208	941	829	813	818	84	105	125	6,329

5/17/2021


Owens Valley Annual Operations Plan
2021-22 Runoff Year
Los Angeles Department of Water and Power

Water Agreement Process

- According to Inyo/LA **Water Agreement** procedure, LADWP submits a draft Operations Plan to the ICWD by April 20th of each year.
- Inyo County provides comments on the Plan within 10 days.
- LADWP finalizes the Plan within 10 days of discussing the comments with ICWD staff at a Technical Group meeting.

Annual Operations Plan Preparation

To prepare the annual pumping plans, LADWP considers:

- Forecasted Owens River Basin Runoff
- ON/OFF status of vegetation monitoring sites
- Water demands
- Vegetation conditions
- Groundwater levels

Annual Plan for 2021-22 Runoff Year

2021-22 Annual Operations Plan

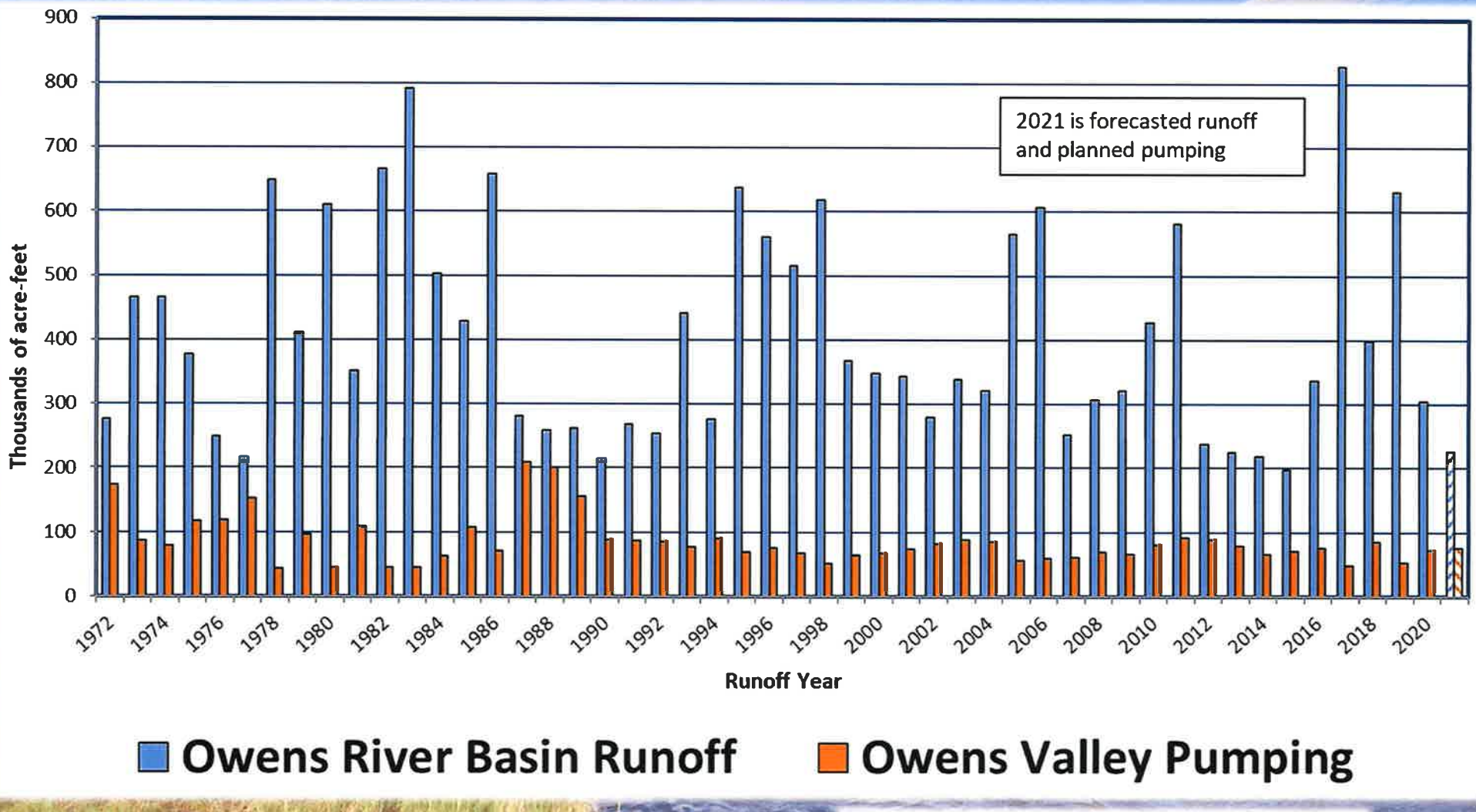
Snow Survey Results (April 1, 2021)

Owens River Basin Snowpack Areas	Percent of Normal April 1
Mammoth Area (27% of overall snowpack)	54%
Rock Creek Area (16% of overall snowpack)	53%
Bishop Area (19% of overall snowpack)	46%
Big Pine Area (13% of overall snowpack)	44%
Cottonwood Area (25% of overall snowpack)	22%
Overall Owens River Basin Snowpack	**46%**

See Table 2.5 in Annual Operations Plan

2021-22 Annual Operations Plan

Forecasted 2021-22 Owens River Basin Runoff is 55% of Long-Term Average



See Figure 1.1 in Annual Operations Plan

2021-22 Annual Operations Plan

ON/OFF Status of Vegetation Monitoring Sites (April 2021)

Vegetation Monitoring Site	April 2021 ON/OFF Status
LW1	ON
LW2	ON
LW3	ON
BP1	ON
BP2	OFF
BP3	ON
BP4	ON
TA3	OFF
TA4	ON
TA5	ON
TA6	ON

Vegetation Monitoring Site	April 2021 ON/OFF Status
TS1	OFF
TS2	ON
TS3	ON
TS4	ON
IO1	OFF
IO2	OFF
SS1	OFF
SS2	OFF
SS3	ON
SS4	OFF
BG2	ON

See Table 1.2 in Annual Operations Plan

Based on Available Soil Moisture and Vegetation Water Demand

2021-22 Annual Operations Plan

Planned 2021-22 Pumping

Wellfield	Available Pumping Capacity (af)	Planned Pumping (af)
Laws	39,751	8,900-9,400
Bishop	19,400	12,000
Big Pine	48,724	20,500-23,000
Taboose-Aberdeen	40,090	5,300-8,880
Thibaut-Sawmill	16,325	8,000-11,000
Independence-Oak	15,710	7,000-8,800
Symmes-Shepherd	6,847	1,200-2,900
Bairs-George	2,820	800-2,100
Lone Pine	980	900
Total Owens Valley	**190,647**	**64,600-78,980**

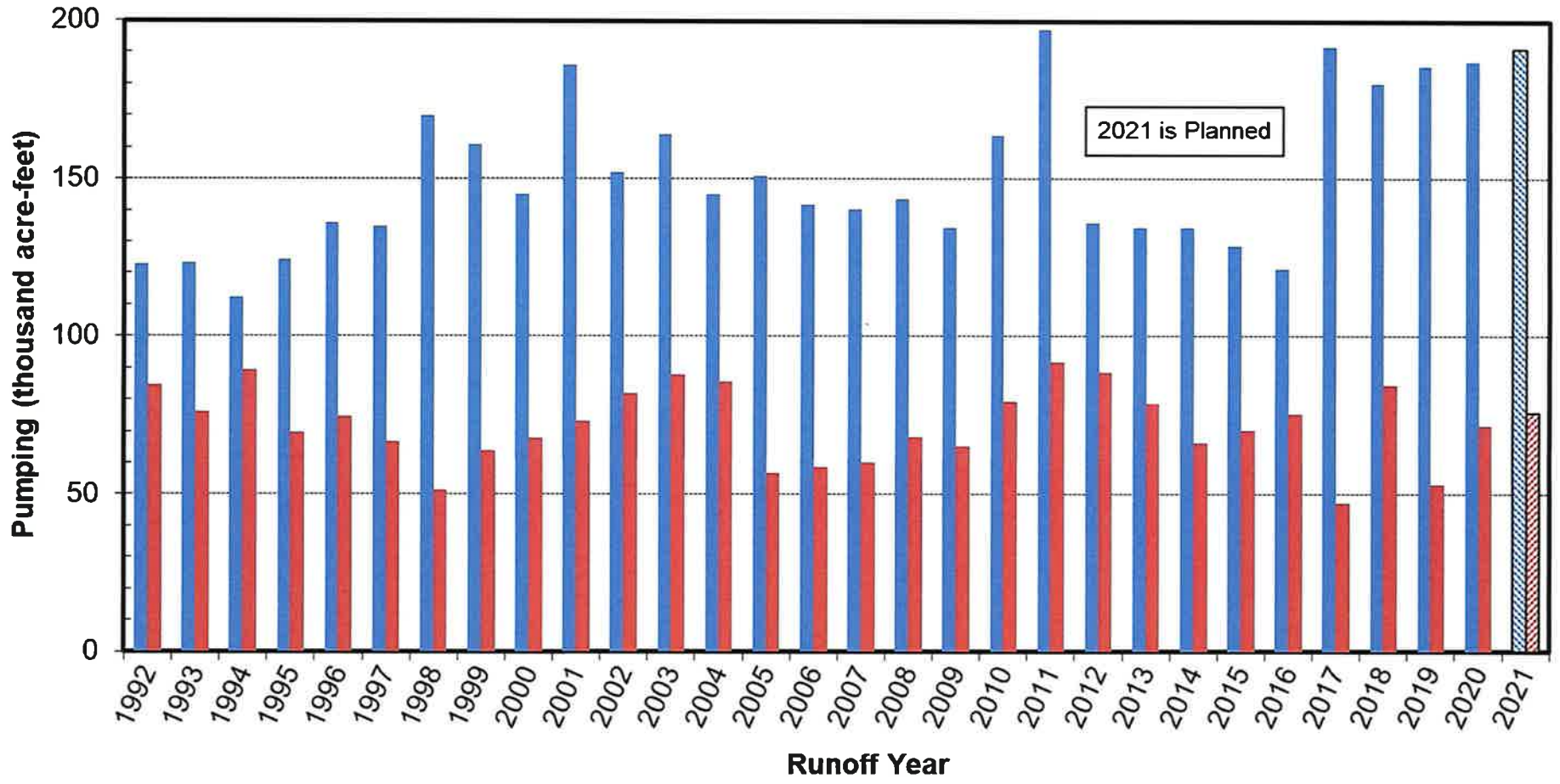
See Tables 1.3 & 1.4 in Annual Operations Plan

Planned pumping is 34 to 41 percent of pumping allowed under Water Agreement Provisions

Planned pumping meets long-term groundwater mining provisions of Water Agreement

2021-22 Annual Operations Plan

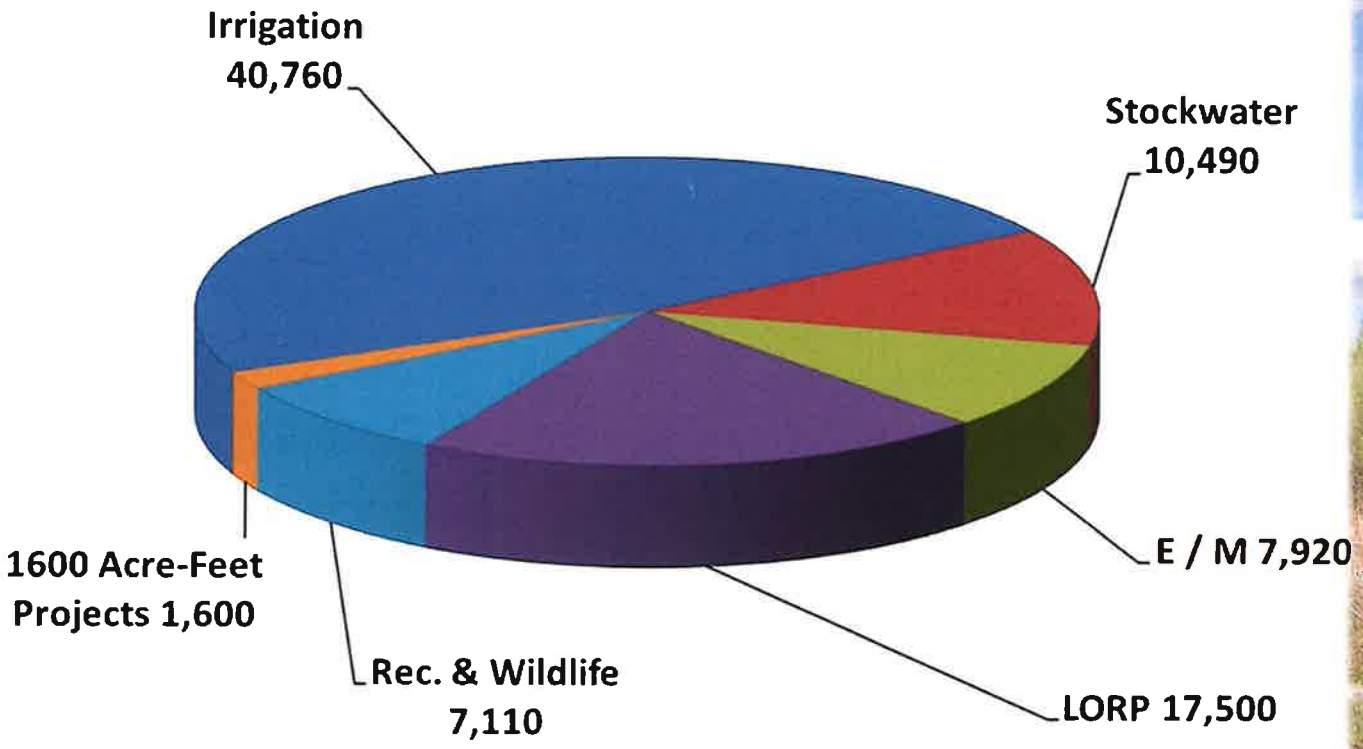
Planned 2021-22 Pumping is 34 to 41 percent of pumping allowed under the Water Agreement



See Figure 1.2 in Annual Operations Plan

2021-22 Annual Operations Plan

Inyo/LA Agreement Water Use



Total Uses = 85,380 acre feet

See Figure 1.11 in Annual Operations Plan

2021-22 Annual Operations Plan

All of the pumped water directly or indirectly supply uses in the Owens Valley

Fish Hatcheries

Town Water Systems

Agriculture

Enhancement and Mitigation

2021-22 Annual Operations Plan

All of the pumped water directly or indirectly supply uses in the Owens Valley

Recreation

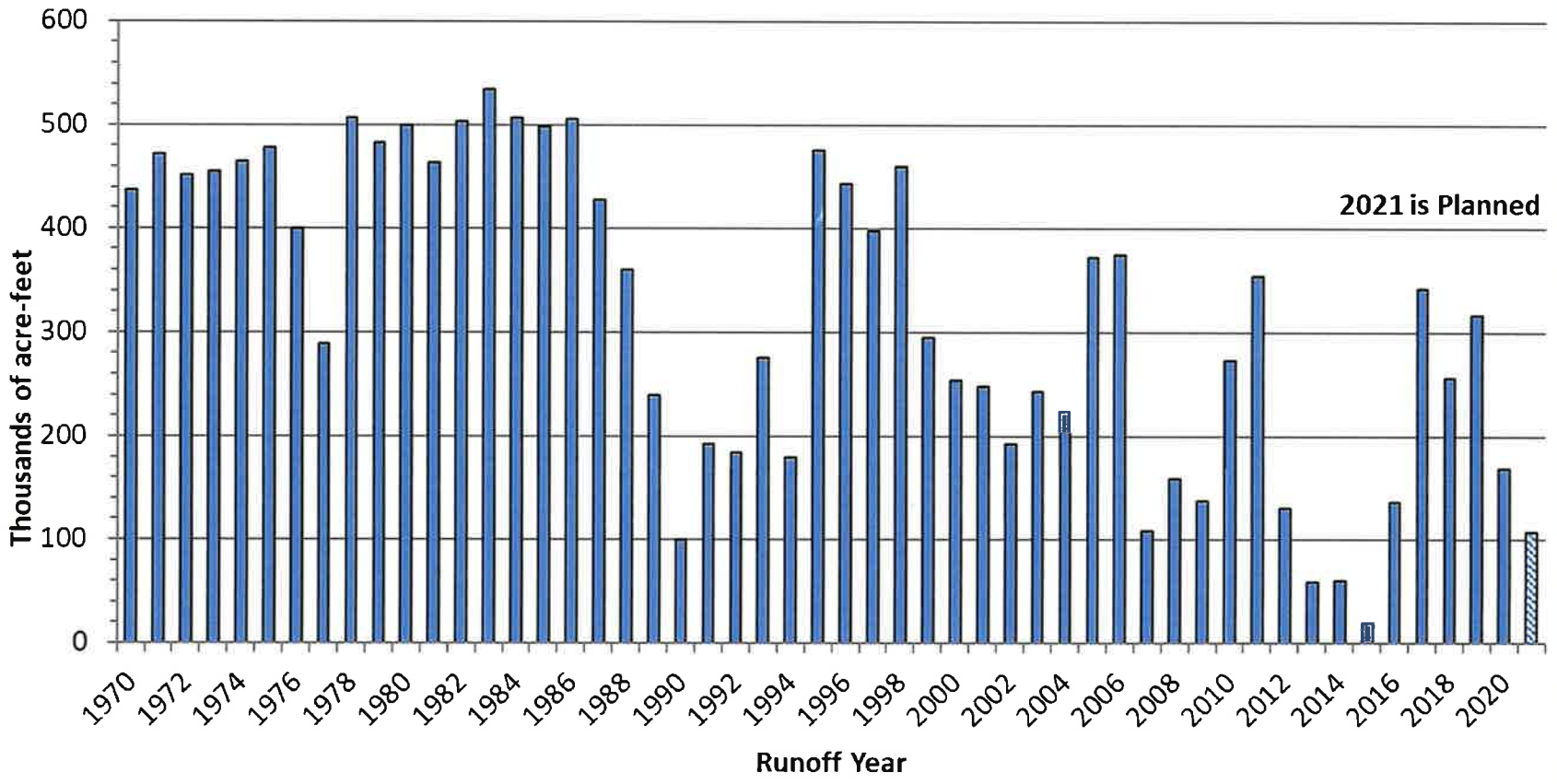
Other Operational Demands

Dust Mitigation at Owens Lake

2021-22 Annual Operations Plan

Planned Water Export to Los Angeles

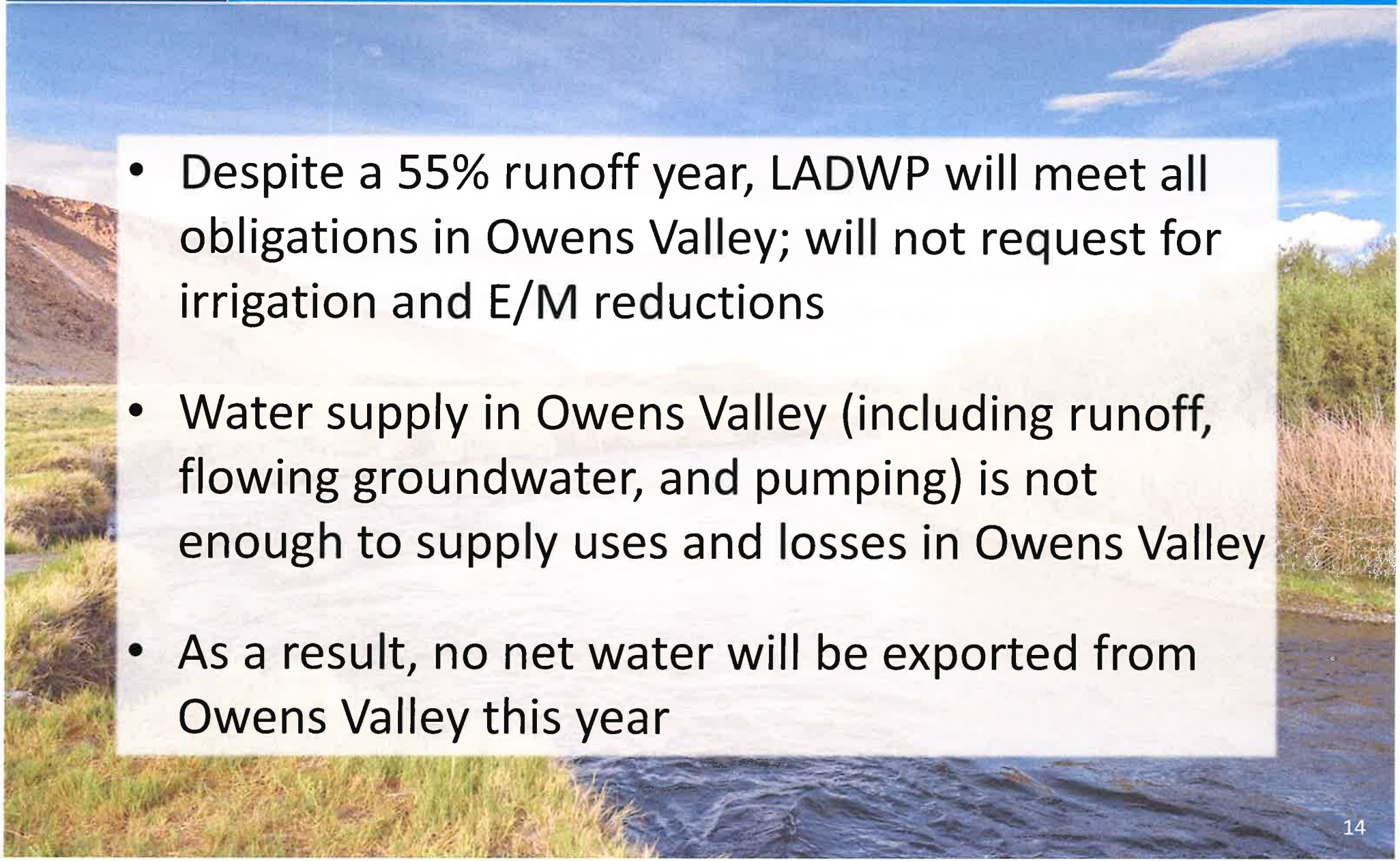
The planned export to Los Angeles is 107,000 af



See Figure 1.13 in Annual Operations Plan

2021-22 Annual Operations Plan

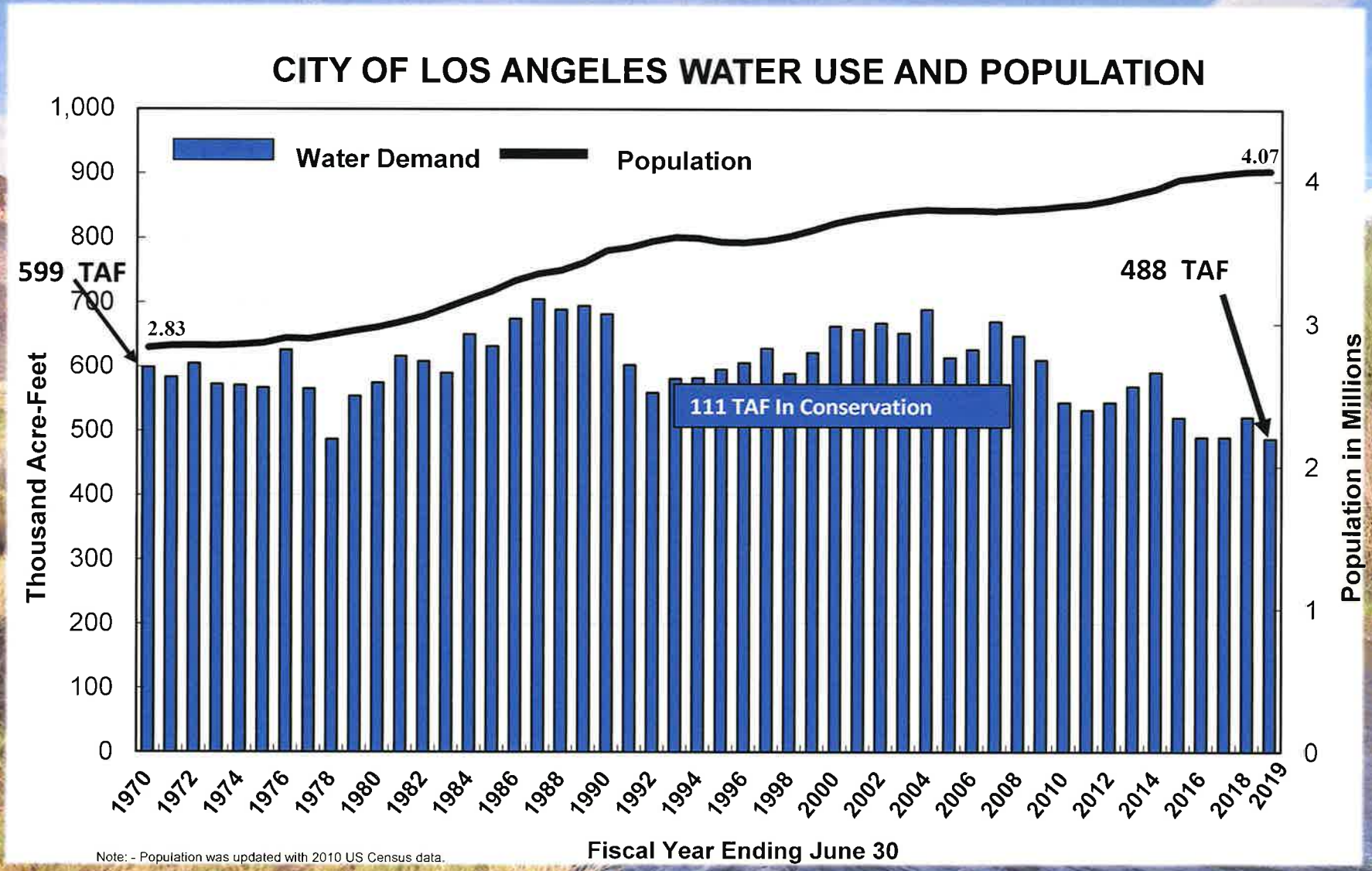
Planned Water Export to Los Angeles



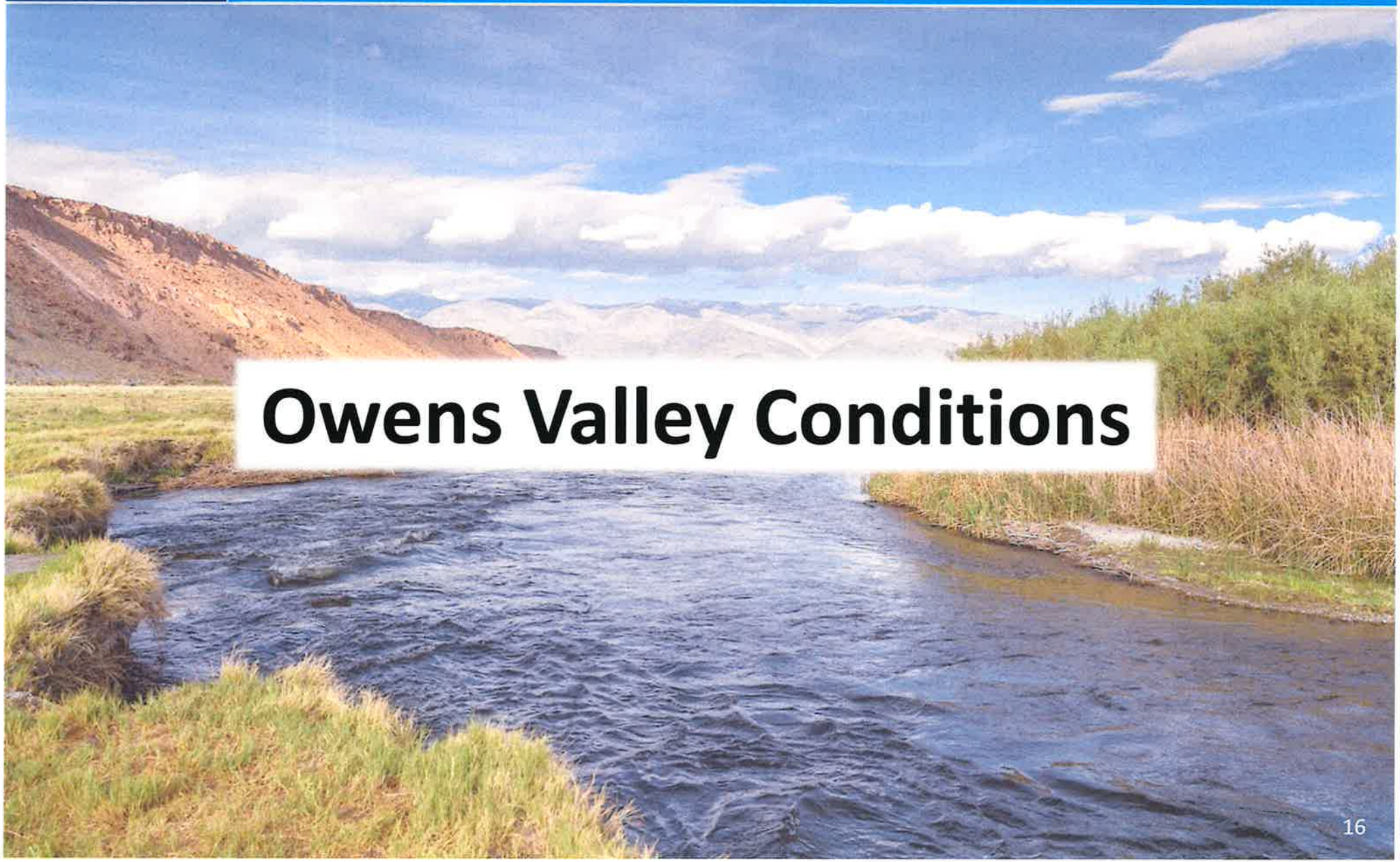
- Despite a 55% runoff year, LADWP will meet all obligations in Owens Valley; will not request for irrigation and E/M reductions
- Water supply in Owens Valley (including runoff, flowing groundwater, and pumping) is not enough to supply uses and losses in Owens Valley
- As a result, no net water will be exported from Owens Valley this year

2021-22 Annual Operations Plan

Long-Term Effect of Conservation on Water Demand



Note: - Population was updated with 2010 US Census data.

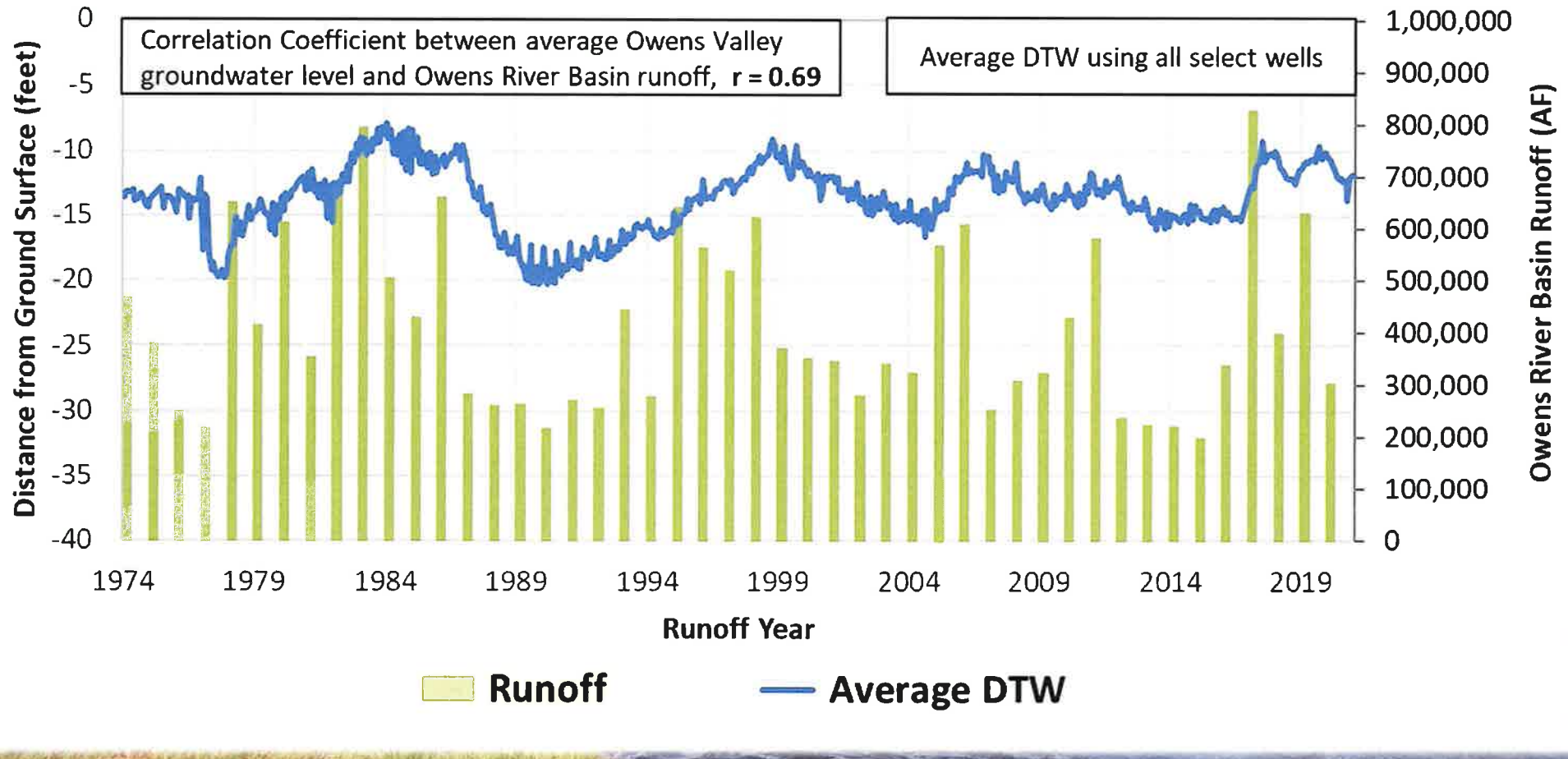


Owens Valley Conditions

Owens Valley Conditions

Average Owens Valley Groundwater Levels

(using representative monitoring wells)

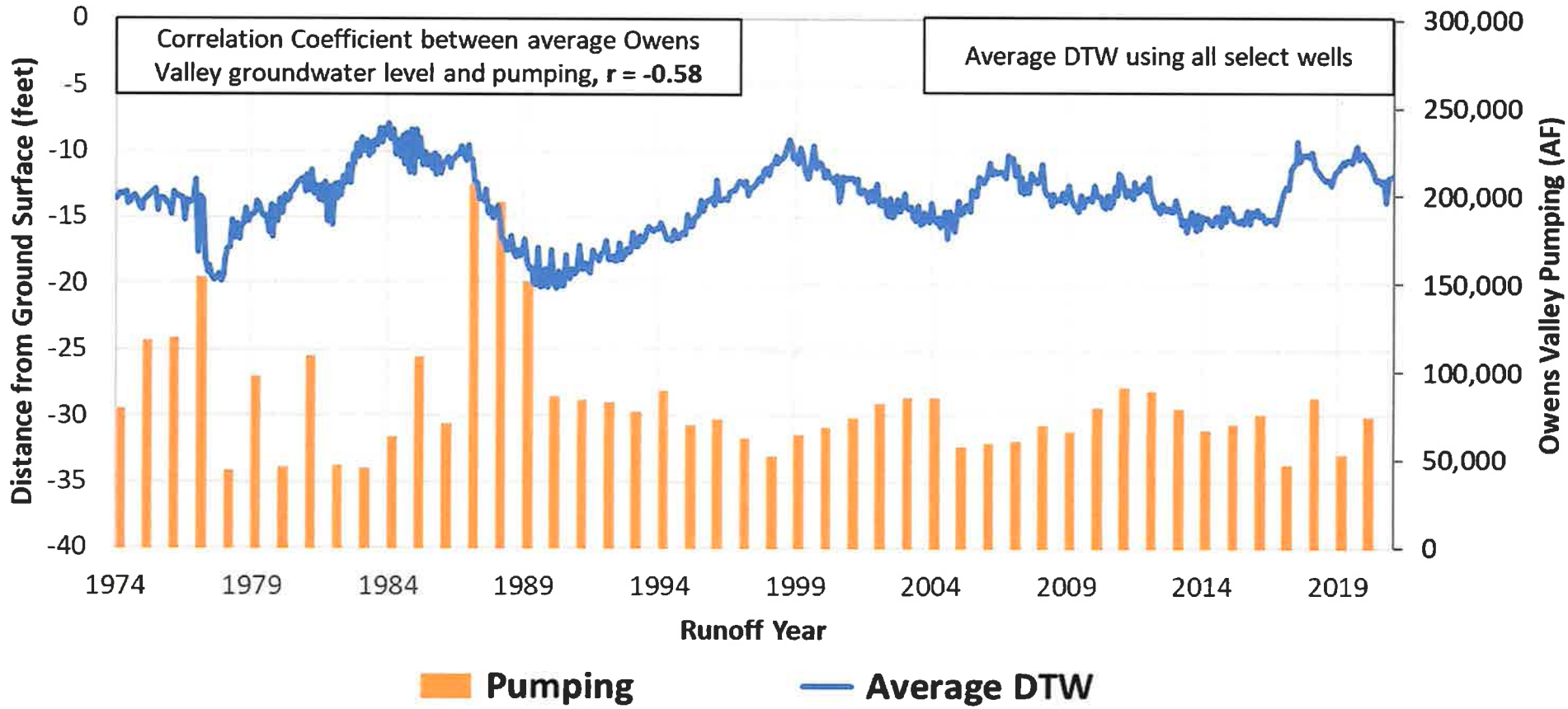


See Figure 2.20 in Annual Operations Plan

Owens Valley Conditions

Average Owens Valley Groundwater Levels

(using representative monitoring wells)



See Figure 2.21 in Annual Operations Plan

Owens Valley Conditions

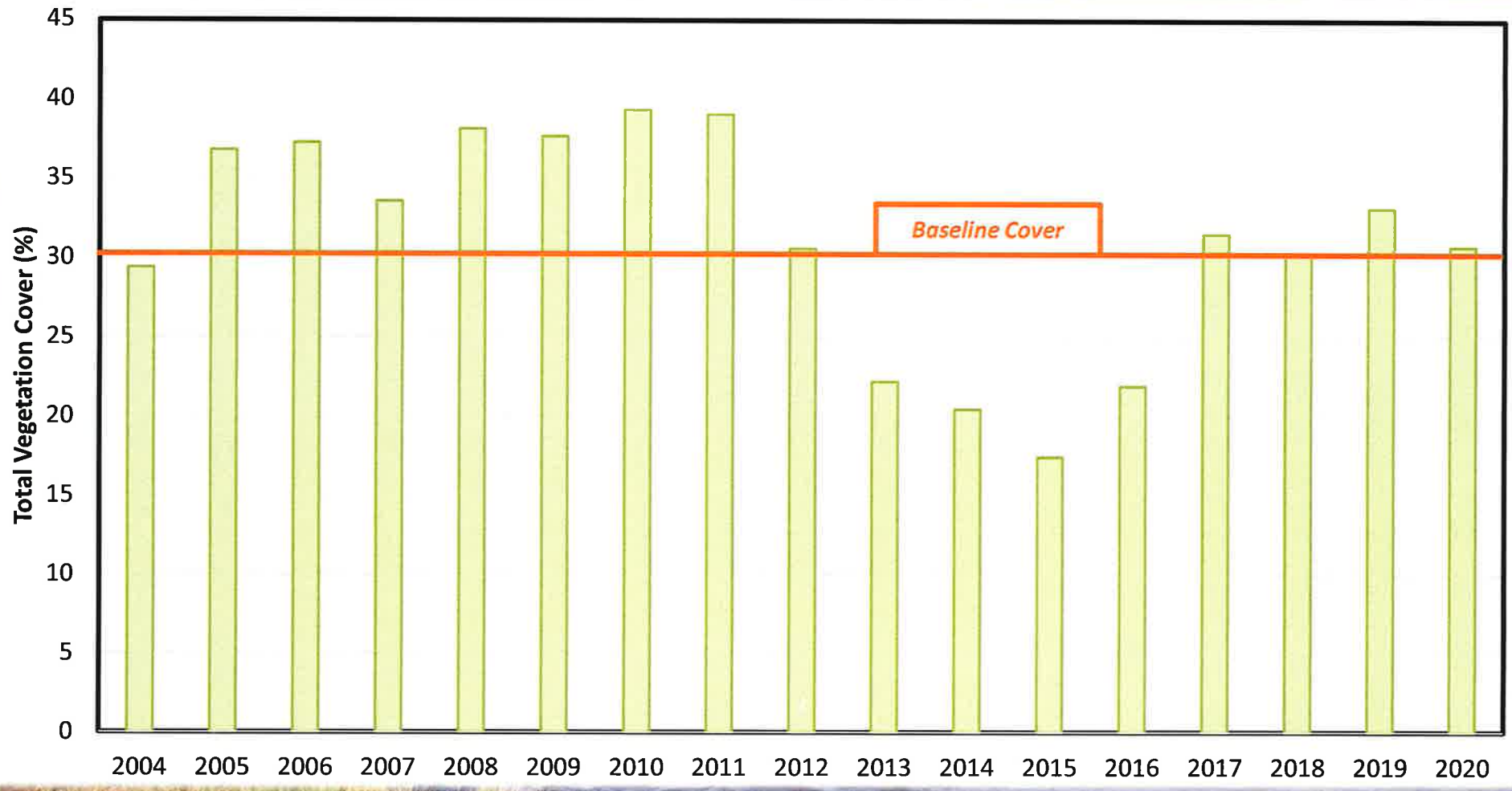
Average Owens Valley Groundwater Levels
(using representative monitoring wells)

Findings: (based on 1991-2020 data)

- Owens River Basin **runoff** was highly variable
  - Range: 198,000 - 826,000 af / Average: 400,000 af/yr
- Owens Valley **pumping** was relatively stable
  - Range: 47,000 - 91,000 af / Average: 72,000 af/yr
- Average Owens Valley **DTW** was relatively stable
  - Range: 7 - 17 ft / Average: 12.9 ft
  - No long-term rising or declining trends
  - Positively correlated with runoff (Correlation coefficient: 0.69)
  - Negatively correlated with pumping (Correlation coefficient: -0.58)

Owens Valley Conditions

Average Owens Valley Vegetation Condition



See Figure 2.25 in Annual Operations Plan

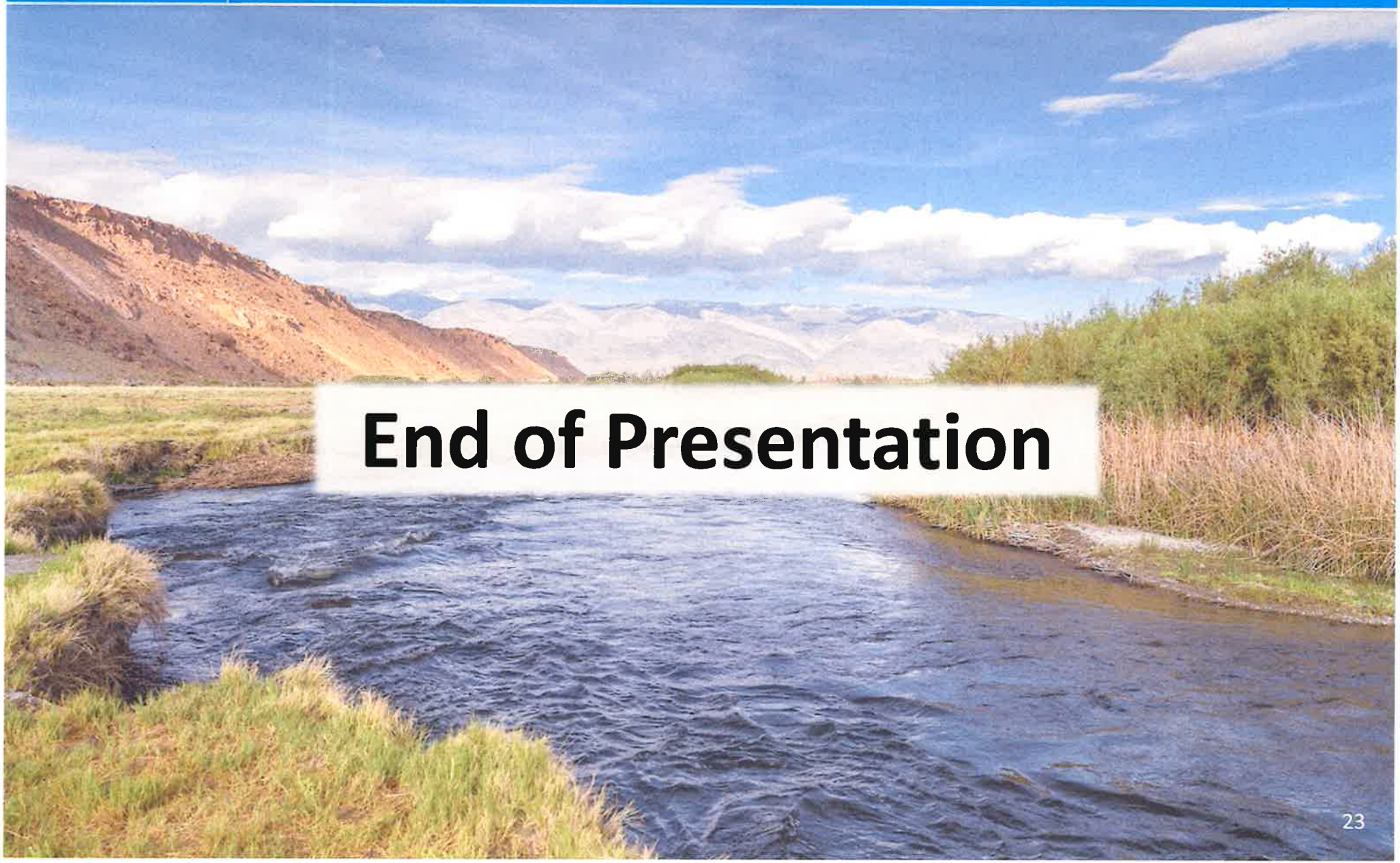
Based on average of 70 wellfield vegetation parcels monitored throughout Owens Valley

2020-21 Annual Operations Plan

LADWP Owens Valley Environmental Mitigation Projects

- 64 environmental mitigation projects are required by the Inyo/LA Water Agreement, 1991 EIR, 1997 MOU, and other related documents.
- The status of these projects are as follows:
  - 8 are complete
  - 43 are implemented, achieving goals, and ongoing (i.e. have ongoing water, financial, or other monitoring requirements)
  - 13 are fully implemented but are not yet meeting goals
  - 0 are not fully implemented

For more detailed information please see the Owens Valley Annual Operation Plan: www.ladwp.com



Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

May 18, 2021

Delivered via electronic submission to adam.perez@ladwp.org

Mr. Adam Perez
Los Angeles Aqueduct Manager
300 Mandich Street
Bishop CA 93514

Subject: Draft Annual Operations Plan under the Long Term Water Agreement (LTWA) and other long-term planning issues

Dear Mr. Perez:

We, the Bristlecone Chapter of the California Native Plant Society are writing to express our support of several recommendations made by the Inyo County Department of Water (ICWD) about the draft pumping plan for 2021-2022. We also urge the Technical Group and the Standing Committee to initiate a long-term planning effort to guide water deliveries from the Eastern Sierra to Los Angeles via the Los Angeles Aqueduct (LAA).

The California Native Plant Society is a non-profit organization working to protect California's native plant heritage and preserve it for future generations. Our nearly 10,000 members are professionals and volunteers who work to promote native plant conservation through 33 chapters statewide. Our local CNPS Bristlecone Chapter has members from Inyo and Mono counties, as well as throughout California and from countries across the globe. The attraction to these thousands of members is the vast and beautiful landscapes - montane and desert - where uniquely intriguing, diverse, and sensitive vegetation occur.

2021-2022 Pumping Plan
Inyo County Water Department (ICWD) recommends annual pumping levels of 59,377 acre-feet from the nine wellfields covered by the LTWA. ICWD's recommendation is approximately 5,000 acre-feet over in-valley minimum use. This pumping level differs from LADWP's range of 64,600 to 78,980 acre-feet. The Bristlecone Chapter concurs with the lower pumping levels in the Laws, Big Pine, Taboose-Aberdeen, Thibault-Sawmill, Independence-Oak, Symmes-Shepherd, and Bairs-George wellfields for the reasons given by ICWD. These reasons include "a more prudent plan for the upcoming drought year" in line with the goals of the LTWA as well as concerns specific to each wellfield. In particular, we are concerned with groundwater-dependent vegetation cover that falls consistently below baseline levels and is likely to be further diminished by the combined impacts of

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

extreme drought and groundwater extraction. Recovery of groundwater levels and stable vegetative communities ultimately benefits citizens of both Los Angeles and Inyo County.

ICWD makes other recommendations with which the Bristlecone Chapter agrees. These include the examination of water needs of Fish Springs Fish Hatchery, providing expected water amounts for Owens Lake dust mitigation, providing information to ICWD to show how in-valley uses were estimated, and implementing "a multi-year planning process to manage water table fluctuations within ranges compatible with vegetation baseline conditions."

On the proposed pumping test for W386 this fall, the Bristlecone Chapter reiterates our previous position that wells 385 and 386 in the Five Bridges area remain permanently shut down due to the project not meeting mitigation requirements including: loss of shrub willow areas, loss of rare plants (e.g. Sidalcea covillei), and conversion to weed species . However, if the testing of W386 is to move forward, then the Bristlecone Chapter concurs with ICWD's proposal that the test on W386 proceed only if hydrological conditions are suitable. Our chapter is aware that vegetation in the area is already suffering from extreme drought and LADWP must wait for improved hydrologic conditions (as were present with the testing of W385) before testing in order to protect sensitive species and vegetation from undue impact. It does not appear that condition will be met given the extremely low runoff forecast. Additionally, we respectfully suggest that LADWP review and incorporate concerns by California Department of Fish and Wildlife based on evaluation of W385 by their hydrologists.. We concur with ICWD that the 1980's "vegetation impact at Five Bridges has not been fully mitigated, in particular the diminished perennial cover, conversion of shrub willow areas, and weed infestation." To that list of concerns the Bristlecone Chapter adds the local extirpation of rare plant populations. In addition, there continue to be other mitigation projects mandated by the LTWA and other agreements which have not been implemented in a meaningful way as determined by ICWD and by concerned citizens.

Future Actions to be considered by Technical Group and Standing Committee
In 2019, Mayor Garcetti's administration approved the Green New Deal which among other goals proposed water conservation, reuse, and infrastructure upgrades to reduce reliance on imported water to 30% of total water supply. The proposed programs to implement these goals are the Urban Water Manage Plan (updated every five years) and Operation NEXT. The Bristlecone Chapter is aware that these plans to reduce imported water will apply to purchased water. As proposed, these plans would maintain water imported from the LAA at historic levels (70,000 to 90,000 acre-feet), based on the low cost and high quality of

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PO Box 364, Bishop, CA 93515

Eastern Sierra water. Eastern Sierra citizens have not been fully included in the scoping process for these plans and appear to derive little benefit as currently proposed.

The Bristlecone Chapter, together with other citizen groups, have commented on the proposed plans, strongly recommending a sustainable Integrated Water Management Plan for the LAA in partnership with Eastern Sierra communities and local governments, Tribal Nations, and environmental organizations (see attached correspondence). The Bristlecone Chapter recommends the re-evaluation and revision of the LTWA by the Standing Committee to be compatible with the goals of the Green New Deal to conserve water and increase water reuse by 2050 and expanded to include benefits to Eastern Sierra communities. Such re-evaluations would address the long history of diversion of a precious resource to Los Angeles without restoring Eastern Sierra watersheds to healthy and sustainable conditions.

The Standing Committee should consider the following revisions to the LTWA: extended timelines for review of the pumping plan as proposed by LADWP to allow for meaningful citizen inputs; full consultation with Tribal Nations and local governments; changes in the role of the Standing Committee to be advocates for a healthy watershed in the Eastern Sierra; a full and independent review of mitigation sites; and implementation of long-term planning for pumping and water delivery which includes all Eastern Sierra communities.

One final area of concern for the Bristlecone Chapter is the inclusion of Owens Lake in managing the Eastern Sierra watershed. A decision needs to be made about groundwater resources under Owen Lake and how they should be incorporated into a greater groundwater management plan for the Eastern Sierra.

The Bristlecone Chapter appreciates the opportunity to comment on the 2021-2022 Pumping Plan. We request that this letter be forwarded to the Standing Committee for their consideration as well.

Sincerely,

Edie Trimmer
CNPS Bristlecone Chapter, Dedicated Volunteer & Member

Maria Jesus
CNPS Bristlecone Chapter, Conservation Chair

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

Cc: Laura Piper, Inyo County Water Department

Inyo County Water Commission

LA/Inyo County Standing Committee

Office of Mayor Garcetti

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

May 14,2021

Operation NEXT
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 N Hope St Room 1044
Los Angeles CA 90012
Attn: Christopher Lopez

Email: OperationNEXT@ladwp.com
Mailed letter to follow.

Subject: Operation NEXT and Hyperion 2035 NOP Scoping Comment

Dear Mr. Lopez:

The Bristlecone Chapter of the California Native Plant Society (Bristlecone Chapter) appreciates the opportunity to comment on the Program Environmental Impact Report for Operation NEXT and Hyperion 2035 NOP Scoping. The Bristlecone Chapter also appreciates the extension of the comment period from April 14, 2021 to May 14, 2021.

(The Notice of Preparation (NOP) advises that this program "aims to maximize production of purified recycled water from the Hyperion Reclamation Plant to replenish the city's groundwater basins." Concurrently, Los Angeles Department of Water and Power (LADWP) is working "with regulators to allow integrating purified recycled water with the drinking water system." The program will allow purified recycled water to be used as a raw water source for treatment at the *Los Angeles Aqueduct Filtration Plant* (emphasis added). Program benefits will increase local water supplies to offset *purchased* (emphasis added) imported water; build a resilient water storage supply in local ground water basins; and mitigate potential interruptions to water supply due to earthquake, climate change, and drought.

LADWP is the lead agency for Operation NEXT and Hyperion 2035. The direct partner is LA Sanitation and Environment. Regional partners include Water Replenishment District of Southern California and Metropolitan Water District of Southern California (MWD). Not included as stakeholders or partners in this scoping process are the citizens of the Eastern Sierra even though Eastern Sierra water is exported via the Los Angeles Aqueduct (LAA) to supply approximately 30% of Los Angeles water consumption. Waters from the LAA will be commingled with recycled water and with imported water from MWD.

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

The Bristlecone Chapter requests that Tribal Nations, county governments, and environmental organizations of the watershed (Mono Lake to Owens Lake) be included as regional partners or stakeholders. Stakeholders should include communities along the length of the LAA, as, for example communities with storage reservoirs. Inclusion of Eastern Sierra stakeholders will allow for long term planning of water delivery by the LAA as addressed by Operation NEXT and the Urban Water Management Plan (UWMP). There are also opportunities for the reservation and enhancement of riparian and valley floor ecosystems as called for Governor Newsom's 30x30 Executive Order of 30 percent of California's coastal and interior lands by 2030.

The Eastern Sierra was left out of the stakeholder outreach efforts for UWMP. The Operation NEXT and Hyperion scoping process is the opportunity to address decades of water policy which has benefited Los Angeles but harmed citizens of the Eastern Sierra. We should be included.

In sum, the Bristlecone Chapter recommends that Tribal Nations, Inyo and Mono County governments, and environmental groups be included in the planning process for Operation NEXT and Hyperion 2035. Currently groundwater and riparian ecosystems are stressed in the Eastern Sierra. Sustainable use means restoring groundwater levels, natural stream flows, and riparian ecosystems through reduced pumping and lower water deliveries to the LAA. These actions would fit in well with the goals for Operation NEXT, the Urban Water Management Plan and Governor Newsom's 30x30 Executive Order.

Thank you for this opportunity to comment.

Sincerely,

Edie Trimmer
Conservation Water Subcommittee
Bristlecone Chapter, California Native Plant Society

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

13 April 2021

Delivered via electronic submission to uwmp@ladwp.com

Los Angeles Department of Water and Power
111 No. Hope Street, Room 308
Los Angeles, CA 90012

Re: Comments on 2020 Urban Water Management Plan

Dear Mr. Benjamin Wong,

We, the California Native Plant Society (CNPS) Bristlecone Chapter, are writing to express our comments and concerns regarding LADWP's 2020 Urban Water Management Plan (UWMP).

The California Native Plant Society is a non-profit organization working to protect California's native plant heritage and preserve it for future generations. Our nearly 10,000 members are professionals and volunteers who work to promote native plant conservation through 33 chapters statewide. Our local CNPS Bristlecone Chapter has members from Inyo and Mono counties, as well as throughout California and from countries across the globe. The attraction to these thousands of members is the vast and beautiful landscapes – montane and desert – where uniquely intriguing, diverse, and sensitive vegetation occur.

We understand the need to supply adequate water to the City of Los Angeles (LA) and commend LADWP for establishing bold conservation goals which include decreasing LA's reliance on imported water. Additionally, we recognize that a substantial proportion of the Los Angeles Aqueduct (LAA) water supply has been allocated to important environmental projects that are critical for human and ecological health in our region. Such goals and actions are needed to build resilient communities in response to an increasingly unstable climate.

However, we have reviewed the UWMP and are concerned that resiliency of LA will come at the expense of our own communities here in the Owens Valley. The UWMP does not account for the possibility that climate change will increase the water demand needed for obligatory environmental projects. While there may be only slight losses in mean precipitation, ensemble modeling predicts dramatic shifts in how precipitation will be distributed over time (Swain et al. 2018). Additional water inputs will likely be required to buffer mitigation sites from extreme drought.

Additionally, section 4.3 of the UWMP does not account for the numerous environmental and mitigation projects for which the final outcome is in dispute (see Inyo County Water Department's report on 2019-2020 Mitigation Projects) and for which a greater volume of water is likely required. In particular, we are concerned by the impacted vegetation and rare plant populations at sites including the Five Bridges Impact Area, projects in the Laws area, and the Lower Owens River Project. Until the status of mitigation projects are resolved, the UWMP

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

should account for the uncertainty around the levels of water required to fulfill mitigation obligations outlined in the Long Term Water Agreement.

As stated in a collaborative letter from our chapter and allied organizations, we respectfully suggest that the UWMP incorporate a commitment to the development of a sustainable Integrated Water Resource Management Plan for the LAA in partnership with Eastern Sierra communities, Tribal Nations, and environmental organizations.

Thank you for consideration of these comments. Please keep us informed of any developments regarding the UWMP.

Sincerely,

Maria Jesus
CNPS Bristlecone Chapter, Conservation Chair

Bristlecone Chapter of the California Native Plant Society
PO Box 364, Bishop, CA 93515

Reference:

Swain, D.L., Langenbrunner, B., Neelin, J.D. et al. Increasing precipitation volatility in twenty-first-century California. Nature Clim Change 8, 427–433 (2018). https://doi-org.ccl.idm.oclc.org/10.1038/s41558-018-0140-y

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WEB: http://www.inyowater.org

P.O. Box 337
135 South Jackson Street
Independence, CA 93526

COUNTY OF INYO
WATER DEPARTMENT

April 30, 2021

Mr. Adam Perez, Aqueduct Manager
Los Angeles Department of Water and Power
300 Mandich Street
Bishop, California 93514

Subject: Inyo County comments on LADWP's proposed Annual Operations Plan for Runoff Year 2021-2022

Dear Mr. Perez,

In accordance with Section V.D. of the Inyo/Los Angeles Long Term Water Agreement, this letter transmits the Inyo County Water Department's (ICWD) comments on LADWP's Draft Owens Valley Operations Plan for Runoff Year 2021-2022 (Draft Plan). The Draft Plan indicates that the City intends to pump between 64,600 and 78,980 acre-feet (ac-ft) of groundwater during the 2021-2022 runoff year, and that runoff is forecast to be 55% of normal. Approximately 10,000 ac-ft of the potential high range of pumping is planned for the October-March period, presumably for aqueduct supply. The lower range of proposed pumping is less than long-term average pumping under the Water Agreement (73,645 ac-ft, 1991-2020) but significantly greater than necessary for sole source uses (e.g. in-valley agriculture or mitigation). The expected low runoff this year and low precipitation of this past winter will present challenges to meeting Water Agreement goals. These conditions stress native vegetation, and our analysis suggests water levels are expected to decline in wellfields even at minimum pumping for uses in the valley. ICWD's recommended pumping amount, 59,377 ac-ft is a more prudent plan for the upcoming drought year which allows the multiple goals of the Water Agreement to be met with a more sustainable approach: a significant amount of groundwater would be pumped for use in Owens Valley and export to Los Angeles, while stabilizing shallow water level conditions that are compatible with groundwater dependent vegetation protected by the Water Agreement.

Background

Relatively low runoff and approximately 73,000 ac-ft of pumping in 2020-2021 caused the water table to decline in most areas of the Owens Valley (Table 1). Operations and conditions in 2020 were unusual in that pumping in Big Pine was curtailed due to closure of the Fish Springs hatchery. Big Pine was the only wellfield in which water levels in multiple indicator wells rose in 2020-21. April 2021 water levels in two thirds of the indicator wells are now below those measured in the mid-1980s when the baseline vegetation mapping was completed, primarily in Laws, Taboose-Aberdeen, Independence-Oak, and Symmes-Shepherd wellfields. Water levels in Independence-Oak and Symmes-Shepherd have not recovered from the pumping early in the 2012-2016 drought despite favorable runoff during in 2016-2019 (Table 1).

As in previous years, Inyo County does not think it is justified to pump groundwater for aqueduct supply to Los Angeles near vegetation that is measurably and chronically below baseline levels. Adjusting pumping to maintain a shallow water table in some areas of groundwater-dependent vegetation in 2021-22 is necessary to stabilize declines since the onset of the present drought and to potentially avoid impacts should the drought resemble recent lengthy droughts like those experienced often during the past 35 years. Shallow groundwater levels are particularly important to maintain perennial grasses which have seen larger and more persistent declines than total cover and in a larger number of parcels.

General Comments

The Draft Plan includes testing of 386W near the Five-Bridges mitigation site. Mitigation measure 10-12 was adopted by LADWP in the 1991 FEIR to mitigate the impacts caused by the operation of wells W385 and W386 in the late 1980's (p. 10-58 of the 1990 DEIR, Sept. 1990). The adopted mitigation measure included discontinuation of pumping from the two wells. In 2018 Inyo and Los Angeles settled litigation regarding test pumping W385. That settlement required the Technical Group to temporarily amend the 1999 Revegetation Plan to allow pumping from W385 and to adopt a Mitigation and Monitoring plan for the test. The settlement also prescribes several actions that must occur before testing of W386 can proceed including: 1) Technical Group agreement that testing W385 did not cause adverse effects, 2) Technical Group approval of monitoring and mitigation plan for a W386 test, and 3) Technical Group agreement to again temporarily suspend the 1999 Revegetation Plan provision that W385 and W386 remain "permanently shut down" to allow the test to be conducted. In addition to the requirements necessary to comply with the 2018 settlement, we are aware that hydrologists from California Department of Fish and Wildlife are in the process of evaluating and reporting on the results of the 385W test. The Technical Group should review that report before proceeding with a test of 386W. Also, the monitoring and mitigation plan for the 385W test included a provision that hydrological conditions should be favorable before commencing pumping. Favorable hydrologic conditions were present at the beginning of the W385 test, and the Water Department would insist that similar conditions exist before the start of any test of W386 to protect sensitive resources and to clearly discriminate the effects of pumping from drought. It does not appear that condition will be met given the extremely low runoff forecast. The County is

concerned that the 1980's vegetation impact at Five-Bridges has not been fully mitigated, in particular the diminished perennial cover, conversion of shrub willow areas, and weed infestation.

Miscellaneous comments

Neither the Draft Operations Plan nor Table 2.7 in the Draft Annual Report Chapter 2 – Conditions in the Owens Valley specify the amount of water used for Owens Lake dust mitigation separate from other uses. To assist Inyo County's participation in the Owens Lake Groundwater Work Group, please include these data in the Draft Plan or elsewhere in the Annual Report.

We are pleased to note that despite the lower than normal expected runoff, attempts will be made to meet Type E irrigation and other in-valley use obligations. We recognize that the planned irrigation and stockwater values are less than 1981-82 amounts but understand these reduced amounts are due to anticipated low creek flows in late summer due to the drought. Additional information regarding area runoff should be provided to inform the County how these final in-valley use values were estimated. We remain concerned, however, over the persistent reduced delivery of stockwater compared with 1981-82 and the potential for adverse effects on lease operations and Type E vegetation and lessee operations.

Although the Water Agreement's process for Annual Operations Plans is based on planning for individual years, the Water Department recommends that the Technical Group consider multi-year planning to manage water table fluctuations within ranges compatible with vegetation baseline conditions. Staff worked cooperatively on such proposals to revise the Green Book for several years, but while progress was made final methods were never agreed upon.

Evaluation of 2020 Operations Plan – methods

ICWD's analysis of the Draft Plan and pumping recommendations are based on the goals and principles of the Water Agreement, the status of individual pumping wells according to Green Book soilwater triggers, groundwater dependent vegetation conditions monitored by the Technical Group, water table conditions in each well field, and groundwater uses within each wellfield.

Multiple linear regression models at 46 indicator wells are used to predict water table elevation in April 2022 as a function of wellfield pumping, 2021 water table elevation, and forecasted Owens Valley runoff. The Laws indicator well models rely on the sum of diversions into the Upper and Lower McNally canals at the Owens River as the variable related to recharge instead of Owens Valley runoff. Water spreading is not planned for Laws in 2021-22 (Table 2.5 of the Draft Plan). The set of indicator well models used by ICWD differs from the original set of indicator wells used by LADWP, but the ranges of predicted changes generally agree with the predictions in Table 1.7. The Technical Group in 2021should update and evaluate the models and agree on a common set of the best models to use for future pumping plans and analyses.

Four pumping scenarios were evaluated and are presented in this letter; minimum pumping for

uses in the valley, LADWP's proposed lower limit (minimum) and upper limit (maximum) for pumping in the Draft Plan, and reduced pumping (Tables 2 and 3). The upper limit of the pumping proposed in the Draft Plan represents the maximum impact on the water table, and LADWP has historically pumped near the maximum proposed amount except for unusual circumstances (like in 2020 in Big Pine). The analysis of water levels with minimum pumping for specific uses in the Owens Valley is included as a basis for comparison with the higher levels of pumping in the Draft Plan and the amount of pumping that ICWD analysis suggests is compatible with the goals of the Water Agreement. In below normal runoff years, ICWD estimates minimum pumping for in-valley uses to be approximately 54,445 AF. We recognize the actual pumped amount deviates from this estimate depending on forecasted and actual runoff differences which affect the amount of surface water available to supply irrigation or mitigation projects instead of groundwater.

LADWP's proposed operations plan includes pumping for export from all wellfields except Bishop, Lone Pine, and at the lower range of proposed pumping only, Thibaut-Sawmill and Symmes-Shepherd wellfields. ICWD's reduced pumping corresponds with the lower range of the pumping in Draft Plan in those wellfields. ICWD has concerns about pumping and water levels persisting below baseline in three wellfields following the 2012-16 drought: Independence-Oak, Symmes-Shepherd, and southern Thibaut-Sawmill (Table 1). Thibaut-Sawmill and Independence-Oak were pumped for aqueduct supply in 2020 causing water levels to decline. In 2020-21, the goal for these areas/wellfields should be to limit pumping to maintain water levels compatible with achieving the groundwater-dependent vegetation protections of the Water Agreement.

Wellfield-specific conditions

The following sections present a summary of conditions in each wellfield including: the predicted effects of the proposed pumping, ICWD's comments on LADWP's proposed operations, and ICWD's recommended pumping. In the sections below, baseline water levels refer to the average of April water levels for 1985, 1986, and 1987, and baseline vegetation conditions refer to the conditions documented in the baseline maps attached to the Water Agreement as Exhibit A. Observed water level changes since April 2020 and deviations from baseline water levels based on ICWD field measurements are given in Table 1. Wellfield pumping proposed by LADWP in the Draft Plan and pumping recommended by ICWD are given in Table 2. Predicted water table changes are presented in Table 3.

Laws. The Draft Plan proposes between 8,900 and 9,400 ac-ft of pumping in the Laws wellfield to supply town water systems, irrigation, enhancement/mitigation (E/M) projects, and export. Last year, the water table declined between 0.9 and 7.4 feet in indicator wells. The greatest declines were in the vicinity of the McNally Ponds project. Water levels currently range from 4.0 feet below to 3.8 feet above baseline. Vegetation parcels LAW035, LAW043, LAW052, LAW062, LAW070, LAW072 and LAW085 are all in the same general vicinity and have chronically below-baseline grass cover, and perennial cover that only infrequently recover

to baseline conditions.

Water levels in Laws respond substantially to irrigation and water spreading that is diverted from the Owens River into the McNally canals. LADWP's Draft Plan suggests no diversion from the river is planned. The proposed upper pumping amount in Laws would cause water levels to decline several feet (Table 3). Water levels are predicted to decline even at pumping for in-valley uses in Laws. Given the chronically poor vegetation conditions in the parcels listed above despite water table recovery in 2019-20, pumping should be limited to uses in Laws. Pumping at this amount will maintain water levels in indicator wells (434T, 436T, 490T, V001g, and 574T) located near the relatively high cover meadow parcels in the southern and eastern portion within 2.6 ft of baseline. Following the 2012-16 drought, some perennial vegetation and grass recovery was observed, likely in response to shallower water levels caused by water spreading in 2017-19. Minimizing water level declines and water levels greater than 6 ft below ground surface (the nominal grass rooting zone) should continue to allow for maintenance of perennial vegetation and grass conditions.

Despite repeated recovery of water levels to near or above baseline since 2000, the degraded conditions in parcels noted above persist. It is important that the Technical Group evaluate in 2021-22 whether a significant impact exists (Green Book Sec. I.C.) in these vegetation parcels in Laws.

Bishop. LADWP proposes to pump 12,000 ac-ft from the Bishop wellfield. It appears that the proposed pumping will be within the limits of the Hillside Decree. ICWD recommends pumping not exceed 12,000 ac-ft providing that it complies with the Hillside Decree and that uses/losses downstream of the wells exceed pumping.

Big Pine. LADWP proposes to pump between 20,500 and 23,000 ac-ft from the Big Pine wellfield. The upper amount includes hatchery and town supply as well as several months of operation of exempt well(s) for export. One large vegetation parcel in the wellfield, BGP162, has had vegetation cover chronically below baseline. Two other parcels, BP154 and FSP006 have suffered a measurable grass decline. Last year, perennial vegetation cover in BGP162 was significantly below baseline again. The water table changes varied between +0.45 ft to -2.94 ft at indicator wells and monitoring sites in the wellfield. Water levels vary between 4 ft above to 0.8 ft below baseline at indicator wells but, due to the reduction in hatchery pumping, the average water level in the shallow-aquifer indicator wells remained above baseline (0.9 ft) for the second consecutive year.

The Draft Plan states that LADWP intends to decommission W341 and replace its pumping with adjacent W415 for the town water system needs. In 2020 the Inyo/Los Angeles Technical Group approved test procedures for the initial period of operation of W415 pumping above the exemption for town supply (W415 test) consistent with GreenBook Section VI. The test has not commenced but the monitoring program is in place. Staff should continue the water level and vegetation monitoring in 2021. We also recognize that the Water Agreement, as amended in

2002, committed LADWP to provide surface and groundwater for the Big Pine Irrigation and Improvement Association (BPIIA) ditch system from Big Pine Creek. In an exchange of letters in 2020, Inyo and Los Angeles concurred that water exiting the Big Pine Community Service District into Big Pine Creek would be considered pumped make-up water for the BPIIA. That accounting practice should continue.

If the proposed pump test of W415 is conducted in 2020, the overall pumping from Big Pine should not exceed the amount for the W415 test, town supply, BP Northeast Regreening Project, and the hatchery (approximately 19,225 ac-ft, approximate required use). Wells W218 and W219 should not be operated to prevent confounding the 415W test results and to safeguard water level increases and tenuous vegetation improvements in recent years.

In late 2020, conversations with California Department of Fish and Wildlife, staff mentioned that the Fish Springs hatchery may not require the full capacity of W330 and W332 at certain times of the year. Over the past several months, CDFW staff have analyzed their operations and water requirements. The flow required by the hatchery operations in any month cannot be supplied with a single well, but there are certain months in the fall or winter where pumping capacity of both wells is not necessary to meet present hatchery fish production goals. Those wells are exempt for hatchery use, and the Technical Group should revisit the exemptions and cooperate with CDFW to design water delivery infrastructure or pumps with varying capacity and potentially reduce the constant pumping stress on the Big Pine Wellfield.

Taboose-Aberdeen. LADWP proposes to pump between 5,300 and 8,880 ac-ft in the Taboose-Aberdeen wellfield. Alkali meadow parcels TIN050, TIN053, TIN064, and TIN068 all have chronically lower grass cover than baseline despite water level recovery to baseline suggesting a Type C to B conversion may have occurred and the water table regime may be insufficient to recover vegetation to baseline. Last year, water table declined in all indicator wells in this wellfield from 1.2-5.2 ft and now are below baseline. All indicator wells declined in 2020-21 at the lower and upper limits of proposed pumping. Decreasing pumping to 4,000 ac-ft would stabilize water levels during the upcoming year on average. Pumping from W118 and W349 should be limited to avoid lowering water levels under the parcels in the northern portion of the wellfield exhibiting grass declines.

The Technical Group should evaluate in 2021-22 whether a significant change in Type C parcels exists in vegetation parcels with chronically depressed grass cover.

Thibaut-Sawmill. LADWP proposes to pump 8,000 to 11,000 in the Thibaut-Sawmill wellfield. Two parcels, IND026 and IND029 in the southern portion of this wellfield have chronically depressed water levels and grass cover. Pumping should be managed to promote water table recovery under these parcels by not pumping W382. Cover in BLK094 is not fully recovered in terms of perennial or grass cover. Last year, the water table declined 0.8-3.0 ft, but water levels remained at baseline or several feet above baseline (Table 1), largely due to reductions in pumping at the Blackrock hatchery in 2014. Water levels will remain above baseline at LADWP's proposed

maximum pumping amount; however, ICWD recommends pumping not exceed 8,432 ac-ft for the hatchery and possible late summer irrigation pumping from W155 if creek flow is insufficient. Pumping should be managed to maintain water levels under the parcels mentioned above.

The Technical Group should evaluate in 2021-22 whether a significant impact exists in vegetation parcels IND026 and 029.

Independence-Oak. LADWP proposes to pump between 7,000 and 8,800 ac-ft in the wellfield. Last year, water levels decreased at all monitoring sites and indicator wells, and were 2-6 ft below baseline. This wellfield was pumped for export again in 2020 and water levels in the southern portion remain below baseline and have not recovered since 2018. Pumping should be limited to sole source uses at 6,420 ac- ft. Water levels in some wells decline even at that amount, and restricting pumping to irrigation and E/M projects would result in approximately 0.54 ft. decline in water levels on average (Table 3).

Symmes-Shepherd. LADWP proposes to pump 1,200-2,900 ac-ft from the Symmes-Shepherd wellfield for sole source irrigation supply and export. One parcel, IND139, exhibits chronically depressed grass cover. Last year, the water table changes varied between +0.4--0.7 ft;, but despite the gradual water table recovery and conservative pumping in recent years, the water table level remains below baseline. ICWD recommends that pumping be limited to approximately 1,800 ac-ft to stabilize water levels.

Bairs-Georges. LADWP proposes to pump 2,100 to 2,820 ac-ft in the Bairs-Georges wellfield. Perennial and grass cover in the largest monitored parcel in the wellfield MAN037 have been not statistically below baseline in three out of the previous four years but has yet to attain or exceed baseline. The increased vegetation cover has corresponded with water levels recovery to baseline. Cover in an adjacent parcel, MAN038, which has only infrequently been sampled, was also below baseline in 2020. Last year, water levels declined 0.8 to 3.4 ft. in indicator and vegetation monitoring site wells and two remain at or above baseline. Under LADWP's maximum proposed pumping, water levels would decline 1.5 to 2.5 ft and would be below baseline in all wells. ICWD acknowledges the possible need to supplement irrigation/stockwater flows from Georges Creek with pumped water in this low-runoff year, and 600 ac-ft of pumping can accomplish this need and maintain water levels in 2022.

Lone Pine. LADWP proposes to pump 900 ac-ft from the Lone Pine wellfield for town and E/M project supply. Concerning operation of well W416, the Draft Plan notes that LADWP plans to equip and test this well and has requested that the Technical Group designate a monitoring site to manage this well. The management requirements of this well differ from those of many of LADWP's aqueduct supply wells in that effects on non-LADWP wells are a much more substantial concern here than in other wellfields. The Water Department does not think the modifications to the well alleviate concerns that it may affect private wells. Before W416 can be operated, the Technical Group should adopt procedures to test the well under conditions that prevent impacts to vegetation and private wells. ICWD recommends pumping not exceed 980

ac-ft for the uses specified in the Draft Plan.

We look forward to addressing these comments at a Technical Group meeting. If you wish to discuss these comments prior to the Technical Group meeting, feel free to contact me.

Sincerely,

Aaron Steinwand, Water Director

cc: Inyo County Board of Supervisors
Inyo County Water Commission
Clint Quilter, County CAO
Marshall Rudolph, County Counsel
Greg James, Special Counsel

Table 1. Depth to Water (DTW) at indicator wells, April 2020. All data are in feet. Negative values denote a decline in water level. Depths are from reference point on the test well. Baseline elevation at monitoring sites was predicted from monitoring site/indicator wells regression models unless the test well was present 1985-87.

Station ID, Monitoring site	DTW April 2021	Change from April 2020	Deviation from Baseline in 2021
Laws			
107T	27.37	-3.87	-3.10
434T	6.98	-0.91	0.62
436T	8.09	-2.11	0.01
438T	13.63	-6.43	-4.03
490T	13.75	-4.88	-0.68
492T	29.02	-4.95	3.78
795T, LW1	15.56	-7.41	-2.27
V001G, LW2	18.48	-4.54	1.14
574T, LW3†	14.45	-3.72	-1.37
Big Pine			
425T	13.57	0.33	1.33
426T	11.90	-0.36	-0.33
469T	22.09	-0.90	-0.42
572T	7.78	0.45	4.12
798T, BP1	14.64	-2.94	1.41
799T, BP2	19.31	-0.87	-0.80
567T, BP3	13.06	-0.74	0.90
800T, BP4	12.49	0.49	1.10
Taboose Aberdeen			
417T	28.61	-5.15	-1.64
418T	8.69	-1.23	-0.46
419T, TA1	7.01	-2.90	-0.38
421T	36.84	-3.58	-2.49
502T	11.34	-2.29	-3.85
504T	11.02	-2.79	-0.25
505T	20.41	-5.21	-1.81
586T, TA4	8.39	-1.99	-0.07
801T, TA5	16.11	-1.45	-2.59
803T, TA6	9.86	-4.87	-1.16

Station ID, Monitoring site	DTW April 2021	Change from April 2020	Deviation from Baseline in 2021
Thibaut Sawmill			
415T	12.35	-3.00	6.15
507T	4.62	-0.75	0.05
806T, TS2	10.39	-0.87	2.79
Independence Oak			
406T	4.03	-0.47	-2.46
407T	12.05	-0.36	-4.75
408T	5.60	-1.60	-2.47
409T	7.38	-0.83	-5.78
546T	6.27	-1.52	-2.84
809T, IO1	10.99	-1.64	-4.42
Symmes Shepherd			
402T	10.80	-0.69	-2.77
403T	7.11	-0.05	-1.78
404T	6.39	-0.51	-2.82
447T	35.42	-0.08	-13.55
510T	7.62	-0.54	-2.62
511T	7.89	-0.34	-3.26
V009G, SS1	17.49	0.46	-10.66
Bairs George			
398T	5.98	-2.02	0.37
400T	6.38	-0.81	-0.08
812T, BG2	16.16	-3.44	-2.70

Table 2. Pumping totals by wellfield evaluated using the regression models. Regression modeling is not completed for Bishop because pumping in that wellfield must comply with the Hillside decree and for Lone Pine because the proposed pumping is for mitigation and town supply only.

Wellfield	LADWP Min (64,600 AF)	LADWP Max (78,980 AF)	In-Valley Min (54,445 AF)	ICWD Reduced (59,377 AF)
	Ac-ft/year	Ac-ft/year	Ac-ft/year	Ac-ft/year
Laws	8,900	9,400	6,000	6,000
Bishop	12,000	12,000	12,000	12,000
Big Pine	20,500	23,000	19,225	19,225
Taboose-Aberdeen	5,300	8,880	300	4,000
Thibaut-Sawmill	8,000	11,000	8,000	8,432
Independence-Oak	7,000	8,800	6,420	6,420
Symmes-Shepherd	1,200	2,900	1,200	1,800
Bairs-George	800	2,100	400	600
Lone Pine	900	900	900	900

Table 3. Predicted water level changes at indicator wells and monitoring sites for LADWP's proposed annual operations plan for 2020. Negative DTW values denote a decline.

Station ID, Monitoring site	LADWP Low 64,600 ac-ft 2022 vs 2021	LADWP Low 64,600 ac-ft 2022 vs Baseline	In Valley MIN 54,445 ac-ft 2022 vs 2021	In Valley MIN 54,445 ac-ft 2022 vs Baseline
	(DTW change ft)	(DTW change ft)	(DTW change ft)	(DTW change ft)
Laws				
107T	-3.55	-6.65	-2.59	-5.69
434T	-1.12	-0.50	-0.70	-0.08
436T	-2.33	-2.32	-1.91	-1.90
438T	-1.15	-5.18	-0.80	-4.83
490T	-1.40	-2.08	-1.21	-1.90
492T	-4.87	-1.09	-3.32	0.46
795T	-7.21	-9.48	-5.83	-8.10
V001g	-4.35	-3.21	-3.55	-2.41
574T	-1.64	-3.00	-1.20	-2.57
Big Pine				
425T	-1.74	-0.41	-1.52	-0.19
426T	-1.03	-1.36	-0.90	-1.24
469T	-0.85	-1.27	-0.73	-1.15
572T	-3.70	0.42	-3.46	0.66
798T, BP1	-1.03	0.37	-0.82	0.58
799T, BP2	-0.42	-1.22	-0.30	-1.10
567T, BP3	-2.12	-1.22	-1.93	-1.02
800T, BP4	-1.18	-0.08	-0.92	0.19
Taboose Aberdeen				
417T	-0.50	-2.15	0.80	-0.84
418T	-0.14	-0.60	0.43	-0.03
419T, TA1	-0.47	-0.85	0.88	0.50
421T	-0.51	-3.00	0.85	-1.63
502T	-0.07	-3.92	0.55	-3.29
504T	-0.52	-0.77	1.16	0.90
505T	-0.42	-2.23	0.92	-0.89
586T, TA4	-0.13	-0.20	0.98	0.92
801T, TA5	-0.66	-1.93	0.96	-1.62
803T, TA6	-0.87	-2.03	0.37	-0.79
Thibaut Sawmill				
415T	0.41	6.56	0.41	6.56
507T	0.55	0.59	0.55	0.59
806T, TS2	-0.18	2.61	-0.18	2.61
Independence- Oak				
406T	-0.43	-2.89	-0.39	-2.85
407T	0.14	-4.61	0.34	-4.41
408T	0.19	-2.27	0.33	-2.14
409T	-1.24	-7.02	-0.84	-6.62
546T	-1.63	-4.47	-1.55	-4.38
809T, IO1	-1.32	-5.74	-1.11	-5.54
Symmes Shepherd				
402T	0.03	-2.74	0.03	-2.74
403T	0.28	-1.50	0.28	-1.50
404T	0.53	-2.29	0.53	-2.29
447T	-0.44	-14.00	-0.44	-14.00
510T	0.54	-2.08	0.54	-2.08
511T	0.45	-2.81	0.45	-2.81
V009G, SS1	-0.05	-10.71	-0.05	-10.71
Bairs George				
398T	0.28	0.65	0.83	1.20
400T	0.05	-0.03	0.15	0.07
812T	-0.96	-3.65	-0.48	-3.18

Table 3. [continued]

Station ID, Monitoring site	LADWP High 78,980 ac-ft 2022 vs 2021	LADWP High 78,980 ac-ft 2022 vs Baseline	ICWD Recommended 59,377 ac-ft 2022 vs 2021	ICWD Recommended 59,377 ac-ft 2022 vs Baseline
	(DTW change ft)	(DTW change ft)	(DTW change ft)	(DTW change ft)
Laws				
107T	-3.72	-6.82	-2.59	-5.69
434T	-1.19	-0.57	-0.70	-0.08
436T	-2.40	-2.39	-1.91	-1.90
438T	-1.21	-5.24	-0.80	-4.83
490T	-1.43	-2.11	-1.21	-1.90
492T	-5.14	-1.36	-3.32	0.46
795T	-7.44	-9.72	-5.83	-8.10
V001g	-4.49	-3.35	-3.55	-2.41
574T	-1.71	-3.08	-1.20	-2.57
Big Pine				
425T	-2.16	-0.83	-1.52	-0.19
426T	-1.27	-1.60	-0.90	-1.24
469T	-1.08	-1.50	-0.73	-1.15
572T	-4.16	-0.04	-3.46	0.66
798T, BP1	-1.44	-0.03	-0.82	0.58
799T, BP2	-0.64	-1.44	-0.30	-1.10
567T, BP3	-2.51	-1.60	-1.93	-1.02
800T, BP4	-1.69	-0.59	-0.92	0.19
Taboose Aberdeen				
417T	-1.44	-3.09	-0.16	-1.81
418T	-0.54	-1.00	0.01	-0.45
419T, TA1	-1.44	-1.81	-0.12	-0.50
421T	-1.49	-3.98	-0.16	-2.64
502T	-0.52	-4.37	0.09	-3.76
504T	-1.71	-1.97	-0.08	-0.33
505T	-1.38	-3.19	-0.07	-1.88
586T, TA4	-0.93	-1.00	0.16	0.09
801T, TA5	0.43	-2.15	0.74	-1.85
803T, TA6	-1.76	-2.92	-0.55	-1.71
Thibaut Sawmill				
415T	-1.91	4.24	0.07	6.22
507T	0.05	0.10	0.48	0.52
806T, TS2	-0.77	2.02	-0.27	2.53
Independence- Oak				
406T	-0.56	-3.02	-0.39	-2.85
407T	-0.47	-5.22	0.34	-4.41
408T	-0.21	-2.68	0.33	-2.14
409T	-2.50	-8.28	-0.84	-6.62
546T	-1.90	-4.74	-1.55	-4.38
809T, IO1	-1.94	-6.36	-1.11	-5.54
Symmes Shep.				
402T	-0.16	-2.94	-0.04	-2.81
403T	-0.25	-2.03	0.09	-1.69
404T	0.34	-2.49	0.46	-2.36
447T	-1.68	-15.23	-0.88	-14.43
510T	0.35	-2.27	0.47	-2.15
511T	0.25	-3.01	0.38	-2.88
V009G, SS1	-0.15	-11.81	-0.44	-11.10
Bairs George				
398T	-1.48	-1.11	0.55	0.92
400T	-0.28	-0.36	0.10	0.02
812T	-2.49	-5.16	-0.72	-3.42

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region 6
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

May 19, 2021

Mr. Adam Perez
Los Angeles Aqueduct Manager
Los Angeles Department of Water and Power
300 Mandich Street
Bishop, CA 93514

Dr. Aaron Steinwand
Inyo County Water Department
P.O. Box 337
Independence, CA 93526-0337

Sent via email

Subject: CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE CONSULTATION REGARDING 2021 LOWER OWENS RIVER PROJECT SEASON HABITAT FLOW AND BLACKROCK WATERFOWL AREA FLOODED ACREAGE

Mr. Perez and Dr. Steinwand:

The California Department of Fish and Wildlife (CDFW) has reviewed your Proposal for the *2021 Lower Owens River Project Season Habitat Flow and Blackrock Waterfowl Area Flooded Acreage* (2021 Proposal) dated May 4, 2021. Your 2021 Proposal was received by CDFW on May 6, 2021 and reviewed thereafter. CDFW appreciates the opportunity to provide consultation on this matter. CDFW is supportive of the Blackrock Waterfowl Management Interim Plan and would like to continue to see the proposal and implementation of adequate adaptive management actions that will meet the Lower Owens River Project (LORP) goals. While CDFW does not oppose the Lower Owens River Seasonal Habitat Flow Recommendations and the recommendations proposed below for flooding at the Blackrock Waterfowl Management Area in 2021, CDFW continues to have concerns regarding the proposed actions. CDFW's concerns are discussed below:

Seasonal Habit Flow:

CDFW understands that the 2019 Proposal aligns with the formula outlined in the 2004 LORP Environmental Impact Report (EIR) (Volume 1 – Section 2.3.5.3 Seasonal Habitat Flows). However, CDFW continues to be concerned that the LORP objectives are not being achieved by following the 2004 EIR hydrograph (Chart 2-2 & Chart 1-1A). The *2021 Seasonal Habitat Flow Schedule* (peak of 56 cfs) on Page 2 of the 2021 Proposal defines a flow schedule for ramping, magnitudes, and duration. CDFW

believes this magnitude and schedule does not provide adequate stream flows to achieve the intended LORP seasonal habitat goals of creating sufficient disturbance to establish and maintain native riparian vegetation and channel morphology. Additionally, a peak flow of 56 cfs is similar to the flows that the Los Angeles Department of Water and Power (LADWP) is required to release during mid-summer flows, and is unlikely to function as an effective seasonal habitat flow. The effectiveness of the seasonal habitat flows to meet the objectives in the 2004 EIR can be evaluated in part by measuring suspended organic and inorganic sediment mobilization and flux during pulse flows in conjunction with evaluating changes to channel wetted width and profile (Kondolf and Wilcock 1996).

In April 2017, CDFW monitored the mobilization of fine and coarse particulate organic matter and mineral sediment during an early-season pulse flow event (200+ cfs); additionally, CDFW analyzed LORP cross section data to assess changes in wetted width during pulse flows (*2017 LORP Seasonal Habitat Flow and Blackrock Waterfowl Area Flooded Acreage* Letter). CDFW's monitoring efforts found no evidence of substantial coarse particulate organic matter mobilization or mineral sediment (sand/silt) mobilization in the LORP during the April pulse flow and did not document a change in fine particulate organic matter transport. Based on this empirical data CDFW determined a 200 cfs seasonal habitat flow (the maximum flow included in the EIR) is unlikely to achieve the habitat flow objectives in the LORP. This conclusion is supported by the apparent failure of over ten-years of flushing flows to prevent the accumulation of organic material within the LORP and the continued encroachment of hardstem bulrush (*Schoenoplectus acutus*) and cattails (*Typha*) into the river channel.

CDFW encourages both LADWP and the Inyo County Water Department (the County) to continue discussion with the 1997 Memorandum of Understanding (MOU) parties on altered flows recommendations, including:

- Higher magnitude seasonal habitat flows, released over shorter time periods (e.g., series of releases between 350 cfs and 375 cfs per second over a one to two-week period prior to mid-May, with ramping rates that are appropriate for public safety and infrastructure capacity) (April 18, 2019 - *Recommended Flow Releases within the LORP* Letter; *2018, 2019 LORP Draft Annual Report Comments*)

- Temporary lifting of the 50 cfs Pumpback Station restriction to allow for more flexible management of LORP seasonal habitat flows (*2017 LORP Seasonal Habitat Flow and Blackrock Waterfowl Area Flooded Acreage* Letter; *2013, 2015 LORP Draft Annual Report Comments*)

- Changes to the flow regime for a trial period in which monitoring would further elucidate the impacts on various water quality parameters and riparian tree recruitment and survival (*2018 LORP Draft Annual Report Comments*)

The hydrograph outlined in the LORP EIR has been implemented for over ten years and has not been successful at achieving the LORP objectives; therefore, the flow regime needs to be reconsidered and revised. CDFW encourages MOU Parties to work together on revision to legal documents that will make this allowable in future years.

Blackrock Waterfowl Management Area

CDFW has continuously demonstrated our support of seasonal wetland management at the Blackrock Waterfowl Management Area (LORP Annual Reports 2015, 2016, 2017, 2018, 2019 and 2020) and CDFW appreciates LADWP, the County, and the MOU Party's collaborative efforts to implement an adaptive management Interim Plan that will test and monitor the success of seasonal flooding within the Blackrock Waterfowl Management Area. If the Standing Committee does not approve the implementation of the Interim Plan as adaptive management for a period of five (5) years, CDFW does not oppose the proposed flooded acreage of 275 acres (based on a 55 percent of normal water year for 2021) in the Winterton and Drew Units. However, CDFW recommends that if the Standing Committee does not approve the implementation of the Interim Plan as adaptive management for a period of five (5) years, LADWP, the County and the MOU Parties work together with the Standing Committee to determine what changes need to be made to implement the Interim Plan.

If you have any questions, please contact Alyssa Marquez at Alyssa.Marquez@Wildlife.ca.gov or (760) 567-0332.

Sincerely,

DocuSigned by:
Alisa Ellsworth
84FBB8273E4C480...

Alisa Ellsworth
Environmental Program Manager

Ec: California Department of Fish and Wildlife
Alyssa Marquez, Alyssa.Marquez@Wildlife.ca.gov
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Los Angeles Department of Water and Power
Lori Dermody, lori.dermody@ladwp.com
Adam Perez, Adam.Perez@ladwp.com

Citations:

Kondolf, G. M. and Wilcock, P.R., 1996. The flushing flow problem: defining and evaluating objectives. *Water Resources Research*, 32(8), pp. 2589-2599.

Lose Angeles Department of Water and Power. 2004. *Lower Owens River Project Environmental Impact Report.*

May 4, 2021

Ms. Patricia Moyer
State of California
Department of Fish and Wildlife
787 N. Main Street, Suite 220
Bishop, CA 93514

Dear Ms. Moyer:

Subject: 2021 Lower Owens River Project Seasonal Habitat Flow and Blackrock Waterfowl Management Area Flooded Acreage

Lower Owens River Project Seasonal Habitat Flow

The Lower Owens River Project (LORP) annual Seasonal Habitat Flow (SHF) is intended to create a natural disturbance to establish and maintain native riparian vegetation and influence channel morphology as described in the *2004 Lower Owens River Project Environmental Impact Report* (2004 LORP EIR). A primary LORP goal is the establishment of a healthy, functioning Lower Owens riverine-riparian ecosystem. Other goals call for the establishment of a healthy functioning ecosystem in other physical features of the LORP, for the benefit of biodiversity and threatened and endangered species, while providing for the continuation of sustainable uses including recreation, livestock grazing, agriculture, and other activities. The goal for the riverine-riparian system is to create and sustain healthy and diverse riparian and aquatic habitats and a healthy warm water recreational fishery with healthy habitat for native fish (1997 Memorandum of Understanding, MOU).

The Post Implementation Agreement defines the process for establishing the SHF and consultation with California Department of Fish and Game (CDFG), now known as California Department of Fish and Wildlife (CDFW). Section II.O.5.a requires that:

> *"Soon after the first of April each year, LADWP will develop its annual runoff year forecast for the Owens River Basin. The runoff year forecast will be developed as described in Section 2.3.5.3 of the LORP EIR. By approximately the second or third week in April, LADWP and the County will transmit the recommendation concerning the amount, duration, timing, and ramping of the seasonal habitat flow, along with LADWP's annual runoff year forecast for the Owens River Basin, to DFG. DFG will be*

requested to, within ten business days from the receipt of the recommendation, provide their concurrence with the recommendations or provide their own recommendation as to the amount, duration, timing, and ramping of the seasonal habitat flow along with the scientific basis for its differing recommendation."

The 2004 LORP EIR, Section 2.3.5.3, describes the means for determining the LORP SHF velocity and ramping schedule based on the Owens River Basin Runoff Forecast, which for runoff year 2021-2022 has been determined to be 55 percent of normal. According to the 2004 LORP EIR, this forecast will result in a four-day SHF with the peak release of 56 cfs. Based on Section 2.3.5.3, the table below provides the schedule for ramping, magnitudes, and duration that is proposed for the 2021 SHF.

Seasonal Habitat Flow Schedule (peak 56 cfs)

	Begin Flow	Change To
Day 1	40	50
Day 2	50	56
Day 3	56	45
Day 4	45	40

The four-day 56 cfs SHF will be released as soon as possible following Inyo/Los Angeles Standing Committee (Standing Committee) approval in May 2021.

Blackrock Waterfowl Management Area

In 2019, LADWP and the County conducted a comprehensive LORP Evaluation that assessed progress toward LORP goals as defined in the guiding legal documents and also provided recommendations for areas that could be further improved. One of the findings of the evaluation was that although LADWP is meeting the legal goals prescribed in the MOU, the Blackrock Waterfowl Management Area (BWMA) could further benefit from a seasonal flooding regime, as is commonly practiced throughout the western United States in similar waterfowl management areas. Consequently, in 2020, LADWP and the County developed a five-year BWMA Interim Management and Monitoring Plan (Interim Plan) that would test seasonal flooding concepts in the BWMA for a period of five years as adaptive management in the LORP. We appreciate CDFW's input to, and support of this plan.

As you are aware, implementation of the Interim Plan would flood a fixed 500 acres in the Winterton, Waggoner, and Thibaut Units in fall, winter, and early spring which is most optimal for migratory waterfowl use. Seasonal flooding will also benefit shorebirds by creating more open water areas and mudflats and will enhance forage for indicator species through moist soil management. Additionally, seasonal flooding is intended to

deter considerable encroachment of cattails and tules. Monitoring is also included as part of the plan to test the effectiveness of the interim management approach against past practices.

LADWP and the County have received notices of non-objection from all MOU Parties to proceed with implementing this Interim Plan as adaptive management under the MOU, to test concepts of seasonal flooding in the BWMA and its response by indicator species for a period of 5 years. LADWP and the County intend to submit a recommendation to the Standing Committee to implement the Interim Plan beginning in fall 2021.

If the Standing Committee does not approve implementation of the Interim Plan as adaptive management for a period of 5 years, LADWP will defer to previous guidance for establishing the flooded acreage in the BWMA. More specifically, the Post Implementation Agreement describes the process for establishing the amount of acreage flooded in the BWMA and describes consultation with CDFG regarding the amount of flooded area. Section II.P.1 states that:

Section II.C.4 of the 1997 MOU addresses the 1500 Acre BWMA and states:

> *"Approximately 500 acres of the habitat area will be flooded at any given time in a year when the runoff to the Owens River Watershed is forecasted to be average or above. In years when the runoff is forecasted to be less than average, the water supply to the area will be reduced in general proportion to the forecasted runoff in the watershed. (The runoff forecast for each year will be DWP's runoff year forecast for the Owens River Basin, which is based upon the results of its annual April 1 snow survey of the watershed). Even in the driest years, available water will be used in the most efficient manner to maintain the habitat. The Wildlife and Wetlands Management Plan element of the LORP Plan will recommend the water supply to be made available under various runoff conditions and will recommend how to best use the available water in dry years. The amount of acreage to be flooded in years when the runoff is forecasted to be less than average will be set by the Standing Committee based upon the recommendations of the Wildlife and Wetland Management Plan and in consultation with DFG."*

Section II.P.2 of the Post Implementation Agreement states that:

> *"In order to address the requirement that when runoff is forecasted to be less than average, the amount of acreage to be flooded will be set by the Standing Committee in consultation with DFG the following process will be followed.*

a. Soon after the first of April each year, LADWP will develop its annual runoff year forecast for the Owens River Basin. The runoff year forecast will be developed as described in Section 2.3.5.3 of the LORP EIR. In the event the runoff forecast equals or exceeds "normal runoff" as defined in Section 2.3.5.3 of the 2004 Final LORP EIR, no further action is required.

b. If the runoff forecast is for less than the normal runoff, the year will be considered a Dry Year, and consultation with the Department of Fish and Game ("DFG") will occur on the development of a Dry Year Blackrock Management Plan. In a Dry Year, by approximately the second or third week in April, LADWP and the County will transmit the recommendation concerning the amount of acreage to be flooded, along with LADWP's annual runoff year forecast for the Owens River Basin to DFG. DFG will be requested to, within ten business days from receipt of the recommendation, provide their concurrence with the recommendation or provide their own recommendation as to the amount of acreage to be flooded, along with the scientific basis for its differing recommendation.

c. In dry years when DFG has a differing recommendation, a report on the difference will be provided to the Standing Committee and a Standing Committee meeting will be scheduled. An action item entitled "Establishment of Dry Year Blackrock Management Plan" will be placed on the Standing Committee agenda. The Standing Committee will provide an opportunity for DFG to make a presentation at the meeting concerning its recommendations. Following any such presentation by DFG, the Standing Committee will consider adoption of a Dry Year Blackrock Management Plan".

Under this guidance and based on a 55 percent of normal water year for 2021, the acreage to be flooded in the BMWA equates to approximately 275 acres. If this option is pursued instead of the Interim Plan, the 275 acres flooded will be in the Winterton and Drew Units.

In order to prepare for the Standing Committee meeting we request that CDFW provide its concurrence with the recommendations presented, or CDFW's recommendations along with the scientific basis for the differing recommendation, within 10 business days of this letter. At the Standing Committee meeting, CDFW will be provided an opportunity to make a presentation regarding its recommendations.

If you have any questions regarding this submission, please contact Mr. Adam Perez, Manager of the Los Angeles Aqueduct, at (760) 872-1104, or Dr. Aaron Steinwand, Director of Inyo County Water Department, at (760) 878-0001.

Sincerely,

Adam Perez
Manager of Aqueduct
Los Angeles Department of Water and Power

300 Mandich Street
Bishop, California 93514-3449

Aaron Steinwand
Director
Inyo County Water Department

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LD:dn
c: Ms. Alyssa Marquez, CDFW
Mr. Nick Buckmaster, CDFW
Mr. Mark Hill
Dr. William Platts
Ms. Lori Dermody

INYO/LOS ANGELES
STANDING COMMITTEE
Dedicated to the advancement of mutual cooperation

MEMORANDUM

To: Inyo/Los Angeles Standing Committee

From: Technical Group

Date: May 26, 2021

Subject: Agenda Item 4b: Setting the 2021 Lower Owens River Project Seasonal Habitat Flow

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Lower Owens River Project Seasonal Habitat Flow

Lower Owens River Project (LORP) annual seasonal habitat flows (SHF) are intended to create a natural disturbance to establish and maintain native riparian vegetation and channel morphology as described in the *2004 Lower Owens River Project Environmental Impact Report* (2004 LORP EIR). A primary LORP goal is the establishment of a healthy, functioning Lower Owens riverine-riparian ecosystem. Other goals call for the establishment of a healthy functioning ecosystem in other physical features of the LORP, for the benefit of biodiversity and threatened and endangered species, while providing for the continuation of sustainable uses including recreation, livestock grazing, agriculture, and other activities. The goal for the riverine--riparian system is to create and sustain healthy and diverse riparian and aquatic habitats and a healthy warm water recreational fishery with healthy habitat for native fish (1997 Memorandum of Understanding).

The *2009 Lower Owens River Project Post Implementation Agreement between the Los Angeles Department of Water and Power and the County of Inyo Concerning Operation and Funding of the Lower Owens River Project,* (Post Implementation Agreement) describes the process for establishing the SHF and consultation with California Department of Fish and Game (CDFG) or (DFG), now known as California Department of Fish and Wildlife (CDFW). Section II.O.5.a requires that:

> *"Soon after the first of April each year, LADWP will develop its annual runoff year forecast for the Owens River Basin. The runoff year forecast will be developed as described in Section 2.3.5.3 of the LORP EIR. By approximately the second or third week in April, LADWP and the County will transmit the recommendation concerning the amount, duration, timing, and ramping of the seasonal habitat flow, along with LADWP's annual runoff year forecast for the Owens River Basin, to DFG. DFG will be requested to, within ten business days from the receipt of the recommendation, provide their concurrence with the recommendations or provide their own recommendation as to the amount, duration, timing, and ramping of the seasonal habitat flow along with the scientific basis for its differing recommendation."*

The 2004 LORP EIR, Section 2.3.5.3, describes the means for determining the LORP SHF velocity and ramping schedule based on the Owens River Basin Runoff Forecast, which for runoff year 2021-2022 has been determined to be 55 percent of normal. According to the 2004 LORP EIR, this forecast will result in a four-day SHF with the peak release of 56 cfs. Based on Section 2.3.5.3, the table below provides the schedule for ramping, magnitudes, and duration that is proposed for the 2021 SHF.

Seasonal Habitat Flow Schedule (peak 56 cfs)

	Begin Flow	Change To
Day 1	40	50
Day 2	50	56
Day 3	56	45
Day 4	45	40

The four-day 56 cfs SHF will be released as soon as possible following Standing Committee approval.

Requested Action

The 1997 MOU and the 2009 Post Implementation Agreement require that the Standing Committee set the annual SHF. Based on guidance from the LORP EIR, the Technical Group requests that the Standing Committee approve a four-day SHF for 2021 with a peak of 56 cfs following the table above.

Blackrock Waterfowl Management Area
Interim Management and Monitoring Plan

Introduction

To improve conditions in the Lower Owens River Project (LORP) Blackrock Waterfowl Management Area (BWMA), the Los Angeles Department of Water and Power (LADWP) and Inyo County Water Department (ICWD) have worked cooperatively to develop this Interim Management and Monitoring Plan. This 5-year interim plan will be monitored and assessed both for its capacity to create desired habitat conditions, as well as to determine the suitability and sustainability of the new management approach.

The BWMA is a natural slough that historically received seasonal or periodic inundation primarily during winter and spring. In an attempt to enhance wetland habitat for waterbirds, BWMA basins have been supplied year-round water since 2007. Year-round flooding is a significant deviation from historic conditions, and application of water throughout the growing season has resulted in wetland habitats at BWMA that are often choked with cattails and bulrush at the expense of open water. This condition has been observed in other wetland locations in the Owens Valley that are supplied year-round water. Implementation of the BWMA as prescribed, initially led to increased use by wetland birds as compared to pre-project conditions. However, the value of the created habitats declined in quality over time due to excessive growth of emergent vegetation.

Under this interim plan we hope to test if operational changes improve BWMA productivity and waterbird habitat quality and limit cattail and bulrush growth. The approach to increasing habitat quality and habitat productivity is two-fold, and involves 1) seasonal flooding to control the growth of emergent vegetation thereby increasing open water habitat, and 2) implementing moist soil management techniques to enhance the growth of plant species that provide direct or indirect food resources for migratory waterbirds. At the end of the 5 years, the interim program will be evaluated and future recommendations presented.

Background and Historical Setting

The BWMA is one of four physical features of the large scale river restoration project known as the LORP (LADWP, USEPA, and ICWD 2004). The BWMA encompasses a large natural slough with basins physically connected by channels. The basins are of low relief and punctuated in some areas by high spots that create small islands under periods of flooding. The topography, soil types (USDA-NRCS 2002) and pre-European cultural use adjacent to the current management units indicate that the area functioned as a natural wetland for several millennia. Historically, prominent sources of surface and ground water in the BWMA area included Blackrock and Little Blackrock Springs, seepage along the Owens Valley fault, and seasonal discharge from Sierra creeks

including Sawmill, Thibaut, Oak, and Independence (Whitehorse Associates 2004). Construction of the Los Angeles Aqueduct interrupted flow from these sources to the BWMA (Whitehorse Associates 2004).

The principal sources of water for the BWMA are now the Blackrock Ditch and diversions off of the Los Angeles Aqueduct. In the mid-20th century, prior to the construction of the Blackrock Ditch, aerial photography (Figure 1) indicates that the BWMA continued to function as wetlands with some limited irrigation on the Winterton Unit (LADWP 1944).

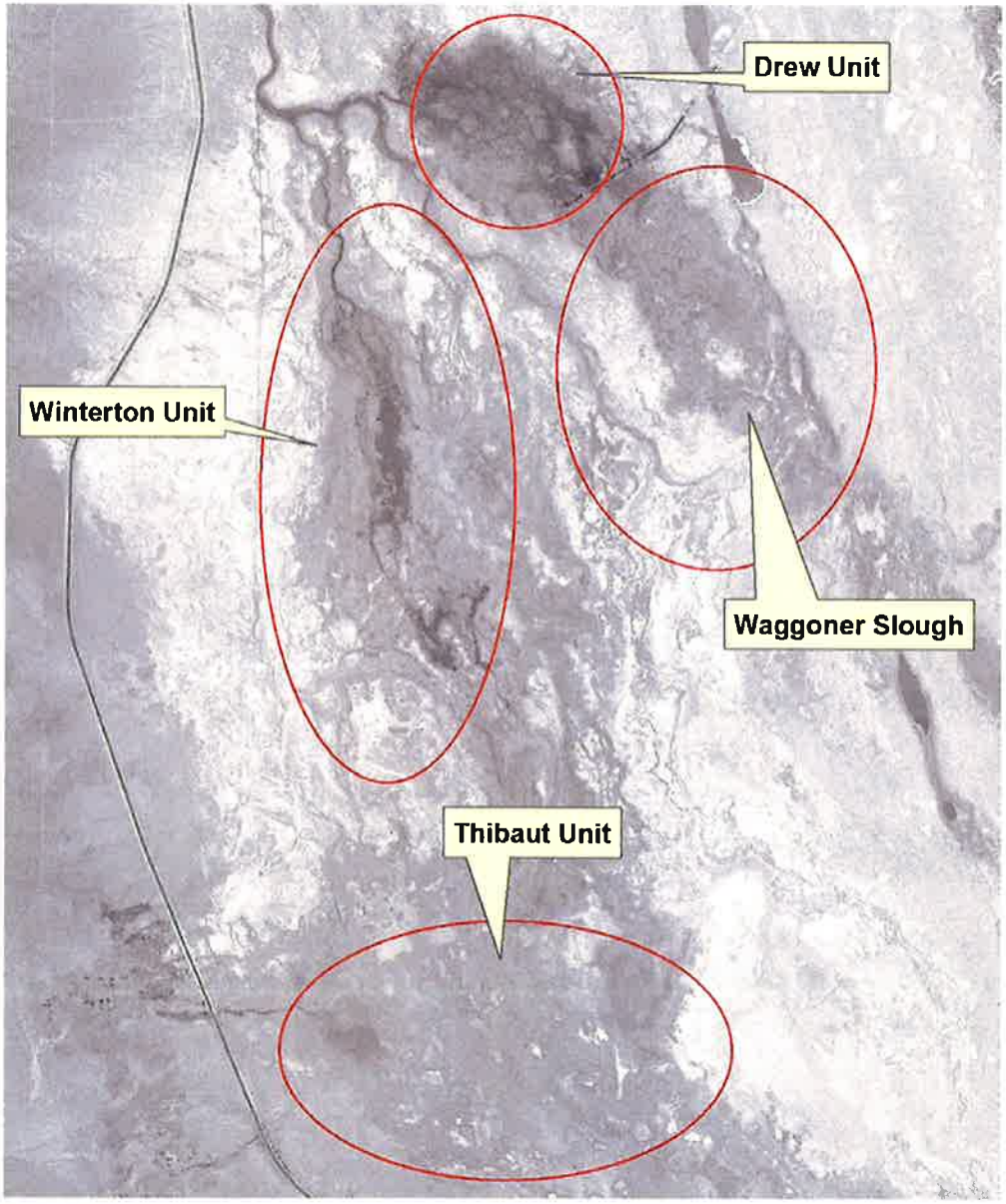

Figure 1. Map depicting approximate locations of BWMA Units on 1944 aerial photo.

Starting in the 1960's, water was spread in the BWMA during high runoff years and when operational needs required, such as during maintenance on the Los Angeles Aqueduct. To accomodate water spreading, LADWP has constructed dikes, levees, ditches, roads, and basins within the BWMA area.

When incorporated into the LORP, the BWMA was divided into four management units: Drew, Waggoner, Winterton, and Thibaut. All these units were mapped as marshlands in 1905 (USGS 1919) (Figure 1). Under the LORP, the primary management objective for these wetland units is to create and maintain diverse natural habitats consistent with the needs of "habitat indicator species" (MOU 1997). These species include waterfowl, wading birds, shorebirds, and marsh-dwelling species such as rails, bitterns, and Marsh Wren.

BWMA Goals and Management Under the LORP

Since 2007, BWMA has been operated following management described in the Final Environmental Impact Report and Environmental Impact Statement - Lower Owens River Project (LORP EIR/EIS; LADWP, USEPA, and ICWD 2004), and the 1997 Memorandum of Understanding (MOU) between LADWP, the County of Inyo (County), California Department of Fish and Wildlife, California State Lands Commission, Sierra Club, and Owens Valley Committee.

The MOU describes goals sought at BWMA:

> *The goal is to maintain this waterfowl habitat area to provide the opportunity for the establishment of resident and migratory waterfowl populations as described in the EIR and to provide habitat for other native species. Diverse natural habitats will be created and maintained through flow and land management, to the extent feasible, consistent with the needs of the "habitat indicator species" for the Blackrock Waterfowl Habitat Area. These habitats will be as self-sustaining as possible.*

The MOU prescribes water management to achieve these goals:

> *Approximately 500 acres of the habitat area will be flooded at any given time in a year when the runoff to the Owens River watershed is forecasted to be average or above average. In years when the runoff is forecasted to be less than average, the water supply to the area will be reduced in general proportion to the forecasted runoff in the watershed. (The runoff forecast for each year will be DWP's runoff year forecast for the Owens River Basin, which is based upon the results of its annual April 1 snow survey of the watershed.) Even in the driest years, available water will be used in the most efficient manner to maintain the habitat. The Wildlife and Wetlands Management Plan element of the LORP Plan will recommend the water supply to be made available under various runoff conditions and will recommend how to best use the available water in dry years.*

The amount of acreage to be flooded in years when the runoff is forecasted to be less than average will be set by the Standing Committee based upon the recommendations of the Wildlife and Wetlands Management Plan and in consultation with DFG.

The LORP EIR/EIS refers to the MOU in describing the BWMA:

The MOU specifies that a 1,500-acre off-river area with a mixture of pasture and wetlands be enhanced through flow and land management to benefit wetlands and waterfowl. Approximately 500 acres of the habitat area are to be flooded at any given time when runoff is forecasted to be average or above average with reductions in water supplies in less than average runoff years. The proposed flooding will increase wetland productivity and diversity, which is consistent with the approach described in the LORP Plan. The management units would be subject to periodic cycles of wetting and drying so that one to three management units would be wholly or partially flooded at any given time. Various physical improvements to existing ditches, berms, and spillgates will be necessary to manage water conveyance and flooding in the management units.

In compliance with these directives, water has been released year-round to flood up to 500 acres of the BWMA at any given time throughout the year when runoff is forecasted to be average or above-average. Reductions in water supplies and concomitant acreages have occurred during less than average runoff years as prescribed (2009-2015, Table 1).

As part of the overall management strategy for the BWMA presented in the LORP EIR/EIS, the flooded cells were intended to be managed to "maintain the ratio of open water wetland to emergent wetland so that emergent wetlands do not exceed about 50 percent of the flooded area of any management unit" (Section 2.5.3). While there was a proposed flooding regime provided in the LORP EIR/EIS (Section 2.5.4), the BWMA has been managed since implementation to achieve required flooded acreage. Units could remain indefinitely active or inactive as long as flooding met the MOU criteria of an annual fixed amount of acreage based on the water year and the active unit remained flooded year-round (LADWP, USEPA, and ICWD 2004).

Over the last 14 years, the Waggoner Unit has been active three years, the Thibaut Unit five years, the Winterton Unit nine years, and the Drew Unit ten years (Table 1). The running average of flooded extent in all years (2007-2020) is 370 acres. Active-status (flooded) units have maintained year-round continuous flooding for a minimum of two years, with the exception of Winterton which was flooded for a single year in 2011-12. The Drew Unit, which has been used more than others, was continually flooded for six straight years As described in the LORP EIR/EIS (page 2-43), the original intent was to flood the Drew Unit only when needed to create additional acreage to meet the 500-acre MOU requirement or to better meet MOU habitat goals.

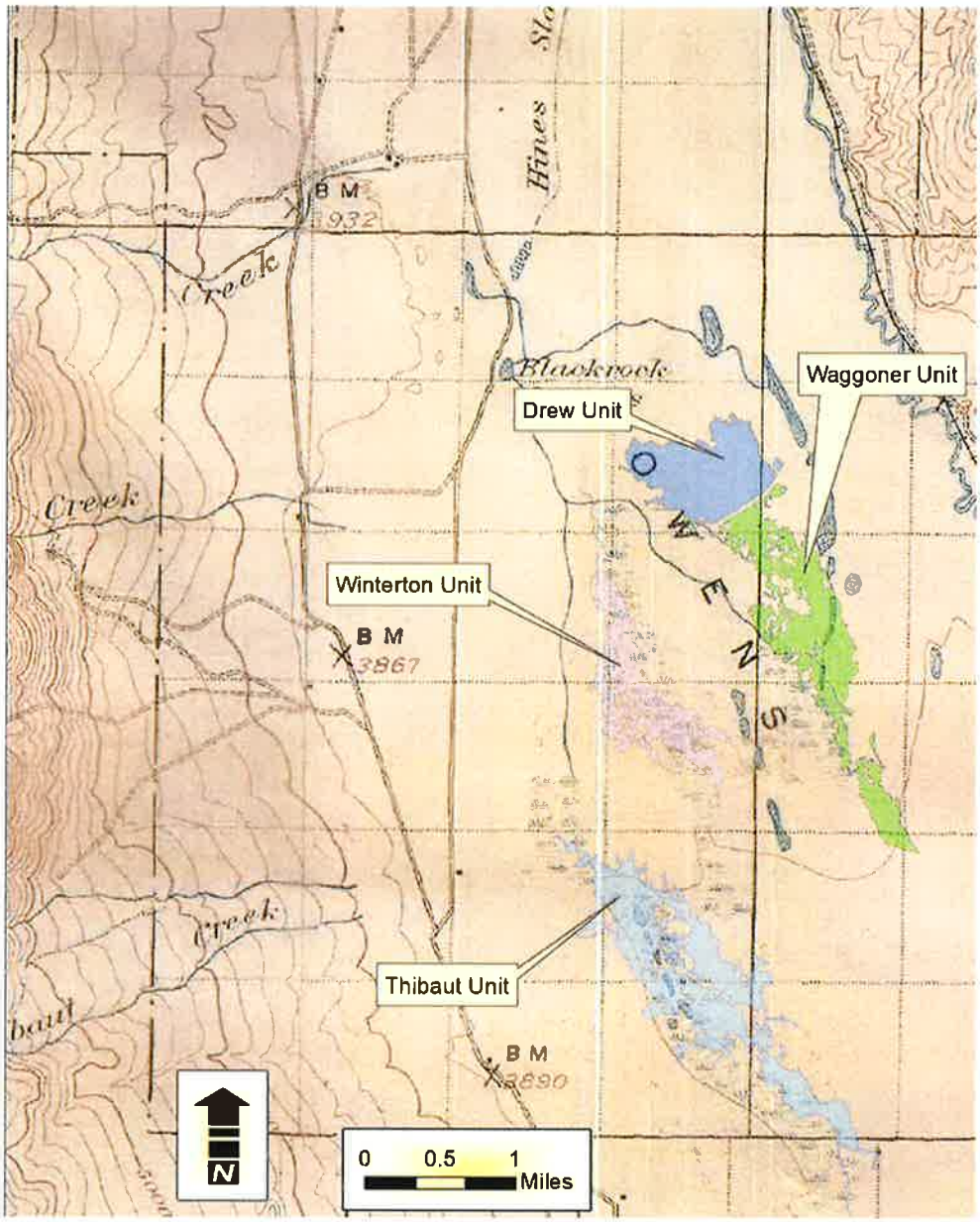

Figure 2. BWMA Units in relation to wetlands mapped by the USGS in 1905 (USGS 1919).

Table 1. BWMA Flooded Acreage by Year since LORP Implementation

Blackrock Waterfowl Management Area				
Runoff Year	**Runoff Forecast (% normal)**	**Flooded Acreage Requirement**	**Cells Flooded**	**Average Acreage Flooded**
2007-2008	58%	290	Winterton and Thibaut	477
2008-2009	86%	430	Winterton and Thibaut	494
2009-2010	71%	355	Drew and Waggoner	385
2010-2011	95%	475	Drew and Waggoner	669
2011-2012	150%	500	Drew and Winterton	480*
2012-2013	65%	325	Drew	327
2013-2014	54%	270	Drew	308
2014-2015	50%	250	Drew	275
2015-2016	36%	180	Winterton	234
2016-2017	71%	355	Winterton and Thibaut	530
2017-2018	197%	500	Winterton and Thibaut	700+
2018-2019	78%	390	Winterton and Drew	423
2019-2020	137%	500	Winterton, Drew, and Thibaut	500+
2020-2021	74%	370	Winterton and Drew	TBD

**flooded acres ranged between 372-539 acres*

2019 Evaluation Report

The LORP EIR/EIS (Section 2.5.4) recommended a review of BWMA flooding cycles 10 to 15 years following LORP implementation. The review is undertaken to determine if modifying the flooding regime can improve the project and bring it closer to achieving MOU goals.

The BWMA was reviewed by LADWP and Inyo County in the LORP 2019 Evaluation Report. The evaluation included a review of the effectiveness of BWMA management that has been conducted according to the year-round flooding regime prescribed in the 1997 MOU and LORP EIR/EIS. The focus of the review was on habitat indicator species use.

The evaluation concluded that continuous year-round flooding resulted in excessive and aggressive growth of emergent vegetation leading to reduced open water habitat, static water conditions, and a decrease in waterbird use. While the evaluation noted that habitat indicator species continue to use BWMA, continuous inundation has resulted in the dominance of late successional wetland vegetation and significantly reduced

suitable habitat for indicator species and migrating waterbirds. Observed ramifications of static, year-round flooding have also been discussed in detail in LORP Annual Reports (LADWP and County of Inyo 2019, 2018, 2017, 2016, 2015). The integration of seasonal flooding at BWMA was first conceptualized at the 2014 LORP River Summit.

Actions Undertaken to Date

LADWP has implemented several approaches to address vegetation encroachment by preparing units prior to flooding. Prescribed burns were conducted in the Drew and Waggoner Units in 2009, in the Winterton Unit in 2010, and most recently in the South Winterton Unit in 2019. In 2012, approximately 100 acres of cattail and bulrush root mats on the Winterton Unit were tractor disced. These aggressive and expensive vegetation management efforts resulted in only very short-term control as subsequent year-round flooding, specifically during the growing season, erased virtually any benefits derived from the site preparation activities.

Interim Management Plan Overview and Habitat Objectives

To address project shortcomings identified in the evaluation, LADWP and ICWD propose a five-year Interim Management and Monitoring Plan. We intend to apply an approach to wetland management used throughout the west, and although used primarily for migratory waterfowl habitat management, will also benefit shorebirds by creating more open water areas and mudflats. This approach involves managing vegetation by providing seasonal rather than year-round flooding and enhancing forage for indicator species through moist soil management. We will monitor progress and use collected data to compare the effectiveness of the new management approach against past practices.

The main components of the plan are to:

(1) Implement a seasonal flooding regime in which sustained flooding occurs from fall through mid-spring with a drawdown during the summer growing season. Units will be flooded beginning September 15th with a complete drawdown by May 1st. Seasonal flooding will enhance habitat by suppressing the growth of cattails and bulrush, and thus maintaining more open water.

(2) Discontinue varying annual flooded acreage targets based on the projected runoff, and flood a fixed 500 acres each year with ramping-up to begin September 15th and ramping-down to start after March 1st with complete dry down by May 1st. Wetted acreage measurements will occur on or around November 1 and March 1, with the average of those two measurements being used to determine the flooded acreage number. If the average value is above or below the 500 acre number, releases in subsequent years will be adjusted to more accurately meet the 500 acre

target. The Waggoner and Winterton Units will continue to be supplied from Blackrock Ditch and the Thibaut Unit from the Los Angeles Aqueduct, as has been past practice.

(3) On identified portions of active units and in areas where drawdown has occurred quickly, implement "moist soil management" by providing a rapid early summer 'irrigation' pulse of water to increase soil moisture. The objective of this irrigation release is to sustain the growth and seed set of desirable early-seral plant species that directly or indirectly provide food for migrating waterbird populations.

Effectiveness monitoring will include documenting the flooded acreage, vegetation assessments to evaluate moist soil management implementation, and waterbird surveys to determine use by indicator species.

Habitat Objectives of Interim Plan

Create and maintain open water habitat

Waterfowl and shorebirds primarily feed and rest in open water, mudflat, or areas of open vegetation. Wading birds will also feed in meadow, low marsh, or open cattail marsh situations. Dense homogenous stands of vegetation reduce feeding opportunities and restrict movement. Seasonal flooding in fall, winter, and spring rather than year-round is an effective way to control the growth of emergent vegetation in the Owens Valley and improve habitat management efficiency. The LORP FEIR (LADWP, USEPA and ICWD 2004) has as an objective to "maintain a ratio of open water wetlands to emergent wetlands so that emergent wetlands do not exceed 50 percent of the flooded area of any management unit" (Section 2.5.3). A 50:50 ratio of open water to emergent wetlands is consistent with the concept of the "hemi-marsh" (Weller and Spatcher 1965) where species richness and density was found to be greatest compared with other proportions of vegetative cover to open water. Wetland managers often replicate the physical appearance of hemi-marshes by intensely managing vegetation (Euliss, Jr. et al. 2008), however open water alone will not necessarily create productive conditions. Hydrologic processes of wet and dry cycles, or employing moist soil management are also needed to produce food resources for migratory birds.

Increase wetland productivity for migratory waterbirds using moist soil management concepts

Forage availability is as important as the availability of open water to attracting and maintaining waterbird populations. Moist soil management is the management of water drawdown rate and timing in order to promote the growth of desirable plants on mudflats that will be subsequently reflooded (Mississippi River Trust et al. 2007). The ability to manipulate forage composition, production, and open water habitat through seasonal flooding is regarded as the most effective tool available to land managers in California

and elsewhere in the United States for managing migratory waterbird habitats (Fredrickson and Taylor 1982; Smith et al. 1995). Manipulating plant succession and site hydrology are the mechanisms used to reach moist-soil management objectives.

Moist soil management guidelines have been developed and implemented in other parts of the U.S., but there is limited information available for use in the Intermountain West. Plant species often cited as "target" species for waterfowl either do not occur in Owens Valley, or are weedy and undesirable here. Therefore, LADWP and ICWD will work together to experiment with different approaches and develop techniques applicable to the BWMA and develop local information and targets for desirable species. Some general information is available regarding plant foods important to waterfowl, and these accounts will be adapted to the Owens Valley to provide guidance as we evaluate moist soil management effectiveness. Moist-soil plants both occurring in the Owens Valley and reported to be of exceptional value to wildlife by the California Waterfowl Association (2020) include smartweed (*Polygonum* sp.), beggar-ticks (*Bidens* sp.), annual Atriplex (*Atriplex* spp.), and goosefoot (*Chenopodium* spp.). Spikerush (*Eleocharis* spp.), aster, and alkali bulrush (*Bolboschoenus maritimus*) are moist-soil plants that are believed to be only moderately valuable to wildlife, but may be important in localized areas; and sweet clover, river bulrush, tuberous bulrush, bermuda grass, baltic rush, jointgrass, dock, and saltgrass are generally invasive and undesirable wetland plants (California Waterfowl Association 2020). Applying moist soil management techniques to wetland areas to support a diverse array of early seral annual and perennial plant species will also benefit shorebirds and wading birds by supporting aquatic invertebrate populations.

Waterfowl generally forage in wetland habitats, consuming plant parts, aquatic or terrestrial invertebrates, crustaceans, or small fish. Swans and geese are primarily herbivorous, and feed on roots, tubers, stems and leaves of submerged and emergent aquatics. Dabbling ducks consume both animal and plant food materials, however, the diet of many species varies seasonally as animal food sources are favored during the breeding season, and plant food sources (primarily seeds) are typically consumed in greater proportion during non-breeding periods.

Wetland plant communities provide a direct or indirect source of food for waterfowl. These community types include submergent plants (rooted plants whose vegetative material is completely underwater), floating-leaved plants (both rooted and free-floating), and emergent. Submergent plants provide a direct source of food as waterfowl will consume tubers, leafy material, or seeds of some submergent plant species. Submergent plants also support macroinvertebrate production and therefore indirectly affect food resources.

Plant species that are part of the floating-leaved community include rooted species, and free-floating aquatic plants. Free-floating plants can be more accessible to waterfowl

than submergent species, however, there are only a few floating-leaved plant species that produce waterfowl food of much value (Baldasserre and Bolen 1994). Some smartweed species (*Polygonum* spp.) and a few pondweed species (especially *Potamogeton natans*) produce seeds that are of fair to good quality for waterfowl. Despite their vernacular name, free-floating aquatic plants in the family Lemnaceae, known as duckweeds, duckmeats, or bogmats (genera: *Lemma*, *Spirodela*, *Wolffiella*, and *Wolffia*) are not important waterfowl foods. These free-floating aquatic plants do however support aquatic invertebrate production, and therefore may be consumed in small quantities as waterfowl forage for aquatic invertebrates associated with these plants.

Emergent plants primarily provide cover, but some species are key food sources. Bulrushes of the leafy triangular-stemmed type such as alkali bulrush (*Schoenoplectus maritimus*) are key food producers. Other species such as hardstem bulrush (*S. acutus*), softstem bulrush (*S. tabernaemontani*), and California bulrush (*S. californicus*) produce desirable nutlets. Cattails (*Typha* spp.) are important for cover and nesting for some species, but are not a direct food source. Grass and sedges also occur in the emergent zone, and some species are highly valuable as waterfowl foods. Species in this group that occur in this region include sedges (*Cyperus* spp.), and spikerushes (*Eleocharis* spp.). Waterfowl may eat the seeds of rushes (Family Juncacae) when available, but these species are not considered highly valuable food resources. The seeds of saltgrass (*Distichlis spicata*) may also be consumed.

Differences in soil type between and within individual units combined with variation in annual climate conditions will affect how long it will take for each unit to draw down and may influence plant species compositional differences between units. Because of the presumed variability that may be encountered, flexibility in flooding, drawdowns, and site preparation for each unit will be needed. With close monitoring, more effective management strategies may be discovered such as adjusting the maximum flooded extent further into spring and starting later in the fall, or the reverse with an earlier drawdown in the spring and an earlier maximum flooded extent in the fall. If adjustments are required, 500 acres for four months will still be adhered to.

If needed in order to maintain soil moisture, a short-term irrigation pulse will be implemented. This will be a pulse flow in late spring or early summer for a maximum of two weeks across portions of active units that have shallow water depths and would benefit from a rapid flow. This irrigation set would provide needed moisture for desirable annuals to reach seed production stage.

Maintain Appropriate Water Depths for Waterbirds

Water depth is highly predictive of waterfowl use and is a critical consideration for effective waterfowl habitat management (Isola et al. 2000, Taft et al. 2002). Water

depths greater than 25 cm limit access to food resources for dabbling ducks, shorebirds and wading birds, whereas diving birds require approximately a minimum of 25 cm (Figure 2). Recommended water depths for dabbling ducks, shorebirds and waders in flooded units in central California are between 10 cm- 25 cm (4-10 inches) (Figure 2) (Taft et al. 2002). Managing for shallower water depths such as these will also help to conserve water and ensure better irrigation during times when warranted in the early summer.

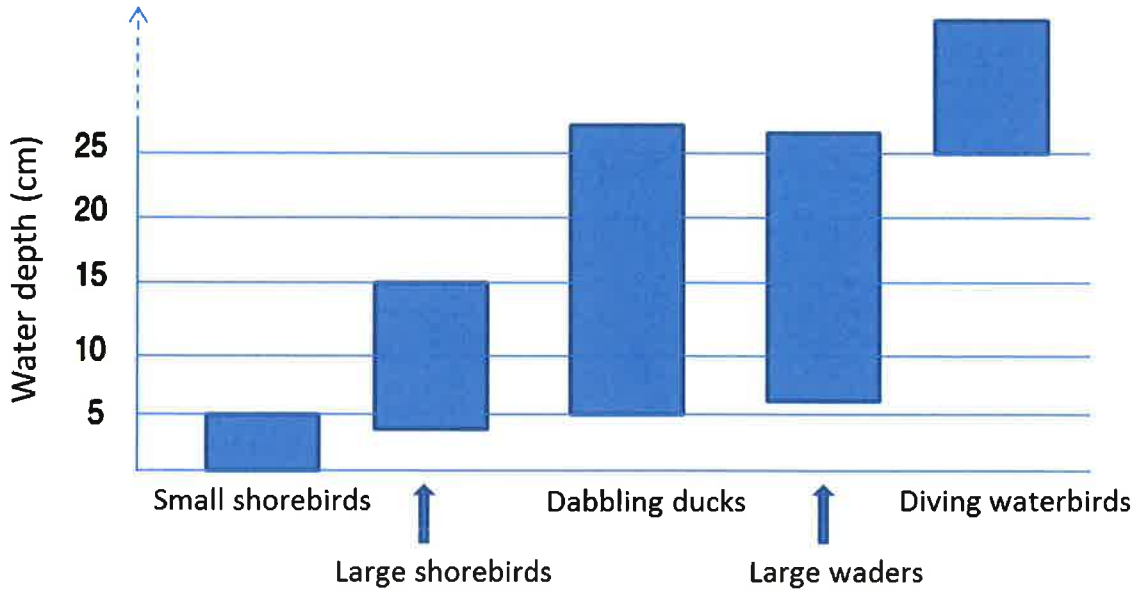

Figure 2. Variation of water depths at foraging sites among waterbird groups Figure adapted from Ma et al (2010). Management proposed for the BWMA will target depths less than 25 cm (10 inches) preferred by shorebirds, dabbling ducks and large waders.

This management technique was tested in the Winterton Unit in 2020. Manipulating water in shallow flooded subunits on the southeastern portion of the Winterton Unit in 2020 produced comparatively large stands of smartweed (*Polygonum sp.*) by June 15th (Figure 3). Smartweed is considered of high nutritional value for waterfowl, and is a species whose growth can be enhanced through effective water management. This water depth should provide satisfactory habitat for dabbling ducks, diving waterbirds, and waders. During the first years of implementation of the Interim Plan, active units should be evaluated to better understand the water depth variation in the units and how water depth is influencing waterbird use. In addition, opportunities to improve conditions for waterbirds by manipulating water levels and therefore depths should be considered and evaluated each August before mid-September shallow flooding.

Figure 3. Smartweed, June 15, 2020, Winterton Unit.

Description of the BWMA units

Drew Unit

The Drew Unit is located north of Blackrock Ditch and receives water from Blackrock Diversion #4. The Drew Unit is entirely within the 2,193 acre Lower Blackrock Field of the Twin Lakes Lease. The lease is typically grazed by livestock from November through mid-May. Livestock arrive in the Lower Blackrock Field in early November and are then moved to the two river pastures on this same lease. During spring, cattle are moved back into the Lower Blackrock Field and then shipped to Long Valley (Mono County) in mid-May.

The Drew Unit was burned in February of 2009 to prepare the unit for flooding. The unit has been flooded 9 out of 14 years. Table 2-14 in the LORP EIR identified 397 acres as the total management unit area for the Drew Unit (2004). The maximum acreage flooded in this unit since implementation was 334 acres in January of 2013 (Figure 4). It would be difficult to further increase acreage in the Drew Unit because additional increases in water would spill over the Blackrock Ditch berm on the south side.

The Drew Unit was dried in May 2015 and experienced extensive salt cedar (*Tamarisk ramosissima)* germination. LADWP mowed the salt cedar in late winter 2018, and the unit was then reactivated with the intent to fully submerge mowed seedlings and

eliminate them. The treatment appears to have been effective. The majority of the unit is now dominated by cattails, however.

Compared to the Waggoner and Winterton Units, colonization by cattails and bulrush tends to occur at a slower rate in the central and southern portion of the unit likely due to greater water depth. The comparatively longer duration of open water has been the primary rationale to flood this unit with greater frequency than the other three units. The northern third of the Drew Unit was originally a xeric shrub upland with aeolian sandy soils. When initially flooded, the northern portion attracted shorebirds due to its gently sloping sandy beaches interspersed with hummocky topography, but continuous flooding resulted in the formation of dense cattail marsh, eliminating shorebird habitat.

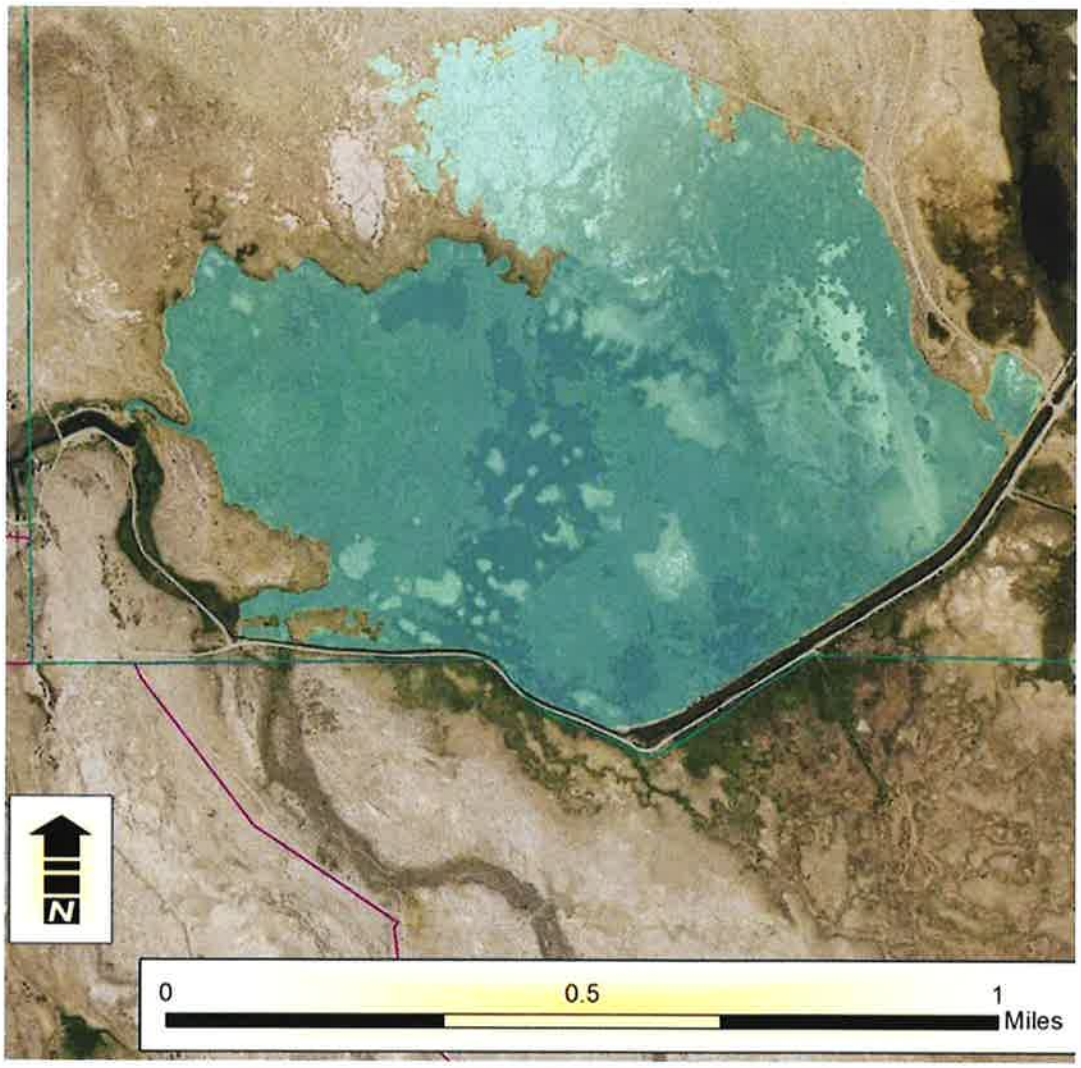

Figure 4. Drew Unit, 330 acres, January 2013.

The Drew Unit offers the greatest variation in water depth of any of the BWMA units, from low gradient sandy shallows in the north, to island features in the middle, to deep water toward the southern end adjoining the Blackrock Ditch.

Because of years of continuous flooding, much of the unit has been encroached upon by now dense stands of emergent vegetation (Figures 5 and 6). The deepest part of the unit, just north of the Blackrock Ditch berm, contains the most open water and is largely free of cattails and bulrush. While this deep water inhibits emergent vegetation growth, maintaining the depth is a water management challenge. The deep-water unit takes several weeks to fill and flood and is slow to dry out because of its concave shape. The Drew Unit's extended drawdown time means that saltcedar seedlings can become established before the unit dries. Therefore, the Drew Unit will not be prioritized for use in the proposed revised flooding regime.

Figure 5. Drew Unit, northeast looking southwest, May 2010

Figure 6. Drew Unit, northeast looking southwest, Winter 2011

Waggoner Unit

The Waggoner unit is part of the 3,749 acre White Meadow Field of the Blackrock Lease. The Waggoner Unit receives water from the Blackrock Ditch. Water can be sent into the southern portion of the unit via Diversions #5, #6, #7, and #8. The LORP EIR (2004) notes 598 acres as the total management unit area for the Waggoner Unit (327 acres potential flooded area, 271 acres adjacent habitat area) (Table 2-14). This has been the least used unit in the BWMA. The unit was flooded for two consecutive years between 2010 and 2011 and flooded extent ranged between 210 and 390 acres during the two years it was active (Figure 7, Table 2). This unit is useful in that additional acreage can be gained if needed. The unit is shallow, interspersed with island features and surrounded by wet saline meadows. In 2009, due to the shallow depths across the majority of the unit, the area was rapidly colonized by cattails and bulrush by the middle of the first summer. The Waggoner Unit was flooded again during the water-spreading activities in the summer of 2017. Despite having been dry for six years, the unit was fully colonized by cattails and bulrush by the end of July in 2017. For this reason, the Waggoner Unit has not been prioritized for any site preparations for subsequent

yearlong flooding. If the unit is not flooded between June-August, it should be prioritized for discing and subsequent winter flooding. The shallow water depth should be ideal for a moist-soil management approach.

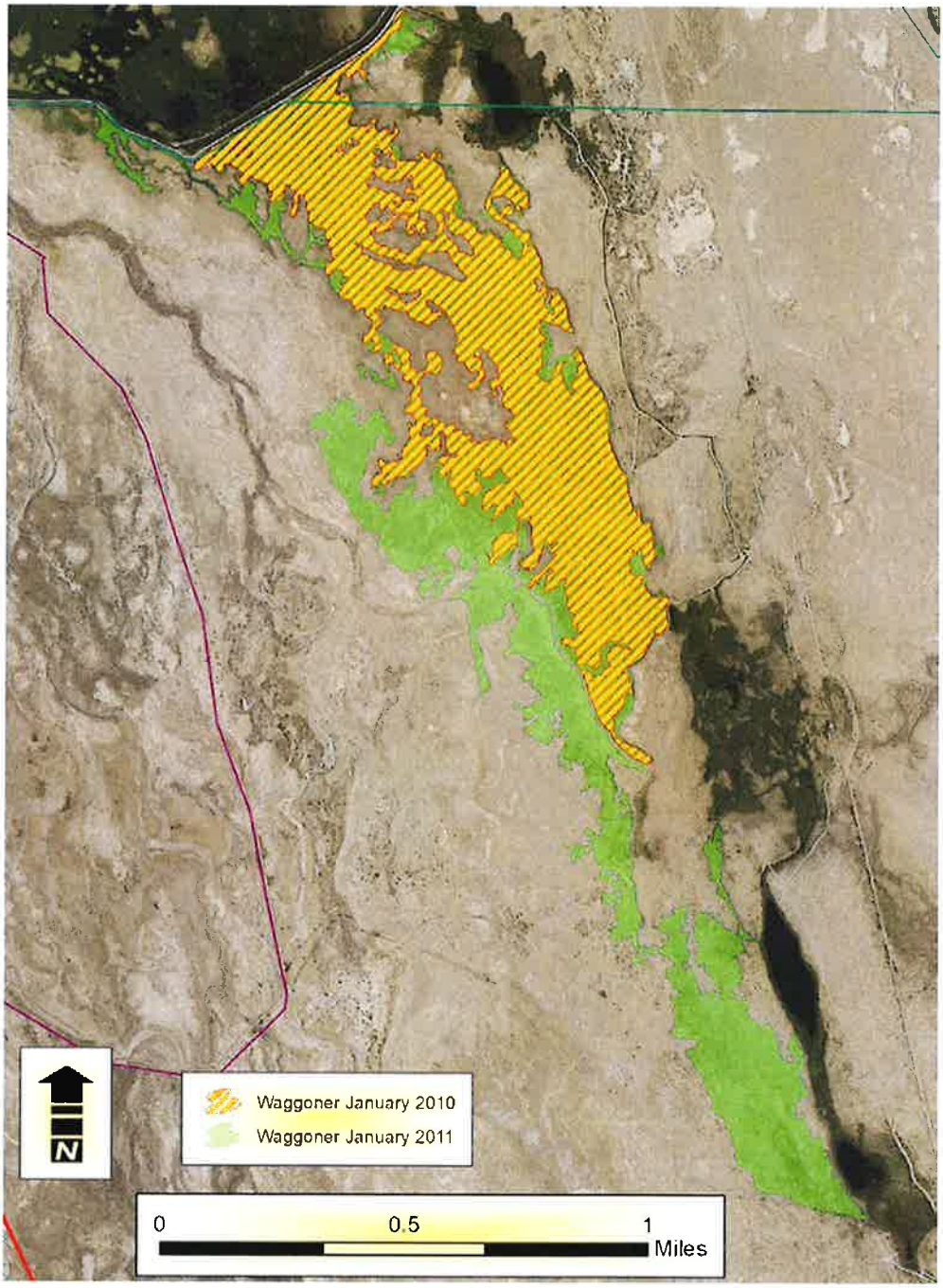

Figure 7. Waggoner Unit flooding in January 2010 (210 acres) and January 2011 (390 acres).

Table 2. Measured acreages taken from active units in January from 2010 to 2020.

	Drew	Winterton	Waggoner	Thibaut
flooded ac in LORP EIR	246	164	147	353
Jan-10	333	NA	210	NA
Jan-11	333	NA	390	NA
Jan-12	294	131	NA	NA
Jan-13	334	NA	NA	NA
Jan-14	330	NA	NA	NA
Jan-15	267	NA	NA	NA
Jan-16	NA	178	NA	86
Jan-17	NA	243	NA	494
Jan-18	NA	200	NA	465
Jan-19	285	99	NA	NA
Jan-20	248	233	NA	140

Winterton Unit

The Winterton Unit is located on the Blackrock Lease inside the 1,567 acre Winterton Exclosure Field. Water can be released into the Winterton Unit through Blackrock Diversion #2, Diversion #3, and Diversion #5 (Figure 8). Total management unit area was identified as 525 acres per Table 2-14 in LADWP 2004, (281 acres potential flooded area and 244 acres adjacent habitat area). Based on 13 years of measurements, the unit can flood approximately 200 acres.

The unit has been used 9 out of 14 years and is now being flooded for a sixth consecutive year. Maximum acreage was measured at 243 acres when water was released from Diversion #2 (Table 1). Most of the Winterton Unit is shallow with two deeper ponds at the lower portion of the unit. Depths of these ponds can be manipulated by a series of culverts and head gates.

The northern two thirds of the unit is very shallow and is quickly colonized by cattails and bulrush when flooded. This unit was burned in preparation for flooding in 2011 and cattails promptly recolonized by mid-summer of the first year of flooding. The unit was disced in 2015 and was again rapidly enveloped by cattails and bulrush by July of the same year (Figure 9). Similar to the Waggoner Unit, the upper 125 acres would be an optimal location for shallow flooding if discing prior to flooding, allowed to dry out during the summer, and then flooded again in the fall.

Figure 8. Winterton Unit flooded area in January 2019 (200 acres).

Figure 9. Winterton Unit, September 2016, looking north. Although disced in 2015, the dark green vegetation patch is dense cattails that rapidly colonized the area following one year of continuous water application.

East Winterton Subunit

In January of 2020, Diversion #3 released water for approximately one month into what is called the Winterton East Unit. The flooded extent in this area was approximately 75 acres but continued to expand south after measurements were taken. Total acreage estimated at the time when water was shut off was approximately 80-85 acres. Diversion #3 was then turned off by February 1, 2020 and cattail and bulrush had not occurred in the site when evaluated in May of 2020 (Figure 10).

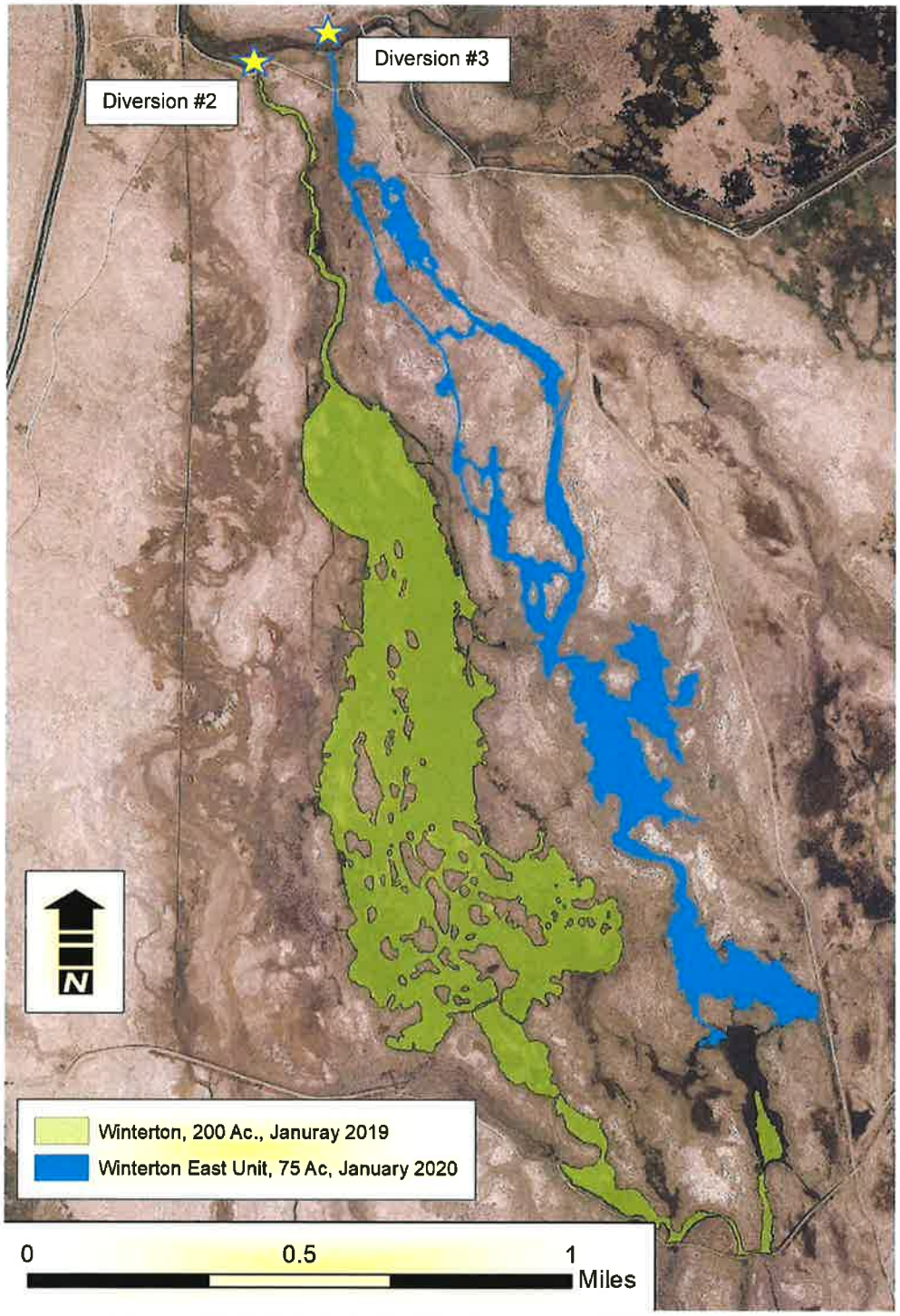

Figure 10. Winterton East unit, January 2019 and 2020.

South Winterton Subunit

Accumulated water at the southern end of the main Winterton Unit can be released further south into the South Winterton Subunit (Figure 11). Flooding this open area would cover approximately 60-75 additional acres. This subunit was burned in December of 2019 in preparation to be flooded. It should not be flooded until there are assurances that the area will not receive water during the summer to prevent cattail and bulrush encroachment.

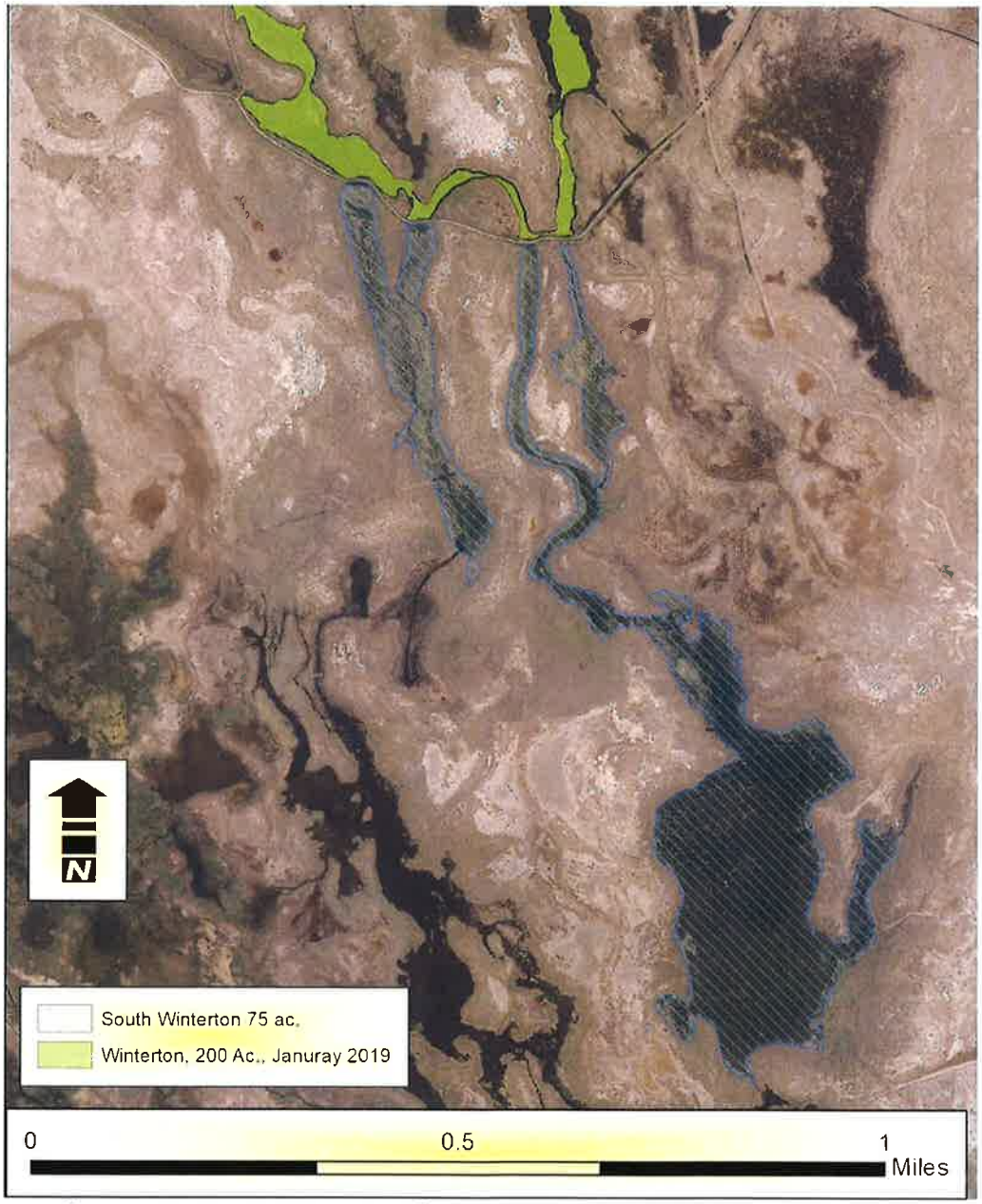

Figure 11. South Winterton Subunit, estimated potential of 75 acres.

The Winterton East and Winterton South Subunits should be incorporated into the future flooding regime. Utilizing these two units will create the flexibility to dry out and disc the main Winterton Unit to the north and west while still maintaining a portion of the entire Winterton Unit as active.

Thibaut Unit

The Thibaut Unit is located on the Thibaut Lease and spans a portion of the 4,030 acre Thibaut Field. Total management unit area is noted as 1,063 acres in Table 2-14 of the LORP EIR (488 acres potential flooded area, 575 adjacent habitat area). The lease is jointly used by three pack stations to overwinter horses and mules. Animals arrive on the lease by October and typically leave in June.

The Thibaut Unit is the southernmost unit in the BWMA and historically was the largest unit with a capacity to flood to nearly 500 acres (Table 1). The unit has been used less than the Drew and the Winterton Units, being flooded 5 out of 14 years. The eastern complex of ponds have maintained open water when the unit is flooded. These ponds are reliably used by both waterfowl and shorebirds throughout the winter. In 2018, a ditch was constructed to direct flows into the aforementioned pond complex and reduce sheet flows across the saltgrass meadows on the western portions of the unit. This ditch has reduced the amount of total flooded acres but has helped maintain the large saline meadows which deteriorated when flooded prior to 2018 (Figure 12). Flows are presently directed to where they are most beneficial for migratory waterbirds.

Livestock Grazing

All four units discussed above are situated within active grazing leases. Grazing management is guided by lease plans developed by LADWP and the lessees as part of the LORP EIR (LADWP 2004). Currently, grazing utilization for all pastures within BWMA is limited to 65%. Utilization monitoring is ongoing in each pasture and has consistently remained well below the 65% limit. Starting in June of each year, units are rested from livestock grazing for a minimum of 120 days during the growing season.

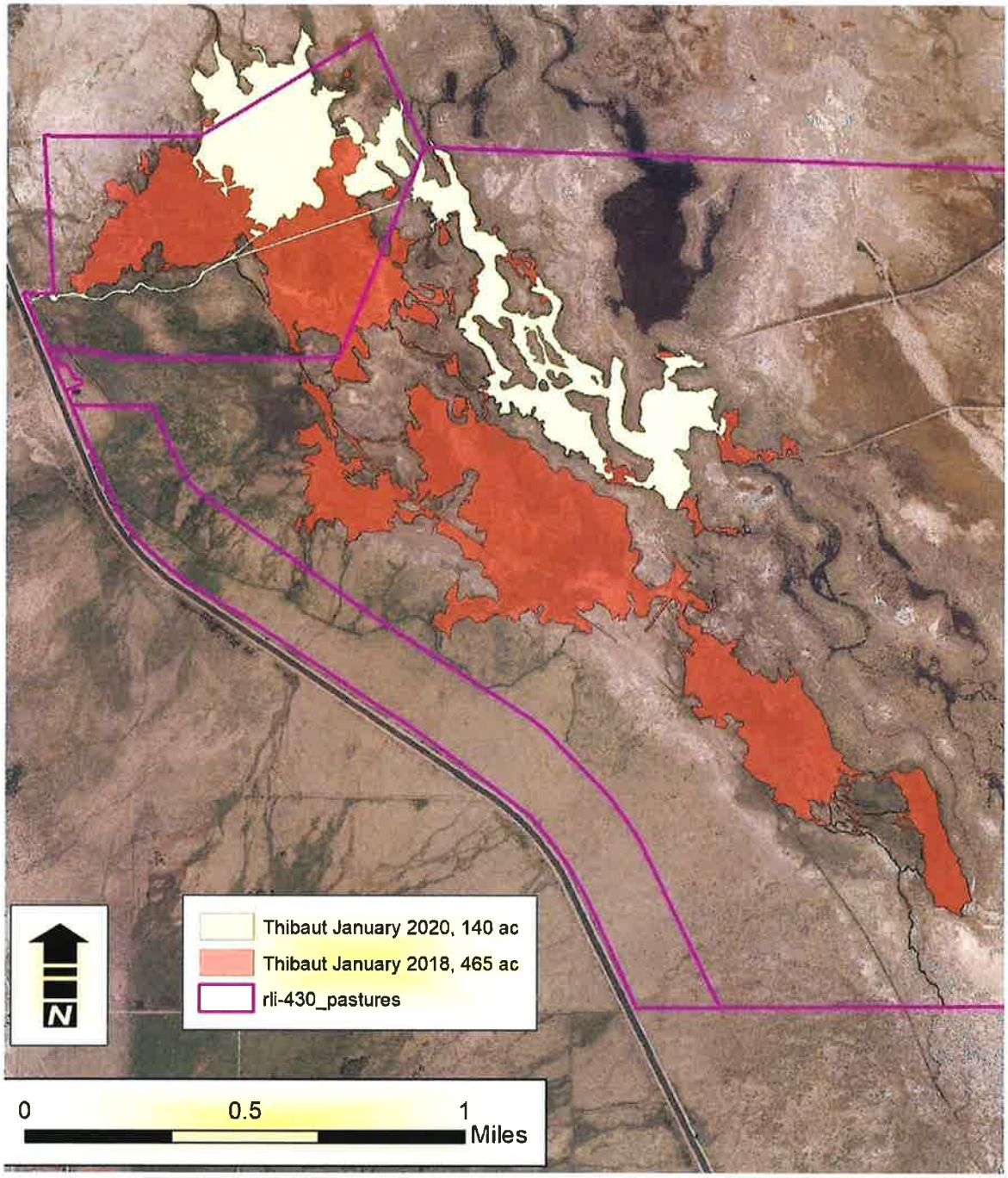

Figure 12. Thibaut Unit, January 2018 and January 2020.

Proposed Interim Management Schedule

Table 3 and Figure 13 present a flooding schedule across the Winterton, Waggoner, and Thibaut Units for the five-year interim project. Acreages for flooding each unit to meet the seasonal 500-acre target during the first years will require a degree of adjustment as LADWP transitions to seasonal wetland management. (The Drew Unit may be used for water spreading in very high runoff years). Following the guidelines of moist soil measurements (Fredrickson and Taylor 1982), units should be prepared prior to initial flooding. In order to provide cover for wildlife and maintain habitat heterogeneity, when possible, portions of units will be disced while other areas containing cattails and bulrush will not be disturbed. Discing should be done to a depth of 60 cm and cattail/bulrush roots should be exposed to sunlight for two months (Gray et al. 1999). Disced units will then be flooded in mid-September and should be seasonally flooded beginning each fall for at least 2-3 years.

Table 3. Five-year interim management flooding schedule for the BWMA. Active units will be flooded seasonally from the fall through the spring.

	Thibaut Unit	Waggoner	Drew	Winterton West	Winterton East	Winterton South
2021-22	Flood	Flood	Inactive	Inactive	Flood	Flood
2022-23	Flood	Flood	Inactive	Inactive	Flood	Flood
2023-24	Inactive	Flood	Inactive	Flood	Flood	Inactive
2024-25	Flood	Flood	Inactive	Flood	Inactive	Inactive
2025-26	Flood	Flood	Inactive	Flood	Inactive	Inactive

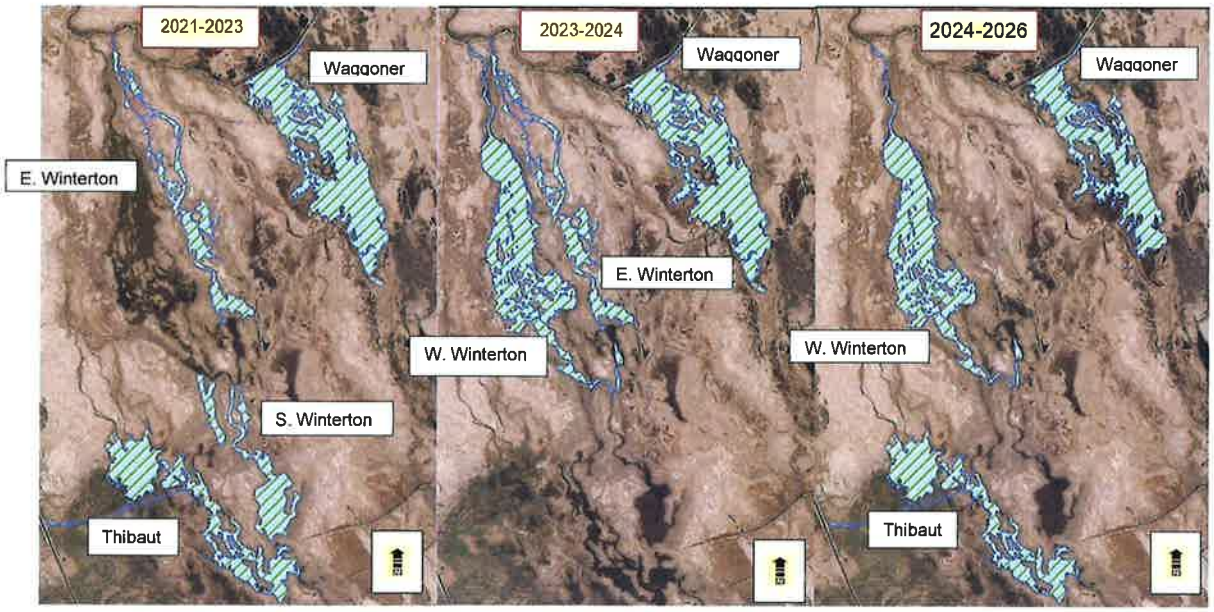

Figure 13. Seasonal flooding schedule. 2021-2026.

The following text and Table 4 identify actions to be implemented each year for site preparation, flooding, and associated maintenance under this Interim Management Plan.

Fall 2021-2022:

Site preparations needed before flows released in Fall 2021:

- Improve Blackrock Ditch by installing a check structure that will raise elevation to ensure that flows can be released from Diversion #5 into Winterton East subunit or into Waggoner.
- Disc 70% of Waggoner Unit in the summer/fall of 2021.
- Disc middle portion of the Winterton East Unit.
- Disc bottom pond in Winterton South.
- Maintenance on Diversion #3 (Four Corners) ditch and reinforce berm on west side to ensure flows into Winterton East subunit.
- Repair berm at bottom of Thibaut Unit.

Initiate water releases on September 15th

- Release water from Thibaut Spillgate East to Thibaut Unit.
- Release water from Blackrock Ditch Diversion #8 to Waggoner Unit.
- Release water from Diversion #3 (Four Corners) and Diversion #5 to Winterton East.
- Release water from Diversion #3 (Four Corners) and Diversion #5, water will then be released from culverts at south berm of Winterton into Winterton South, flooded extent.

October: 2 days to evaluate progress of initial flooding.
November 1-4: Measure flooded extent of units.
Avian Monitoring: From September to April, eight seasonal surveys of each active unit.
Initiate draw-down all units on March 1st by shutting off diversions.
March 1st-3rd: Measure flooded extent of units.
May 1st -2nd evaluate wetted extent of four units to determine if additional irrigation release is needed.
June 15th -18th Establish line point transects in basins on each of the four active units.
July 15th Evaluate outcomes from prior year's flooding and determine if 2022-2023 flooding schedule requires changes.

Fall 2022-2023

Site Prep: Possible mowing/discing in portions of Winterton East
Flood September 15th

- Release water from Thibaut Spillgate East to Thibaut Unit, flooded extent.
- Release water from Blackrock Ditch Diversion #8 to Waggoner Unit, flooded extent.
- Release water from Diversion #3 (Four Corners) and Diversion #5 to Winterton East.

- Release water from Diversion #3 (Four Corners) and Diversion #5, water will then be released from culverts at south berm of Winterton into Winterton South, flooded extent.

November 1-3: Measure flooded extent of units.
Avian Monitoring: From September to April, eight seasonal surveys of each active unit.
Draw down all units March 1st.
March 1st-3rd: Measure flooded extent of units.
May 1st -2nd evaluate wetted extent of four units to determine if additional flow release is needed.
June 15th -18th Reread line point transects in basins on each of the four active units.
July 15th Evaluate outcomes from prior year's flooding and determine if 2023-2024 flooding schedule requires changes.

Fall 2023-2024

Site Prep: Disc 80% Winterton Unit

- Repair berm that bisects Winterton Unit and repair culverts along berm.

Flood September 15th:

- Release water from Blackrock Ditch Diversion #8 to Waggoner Unit, flooded extent.
- Release water from Blackrock Ditch Diversion #2 to Winterton West Unit, flooded extent.
- Release water from Diversion #3 (Four Corners) and Diversion #5 to Winterton East, flooded extent.

November 1-3: Measure flooded extent of units.
Avian Monitoring: One fall, one winter, and one spring survey of each active unit.
Draw down all units March 1st.
March 1st-3rd: Measure flooded extent of units.
May 1st evaluate wetted extent of three units.
June 15th -18th Reread and establish new line point transects in basins on each of the three active units.
July 15th Evaluate outcomes from prior year's flooding and determine if 2023-2024 flooding schedule requires changes.

Fall 2024-2025

Site Prep: Evaluate Thibaut Unit for discing, disc Waggoner Unit
Flood September 15th:

- Release water from Thibaut Spillgate East to Thibaut Unit.
- Release water from Blackrock Ditch Diversion #8 to Waggoner Unit
- Release water from Blackrock Ditch Diversion #2 to Winterton West Unit, flooded extent

November 1-4: Measure flooded extent of units.
Avian Monitoring: One fall, one winter, and one spring survey of each active unit.

Draw down all units March 1st.
March 1st-3rd: Measure flooded extent of units.
May 1st evaluate wetted extent of three units.
June 15th -18th Reread line point transects in basins on each of the three active units.
July 15th Evaluate outcomes from prior year's flooding and determine if 2025-2026 flooding schedule requires changes.

Fall 2025-2026

Site Prep: No prep
Flood September 15th:

- Release water from Thibaut Spillgate East to Thibaut Unit
- Release water from Blackrock Ditch Diversion #8 to Waggoner Unit
- Release water from Blackrock Ditch Diversion #2 to Winterton West Unit, flooded extent

November 1-4: Measure flooded extent of units.
Avian Monitoring: From September to April, eight seasonal surveys of each active unit.
Draw down all units March 1st.
March 1st-3rd: Measure flooded extent of units.
May 1st evaluate wetted extent of three units.
June 15th -18th Reread line point transects in basins on each of the three active units.
September - write up final evaluation of the five-year interim project.

Table 4. Schedule for preparing/maintaining units during the interim period.

	Infrastructure	Discing
Winter 2020-Summer 2021	• Raise elevation on Blackrock Ditch for Waggoner Diversions • Repair Diversion #3 • Repair and install culvert Thibaut Unit	• Waggoner (approx. 150 ac) • Winterton East (15 ac) • Winterton South (30 ac)
Summer 2022	• General maintenance of existing infrastructure	• Possible mowing/discing in portions of Winterton East
Summer 2023	• Repair center berm & culverts on Winterton Unit	• Winterton (160 ac)
Summer 2024	• Maintenance if needed	• Waggoner Unit (approx. 150 ac) • Thibaut unit 70 ac
Summer 2025	• Maintenance if needed	• None

It is expected that seasonal withdrawal of water from the shallow units (Winterton, Waggoner, and Thibaut) will discourage emergent vegetation overgrowth. Treating emergent vegetation through tractor discing and controlled burns is expensive. It is hoped that through seasonal water management, the frequency of vegetation maintenance will be reduced. However, it is also possible that noxious weeds, including

saltcedar, will be encouraged by wet soils during the spring drawdown. Monitoring for noxious species during vegetation surveys described below will help us consider the effects of the new water regime on undesirable vegetation. Minimal to no colonization by noxious plant species has been observed over the past seven years in the 28-acre flooded portion of Thibaut Pond following seasonal draw downs initiated on March 15th.

Effectiveness Monitoring

Flooded Extent Measurements

The extent of flooding has been measured seasonally since the beginning of the project for the purposes of tailoring water releases and to assure the flooded acreage was in compliance with MOU guidelines. Flooded extent will continue to be measured both to confirm compliance with the Interim Plan and to help describe the effectiveness of seasonal filling and drawdown. Remote sensing will be used to take rough area estimates, and two on-the-ground surveys will be used to map more precisely the extent and location of water found above soil. Water releases will be monitored and reported annually.

Vegetation Monitoring

Initial monitoring will consist of line-point vegetation transects and/or plots in areas expected to have the most potential to produce waterfowl foods. A second objective of monitoring is to evaluate the effectiveness of controlling the expansion of cattails and bulrush in active units. This can be mapped and quantified from a combination of satellite imagery, aerial imagery from UAV, and field training data. Seed production will be estimated on sites that are positively responding to moist-soil management following the methods proposed by Naylor et al. (2005). Evaluating the vegetative response following shallow flooding will help managers determine the following year's flooding schedule. Based on results from each summer the flooding schedule may need to be adjusted to improve forage production.

Monitoring for noxious weeds will be conducted by the Inyo Mono Agricultural Commissioner's Office and/or by ICWD or LADWP staff as part of annual LORP Work Plans during the Interim Plan period.

Water Depths in Flooded Units

During the first years of implementation, water depth will be measured, mapped and evaluated in active units coinciding with avian surveys to better understand how water depth influences waterbird habitat use. Patterns of unit drydown will also be monitored to inform whether there are opportunities that could further benefit breeding waterfowl and their broods.

Opportunities to improve conditions for waterbirds by manipulating water levels and therefore depths should be considered each August before mid-September shallow flooding. The effectiviness of this water manipulation will be evaluated based on the spatial extent and configuration of shallow flooding, moist-soil plant production, and results of avian monitoring.

Avian Monitoring

Avian monitoring will be conducted to evaluate the use of BWMA by the habitat indicator species during implementation of the 5-year interim program. Avian data will be collected in a manner that will allow comparison with previous data by replicating the survey periods used to date (Table 5). Eight seasonal surveys will be conducted yearly in each active unit during implementation of the Interim Plan (see Figure 13, Table 6). Adjustments will be made to the bird monitoring schedule if the flooding schedule is revised. Units will not be surveyed when dry, thus there will be fewer surveys conducted per year than current practice.

Waterbird spatial and habitat use patterns, including water depth use will be recorded.

Table 5. Interim Management Plan Avian Seasonal Surveys

Survey Period	Season
End of September	Fall
Mid-October	Fall
End October	Fall
November/December	Winter
January	Winter
Beg of April	Spring
Mid April	Spring
End April	Spring

Table 6. Interim Management Plan Unit Avian Survey Schedule

Unit	Project Year and Survey Schedule				
	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
East Winterton	X	X	X		
West Winterton			X	X	X
South Winterton	X	X			
Thibaut	X	X		X	X
Waggoner	X	X	X	X	X

Reporting

Analysis of monitoring data collected during the interim period will be provided in the LORP Annual Reports. LADWP and Inyo County will continue to host a public meeting following release of the LORP Annual Report as defined in the Final LORP EIR and the 2007 Stipulation and Order which will allow the MOU Parties and members of the public to provide comments on LORP activities, including implementation of the Interim Plan.

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Appendix 1. Comments from MOU Parties and Response to Comments by LADWP and Inyo County

BWMA Interim Management and Monitoring Plan Questions - Sierra Club

LADWP and Inyo County responses in blue

1. The plan is not clear about this, but we assume that since the new flooding regime is proposed to start in the 2021-2022 runoff year and that you will want to start drying out the units that are usually flooded starting March 1 in order to have a dry period when the proposed discing would be done before flows are released September 15, 2021. *The first units to be flooded under the Interim Plan are East Winterton and Waggoner, which are not currently flooded. However, discing for site preparation should occur as soon as the plan is approved to ensure implementation in Fall 2021. Units that are currently flooded should also be dried down as soon as possible following plan approval to prevent saltcedar encroachment into the units.*

2. Do cattails die in 4 months (May-August) without water? in a year? longer? Or does it take the discing to a depth of 60 cm and cattail/bulrush root exposed to sunlight for two months (pg. 23)? If so, then the plan should say that all discing will be conducted between May 1 and July 15 to give the two months for exposing the roots to sunlight. *Cattails can survive a year without water and then respond to water/moisture during the next growing season, or can continue growing if the area is dry but still has moisture in the soil. The plan allows for most discing to be done for preparation up to 6 months to a year in advance to allow for scheduling and performing the work along with other work required of LADWP's Construction staff. May-July may work but also may be difficult to secure personnel if responding to heavy runoff conditions or other operational needs.*

3. The plan states that there will be 500 acres of wetland/open water at the peak in 3 to 5 of the 6 unit areas (where Winterton=3 units: east, west, south). It has the schedule of which ones will be watered in which year--Table 3. However, it doesn't say how many acres will be in each unit each year, i.e. how is the 500 acres split up across the units? The plan should tell us how many acres you expect to be wetted in each unit. *While flooded acreages can be approximated in each unit, they will likely be variable as the Interim Plan is implemented and we learn what works best in practice. Consequently, LADWP cannot commit to specific acreages by unit, but can commit 500 acres flooded annually between units. Please refer to Figure 13 in the Interim Plan to view the tentative schedule for flooding each year. LADWP presently anticipates being able to flood up to approximately 210 acres in Waggoner, 200 acres in Winterton, 85 acres in East Winterton, 75 acres in South Winterton, and 140 Acres in Thibaut under the Interim Plan.*

4. How many acre-feet of water will be used from September 15 to May 1 and how does that compare to the average acre-feet of water used for flooding the BWMA now? Is there a significant difference? Could the BWMA section of the annual LORP report include a table of the input of water each month for each unit? The plan states that 500 acres would be flooded for only four months as compared to the average of 446 acres that was flooded from 2007 to 2019 runoff years (pg 6, Table 1). It seems that much less water will be used in the proposed interim plan. *We do not know how much water will be used from September 15 to May 1, which is part*

of the reason for this proposal being an interim plan. The change to a seasonal flooding regime will lead to recurring "wetting up" cycles which require more water than maintaining flooded acreage. The change to a seasonal flooding regime means some of the high ET periods will be avoided, which should reduce water use. How it all turns out is an unknown at this time, however the change to a fixed 500 acres every year, even in low runoff years as appears likely in 2021-22, means that water use may be higher in years when supplies are lower. Nine of the runoff years shown on page 6, Table 1 had flooding requirements under 400 acres, and four of the runoff years had flooded acreage requirements under 300 acres. The historical water use to date for the BMWA is approximately 4,000 AF per year, to return an average of about 400 acres. Under this plan, the BWMA section of the annual LORP report will continue to include flow changes and wetted acreage measurements.

5. **To maintain 500 acres of wetted land, water will need to be added from November 1 to March 1 depending upon how much evaporation there is. How will you know when to add water and who will keep track of this? LADWP or ICWD?** *LADWP will estimate the amount of water to add, and use feedback from LADWP staff and the official wetted acreage measurements on November 1 and March 1 to help calibrate releases in future years. Releasing the appropriate amount of water to return 500 flooded acres will be a learning process, likely requiring adjustments over multiple years, and is another reason for the proposal being a 5-year interim plan.*

6. **What impact will 4 dry months in summer have on the year-round waterfowl (mainly ducks/coots?) that may breed here and their fledglings?** *Few waterbirds likely remain year-round in Owens Valley, but migrate to, or move to BWMA to breed when conditions are favorable. Over our period of record, 2016 saw the highest summer number of waterfowl and coots at BWMA (potential breeders averaging 350 ducks and 300 coots over the two surveys in June, but only observed fewer than 20 waterfowl broods. Coots were seen nesting but broods were not estimated. Species that breed early in the season (for example Mallard), may actually find improved breeding conditions if productive open water areas persist to early May. Once hatched, upland nesting waterfowl species such as Mallard and their broods can be quite mobile and move their broods in response to changing conditions. Species that breed later (late May, June and July) such as Gadwall and American Coot may not even settle and establish territories as drawdown will be complete by May 1. In short, even under conditions of continuous flooding in summer, while waterbird nesting has occurred, we do not have any evidence that BWMA has been highly productive for breeding waterfowl.*

7. **Water depths are discussed at length for the Drew Unit and it has good, varied depths including a deep end. But the other units are not so deep and there is less information about their depths. Since we aren't using the Drew Unit, do we have the depths we need in the other units and if not, will there be any human efforts (dredging/bulldozing?) to create depths?** *From previous discing and burning in the Winterton and Waggoner Units we have an understanding of their depths; they are fairly shallow and the <25 cm goal should be achievable in many areas. Thibaut from observation is much the same. At this point, we do not anticipate bulldozing to achieve greater depths in any unit under the Interim Plan.*

8. The Drew Unit

- Why is the Drew Unit, one of the best, being dried out for all 5 years?
  Drew is not one of the best units. It was intended under the LORP EIR only to be used as a last resort but a portion of it tends to maintain open water longer than the other units due to its depth. However, this depth is not optimal for target species compared with what is available at the other units. Additionally, this pond becomes stagnant and requires a much longer dry down period than the other units which has encouraged an influx of salt cedar in previous years.

- What will be the stockwater in the Drew? or will the cows just wander over to the other units for their water and be overly concentrated there. *Each of these units are fenced and held by three different lessees who will ensure existing fences are maintained and herds do not intermix. Because each of these units have periodically been dry, stockwater availability has already been addressed. The Blackrock Ditch will supply water for livestock in the Drew area as well as along Upper Twin Lake. The Winterton Unit has stockwater provided for periods when this unit is inactive. Water is available on Lower Twin, Tillemans Ditch, and Goose Lake for Waggoner when the unit is inactive. There is a stockwater well in the Thibaut Unit that has already been the primary water source when this unit is inactive.*

- Any advantage to discing the cattails now or wait until just before it's flooded again in 6 years? And will the cuttings be hauled away or left to decay where they fall? *Discing Drew could help facilitate decomposition, however discing will be prioritized in units that will receive water under the Interim Plan to optimize habitat quality and maximize open water. When units are disced, the cut material will be left onsite.*

- What will happen to the non-cattail vegetation in this unit if no water is provided for 5 years? *The only notable non-cattail vegetation in the Drew Unit are willows, Russian olive, and salt cedar. The willows should be able to survive since they are mature trees and will no longer be flooded year round.* Will it die off and be a dust bowl? *Dust emissions are not anticipated from the proposed change. Waggoner has not been flooded for the past 8 years and has not been emissive.* Will weeds move in? *The area north of Blackrock Ditch (Drew) in 2008 was a shrub dominant saline meadow that transitioned to a saline bottom site. Some weeds could move in so the area should be monitored and treated as needed to keep invasive populations under control.*

- Is habitat reclamation/mitigation needed? *No.* Will any smartweed come back if the unit is flooded in the 6th year? *We cannot predict this based on current information. Observing the response in the Waggoner Unit (that has not been flooded for many years) during the Interim Plan period will provide useful information regarding smartweed. As mentioned in the plan we have already seen smartweed occupy sites in the southern section of Winterton in response to small scale water management. No direct seeding occurred.*

- Will there be moist-soil management there? Are there any invertebrates in the mud that should be kept alive? I heard at least 3 frogs at the Drew Unit in shallow water. How will they survive? *The amphibians can migrate to Blackrock Ditch or across the dirt road to Upper Twin Lake. There are no plans for moist soil management in Drew unless it becomes active.*

9. Why not disc the Winterton-west Unit now instead of before flooding in 2023? *The Winterton West Unit is presently flooded.*

10. Early Summer, Soil-Moisture Wetting

- Which units will be managed for soil moisture? Will the Drew Unit be one of them? *All units except Drew will be managed for moist soil plants and waterfowl habitat. There are no plans to flood the Drew Unit as part of the Interim Plan.*

- What areas will be wetted within these units? the whole unit area? or selective parts i.e. open mud areas, open vegetation areas? *To meet the 500 flooded acre objective, the units will be wetted based on past operational knowledge of how those units have flooded. Creating a diversity of habitats will be optimal, and mudflats will accompany ramping up and ramping down periods which will also coincide with the migratory season.*

- How will the wetting be done? This looks challenging. Will "wetting" be done in the same way as flooding is done now? Are there irrigation ditches that would be watered to limit flooding, but wet the soil? Will there be any new digging of ditches for the wetting? Will the wetting be selective? i.e. in the areas that don't have cattails? In looking at the site, there are large, dense areas of cattails, tules, and fragmites especially along the Blackrock Canal/Drain. The goal is to dry those areas out and wet areas that food sources can grow or the open areas. So how do you get water beyond the cattails without wetting them as well? The Blackrock Canal/Drain is a water conveyance, but also wets the soil along it and is part of the cattail problem. *Wetting/flooding the units can be a challenge in some areas. Achieving 500 flooded acres in a short time may require releasing water from multiple diversions into a unit at once. No new ditches are planned, just maintenance of existing ditches and facilities. Additionally, there will not be complete removal of cattails in each unit. Some areas will be left to provide habitat complexity. These will survive the summer if wetted during the winter, but should not expand in the summer if not wetted.*

- What is the optimum soil moisture and timing need for germinating the desirable food species, but suppressing the tamarisk from germinating? *We are unsure of exact requirements but do not want any surface water or soils at field capacity by June 15th. This will be investigated during the Interim Plan period to inform potential long-term management. Observations in the Owens Valley indicate that later flooding and drying promotes different annuals than early season flooding and drying.*

- How will soil moisture be measured? *Response to soil moisture will be measured based on plant vigor, species composition, and abundance.*

- Who will do the monitoring? LADWP or ICWD? *Both LADWP and ICWD will conduct monitoring associated with the Interim Plan.*

- How much water will it take? *The amount of water it will take is an unknown at this time, but is likely to be similar to water use under the original BWMA plan. This will be a learning process to operate the BWMA under the proposals in the Interim Plan.*

How will the vegetation in the soil moisture areas be measured? Is that the area where transects will be established? Will there be a contingency plan e.g. seeding, if natural seeding doesn't work? What are the goals for the wetted area? *Visual estimates of seedling species composition during and after the mid-spring drawdown will be tracked and a later more thorough sampling will occur in summer where a combination of techniques will be evaluated including line intercept techniques, quadrat-based percent cover estimates and species-specific seed production estimates. The goals for the wetted area are to produce a robust annual community of moist soil plants. Ultimately, seed production in units of kg/acre can be estimated, and translated into duck-use-days (DUD), or the number of ducks that could be supported per day by one acre of habitat.*

11. At the top of page 28 it states, "Soil moisture monitoring in conjunction with monitoring for noxious species will help us consider the effect of the new water regime on undesirable vegetation." However, such monitoring is not included in the plan. It should be. If noxious species do colonize the units, there should be something in the plan that would deal with it. *Noxious weeds will be mapped and treated and the timing and rate of drawdown will be adaptively managed to favor desirable moist soil plants and minimize the regeneration of undesirable vegetation.*

12. There are trees along the road next to the Blackrock Canal/Drain—are they Elms? Some in the Drew Unit side are dead. Will those remaining survive the flooding? Woody recruitment isn't a goal of the BWMA, but should it be? It's a goal of the riverine part of the LORP. I've seen ravens, raptures, and the big egrets in the trees there. *The trees are Gooding's willow and coyote willow. These trees should not be impacted by the Interim Plan and riparian tree species will be avoided when preparing the sites for flooding. Woody recruitment is not a goal of the BWMA; the goal is to create and maintain habitat that is consistent with the needs of the habitat indicator species. This will be achieved through the Interim Plan.*

13. Do all 5 units that will be flooded in the next 5 years attract birds in all the categories i.e. resident waterfowl, migrating waterfowl, rails, waders, etc. So does the flooding plan provide all the categories of birds across the flooded units each year? *All of these waterbird groups are expected to use the units to varying degrees. The BWMA is a fairly natural slough system and not constructed ponds. We expect an increase in habitat heterogeneity over current conditions, supporting these different waterbird species.*

14. All of the other units will have 8 avian surveys done from September to April two or three years except the Winterton-west unit. The plan has Winterton-west only getting the 8 avian surveys from September to April for one year during the interim period (2025-2026). Why will there be fewer avian surveys at Winterton-west? *Thank you for pointing out this inconsistency. We have revised the Interim Plan and will conduct 8 surveys of each of the 5 units each year they are active.*

Should the new plan state that CWHR will not be used for avian monitoring? It has been mentioned many times in comment letters that it is not the best way to go. *For brevity we don't include methods and models that we don't intend to use. To clarify, CWHR was never used for avian monitoring but rather to quantify potential habitat from a vegetation map. CWHR is a lookup table relating vegetation attributes to a categorical species-specific habitat suitability score, mostly parameterized from expert opinion, and its application was intended for coarse evaluation of potential habitat in areas were wildlife hadn't been inventoried. In this plan, systematic avian surveys will allow habitat quality to be represented by measurements of food resources and waterfowl abundance.*

15. Is there anything in the old plan that should be carried over into the new plan that isn't in the plan so far? I assume the new plan will replace the current one in its entirety. *LADWP and ICWD staff have worked to develop an Interim Plan based on what has been learned from managing the project as required for 14 years since implementation. While goals of providing habitat for indicator species and annual flooded acreage requirements are being met, information gleaned from this period indicates that the project may be better managed though a seasonal flooding regime as presented. Yes, the Interim Plan is intended to supersede the current plan for 5 years while the concepts of the Interim Plan are tested.*

16. There are some misleading statements on page 7 where the main components of the plan are presented:
    - In number 1, it states, "...sustained flooding occurs from fall through spring." However, the plan expects flooded units to be dry by May 1. May 1 is less than half-way through spring, so that sentence should indicate that flooding will be through mid-spring. *Correct. Language in the plan will be amended to reflect "mid-spring."*

    - In number 2, it states that the plan is to, "...flood 500 acres each between September 15 and May 1st." However, it is clear in other parts of the plan that we should expect 500 acres to only be flooded in the four months from November 1 to March 1. The flooding will be ramping up from zero to 500 acres from September 15 to November 1 and ramping down from 500 to zero acres from March 1 to May 1. *Correct. Language in the plan will be amended accordingly.*

LADWP and Inyo County responses in blue

Owens Valley Committee
P. O. Box 77
Bishop, CA 93515

Dear Inyo County Water Department,

The Owens Valley Committee is generally in support of adaptive management at Blackrock Waterfowl Management Area to achieve the full potential of mitigations agreed to by the City of Los Angeles in the Long Term Water Agreement, MOU and other related agreements. We have some specific questions about the proposed changes to the Blackrock Waterfowl Management Area listed below.

We are also concerned about the evaluative process during the lifetime of the proposed adaptive management project. Recognizing that many of the concerns expressed in our questions below may have been resolved if OVC were able to be part of the development process for the BWMA Interim Management and Monitoring Plan, we request that MOU Parties, including Inyo County and LADWP, meet annually to review the data generated during the previous year of activity. This will provide an opportunity to make corrections to the plan if necessary. Secondly, we request that the MOU Parties, Inyo County, and LADWP should convene one year prior to the cessation of this Interim Plan to provide a successor plan or to determine if a return to the previous operational conditions is needed.

In the future, providing an opportunity for MOU Parties to be a part of any plan development has several positive outcomes – incorporating scientific expertise from members of the MOU Parties, streamlining the approval process by ensuring that decisionmakers' concerns are addressed to the extent possible, and providing better plans by a collaborative teamwork approach that will be able to identify problems and unintended consequences prior to plan adoption.

We had hoped to have our questions answered during the Technical Group meeting, originally scheduled ahead of the MOU meeting. Due to the Technical Group meeting being rescheduled, we are hopeful that we can focus our efforts at the MOU meeting scheduled for February 17th at 1:00 pm to better define the process that can lead to a more inclusive, constructive and collaborative adaptive management plan going forward.

Per the 2020 -2021 LORP Workplan,

The basic concept of the adaptive management recommendations involves transitioning from year-round flooding to seasonal flooding to increase the extent of open water and reduce the extent of cattail and bulrush, which is predicted to improve habitat quality for waterfowl and shorebirds. The plan will detail habitat

objectives, the water delivery system and vegetation management. In addition, the current monitoring program will be reevaluated with the following objectives:

1. Incorporate use of satellite imagery to document flooded acreage
2. Assess the productivity of waterfowl food plants in response to management actions
3. Assess habitat quality
4. Improve the efficiency of the avian monitoring

After the fifth year of implementation, the effectiveness of the program will be reevaluated in terms of improvements in habitat quality, ease of implementation, water use, cost, and any other management concerns. Pg 12

1. What is the current extent of cattails and bulrush within the project area? *Unquantified but extensive based on qualitative data and field observation. A rough estimate is that within the typical wetted extent the units, Winterton is >98% emergent vegetation, 2% open water and Drew Slough is at >90% and ~10% open water (JH).*

2. What is the current ratio of open water to wetted acreage? How will this be monitored during the time period established by the interim plan? For how many months will the ratio of 50 percent open water to emergent wetlands be maintained? *See answer to question 1. Open water strongly absorbs photon energy in the near infrared (NIR) wavelengths whereas vegetation strongly reflects NIR, thus open water will be isolated from emergent vegetation using Landsat 8 and Sentinel 2 satellite optical and thermal sensors and a series of maps throughout the annual cycle will be archived to document extent and distribution of open water over the 5-year period. Additionally, the goal is not to maintain a 50 percent open water hemi-marsh, but rather to maximize open water habitat beyond 50% to the extent feasible.*

3. What criteria is being used to determine habitat quality? *Assessing habitat quality will be an iterative process of evaluating waterbird use versus the physical parameters.*

4. In what ways is the current avian monitoring inefficient? What steps are being planned to improve it? *Improvements in avian monitoring will be to delineate "subbasins" in all areas to be flooded such that bird use can be better tied to a physical location. This process was initiated in the BWMA in 2016, but will be used to a greater extent under the Interim Plan. The physical parameters of subbasins will be evaluated in order to tie bird use to conditions, and guide future management. In addition, more detailed behavioral observations will be recorded such as use by water depth category.*

5. If the intent is to establish the benefit of seasonal flooding for the habitat indicator species (specifically, the waterfowl), shouldn't the active and non-active units all be surveyed to establish the benefit of seasonally flooded open water extents on the "hemi-wetlands"? *Surveying non-active units and comparing it to active units would probably tell us that water is good for waterbirds but not be helpful in determining how best to manage water releases to improve waterbird habitats. If, however we look at differences in use within and between the active units, evaluating differences in water depth or vegetation development, we may see patterns that will help guide future*

management.

6. If the effectiveness of the program is being determined based on water use over the five years, what is the current water use for the Blackrock Waterfowl Management Area? Is cost the difference between current operating costs versus those incurred for adaptive management? *The interim program will evaluate changes to BWMA productivity, waterbird habitat quality, limiting cattail and bulrush growth, in addition to the operational complexity and water use required to implement the interim program. The amount of water use in the BWMA now is approximately 4,000 AF a year, to average about 400 flooded acres. The specific cost differences between current operations and maintenance costs and those under the Interim Plan are unknown.*

> The value of the LORP as migration stopover habitat has not been explored and may be underappreciated. Point count surveys in 2010 and 2015 that started in mid-May rather than the end of May, detected significant use of the LORP by neotropical songbird migrants. A limited number of surveys during migration (late April-early May 2021) will provide an approximation on the importance of the LORP as stopover habitat for migrants traveling along the Pacific Flyway. Pg 13-14

7. The goals of the adaptive management plan focus on the impact on waterfowl. Are other habitat indicator species for the LORP going to be monitored as well, such as migratory songbirds as mentioned in the 2020-2021 Workplan? How might the planned modifications impact them? *This quote from the 2020-2021 LORP Work Plan applies to the LORP Riverine/Riparian Corridor. LADWP and ICWD will be conducting additional surveys along the river in 2021 to assess the value of the river to migrants. Avian surveys will continue to record all bird species encountered as it functions to provide a more complete picture of birds and habitats of BWMA. Survey protocols for BWMA focus on recording waterbird species use by area, and will not be appropriate to analyze trends in songbirds which are typically surveyed using fixed station point counts. The open water wetlands that will be developed under this interim plan will benefit some species groups other than waterbirds by providing additional open water and wetland/water edge habitats for feeding.*

From the LORP 2020 Annual Report

> It {Tamarisk} colonizes moist areas that have been disturbed by land clearing, grading, or other disturbances that removes native plants. Once established, tamarisk is a very hardy plant that can withstand adverse soil and weather conditions. It displaces native plants as it grows in size and reproduces, creating dense stands of tall shrubs. pg 4-1In the Winterton Blackrock Waterfowl Area, LADWP personnel treated pepperweed in the spring and again in late summer of 2020. Water drawdown in this area created moist bare ground favorable to pepperweed colonization in 2019. To control these new recruits from becoming

established crews spent four weeks in the spring strategically targeting the young plants. Crews reentered in late summer for one more week to ensure effective treatment and found their efforts largely successful as locating and treating individuals during the second go around proved more tedious. This area will continue as a treatment priority in 2021. Pg 5-1

8. The most recent annual report (2020 draft) specifically references the impact land clearing, grading and other disturbances have on native plants and the succession of salt cedar. How will LADWP and ICWD ensure that the planned discing on large stretches of the BWMA will not have the same impact? *The referenced salt cedar infestations resulted from an instance where water was flooded from mid-June to mid-August. The primary tool to prevent salt cedar colonization of treated flooded units for this project is to ensure that exposed mineral soils are not wet to field capacity from mid-June to the end of August. Drawdowns and any pulse flooding will be timed to avoid wetted soils after mid-June.*

9. With the intent to dry out the Drew Unit for the lifetime of the Interim Plan, how will LADWP and ICWD ensure that a repeat of the cycle from the 2015 drying and subsequent incursion of salt cedar does not repeat. LADWP took the steps of mowing the salt cedar in 2018, but the following activation has seen the region dominated by cattails. Does mowing increase the roughness of the wetlands and encourage submerged vegetation? *To avoid a repeat scenario, the unit should not be dried out any later than February 1st, or wait until mid-August to begin drying the unit out. In 2018, the unit was mowed with a John Deere tractor and tail dragger as well as an All-Season Vehicle (rubber tracked) and there was minimal roughness generated from the mowing. Subsequent cattail colonization occurred because of flooding during the growing season.*

10. If drawdown has already been correlated with increases in pepperweed within the BWMA, how will LADWP and ICWD monitor the site for new recruits, especially in non-active units where no monitoring needs were specified in the Adaptive Management Plan? *Active units will be heavily monitored and noxious weed locations are reported to a central geodatabase co-managed with Inyo County Ag to ensure treatment prioritization of any new infestations detected. Non-active units can be incorporated into the annual noxious weed survey of the LORP which typically occurs in August.*

From the BWMA Interim Plan

Discontinue varying annual flooded acreage targets based on the projected runoff, and flood a fixed 500 acres each year between September 15th and May 1st. Wetted acreage measurements will occur on or around November 1 and March 1, with the average of those two measurements being used to determine the flooded acreage number. Pg 7

11. Functionally, this means that 500 acres of the BWMA will be flooded between November 1 and March 1 regardless of the projected runoff. Will the water releases be increased mid-cycle if the measured extents do not meet the 500 acre requirement? *Yes, water releases will be increased or decreased as appropriate relative to the 500 flooded acre target, as we see what results turn out to be and learn how to operate in this manner.*

12. Is the intent with a November 1 survey date to ensure that equilibrium has been met within the active unit after the water releases begin on September 15? Approximately, how much time will it take for the released water to propagate across 500 acres? What criteria will be used to evaluate the program of initial flooding in October (referenced in the work plan on pg 25). *The intent of the November 1 survey date is to be one of the two measurement dates, which will be averaged together, to determine the actual flooded acreage for that runoff year. We do not know how much time it will take for 500 acres to propagate, and understand the 5-year Interim Plan will involve an operations learning period. The criteria used to evaluate the initial flooding (wetted extent) will be performed in a similar way that wetted extent has been determined in the past, by walking the perimeter with GPS units.*

13. What is the projected impact to the grazing quality within the BWMA with the switch from year-round to seasonal flooding? *When units are active, there is a buffer around the flooded unit that results in an increase in forage production caused by the lateral movement of moisture. This is particularly observable in the units that have a caliche layer (e.g., Winterton, Thibaut, and the west side of the Waggoner Unit). Because the BWMA will be flooded at a set 500 acres seasonally and the units will be rotated throughout the project area, the quantity of perennial grasses (production) is expected to increase. Forage quality is unlikely to change. The areas are dominated by alkali sacaton and saltgrass, both moderate to poor quality grasses for livestock grazing. Based on vegetation data sets from adjacent areas, shifts in species composition is unlikely to occur.*

> On identified portions of active units and in areas where drawdown has occurred quickly, implement "moist soil management" by providing a rapid early summer 'irrigation' pulse of water to increase soil moisture. … Effectiveness monitoring will include documenting the flooded acreage, vegetation assessments to evaluate moist soil management implementation, and waterbird surveys to determine use by indicator species. Pg 8

14. With only two surveys of the wetted extent of the BWMA, how will the drawdown rate of the units accurately be calculated to ensure optimal timing for the growth of desirable plants? *In the plan we have scheduled May 1st to evaluate the wetted extent of the units after water has been turned off March 1st. It may also be beneficial to evaluate the rate of drawdown before May 1st during the first week of April on units that are flooded for the first time.*

15. What criteria will be used to evaluate the wetted areas of the active units at the beginning of May

to determine if additional irrigation release is needed? Is this soil moisture, vegetation health, the wetted extent of the unit, etc.? *Criteria to be assessed includes the presence of desirable annuals, soil moisture, general plant vigor, plant stage in relation to seed set, and the ability to spread water across locations but still ensure that the areas will be dry before conditions become favorable for Tamarix sp. establishment.*

16. How will only the identified portions of the active units receive an "irrigation pulse"? Will additional canals or spillways be necessary? *No additional spillways and canals are planned during implementation of the Interim Plan to facilitate faster water conveyance onto the units. Areas that are slow to dry out or will take a long period of time to receive water will be avoided. These locations are expected to be at the bottom of the units furthest from conveyances.*

Moist soil management guidelines have been developed and implemented in other parts of the U.S., but there is limited information available for use in the Intermountain West. Plant species often cited as "target" species for waterfowl either do not occur in Owens Valley, or are weedy and undesirable here. Therefore, LADWP and ICWD will work together to experiment with different approaches and develop techniques applicable to the BWMA and develop local information and targets for desirable species. Pg 9

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17. What criteria have been used to determine the moist soil management is appropriate for the Owens Valley? *The approach we will take for habitat management is two-fold and involves seasonal flooding to control the excessive growth of cattails and moist soil management to increase productivity of the basins. Seasonal flooding has been used effectively to maintain open water habitats at several sites throughout the Owens Valley including Warren Lake, Farmers Pond, and Thibaut Pond. At many locations in the Owens Valley we have observed concentrated feeding flocks of waterfowl and shorebirds in shallow water areas supporting a mix of short-lived perennials or annuals. Our objective during the 5-year interim period is to determine if and how we can replicate these conditions with targeted water application and using the concepts of moist soil management. While the application of moist soil management principles is new to the BWMA, in addition to the local anecdotal evidence, the principles have been used successfully in the West for some time. LADWP and the County will be employing methods that are well understood.*

18. When will the approaches and techniques be determined? If moist soil management techniques are required to determine if the "irrigation pulse" will occur, they must be established prior to May 1st. *Please refer to the response to question 15.*

Because of the presumed variability that may be encountered, flexibility in flooding, drawdowns, and site preparation for each unit will be needed. With close monitoring, more effective management strategies may be discovered such

as adjusting the maximum flooded extent further into spring and starting later in the fall, or the reverse with an earlier drawdown in the spring and an earlier maximum flooded extent in the fall. If adjustments are required, a maximum of 500 acres for four months would still be adhered to. Pg 10

19. Why has the word "maximum" been introduced? *Maximum can be removed. Plan will be revised to read "If adjustments are required, ~~a maximum of~~ 500 acres for four months ~~would~~ will still be adhered to."*

Compared to the Waggoner and Winterton Units, colonization by cattails and bulrush tends to occur at a slower rate in the central and southern portion of the unit likely due to greater water depth. Pg 13

20. If the intent is to increase open water extent within the BWMA, and current data suggests that greater water depth inhibits cattail and bulrush growth, then why are shallow water depths the focus of the adaptive management plan? *The absence of available surface water for cattails and bulrushes during the growing season is also an effective tool for control and is integral for moist soil management. Management proposed for the BWMA will target depths less than 25 cm (10 inches) preferred by shorebirds, dabbling ducks and large waders as discussed on page 11 of the Interim Plan. These same areas will be dry during the summer and are expected to be an effective means to controlling cattails and bulrushes.*

We look forward to your response,

Kammi Foote, President Owens Valley Committee

BWMA Interim Plan Comments from CDFW, received via email Friday, February 19, 2021

LADWP and Inyo County Responses in Purple

Hello Larry and Lori,

As requested by Inyo County (County) and the Los Angeles Department of Water and Power (LADWP) during the February 17, 2021 virtual meeting, the California Department of Fish and Wildlife (CDFW) is providing comments on the Draft Blackrock Waterfowl Management Area Interim Management and Monitoring Plan (Plan) in our roll as Trustee Agency and as a Memorandum of Understanding (MOU) Party member. The Plan was provided on February 5, 2021 to CDFW via email and the Plan was discussed in a virtual meeting with all MOU Parties on February 17, 2021.

Procedural comments:

- The Plan should discuss how, when, why and who will be making adaptive management decision (e.g., summer pulse timing and amount, draw down rate, monitoring schedules, site preparation). The Plan should also detail what method will be used to consult with the MOU Parties (e.g., meetings and reports) and the timing of consulting with the MOU Parties, including the timeline for MOU Parties to respond.

During implementation of the Interim Plan, changes to operations may be determined to be necessary in order to meet the goal of 500 flooded acres for 4 months per year with appropriate wetting and drying periods. A slight shift in timing of flooding may be warranted to better meet habitat objectives but that is unknown at this time. Decisions on pulse flows will be guided by monitoring data collected during the interim period by LADWP and Inyo County. Any implementation practices that vary from those described in the Interim Plan will be discussed in LADWP and Inyo County's LORP Annual Report, along with findings from the plan's annual monitoring efforts. LADWP and Inyo County will continue to host a public meeting following release of the LORP Annual Report as defined in the Final LORP EIR and the 2007 Stipulation and Order. The MOU Parties are welcome to attend the public meeting and provide verbal and/or written comments on the report at that time per guidance in the 2007 Stipulation and Order.

Monitoring schedules and site preparation will be jointly decided upon by both LADWP and Inyo County and incorporated into annual LORP Work Plans and Budgets required under the LORP Post Implementation Agreement, which are taken to the Inyo/Los Angeles Technical Group and approved by LADWP and Inyo County's respective Boards. Under the 1997 MOU and LORP Post Implementation Agreement, LADWP consults with CDFW on recommendations for the BWMA in years that runoff is forecast to be below normal. This occurs following the release of the runoff forecast (April) and before the annual May Standing Committee meeting where the flooded acreage for the BWMA is generally set. LADWP will continue to follow this timeline and describe management recommendations for the upcoming fiscal year per the Interim Plan in their consultation letter to CDFW during the five-year implementation period.

Technical feedback:

- The County and LADWP should identify mechanisms (such as fencing) to exclude cattle or reduce the number of cattle from the units. Cattle can compete with waterfowl for resources, specifically wetland plain foliage and seeds, as well as damage habitat and reduce the ecological value of the restoration efforts.

One of the goals of the LORP is to provide for the continuation of sustainable uses including livestock grazing and agriculture (1997 MOU). The BWMA Units are inside large pastures (Waggoner Unit = 3749 acres, Drew Unit = 2193 acres, Winterton Unit = 1567 acres, and Thibaut Unit = 4584 acres). Excluding livestock from these pastures or even reducing the stocking rate for these pastures conflicts with the goals of the LORP Project. Livestock typically arrive onto these pastures in November and leave by May. The plan calls for full inundation by November 15th; forage grown from moist-soil management will be submerged by that time and will not be targeted by livestock.

- CDFW recommends using LiDAR mapping to generate a fine-scale topographic map of the proposed units. This will allow staff to assess potential flow-paths and identify controls on wetland hydrology in the BWMA units. This will enable managers to limit water loss due to overfilling ponds and ensure timely flood-up and drawdown.

Thank you for the recommendation. We will take this under advisement. A portion of Waggoner has been mapped with LiDAR as part of a fault mapping project and the usefulness of this data for assisting with planning could be evaluated.

- CDFW recommends that small area (s) (totaling between ~10-20 acres) of one unit be kept inundated through July to provide breeding habitat for resident waterfowl. Waterfowl chicks tend to fledge by June and July, and therefore permanent flooding would not be necessary to provide habitat for breeding resident waterfowl.

Few waterbirds likely remain year-round in Owens Valley, but migrate to, or move to BWMA to breed when conditions are favorable. Over our period of record, 2016 saw the highest summer number of waterfowl and coots at BWMA (potential breeders averaging 350 ducks and 300 coots over the two surveys in June, but only observed fewer than 20 waterfowl broods. Coots were seen nesting but broods were not estimated. Species that breed early in the season (for example Mallard), may actually find improved breeding conditions if productive open water areas persist to early May. Once hatched, upland nesting waterfowl species such as Mallard and their broods can be quite mobile and move their broods in response to changing conditions. Species that breed later (late May, June, and July) such as Gadwall and American Coot may not even settle and establish territories as drawdown will be complete by May 1. In short, even under conditions of continuous flooding in summer, while waterbird nesting has occurred, we do not have any evidence that BWMA has been highly productive for breeding waterfowl.

Additionally, the Interim BWMA Plan is placing an emphasis on not facilitating an expansion of saltcedar. Drying up a unit in July will result in salt cedar germination as the wetted area decreases. Flooding the unit into July will also create an expansion of cattails and bulrushes in the pond and may require additional maintenance.

- CDFW recommends that the County and LADWP consider earlier draw-down dates as well as using multiple irrigation pulses to encourage the growth of appropriate wetland plants and maximize seed production. The plan should include an adaptive framework for making the decisions.

LADWP agrees that the date selected for drawdown is tentative and will likely require adjustments after the first year of flooding and drawdown. We also welcome the technical assistance from CDFW in optimizing the timing of flooding and drawdown. However, a late season pulse flow will need to be weighed against the possibility that summer flooding will likely increase saltcedar expansion.

- The County and LADWP should consider petitioning CDFW and the Fish and Game Commission to create a sanctuary unit within BWMA during waterfowl hunting season to provide refuge habitat for overwintering and migratory waterfowl.

This recommendation is beyond the scope of the Interim Plan. However, we will take this comment under advisement if hunting pressure is determined to be problematic as a result of the plan. If CDFW pursues a sanctuary within the BWMA, a separate agreement would be required with CDFW's commitment for enforcement as LADWP and the County are not qualified to enforce CDFW regulations.

Environmental compliance:

- The County and LADWP should identify if activities that impact the bed, bank, or channel (e.g., disking, replacement or installation of structures) of the BWMA units would be covered under an existing Lake and Streambed Alteration Agreement (1600-2008-0146-R6) or if the agreement needs to be amended to incorporate these activities.

LADWP has recently renewed Agreement 1600-2008-0146-R6 for routine maintenance activities within the LORP. Disking of tules falls under provision 14C of the Agreement. This section reads:

> *"The Applicant may breach tule stands to allow unencumbered flow during initial flow periods and generally to maintain stream flow in-stream, and into wetlands and into off-channel lakes and ponds. Tule stand breaching may be conducted using mechanical equipment."*

Most other work necessary for implementing the Interim Plan will be maintenance, repair, or replacement of existing facilities that is covered under the existing agreement. If new structures are constructed, LADWP will apply for a new lake or streambed alteration agreement or consult with CDFW to determine if they can be incorporated into the existing agreement through amendment.

- What has the County and LADWP considered for CEQA compliance, specifically necessary amendments, to the Lower Owens River Project (LORP) 2004 Environmental Impact Report?

The LORP EIR/EIS (Section 2.5.4) recommended a review of BWMA flooding cycles 10 to 15 years following LORP implementation to determine if modifying the flooding regime could improve the project and bring it closer to achieving MOU goals. The BWMA was reviewed by LADWP and Inyo County in the LORP 2019 Evaluation Report; the Interim Plan was generated as a result of the findings in that report. The Interim Plan proposes to test the concepts of seasonal flooding and moist soil management in the BWMA for a period of five years before any permanent change to the project is made. The LORP EIR

does not need to be amended as it considers the need for potential adaptive management with the project.

Per this existing framework established by the LORP documents, CDFW is available and looks forward to future coordination on this Project. In addition, CDFW would like to continue to be consulted regarding Blackrock Waterfowl Management Area (BWMA) annual operation plans and seasonal habitat flows as outlined in the 1997 MOU.

Your comment is noted.

Additional Questions:

- With the new plan framework (i.e., no permanently flooded units), what is the status of the resident breeding waterfowl habitat within the LORP? How much habitat is available for breeding waterfowl and what is the condition of the habitat (e.g., are bass present)? How much benefit is expected to be gained for migratory waterfowl vs. how much we are losing for breeding waterfowl (trade-offs).

Few waterfowl likely remain year-round in Owens Valley, but migrate to, or move to BWMA to breed when conditions are favorable. The current conditions within BWMA of limited open water habitats from yearlong flooding regimes has not resulted in stable conditions for breeding waterfowl. Perhaps the first year of flooding creates open water habitat, but by the second year as cattails fill in, habitat is reduced. Breeding waterfowl exhibit site philopatry, and will return to areas where they bred successfully the year prior, or return to their natal ground to breed. Because the breeding habitat is not stable at BWMA, a stable breeding community has not developed. Creating a small breeding waterfowl pond as you have recommended would certainly provide local benefits by supporting a small number of broods perhaps, but would likely require extensive management to maintain its productivity. We question whether the investment is worth the return as even under the "best" conditions at BWMA, fewer than 20 waterfowl broods have been observed. The most breeding activity we have seen at BWMA was in the summer of 2016, when potential breeder waterfowl averaged 350 ducks over the two surveys in June. In that year we observed fewer than 20 waterfowl broods, which is the highest number we have seen in any one survey year at BWMA. In short, even under conditions of continuous flooding in summer, while waterfowl nesting has occurred, we do not have any evidence that BWMA has been highly productive for breeding waterfowl. From a waterfowl population standpoint, Owens Valley is not a significant contributor to waterfowl reproduction for any species. So 10-20 acres of hemi-marsh in Owens Valley would be insignificant to population trends. We believe the gains we could achieve for our migratory waterfowl populations by providing a stopover location that is more reliable and of higher quality far outweighs gains we could achieve by supporting a small breeding waterfowl population.

- What will the status of the native fish be under the draft Plan's framework? Owens pupfish and Owens tui chub are listed under the 1997 MOU as indicator species for the BWMA.

Seasonal flooding of wetlands is not conducive to supporting native fish populations. However, year-round flooding defined by the project has also not been conducive to supporting native fish as these ponds quickly become a bass fishery that would outcompete any native fish species. Further, BWMA

management was originally designed to rotate and periodically dry and rest the units which would also not support long term fish populations.

- How will additional hunting pressure be managed? *See comment above.*

If you have any questions about the comments, please reach out to me through email or phone.

Thank you,

Alyssa Marquez

Environmental Scientist

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INYO/LOS ANGELES STANDING COMMITTEE

Dedicated to the advancement of mutual cooperation

MEMORANDUM

Date: May 26, 2021

To: Inyo/Los Angeles Standing Committee

From: Inyo/Los Angeles Technical Group

Item #4c. Establishment of Blackrock Waterfowl Management Area flooded acreage and discussion of an adaptive management measure to temporarily modify the management of the BWMA in accordance with an Interim Plan

The Blackrock Waterfowl Management Area (BWMA) is one of four physical features of the large scale river restoration project known as the Lower Owens River Project (LORP). Under the LORP, the primary management objective for the BWMA is to create and maintain diverse natural habitats consistent with the needs of "habitat indicator species."

In April of 1997 the following entities, organizations and an individual entered into a Memorandum of Understanding ("MOU"). The parties to the MOU are: the City of Los Angeles Department of Water and Power ("LADWP"), the County of Inyo ("County"), the California Department of Fish and Game (now the Californian Department of Fish and Wildlife ("CDFW"), the California State Lands Commission ("SLC"), the Sierra Club ("SC"), the Owens Valley Committee ("OVC") and Carla Scheidlinger as a representative of the OVC and as an individual. These entities are collectively referred to as the "Parties." (Through an amendment to the MOU in 2017, Carla Scheidlinger was removed from the Parties who receive notices or service required Section X of the MOU.)

Section II.C.4 of the MOU prescribes the following water management to achieve the primary management objective for the BWMA:

> *Approximately 500 acres of the habitat area will be flooded at any given time in a year when the runoff to the Owens River watershed is forecasted to be average or above average. In years when the runoff is forecasted to be less than average, the water supply to the area will be reduced in general proportion to the forecasted runoff in the watershed. (The runoff forecast for each year will be DWP's runoff year forecast for the Owens River Basin, which is based upon the results of its annual April 1 snow survey of the watershed.) Even in the driest years, available water will be used in the most efficient manner to maintain the habitat. The Wildlife and Wetlands Management Plan element of the LORP Plan*

will recommend the water supply to be made available under various runoff conditions and will recommend how to best use the available water in dry years. The amount of acreage to be flooded in years when the runoff is forecasted to be less than average will be set by the Standing Committee based upon the recommendations of the Wildlife and Wetlands Management Plan and in consultation with DFG.

In compliance with Section II.C.4 of the MOU, since the implementation of the LORP, water has been released year-round to flood up to 500 acres of the BWMA at any given time throughout the year when runoff is forecasted to be average or above-average. Also, in compliance with Section II.C.4, reductions in water supplies and concomitant acreages have occurred during less than average runoff years.

In 2019, as part of the work undertaken as part of the preparation of the annual LORP Evaluation Report required by the MOU, LADWP and the County Water Department reviewed the effectiveness of the BWMA management that has been conducted according to Section II.C.4 of the MOU. The focus of the review was on habitat indicator species use. The evaluation concluded that continuous year-round flooding resulted in excessive and aggressive growth of emergent vegetation leading to a reduction in open water habitat, static water conditions, and a decrease in waterbird use. While the evaluation noted that habitat indicator species continue to use BWMA, continuous inundation has resulted in the dominance of late successional wetland vegetation and significantly reduced suitable habitat for indicator species and migrating waterbirds.

Section II.E of the MOU specifically provides that if monitoring and reporting show that:

...adaptive modifications to the LORP management are necessary to ensure the successful implementation of the project, or the attainment of the LORP goals, such adaptive modifications will be made.

As a result of evaluation of the conditions in the BWMA, with the goal of improving habitat conditions in the BWMA, the Technical Group developed a 5-year Interim Management and Monitoring Plan for the BWMA (Interim Plan) (A copy of the Interim Plan including Appendix 1 to the Plan (comments on the Interim Plan received from the MOU Parties and responses to the comments by LADWP and the County) is attached as Attachment A.)

Under the adaptive management called for in the Interim Plan, instead of releasing water to the BWMA year-round to flood up to 500 acres of at any given time as currently required by the MOU, vegetation will be managed by providing seasonal rather than year-round flooding and by enhancing forage for indicator species through moist soil management. Also, under the Interim Plan, instead of varying annual flooded acreage targets based on the projected runoff, a fixed 500 acres will be flooded each year with ramping-up to begin September 15th and ramping-down to start after March 1st with complete dry down by May 1st.

Under the MOU, the amount of acreage in the BWMA to be flooded in years when the runoff is forecasted to be less than average is set by the Standing Committee in consultation with CDFW.

This year, the runoff is forecasted to be less than average. CDFW and the SLC are in concurrence that the Interim Plan be implemented as an adaptive management measure.

The Owens Valley Committee and the Sierra Club sent separate letters (copies attached) stating that they do not object to the implementation of the Interim Plan as an adaptive management measure; however, each of those organizations conditioned their agreements to the implementation of the Interim Plan on the approval of some clarifications and commitments. The following recommendations to the Standing Committee incorporate the requested clarifications and commitments.

In view of the foregoing, the Technical Group recommends to implement the Interim Plan and undertake the following five actions:

1. During the five-year period beginning in the 2021 runoff year and ending on April 15th, 2026, the provisions of Section II.C.4 of the MOU prescribing water management for the BWMA will be suspended and the provisions of the Interim Plan including the responses to comments on the Interim Plan will govern water management in the BWMA.

2. Unless the MOU has been amended prior to April 15, 2026 to change the MOU's provisions for management of the BWMA, beginning on April 16, 2026, the provisions of Section II.C.4 of the MOU prescribing water management to achieve the primary management objective for the BWMA shall govern water management for the BWMA.

3. During the five-year period when the Interim Plan is being implemented, the Technical Group shall:

   a. monitor the BWMA and to report the monitoring results in accordance with provisions of the Interim Plan;
   b. include in the LORP Annual Report the annual BWMA monitoring data, an evaluation and analysis of the results of the monitoring, a discussion of the challenges in achieving the goals, and a discussion of any problems with the implementation of the Interim Plan; and
   c. each year during the five-year period of the Interim Plan, hold a meeting with the MOU parties during May or June to discuss the monitoring results and the observations of the BWMA during the preceding year.

5. Each year during the five-year period of the Interim Plan, regardless of the amount of forecasted runoff, the amount of acreage in the BWMA to be flooded is to be set by the Standing Committee in consultation with CDFW.

6. Acknowledge that since the BWMA Plan constitutes an adaptive management measure under the MOU, the Dispute Resolution and Litigation provisions in the MOU (§§ VI, VII) apply to LADWP's implementation and compliance with the Interim Plan.