WORKSHOP MEETING OF THE
BOARD OF DIRECTORS WITH MET DIRECTORS
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
18700 Ward Street, Fountain Valley, California
June 2, 2021, 8:30 a.m.

Due to the spread of COVID-19 and as authorized by the Governor's Executive Order, MWDOC will be holding all upcoming Board and Committee meetings by Zoom Webinar and will be available by either computer or telephone audio as follows:

Computer Audio: You can join the Zoom meeting by clicking on the following link:
https://zoom.us/j/8828665300

Telephone Audio:	**(669) 900 9128 fees may apply**
	(877) 853 5247 Toll-free
Webinar ID:	**882 866 5300#**

AGENDA

PLEDGE OF ALLEGIANCE

ROLL CALL

PUBLIC PARTICIPATION/COMMENTS

At this time members of the public will be given an opportunity to address the Board concerning items within the subject matter jurisdiction of the Board. Members of the public may also address the Board about a particular Agenda item at the time it is considered by the Board and before action is taken.

The Board requests, but does not require, that members of the public who want to address the Board complete a voluntary "Request to be Heard" form available from the Board Secretary prior to the meeting.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

Determine need and take action to agendize item(s), which arose subsequent to the posting of the Agenda. (ROLL CALL VOTE: Adoption of this recommendation requires a two-thirds vote of the Board members present or, if less than two-thirds of the Board members are present a unanimous vote.)

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO MEETING

Pursuant to Government Code Section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection in the lobby of the District's business office located at 18700 Ward Street, Fountain Valley, California 92708, during regular business hours. When practical, these public records will also be made available on the District's Internet Web site, accessible at http://www.mwdoc.com.

NEXT RESOLUTION NO. 2115

ACTION ITEMS

1. H.R. 4304 (HUFFMAN) – FUTURE WESTERN WATER INFRASTRUCTURE AND DROUGHT RESILIENCY ACT

Recommendation: Adopt a Support position on H.R. 4304 (Huffman).

PRESENTATION/DISCUSSION ITEMS

2. LEGISLATIVE ACTIVITIES

a. Federal Legislative Report (NRR)
b. State Legislative Report (BBK)
c. MWDOC Legislative Matrix
d. Metropolitan Legislative Matrix

Recommendation: Review and discuss the information presented.

3. INPUT OR QUESTIONS ON MET ISSUES FROM THE MEMBER AGENCIES/MET DIRECTOR REPORTS REGARDING MET COMMITTEE PARTICIPATION

Recommendation: Receive input and discuss the information presented.

4. OVERVIEW OF WORKSHOP ON THE INTEGRATED RESOURCES PLAN (IRP) EXPERT PANEL ON CLIMATE CHANGE

Recommendation: Review and discuss the information presented.

INFORMATION ITEMS

5. MET ITEMS CRITICAL TO ORANGE COUNTY (The following items are for informational purposes only – a write up on each item is included in the packet. Discussion is not necessary unless requested by a Director)

a. MET's Finance and Rate Issues
b. MET's General Manager Recruitment Process
c. MET'S Review of Equal Employment Opportunity Policies and Practices
d. MET's Integrated Resources Plan Update
e. MET's Water Supply Conditions
f. Colorado River Issues
g. Delta Conveyance Activities and State Water Project Issues

Recommendation: Review and discuss the information presented.

6. METROPOLITAN (MET) BOARD AND COMMITTEE AGENDA DISCUSSION ITEMS

a. Summary regarding May MET Board Meeting
b. Review items of significance for MET Board and Committee Agendas

Recommendation: Review and discuss the information presented.

ADJOURNMENT

Note: Accommodations for the Disabled. Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning Maribeth Goldsby, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County at P.O. Box 20895, Fountain Valley, CA 92728. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodations should make the request with adequate time before the meeting for the District to provide the requested accommodations.

Item No. 1

ACTION ITEM
June 2, 2021

TO: Board of Directors

FROM: Robert Hunter
General Manager

Staff Contact: Heather Baez

SUBJECT: **H.R. 4304 (HUFFMAN) – FUTURE WESTERN WATER INFRASTRUCTURE AND DROUGHT RESILIENCY ACT**

STAFF RECOMMENDATION

Staff recommends the Board of Directors vote to adopt a Support position on H.R. 4304 (Huffman).

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

BILL SUMMARY

The FUTURE Western Water Act is comprehensive western water infrastructure and drought response legislation that includes proposals from Rep. Grace Napolitano's Water Recycling Investment and Improvement Act, Rep. Mike Levin's Desalination Development Act, and water-related provisions from Rep. Mike Thompson's GREEN Act. The FUTURE Western Water Act passed the House as a component of H.R. 2, last year's comprehensive House infrastructure package.

The FUTURE Western Water Act was developed last year through an online public engagement process that garnered extensive feedback from the many perspectives, interests, and needs of those with a stake in the nation's water resources, especially in the West.

ARGUMENTS IN SUPPORT

H.R. 3404 will benefit our region in a number of categories. Below is a section-by-section breakdown of the bill:

Title I—INFRASTRUCTURE DEVELOPMENT

Sec. 101: Competitive Grant Program for the Funding of Water Recycling and Reuse Projects: Incorporates Rep. Napolitano's Water Recycling Investment and Improvement Act (H.R. 1015) to support a competitive grant program for water recycling projects.

- Raises the Title XVI water recycling program funding authorization to $500 million through 2025 to support the creation of approximately 650,000 acre-feet of water each year in additional average yield.
- Raises the $20 million federal funding cap for individual Title XVI water recycling projects to $30 million.

Sec. 102: Storage Project Development Reports to Congress: Establishes an authorization process for major water storage projects owned or supported by the Department of the Interior. The process is modeled on the existing process used to authorize U.S. Army Corps of Engineers water projects through the biannual Water Resources Development Act (WRDA) process.

Sec. 103: Funding for Storage and Supporting Projects: Authorizes $750 million for multi-benefit water storage projects, including surface and groundwater storage projects, that provide both water supply reliability benefits and fish and wildlife enhancement benefits. New authorization is also provided for natural water storage projects that use natural materials to increase aquifer recharge or floodplain water storage, and for watershed restoration projects that improve water supply reliability.

Sec. 104: Extension of Existing Requirements for Grandfathered Storage Projects: Extends the existing federal storage project approval process under the Water Infrastructure Improvements for the Nation (WIIN) Act for several water storage projects that have partially advanced under the WIIN project approval process.

Sec. 105: Desalination Project Development: Incorporates Rep. Levin's Desalination Development Act to support a competitive grant program for water desalination projects. The bill raises the existing desalination program funding authorization to $260 million through 2026 to support the creation of approximately 100,000 acre-feet of water each year in additional average yield.

Sec. 106: Assistance for Disadvantaged Communities without Adequate Drinking Water: Authorizes $100 million for a new Bureau of Reclamation grant program to help underserved communities facing significant declines in drinking water quantity or quality. Funding can be used for a variety of drinking water relief activities, including to help households connect to existing water distribution facilities and to pay for emergency drinking water supply projects.

Sec. 107: Water Infrastructure Fund: Establishes a Water Infrastructure Fund to pay for long- term water infrastructure and drought response needs. Beginning in 2032, the Fund would receive
$300 million each fiscal year from revenues that would otherwise be deposited into the Reclamation Fund. The Reclamation Fund was established to support western water projects and now has a surplus of more than $17 billion because of insufficient congressional appropriations from the Reclamation Fund. The following new infrastructure investments would be made each year:

- $100 million per year for Title XVI water recycling and reuse projects
- $100 million per year for cooperative watershed management and WaterSMART water- use efficiency projects
- $100 million per year for Bureau of Reclamation dam safety projects

Title II—IMPROVED TECHNOLOGY AND DATA

Sec. 201: Reauthorization of Water Availability and Use Assessment Program: Amends and reauthorizes funding for the National Water Availability and Use Assessment Program. Directs the U.S. Geological Survey to evaluate national water availability trends in reuse and desalination. Reauthorizes appropriations for grants to improve states' water data and expands eligibility to Tribes. Allows states and Tribes to apply for additional funding after five years instead of having a permanent cap in grant funding awards to encourage continued data collection from states and Tribes.

Sec. 202: Modifications to Income Exclusion for Conservation Subsidies: Incorporates section 305 of Rep. Thompson's H.R. 848 to expand the income tax exclusion for homeowners who receive rebates from water utilities to purchase and install water conservation systems in residential homes. (Tax parity for water rebates)

Sec. 203: X-Prize for Water Technology Breakthroughs: Establishes an expanded "X-Prize" for the development of new water technologies, including technological advances in water desalination and water reuse and recycling.

Sec. 204: Study Examining Sediment Transport: Directs the National Academy of Sciences to examine existing science and management guidance for the transport of sediment flows and to identify future research areas and recommendations related to modeling and quantifying sediment flows.

Sec. 205: Federal Priority Streamgages: Directs the Department of the Interior to make all streamgages identified by the U.S. Geological Survey as "Federal Priority Streamgages" operational within 10 years. Authorizes appropriations to achieve this directive.

Sec. 206: Study Examining Climate Vulnerabilities at Federal Dams: Directs the National Academy of Sciences to study the impact of climate change on the safety of U.S. Bureau of Reclamation dams and identify the dams most vulnerable to climate-related safety risks in upcoming years.

Sec. 207: Innovative Technology Adoption: Directs the Department of the Interior to include some grant funding priority to help facilitate the adoption of certain priority water technologies, where appropriate. Priority technologies include those that address water loss from pipelines, real- time weather and reservoir operations monitoring, real-time groundwater and water infrastructure monitoring, and water-use efficiency improvements.

Sec. 208: Forecast-Informed Water Control Manual Updates: Directs the U.S. Army Corps of Engineers to update Water Control Manuals to improve water operations based on modern weather forecasting technology.

Title III—ECOSYSTEM PROTECTION AND RESTORATION

Sec. 301: Waterbird Habitat Creation Program: Establishes a grant program to provide voluntary incentives to farmers to create temporary habitat by flooding farmlands at crucial times for bird migration, including along the Pacific Flyway.

Sec. 302: Competitive Grant Program for the Funding of Watershed Health Projects: Directs the Department of the Interior to establish a grant program for habitat restoration projects in the western states, including projects that restore native species, protect against invasive species, and enhance commercial and recreational fishing.

Sec. 303: Support for Refuge Water Deliveries: Directs the Department of the Interior to prepare a report on impediments to compliance with required water deliveries to wildlife refuges in California's Central Valley. Also requires the development of an ecological monitoring and evaluation program for Central Valley wildlife refuges and the development of a construction priority list for the completion of conveyance construction projects at wildlife habitat areas. Authorizes $25 million to carry out this section and to provide for adequate staffing to advance the refuge water supply delivery objectives.

Sec. 304: Drought Planning and Preparedness for Critically Important Fisheries: Directs federal agencies to develop proactive plans to sustain the survival of commercially and recreationally important fisheries, ESA-listed fish, and important tribal fisheries during future droughts in the western states without affecting any obligation under federal or state environmental law. Provides a list of proactive strategies that should be investigated and authorizes funding for fish, stream, and hatchery activities related to fish recovery efforts.

Sec. 305: Reauthorization of the Fisheries Restoration and Irrigation Mitigation Act of 2000: Authorizes $25 million through 2028 for fish passage projects under the Fisheries Restoration and Irrigation Mitigation Act to support voluntary fish screen and passage projects in Oregon, Washington, California, Montana, and Idaho.

Sec. 306: Combating water theft for illegal marijuana cultivation: Directs several federal agencies to develop a plan to address illegal water diversions for marijuana cultivation in California and other drought-prone states. Creates a structure for funding remediation of trespass marijuana grow sites that threaten to impact watersheds and water quality.

Sec. 307: Sustaining biodiversity during droughts: Directs the Bureau of Reclamation to analyze drought impacts on native biodiversity in major western river basins and to consider and develop strategies to help sustain native biodiversity during future droughts.

Title IV—WATER JOB TRAINING AND EDUCATION

Sec. 401: Water Resource Education: Authorizes the Department of the Interior to provide financial assistance and support for water education activities, including activities to foster cooperation in addressing water resources and management challenges and to provide training for the professional development of legal and technical professionals in the water sector.

Sec. 402: Water Sector Career Grant Programs: Directs the Department of the Interior to establish a grant program for water sector career training. Authorizes $10 million annually through 2026 to address water industry concerns about a looming "brain drain" in the water sector and help train the next generation of water managers.

Title V—MISCELLANEOUS

Sec. 501: Offset: Establishes a one-time process to identify and deauthorize inactive Bureau of Reclamation water projects where no application for federal funding has been received and no construction has occurred in the previous 10 years. Project sponsors would have the opportunity to provide notice of intent to initiate construction of the project to forestall deauthorization. The deauthorization process is closely modeled on a deauthorization process used for U.S. Army Corps of Engineers water projects.

ARGUMENTS IN OPPOSITION

In Section 102 (storage) there is language pertaining to fish and wildlife benefits that does go above and beyond current law, which is already stringent. Concerns have been raised by some agriculture districts related to this section (contained on pages 24-25 of the bill). Of note, these provisions do not apply to any projects already authorized by the Bureau of Reclamation under the current WIIN Act as stated in Section 104.

BOARD OPTIONS

Option #1

- Adopt a support position on H.R. 3404.

Fiscal Impact: Potentially millions to the region and state

Business Analysis: This measure contains language that would address tax parity for water rebates, additional funding for desalination and recycling projects, storage, clean drinking water, and fisheries.

Budgeted (Y/N): n/a	Budgeted amount: n/a	Core X	Choice __
Action item amount: None	Line item:		
Fiscal Impact (explain if unbudgeted):			

Option #2

- Take no action

Fiscal Impact: Same as above
Business Analysis: Same as above

STAFF RECOMMENDATION

Option #1

ATTACHED:

- H.R. 3404 Full Text

.....

(Original Signature of Member)

117TH CONGRESS
1ST SESSION

H. R. _____

To provide drought preparedness and improved water supply reliability to the Nation.

IN THE HOUSE OF REPRESENTATIVES

Mr. HUFFMAN introduced the following bill; which was referred to the Committee on _____

A BILL

To provide drought preparedness and improved water supply reliability to the Nation.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Furthering Underutilized Technologies and Unleashing Responsible Expenditures for Western Water Infrastructure and Drought Resiliency Act'' or the ''FUTURE Western Water Infrastructure and Drought Resiliency Act''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Findings.
Sec. 3. Definitions.

TITLE I—INFRASTRUCTURE DEVELOPMENT

Sec. 101. Competitive grant program for the funding of water recycling and reuse projects.
Sec. 102. Storage project development reports to Congress.
Sec. 103. Funding for storage and supporting projects.
Sec. 104. Extension of existing requirements for grandfathered storage projects.
Sec. 105. Desalination project development.
Sec. 106. Assistance for disadvantaged communities without adequate drinking water.
Sec. 107. Water infrastructure fund.

TITLE II—IMPROVED TECHNOLOGY AND DATA

Sec. 201. Reauthorization of water availability and use assessment program.
Sec. 202. Modifications to income exclusion for conservation subsidies.
Sec. 203. X-prize for water technology breakthroughs.
Sec. 204. Study examining sediment transport.
Sec. 205. Federal priority streamgages.
Sec. 206. Study examining climate vulnerabilities at Federal dams.
Sec. 207. Innovative technology adoption.
Sec. 208. Forecast-informed water control manual updates.

TITLE III—ECOSYSTEM PROTECTION AND RESTORATION

Sec. 301. Waterbird habitat creation program.
Sec. 302. Competitive grant program for the funding of watershed health projects.
Sec. 303. Support for refuge water deliveries.
Sec. 304. Drought planning and preparedness for critically important fisheries.
Sec. 305. Reauthorization of the Fisheries Restoration and Irrigation Mitigation Act of 2000.
Sec. 306. Combating water theft for illegal marijuana cultivation.
Sec. 307. Sustaining biodiversity during droughts.

TITLE IV—WATER JOB TRAINING AND EDUCATION

Sec. 401. Water resource education.
Sec. 402. Water sector career grant programs.

TITLE V—MISCELLANEOUS

Sec. 501. Offset.

SEC. 2. FINDINGS.

Congress finds the following:

(1) As expressed in the Water Supply Act of 1958, Congress has recognized the primary responsibilities of the States and local interests in developing water supplies for domestic, municipal, industrial, and other purposes, and that the Federal Government should participate and cooperate in these projects.

(2) There is a long and robust legal precedent of Federal deference to State primacy in water law and the legal system that States establish for resolving disputes over water use, with the Supreme Court finding in *Kansas* v. *Colorado* that ''Congress cannot enforce either rule upon any State'' in matters of the right regulation of water rights.

(3) The entire American West and Southwest are facing forecasts of prolonged droughts that will leave States facing major water shortages and catastrophic wildfires.

(4) Recent periods of drought in the American West have also occurred with higher temperatures and reduced snowpack and led to what climate scientists recently concluded was possibly the most severe drought in California in over 1,200 years.

(5) The Colorado River has been under drought conditions since 2000, and the chances of a

''megadrought'' striking the Southwest and central Great Plains are on the rise according to forecasts from climate scientists.

(6) Addressing water shortages today and in the future will require action from the Federal Government that respects State, local, and Tribal law, and that the policies that respond to droughts should not pit State against State, region against region, or stakeholders against one another.

(7) Congress recognizes the range of separate, distinct Federal agencies with authorities and resources that play a role in water supply, including treatment and remediation of groundwater, surface water storage, water recycling and reuse, and other clean water infrastructure, and to avoid duplication and ensure the efficiency and effectiveness of these various Federal roles, there is a need for improved coordination, streamlining, and collaboration, both among Federal agencies and with drought-impacted States and localities.

(8) It is the policy of the United States to respect California's coequal goals, established by the Delta Reform Act of 2009, of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem, and

these coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

(9) The State of California, in CA Water Code section 85021, has established a policy to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency; California law directs each region that depends on water from the Delta watershed to improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts; and it is the intent of Congress to ensure that Federal programs, policies, and investments respect and compliment, and do not undermine or conflict with, California's policy of reducing reliance on Delta diversions.

(10) Federal agencies should operate the Bureau of Reclamation's Central Valley Project in California in compliance with all Federal and State laws, including biological opinions, while working with the

State to maximize operational flexibility in order to deliver as much water as reasonably possible to drought-impacted areas and minimize the harm suffered by fish and wildlife as a result of drought.

(11) The Reclamation Fund was established in 1902 with the express purpose of providing for the construction and maintenance of water infrastructure for the economic development of the Western States and territories, with revenues deposited into the fund out of public land sales within these Western States and territories.

(12) Since 1902, the Reclamation Fund has been supplemented with additional revenues from Federal water resources development and mineral and natural resource leases on Federal lands, such that the surplus within the Reclamation Fund now exceeds $17,000,000,000.

(13) The Reclamation Fund represents a transfer of a portion of receipts from Federal lands and Federal natural resources in the West back to the West for water development, and the Reclamation Fund's surplus should be used to assist the West in meeting its water needs for public health and safety, for expanding water recycling, reuse, and reclama-

tion, and for meeting the emergency needs of communities impacted by drought.

(14) The Federal funding provided in this Act will support near-term and long-term water supply reliability for the Western States, including through the use of the Reclamation Fund surplus to support long-term water infrastructure investment.

(15) The Federal funding authorized in title I of this Act can help provide additional water supplies to the Western States in the near-term, including 650,000 acre-feet per year in additional average yield through water reuse projects, 350,000 acre-feet per year in additional average yield through water storage projects, and 100,000 acre-feet per year in additional average yield through water desalination projects.

(16) Robust Federal investment and support is needed to assist the Western States in developing future drought resiliency in the face of climate change, which will continue to exacerbate existing water supply challenges in an already arid region of the country.

SEC. 3. DEFINITIONS.

In this Act:

(1) RELEVANT COMMITTEES OF CONGRESS.—The term ''relevant committees of Congress'' means—

(A) the Committee on Natural Resources of the House of Representatives; and

(B) the Committee on Energy and Natural Resources of the Senate.

(2) RECLAMATION STATE.—The term ''Reclamation State'' means a State or territory described in the first section of the Act of June 17, 1902 (32 Stat. 388, chapter 1093; 43 U.S.C. 391).

(3) SECRETARY.—The term ''Secretary'' means the Secretary of the Interior, unless otherwise defined in a particular provision.

(4) INDIAN TRIBE.—The term ''Indian Tribe'' has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304)).

TITLE I—INFRASTRUCTURE DEVELOPMENT

SEC. 101. COMPETITIVE GRANT PROGRAM FOR THE FUNDING OF WATER RECYCLING AND REUSE PROJECTS.

(a) COMPETITIVE GRANT PROGRAM FOR THE FUNDING OF WATER RECYCLING AND REUSE PROJECTS.—Sec-

tion 1602(f) of the Reclamation Wastewater and Groundwater Study and Facilities Act (title XVI of Public Law 102–575; 43 U.S.C. 390h et seq.) is amended by striking paragraphs (2) and (3) and inserting the following:

"(2) PRIORITY.—When funding projects under paragraph (1), the Secretary shall give funding priority to projects that meet one or more of the following criteria:

"(A) Projects that are likely to provide a more reliable water supply for States and local governments.

"(B) Projects that are likely to increase the water management flexibility and reduce impacts on environmental resources from projects operated by Federal and State agencies.

"(C) Projects that are regional in nature.

"(D) Projects with multiple stakeholders.

"(E) Projects that provide multiple benefits, including water supply reliability, eco-system benefits, groundwater management and enhancements, and water quality improvements.".

(b) AUTHORIZATION OF APPROPRIATIONS.—Section 1602(g) of the Reclamation Wastewater and Groundwater

Study and Facilities Act (title XVI of Public Law 102–575; 43 U.S.C. 390h et seq.) is amended—

(1) by striking ''$50,000,000'' and inserting ''$500,000,000 through fiscal year 2025''; and

(2) by striking ''if enacted appropriations legislation designates funding to them by name,''.

(c) DURATION.—Section 4013 of the WIIN Act (43 U.S.C. 390b(2)) is amended—

(1) in paragraph (1), by striking ''and'';

(2) in paragraph (2), by striking the period and inserting ''; and''; and

(3) by adding at the end the following:

''(3) section 4009(c).''.

(d) LIMITATION ON FUNDING.—Section 1631(d) of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h–13(d)) is amended by striking ''$20,000,000 (October 1996 prices)'' and inserting ''$30,000,000 (January 2019 prices)''.

SEC. 102. STORAGE PROJECT DEVELOPMENT REPORTS TO CONGRESS.

(a) DEFINITIONS.—In this section:

(1) NON-FEDERAL INTEREST.—The term ''Non-Federal interest'' means an eligible entity or a qualified partner (as defined in section 103(a)).

(2) PROJECT REPORT.—The term ''project report'' means the following documents prepared for a Federal storage project or major federally assisted storage project (as defined in section 103(a)):

(A) A feasibility study carried out pursuant to the Act of June 17, 1902 (32 Stat. 388, chapter 1093), and Acts supplemental to and amendatory of that Act (43 U.S.C. 371 et seq.) including any feasibility or equivalent studies prepared for a project pursuant to section 103(c)(7)(B) or section 103(d)(7)(B)(i) of this Act.

(B) The Fish and Wildlife Coordination Act report described in section 103(g) of this Act prepared for a project.

(C) Any final document prepared for a project pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(D) A brief description of any completed environmental permits, approvals, reviews, or studies required for a project under any Federal law other than the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(E) A description of any determinations made by the Secretary under section

103(d)(7)(A)(ii) for each project and the basis for such determinations.

(3) PROJECT STUDY.—

(A) FEDERAL STORAGE PROJECT.—With respect to a Federal storage project (as defined in section 103(a)), the term ''project study'' means a feasibility study carried out pursuant to the Act of June 17, 1902 (32 Stat. 388, chapter 1093), and Acts supplemental to and amendatory of that Act (43 U.S.C. 371 et seq.) including a feasibility study prepared pursuant to section 103(c)(7)(B) of this Act.

(B) MAJOR FEDERALLY ASSISTED STORAGE PROJECT.—With respect to a major federally assisted storage project (as defined in section 103(a)), the term ''project study'' means the feasibility or equivalent studies prepared pursuant to section 103(d)(7)(B)(i) of this Act.

(b) ANNUAL REPORTS.—Not later than February 1 of each year, the Secretary shall develop and submit to the relevant committees of Congress an annual report, to be entitled ''Report to Congress on Future Storage Project Development'', that identifies the following:

(1) PROJECT REPORTS.—Each project report that meets the criteria established in subsection (d)(1)(A).

(2) PROPOSED PROJECT STUDIES.—Any proposed project study submitted to the Secretary by a non-Federal interest pursuant to subsection (c) that meets the criteria established in subsection (d)(1)(A).

(3) PROPOSED MODIFICATIONS.—Any proposed modification to an authorized project or project study that meets the criteria established in subsection (d)(1)(A) that—

(A) is submitted to the Secretary by a non-Federal interest pursuant to subsection (c); or

(B) is identified by the Secretary for authorization.

(c) REQUESTS FOR PROPOSALS.—

(1) PUBLICATION.—Not later than May 1 of each year, the Secretary shall publish in the Federal Register a notice requesting proposals from non-Federal interests for project reports, proposed project studies, and proposed modifications to authorized projects and project studies to be included in the annual report.

(2) DEADLINE FOR REQUESTS.—The Secretary shall include in each notice required by this subsection a requirement that non-Federal interests submit to the Secretary any proposals described in paragraph (1) by not later than 120 days after the date of publication of the notice in the Federal Register in order for the proposals to be considered for inclusion in the annual report.

(3) NOTIFICATION.—On the date of publication of each notice required by this subsection, the Secretary shall—

(A) make the notice publicly available, including on the internet; and

(B) provide written notification of the publication to the relevant committees of Congress.

(d) CONTENTS.—

(1) PROJECT REPORTS, PROPOSED PROJECT STUDIES, AND PROPOSED MODIFICATIONS.—

(A) CRITERIA FOR INCLUSION IN REPORT.—The Secretary shall include in the annual report only those project reports, proposed project studies, and proposed modifications to authorized projects and project studies that—

(i) are related to the missions and authorities of the Department of the Interior;

(ii) require specific congressional authorization, including by an Act of Congress;

(iii) have not been congressionally authorized;

(iv) have not been included in any previous annual report; and

(v) if authorized, could be carried out by the Department of the Interior or a non-Federal entity eligible to carry out a major federally assisted storage project under section 103.

(B) DESCRIPTION OF BENEFITS.—

(i) DESCRIPTION.—The Secretary shall describe in the annual report, to the extent applicable and practicable, for each proposed project study and proposed modification to an authorized project or project study included in the annual report, the benefits, as described in clause (ii), of each such study or proposed modification.

(ii) BENEFITS.—The benefits (or expected benefits, in the case of a proposed project study) described in this clause are benefits to—

(I) water supply and water management;

(II) the environment, including fish and wildlife benefits estimated under section 103(g) for a project report or proposed modification to an authorized project;

(III) the protection of human life and property;

(IV) the national economy; or

(V) the national security interests of the United States.

(C) IDENTIFICATION OF OTHER FACTORS.—The Secretary shall identify in the annual report, to the extent practicable—

(i) for each proposed project study included in the annual report, the non-Federal interest that submitted the proposed project study pursuant to subsection (c); and

(ii) for each proposed project study and proposed modification to a project or project study included in the annual report, whether the non-Federal interest has demonstrated—

(I) that local support exists for the proposed project study or proposed modification to an authorized project or project study (including the project that is the subject of the proposed project study or the proposed modification to an authorized project study); and

(II) the financial ability to provide the required non-Federal cost share.

(2) TRANSPARENCY.—The Secretary shall include in the annual report, for each project report, proposed project study, and proposed modification to a project or project study included under paragraph (1)(A)—

(A) the name of the associated non-Federal interest, including the name of any non-Federal interest that has contributed, or is expected to contribute, a non-Federal share of the cost of—

(i) the project report;

(ii) the proposed project study;

(iii) the authorized project study for which the modification is proposed; or

(iv) construction of—

(I) the project that is the subject of—

(aa) the project report;

(bb) the proposed project study; or

(cc) the authorized project study for which a modification is proposed; or

(II) the proposed modification to a project;

(B) a letter or statement of support for the project report, proposed project study, or proposed modification to a project or project study from each associated non-Federal interest;

(C) the purpose of the project report, proposed project study, or proposed modification to a project or project study;

(D) an estimate, to the extent practicable, of the Federal, non-Federal, and total costs of—

(i) the proposed modification to an authorized project study; and

(ii) construction of—

(I) the project that is the subject of—

(aa) the project report; or

(bb) the authorized project study for which a modification is proposed, with respect to the change in costs resulting from such modification; or

(II) the proposed modification to an authorized project; and

(E) an estimate, to the extent practicable, of the monetary and nonmonetary benefits of—

(i) the project that is the subject of—

(I) the project report; or

(II) the authorized project study for which a modification is proposed, with respect to the benefits of such modification; or

(ii) the proposed modification to an authorized project.

(3) CERTIFICATION.—The Secretary shall include in the annual report a certification stating that each project report, proposed project study, and proposed modification to a project or project study

included in the annual report meets the criteria established in paragraph (1)(A).

(4) APPENDIX.—The Secretary shall include in the annual report an appendix listing the proposals submitted under subsection (c) that were not included in the annual report under paragraph (1)(A) and a description of why the Secretary determined that those proposals did not meet the criteria for inclusion under such paragraph.

(e) SPECIAL RULE FOR INITIAL ANNUAL REPORT.—Notwithstanding any other deadlines required by this section, the Secretary shall—

(1) not later than 60 days after the date of the enactment of this Act, publish in the Federal Register a notice required by subsection (c)(1); and

(2) include in such notice a requirement that non-Federal interests submit to the Secretary any proposals described in subsection (c)(1) by not later than 120 days after the date of publication of such notice in the Federal Register in order for such proposals to be considered for inclusion in the first annual report developed by the Secretary under this section.

(f) PUBLICATION.—Upon submission of an annual report to Congress, the Secretary shall make the annual

report publicly available, including through publication on the Internet.

(g) CONSULTATION.—The Secretary, acting through the Commissioner of Reclamation, shall confer with the relevant committees of Congress before submitting each annual report prepared under subsection (b).

(h) SUBMISSION OF INDIVIDUAL PROJECT REPORTS.—Upon completion, project reports, including all required documents and reports under subsection (b), shall—

(1) be submitted to the relevant committees of Congress; and

(2) include discussion of the following findings by the Secretary—

(A) whether the project is deemed to be feasible in accordance with the applicable feasibility standards under section 103 and the reclamation laws;

(B) the degree to which the project will provide benefits (or expected benefits, in the case of a proposed project study) as described in subsection (d)(1)(B)(ii) and other benefits under the reclamation laws; and

(C) whether the project complies with Federal, State, and local laws.

SEC. 103. FUNDING FOR STORAGE AND SUPPORTING PROJECTS.

(a) DEFINITIONS.—In this section:

(1) DESIGN; STUDY.—

(A) IN GENERAL.—The terms ''design'' and ''study'' include any design, permitting, study (including a feasibility study), materials engineering or testing, surveying, or preconstruction activity relating to a Federal storage project, a major federally assisted storage project, a natural water storage project, or a standard federally assisted storage project as defined in this subsection.

(B) EXCLUSIONS.—The terms ''design'' and ''study'' do not include an appraisal study or other preliminary review intended to determine whether further study is appropriate for a Federal storage project, a major federally assisted storage project, a natural water storage project, or a standard federally assisted storage project as defined in this subsection.

(2) ELIGIBLE ENTITY.—The term ''eligible entity'' means—

(A) any State, political subdivision of a State, department of a State, or public agency organized pursuant to State law;

(B) an Indian Tribe or an entity controlled by an Indian Tribe;

(C) a water users' association;

(D) an agency established by an interstate compact; and

(E) an agency established under State law for the joint exercise of powers.

(3) FEDERAL STORAGE PROJECT.—The term ''Federal storage project'' means—

(A) any project in a Reclamation State that involves the construction, expansion, upgrade, or capital repair of a water storage facility or a facility conveying water to or from a surface or groundwater storage facility—

(i) to which the United States holds title; and

(ii) that was authorized to be constructed, operated, and maintained pursuant to—

(I) the reclamation laws; or

(II) the Act of August 11, 1939 (commonly known as the Water Conservation and Utilization Act (16 U.S.C. 590y et seq.)); or

(B) an ecosystem restoration project for watershed function, including a forest or watershed restoration project, that, consistent with maintaining and enhancing long-term ecological and hydrological function and resilience, benefits the quality, timing, and other qualities of water available for release on a long-term basis from a water storage facility in a Reclamation State—

(i) to which the United States holds title; and

(ii) that was authorized to be constructed, operated, and maintained pursuant to—

(I) the reclamation laws; or

(II) the Act of August 11, 1939 (commonly known as the Water Conservation and Utilization Act (16 U.S.C. 590y et seq.)).

(4) FISH AND WILDLIFE BENEFITS.—The term ''fish and wildlife benefits'' means overall benefits or improvements to aquatic ecosystems and native fish and wildlife within a Reclamation State, including benefits for a wildlife refuge, that are in excess of—

(A) existing fish and wildlife mitigation or compliance obligations under—

(i) the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.);

(ii) the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.);

(iii) the Water Resources Development Act of 1986 (Public Law 99–662; 100 Stat. 4082);

(iv) the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.);

(v) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

(vi) any other Federal law, State law or other existing requirement in regulations, permits, contracts, licenses, grants, or orders and decisions from courts or State or Federal agencies; or

(B) existing environmental mitigation or compliance obligations as defined in section 6001(a)(32) of title 23 of the California Code of Regulations, with respect to benefits and improvements to aquatic ecosystems and native fish and wildlife within the State of California, in recognition of the State of California's exist-

ing prohibitions against the use of public funds for environmental mitigation required under Federal and State law.

(5) MAJOR FEDERALLY ASSISTED STORAGE PROJECT.—The term ''major federally assisted storage project'' means any project in a Reclamation State that—

(A) involves the construction, expansion, upgrade, or capital repair by an eligible entity or qualified partner of—

(i) a surface or groundwater storage facility that is not federally owned; or

(ii) a facility that is not federally owned conveying water to or from a surface or groundwater storage facility; or

(B) is an ecosystem restoration project for watershed function, including a forest or watershed restoration project, that, on a long-term basis, benefits the quality, timing, and other qualities of water available for release from a project described in subparagraph (A) consistent with maintaining and enhancing long-term ecological and hydrological function and resilience in a Reclamation State; and

(C) provides benefits described in section 102(d)(1)(B)(ii); and

(D) has a total estimated cost of more than $250,000,000.

(6) NATURAL WATER STORAGE PROJECT.—The term ''natural water storage project'' means a single project, a number of distributed projects across a watershed, or the redesign and replacement, or removal, of built infrastructure to incorporate elements, where the project or elements have the following characteristics:

(A) Uses primarily natural materials appropriate to the specific site and landscape setting.

(B) Largely relies on natural riverine, wetland, hydrologic, or ecological processes.

(C) Results in aquifer recharge, transient floodplain water retention, reconnection of historic floodplains to their stream channels with water retention benefits within a Reclamation State, or results in improved ecological forest watershed condition if it is a project located within the State of California.

(D) Is designed to produce two or more of the following environmental benefits:

(i) Stream flow changes beneficial to watershed health.

(ii) Fish and wildlife habitat or migration corridor restoration.

(iii) Floodplain reconnection and inundation.

(iv) Riparian or wetland restoration and improvement.

(7) STANDARD FEDERALLY ASSISTED STORAGE PROJECT.—The term ''standard federally assisted storage project'' means any project in a Reclamation State that—

(A) involves the construction, expansion, upgrade, or capital repair by an eligible entity or qualified partner of—

(i) a surface or groundwater storage facility that is not federally owned; or

(ii) a facility that is not federally owned conveying water to or from a surface or groundwater storage facility; or

(B) is an ecosystem restoration project for watershed function, including a forest or watershed restoration project, that, on a long-term basis, benefits the quality, timing, and other qualities of water available for release from a

project described in subparagraph (A) consistent with maintaining and enhancing long-term ecological and hydrological function and resilience in a Reclamation State;

(C) provides benefits described in section 102(d)(1)(B)(ii); and

(D) has a total estimated cost of $250,000,000 or less.

(8) QUALIFIED PARTNER.—The term ''qualified partner'' means a non-profit organization operating in a Reclamation State.

(9) RECLAMATION LAWS.—The term ''reclamation laws'' means Federal reclamation law (the Act of June 17, 1902 (32 Stat. 388; chapter 1093)), and Acts supplemental to and amendatory of that Act.

(b) STORAGE PROJECT FUNDING.—There is authorized to be appropriated a total of $750 million for use by the Secretary through fiscal year 2026 to advance—

(1) Federal storage projects within a Reclamation State in accordance with subsection (c);

(2) major federally assisted storage projects within a Reclamation State in accordance with subsection (d);

(3) natural water storage projects within a Reclamation State in accordance with subsection (e);

(4) standard federally assisted storage projects within a Reclamation State in accordance with subsection (f); or

(5) grandfathered storage projects in accordance with section 104.

(c) FEDERAL STORAGE PROJECTS.—

(1) AGREEMENTS.—On request of an eligible entity or qualified partner and in accordance with this subsection, the Secretary may negotiate and enter into an agreement on behalf of the United States for the design, study, construction, expansion, upgrade, or capital repair of a Federal storage project located in a Reclamation State.

(2) FEDERAL SHARE.—Subject to the requirements of this subsection, the Secretary may fund up to 50 percent of the design and study costs of a Federal storage project and up to 50 percent of the construction costs of a Federal storage project.

(3) CONDITIONS FOR FEDERAL DESIGN AND STUDY FUNDING.—Funding provided under this subsection may be made available for the design and study of a Federal storage project if—

(A) the Secretary secures a cost share agreement for design and study costs providing sufficient upfront funding to pay the non-Fed-

eral share of the design and study costs of the Federal storage project; and

(B) the feasibility study for the Federal storage project is congressionally authorized by reference to the annual Report to Congress on Future Storage Project Development prepared under section 102.

(4) CONDITIONS FOR FEDERAL CONSTRUCTION FUNDING.—Funding provided under this subsection for the construction of a Federal storage project may be made available to a project if—

(A) the project has been authorized by name in a Federal statute;

(B) the project is a multi-benefit project that would, at a minimum, provide water supply reliability benefits (including additional storage, conveyance, or new firm yield) and fish and wildlife benefits as determined by the final estimate prepared pursuant to subsection (g);

(C) construction funding for the project is congressionally approved by reference to the annual Report to Congress on Future Storage Project Development prepared under section 102;

(D) the Secretary secures an agreement providing sufficient upfront funding to pay the non-Federal share of the construction costs of the Federal storage project; and

(E) The Secretary determines—

(i) the project is technically and financially feasible;

(ii) the project provides water supply reliability benefits for a State or local government and fish and wildlife benefits; and

(iii) in return for the Federal cost-share investment in the project, at least a proportionate share of the project benefits are for—

(I) fish and wildlife benefits as determined under subsection (g); or

(II) non-reimbursable expenses authorized under the reclamation laws other than fish and wildlife expenses.

(5) NOTIFICATION.—The Secretary shall submit to the relevant committees of Congress and make publicly available on the internet a written notification of the Secretary's determinations regarding the satisfaction of the requirements under para-

graphs (3) and (4) by not later than 30 days after the date of the determinations.

(6) ENVIRONMENTAL LAWS.—In participating in a Federal storage project under this subsection, the Secretary shall comply with all applicable Federal environmental laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and all State environmental laws of the Reclamation State in which the project is located involving the construction, expansion or operation of a water storage project or fish and wildlife protection, provided that no law or regulation of a State or political subdivision of a State relieve the Secretary of any Federal requirement otherwise applicable under this section.

(7) ADDITIONAL GUIDELINES FOR RESTORATION PROJECTS THAT REDUCE THE RISK OF WATER STORAGE LOSSES.—

(A) REQUIREMENTS.—A restoration project described in section 103(a)(3)(B) that receives funding under this subsection must—

(i) have the potential to reduce the risk of water storage losses for a Federal storage project described in subsection

(a)(3)(A) by reducing the risk of erosion or sediment loading; and

(ii) be designed to result in fish and wildlife benefits.

(B) DRAFT FEASIBILITY STUDY.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall issue draft requirements for feasibility studies for Federal storage projects described in section 103(a)(3)(B).

(C) FEASIBILITY STUDY REQUIREMENTS.—The draft feasibility study requirements issued under subparagraph (B) shall be consistent with requirements for a title XVI Feasibility Study Report, including the economic analysis, contained in the Reclamation Manual Directives and Standards numbered WTR 11–01, subject to any additional requirements necessary to provide sufficient information for making determinations under this section.

(D) FINAL FEASIBILITY STUDY REQUIREMENTS.—The Secretary shall finalize the feasibility study requirements under subparagraph

(C) by not later than 1 year after the date of the enactment of this Act.

(E) ELIGIBLE PARTNER.—The Secretary is authorized to participate in a restoration project described in subsection (a)(3)(B) with a partner that is—

(i) an eligible entity as defined in subsection (a)(2); or

(ii) a qualified partner as defined in subsection (a)(8).

(d) MAJOR FEDERALLY ASSISTED STORAGE PROJECTS.—

(1) IN GENERAL.—In accordance with this subsection, the Secretary shall establish a competitive grant program to participate in the design, study, construction, expansion, upgrade, or capital repair of a major federally assisted storage project on request of an eligible entity or qualified partner. The competitive grant program established under this paragraph shall—

(A) allow any project sponsor of a major federally assisted storage project to apply for funding for the design, study, construction, expansion, upgrade, or capital repair of a major federally assisted storage project;

(B) include the issuance of annual solicitations for major federally assisted storage project sponsors to apply for funding for the design, study, construction, expansion, upgrade, or capital repair of a major federally assisted storage project; and

(C) permit the Secretary to fund up to 25 percent of the design and study costs of a major federally assisted storage project and up to 25 percent of the construction costs of a major federally assisted storage project.

(2) FUNDING PRIORITY FOR MULTI-BENEFIT PROJECTS.—In making grants under this subsection, the Secretary shall give funding priority to multi-benefit projects that provide greater—

(A) water supply reliability benefits for States and local governments; and

(B) fish and wildlife benefits.

(3) CONDITIONS FOR FEDERAL DESIGN AND STUDY FUNDING.—The Secretary may fund a design or study activity for a major federally assisted storage project under this subsection if—

(A) the Governor of the State in which the major federally assisted storage project is lo-

cated provides written concurrence for the design and study activities;

(B) the Secretary secures an agreement for design and study costs providing sufficient up-front funding to pay the non-Federal share of the design and study costs of the major federally assisted storage project; and

(C) the feasibility study for the major federally assisted storage project is congressionally authorized by reference to the annual Report to Congress on Future Storage Project Development prepared under section 102.

(4) CONDITIONS FOR FEDERAL CONSTRUCTION FUNDING.—Funding provided under this subsection for the construction of a major federally assisted storage project may be made available to a project if—

(A) the project has been authorized by name in a Federal statute;

(B) the project is a multi-benefit project that would, at a minimum, provide water supply reliability benefits (including additional storage, conveyance, or new firm yield) and fish and wildlife benefits as determined by the estimate prepared pursuant to subsection (g);

(C) the Governor of the State in which the major federally assisted storage project is located has requested Federal participation at the time construction is initiated;

(D) the Secretary secures an agreement committing to pay the non-Federal share of the capital costs of the major federally assisted storage project; and

(E) the Secretary determines—

(i) the project is technically and financially feasible;

(ii) the project provides water supply reliability benefits for a State or local government and fish and wildlife benefits; and

(iii) in return for the Federal cost-share investment in the project, at least a proportionate share of the project benefits are for—

(I) fish and wildlife benefits as determined under subsection (g); or

(II) other non-reimbursable expenses authorized under the reclamation laws other than fish and wildlife expenses.

(5) NOTIFICATION.—The Secretary shall submit to the relevant committees of Congress and make publicly available on the internet a written notification of the Secretary's determinations regarding the satisfaction of the requirements under paragraphs (3) and (4) by not later than 30 days after the date of the determinations.

(6) ENVIRONMENTAL LAWS.—In participating in a major federally assisted storage project under this subsection, the Secretary shall comply with all applicable Federal environmental laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and all State environmental laws of the Reclamation State in which the project is located involving the construction, expansion or operation of a water storage project or fish and wildlife protection, provided that no law or regulation of a State or political subdivision of a State relieve the Secretary of any Federal requirement otherwise applicable under this section.

(7) INFORMATION.—

(A) IN GENERAL.—In participating in a major federally assisted storage project under this subsection, the Secretary—

(i) may consider the use of feasibility or equivalent studies prepared by the sponsor of the major federally assisted storage project; but

(ii) shall retain responsibility for determining whether the feasibility or equivalent studies satisfy the requirements of reports prepared by the Secretary.

(B) GUIDELINES.—

(i) DRAFT.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall issue draft guidelines for feasibility or equivalent studies for major federally assisted storage projects prepared by a project sponsor that shall be consistent with requirements for a title XVI Feasibility Study Report, including the economic analysis, contained in the Reclamation Manual Directives and Standards numbered WTR 11–01, subject to—

(I) any additional requirements necessary to provide sufficient information for making any determinations or assessments under paragraphs (2), (3), and (4); and

(II) the condition that the Bureau of Reclamation shall not bear responsibility for the technical adequacy of any design, cost estimate, or construction relating to a major federally assisted storage project.

(ii) FINAL.—The Secretary shall finalize the guidelines under clause (i) by not later than 1 year after the date of the enactment of this Act.

(C) TECHNICAL ASSISTANCE FOR FEASIBILITY STUDIES.—

(i) TECHNICAL ASSISTANCE.—At the request of an eligible entity or qualified partner, the Secretary shall provide to the eligible entity or qualified partner technical assistance relating to any aspect of a feasibility study carried out by the eligible entity or qualified partner under this subsection if the eligible entity or qualified partner contracts with the Secretary to pay all costs of providing the technical assistance.

(ii) IMPARTIAL DECISIONMAKING.—In providing technical assistance under clause

(i), the Secretary shall ensure that the use of funds accepted from an eligible entity or qualified partner will not affect the impartial decisionmaking responsibilities of the Secretary, either substantively or procedurally.

(iii) EFFECT OF TECHNICAL ASSISTANCE.—The provision of technical assistance by the Secretary under clause (i) shall not be considered to be an approval or endorsement of a feasibility study.

(8) ELIGIBLE PARTNER.—The Secretary is authorized to participate in a restoration project described in subsection (a)(4)(B) with a partner that is—

(A) an eligible entity as defined in subsection (a)(2); or

(B) a qualified partner as defined in subsection (a)(8).

(e) NATURAL WATER STORAGE PROJECTS.—

(1) IN GENERAL.—In accordance with this subsection, the Secretary shall establish a competitive grant program to participate in the design, study, construction, expansion, upgrade, or capital repair of a natural water storage project in a Reclamation

State on request of an eligible entity or qualified partner. The competitive grant program established under this paragraph shall—

(A) allow any project sponsor of a natural water storage project to apply for funding for the design, study, construction, expansion, upgrade, or capital repair of a natural water storage project; and

(B) include the issuance of annual solicitations for natural water storage project sponsors to apply for funding for the design, study, construction, expansion, upgrade, or capital repair of a natural water storage project.

(2) FUNDING PRIORITY FOR MULTI-BENEFIT PROJECTS.—In making grants under this subsection, the Secretary shall give funding priority to multi-benefit projects that provide greater—

(A) water supply reliability benefits for States and local governments; and

(B) fish and wildlife benefits.

(3) FEDERAL SHARE.—Subject to the requirements of this subsection, the Secretary may provide funding to an eligible entity or qualified partner for the design, study, construction, expansion, upgrade, or capital repair of a natural water storage project

in an amount equal to not more than 80 percent of the total cost of the natural water storage project.

(4) CONDITIONS FOR FEDERAL DESIGN AND STUDY FUNDING.—The Secretary may fund a design or study activity for a natural water storage project under this subsection if the Governor of the State in which the natural water storage project is located provides written concurrence for design and study activities.

(5) CONDITIONS FOR FEDERAL CONSTRUCTION FUNDING.—Funding provided under this subsection for the construction of a natural water storage project may be made available to a project if—

(A) the Governor of the State in which the natural water storage project is located has requested Federal participation at the time construction was initiated;

(B) the Secretary determines or the applicable non-Federal sponsor determines through the preparation of a feasibility or equivalent study prepared in accordance to paragraph (9), and the Secretary concurs, that—

(i) the project is technically and financially feasible;

(ii) the project provides water supply reliability benefits for a State or local government and fish and wildlife benefits; and

(iii) in return for the Federal cost-share investment in the project, at least a proportionate share of the project benefits are for non-reimbursable expenses authorized under the reclamation laws or for fish and wildlife benefits as defined in this section, which shall be considered a fully non-reimbursable Federal expenditure; and

(C) the Secretary secures an agreement committing to pay the non-Federal share of the construction costs of the project.

(6) ENVIRONMENTAL LAWS.—In participating in a natural water storage project under this subsection, the Secretary shall comply with all applicable Federal environmental laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and all State environmental laws of the Reclamation State in which the project is located involving the construction, expansion or operation of a water storage project or fish and wildlife protection, provided that no law or regulation of a State or political subdivision of a State relieve the Sec-

retary of any Federal requirement otherwise applicable under this section.

(7) INFORMATION.—In participating in a natural water storage project under this subsection, the Secretary—

(A) may consider the use of feasibility or equivalent studies prepared by the sponsor of the natural water storage project if the sponsor elects to prepare such reports; but

(B) shall retain responsibility for determining whether the feasibility or equivalent studies satisfy the requirements of studies prepared by the Secretary.

(8) NOTIFICATION.—The Secretary shall submit to the relevant committees of Congress and make publicly available on the internet a written notification of the Secretary's determinations regarding the satisfaction of the requirements under paragraphs (4) and (5) by not later than 30 days after the date of the determinations.

(9) GUIDELINES.—

(A) DRAFT.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall issue draft guidelines for feasibility or equivalent studies for natural water

storage projects prepared by a project sponsor that shall be consistent with this subsection, provided that the Department of the Interior shall not bear responsibility for the technical adequacy of any design, cost estimate, or construction relating to a natural water storage project.

(B) FINAL.—The Secretary shall finalize the guidelines under subparagraph (A) by not later than 1 year after the date of the enactment of this Act.

(C) TECHNICAL ASSISTANCE FOR FEASIBILITY STUDIES.—

(i) TECHNICAL ASSISTANCE.—At the request of an eligible entity or qualified partner, the Secretary shall provide to the eligible entity or qualified partner technical assistance relating to any aspect of a feasibility study carried out by an eligible entity or qualified partner under this subsection if the eligible entity or qualified partner contracts with the Secretary to pay all costs of providing the technical assistance.

(ii) IMPARTIAL DECISIONMAKING.—In providing technical assistance under clause

(i), the Secretary shall ensure that the use of funds accepted from an eligible entity or qualified partner will not affect the impartial decisionmaking responsibilities of the Secretary, either substantively or procedurally.

(iii) EFFECT OF TECHNICAL ASSISTANCE.—The provision of technical assistance by the Secretary under clause (i) shall not be considered to be an approval or endorsement of a feasibility study.

(f) STANDARD FEDERALLY ASSISTED STORAGE PROJECTS.—

(1) IN GENERAL.—In accordance with this subsection, the Secretary shall establish a competitive grant program to participate in the design, study, construction, expansion, upgrade, or capital repair of a standard federally assisted storage project on request of an eligible entity or qualified partner. The competitive grant program established under this paragraph shall—

(A) allow any project sponsor of a standard federally assisted storage project to apply for funding for the design, study, construction,

expansion, upgrade, or capital repair of a federally assisted storage project;

(B) include the issuance of annual solicitations for standard federally assisted storage project sponsors to apply for funding for the design, study, construction, expansion, upgrade or capital repair of a standard federally assisted storage project; and

(C) permit the Secretary to fund up to 25 percent of the total cost of a federally assisted storage project.

(2) SELECTION OF PROJECTS.—In making grants under this subsection, the Secretary shall give funding priority to projects that—

(A) provide greater water supply reliability benefits for States and local governments, including through aquifer storage and recovery wells, in-lieu recharge activities that could be effectuated or expanded through additional infrastructure investments including interties, and the establishment and use of recharge ponds, including in an urban environment;

(B) provide greater fish and wildlife benefits; and

(C) cost not more than $30,000,000 to allow greater participation and wider distribution of funds and program benefits.

(3) CONDITIONS FOR FEDERAL DESIGN AND STUDY FUNDING.—The Secretary may fund a design or study activity for a standard federally assisted storage project under this subsection if the Governor of the State in which the federally assisted storage project is located provides written concurrence for design and study activities.

(4) CONDITIONS FOR FEDERAL CONSTRUCTION FUNDING.—Funding provided under this subsection for the construction of a standard federally assisted storage project may be made available to a project if—

(A) the Governor of the State in which the federally assisted storage project is located has requested Federal participation at the time construction was initiated; and

(B) the Secretary determines or the applicable non-Federal sponsor determines through the preparation of a feasibility or equivalent study prepared in accordance with paragraph (7), and the Secretary concurs, that—

(i) the standard federally assisted storage project is technically and financially feasible;

(ii) the standard federally assisted storage project provides water supply reliability benefits for a State or local government and fish and wildlife benefits; and

(iii) in return for the Federal cost-share investment in the project, at least a proportionate share of the project benefits are for non-reimbursable expenses authorized under the reclamation laws or for fish and wildlife benefits as defined in this section, which shall be considered a fully non-reimbursable Federal expenditure; and

(C) the Secretary secures an agreement committing to pay the non-Federal share of the construction costs of the project.

(5) NOTIFICATION.—The Secretary shall submit to the relevant committees of Congress and make publicly available on the internet a written notification of the Secretary's determinations regarding the satisfaction of the requirements under paragraphs (3) and (4) by not later than 30 days after the date of the determinations.

(6) ENVIRONMENTAL LAWS.—In participating in a standard federally assisted storage project under this subsection, the Secretary shall comply with all applicable Federal environmental laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and all State environmental laws of the Reclamation State in which the project is located involving the construction, expansion or operation of a water storage project or fish and wildlife protection, provided that no law or regulation of a State or political subdivision of a State relieve the Secretary of any Federal requirement otherwise applicable under this section.

(7) INFORMATION.—

(A) IN GENERAL.—In participating in a standard federally assisted storage project under this subsection, the Secretary—

(i) may consider the use of feasibility or equivalent studies prepared by the sponsor of the standard federally assisted storage project; but

(ii) shall retain responsibility for determining whether the feasibility or equivalent studies satisfy the requirements of reports prepared by the Secretary.

(B) GUIDELINES.—

(i) DRAFT.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall issue draft guidelines for feasibility or equivalent studies for standard federally assisted storage projects prepared by a project sponsor that shall be consistent with requirements for a title XVI Feasibility Study Report, including the economic analysis, contained in the Reclamation Manual Directives and Standards numbered WTR 11–01, subject to—

(I) any additional requirements necessary to provide sufficient information for making any determinations or assessments under paragraphs (2), (3) and (4); and

(II) the condition that the Department of the Interior shall not bear responsibility for the technical adequacy of any design, cost estimate, or construction relating to a standard federally assisted storage project.

(ii) FINAL.—The Secretary shall finalize the guidelines under clause (i) by not

later than 1 year after the date of the enactment of this Act.

(C) TECHNICAL ASSISTANCE FOR FEASIBILITY STUDIES.—

(i) TECHNICAL ASSISTANCE.—At the request of an eligible entity or qualified partner, the Secretary shall provide to the eligible entity or qualified partner technical assistance relating to any aspect of a feasibility study carried out by an eligible entity or qualified partner under this subsection if the eligible entity or qualified partner contracts with the Secretary to pay all costs of providing the technical assistance.

(ii) IMPARTIAL DECISIONMAKING.—In providing technical assistance under clause (i), the Secretary shall ensure that the use of funds accepted from an eligible entity or qualified partner will not affect the impartial decisionmaking responsibilities of the Secretary, either substantively or procedurally.

(iii) EFFECT OF TECHNICAL ASSISTANCE.—The provision of technical assistance by the Secretary under clause (i) shall

not be considered to be an approval or endorsement of a feasibility study.

(8) COMMITTEE RESOLUTION PROCEDURE.—

(A) IN GENERAL.—No appropriation shall be made for a standard federally assisted storage project under this subsection, the total estimated cost of which exceeds $100,000,000, if such project has not been approved by a resolution adopted by the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(B) REQUIREMENTS FOR SECURING CONSIDERATION.—For the purposes of securing consideration of approval under subparagraph (A), the Secretary shall provide to a committee referred to in subparagraph (A) such information as the committee requests and the non-Federal sponsor shall provide to the committee information on the costs and relative needs for the federally assisted storage project.

(9) ELIGIBLE PARTNER.—The Secretary is authorized to participate in a restoration project described in subsection (a)(7)(B) with a partner that is—

(A) an eligible entity as defined in subsection (a)(2); or

(B) a qualified partner as defined in subsection (a)(8).

(g) FISH AND WILDLIFE LOSSES AND BENEFITS.—

(1) DEFINITIONS.—In this subsection—

(A) The term ''Best available scientific information and data'' means the use of the high-value information and data, specific to the decision being made and the time frame available for making that decision, to inform and assist management and policy decisions;

(B) The term ''Director'' means—

(i) the Director of the United States Fish and Wildlife Service; or

(ii) the United States Secretary of Commerce, acting through the Assistant Administrator of the National Marine Fisheries Service, if a determination or fish and wildlife estimate made under this subsection is for an anadromous species or catadromous species.

(C) The term ''major water storage project'' means a major federally assisted stor-

age project or Federal storage project as defined under section 102.

(2) PURPOSES.—The purposes of this subsection are the following:

(A) To reverse widespread fish and wildlife species decline in the Reclamation States.

(B) To help fund and assist in the preparation of reports required under the Fish and Wildlife Coordination Act for proposed water development projects.

(C) To instruct the Director to prepare a report described in section 2(b) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(b)) for each major water storage project that includes an estimate of fish and wildlife losses and fish and wildlife benefits derived from each such project, based on the best available scientific information and data.

(D) To direct Federal funds to major water storage projects that provide demonstrable, measurable fish and wildlife benefits and associated ecosystem services benefits for taxpayers based on objective data and the expertise of the primary Federal agency with ju-

risdiction over the management of fish and wildlife resources.

(E) To ensure that Federal funds provided for fish and wildlife purposes under this section are used effectively in a manner that maximizes positive outcomes for fish and wildlife and associated ecosystem services benefits for taxpayers, including benefits related to the domestic seafood supply and the enhancement and expansion of hunting, fishing, and other fish and wildlife related outdoor recreation opportunities within the Reclamation States.

(3) ESTIMATION OF FISH AND WILDLIFE BENEFITS AND LOSSES UNDER THE FISH AND WILDLIFE COORDINATION ACT.—The Director shall prepare a report described in section 2(b) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(b)), for each major water storage project that—

(A) is based on the best available scientific information and data available; and

(B) includes an estimate of fish and wildlife losses and fish and wildlife benefits derived from a major water storage project determined in accordance with this subsection.

(4) DRAFT ESTIMATE.—

(A) USE OF BEST AVAILABLE SCIENTIFIC INFORMATION AND DATA AVAILABLE.—The Director shall include in the Fish and Wildlife Coordination Act report prepared under paragraph (3) a draft estimate of fish and wildlife losses and fish and wildlife benefits derived from a major water storage project.

(B) COORDINATION.—A draft estimate required under subparagraph (A) shall be prepared in coordination with the head of the State agency with jurisdiction over the fish and wildlife resources of the State in which the major water storage project is proposed to be carried out.

(C) APPLICABLE LAW; REQUIREMENTS.—The draft estimate prepared under this paragraph shall—

(i) meet all the evaluation requirements of section 2(b) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(b)) unless otherwise specified in this subsection;

(ii) quantify and estimate the fish and wildlife benefits and any losses to native

fish and wildlife from the proposed major water storage project; and

(iii) estimate whether the fish and wildlife benefits derived from the proposed major water storage project are likely to exceed the adverse fish and wildlife impacts.

(D) REVIEW; AVAILABILITY.—The Director shall ensure that any draft estimate prepared under this paragraph is—

(i) made available for peer review by an independent group of scientific experts; and

(ii) made available for a public review and comment period of not less than 30 days.

(5) FINAL ESTIMATE.—Using the best available scientific information and data, the Director shall prepare a final estimate of fish and wildlife benefits for each proposed major water storage project based on the applicable draft estimate prepared under paragraph (4), after considering the results of the independent scientific peer review and public comment processes under paragraph (4)(D).

(6) TRANSMISSION; AVAILABILITY.—A final estimate prepared under paragraph (5) shall be—

(A) transmitted to—

(i) the project applicant; and

(ii) the relevant State agency; and

(B) made available to the public.

(7) RECOMMENDATIONS.—If a final estimate under paragraph (5) determines that the proposed major water storage project fails to provide fish and wildlife benefits, the final estimate may identify potential recommendations to enable the project to provide fish and wildlife benefits or to reduce the project's adverse fish and wildlife impacts.

(8) IMPORTATION OF REVIEW STANDARDS.—Sections 207(i) and 207(j) of the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102–575; 106 Stat. 4709) shall apply to a final estimate prepared under paragraph (5), except that—

(A) any reference contained in those sections to the Secretary shall be considered to be a reference to the Director as defined in this subsection;

(B) any reference contained in those sections to determination or determinations shall

be considered to be a reference to estimate or estimates described in this subsection;

(C) any reference contained in those sections to subsection (b), (f)(1), or (g) shall be considered to be a reference to paragraph (5) of this subsection; and

(D) any reference contained in those sections to ''this subsection'' shall be considered to be a reference to section 103(g) of the Future Western Water Infrastructure and Drought Resiliency Act.

(9) FUNDING FOR ESTIMATES.—There is authorized to be appropriated $10,000,000 through fiscal year 2026 for the United States Fish and Wildlife Service to prepare draft estimates under paragraph (4) and final estimates under paragraph (5).

(10) ADDITIONAL FUNDING FOR ESTIMATES.—The authority under section 662(e) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(b)) to transfer funds from the Bureau of Reclamation to the United States Fish and Wildlife Service for Fish and Wildlife Coordination Act reports for proposed water development projects shall be deemed to extend to the preparation of a draft or final estimate prepared under paragraph (4) or (5), provided that

any transfer of funds generally adheres to the 1981 Transfer Funding Agreement between the United States Fish and Wildlife Service and the Bureau of Reclamation or any successor agreement, to the extent that any such agreement is consistent with the requirements of this subsection.

(11) AGENCY RESPONSIBILITIES.—The responsibility for preparing a draft and final estimate under this subsection shall reside with the United States Fish and Wildlife Service and may not be delegated to another entity, including another Federal agency or bureau, except for the United States Secretary of Commerce, acting through the Assistant Administrator of the National Marine Fisheries Service, for the preparation of a draft or final estimate for anadromous species or catadromous species.

(12) USE OF FISH AND WILDLIFE ESTIMATES TO INFORM FEDERAL SPENDING FOR FISH AND WILDLIFE PURPOSES.—With respect to a major water storage project considered for Federal funding under this section, the Director shall determine costs allocated to the specific purpose of providing fish and wildlife benefits, based on the fish and wildlife benefits estimate for the applicable project or the

best available scientific information and data available at the time a cost allocation determination is made. In determining a cost allocation under this paragraph, the Director shall consult with the Commissioner of the Bureau of Reclamation and may make a cost allocation determination for fish and wildlife benefits in accordance with existing cost allocation procedures, to the extent that such procedures are consistent with the requirements of this subsection. Cost allocation determinations for all other non-reimbursable or reimbursable project purposes for a major water storage project advanced under this section shall be determined in accordance with existing cost allocation procedures under the reclamation laws.

(h) PRELIMINARY STUDIES.—Of the amounts made available under subsection (b), not more than 25 percent shall be provided for appraisal studies, feasibility studies, or other preliminary studies.

(i) PROVIDING GREATER FEDERAL FUNDING AND SUPPORT FOR MULTI-BENEFIT STORAGE PROJECTS.—Notwithstanding any non-Federal cost share requirement under the reclamation laws for water development projects, any cost allocated to a water storage project under this section for the sole purpose of providing fish

and wildlife benefits, determined in accordance with all applicable requirements under this section, shall be considered a 100 percent non-reimbursable Federal cost.

(j) CALFED REAUTHORIZATION.—

(1) REAUTHORIZATION.—Title I of Public Law 108–361 (118 Stat. 1681; 123 Stat. 2860; 128 Stat. 164; 128 Stat. 2312; 129 Stat. 2407; 130 Stat. 1866; 133 Stat. 2669), as amended by section 204 of the Energy and Water Development and Related Agencies Appropriations Act, 2021 (Public Law 116–260), is amended by striking ''2021'' each place it appears and inserting ''2026''.

(2) CALFED DESCRIPTION OF ACTIVITIES.—Subparagraph 103(f)(1)(A) of Public Law 108–361 (118 Stat. 1694) is amended by striking '', except that'' and all that follows through the end of the subparagraph.

(k) EFFECT.—Nothing in this section is intended to authorize Federal funds made available under subsection (b) for a project led by a non-profit organization, as described in subsection (a)(7), except for a project that is a natural water storage project or forest restoration, watershed restoration or other restoration project that reduces the risk of water storage loss described in subsection (a).

SEC. 104. EXTENSION OF EXISTING REQUIREMENTS FOR GRANDFATHERED STORAGE PROJECTS.

(a) PURPOSE; DEFINITION.—

(1) PURPOSE.—The purpose of this section is to establish an expedited project advancement process for certain water storage projects that have already received some degree of evaluation under the Water Infrastructure Improvements for the Nation Act (Public Law 114–322) or under certain State water storage project evaluations.

(2) DEFINITION OF GRANDFATHERED STORAGE PROJECT.—In this section, the term ''grandfathered storage project'' means a storage project that has already been recommended for funding made available under section 4007 of the Water Infrastructure Improvements for the Nation Act (Public Law 114–322) by the Secretary or a State governor prior to June 1, 2020, except for any project within the State of California that—

(A) has been evaluated for State storage funding awards by the California Water Commission pursuant to the California Water Quality, Supply, and Infrastructure Improvement Act, approved by California voters on November 4, 2014, and failed to receive a maximum con-

ditional eligibility determination of at least $200 million; or

(B) is an on-stream storage project that has not been evaluated for State storage funding awards by the California Water Commission pursuant to the California Water Quality, Supply, and Infrastructure Improvement Act, approved by California voters on November 4, 2014.

(b) IN GENERAL.—Notwithstanding any other requirements of this Act, grandfathered storage projects shall be eligible to receive funding authorized under section 103(b) of this Act in accordance with this section.

(c) REQUIREMENTS.—

(1) IMPORTATION OF WIIN ACT REQUIREMENTS.—The following requirements shall apply to grandfathered storage projects: sections 4007(c)(1) through 4007(c)(4), section 4007(f), and section 4007(h)(2) of the Water Infrastructure Improvements for the Nation Act (Public Law 114–322), except that any reference contained in those sections to State-led storage projects shall be considered to be a reference to grandfathered storage projects.

(2) PRIORITIZATION.—The Secretary shall give funding priority among grandfathered storage

projects to those that provide greater and more reliable water supply benefits to wildlife refuges, species listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), or to commercially harvested salmon species.

(d) APPLICABILITY OF WIIN ACT DEADLINES.—Storage project deadlines described in section 4007(i) and section 4013(2) of the Water Infrastructure Improvements for the Nation Act (Public Law 114–322) shall not apply to any grandfathered storage project under this section.

SEC. 105. DESALINATION PROJECT DEVELOPMENT.

(a) DESALINATION PROJECTS AUTHORIZATION.—Section 4(a) of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended by striking the second paragraph (1) (relating to projects) and inserting the following:

"(2) PROJECTS.—

"(A) DEFINITIONS.—In this paragraph:

"(i) ELIGIBLE DESALINATION PROJECT.—The term 'eligible desalination project' means any project located in a Reclamation State that—

"(I) involves an ocean or brackish water desalination facility—

"(aa) constructed, operated, and maintained by a State, Indian Tribe, municipality, irrigation district, water district, or other organization with water or power delivery authority; or

"(bb) sponsored or funded by a State, department of a State, political subdivision of a State, municipality or public agency organized pursuant to State law, including through—

"(AA) direct sponsorship or funding; or

"(BB) indirect sponsorship or funding, such as by paying for the water provided by the facility; and

"(II) provides a Federal benefit in accordance with the reclamation laws.

"(ii) RURAL DESALINATION PROJECT.—The term 'rural desalination project' means an eligible desalination project that is designed to serve a commu-

nity or group of communities, each of which has a population of not more than 40,000 inhabitants.

"(iii) DESIGNATED DESALINATION PROJECT.—The term 'designated desalination project' means an eligible desalination project that—

"(I) is an ocean desalination project that uses a subsurface intake;

"(II) has a total estimated cost of $80,000,000 or less; and

"(III) is designed to serve a community or group of communities that collectively import more than 75 percent of their water supplies.

"(B) COST-SHARING REQUIREMENT.—

"(i) IN GENERAL.—Subject to the requirements of this subsection and notwithstanding section 7, the Federal share of an eligible desalination project carried out under this subsection shall be—

"(I) not more than 25 percent of the total cost of the eligible desalination project; or

"(II) in the case of a rural desalination project or a designated desalination project, the applicable percentage determined in accordance with clause (ii).

"(ii) RURAL DESALINATION PROJECTS AND DESIGNATED DESALINATION PROJECTS.—

"(I) COST-SHARING REQUIREMENT FOR APPRAISAL STUDIES.—In the case of a rural desalination project carried out under this subsection, the Federal share of the cost of appraisal studies for the rural desalination project shall be—

"(aa) 100 percent of the total costs of the appraisal studies, up to $200,000; and

"(bb) if the total costs of the appraisal studies are more than $200,000, 50 percent of any amounts over $200,000.

"(II) COST-SHARING REQUIREMENT FOR FEASIBILITY STUDIES.—In the case of a rural desalination project

carried out under this subsection, the Federal share of the cost of feasibility studies for the rural desalination project shall be not more than 50 percent.

''(III) COST-SHARING REQUIREMENT FOR CONSTRUCTION COSTS.—In the case of a rural desalination project or a designated desalination project carried out under this subsection, the Federal share of the cost of construction of the rural desalination project shall not exceed the greater of—

''(aa) 35 percent of the total cost of construction, up to a Federal cost of $20,000,000; or

''(bb) 25 percent of the total cost of construction.

''(C) STATE ROLE.—Participation by the Secretary in an eligible desalination project under this paragraph shall not occur unless—

''(i)(I) the eligible desalination project is included in a State-approved plan; or

''(II) the participation has been requested by the Governor of the

State in which the eligible desalination project is located; and

''(ii) the State or local sponsor of the eligible desalination project determines, and the Secretary concurs, that—

''(I) the eligible desalination project—

''(aa) is technically and financially feasible;

''(bb) provides a Federal benefit in accordance with the reclamation laws; and

''(cc) is consistent with applicable State laws, State regulations, State coastal zone management plans and other State plans such as California's Water Quality Control Plan for the Ocean Waters in California;

''(II) sufficient non-Federal funding is available to complete the eligible desalination project; and

''(III) the eligible desalination project sponsors are financially solvent; and

"(iii) the Secretary submits to Congress a written notification of the determinations under clause (ii) by not later than 30 days after the date of the determinations.

"(D) ENVIRONMENTAL LAWS.—In participating in an eligible desalination project under this paragraph, the Secretary shall comply with all applicable environmental laws, including, but not limited to, the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and State laws implementing the Coastal Zone Management Act.

"(E) INFORMATION.—In participating in an eligible desalination project under this subsection, the Secretary—

"(i) may consider the use of reports prepared by the sponsor of the eligible desalination project, including feasibility or equivalent studies, environmental analyses, and other pertinent reports and analyses; but

"(ii) shall retain responsibility for making the independent determinations described in subparagraph (C).

"(F) FUNDING.—

"(i) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this paragraph $260,000,000 for the period of fiscal years 2022 through 2026, to remain available until expended, of which not less than $15,000,000 shall be made available during that period for rural desalination projects.

"(ii) CONGRESSIONAL APPROVAL INITIALLY REQUIRED.—

"(I) IN GENERAL.—Each initial award under this paragraph for design and study or for construction of an eligible desalination project shall be approved by an Act of Congress.

"(II) RECLAMATION RECOMMENDATIONS.—The Commissioner of Reclamation shall submit recommendations regarding the initial award of preconstruction and construction funding for consideration under subclause (I) to—

"(aa) the Committee on Appropriations of the Senate;

"(bb) the Committee on Energy and Natural Resources of the Senate;

"(cc) the Committee on Appropriations of the House of Representatives; and

"(dd) the Committee on Natural Resources of the House of Representatives.

"(iii) SUBSEQUENT FUNDING AWARDS.—After approval by Congress of an initial award of preconstruction or construction funding for an eligible desalination project under clause (ii), the Commissioner of Reclamation may award additional preconstruction or construction funding, respectively, for the eligible desalination project without further congressional approval.

"(G) TOTAL DOLLAR CAP.—The Secretary shall not impose a total dollar cap on Federal contributions for individual desalination

projects receiving funding under this paragraph.''.

(b) PRIORITIZATION FOR PROJECTS.—Section 4 of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298) is amended by striking subsection (c) and inserting the following:

''(c) PRIORITIZATION.—In carrying out demonstration and development activities under this section, the Secretary and the Commissioner of Reclamation shall each prioritize projects—

''(1) for the benefit of drought-stricken States and communities;

''(2) for the benefit of States that have authorized funding for research and development of desalination technologies and projects;

''(3) that demonstrably reduce a reliance on imported water supplies that have an impact on species listed under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.);

''(4) that, in a measurable and verifiable manner, reduce a reliance on imported water supplies from imperiled ecosystems such as the Sacramento-San Joaquin River Delta;

''(5) that demonstrably leverage the experience of international partners with considerable expertise in desalination, such as the State of Israel;

''(6) that maximize use of renewable energy to power desalination facilities;

''(7) that maximize energy efficiency so that the lifecycle energy demands of desalination are minimized;

''(8) located in regions that have employed strategies to increase water conservation and the capture and recycling of wastewater and stormwater; and

''(9) that meet the following criteria if they are ocean desalination facilities—

''(A) utilize a subsurface intake or, if a subsurface intake is not technologically feasible, an intake that uses the best available site, design, technology, and mitigation measures to minimize the mortality of all forms of marine life and impacts to coastal dependent resources;

''(B) are sited and designed to ensure that the disposal of wastewaters including brine from the desalination process—

''(i) are not discharged in a manner that increases salinity levels in impaired

bodies of water, or State or Federal Marine Protected Areas; and

''(ii) achieve ambient salinity levels within a reasonable distance from the discharge point;

''(C) are sited, designed, and operated in a manner that maintains indigenous marine life and a healthy and diverse marine community;

''(D) do not cause significant unmitigated harm to aquatic life; and

''(E) include a construction and operation plan designed to minimize loss of coastal habitat as well as aesthetic, noise, and air quality impacts.''.

(c) RECOMMENDATIONS TO CONGRESS.—In determining project recommendations to Congress under section 4(a)(2)(F)(ii)(II) of the Water Desalination Act of 1996, the Commissioner of Reclamation shall establish a priority scoring system that assigns priority scores to each project evaluated based on the prioritization criteria of section 4(c) of the Water Desalination Act of 1996 (42 U.S.C. 10301 note; Public Law 104–298).

SEC. 106. ASSISTANCE FOR DISADVANTAGED COMMUNITIES WITHOUT ADEQUATE DRINKING WATER.

(a) IN GENERAL.—The Secretary shall provide grants within the Reclamation States to assist eligible applicants in planning, designing, or carrying out projects to help disadvantaged communities address a significant decline in the quantity or quality of drinking water.

(b) ELIGIBLE APPLICANTS.—To be eligible to receive a grant under this section, an applicant shall submit an application to the Secretary that includes a proposal of the project or activity in subsection (c) to be planned, designed, constructed, or implemented, the service area of which—

(1) shall not be located in any city or town with a population of more than 60,000 residents; and

(2) has a median household income of less than 100 percent of the nonmetropolitan median household income of the State.

(c) ELIGIBLE PROJECTS.—Projects eligible for grants under this program may be used for—

(1) emergency water supplies;

(2) distributed treatment facilities;

(3) construction of new wells and connections to existing water source systems;

(4) water distribution facilities;

(5) connection fees to existing systems;

(6) assistance to households to connect to water facilities;

(7) local resource sharing, including voluntary agreements between water systems to jointly contract for services or equipment, or to study or implement the physical consolidation of two or more water systems;

(8) technical assistance, planning, and design for any of the activities described in paragraphs (1) through (7); or

(9) any combination of activities described in paragraphs (1) through (8).

(d) PRIORITIZATION.—In determining priorities for funding projects, the Secretary shall take into consideration—

(1) where the decline in the quantity or quality of water poses the greatest threat to public health and safety;

(2) the degree to which the project provides a long-term solution to the water needs of the community; and

(3) whether the applicant has the ability to qualify for alternative funding sources.

(e) MAXIMUM AMOUNT.—The amount of a grant provided under this section may be up to 100 percent of costs, including—

(1) initial operation costs incurred for startup and testing of project facilities;

(2) costs of components to ensure such facilities and components are properly operational; and

(3) costs of operation or maintenance incurred subsequent to placing the facilities or components into service.

(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $100,000,000, to remain available until expended.

(g) COORDINATION REQUIRED.—In carrying out this section, the Secretary shall consult with the Secretary of Agriculture and the Administrator of the Environmental Protection Agency to identify opportunities to improve the efficiency, effectiveness, and impact of activities carried out under this section to help disadvantaged communities address a significant decline in the quantity or quality of drinking water.

SEC. 107. WATER INFRASTRUCTURE FUND.

(a) ESTABLISHMENT.—There is established in the Treasury of the United States a fund, to be known as the

Bureau of Reclamation Infrastructure Fund (referred to in this section as the ''Fund''), consisting of—

(1) such amounts as are deposited in the Fund under subsection (b); and

(2) any interest earned on investment of amounts in the Fund under subsection (c)(1)(B).

(b) DEPOSITS TO FUND.—

(1) IN GENERAL.—For each of fiscal years 2032 through 2062, the Secretary of the Treasury shall deposit in the Fund $300,000,000 of the revenues that would otherwise be deposited for the fiscal year in the reclamation fund established by the first section of the Act of June 17, 1902 (32 Stat. 388; chapter 1093), of which—

(A) $100,000,000 shall be expended by the Secretary for water reclamation and reuse projects authorized under title XVI of Public Law 102–575 or section 4009 of Public Law 114–322;

(B) $100,000,000 shall be expended by the Secretary for grants authorized under sections 6002 and 9504 of the Omnibus Public Land Management Act of 2009 (16 U.S.C. 1015a and 42 U.S.C. 10364); and

(C) $100,000,000 shall be expended by the Secretary to perform modifications to preserve the structural safety of Bureau of Reclamation dams and related facilities to ensure that Reclamation facilities do not present unreasonable risks to public safety, property, or the environment, provided that Federal expenditures made under this section—

(i) account for no more than 85 percent of the total costs for any dam safety project; and

(ii) are made in accordance with section 3 of the Reclamation Safety of Dams Act of 1978.

(2) AVAILABILITY OF AMOUNTS.—Amounts deposited in the Fund under this section shall—

(A) be made available in accordance with this section, without further appropriation; and

(B) be in addition to amounts appropriated for such purposes under any other provision of law.

(c) EXPENDITURES FROM FUND.—

(1) IN GENERAL.—Subject to subsection (b), for each of fiscal years 2032 through 2062, the Secretary may expend from the Fund, in accordance

with this section, not more than an amount equal to the sum of—

(A) the amounts deposited in the Fund that year under subsection (b); and

(B) the amount of interest accrued in the Fund for the fiscal year in which the expenditures are made.

(2) ADDITIONAL EXPENDITURES.—

(A) IN GENERAL.—The Secretary may expend more in any fiscal year than the amounts described in subsection (a) if the additional amounts are available in the Fund as a result of a failure of the Secretary to expend all of the amounts available under subsection (a) in 1 or more prior fiscal years.

(B) RETENTION IN ACCOUNTS.—Any additional amounts referred to in paragraph (1) shall—

(i) accrue interest in accordance with this section; and

(ii) only be expended for the purposes for which expenditures from the Fund are authorized.

TITLE II—IMPROVED TECHNOLOGY AND DATA

SEC. 201. REAUTHORIZATION OF WATER AVAILABILITY AND USE ASSESSMENT PROGRAM.

Section 9508 of Public Law 111–11 (42 U.S.C. 10368) is amended—

(1) in subsection (b)—

(A) by striking ''and'' at the end of paragraph (2)(A)(ii)(VII);

(B) in paragraph (2)(A)(iii), by adding ''and'' at the end;

(C) by adding at the end of paragraph (2)(A) the following:

''(iv) water supplies made available through water reuse and seawater and brackish desalination;''; and

(D) by adding at the end the following:

''(3) DATA INTEGRATION.—In carrying out the assessment program, the Secretary shall, to the greatest extent practicable—

''(A) integrate available data from new technologies where appropriate including data made available from drones and emerging remote sensing technologies; and

''(B) coordinate with relevant Federal agencies and bureaus to develop common data requirements for—

''(i) Federal water data programs and efforts; and

''(ii) geospatial data programs that can inform assessments of water availability and use under the assessment program.'';

(2) in subsection (c)—

(A) in paragraph (1), by striking ''State water resource'' each place it appears and inserting ''State or Tribal water resource'';

(B) in the heading of paragraph (2), by striking ''CRITERIA'' and inserting ''STATE CRITERIA'';

(C) by inserting after paragraph (2) the following (and redesignating the succeeding paragraph accordingly):

''(3) TRIBAL CRITERIA.—To be eligible to receive a grant under paragraph (1), a Tribal water resource agency shall demonstrate to the Secretary that the water use and availability dataset proposed to be established or integrated by the Tribal water resource agency—

''(A) is in compliance with each quality and conformity standard established by the Secretary to ensure that the data will be capable of integration with any national dataset; and

''(B) will enhance the ability of the officials of the Tribe or the Tribal water resource agency to carry out water management responsibilities.

''(4) TRIBAL WATER RESOURCE AGENCY DEFINITION.—For the purposes of this subsection, the term 'Tribal water resource agency' means any agency of an Indian Tribe responsible for water resource planning and management.''; and

(D) in paragraph (5) (as so redesignated)—

(i) by inserting ''or Tribal water resource agency'' after ''State water resource agency''; and

(ii) by inserting ''within any 5-year period'' after ''$250,000''; and

(3) in subsection (e)(2), by striking ''2009 through 2013'' and inserting ''2022 through 2026''.

SEC. 202. MODIFICATIONS TO INCOME EXCLUSION FOR CONSERVATION SUBSIDIES.

(a) IN GENERAL.—Section 136(a) of the Internal Revenue Code of 1986 is amended—

(1) by striking ''any subsidy provided'' and inserting any subsidy—

''(1) provided'';

(2) by striking the period at the end and inserting a comma; and

(3) by adding at the end the following new paragraphs:

''(2) provided (directly or indirectly) by a public utility to a customer, or by a State or local government to a resident of such State or locality, for the purchase or installation of any water conservation or efficiency measure;

''(3) provided (directly or indirectly) by a storm water management provider to a customer, or by a State or local government to a resident of such State or locality, for the purchase or installation of any storm water management measure; or

''(4) provided (directly or indirectly) by a State or local government to a resident of such State or locality for the purchase or installation of any wastewater management measure, but only if such meas-

ure is with respect to the taxpayer's principal residence.''.

(b) CONFORMING AMENDMENTS.—

(1) DEFINITION OF WATER CONSERVATION OR EFFICIENCY MEASURE AND STORM WATER MANAGEMENT MEASURE.—Section 136(c) of the Internal Revenue Code of 1986 is amended—

(A) by striking ''ENERGY CONSERVATION MEASURE'' in the heading thereof and inserting ''DEFINITIONS'';

(B) by striking ''IN GENERAL'' in the heading of paragraph (1) and inserting ''ENERGY CONSERVATION MEASURE''; and

(C) by redesignating paragraph (2) as paragraph (5) and by inserting after paragraph (1) the following:

''(2) WATER CONSERVATION OR EFFICIENCY MEASURE.—For purposes of this section, the term 'water conservation or efficiency measure' means any evaluation of water use, or any installation or modification of property, the primary purpose of which is to reduce consumption of water or to improve the management of water demand with respect to one or more dwelling units.

''(3) STORM WATER MANAGEMENT MEASURE.—For purposes of this section, the term 'storm water management measure' means any installation or modification of property primarily designed to reduce or manage amounts of storm water with respect to one or more dwelling units.

''(4) WASTEWATER MANAGEMENT MEASURE.—For purposes of this section, the term 'wastewater management measure' means any installation or modification of property primarily designed to manage wastewater (including septic tanks and cesspools) with respect to one or more dwelling units.''.

(2) DEFINITIONS.—Section 136(c)(5) of the Internal Revenue Code of 1986 (as redesignated by paragraph (1)(C)) is amended by striking subparagraph (B) and inserting the following:

''(B) PUBLIC UTILITY.—The term 'public utility' means a person engaged in the sale of electricity, natural gas, or water to residential, commercial, or industrial customers for use by such customers.

''(C) STORM WATER MANAGEMENT PROVIDER.—The term 'storm water management provider' means a person engaged in the provi-

sion of storm water management measures to the public.

''(D) PERSON.—For purposes of subparagraphs (B) and (C), the term 'person' includes the Federal Government, a State or local government or any political subdivision thereof, or any instrumentality of any of the foregoing.''.

(3) CLERICAL AMENDMENTS.—

(A) The heading for section 136 of the Internal Revenue Code of 1986 is amended—

(i) by inserting ''**AND WATER**'' after ''**ENERGY**''; and

(ii) by striking ''**PROVIDED BY PUBLIC UTILITIES**''.

(B) The item relating to section 136 in the table of sections of part III of subchapter B of chapter 1 of the Internal Revenue Code of 1986 is amended—

(i) by inserting ''and water'' after ''Energy''; and

(ii) by striking ''provided by public utilities''.

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to amounts received after December 31, 2018.

(d) NO INFERENCE.—Nothing in this Act or the amendments made by this Act shall be construed to create any inference with respect to the proper tax treatment of any subsidy received directly or indirectly from a public utility, a storm water management provider, or a State or local government for any water conservation measure or storm water management measure before January 1, 2022.

SEC. 203. X-PRIZE FOR WATER TECHNOLOGY BREAKTHROUGHS.

(a) WATER TECHNOLOGY AWARD PROGRAM ESTABLISHED.—The Secretary, working through the Bureau of Reclamation, shall establish a program to award prizes to eligible persons described in subsection (b) for achievement in one or more of the following applications of water technology:

(1) Demonstration of wastewater and industrial process water purification for reuse or desalination of brackish water or seawater with significantly less energy than current municipally and commercially adopted technologies.

(2) Demonstration of portable or modular desalination units that can process 1 to 5,000,000 gallons per day that could be deployed for temporary

emergency uses in coastal communities or communities with brackish groundwater supplies.

(3) Demonstration of significant advantages over current municipally and commercially adopted reverse osmosis technologies as determined by the board established under subsection (c).

(4) Demonstration of significant improvements in the recovery of residual or waste energy from the desalination process.

(5) Reducing open water evaporation.

(b) ELIGIBLE PERSON.—An eligible person described in this subsection is—

(1) an individual who is—

(A) a citizen or legal resident of the United States; or

(B) a member of a group that includes citizens or legal residents of the United States;

(2) an entity that is incorporated and maintains its primary place of business in the United States; or

(3) a public water agency.

(c) ESTABLISHMENT OF BOARD.—

(1) IN GENERAL.—The Secretary shall establish a board to administer the program established under subsection (a).

(2) MEMBERSHIP.—The board shall be composed of not less than 15 and not more than 21 members appointed by the Secretary, of whom not less than 2 shall—

(A) be a representative of the interests of public water districts or other public organizations with water delivery authority;

(B) be a representative of the interests of academic organizations with expertise in the field of water technology, including desalination or water reuse;

(C) be representative of a non-profit conservation organization;

(D) have expertise in administering award competitions; and

(E) be a representative of the Bureau of Reclamation of the Department of the Interior with expertise in the deployment of desalination or water reuse.

(d) AWARDS.—Subject to the availability of appropriations, the board established under subsection (c) may make awards under the program established under subsection (a) as follows:

(1) FINANCIAL PRIZE.—The board may hold a financial award competition and award a financial

award in an amount determined before the commencement of the competition to the first competitor to meet such criteria as the board shall establish.

(2) RECOGNITION PRIZE.—

(A) IN GENERAL.—The board may recognize an eligible person for superlative achievement in 1 or more applications described in subsection (a).

(B) NO FINANCIAL REMUNERATION.—An award under this paragraph shall not include any financial remuneration.

(e) ADMINISTRATION.—

(1) CONTRACTING.—The board established under subsection (c) may contract with a private organization to administer a financial award competition described in subsection (d)(1).

(2) SOLICITATION OF FUNDS.—A member of the board or any administering organization with which the board has a contract under paragraph (1) may solicit gifts from private and public entities to be used for a financial award under subsection (d)(1).

(3) LIMITATION ON PARTICIPATION OF DONORS.—The board may allow a donor who is a private person described in paragraph (2) to participate

in the determination of criteria for an award under subsection (d), but such donor may not solely determine the criteria for such award.

(4) NO ADVANTAGE FOR DONATION.—A donor who is a private person described in paragraph (3) shall not be entitled to any special consideration or advantage with respect to participation in a financial award competition under subsection (d)(1).

(f) INTELLECTUAL PROPERTY.—The Federal Government may not acquire an intellectual property right in any product or idea by virtue of the submission of such product or idea in any competition under subsection (d)(1).

(g) LIABILITY.—The board established under subsection (c) may require a competitor in a financial award competition under subsection (d)(1) to waive liability against the Federal Government for injuries and damages that result from participation in such competition.

(h) ANNUAL REPORT.—Each year, the board established under subsection (c) shall submit to the relevant committees of Congress a report on the program established under subsection (a).

(i) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There are authorized to be appropriated sums for the program established under subsection (a) as follows:

(A) For administration of prize competitions under subsection (d), $750,000 for each fiscal year through fiscal year 2026.

(B) For the awarding of a financial prize award under subsection (d)(1), in addition to any amounts received under subsection (e)(2), $5,000,000 for each fiscal year through fiscal year 2026.

(2) AVAILABILITY.—Amounts appropriated under paragraph (1) shall remain available until expended.

(j) WATER TECHNOLOGY INVESTMENT PROGRAM ESTABLISHED.—The Secretary, acting through the Bureau of Reclamation, shall establish a program, pursuant to the Reclamation Wastewater and Groundwater Study and Facilities Act (Public Law 102–575, title XVI), the Water Desalination Act of 1996 (Public Law 104–298), and other applicable laws, to promote the expanded use of technology for improving availability and resiliency of water supplies and power deliveries, which shall include—

(1) investments to enable expanded and accelerated deployment of desalination technology; and

(2) investments to enable expanded and accelerated use of recycled water.

(k) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated $5,000,000 for each fiscal year through fiscal year 2026 for the Secretary to carry out the purposes and provisions of subsection (j).

SEC. 204. STUDY EXAMINING SEDIMENT TRANSPORT.

(a) IN GENERAL.—Not later than 60 days after the date of the enactment of this Act, the Secretary shall make appropriate arrangements with the National Academies of Sciences, Engineering, and Medicine (referred to in this section as the ''National Academies'') under which the National Academies shall conduct a study that—

(1) examines existing science and management guidance related to methods for managing sediment transport from dam removal;

(2) includes case studies where diverse interests, including hydroelectric, agricultural, conservation, and industry stakeholders work jointly with Tribal, State, and Federal government agencies to implement collaborative projects requiring sediment transport; and

(3) identifies future research opportunities, requirements, and recommendations related to the science and management guidance examined under

paragraph (1), including research opportunities, requirements, and recommendations related to modeling and quantifying sediment flows.

(b) REPORT.—In entering into an arrangement under subsection (a), the Secretary shall request that the National Academies transmit to the Secretary and to Congress a report not later than 36 months after the date of the enactment of this Act that—

(1) includes the results of the study and relevant interpretations of the results;

(2) provides recommendations for applying science in management and mitigation decisions relating to dam removal; and

(3) provides recommendations for improving future research on the beneficial and adverse environmental impacts of sediment transport from dam removal and appropriate actions to mitigate such impacts.

SEC. 205. FEDERAL PRIORITY STREAMGAGES.

(a) FEDERAL PRIORITY STREAMGAGES.—The Secretary shall make every reasonable effort to make operational all streamgages identified as Federal Priority Streamgages by the United States Geological Survey not later than 10 years after the date of the enactment of this Act.

(b) COLLABORATION WITH STATES.—The Secretary shall, to the maximum extent practicable, seek to leverage Federal investments in Federal Priority Streamgages through collaborative partnerships with States and local agencies that invest non-Federal funds to maintain and enhance gage networks to improve both environmental quality and water supply reliability.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated $45,000,000 to carry out this section for each fiscal year through fiscal year 2026.

SEC. 206. STUDY EXAMINING CLIMATE VULNERABILITIES AT FEDERAL DAMS.

(a) IN GENERAL.—Not later than 2 years after the date of the enactment of this Act, the Secretary shall make appropriate arrangements with the National Academies of Sciences, Engineering, and Medicine (referred to in this section as the ''National Academies'') under which the National Academies shall conduct an independent study to—

(1) examine the projected impact of climate change on the safety of Bureau of Reclamation dams; and

(2) evaluate and list the Bureau of Reclamation dams that are most vulnerable to climate change re-

lated safety risks based on an assessment of climate change related impacts on—

(A) the frequency of heavy precipitation events; and

(B) other factors that influence the magnitude and severity of flooding events including snow cover and snowmelt, vegetation, and soil moisture.

(b) REPORT.—In entering into an arrangement under subsection (a), the Secretary shall request that the National Academies—

(1) transmit to the Secretary and to the relevant committees of Congress a report not later than 24 months after the date of the enactment of this Act that includes the results of the study; and

(2) consider any previous studies or evaluations conducted or completed by the Bureau of Reclamation or local water agencies on climate change impacts to dams, facilities, and watersheds as a reference and source of information during the development of the independent study.

SEC. 207. INNOVATIVE TECHNOLOGY ADOPTION.

The Secretary is directed to include as a priority for grants authorized under section 9504 of the Omnibus Public Land Management Act of 2009 (42 U.S.C. 10364),

the Water Conservation Field Services Program, and other water conservation grant programs, as appropriate, that help foster the adoption of technologies that can—

(1) identify losses from water conveyance facilities in a non-destructive manner that—

(A) does not disrupt the conveyance of water supplies; and

(B) provides comprehensive data on pipeline integrity, including leak and gas pocket detection, for all pipeline materials;

(2) provide real-time monitoring of weather patterns and reservoir operations to improve flexibility, protect natural resources, increase resiliency, maintain temperature control, and ensure water supply reliability;

(3) provide real-time data acquisition and analysis to improve predictive aquifer management, including the improvement of recharge, storage, and stormwater management capabilities;

(4) implement the use of real time sensors and forecast data to improve the management of other water infrastructure assets, including the identification and prevention of impairments from inadequately treated agricultural or municipal wastewaters or stormwater; or

(5) improve water use efficiency and conservation, including through behavioral water efficiency, supervisory control and data acquisition systems, or other system modernizations.

SEC. 208. FORECAST-INFORMED WATER CONTROL MANUAL UPDATES.

Not less than $10,000,000 annually shall be used by the Army Corps of Engineers out of appropriated Operations and Maintenance funds to prepare for and process Water Control Manual Updates for forecast-informed water operations projects prioritizing regions impacted by Atmospheric Rivers and where improved forecast skill can improve water operations. Funds shall also be used to operationalize a forecast-informed water operations compatible component of the Corps Water Management System to process ensemble and synthetic forecasts to ensure continuous implementation of improvements in forecast skill for water operations.

TITLE III—ECOSYSTEM PROTECTION AND RESTORATION

SEC. 301. WATERBIRD HABITAT CREATION PROGRAM.

(a) AUTHORIZATION OF HABITAT CREATION PROGRAM.—The Secretary shall establish a program to incentivize farmers to keep fields flooded during appropriate time periods for the purposes of waterbird habitat

creation and maintenance, including waterfowl and shorebird habitat creation and maintenance, provided that—

(1) such incentives may not exceed $3,500,000 annually, either directly or through credits against other contractual payment obligations;

(2) the holder of a water contract receiving payments under this section pass such payments through to farmers participating in the program, less reasonable contractor costs, if any; and

(3) the Secretary determines that habitat creation activities receiving financial support under this section will create new habitat that is not likely to be created without the financial incentives provided under this section.

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary $3,500,000 for each fiscal year through fiscal year 2026 to carry out this section, to remain available until expended.

(c) REPORT.—Not later than October 1, 2022, and every 2 years thereafter, the Secretary shall submit to Congress a report summarizing the environmental performance of activities that are receiving, or have received, assistance under the program authorized by this section.

SEC. 302. COMPETITIVE GRANT PROGRAM FOR THE FUNDING OF WATERSHED HEALTH PROJECTS.

(a) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act and in accordance with this section, the Secretary, in consultation with the heads of relevant agencies, shall establish a competitive grant program to award grants to an eligible entity for habitat restoration projects that improve watershed health in a Reclamation State and accomplish one or more of the following benefits:

(1) Ecosystem benefits.

(2) Restoration of native species beyond existing or planned measures necessary to meet State or Federal laws for species recovery.

(3) Protection against invasive species.

(4) Restoration of aspects of the natural ecosystem.

(5) Enhancement of commercial and recreational fishing.

(6) Enhancement of river-based recreation such as kayaking, canoeing, and rafting.

(7) Mitigate against the impacts of climate change to fish and wildlife habitats.

(b) REQUIREMENTS.—

(1) IN GENERAL.—In awarding a grant under subsection (a), the Secretary—

(A) shall give priority to a project that achieves more than one of the benefits listed in subsection (a); and

(B) may not provide a grant for a project that is for the purpose of meeting existing environmental mitigation or compliance obligations under State or Federal law.

(2) COMPLIANCE.—A project awarded a grant under subsection (a) shall comply with all applicable Federal and State laws.

(c) DEFINITION OF ELIGIBLE ENTITY.—In this section, the term ''eligible entity'' means a State, Indian Tribe, nonprofit conservation organization operating in a Reclamation State, irrigation district, water district, or other organization with water or power delivery authority.

(d) PUBLIC PARTICIPATION.—Before the establishment of the program under subsection (a), the Secretary shall—

(1) provide notice of and, for a period of not less than 90 days, an opportunity for public comment on, any draft or proposed version of the program requirements in accordance with this section; and

(2) consider public comments received in developing the final program requirements.

(e) REPORT.—Not later than October 1, 2023, and every 2 years thereafter, the Secretary shall submit to Congress a report summarizing the environmental performance of activities that are receiving, or have received, assistance under the program authorized by this section.

(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $150,000,000 for each fiscal year through fiscal year 2026, to remain available until expended.

SEC. 303. SUPPORT FOR REFUGE WATER DELIVERIES.

(a) REPORT ON HISTORIC REFUGE WATER DELIVERIES.—Not later than 90 days after the date of the enactment of this Act, the Secretary shall submit to the relevant committees of Congress and make publicly available a report that describes the following:

(1) Compliance with section 3406(d)(1) and section 3406(d)(2) of the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575) in each of years 1992 through 2018, including an indication of the amount of water identified as the Level 2 amount and incremental Level 4 amount for each wetland area.

(2) The difference between the mandated quantity of water to be delivered to each wetland habitat area described in section 3406(d)(2) and the actual

quantity of water delivered since October 30, 1992, including a listing of every year in which the full delivery of water to wetland habitat areas was achieved in accordance with Level 4 of the ''Dependable Water Supply Needs'' table, described in section 3406(d)(2) of the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575).

(3) Which of the authorities granted to the Secretary under Public Law 102–575 to achieve the full Level 4 deliveries of water to wetland habitat areas was employed in achieving the increment of water delivery above the Level 2 amount for each wetland habitat area, including whether water conservation, conjunctive use, water purchases, water leases, donations, water banking, or other authorized activities have been used and the extent to which such authorities have been used.

(4) An assessment of the degree to which the elimination of water transaction fees for the donation of water rights to wildlife refuges would help advance the goals of the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575).

(b) PRIORITY CONSTRUCTION LIST.—The Secretary shall establish, through a public process and in consulta-

tion with the Interagency Refuge Water Management Team, a priority list for the completion of the conveyance construction projects at the wildlife habitat areas described in section 3406(d)(2) of the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575), including the Mendota Wildlife Area, Pixley National Wildlife Refuge and Sutter National Wildlife Refuge.

(c) ECOLOGICAL MONITORING AND EVALUATION PROGRAM.—Not later than 1 year after the date of the enactment of this Act, the Secretary, acting through the Director of the United States Fish and Wildlife Service, shall design and implement an ecological monitoring and evaluation program, for all Central Valley wildlife refuges, that produces an annual report based on existing and newly collected information, including—

(1) the United States Fish and Wildlife Service Animal Health Lab disease reports;

(2) mid-winter waterfowl inventories;

(3) nesting and brood surveys;

(4) additional data collected regularly by the refuges, such as herptile distribution and abundance;

(5) a new coordinated systemwide monitoring effort for at least one key migrant species and two resident species listed as threatened and endangered pursuant to the Endangered Species Act of 1973

(16 U.S.C. 1531 et seq.) (including one warm-blooded and one cold-blooded), that identifies population numbers and survival rates for the 3 previous years; and

(6) an estimate of the bioenergetic food production benefits to migrant waterfowl, consistent with the methodology used by the Central Valley Joint Venture, to compliment and inform the Central Valley Joint Venture implementation plan.

(d) ADEQUATE STAFFING FOR REFUGE WATER DELIVERY OBJECTIVES.—The Secretary shall ensure that adequate staffing is provided to advance the refuge water supply delivery objectives under the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575).

(e) FUNDING.—There is authorized to be appropriated $25,000,000 to carry out subsections (a) through (d), which shall remain available until expended.

(f) EFFECT ON OTHER FUNDS.—Amounts authorized under this section shall be in addition to amounts collected or appropriated under the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575).

SEC. 304. DROUGHT PLANNING AND PREPAREDNESS FOR CRITICALLY IMPORTANT FISHERIES.

(a) DEFINITIONS.—In this section:

(1) CRITICALLY IMPORTANT FISHERIES.—The term ''critically important fisheries'' means—

(A) commercially and recreationally important fisheries located within the Reclamation States;

(B) fisheries containing fish species that are listed as threatened or endangered pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) within the Reclamation States; or

(C) fisheries used by Indian Tribes within the Reclamation States for ceremonial, subsistence, or commercial purposes.

(2) QUALIFIED TRIBAL GOVERNMENT.—The term ''qualified Tribal Government'' means any government of an Indian Tribe that the Secretary determines—

(A) is involved in fishery management and recovery activities including under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.); or

(B) has the management and organizational capability to maximize the benefits of assistance provided under this section.

(b) DROUGHT PLAN FOR CRITICALLY IMPORTANT FISHERIES.—Not later than January 1, 2022, and every three years thereafter, the Secretary, acting through the Director of the United States Fish and Wildlife Service shall, in consultation with the National Marine Fisheries Service, the Bureau of Reclamation, the Army Corps of Engineers, State fish and wildlife agencies, and affected Indian Tribes, prepare a plan to sustain the survival of critically important fisheries within the Reclamation States during future periods of extended drought. The plan shall focus on actions that can aid the survival of critically important fisheries during the driest years. In preparing such plan, the Director shall consider—

(1) habitat restoration efforts designed to provide drought refugia and increased fisheries resilience during droughts;

(2) relocating the release location and timing of hatchery fish to avoid predation and temperature impacts;

(3) barging of hatchery release fish to improve survival and reduce straying;

(4) coordination with water users, the Bureau of Reclamation, State fish and wildlife agencies, and interested public water agencies regarding voluntary water transfers, including through groundwater sub-

stitution activities, to determine if water releases can be collaboratively managed in a way that provides additional benefits for critically important fisheries without negatively impacting wildlife habitat;

(5) hatchery management modifications, such as expanding hatchery production of fish during the driest years, if appropriate for a particular river basin;

(6) hatchery retrofit projects, such as the installation and operation of filtration equipment and chillers, to reduce disease outbreaks, egg mortality and other impacts of droughts and high water temperatures;

(7) increasing rescue operations of upstream migrating fish;

(8) improving temperature modeling and related forecasted information to predict water management impacts to the habitat of critically important fisheries with a higher degree of accuracy than current models;

(9) testing the potential for parentage-based tagging and other genetic testing technologies to improve the management of hatcheries;

(10) programs to reduce predation losses at artificially created predation hot spots; and

(11) retrofitting existing water facilities to provide improved temperature conditions for fish.

(c) PUBLIC COMMENT.—The Director of the United States Fish and Wildlife Service shall provide for a public comment period of not less than 90 days before finalizing a plan under subsection (a).

(d) AUTHORIZATION OF APPROPRIATIONS FOR FISH RECOVERY EFFORTS.—There is authorized to be appropriated $25,000,000 for the United States Fish and Wildlife Service for fiscal year 2022 for fish, stream, and hatchery activities related to fish recovery efforts, including work with the National Marine Fisheries Service, the Bureau of Reclamation, the Army Corps of Engineers, State fish and wildlife agencies, or a qualified Tribal Government.

(e) EFFECT.—Nothing in this section is intended to expand, diminish, or affect any obligation under Federal or State environmental law.

SEC. 305. REAUTHORIZATION OF THE FISHERIES RESTORATION AND IRRIGATION MITIGATION ACT OF 2000.

Section 10(a) of the Fisheries Restoration and Irrigation Mitigation Act of 2000 (16 U.S.C. 777 note; Public Law 106–502) is amended by striking ''$15 million

through 2021'' and inserting ''$25,000,000 through 2028''.

SEC. 306. COMBATING WATER THEFT FOR ILLEGAL MARIJUANA CULTIVATION.

(a) POLICY DIRECTIVE ON ILLEGAL WATER DIVERSION FOR MARIJUANA CULTIVATION.—Not later than 90 days after the date of the enactment of this Act, the Director of National Drug Control Policy, in collaboration with the Secretary and the Administrator of the Environmental Protection Agency, shall use the best available information to determine the amount of water diverted for marijuana cultivation in each of the high intensity drug trafficking areas (as designated under section 707 of the Office of National Drug Control Policy Reauthorization Act of 1998 (21 U.S.C. 1706)) within the State of California and other States frequently affected by water shortages.

(b) ENVIRONMENTAL REPORTING REQUIREMENTS FOR DOMESTIC CANNABIS ERADICATION PROGRAM.—Not later than 1 year after the date of the enactment of this Act, and annually thereafter, the Attorney General shall require, as a condition of the receipt of any funds under the Domestic Cannabis Eradication/Suppression program of the Drug Enforcement Administration, or any successor program, a report from any participant in such program containing information on the environmental consequences

of actions taken pursuant to program participation. The Attorney General, in making any determination to provide funding under the program, shall take into account the information so reported.

(c) TRESPASS MARIJUANA LOCATION REGISTRY.—Not later than 180 days after the date of the enactment of this Act, the Attorney General shall establish and maintain a registry, in which reports received by the Attorney General of incidents of cultivation of marijuana on Federal or State property or while intentionally trespassing on the property of another shall be recorded and, to the extent feasible, made available to the public.

(d) FUNDING FOR REMEDIATION OF TRESPASS MARIJUANA SITES.—

(1) FROM FORFEITURE FUND.—Section 524(c)(1)(E)(ii) of title 28, United States Code, is amended—

(A) in subclause (I), by striking ''and'' at the end;

(B) in subclause (II), by inserting ''and'' after the semicolon at the end; and

(C) by inserting after subclause (II) the following:

''(III) costs incurred by or on behalf of any State, local, or Tribal gov-

ernment in connection with the remediation of any area formerly used for the production or cultivation of marijuana, including the removal of any hazardous substance or pollutant or contaminant, in which such State, local, or Tribal government has assisted in a Federal prosecution related to marijuana;''.

(2) FROM RESTITUTION IN CRIMINAL CASES.—Section 413(q) of the Controlled Substances Act (21 U.S.C. 853(q)) is amended—

(A) in the matter preceding paragraph (1)—

(i) by inserting after ''manufacture'' the following: ''or cultivation''; and

(ii) by striking ''or methamphetamine'' and inserting '', methamphetamine, or marihuana''; and

(B) in paragraph (2), by inserting after ''or methamphetamine'' the following: '', or cultivation of marihuana,''.

(e) VOLUNTARY GUIDELINES.—

(1) ESTABLISHMENT OF VOLUNTARY GUIDELINES.—Not later than 6 months after the date of

the enactment of this Act, the Secretary of Agriculture, in consultation with other appropriate Federal agencies, including the Environmental Protection Agency, and experts in the field, shall establish voluntary guidelines, based on the best available scientific knowledge—

(A) for the remediation of former indoor and outdoor marijuana cultivation and processing sites, including guidelines regarding preliminary site assessment and the remediation of residual contaminants and ecosystems; and

(B) for State, local, and Tribal governments to use in developing and implementing laws, regulations, guidelines, and other policies that apply the best available research and technology to the remediation of former indoor and outdoor marijuana cultivation and processing sites.

(2) CONSIDERATIONS.—In establishing the voluntary guidelines under paragraph (1), the Secretary of Agriculture shall consider, at a minimum—

(A) relevant standards, guidelines, and requirements found in Federal, State, Tribal, and local laws and regulations;

(B) the various types and locations of former marijuana cultivation or processing sites, including both indoor and outdoor sites; and

(C) the estimated costs of carrying out any such guidelines.

(3) CONSULTATION.—The Secretary of Agriculture shall work with State, local, and Tribal governments and other non-Federal agencies and organizations the Secretary determines relevant to promote and encourage the adoption of the voluntary guidelines established under paragraph (1).

(4) REVISIONS TO THE GUIDELINES.—

(A) IN GENERAL.—The Secretary of Agriculture shall periodically review and revise the voluntary guidelines to incorporate findings of the research conducted pursuant to subsection (f) and other new knowledge.

(B) CONSULTATION.—In carrying out subparagraph (A), the Secretary of Agriculture may consult with State, local, Tribal governments, and non-profits engaged in scientific research and reclamation, and other interested parties.

(f) RESEARCH PROGRAM.—The Secretary of Agriculture, in consultation with other appropriate Federal agencies, including the Environmental Protection Agency, shall establish a program of research to support the development and revision of the voluntary guidelines established under subsection (e). Such program shall—

(1) identify marijuana cultivation or processing-related chemicals of concern;

(2) assess the types and levels of exposure to chemicals of concern identified under paragraph (1) that may present significant adverse biological effects, and identify actions and additional research necessary to remediate such biological effects;

(3) assess the impacts of marijuana cultivation and processing on waterways and bodies of water, and identify actions and additional research necessary to remediate such impacts;

(4) evaluate the performance of current remediation techniques for marijuana cultivation and processing sites;

(5) identify areas for which additional research is necessary, including research relating to—

(A) the impacts of indoor and outdoor marijuana cultivation and processing, including biological and hydrological effects and impacts

to soil and landscape, such as the potential for erosion; and

(B) the remediation of former indoor or outdoor marijuana cultivation or processing sites;

(6) support other research priorities identified by the Secretary of Agriculture, in consultation with State, local, Tribal governments, non-profits engaged in scientific research and reclamation, and other interested parties; and

(7) include collaboration with institutions of higher education engaged in research on any matter described in this subsection or additional research priorities determined appropriate by the Secretary of Agriculture.

SEC. 307. SUSTAINING BIODIVERSITY DURING DROUGHTS.

Section 9503(b) of the Omnibus Public Land Management Act of 2009 (42 U.S.C. 10363(b)) is amended—

(1) in paragraph (3)(D), by inserting ''and native biodiversity'' after ''wildlife habitat''; and

(2) in paragraph (4)(B), by inserting ''and drought biodiversity plans to address sustaining native biodiversity during periods of drought'' after ''restoration plans''.

TITLE IV—WATER JOB TRAINING AND EDUCATION

SEC. 401. WATER RESOURCE EDUCATION.

(a) GENERAL AUTHORITY.—In accordance with this section, the Secretary may enter into a cooperative agreement or contract or provide financial assistance in the form of a grant, to support activities related to education on water resources.

(b) ELIGIBLE ACTIVITIES.—The Secretary may enter into a cooperative agreement or contract or provide financial assistance for activities that improve water resources education, including through tours, publications or other activities that—

(1) disseminate information on water resources via educational tools, materials or programs;

(2) publish relevant information on water resource issues, including environmental and ecological conditions;

(3) advance projects that improve public understanding of water resource issues or management challenges, including education on drought, drought awareness, and drought resiliency;

(4) provide training or related education for teachers, faculty, or related personnel, including in a specific geographic area or region; or

(5) enable tours, conferences, or other activities to foster cooperation in addressing water resources or management challenges, including cooperation relating to water resources shared by the United States and Canada or Mexico.

(c) GRANT PRIORITY.—In making grants under this section, the Secretary shall give priority to activities that—

(1) provide training for the professional development of legal and technical experts in the field of water resources management; or

(2) help educate the public, teachers or key stakeholders on—

(A) a new or significantly improved water resource management practice, method, or technique;

(B) the existence of a water resource management practice, method, or technique that may have wide application;

(C) a water resource management practice, method, or technique related to a scientific field or skill identified as a priority by the Secretary; or

(D) general water resource issues or management challenges, including as part of a

science curricula in elementary or secondary education setting.

SEC. 402. WATER SECTOR CAREER GRANT PROGRAMS.

(a) COORDINATION WITH INNOVATIVE WATER INFRASTRUCTURE WORKFORCE DEVELOPMENT PROGRAM.—

(1) IN GENERAL.—The Secretary shall develop a grant program to improve job placement and retention in the water and wastewater utilities sector, to be administered in coordination with the Innovative Water Infrastructure Workforce Development Program.

(2) CONFORMING AMENDMENT.—Section 4304(b) of Public Law 115–270 (42 U.S.C. 300j–19e) is amended by inserting ''and the Secretary of the Interior'' after ''Agriculture''.

(3) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated for purposes of this section $10,000,000 for each fiscal year through fiscal year 2026, to remain available until expended.

(b) GRANTS AUTHORIZED.—Beginning 360 days after the date of the enactment of this section, the Secretary may award grants to eligible entities for the purpose of developing, offering, or improving programs that

increase the job placement and retention of skilled and diverse workers in the water and wastewater sector.

(c) ALLOCATION OF GRANTS.—

(1) LIMITATION ON GRANT QUANTITY AND SIZE.—An eligible entity may not be awarded—

(A) more than 1 grant under this section for which the eligible entity is the lead applicant; or

(B) a grant under this section in excess of $2,500,000.

(2) ALLOCATION TO COMMUNITY COLLEGES.—Not less than 20 percent of the total amount awarded under this section for a fiscal year shall be awarded to eligible entities that are community colleges.

(d) PARTNERSHIPS.—An eligible entity seeking to receive a grant under this section may partner with 1 or more of the following:

(1) Another eligible entity (including an eligible entity that is a community college).

(2) A water district or other organization with water delivery authority.

(3) A State or local government.

(4) A nonprofit organization.

(e) USE OF GRANT.—An eligible entity may use a grant awarded under this section for the following activities:

(1) Assessment of water workforce needs and priorities.

(2) Development of a water workforce plan.

(3) Design and implementation of formalized mentorship or registered apprenticeship programs.

(4) Design and implementation of bridge programs, work-study opportunities, or other strategies to connect jobseekers with employment opportunities.

(5) Development of outreach strategies to recruit a more diverse workforce.

(6) Incumbent worker and career ladder training and skill upgrading and retraining.

(7) Identification and removal of barriers preventing qualified individuals from securing and retaining a job.

(8) Curriculum development at the undergraduate and postgraduate levels.

(9) Development and support of water resource management major, minor, or certificate programs.

(10) Outreach, recruitment, career guidance, and case management services.

(11) Such other activities, as determined by the Secretary, to meet the purposes of this section.

(f) GRANT PROPOSALS.—

(1) SUBMISSION PROCEDURE FOR GRANT PROPOSALS.—An eligible entity seeking to receive a grant under this section shall submit a grant proposal to the Secretary at such time, in such manner, and containing such information as the Secretary may require.

(2) CONTENT OF GRANT PROPOSALS.—A grant proposal submitted to the Secretary under this section shall include a detailed description of—

(A) the specific project for which the grant proposal is submitted, including the manner in which the grant will be used to develop, offer, or improve a program to improve recruitment and retention in the water or wastewater utility sector;

(B) any previous experience of the eligible entity in providing such programs; and

(C) the extent to which such project will meet the needs identified under subsection (i).

(g) CRITERIA FOR AWARD OF GRANTS.—

(1) IN GENERAL.—Subject to appropriations, the Secretary shall award grants under this section based on an evaluation of—

(A) the merits of the grant proposal;

(B) the likely improvement to job recruitment and retention as a result of the grant proposal; and

(C) the availability and capacity of existing educational programs in the community to meet future demand for such programs.

(2) PRIORITY.—Priority in awarding grants under this section shall be given to an eligible entity that—

(A) includes the equal participation of industry and labor organizations, including joint labor-management training programs and workforce investment boards;

(B) has entered into a memorandum of understanding with an employer that is a water district or organization with water delivery authority to foster workforce development, recruitment, and retention, and can leverage additional public and private resources to fund activities that further the purposes of the grant;

(C) focuses on individuals who are—

(i) veterans, members of the reserve components of the Armed Forces, or former members of such reserve components;

(ii) unemployed;

(iii) seeking employment pathways out of poverty and into economic self-sufficiency;

(iv) at-risk youth;

(v) formerly incarcerated, adjudicated, nonviolent offenders; or

(vi) from populations that are traditionally underrepresented in the infrastructure workforce; or

(D) with respect to an eligible entity that is an institution of higher education, has a high percentage or number of minority or low-income students.

(3) GEOGRAPHIC DISTRIBUTION.—The Secretary shall, to the extent practicable, award grants under this section in a manner that provides for a reasonable geographic distribution, except that the Secretary shall prioritize grants to institutions focused on the water management challenges of the Reclamation States.

(h) DATA COLLECTION AND REPORTING.—

(1) IN GENERAL.—A grantee under this section shall collect and report to the Secretary on an annual basis the following:

(A) The number of participants enrolled in the program.

(B) The number of participants that have completed the program.

(C) The services received by such participants, including a description of training, education, and supportive services.

(D) The amount spent by the grantee per participant.

(E) The rate of job placement of participants with a water district or other entity in the water and wastewater utilities sector.

(F) The rate of employment retention 1 year after completion of the program or 1 year after the participant is no longer enrolled in such institution of higher education, whichever is later.

(G) The average wage at placement, including any benefits, and the rate of average wage increase after 1 year.

(H) Any factors determined as significantly interfering with recruitment and retention.

(2) DISAGGREGATION OF DATA.—The data collected and reported under this subsection shall be disaggregated by—

(A) race;

(B) gender;

(C) low-income status;

(D) disability; and

(E) English language proficiency.

(3) ASSISTANCE FROM SECRETARY.—The Secretary shall assist grantees in the collection of data under this subsection by making available, where practicable, low-cost means of tracking the labor market outcomes of participants and by providing standardized reporting forms, where appropriate.

(i) INTERAGENCY RESEARCH PROGRAM AND COORDINATION.—

(1) INTERAGENCY LABOR MARKET RESEARCH PROGRAM.—

(A) MEMORANDUM OF UNDERSTANDING.—Not later than 120 days after the date of the enactment of this section, the Secretary shall enter into a memorandum of understanding

with the Administrator of the Environmental Protection Agency, the Secretary of Agriculture, and the Secretary of Labor, acting through the Bureau of Labor Statistics, on a program to—

(i) collect and analyze labor market data in the water and wastewater utilities sector, including the data collected in subsection (h);

(ii) track workforce trends, including those affecting recruitment and retention; and

(iii) identify the educational and career training needs for current and future jobs in the water and wastewater utilities sector, including those related to construction and installation, engineering, operation, and maintenance.

(B) COLLABORATION.—Activities carried out under this paragraph shall include collaboration with State and local governments, workforce investment boards, industry, labor organizations, water districts, and nonprofit organizations.

(2) COORDINATION BETWEEN FEDERAL WATER CAREER TRAINING PROGRAMS.—Not later than 180

days after the date of the enactment of this section, the Secretary shall enter into a memorandum of understanding with the Administrator of the Environmental Protection Agency to facilitate coordination and collaboration between the career training program established by this section and the Innovative Water Infrastructure Workforce Development Program, including the improvement of such career training programs over time to reflect the needs identified by the interagency research program established in paragraph (1).

(j) GUIDELINES.—Not later than 240 days after the date of the enactment of this section, the Secretary shall—

(1) promulgate guidelines for the submission of grant proposals under this section, including a list of the needs identified under subsection (i); and

(2) publish and maintain such guidelines on a public website of the Secretary.

(k) REPORTING REQUIREMENT.—Not later than 18 months after the date of the enactment of this section, and every 2 years thereafter, the Secretary shall submit a report to the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate on the grant programs established by this section and the Innovative

Water Infrastructure Workforce Development Program. The report shall include a description of the grantees and the activities for which grantees used a grant awarded under this section.

(l) DEFINITIONS.—In this section:

(1) COMMUNITY COLLEGE.—The term ''community college'' has the meaning given the term ''junior or community college'' in section 312(f) of the Higher Education Act of 1965 (20 U.S.C. 1058(f)).

(2) ELIGIBLE ENTITY.—The term ''eligible entity'' means a nonprofit entity or partnership that demonstrates experience in implementing and operating worker skills training and education programs such as a labor organization or an institution of higher education, as such term is defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

(3) GRANTEE.—The term ''grantee'' means an eligible entity that has received a grant under this section.

(4) INNOVATIVE WATER INFRASTRUCTURE WORKFORCE DEVELOPMENT PROGRAM.—The term ''Innovative Water Infrastructure Workforce Development Program'' means the program authorized by section 4304(b) of Public Law 115–270.

(5) LEAD APPLICANT.—The term ''lead applicant'' means the eligible entity that is primarily responsible for the preparation, conduct, and administration of the project for which the grant was awarded.

(6) LOW-INCOME STUDENT.—The term ''low-income student'' means a student whose income (adjusted for family size) does not exceed—

(A) for metropolitan areas, 80 percent of the area median income; and

(B) for nonmetropolitan areas, the greater of—

(i) 80 percent of the area median income; or

(ii) 80 percent of the statewide nonmetropolitan area median income.

TITLE V—MISCELLANEOUS

SEC. 501. OFFSET.

(a) PURPOSE; DEFINITION.—

(1) PURPOSE.—The purpose of this section is to establish an efficient and transparent 1-time process for deauthorizing Bureau of Reclamation projects that have failed—

(A) to receive a minimum level of Federal investment; or

(B) to initiate construction.

(2) DEFINITION OF RECLAMATION PROJECT.—In this section, the term ''Reclamation project'' means a surface water storage project or project under the purview of title XVI of Public Law 102–575 that is to be carried out, funded or operated in whole or in part by the Secretary pursuant to the Act of June 17, 1902 (32 Stat. 388, chapter 1093), and Acts supplemental to and amendatory of that Act (43 U.S.C. 371 et seq.).

(b) BACKLOG LIST.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives, and make available on a publicly accessible internet website in a manner that is downloadable, searchable, and sortable, a list of—

(1) Reclamation projects—

(A) that are authorized; and

(B) for which, during the fiscal year in which this Act is enacted and each of the preceding 10 fiscal years—

(i) no application for Federal funding has been received; and

(ii) no construction has occurred; and

(2) for each Reclamation project listed under paragraph (1)—

(A) the date of authorization of the Reclamation project, including any subsequent modifications to the original authorization;

(B) a brief description of the Reclamation project; and

(C) any amounts appropriated for the Reclamation project that remain unobligated.

(c) INTERIM DEAUTHORIZATION LIST.—

(1) IN GENERAL.—The Secretary shall develop and make publicly available an interim deauthorization list that identifies each Reclamation project described in subsection (b)(1).

(2) PUBLIC COMMENT AND CONSULTATION.—

(A) IN GENERAL.—The Secretary shall solicit and accept, for a period of not less than 90 days, comments relating to the interim deauthorization list under paragraph (1) from—

(i) the public; and

(ii) the Governor of each applicable State.

(B) PROJECT SPONSORS.—As part of the public comment period under subparagraph (A), the Secretary shall provide to project sponsors

the opportunity to provide to the Secretary a notice of the intent to initiate construction of the project by not later than the date that is 2 years after the date of publication of the preliminary final deauthorization list under subsection (d).

(3) SUBMISSION TO CONGRESS; PUBLICATION.—Not later than 90 days after the date of submission of the backlog list under subsection (b), the Secretary shall—

(A) submit the interim deauthorization list under paragraph (1) to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives; and

(B) publish the interim deauthorization list in the Federal Register.

(d) PRELIMINARY FINAL DEAUTHORIZATION LIST.—

(1) IN GENERAL.—The Secretary shall develop a preliminary final deauthorization list that includes each project identified pursuant to paragraph (2).

(2) IDENTIFICATION OF PROJECTS.—

(A) EXCLUSIONS.—The Secretary may identify a Reclamation project described in subsection (b)(1) for exclusion from the prelimi-

nary final deauthorization list if the Secretary determines, on a case-by-case basis following receipt of public comments, that the project is critical for interests of the United States, based on the practicable impact of the project on—

(i) public health and safety;

(ii) the national economy; or

(iii) the environment.

(B) SUBJECT TO DEAUTHORIZATION DESIGNATION.—Any Reclamation project the sponsor of which has provided to the Secretary a notice of the intent to initiate construction by not later than 2 years after the date of publication of the preliminary final deauthorization list under this subsection shall be designated on that list as ''subject to deauthorization''.

(C) APPENDIX.—The Secretary shall include as part of the preliminary final deauthorization list under this subsection an appendix that—

(i) identifies each Reclamation project included on the interim deauthorization list under subsection (c) that is not included on the preliminary final deauthorization list; and

(ii) describes the reasons why each Reclamation project identified under clause (i) is not included on the preliminary final deauthorization list.

(3) SUBMISSION TO CONGRESS; PUBLICATION.—Not later than 120 days after the date of expiration of the public comment period under subsection (c)(2)(A), the Secretary shall—

(A) submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives the preliminary final deauthorization list and the appendix required under this subsection; and

(B) publish the preliminary final deauthorization list and appendix in the Federal Register.

(e) DEAUTHORIZATION; CONGRESSIONAL REVIEW.—Effective beginning on the date that is 180 days after the date of submission to Congress of the preliminary final deauthorization list under subsection (d)(3)(A), each Reclamation project included on that list is deauthorized, unless—

(1) the Reclamation project is designated as ''subject to deauthorization'' pursuant to subsection (d)(2)(B); or

(2) Congress has enacted a joint resolution disapproving the preliminary final deauthorization list.

(f) UPDATED FINAL DEAUTHORIZATION LIST.—

(1) PUBLICATION.—Not later than the date that is 2 years after the date of publication of the preliminary final deauthorization list under subsection (d)(3)(B), the Secretary shall publish an updated final deauthorization list.

(2) PROJECTS SUBJECT TO DEAUTHORIZATION.—On the updated final deauthorization list under this subsection, the Secretary shall describe any Reclamation project designated as ''subject to deauthorization'' on the preliminary final deauthorization list pursuant to subsection (d)(2)(B) as—

(A) authorized, if the Secretary has received evidence that the sponsor of the Reclamation project has substantially initiated construction on the Reclamation project; or

(B) deauthorized, if the Secretary has not received the evidence described in subparagraph (A).

(3) DEAUTHORIZATION.—Any project described as deauthorized pursuant to paragraph (2)(B) shall be deauthorized on the date that is 180 days after the date of submission of the updated final deauthorization list under paragraph (1), unless Congress has enacted a joint resolution disapproving that list.

(g) TREATMENT OF PROJECT MODIFICATIONS.—For purposes of this section, if an authorized Reclamation project has been modified by an Act of Congress, the date of authorization of the project shall be considered to be the date of the most recent modification.

To: Board of Directors, *Municipal Water District of Orange County*
From: Natural Resource Results
RE: Monthly Board Report – June 2021

Nominations

Last week, the Senate Environment and Public Works Committee voted to advance the nomination of Radhika Fox to lead EPA's Office of Water along with Shannon Estenoz to be the Department of the Interior's Assistant Secretary for Fish and Wildlife and Parks.

The Senate Energy and Natural Resources Committee advanced the nomination of Tanya Trujillo to be the Department of the Interior's Assistant Secretary for Water and Science.

Water Emergency Response Organization of Orange County (WEROC)

President Biden transmitted his budget request to Congress on May 28th which will allow Congress to kick off its appropriations process in earnest. Prior to the last MWDOC board meeting, NRR worked with MWDOC staff to develop an earmark request for WEROC's EOC for Senator Feinstein following the announcement that the Senate would follow suit with the House and bring back earmarks. Since then, an earmark request has also been submitted to Senator Padilla's office.

Household Water Debt Relief

As mentioned in previous board reports, Congress created the Low-Income Household Water Assistance Program at the Department of Health and Human Services (HHS). The program currently has roughly $1.1 billion in funding available but is struggling to get money out the door. HHS has struggled to get the program off of the ground but has stated that it expects to start distributing funding in earnest in late May or early June. Funding will be provided to states, tribes and territories and will be available for expenditure through December of 2023.

Part of the tension for water bill-assistance is the design of the program. Is it an emergency response to Covid-19? Or is it the beginning of a permanent program? Officials from the HHS Office of Community Services emphasized the urgency of assisting people in a pandemic as quickly as possible. For that reason, the money cannot be spent on problems that might be causing high water bills, like plumbing repairs.

Congressman Huffman's Western Water Legislation

On May 20th, Congressman Huffman introduced his long-awaited water bill – H.R. 3404, the FUTURE Drought Act. Highlights of the comprehensive legislation, which closely matches his bill from the 116th Congress include:

- $750 million for multi-benefit water storage projects
    - WIIN Act storage projects that have already received funding prior to June of 2020 are automatically eligible for this new storage funding stream
- $260 million for desalination projects
- $500 million for Title XVI
    - Also raises the $20 million funding cap for individual projects to $30 million
- $100 million for a Reclamation grant program designed to assist disadvantaged communities that have water quality or quantity challenges
- Starting in 2032, the bill would provide $300 million per year from funds that would have traditionally been deposited in the Reclamation Fund
    - $100 million per year for Title XVI
    - $100 million per year for cooperative watershed management and WaterSMART water use efficiency projects
    - $100 million per year for Reclamation dam safety projects
- Expansion of the income tax exclusion for homeowners who receive rebates from water utilities for the purchase or installation of water conservation systems
- $10 million grant program for water sector career training

We expect the bill to be included in the House infrastructure package, which Speaker Pelosi has indicated that she wants to finish by the 4th of July recess (more on that below). In his press rollout of the legislation, Huffman stated that the bill has been endorsed by the Newsom Administration.

Colorado River Update

The Colorado Basin River Forecast Center recently updated its spring runoff projects by decreasing runoff projections into Lake Powell from 28% of normal down to 26% of normal, making 2021 one of the worst runoff years since the lake was originally filled in the 1960s.

White House Infrastructure Discussions

The White House continues to seek a bipartisan infrastructure proposal and has now traded offers multiple times with Senate Republicans. Senate Republican's initially offered a $568 billion infrastructure package as a counter to President Biden's $2.3 trillion American Jobs Plan. Senate Republicans subsequently provided the White House with another offer that has not been made public. The White House responded in late May with a $1.7 trillion proposal that was not very well received by congressional Republicans. Th Senate GOP in returned made another counteroffer that was closer to the $1 trillion mark. The White House has come out against user fees as a means for paying for infrastructure while Senate Republicans will continue to oppose any effort to roll back the 2017 Tax Cuts and Jobs Act, which the White House has offered as a pay-for. There is also a growing difference of opinion regarding the definition of "infrastructure" with Senate Republicans insisting that it be "hard infrastructure" such as roads, bridges, airports, and seaports, whereas the White House has a more expansive view of "infrastructure" and believes that it should include social programs.

Pressure in mounting on the White House to abandon bipartisan talks and to push forward what Democrats are calling a “one in a generation investment” that tracks with President Biden’s American Jobs Plan.

BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

To:	Municipal Water District of Orange County
From:	Syrus Devers, Best Best & Krieger
Date:	June 2nd , 2021
Re:	State Legislative Report

2021 is on track to be a good year for the water industry as far as legislation goes. All of the top priority opposition bills have stalled until 2022 and several bills supported by MWDOC are still moving. In particular, AB 1434 (Friedman) on indoor water use efficiency, and SB 223 (Dodd) extending the prohibitions on water shutoffs, stalled in their respective Appropriations Committee. For this reason the majority of the attention over the last few weeks has been on the Budget and the Governor's May Revise.

The California Municipal Utilities Association and the Association of California Water Agencies organized a large lobbying effort to generate support for the Senate's budget proposal to eliminate arrearages on utility bills and fund water infrastructure projects. The hope was that the Senate's proposal would gain early support and be passed as part of the Budget, but that hope is fading fast. The Senate Budget Subcommittee elected to send the proposed amount ($3.475B) to the full committee with no proposal details in anticipation of future negotiations with the Governor and the Assembly. Furthermore, a member of the Assembly Budget Committee opined that the most likely outcome will be to approve a relief package amount by the budget deadline of June 30th and work out the details in the following weeks in Budget Trailer Bills. That said, here are the key differences between the Governor's and the Senate's proposals as of the day this report was prepared[1]:

	Senate	Governor (including May Revise)
	(in millions)	
Address water arrearage debt	1,000	1,000
Small community drought assistance	500	1,450
SGMA implementation	300	300
Recycled water/groundwater/water quality	300	170
Agricultural water use efficiency	250	60
Land conservation/restoration programs	265	266
Urban water-use efficiency	250	0
Resilient water infrastructure projects	200	266
Stormwater management	200	0
Water data and forecast improvements	75	91

[1] From the Senate Budget Subcommittee No. 2 analysis on May 25th.

Drought projects at State Parks	50	0
Drought assistance for fish and wildlife	35	33
Land repurposing program	0	500
Salton Sea	0	220
SWP and CVP canal repairs	0	200
Oroville pump storage project	0	200
Urban water management grants	0	150
Flood management projects	0	140
Drought emergency response activities	0	65
Specified water and climate studies	0	45
Totals	3,425	5,156

There are a few caveats where some of the numbers come from more than one source, but the bottom line is that the Governor is proposing a much larger relief package. That sounds great, so what could possibly go wrong?

"In Contrast to the Governor, [the Legislative Analyst's Office] ***Recommend Legislature Restore Budget Resilience."*** (LAO comments on The Governor's May Revise.)

That's probably not what Governor Newsom was hoping for out of the LAO, which took issue with several aspects of the revised budget. The main issue the LAO took Newsom to task for was continuing to withdraw $12B from the "rainy day" fund in order to help pay for his new programs. This was proposed when the state appeared to be facing an unprecedented budget shortfall, but Newsom is pushing forward with it despite the fact that we now know we have an unprecedented budget surplus, especially in light of the anticipated federal funds. The LAO wants significant dollars put towards reserves instead.

The other major issue the LAO called out was Newsom spreading too much money over too many new programs. In all, Newsom is proposing 400 new programs. The LAO is very skeptical about state agencies being able to manage that much money across that many programs without dramatically increasing staff, which Newsom doesn't propose in order to keep the talking point that these are one-time spending proposals. The report not so subtly suggests that the Legislature needs to exercise restraint and reign in the Governor's ambitions by focusing on fewer new programs and making a bigger impact on core issues.

The next step in the process is for the full Budget Committees in both houses to adopt a budget and send the outstanding issues to conference committees. In sum, everything is going great as long as we don't have a drought….

Bill Matrix

Prepared by Best Best & Krieger, June 2021

A. Priority Support/Oppose

Measure	Author	Topic	Status	Brief Summary	Position	Priority	Notes 1
AB 339	Lee D	Local government: open and public meetings.	5/20/2021-Read second time. Ordered to third reading.	Would, until December 31, 2023, require all open and public meetings of a city council or a county board of supervisors that governs a jurisdiction containing least 250,000 people to include an opportunity for members of the public to attend via a telephonic option or an internet-based service option. The bill would require all open and public meetings to include an in-person public comment opportunity, except in specified circumstances during a declared state or local emergency. The bill would require all meetings to provide the public with an opportunity to comment on proposed legislation in person and remotely via a telephonic or an internet-based service option, as provided.	Support	A. Priority Support/ Oppose	Support position adopted April 7th.
AB 361	Rivas, Robert D	Open meetings: local agencies: teleconferences.	5/18/2021-In Senate. Read first time. To Com. on RLS. for assignment.	Would authorize a local agency to use teleconferencing without complying with the teleconferencing requirements imposed by the Ralph M. Brown Act when a legislative body of a local agency holds a meeting for the purpose of declaring or ratifying a local emergency, during a declared state of emergency or local emergency, as those terms are defined, when state or local health officials have imposed or recommended measures to promote social distancing, and during a declared local emergency provided the legislative body determines, by majority vote, that meeting in person would present imminent risks to the health or safety of attendees.	Support	A. Priority Support/ Oppose	Support adopted on March 3rd
AB 377	Rivas, Robert D	Water quality: impaired waters.	5/25/2021-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/19/2021) (May be acted upon Jan 2022)	Would require, by January 1, 2023, the State Water Resources Control Board and regional boards to prioritize enforcement of all water quality standard violations that are causing or contributing to an exceedance of a water quality standard in a surface water of the state. The bill would require the state board and regional boards, by January 1, 2025, to evaluate impaired state surface waters and report to the Legislature a plan to bring all water segments into attainment by January 1, 2050. The bill would require the state board and regional boards to update the report with a progress summary to the Legislature every 5 years. The bill would create the Waterway Recovery Account in the Waste Discharge Permit Fund and would make moneys in the Waterway Recovery Account available for the state board to expend, upon appropriation	Opposition	A. Priority Support/ Oppose	Oppose position adopted April 7th.

				by the Legislature, to bring impaired water segments into attainment in accordance with the plan.			
AB 442	Mayes I	Surface Mining and Reclamation Act of 1975: exemption: Metropolitan Water District of Southern California: single master reclamation plan.	5/20/2021-Read second time. Ordered to Consent Calendar.	The Surface Mining and Reclamation Act of 1975 exempts certain activities from the provisions of the act, including, among others, emergency excavations or grading conducted by the Department of Water Resources or the Central Valley Flood Protection Board for the specified purposes; surface mining operations conducted on lands owned or leased, or upon which easements or rights-of-way have been obtained, by the Department of Water Resources for the purpose of the State Water Resources Development System or flood control; and surface mining operations on lands owned or leased, or upon which easements or rights-of-way have been obtained, by the Central Valley Flood Protection Board for the purpose of flood control. This bill would additionally exempt from the provisions of the act emergency excavations or grading conducted by the Metropolitan Water District of Southern California (MWD) for its own operations and infrastructure for specified purposes.	Support	A. Priority Support/ Oppose	Support adopted on March 3rd.
AB 703	Rubio, Blanca D	Open meetings: local agencies: teleconferences.	5/7/2021-Failed Deadline pursuant to Rule 61(a)(3). (Last location was L. GOV. on 2/25/2021) (May be acted upon Jan 2021)	Current law, by Executive Order N-29-20, suspends the Ralph M. Brown Act's requirements for teleconferencing during the COVID-19 pandemic, provided that notice requirements are met, the ability of the public to observe and comment is preserved, as specified, and that a local agency permitting teleconferencing have a procedure for receiving and swiftly resolving requests for reasonable accommodation for individuals with disabilities, as specified. This bill would remove the notice requirements particular to teleconferencing and would revise the requirements of the act to allow for teleconferencing subject to existing provisions regarding the posting of notice of an agenda, provided that the public is allowed to observe the meeting and address the legislative body directly both in person and remotely via a call-in option or internet-based service option, and that a quorum of members participate in person from a singular physical location clearly identified on the agenda that is open to the public and situated within the jurisdiction.	Support	A. Priority Support/ Oppose	Support adopted on March 3rd.
AB 1195	Garcia, Cristina D	Drinking water.	5/25/2021-Read second time. Ordered to third reading.	Current law establishes the Safe and Affordable Drinking Water Fund in the State Treasury to help water systems provide an adequate and affordable supply of safe drinking water in both the near and long terms. Current law authorizes the state board to provide for the deposit into the fund of certain moneys and continuously appropriates the moneys in the fund to the state board for	Oppose unless amended	A. Priority Support/ Oppose	Position adopted May 5th.

				grants, loans, contracts, or services to assist eligible recipients. This bill would prohibit a public water system from transferring or abandoning a water right held by the public water system except upon approval of the state board, as prescribed.			
AB 1434	Friedman D	Urban water use objectives: indoor residential water use.	5/25/2021-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. on 4/27/2021) (May be acted upon Jan 2022)	Would establish, beginning January 1, 2023, until January 1, 2025, the standard for indoor residential water use as 48 gallons per capita daily. The bill would establish, beginning January 1, 2025, the standard as 44 gallons per capita daily and, beginning January 1, 2030, 40 gallons per capita daily.	Opposition	A. Priority Support/ Oppose	Opposed position adopted April 7th.
AB 1500	Garcia, Eduardo D	Safe Drinking Water, Wildfire Prevention, Drought Preparation, Flood Protection, Extreme Heat Mitigation, and Workforce Development Bond Act of 2022.	5/20/2021-Joint Rule 62(a), file notice suspended. From committee: Do pass and re-refer to Com. on RLS. (Ayes 12. Noes 3.) (May 20). Re-referred to Com. on RLS.	Would enact the Safe Drinking Water, Wildfire Prevention, Drought Preparation, Flood Protection, Extreme Heat Mitigation, and Workforce Development Bond Act of 2022, which, if approved by the voters, would authorize the issuance of bonds in the amount of $7,080,000,000 pursuant to the State General Obligation Bond Law to finance projects for safe drinking water, wildfire prevention, drought preparation, flood protection, extreme heat mitigation, and workforce development programs.	Out for Analysis	A. Priority Support/ Oppose	Bond intended for Nov. '22 ballot. Will remain "out for analysis" for the near future.
SB 45	Portantino D	Wildfire Prevention, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2022.	5/20/2021-From committee: Do pass. (Ayes 5. Noes 2.) (May 20). Read second time. Ordered to third reading.	Would enact the Wildfire Prevention, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2022, which, if approved by the voters, would authorize the issuance of bonds in the amount of $5,595,000,000 pursuant to the State General Obligation Bond Law to finance projects for a wildfire prevention, safe drinking water, drought preparation, and flood protection program.	Out for Analysis	A. Priority Support/ Oppose	Bond intended for the Nov. '22 ballot.
SB 222	Dodd D	Water Rate Assistance Program.	5/24/2021-Read second time. Ordered to third reading.	This bill would establish the Water Rate Assistance Fund in the State Treasury to help provide water affordability assistance, for both drinking water and wastewater services, to low-income ratepayers and ratepayers experiencing economic hardship in California. The bill would require the Department of Community Services and Development to develop and administer the Water Rate Assistance Program established	Watch	A. Priority Support/ Oppose	Position adopted 2/3/2021

				by the bill.			
SB 223	Dodd D	Discontinuation of residential water service.	5/25/2021-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/17/2021) (May be acted upon Jan 2022)	Current law requires an urban and community water system to have a written policy on discontinuation of residential service for nonpayment, including, among other things, specified options for addressing the nonpayment. Current law requires an urban and community water system to provide notice of that policy to customers, as provided. This bill would apply those provisions, on and after July 1, 2022, to a very small community water system, defined as a public water system that supplies water to 200 or fewer service connections used by year long residents.	Opposition	A. Priority Support/ Oppose	Oppose position taken on 2/3/2021
SB 230	Portantino D	State Water Resources Control Board: Constituents of Emerging Concern Program.	5/25/2021-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. on 3/15/2021) (May be acted upon Jan 2022)	Would require the State Water Resources Control Board to establish, maintain, and direct an ongoing, dedicated program called the Constituents of Emerging Concern Program to assess the state of information and recommend areas for further study on, among other things, the occurrence of constituents of emerging concern (CEC) in drinking water sources and treated drinking water. The bill would require the state board to convene, by an unspecified date, the Science Advisory Panel to review and provide recommendations to the state board on CEC for further action, among other duties. The bill would require the state board to provide an annual report to the Legislature on the ongoing work conducted by the panel.	Support	A. Priority Support/ Oppose	Support position adopted April 7th.
SB 323	Caballero D	Local government: water or sewer service: legal actions.	5/13/2021-Referred to Coms. on L. GOV. and JUD.	Current law prohibits a local agency from imposing fees for specified purposes, including fees for water or sewer connections, as defined, that exceed the estimated reasonable cost of providing the service for which the fee is charged, unless voter approval is obtained. Current law provides that a local agency levying a new a water or sewer connection fee or increasing a fee must do so by ordinance or resolution. Current law requires, for specified fees, including water or sewer connection fees, any judicial action or proceeding to attack, review, set aside, void, or annul an ordinance, resolution, or motion adopting a new fee or service charge or modifying an existing fee or service charge to be commenced within 120 days of the effective date of the ordinance, resolution, or motion according to specified procedures for validation proceedings. This bill would apply the same judicial action procedure and timelines, as stated above, to ordinances, resolutions, or motions adopting, modifying, or amending water or sewer service fees or charges adopted after January 1, 2022, except as provided.	Support	A. Priority Support/ Oppose	Support adopted on March 3rd.
SB 351	Caballero D	Water Innovation	5/25/2021-	Current law establishes the State Water	Support	A.	Support

		Act of 2021.	Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/10/2021) (May be acted upon Jan 2022)	Resources Control Board for the purposes of providing for the orderly and efficient administration of the water resources of the state. This bill, the Water Innovation Act of 2021, would create the Office of Water Innovation at the California Water Commission for the furtherance of new technologies and other innovative approaches in the water sector. The bill would require the office, by December 31, 2023, to take specified measures to advance innovation in the water sector. The bill would make findings and declarations regarding the need for water innovation.		Priority Support/ Oppose	adopted on March 3rd.
SB 559	Hurtado D	Department of Water Resources: water conveyance systems: Canal Conveyance Capacity Restoration Fund.	5/24/2021-Read second time. Ordered to third reading.	Would establish the Canal Conveyance Capacity Restoration Fund in the State Treasury to be administered by the Department of Water Resources. The bill would require all moneys deposited in the fund to be expended, upon appropriation by the Legislature, in support of subsidence repair costs, including environmental planning, permitting, design, and construction and necessary road and bridge upgrades required to accommodate capacity improvements. The bill would require the department to expend from the fund, upon appropriation by the Legislature, specified monetary amounts to restore the capacity of 4 specified water conveyance systems, as prescribed, with 2 of those 4 expenditures being in the form of a grant to the Friant Water Authority and to the San Luis and Delta-Mendota Water Authority. The bill would make operation of these provisions contingent on specified conditions being met. The bill would make these provisions inoperative on July 1, 2030, and would repeal the provisions as of January 1, 2031.	Support	A. Priority Support/ Oppose	Position adopted May 5th.

B. Watch

Measure	Author	Topic	Status	Brief Summary	Position	Priority	Notes 1
AB 11	Ward D	Climate change: regional climate change authorities.	4/30/2021-Failed Deadline pursuant to Rule 61(a)(2). (Last location was NAT. RES. on 1/11/2021) (May be acted upon Jan 2022)	Would require the Strategic Growth Council, by January 1, 2023, to establish up to 12 regional climate change authorities to coordinate climate adaptation and mitigation activities in their regions, and coordinate with other regional climate adaptation autorities, state agencies, and other relevant stakeholders.	Watch	B. Watch	
AB 50	Boerner Horvath D	Climate change: Climate Adaptation Center and Regional	4/30/2021-Failed Deadline pursuant	Current law requires the Natural Resources Agency, in collaboration with the Ocean Protection Council, to create, and update biannually, a Planning for Sea Level Rise	Watch	B. Watch	

		Support Network: sea level rise.	to Rule 61(a)(2). (Last location was NAT. RES. on 1/11/2021) (May be acted upon Jan 2022)	Database describing steps being taken throughout the state to prepare for, and adapt to, sea level rise.This bill would establish the Climate Adaptation Center and Regional Support Network in the Ocean Protection Council to provide local governments facing sea level rise challenges with information and scientific expertise necessary to proceed with sea level rise mitigation.			
AB 51	Quirk D	Climate change: adaptation: regional climate adaptation planning groups: regional climate adaptation plans.	4/30/2021-Failed Deadline pursuant to Rule 61(a)(2). (Last location was NAT. RES. on 1/11/2021) (May be acted upon Jan 2022)	Would require the Strategic Growth Council, by July 1, 2022, to establish guidelines for the formation of regional climate adaptation planning groups. The bill would require the council, by July 1, 2023, and in consultation with certain state entities, to develop criteria for the development of regional climate adaptation plans.	Watch	B. Watch	
AB 59	Gabriel D	Mitigation Fee Act: fees: notice and timelines.	4/30/2021-Failed Deadline pursuant to Rule 61(a)(2). (Last location was L. GOV. on 1/11/2021) (May be acted upon Jan 2022)	Current law authorizes any party to protest the imposition of a fee, dedication, reservation, or other exactions imposed on a development project within 90 or 120 days of the imposition of the fee, as applicable, and specifies procedures for those protests and actions. The Mitigation Fee Act imposes the same requirements on a local agency for a new or increased fee for public facilities. Current law, for specified fees, requires any judicial action or proceeding to attack, review, set aside, void, or annul an ordinance, resolution, or motion adopting a new fee or service charge or modifying an existing fee or service charge to be commenced within 120 days of the effective date of the ordinance, resolution, or motion. Current law also provides that, if an ordinance, resolution, or motion provides for an automatic adjustment in a fee or service charge and the adjustment results in an increase in the fee or service charge, that any action to attack, review, set aside, void, or annul the increase to be commenced within 120 days of the increase. This bill would increase, for fees and service charges and for fees for specified public facilities, the time for mailing the notice of the time and place of the meeting to at least 45 days before the meeting.	Watch	B. Watch	
AB 100	Holden D	Drinking water: pipes and fittings: lead content.	5/24/2021-Read second time. Ordered to third reading.	The California Safe Drinking Water Act prohibits, with certain exceptions, the use of any pipe, pipe or plumbing fitting or fixture, solder, or flux that is not lead free in the installation or repair of any public water system or any plumbing in a facility providing water for human consumption. The act defines “lead free” for purposes of	Watch	B. Watch	

				conveying or dispensing water for human consumption to mean not more than 0.2% lead when used with respect to solder and flux and not more than a weighted average of 0.25% lead when used with respect to the wetted surfaces of pipes and pipe fittings, plumbing fittings, and fixtures. This bill would additionally define “lead free,” with respect to endpoint devices, as defined, to mean that the devices do not leach more than one microgram of lead under certain tests and meeting a specified certification.			
SB 1	Atkins D	Coastal resources: sea level rise.	5/24/2021-Read third time. Passed. (Ayes 33. Noes 5.) Ordered to the Assembly. In Assembly. Read first time. Held at Desk.	Thee California Coastal Act of 1976 establishes the California Coastal Commission and provides for planning and regulation of development in the coastal zone, as defined. The act requires the commission, within 90 days after January 1, 1977, to adopt, after public hearing, procedures for the preparation, submission, approval, appeal, certification, and amendment of a local coastal program, including a common methodology for the preparation of, and the determination of the scope of, the local coastal programs, as provided. This bill would also include, as part of the procedures the commission is required to adopt, recommendations and guidelines for the identification, assessment, minimization, and mitigation of sea level rise within each local coastal program, as provided. The bill would delete the timeframe specified above by which the commission is required to adopt these procedures.	Watch	B. Watch	
SB 273	Hertzberg D	Water quality: municipal wastewater agencies.	5/13/2021-Referred to Coms. on L. GOV. and E.S. & T.M.	Would authorize a municipal wastewater agency, as defined, to enter into agreements with entities responsible for stormwater management for the purpose of managing stormwater and dry weather runoff, to acquire, construct, expand, operate, maintain, and provide facilities for specified purposes relating to managing stormwater and dry weather runoff, and to levy taxes, fees, and charges consistent with the municipal wastewater agency’s existing authority in order to fund projects undertaken pursuant to the bill. The bill would require the exercise of any new authority granted under the bill to comply with the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. To the extent this requirement would impose new duties on local agency formation commissions, the bill would impose a state-mandated local program.	Watch	B. Watch	
SB 274	Wieckowski D	Local government meetings: agenda and documents.	5/13/2021-Referred to Com. on L. GOV.	The Ralph M. Brown Act requires meetings of the legislative body of a local agency to be open and public and also requires regular and special meetings of the legislative body to be held within the boundaries of the territory over which the local agency exercises jurisdiction, with specified exceptions.	Watch	B. Watch	

				Current law authorizes a person to request that a copy of an agenda, or a copy of all the documents constituting the agenda packet, of any meeting of a legislative body be mailed to that person. This bill would require a local agency with an internet website, or its designee, to email a copy of, or website link to, the agenda or a copy of all the documents constituting the agenda packet if the person requests that the items be delivered by email. If a local agency determines it to be technologically infeasible to send a copy of the documents or a link to a website that contains the documents by email or by other electronic means, the bill would require the legislative body or its designee to send by mail a copy of the agenda or a website link to the agenda and to mail a copy of all other documents constituting the agenda packet, as specified.			
SB 403	Gonzalez D	Drinking water: consolidation.	5/20/2021-Read third time. Passed. (Ayes 27. Noes 7.) Ordered to the Assembly. In Assembly. Read first time. Held at Desk.	The California Safe Drinking Water Act authorizes the State Water Resources Control Board to order consolidation with a receiving water system where a public water system or a state small water system, serving a disadvantaged community, consistently fails to provide an adequate supply of safe drinking water or where a disadvantaged community is substantially reliant on domestic wells that consistently fail to provide an adequate supply of safe drinking water. This bill would authorize the state board to also order consolidation where a water system serving a disadvantaged community is an at-risk water system, as defined, or where a disadvantaged community is substantially reliant on at-risk domestic wells, as defined.	Watch	B. Watch	
SB 480	Stern D	Metropolitan Water District of Southern California: rules: inappropriate conduct.	5/5/2021-Read second time. Ordered to third reading.	The Metropolitan Water District Act provides for the creation of metropolitan water districts and specifies the powers and purposes of a district. The act requires the Metropolitan Water District of Southern California to establish and operate an Office of Ethics and adopt rules relating to internal disclosure, lobbying, conflicts of interest, contracts, campaign contributions, and ethics for application to its board members, officers, and employees. This bill would require the Metropolitan Water District of Southern California to adopt rules relating to inappropriate conduct, as defined, by board members, officers, and employees.	Watch	B. Watch	
SB 526	Min D	Community water systems: lead user service lines.	4/30/2021-Failed Deadline pursuant to Rule 61(a)(2). (Last location	Current law requires, by July 1, 2020, a community water system with known lead user service lines in use in its distribution system to provide a timeline for replacement of those lines to the State Water Resources Control Board. Current law requires the state board to review and approve an established timeline, and requires, if the state board fails	Watch	B. Watch	

			was E.Q. on 2/25/2021) (May be acted upon Jan 2022)	to act within 30 days of the submission of the timeline, the timeline to be deemed approved. Current law authorizes the state board to enforce these requirements, as specified, and a violation is considered a violation of the California Safe Drinking Water Act, subjecting the violator to specified civil and criminal penalties. This bill would, until January 1, 2025, require a community water system to remove or replace the full lead user service line, if the community water system disturbs, removes, or replaces a portion thereof. The bill would apply the above-described enforcement provisions to a violation of the requirements of the bill, thereby creating a state-mandated local program by expanding the scope of crimes under the California Safe Drinking Water Act.			
SB 552	Hertzberg D	Drought planning: small water suppliers: nontransient noncommunity water systems.	5/24/2021-Read second time. Ordered to third reading.	Would require small water suppliers, as defined, and nontransient noncommunity water systems that are schools, no later than December 31, 2022, to develop and maintain an abridged Water Shortage Contingency Plan that includes specified drought-planning elements. The bill would require these water systems to report specified water supply condition information to the state board through the state board's Electronic Annual Reporting System, and to include water system risk and water shortage information in the water systems' consumer confidence reports, as provided. The bill would require the State Water Resources Control Board, in partnership with the department and no later than December 31, 2022, to conduct an assessment of drought and emergency water shortage resiliency measures for small water systems and nontransient noncommunity water systems that are schools, among other tasks.	Watch	B. Watch	

Total Measures: 27

Total Tracking Forms: 27

Metropolitan Water District of Southern California
State Legislative Matrix
May 7, 2021 – First Year of Legislative Session

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
Metropolitan-sponsored bills	**AB 442 Mayes (I)** Sponsor: Metropolitan	Introduced 2/4/2021 Assembly Floor	**Surface Mining and Reclamation Act of 1975: exemption: Metropolitan Water District of Southern California: single master reclamation plan** Amends the Surface Mining and Reclamation Act of 1975 (SMARA) to prepare a single reclamation plan for emergency excavations or grading on lands owned, leased, or with easements for repairs and maintenance of pipelines, infrastructure, or related transmission systems used to distribute water in Metropolitan's service area.	**SPONSOR** Based on October 2019 Board Action	Maintaining critical water infrastructure requires coordinated regulatory compliance. Metropolitan is proposing legislation to allow it to develop a single reclamation plan to consistently administer and enforce SMARA compliance for responding to emergencies and repairing, maintaining or replacing any pipelines, infrastructure, or related transmission systems used to distribute water in Southern California.
Metropolitan-sponsored bills	**SB 230 Portantino (D)** Sponsors: Metropolitan and the California Municipal Utilities Association	Introduced 1/19/2021 Senate Appropriations Committee Two-year bill	**State Water Resources Control Board: Constituents of Emerging Concern Program** Seeks to create a statewide program to identify and evaluate Constituents of Emerging Concern (CECs) in drinking water sources.	**CO-SPONSOR** Based on October 2019 Board Action	Metropolitan and the California Municipal Utilities Association are co-sponsoring legislation in response to growing public concern about CECs in drinking water. The bill would establish a CEC Drinking Water Program at the State Water Resources Control Board. The program would set up a consistent and science-based approach for assessing the public health and drinking water consequences of CECs, with the

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
					intent to improve knowledge and future regulatory determinations.
Drinking Water	**AB 588** **Garcia, E. (D)** Sponsors: Association of California Water Agencies California Association of Mutual Water Companies	Amended 3/30/2021 Assembly Environmental Safety & Toxic Materials Two-year bill	**California Safe Drinking Water Act: compliance** Would allow the State Water Resources Control Board to approve a compliance period of not less than 30 days and no more than 6 months for new primary drinking water standards and would allow an additional 12 months on a case-by-case basis.	**SUPPORT**	The bill would create flexibility for water agencies to comply with new primary drinking water standards. Metropolitan supports granting more time to comply if a contaminant requires extensive treatment and capital investments. Large water agencies with adequate resources may be able to comply sooner with new MCLs, but smaller systems may need longer lead times to invest in routine monitoring and treatment. Water agencies granted longer compliance periods would have to report on progress.
Water Quality and Treatment	**AB 377** **Rivas, R. (D)** Sponsor: California Coastkeeper Alliance	Amended 4/13/2021 Assembly Appropriations Committee	**Water quality: impaired waters** Would require the State Water Resources Control Board and Regional Water Quality Control Boards to evaluate impaired surface waters and report to the Legislature a plan to bring them in to attainment by January 1, 2050. Requires by January 1, 2023 the State Water Board and Regional Boards prioritize enforcement of surface water quality standards and creates	**WATCH** Based upon Board-adopted 2021 State Legislative Priorities and Principles	The April 13 amendment substantively revised the bill. The blanket prohibitions on the issuance of new, renewed, or remodified NPDES waivers, waste discharge requirements, and permits with best management practices have been removed. There is still language with provisions pertaining to new enforcement procedures for discharges that are "causing or contributing to an exceedance of water quality standard in a surface water of the state." However, it is too early to assess how, or if, the State and

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
			the Waterway Recovery Account to provide funding to bring impaired surface water segments into compliance		Regional boards will take enforcement action on low-threat drinking water discharges to bring "all water segments" into attainment by the 2050 target date.
Delta/State Water Project	**SB 369** **Pan (D)** Sponsor: Sacramento Area Flood Control Agency	Introduced 2/10/2021 Assembly Desk	**Flood control: Yolo Bypass Cache Slough Partnership Multi-Benefit Program** Codifies State recognition and support for the Yolo Bypass Partnership and its efforts to advance coordinated master planning and accelerate restoration activities for the Yolo Bypass-Cache Slough region.	**SUPPORT** Based upon Board-adopted 2021 State Legislative Priorities and Principles	The 2020 Water Resources Development Act authorized a comprehensive study of the Yolo Bypass and its future role in regional flood control. A state master plan for the Yolo Bypass-Cache Slough would similarly advance multi-benefit restoration projects and encourage state and federal agencies to coordinate regulatory compliance and funding for flood control, water supply, habitat and recreation.
Delta/State Water Project	**SB 626** **Dodd (D)** Sponsor: Author	Amended 4/28/2021 Senate Appropriations Committee	**Construction Manager/General Contractor Procurement Method: Department of Water Resources** Authorizes the Department of Water Resources to use the Construction Manager/General Contractor (CM/GC) procurement method for construction contracts.	**SUPPORT IF AMENDED** Based upon Board-adopted 2021 State Legislative Priorities and Principles	The State Water Contractors (SWCs) fund all State Water Project capital and operations and maintenance (O&M) projects. Projects that use the CM/GC or design build procurement method can begin earlier and take less time because of overlapping design and construction phases. This will reduce the overall cost of capital infrastructure, public safety and habitat restoration projects. The SWCs are seeking amendments to ensure price is considered when selecting a qualified contractor, and to ensure that in the event a procurement contract is appealed that

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
					any work started before the appeal is completed.
Delta/State Water Project	**AB 979 Frazier (D)** Sponsor: Author	Amended 4/13/2021 Assembly Appropriations Committee	**Sacramento-San Joaquin Delta: projects: sea level rise analysis report** Requires a local or state agency and private developers undertaking a project in the San Joaquin-Sacramento Delta to complete and submit to the Delta Stewardship Council, Delta Protection Commission and Legislature a report that analyzes the impact of sea-level rise (SLR) on the project.	**OPPOSE**	The bill as amended on April 13 would apply to Metropolitan as owners of Delta islands and the Department of Water Resources as operator of the State Water Project. A SLR analysis be required using Ocean Protection Council scenarios from a 2018 guidance document including one projecting an 22 additional feet of rise at the Golden Gate bridge. It could add significant costs and delays to Delta levees or habitat restoration projects including the DCP, an action covered under the Delta Reform Plan. Any updates to the plan already require the Delta Stewardship Council to consider sea level rise.
Water/Energy Nexus	**AB 1161 E. Garcia (D)** Sponsor: Author	Amended 4/13/2021 Two-year bill	**Electricity: eligible renewable energy and zero-carbon resources: state agencies: procurement** Requires the Department of Water Resources (DWR) to procure newly eligible renewable energy resources or zero-carbon resources, and associated energy storage, for state agencies to satisfy their 100%	**OPPOSE** Based upon Board-adopted 2021 State Legislative Priorities and Principles	SB 100 (DeLeon, 2018) set a state goal for 100% carbon-free resources for all state agencies by 2045. Staff have concerns that this bill misplaces the burden of procuring renewable and carbon-free resources and associated storage onto DWR. Procuring energy for other state agencies is outside DWR's purpose and core expertise. Moreover, accelerating the state's goal of 100%

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
			renewable energy goals by December 31, 2030.		renewable and carbon-free energy resources for all state agencies by 2045 to 2030 could dramatically increase Metropolitan's retail electricity rates above what is mandated by SB 100.
Water Bond Infrastructure Funding	**AB 1500 Garcia, E. (D) and Mullin (D)** Sponsor: Author	Amended 4/14/2021 Assembly Appropriations Committee	**Safe Drinking Water, Wildlife Prevention, Drought Preparation, Flood Protection, Extreme Heat Mitigation, and Workforce Development Bond Act of 2022** Places a $6.995 billion wildfire and water bond on the 2022 ballot for voter approval.	**SUPPORT AND SEEK AMENDMENTS** Based upon Board adopted 2021 State Legislative Priorities and Principles and Board action on AB 3256 (Garcia, 2020) 06/09/2020	Would provide funding for safe drinking water, wildfire prevention, drought preparation, flood protection, extreme heat mitigation, and workforce development programs. Metropolitan is seeking amendments to ensure adequate funding for recycled water projects, water quality monitoring and treatment, and subsidence repairs to conveyance infrastructure projects.

Metropolitan Water District of Southern California
State Legislative Matrix
May 7, 2021 – First Year of Legislative Session

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
Water Bond Infrastructure Funding	**SB 45 Portantino (D)** Sponsor: Author	Amended 4/8/2021 Senate Appropriations Committee - Suspense File	**Wildfire, Safe Drinking Water, Drought Preparation, and Flood Protection Bond Act of 2022** Places a $5.595 billion wildfire and water bond on the 2022 ballot for voter approval.	**SUPPORT AND SEEK AMENDMENTS** Based upon Board adopted 2021 State Legislative Priorities and Principles and Board action on SB 45 (Allen, 2018) 6/11/19	Would provide funding to restore areas damaged by wildfires, mitigate future wildfires, create healthy forests and watersheds, protect water supplies and water quality, and protect and restore rivers, streams and lakes. Metropolitan is seeking amendments to ensure adequate funding for recycled water projects, water quality monitoring and treatment, and subsidence repairs to conveyance infrastructure projects.
Water Bond Infrastructure Funding	**SB 559 Hurtado (D)** Sponsors: Friant Water Authority, San Luis & Delta Mendota Water Authority, and State Water Contractors	Amended 4/19/2021 Senate Appropriations Committee Hearing: 5/10/2021	**Department of Water Resources: water conveyance systems: Canal Conveyance Capacity Restoration Fund** Establishes the Canal Conveyance Capacity Restoration Fund that would upon appropriation provide up to $785 million in funding for the Department of Water Resources to help pay for subsidence repairs to the State Water Project and Central Valley Project water conveyance systems and for necessary road and bridge upgrades.	**SUPPORT** Based upon Board adopted 2021 State Legislative Priorities and Principles	Portions of the California Aqueduct, the Friant Kern Canal and the Delta Mendota Canal have lost capacity due to subsidence. The Fund would upon appropriation provide funding to DWR to support a 10-year program to restore the capacity of the canals and ensure a more secure water supply. Funds could be used to cover one-third of the cost to restore the capacity of the canals. A federal companion bill is envisioned that would provide one-third the cost and local partners would contribute the remaining one-third of the cost

Metropolitan Water District of Southern California
State Legislative Matrix
May 7, 2021 – First Year of Legislative Session

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
Innovation	**SB 351** **Caballero (D)** Sponsor: California Municipal Utilities Association	Amended 4/20/2021 Senate Appropriations Committee 5/10/2021	**Water Innovation Act of 2021** Would create the Office of Water Innovation at the California Water Commission to foster the adoption of new technologies and other innovative approaches in the water sector. Creates the Water Innovation Fund, with monies available upon appropriation, to the Department of Water Resources and State Water Resources Control Board to support water innovation.	**SUPPORT** Based upon Board adopted 2021 State Legislative Priorities and Principles	The water sector is facing a myriad of challenges from climate change, aging infrastructure, groundwater contamination, subsidence and freshwater ecosystems vulnerable to climate change. Innovative technologies and approaches are needed to ensure a reliable water supply while trying to address the challenges. An Office of Water Innovation could increase collaboration among state agencies on innovative approaches, engage stakeholders, and review regulations that may inhibit innovation in order to recommend regulatory reforms.
Governance	**AB 361** **R. Rivas (D)** Sponsor: California Special Districts Association	Amended 4/6/2021 Assembly Floor	**Open meetings: local agencies: teleconferences** Authorizes local agencies to use teleconferencing during state or local emergencies or when social distancing guidelines have been imposed without complying with physical noticing or quorum requirements under the Ralph M. Brown Act.	**SUPPORT** Based upon Board Action on 3/9/2021	Codifies Executive Order N-29-20 that allows for teleconferenced public meetings during state or local emergencies. Metropolitan currently hosts teleconferencing public meetings in accordance with the Executive Order. AB 361 provides statutory clarity allowing Metropolitan to maintain transparency and public participation in public meetings during future declared emergencies.
Governance	**AB 703** **B. Rubio (D)**	Amended 04/29/2021	**Open meetings: local agencies: teleconferences**	**SUPPORT** Based upon	Metropolitan currently hosts teleconferencing public meetings in accordance with Executive Order, N-29-20. AB 703 allows the option to hold

Topic	Bill Number Author	Status	Title – Summary	MWD Position	Effects on Metropolitan
	Sponsor: Three Valleys Municipal Water District	Assembly Local Government Committee	Amends the Ralph M. Brown Act to allow a local agency to use teleconferencing and removes certain noticing provisions for each teleconferencing location, requires the local agency to allow all members of the public to observe the meeting and address the legislative body in person and remotely by teleconference or internet option, and requires a quorum of members participate in person from a location noticed in the meeting agenda.	Board Action on 3/9/2021	teleconferenced meetings into the future after the COVID-19 public health emergency is over and the Executive Order is lifted as long as a quorum of the Board's directors participate in person, give notice and post agendas as prescribed, and the public can address the Board in person or by teleconference.

Item No. 4

DISCUSSION ITEM
June 2, 2021

TO: **Board of Directors**

FROM: **Robert Hunter, General Manager**

Staff Contact: Melissa Baum-Haley

SUBJECT: **OVERVIEW OF WORKSHOP ON THE INTEGRATED RESOURCES PLAN (IRP) EXPERT PANEL ON CLIMATE CHANGE**

STAFF RECOMMENDATION

Staff recommends the Board of Directors review and discuss the information presented. .

REPORT

On May 25, Metropolitan held its second Integrated Resources Plan (IRP) workshop to engage expert consultants in the fields of water demand and climate change to inform key drivers affecting future water reliability in the preparation of the IRP. The first workshop, held March 23, focused on water demands.

The purpose of these workshops was for the Metropolitan Board and member agency general managers to interact with the experts and through that discussion help Metropolitan staff refine and analyze the impacts of plausible future scenarios. The facilitated workshop consisted of a presentation summarizing expert feedback to date and opportunities for experts to provide further comment and to answer questions.

The nearly three-hour expert panel Climate Change workshop was facilitated by Ed Means and organized into three segments:

1. Panel member discussion of charge questions related to climate change
2. Panel member feedback on questions submitted by the Board and member agency managers in advance
3. Panel member feedback for clarification or additional climate-related questions from Board members or member agency participants

Budgeted (Y/N): N/A	Budgeted amount: None	Core _X_	Choice __
Action item amount: N/A	Line item:		
Fiscal Impact (explain if unbudgeted):			

Expert Panelists:

- Dr. Heidi Roop, Assistant Professor at the University of Minnesota, Department of Soil, Water and Climate
- Dr. Julie Vano, Research Director at Aspen Global Change Institute
- Brad Udall, Senior Water and Climate Research Scientist at Colorado Water Institute, Colorado State University
- Heather Cooley, Director of Research at the Pacific Institute

Metropolitan staff sought feedback from the demand consultants in four primary question areas on drivers of demands. Below is a brief recap of the responses as presented during the workshop:

- ***Major components that contribute to the range of future climate outcomes***

  California is already warming and experiencing a range of impacts of a changing climate. These impacts span everything from changing precipitation patterns, rising sea level, declining snowpack, increased drought, increased extreme precipitation events and an expansion in the area burned by wildfires. All of these impacts have implications for understanding future supply and demand for water resources in California. How much the climate changes and the extent to which we experience changes in the intensity or severity of many of these impacts, is related to global emissions of greenhouse gases which directly determine how much warmer the planet will get and how well we plan and manage for these changes.

	CLIMATE IMPACT	DIRECTION	SCIENTIFIC CONFIDENCE FOR FUTURE CHANGE
	TEMPERATURE	WARMING ↗	Very High
	SEA LEVELS	RISING ↗	Very High
	SNOWPACK	DECLINING ↘	Very High
	HEAVY PRECIPITATION EVENTS	INCREASING ↗	Medium-High
	DROUGHT	INCREASING ↗	Medium-High
	AREA BURNED BY WILDFIRE	INCREASING ↗	Medium High

Summary of California climate impacts, the anticipated direction of change, and the scientific confidence associated with each impact.

- **How to apply global climate model outputs that examine climate change over a long timeframe to the shorter 25-year IRP planning horizon**

  While changes are not as big as those seen by the end of the 2100s, climate changes are still apparent in the General Circulation Models in the next 25-40 years. These changes are still significant to water management, especially when considering the range of future projections (not just averages). Both the higher and lower ends of the mid-21st century range would provide useful comparison points.

The sources of uncertainty (i.e., the range of future projections) differ depending on what time period and how far into the future the projections are.

- ***What approaches or methodologies do they recommend for quantifying how climate change (e.g., changing temperatures and precipitation) affect Southern California and its imported supply watersheds***

  Hydrologic projections (otherwise known as "climate change scenario studies" or "chain-of-models approaches") are commonly used in climate change assessments. Regardless of the method used, it is important to recognize there should be a range of possible outcomes. Models, while helpful tools in exploring possible futures, cannot predict the future.

  Evaluating relative differences (modeled historical vs. modeled future) in system performance over time can provide improved perspectives on potential improvements as well as risks. In this, it is important to recognize that **model outputs are not intended to be predictions, and should be treated instead as possible future 'scenarios' which can complement existing monitoring and performance evaluation systems.** They provide an opportunity to explore how natural and managed systems may respond to and influence future changes and to investigate uncertainties.

- ***Highlights of anticipated future hydrologic changes for relevant regions***

  <u>Southern California and the Eastern Sierra</u>

  1. Wet extreme events are projected to increase (e.g., storms bring more water)
  2. Dry years are projected to increase (e.g., droughts increase)
  3. Wet and dry swings are expected to be amplified
  4. Annual average precipitation changes (e.g., averaged over 30 years) are small and unclear
  5. Seasonal changes indicate statewide increases in precipitation in winterand decreases in spring
  6. Snowpack will decline, increasing cold season and decreasing warm season streamflow (most relevant to Eastern Sierra)

  <u>Colorado River</u>

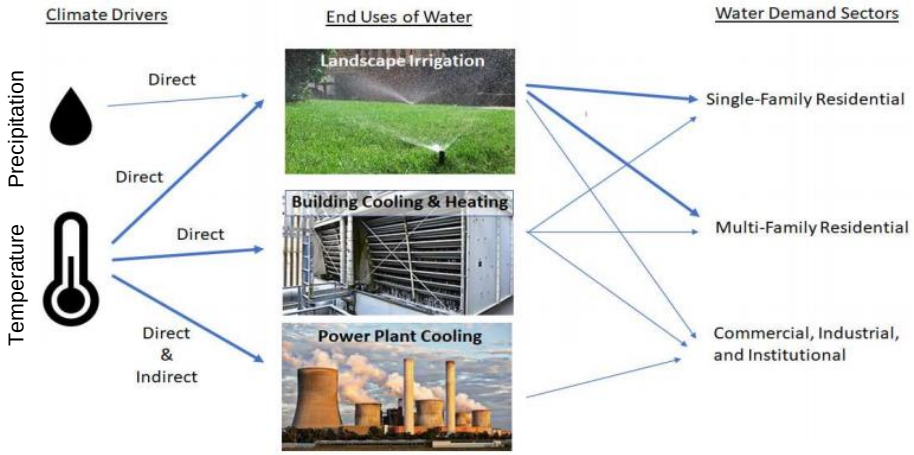
  1. Warming temperatures are increasing evaporation which in turn is decreasing the amount of precipitation that turns into runoff
  2. Runoff will likely decline by mid-century, potentially by large amounts
  3. Reservoir evaporation will increase
  4. Crop water demands will increase
  5. Spring runoff will occur earlier
  6. The Salton Sea is expected to continue to decline

- ***Important underlying climate change drivers that influence demands, and how do they affect demands in each of the three major demand sectors (single family residential, multi-family residential, commercial/industrial)***

  Temperature, and to a lesser extent precipitation, are the major climate drivers influencing water demand. The effect of climate change on end uses of water is

impacted in the areas of landscape irrigation, building cooling and heating systems, as well as electricity generation. Each of these end-uses is particularly sensitive to the temperature increases.

Generally, climate impacts on water demand will vary across each of the major demand sectors according to (1) the magnitude of climate change impacts on the end use, and (2) the proportion of total water use the end use represents.



Summary interactions between climate change and water demand. The thickness of the arrows demote weighted impact.

Additionally, the expert panelists were given/asked individual question from the Metropolitan Board and member agency staff. While the expert panel was not specifically intended to address in these questions in detail, the individual questions were used improve the robustness the discussion at the workshop and will help inform each panel member's written feedback to Metropolitan staff.

MWDOC Staff Observations:

With climate-related impacts spanning everything from changing precipitation patterns, rising sea level, declining snowpack, increased drought, increased extreme precipitation events, and an expansion in the area burned by wildfires – this highlights that there will be more extremes in hydrology. The deviations from a historical normal, illustrates the need for more comprehensive consideration of storage to manage variability.

Thus, climate change will have implications on water management, specifically a need for increased flexibility within source limited areas. For example, this year which has evolved from dry to historically dry illustrates how years of storage and local supply investments, coupled with conservation that has continued since the last drought, has positioned the region to withstand and adapt to the latest water supply challenges. With a State Water Project Table A allocation of 5%, storage has been necessary to bridge the gap between the year-to-year variability of imported supplies and the regions' demands.

Therefore when looking into the future, the need to preserve existing storage, adding to existing capacity, and increasing withdrawal capacity may all be fundamental to managing future climate variability.

Full Presentation Link:
http://www.mwdh2o.com/PDFWWACurrentBoardAgendas/05252021%20IRP%206a%20Presentation.pdf

Attachment 1 - Summary of Preliminary Responses – Key Points. Provides a summary of the panel feedback

Attachment 2 - Preliminary Responses to Charge Questions. Includes more information on their preliminary responses to each question. The preliminary responses are intended to inspire and inform the workshop discussion and also solicit additional questions for discussion at the workshop.

Summary of Preliminary Responses Attachment 1

Climate Change Expert Feedback

The table below summarizes key feedback received so far. This document is intended to inspire discussion and additional questions for discussion with the Climate Change Expert Panel during the May 25, 2021, IRP Climate Change Experts Panel workshop.

	Question	Key Points
1	**What major components contribute to the range of future climate outcomes?**	• California is already warming and experiencing a range of impacts of a changing climate. • These impacts span everything from changing precipitation patterns, rising sea level, declining snowpack, increased drought, increased extreme precipitation events, and an expansion in the area burned by wildfires. All of these impacts have implications for understanding future supply and demand for water resources in California. • How much the climate changes and the extent to which we experience changes in the intensity or severity of many of these impacts are related to global emissions of greenhouse gases, which directly determine how much warmer the planet will get and how well we plan and manage for these changes. • How well we can project future climate changes is limited by global, regional, and local climate and hydrologic modeling techniques. However, models have performed well against observed warming (Figure 3 in Attachment 2) and are the best source of information to understand future climate. • Being a savvy consumer of future climate change information is required to ensure proper use and application of these data in water resources management and planning (see Questions 2-4 for more on modeling techniques and Question 8 for planning with this uncertainty).
2	**How do we apply global climate model output that examines climate change over a long timeframe to the shorter 25-year IRP planning horizon?**	• While changes are not as significant as those seen by the end of the 2100s, climate changes are still apparent in the GCMs in the next 25-40 years. These changes are still significant to water management, especially when considering the range of future projections (not just averages). Both the higher and lower ends of the mid-21st century range would provide useful comparison points. • The sources of uncertainty (i.e., the range of future projections) differ depending on what period you are most interested in exploring.

3	**What approaches or methodologies do you recommend for quantifying how climate change (e.g., changing temperatures and precipitation) affect Southern California and its imported supply watersheds?**	• To better understand potential impacts of global climate change at regional or local scales, there are many methods one can use. • Hydrologic projections (otherwise known as "climate change scenario studies" or "chain-of-models approaches") are commonly used in climate change assessments. • Regardless of the method used (see Question 4 on ways to select an appropriate method), recognize there should be a range of possible outcomes. Models, while helpful tools in exploring possible futures, cannot predict the future.
4	**What models and downscaling techniques are available and appropriate for the relevant regions?**	• Downscaling refers to techniques employed to make global-scale information more applicable to regional or local scales. There are a variety of different downscaling techniques that are used to produce regionally downscaled climate information. These techniques are continually under development and significant advancements have been made in recent years. This work is likely to continue to evolve. • Practitioners should consider what variables (e.g., seasonal temperature changes, annual precipitation) are of greatest interest to help identify models that would be most appropriate. • There is a range of data available to support modeling efforts.
5	**If the models and downscaling techniques differ for each region, how do we ensure internal consistency within the analysis?**	• This is not an uncommon challenge. It is better to use the model that captures the impact of interest for a particular question/region vs. trying to use a model that is universal. • The most important thing is to be sure choices are placed in context. To be consistent, one approach would be to use similar GCMs, downscaled in ways most appropriate to the questions of interest. Another approach would be to consistently look at an ensemble of models and results that are 90% and 10% of the range (see full answer for why Reclamation decided to use 90% and 10%, Metropolitan may choose different percentiles.) • No model is perfect and cannot provide all answers. They are one tool in the toolbox.
6	**What hydrologic changes are anticipated for the relevant regions?**	• This is a question that lengthy reports are written on. We will expand on this question throughout the course of our work with Metropolitan. To provide an illustration of some of the material we could provide, we share some highlights. New information shared here focuses on the Colorado River basin.

7	**What are the important underlying climate change drivers that influence demands, and how do they affect demands in each of the three major demand sectors (single-family residential, multi-family residential, commercial/industrial)?**	• Temperature, and to a lesser extent precipitation, are the major climate drivers influencing water demand. Here, we describe the impact of climate changes on major end uses and the extent to which each of these end uses is associated with the three major demand sectors: single-family residential, multi-family residential, and non-residential (or commercial, industrial, and institutional).
8	**What other recommendations do you have for our planning?**	• **Prudent Planning and "Reasonable Worst-Case Future":** By this we mean, planning for a future that is both politically possible to plan for, and climatologically possible without being on the extreme tail. This requires balancing the politically possible and the "climatologically problematic". That is to say, some futures are too hard to plan for politically and too uncertain to plan for based on climate models. For example, given the strong tie between flow reductions over the last 21 years and rising temperatures in the Colorado River Basin, prudence dictates that planning use flows less than the last 21 years. It remains an active area of inquiry about how much less. Planning for California would likely require some very wet, flood prone scenarios along with drought scenarios. Ultimately, the determination of a 'reasonable worst-case future' is a policy decision informed by qualitative weighting of certain and less certain science.

Preliminary Responses to Charge Questions Attachment 2

Climate Change Expert Feedback

Document Purpose

This is an overview of preliminary responses to a set of questions posed by the Metropolitan Water District of Southern California for the IRP process and the May 25, 2021 Board Workshop with the Climate Expert Panel. *This document is intended to inspire discussion and additional questions for discussion with the Climate Expert Panel during the Board workshop.* The following responses are structured to provide an overview of key points and suggested data and resources to guide a more in-depth review of the literature and science relevant to specific questions being asked related to climate change and water supply and demand for the primary geographies of interest (Southern California, Eastern Sierras, State Water Project, and the Colorado River Basin).

Useful definitions

- **Emissions:** The production or release of heat-trapping gases like carbon dioxide, methane, and nitrous oxide.
- **GCM:** General Circulation Models (GCM) are mathematical models that represent the general circulation of the atmosphere or ocean. These models are used to simulate future climate changes. Also known as Global Climate Models.
- **Downscaling:** Techniques employed to make global-scale information more applicable to regional or local scales.
- **Scenario:** Here we refer to two types of "scenarios": 1) *Emission scenarios* (e.g., Representative Concentration Pathway (RCP) 4.5, 8.5), and 2) the scenarios being used by Metropolitan in the IRP process called the *Metropolitan's Future Scenarios* (A. low demand, stable imports, B. high demand stable imports, C. low demand, reduced imports, D. high demand, reduced imports). In general, a scenario is a plausible and often simplified description of how the future may develop based on a coherent and internally consistent set of assumptions about driving forces and key relationships. Scenarios may be derived from projections, but are often based on additional information from other sources, sometimes combined with a narrative storyline (IPCC, 2012).
- **Uncertainty:** Uncertainty is often categorized in two ways: 1) the kind that will always exist (e.g., inherent randomness natural to a process) and, 2) the kind that can be reduced with improved understanding or data (e.g., improving model structures or parameters, improving quality of observations) (from SECURE web portal).
- **Drivers:** Impacts that influence supply and demand outcomes that are outside Metropolitan's control.
- **Climate Drivers:** Key determinants of our overall climate. For example, temperature, precipitation, wind speed, dew point, soil moisture, and sea surface temperatures.
- **Drivers of climate drivers:** Various feedbacks of the Earth system that influence the climate drivers (e.g., emissions of greenhouse gases, how much carbon will be taken up by forests globally, will oceans continue to be a carbon sink, ice loss from Antarctica, feedbacks from warming polar regions like changes in albedo and methane releases from melting permafrost).
- **Signposts:** In other contexts for the IRP, 'signposts' are data and/or signals that help managers determine trajectories of variables of interest such as supply and demand. In the climate context, for this document, the only 'signposts' of interest are the 'drivers of climate drivers'.

Q1. What major components contribute to the range of future climate outcomes?

Key Points:

- California is already warming and experiencing a range of impacts of a changing climate.
- These impacts span everything from changing precipitation patterns, rising sea level, declining snowpack, increased drought, increased extreme precipitation events and an expansion in the area burned by wildfires. All of these impacts have implications for understanding future supply and demand for water resources in California
- How much climate changes and the extent to which we experience changes in the intensity or severity of many of these impacts is related to global emissions of greenhouse gases which directly determine how much warmer the planet will get and how well we plan and manage for these changes.
- How well we can project future climate changes is limited by global, regional and local climate and hydrologic modeling techniques. However, models have performed well against observed warming (Figure 3) and are the best source of information we have to understand future climate.
- Being a savvy consumer of future climate change information is required to ensure proper use and application of these data in water resources management and planning (see Q2-4 for more on modeling techniques and Q8 for more on planning with this uncertainty) .

First, we know that climate change, and the impacts of a changing climate, are already here. We also expect many of these impacts to worsen in the future. Figure 1, from the 4th National Climate Assessment (2018), shows that widespread warming is already occurring across the Western United States.

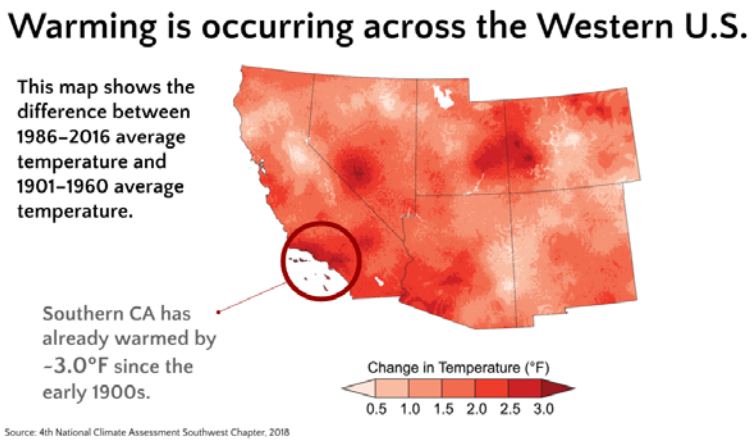


Figure 1: This map shows the difference between 1986-2016 average annual temperature relative to average annual temperature from 1901-1960. Southern California has warmed by nearly 3.0°F since the early 1900s. Source: Modified from the 4th National Climate Assessment Southwest Chapter, 2018.

California's Fourth Climate Change Assessment summarized the impacts and direction of change expected to be experienced in California as the region continues to warm (Figure 2).

	CLIMATE IMPACT	DIRECTION	SCIENTIFIC CONFIDENCE FOR FUTURE CHANGE
	TEMPERATURE	WARMING ↗	Very High
	SEA LEVELS	RISING ↗	Very High
	SNOWPACK	DECLINING ↘	Very High
	HEAVY PRECIPITATION EVENTS	INCREASING ↗	Medium-High
	DROUGHT	INCREASING ↗	Medium-High
	AREA BURNED BY WILDFIRE	INCREASING ↗	Medium High

Figure 2: A summary of California climate impacts, the anticipated direction of change, and the scientific confidence associated with each impact. Source: California's Fourth Climate Change Assessment, 2018

When thinking about how to understand the range of outcomes for these impacts in the *future* we have to consider the following primary components:

1. **Human choices:**
   - ***Emissions Scenarios:*** The principal driver of long-term warming is total emissions of carbon dioxide (CO_2) and other greenhouse gases. This is a human choice. The Representative Concentration Pathways from the Intergovernmental Panel on Climate Change (IPCC) and Coupled Model Intercomparison Project (CMIP) climate model (Moss et al., 2010; Collins et al., 2013), have been designed to cover a wide range of possible magnitudes of climate change driven by different socioeconomic pathways, that include differing amounts of greenhouse gas emissions.
   - ***Systems management:*** Choices made today to be proactive rather than reactive to future climate impacts in how systems, like water infrastructure, are managed and designed.

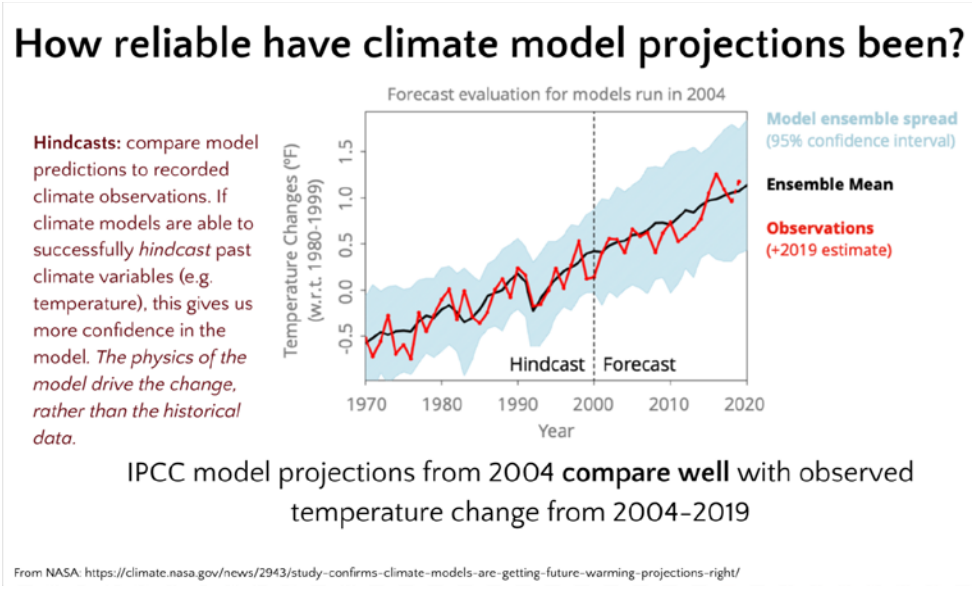


Figure 3: This graph from NASA shows how climate models run in 2004 to project change out to the year 2020 performed against actual observed change in temperature. The data show that model projections compare well with the observed temperature change that occurred between 2004 and 2019.

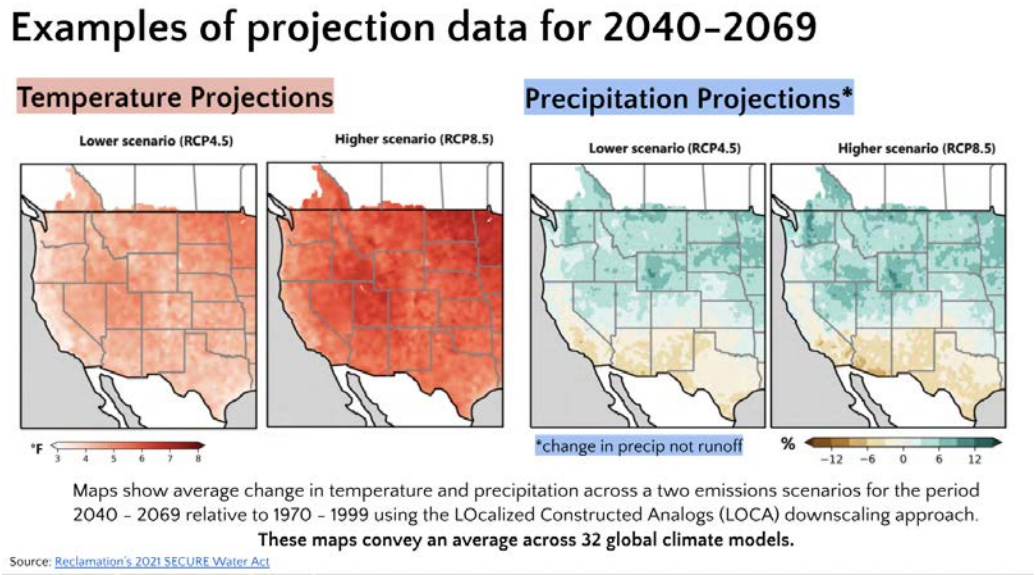


Figure 4: Examples of climate projection data from the LOcalized Constructed Analogs (LOCA) downscaling approach. The panels show temperature (left) and precipitation (right) projections for mid-century (2040-2069) under both low and high emissions scenarios. The change shown is relative to the time period 1970-1999. Note that precipitation projections are not runoff projections. Source: Modified from Reclamation's SECURE Water Act report (2021).

2. Natural Variability:

Natural variability is influenced by processes internal to the climate system that arise, in part, from interactions between the atmosphere and ocean, such as El Niño/La Niña events. The sun,

volcanic eruptions, and changes in the orbit of the Earth around the sun all influence the climate. Natural variability and human-caused climate change work together to shape the climate at any given point in time. In global climate models, internal variability is often used as a proxy for natural variability.

3. Model Uncertainty:
Representing complex Earth climate systems and sociopolitical pathways in global climate models, downscaled and regional climate models and hydrologic models all lead to some uncertainties in future climate conditions.

The primary sources of uncertainty in future climate projections include uncertainty related to the emissions pathway, model uncertainty, and internal variability (see Figure 6). The Bureau of Reclamation's West-wide Assessment (2021) provides more details, and summarizes these factors well in the following statement:

"Uncertainties in future projections stem from the inability to predict future global socio-political developments, incomplete understanding of complex system processes, imperfect representation of those processes in models, and irreducible natural variability. Numerous decisions must be made to generate usable projections, and each has associated uncertainties: choice in scenarios of greenhouse gases (uncertainties in human behavior); choice of models used for global climate simulation; choice of model initial conditions; choice of climate downscaling techniques; and, choice, configuration, and calibration of hydrologic models, as examples."

Q2. How do we apply global climate model outputs that examine climate change over a long timeframe to the shorter 25-year IRP planning horizon?

Key points:

- While changes are not as big as those seen by the end of the 2100s, climate changes are still apparent in the GCMs in the next 25-40 years. These changes are still significant to water management, especially when you consider the range of future projections (not just averages). Both the higher and lower ends of the mid-21st century range would provide useful comparison points.
- The sources of uncertainty (i.e., the range of future projections) differ depending on what time period you are most interested in exploring.

A. An illustration of the ranges from mid-21st and late-21st century projections:

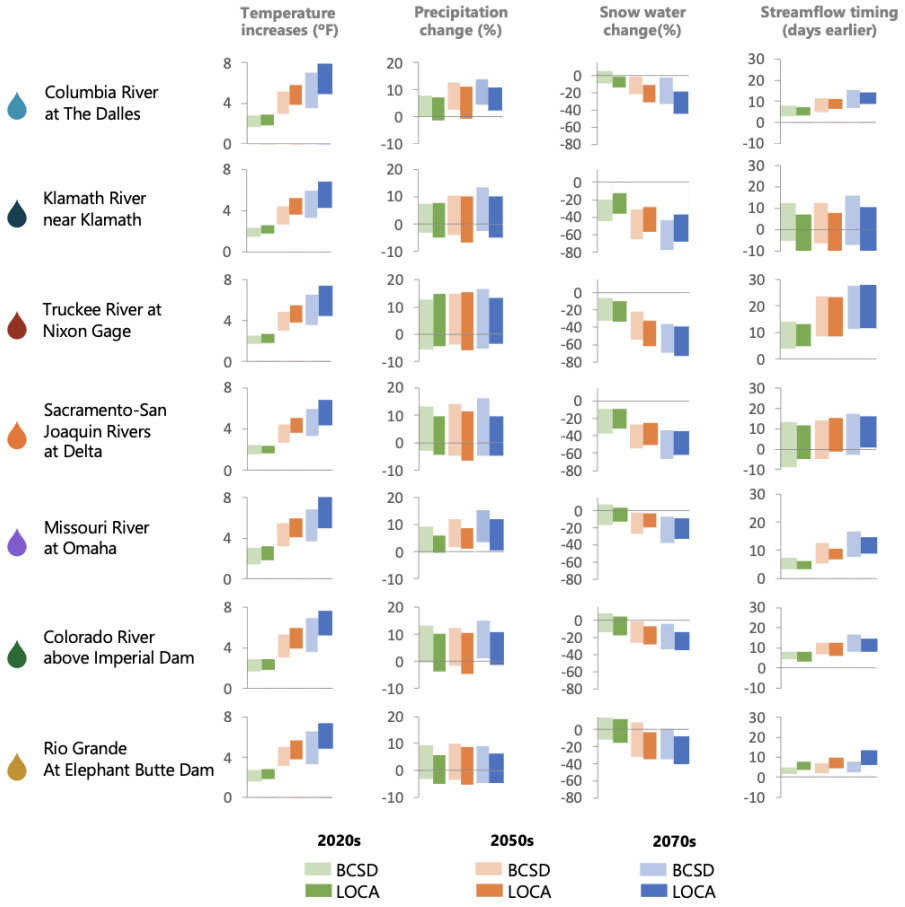


Figure 5: Climate change projection in seven basins across the Western US over the next century. Values represent the mid-range (the 25th to 75th percentiles) of future hydroclimate projections from future decades relative to 1990 - 1999. These include values from the 2016 SECURE Report using BCSD (one type of downscaling) with RCP2.5, RCP4.5, RCP6.5, and RCP8.5 (displayed as lighter shades on the left), and from another type of downscaling, LOCA

projections using RCP4.5 and RCP8.5, on the right. Source: Reclamation's SECURE Water Act report, see report for a map of the locations and additional details.

Take away from Figure 5 as it relates to the question: The ranges of the orange (2050s) have changes that are large, even if not as large as the full range of the blue (2070s), they are still important to consider.

B. How uncertainties differ depending on the time period of interest: In global climate models, the source of uncertainties--internal variability, model uncertainty, or global emission scenario uncertainty, as outlined in Q1 above--depends on how far into the future the projections are.

Figure 6 provides an illustration. For global temperature, the uncertainty (i.e., range in projections) in the mid-21st century is from both model uncertainty and global emission scenarios (blue and green lines). At the end of the century, global emission uncertainties have a greater influence on the range in future projections than model uncertainty (green line increases over time).

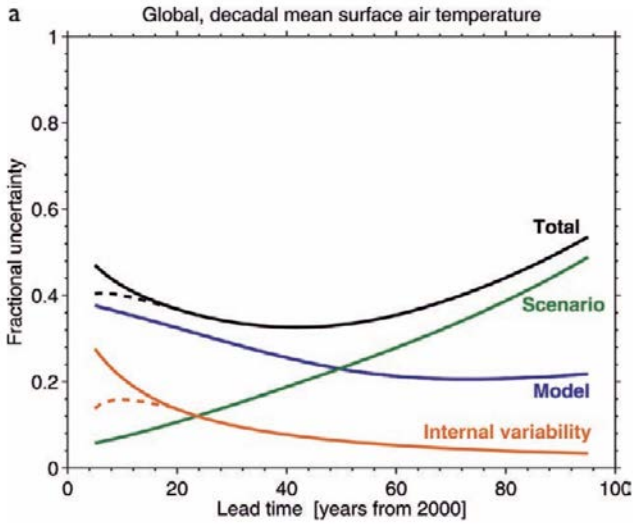


Figure 6: The relative importance of each source of uncertainty in decadal mean surface temperature projections is shown by the fractional uncertainty (the 90% confidence level divided by the mean prediction) for (a) the global mean, relative to the warming from the 1971–2000 mean. Source: Hawkins and Sutton 2009

Q3. What approaches or methodologies do you recommend for quantifying how climate change (e.g., changing temperatures and precipitation) affect Southern California and its imported supply watersheds

Key points:

- To better understand potential impacts of global climate change at regional or local scales, there are many methods one can use.
- Hydrologic projections (otherwise known as "climate change scenario studies" or "chain-of-models approaches") are commonly used in climate change assessments.
- Regardless of the method/s used (see Q4 on ways to select an appropriate method), it is important to recognize there should be a range of possible outcomes. Models, while helpful tools in exploring possible futures, cannot predict the future.

A. Details on different methods: Below is a brief overview of four approach categories from Vano et al (2018) "Dos and Don'ts." This is not an inclusive list, as more exist, and more will likely be developed.

1) Climate change scenario studies: These approaches are often characterized as a chain-of-models approach where global climate model projections are downscaled and the downscaled climate change information (e.g., 30 years of daily precipitation, temperature) is then used as input to hydrology models, which generate streamflow and snowpack information, which can be used as input to reservoir operations models. This type of study is often the focus of existing guidelines because it most explicitly uses global climate model information and often requires decisions on model selection to translate global information to a local scale.
2) Paleoclimate studies: Paleoclimate or paleoflood information is generated using information collected from the environment which can be proxies for past climate and flood events that date back further than the instrumental record (e.g., the width of tree rings can be correlated with streamflow) (Woodhouse et al. 2006). These analogs from the past can date back thousands of years, and provide improved perspectives on natural variability, such as the length of dry periods (Woodhouse and Lukas 2006), the characteristics of past floods (Raff 2013) or how sensitive river basins are to temperature increases (Lehner et al. 2017a). Studies have also used a combination of scenario-based and paleoclimate studies to evaluate future change (Reclamation 2011a; McCabe and Wolock 2007).
3) Stochastic hydrology studies: stochastic precipitation and hydrology timeseries can be used to stress test a system (Rodriguez-Iturbe et al. 1987; Salas 1993; Wilks and Wilby 1999; Yates et al. 2003; Erkyihun et al. 2016). The perturbations can be informed by historical information (e.g., paleoclimate information) or by global climate model trends. These techniques aim to avoid some of the uncertainties associated with using global climate models directly, yet address risk-based issues analytically (Olsen et al. 2015). In many cases, stationarity is assumed, although there are techniques that have

included non-stationary stochastic methods (Kilsby et al. 2007; Erkyihun et al. 2016). It is, however, important to recognize that these timeseries are based on statistical models that do not capture process-based understandings, which limits how these can be used to interpret future change.

4) Climate-informed water system vulnerability analysis: These approaches are commonly referred to as decision support modeling and include techniques such as decision scaling (Brown et al. 2012), scenario-neutral approaches (Prudhomme et al. 2010), and robust decision making (Lempert et al. 2003). Typically, the focus is first on defining the decision context and exploring sensitivities by perturbing the climate incrementally to identify system vulnerabilities to changes in temperature, precipitation, or other climate variables before considering whether and how to apply climate change information (Brown et al. 2012; Brown and Wilby 2012; Weaver et al. 2013). EPA and CWDR (2011) describe strengths and limitations of using different decision support tools.

B. More details on hydrologic projections (also referred to as climate change scenario studies): For hydrologic projections, a commonly used approach, each step in the climate impacts modeling chain (first column of the Figure 7 below) has uncertainties. While several studies have sampled the range of possible outcomes by varying elements at each step (second column), they are typically limited. Larger ensembles can reveal a more complete range, but can be computationally impractical in applications, and thus require the development of innovative methods to assess climate impacts.

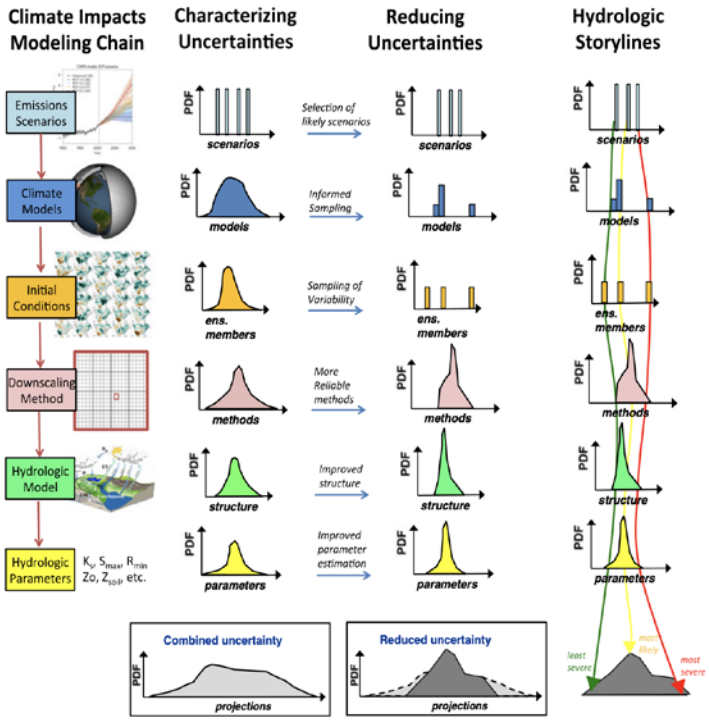


Figure 7: Schematic on approaches to explicitly characterize and reduce uncertainties in assessments of hydrologic impacts of climate change. Source: Clark et al. 2016

C. More details on how models can be useful tools: Vano et al. (2018) "Dos and Don'ts" provides useful advice about how models can be used appropriately:

"Models are useful tools, if used appropriately. Watershed-relevant climate change scenarios can provide information useful in assessing how the system is vulnerable to climate change and help identify adaptation options.

To generate climate change information at the global, planetary scale and make it relevant to local watersheds, many methodological choices must be made by both information producers (on how to generate the datasets) and users (on how to apply the climate data to their decision). In the U.S., for example, the U.S. Army Corps of Engineers has 21 regional reports (http://www.corpsclimate.us/rccciareport.cfm) and Appendix A in Bureau of Reclamation's (Reclamation) Literature Synthesis on Climate Change Implications for Water and Environmental Resources (Reclamation 2013) lists over 300 papers that could be leveraged as examples. In Europe, the Service for Water Indicators in Climate Change Adaptation (SWICCA) currently provides 15 case studies (http://swicca.climate.copernicus.eu).

Models, including global and regional climate models, as well as watershed models, are used to explicitly characterize possible futures as well as historical and current conditions. These simulated futures, often referred to as projections, when used together with simulated historical conditions, can then be used to assess potential changes. More specifically, evaluating relative differences (modeled historical vs. modeled future) in system performance over time can provide improved perspectives on potential improvements as well as risks . In this, it is important to recognize that **model outputs are not intended to be predictions, and should be treated instead as possible future 'scenarios' which can complement existing monitoring and performance evaluation systems.** They provide an opportunity to explore how natural and managed systems may respond to and influence future changes and to investigate uncertainties (Weaver et al. 2013; IPCC 2014b; Milly et al. 2015; Reclamation 2016). Scenarios can be viewed as narratives that can be used to stress-test water systems and infrastructure (Moss et al. 2010; Weaver et al. 2013). As such, a single stress test can be misleading when viewed in isolation; multiple stress tests, especially when they span a range of possible stresses, are preferred and can be added to as resources and time permit.

In performing these stress tests, current approaches often capitalize on "ensembles of opportunity" – that is, collections of available datasets – to evaluate the range of future impacts and their uncertainties. This may be the most appropriate path forward at present; although as the field of climate change impacts advances and computing capacity improves, it will be possible to better understand and quantify underlying uncertainties (Harding et al. 2012; Gutmann et al. 2014; Clark et al. 2016), evaluate and account for model dependencies (Knutti 2010b; Knutti et al. 2013; Bishop and Abramowitz 2013), and improve how models are selected for use including ensuring they capture features that make them appropriate for particular uses (Knutti 2010a; Tebaldi et al. 2011; Sanderson et al. 2015)."

The DOS AND DON'TS review important considerations when designing studies so models can be useful tools in exploring future change.

Another relevant resource is the Climate Change Handbook for Regional Water Planning. It was created in the California Department of Water Resources in partnership with the U.S. Environmental Protection Agency, Resources Legacy Fund, and The U.S. Army Corps of Engineers. It is on a list of resources for water managers, where they describe the report as: a framework for considering climate change in water management planning. Key decision considerations, resources, tools, and decision options are presented that will guide resource managers and planners as they develop means of adapting their programs to a changing climate.

Q4. What models and downscaling techniques are available and appropriate for the relevant regions?

Key Points:

- Downscaling refers to techniques employed to make global-scale information more applicable to regional or local scales. There are a variety of different downscaling techniques that are used to produce regionally downscaled climate information. These techniques are continually underdevelopment and significant advancements have been made in recent years, and this work is likely to continue to evolve.
- Practitioners should consider what variables (e.g., seasonal temperature changes, annual precipitation) are of greatest interest to help identify models that would be most appropriate.
- There is a range of data available to support modeling efforts.

A. Detail on different types of downscaling techniques.

Neil Berg at UCLA's Center for Climate Science shared details on different types of downscaling techniques during a technical training in 2018. See the presentation here.

Typically downscaling is thought of as either statistical or dynamical, although increasingly there are approaches that are hybrids. As such, it is helpful to view these approaches as lying along a continuum of increasing methodological complexity, and acknowledge that they have various tradeoffs: physical realism v. computational cost; single realizations v. ensembles; explicit physics/feedbacks v. simplicity. Which approach is best depends on the question being asked.

Statistical downscaling: Commonly used approaches include BCSD and LOCA which have been used in the National Climate Assessment, Reclamation's SECURE Water Act report and MACA which has been used in water demand analysis within Reclamation's SECURE report and fire simulations (Abatzoglou & Williams, 2016). (all these provide values that are across the West)

Dynamical downscaling: Because they require more computing time, they are often used more locally in individual studies. There are, however, some efforts to do intercomparisons across regional climate models in the US (e.g., NARCCAP, CORDEX).

Hybrid dynamical-statistical approaches: Two examples: Alex Hall at UCLA has led the development of a hybrid approach; it was used in a precipitation study done over Los Angeles. Ethan Gutmann at the National Center for Atmospheric Research has led the development of a hybrid approach (ICAR), which has datasets for the US.

B. How to determine appropriate models: Vano et al. (2018) "Dos and Don'ts" provides useful advice about how to determine appropriate models based on the impact/s being evaluated. This advice applies to models and downscaling techniques.

"Ideally, models should represent all relevant processes well. If certain processes are poorly captured, the model's ability to simulate the climate sensitivities of dominant processes could

be in question. Yet models will always be limited by being simplifications of the real world (Clark et al. 2008; Carslaw et al. 2018). Therefore, for practical purposes, models are most often evaluated on how well they do at simulating key, measurable processes, especially those relevant to the impact of interest. For example, if the decisions relate to flooding, then hydrology model performance on short timescales matters. If, however, the decisions relate to water needs for drought, performance on shorter timescales may be less relevant. Evaluations should include how well model outputs are simulated historically (what is the current ability to simulate the variable of interest) and how sensitive they are to an altered climate. The latter can be done through evaluating whether modeled values respond accurately to a range of different climate conditions or through simple perturbations of the most relevant climate variables (e.g., Vano et al., 2012). This does not provide a comprehensive evaluation of how well future changes can be simulated, as this may not be knowable, but it can provide confidence that model sensitivities are physically reasonable and that further exploration using a model or approach is warranted. Additionally, techniques exist that can be used to evaluate how well a model performs under climatic conditions significantly different from those it was developed to simulate (Refsgraad et al. 2013)."

Here are a series of questions (shared during a technical training), that can be useful in identifying what models to use:

- Where is the area of interest?
- How large of an area?
- What is the impact of interest?
- When in the future?
- Does event sequencing matter?
- What type of climate uncertainty is important?
- What is available?

C. Examples of Available Data (shared during a technical training)

Statistical Approaches and Hydrology simulations are on the Green Data Oasis portal

- BCSD (12km), LOCA (6km)
- VIC streamflow

Dynamical Downscaling

- NARCCAP (50km),
- CORDEX (limited 25km)
- Others over regional domains or limited time periods

USGS GeoDataPortal

- Collection of different archives

Many others (NASA NEX, ARRM)

Q5. If the models and downscaling techniques differ for each region, how do we ensure internal consistency within the analysis?

Key points:

- This is not an uncommon challenge. It is better to use the model that captures the impact of interest for a particular question/region vs. trying to use a model that is universal.
- The most important thing is to be sure choices are placed in context. To be consistent, one approach would be to use similar GCMs, downscaled in ways most appropriate to the questions of interest. Another approach would be to consistently look at an ensemble of models and results that are 90% and 10% of the range (see example below for why Reclamation decided to use 90% and 10%, Metropolitan may choose different percentiles.)
- No model is perfect and cannot provide all the answers. They are one tool in the toolbox.

More details on defining the range:

For example, see the description in Reclamation's report in 2016 on "Considerations for Selecting Climate Projections for Water Resources, Planning, and Environmental Analyses"

"*Define the Range of Uncertainty to be Considered:* For each metric, study teams must define the range of uncertainty to be considered in their analysis. The range of uncertainty is typically represented as a range of percentiles that correspond to the higher end of the range of projected change, the middle or central tendency, and the lower end of the range of projected change. The central tendency is defined by the 50th percentile (median). In order to represent the range of projected climate change, the 10th and 90th percentiles, for example, encompass 80% of the values of a given metric while excluding the highest 10% and lowest 10% of values; similarly, the 20th and 80th percentiles encompass 60% of values while excluding the highest 20% and lowest 20%. Selecting a larger range of uncertainty results in considering a broader range of future climate conditions in the study, but bears the risk of including outlier values. By contrast, selecting a smaller range of uncertainty results in considering a narrower range of future climate conditions, but reduces the risk of including outlier values. In general, selecting projections based on the 10, 50 , and 90 percentiles is appropriate for most studies."

Q6. What hydrologic changes are anticipated for the relevant regions?

Key Points: This is a question that lengthy reports are written on. We will expand on this question throughout the course of our work with Metropolitan. To provide an illustration of some of the material we could provide, we share some highlights below. New information shared here focuses on the Colorado River basin.

Southern California and Eastern Sierra Precipitation: We provided Metropolitan a document addressing the question "*What are the plausible ranges in the quantity and pattern/timing of precipitation with a specific focus on Southern California and the Eastern Sierra (supply source for the LA Aqueduct)?*" The key summary points are copied below; see the document for more details.

In the future, in both Southern California and the Eastern Sierra:

1. Wet extreme events are projected to increase (e.g., storms bring more water)
2. Dry years are projected to increase (e.g., droughts increase)
3. Wet and dry swings are expected to be amplified
4. Annual average precipitation changes (e.g., averaged over 30 years) are small and unclear
5. Seasonal changes indicate statewide increases in precipitation in winter, decreases in spring
6. Snowpack will decline, increasing cold season and decreasing warm season streamflow (most relevant to Eastern Sierra)

Climate Changes in the Colorado River:

1. Warming temperatures are increasing evaporation which in turn is decreasing the amount of precipitation that turns into runoff
2. Colorado River runoff will likely decline by mid-century, potentially by large amounts
3. Reservoir evaporation will increase
4. Crop water demands will increase
5. Spring runoff will occur earlier
6. The Salton Sea is expected to continue to decline

Colorado River Basin Runoff Projections

Multiple studies since 2007 have attempted to assess how runoff in the Colorado River Basin will change in the 21st century. Current best guess runoff projections range from approximately +5% to -40% by mid-century with most projections indicating a decline (See Milly and Dunne, 2020, Lukas and Payton, 2020). Rising temperatures are a certainty and will increase ET, which in turn will reduce river flow. Because ET is about 80% of precipitation, every 1% increase in ET

translates to a substantially larger 5% drop in river flow. Changes in precipitation can either reduce these temperature-induced declines or enhance them. Confidence in modeled precipitation is much lower than temperature and is the main reason why the range is so great. With no changes in long term precipitation[1], a reasonable assumption would be river flow declines -15% to -25% by mid-century. (Note that the current ~20% decline is approximately split between a temperature-induced decline and a precipitation decline. Thus, a future -15% to -25% decline due solely to temperature increases would become -25% to -35% with the current precipitation decline.

It is important to note the precipitation is not runoff, and that increases in precipitation may not lead to increases in runoff. It is quite possible that additional precipitation turns into evapotranspiration, as does approximately 80% of all precipitation in the Colorado River Basin now. Studies on future megadroughts indicate that megadroughts can occur even with substantial additional precipitation if it is warm enough.

Five important peer-reviewed papers in the last 5 years have provided useful insights into future flow. We know that runoff efficiency for a given amount of precipitation has declined (Woodhouse et al., 2016) that up to half of the approximately 20% flow decline since 2000 is due to human causes (Udall and Overpeck, 2017, Xiao et al, 2018, Hoerling et al, 2019, Milly and Dunne 2020) and that warming temperatures of over 1°C are reducing the flow by up to nearly 10% per degree Celsius temperature increase. Two papers have projected flow losses of up to 40% by mid-century (Udall and Overpeck, 2017, Milly and Dunne, 2020). An additional paper states that the American Southwest is now in a 19-year long 'megadrought' as measured by the 2nd lowest soil moisture in the last 1200 years (Williams et al, 2020). Without human-caused warming, this drought would be modest.

Most of these papers have focused on the impacts of the unequivocal, human caused, greater than 1°C temperature increase since the mid-20th century. The modest recent precipitation decline (~3%) could be natural variability, but one paper found human fingerprints on this deficit (Hoerling et al, 2019). If true, there are reasons to believe that the decline will not only continue but get worse, greatly amplifying the known temperature-induced flow losses. Such precipitation declines, along with temperature increases, are what push some runoff projections to -40% by mid-century.

In addition, recent runoff trends are worrisome. In the last two years, reasonable winter snowpacks have turned into very low runoff, with 100% of snowpack becoming 52% of runoff in 2020 and this year 80% turning into less than 30%. Record setting hot and dry periods in the summers of 2019 and 2020 dried soils significantly. Dry soil moisture from the previous year must be filled before runoff occurs in the next year. We should expect more, and worse, of these dry and very hot summer periods going forward, not fewer.

Changing Colorado River Runoff Patterns

Modeled future precipitation consistently shows a North to South gradient, with declining precipitation in the south and increasing in the north. The dividing line is often near the middle

of the state of Colorado, but varies by model. Modeled precipitation in the Lower Basin is robustly projected to decline but the impacts of this have been little studied. Of particular concern to MWD would be declines of inflows in the Grand Canyon. These inflows are about 750 kaf/yr, about 5% of the total flow. Declines in these flows would translate directly into water availability in the Lower Basin and increases in Lower Basin shortages. Importantly, they are not part of the Colorado River Compact Section III (d) 75 maf over ten-year "delivery" clause and thus there is no valid claim that these flows are owed to the Lower Basin. In the overall scheme of Colorado River water deliveries to the Lower Basin, declines of up to half of these flows would be about 5% Lower Basin deliveries (375 kaf out of 8.25 maf), but such declines would increase the already substantial pressures to reduce water consumption in the Lower Basin and Arizona, especially.

Changes in Colorado River Runoff Timing

Runoff timing has advanced by 1 to 4 weeks (Clow, 2010, Lukas and Payton, 2020), and is expected to advance several weeks more by mid-century. (See figure below that shows a peak in early May compared to mid-June historically.)

Changes in Colorado River runoff timing do not have direct implications for MWD, as the water can generally be captured in storage. (This is not true for direct flow diverters in the Upper Basin who may have to change practices to utilize earlier runoff.) However, there are important indirect effects. Early runoff promotes greater ET as soils are exposed for longer periods of the year which in turn promotes more evaporation and transpiration by plants. This then can lead to runoff reductions in the following year (Das et al., 2012).

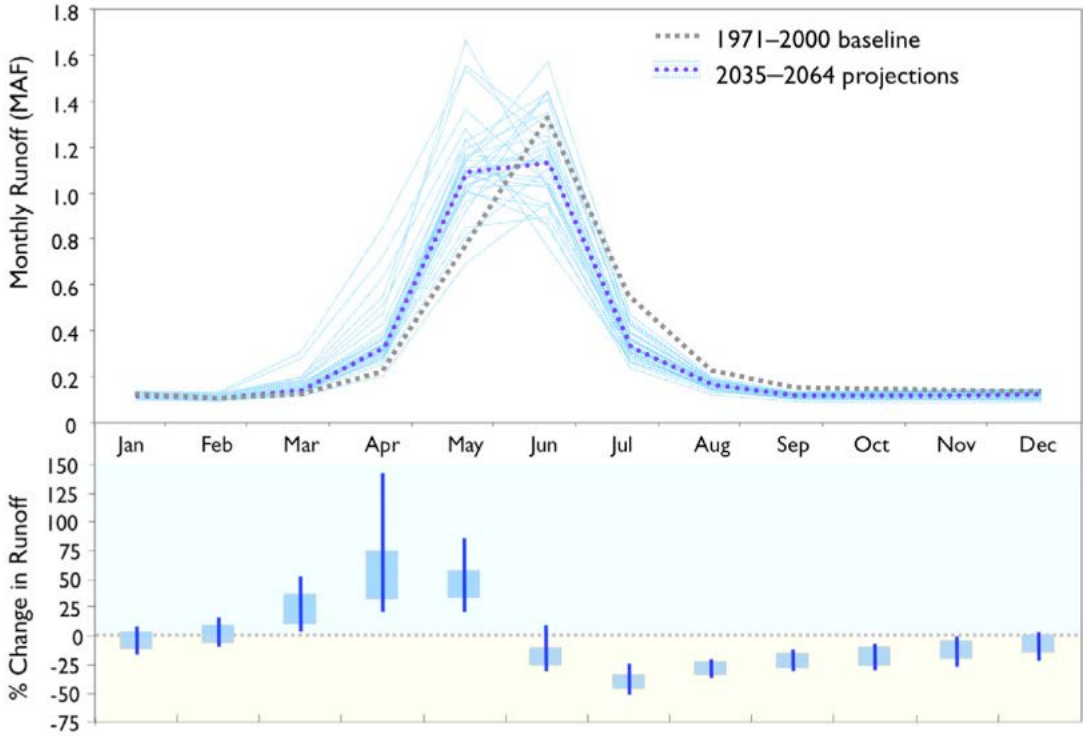


Figure 9: Projected monthly runoff change for the Colorado River headwaters from ~2050 (2035-2064) under moderate emissions (RCP4.5) from the CMIP4-BCSD. Projected average monthly flows for 31 projections (light blue lines) and the ensemble median (dark blue dotted line) compared to the 1971-2000 baseline (gray dashed line). The bottom panel shows the corresponding ranges of the monthly runoff changes from the model ensemble; the dark blue bars show the range from the 10th to 90th percentile and the light blue boxes show the 25th to 75th percentile. **As the hydrography shifts earlier, March-May runoff increases while June tends to decrease, and July-September runoff sharply decreases in all projections**. For original figure caption and data please see the State of the Science, 2020, https://wwa.colorado.edu/publications/reports/CRBreport/.

Dust on Snow Impacts on Colorado River Flow

Dust on snow has been found to advance runoff timing by up to 3 weeks and to reduce river flow by up to 5% (Painter et al., 2010). Drought in the Southwest has been associated with increases in the dust deposition that is responsible for runoff reductions and early melting. It has been hypothesized that severe future droughts could cause additional dust. Were dust to increase, the flow would decline modestly to 6% but runoff timing would advance by an additional 3 weeks (Deems et al., 2013) The advances in runoff timing due to dust are substantially larger than caused by warming. Dust physically darkens the snowpack which allows for much more solar energy to be absorbed thus hastening melting. There is some evidence that human interventions could reduce some of the impacts of dust (Duniway, 2019).

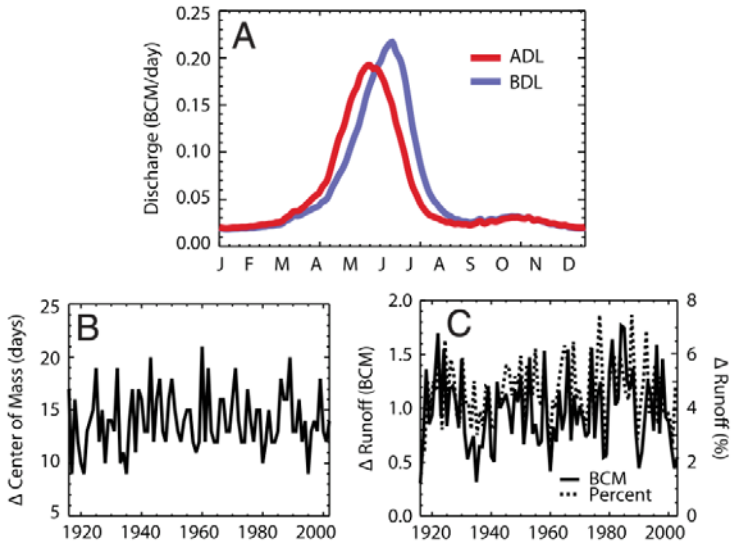


Fig. 2. Differences in runoff timing and volume between ADL and BDL dust scenarios. (*A*) Mean discharge at Lees Ferry, AZ on the Colorado River for ADL and BDL scenarios across the period 1916–2003. (*B*) Time series of BDL versus ADL Δ runoff in billion cubic meters across 1916–2003. (*C*) Time series of BDL versus ADL Δ runoff in percent of ADL runoff.

Figure 10: Differences in runoff timing and volume at Lees Ferry between After Dust Loading (ADL) and Before Dust Loading (BDL). Total runoff volumes are the areas under the curves. Note that the red ADL line shows earlier and lower total runoff -- i.e., the enclosed area from the red line to the blue line on the left is smaller than the enclosed area from the red line to the blue line on the right. Source: Painter et al., 2010.

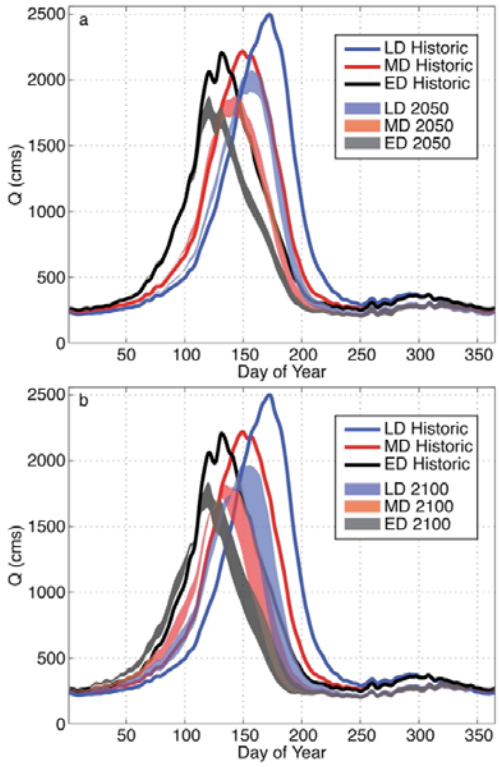


Fig. 8. (a) Mean annual hydrograph at Lees Ferry, showing moderate dust (MD), low dust (LD), and extreme dust (ED) historic traces and mean annual hydrograph for all three dust/albedo scenarios, for decade centered on 2050; colored areas show the range in hydrograph response between B1 and A2 emissions scenarios; and **(b)** as in **(a)**, but for the decade ending 2100.

Figure 11: Lees Ferry runoff at 2050 (a) and 2100 (b) under Low (LD), Moderate (MD) and Extreme (ED) dust. The lines are for the historic period and the ribbons represent future warming under lower (B1) and higher (A2) greenhouse gas emissions. Under historic conditions (lines) MD and ED lines shift to earlier runoff but show about the same runoff volumes. Under climate change (ribbons) LD shows both a shift in runoff timing and lower runoff volume. MD and ED under climate change show similar volumes but ED runoff timing is advanced into spring. Source: Deems et al, 2013.

Increasing Colorado River Evapotranspiration (ET) Demand

Multiple studies as noted above have shown that increasing ET is the root cause of up to half of the decline in Colorado River flows. These data are often not directly published but would be available as hydrology model outputs. Data from Milly and Dunne (2020) show increases in basin wide ET of approximately 3% since the 1930s, with much of these increases occurring during the last 20 years. Milly and Dunne note the importance of the earlier loss of snowpack, which decreases the Earth's reflectivity ("albedo"), and that in turn allows for increases in all forms of evaporation, including transpiration. Winter sublimation, the direct conversion of snow to water vapor, will also increase as it warms although this amount has not been projected. Sublimation is very dependent on wind and future changes in wind are not well understood.

Increasing West Wide Crop Demands

Reclamation studied how climate change will affect crop demands in 2015. They found a 12% increase across the West, with greater increases occurring in the South (Rio Grande) and lesser increases in the north (Columbia). Perennial crops increased the most, while annual crops may

be able to be planted and harvested earlier, minimizing the impacts of increasing temperature on ET. The study used a modern, physically-based method to calculate ET, unlike some older studies using inaccurate temperature-based methods.

BCSD Irrigation Demand and Reservoir Evaporation Projections

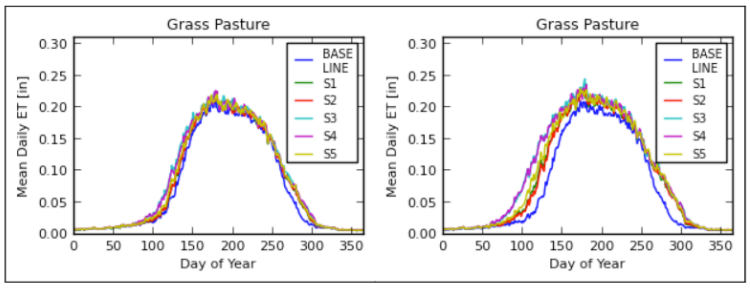


Figure 20.—Colorado River Basin – COOP station WY6555 (Mountain View, WY). Baseline and projected mean daily grass pasture evapotranspiration for all scenarios and for time periods 2020 (left) and 2080 (right).

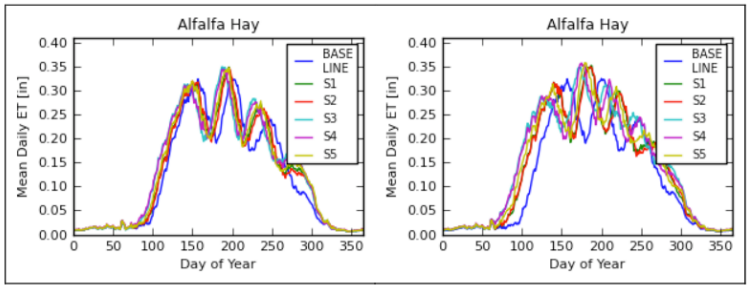


Figure 21.—Colorado River Basin – COOP station UT5969 (Myton, UT). Baseline and projected mean daily alfalfa evapotranspiration for all scenarios and for time periods 2020 (left) and 2080 (right).

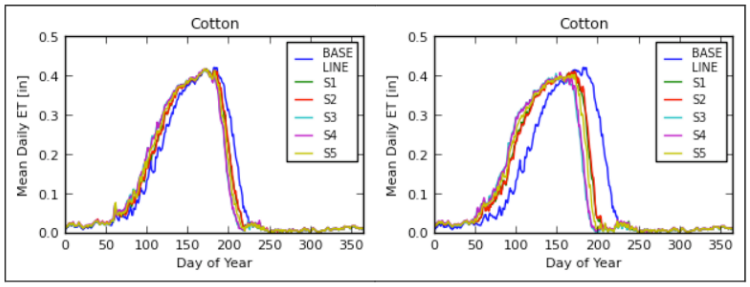


Figure 22.—Colorado River Basin – COOP station AZ9656 (Yuma, AZ). Baseline and projected mean daily cotton evapotranspiration for all scenarios and for time periods 2020 (left) and 2080 (right).

Figure 12: Evapotranspiration now versus different future scenarios (S1 thru S5) with higher temperatures. Note that for Grass Pasture and Alfalfa Hay the growing period starts earlier and ends later, enlarging consumptive use. For cotton, the growing period starts earlier but also ends earlier, offsetting some of the consumptive use increases. Source: Reclamation, 2015.

Increasing Colorado River Reservoir Evaporation

There has been only one comprehensive study on changes in lake evaporation due to climate change, a 2015 study by Reclamation (Reclamation, 2015). That study suggests a roughly linear thru time 10% increase in evaporation at Lakes Mead and Powell by 2100. If current Lake Mead evaporation is approximately 600 to 800 kaf / year, this means additional losses of 60 to 80 kaf

/ year by 2100 with similar but slightly smaller losses at Powell. These losses are dependent on reservoir contents, with lower reservoirs having less surface area and thus lower losses. Combined, the two reservoirs might thus lose an additional 120 kaf / year by 2100 and perhaps 60 kaf / year by 2050. These are reasonably small numbers in the context of the entire river, but are part of the larger trend of increasing ET losses everywhere.

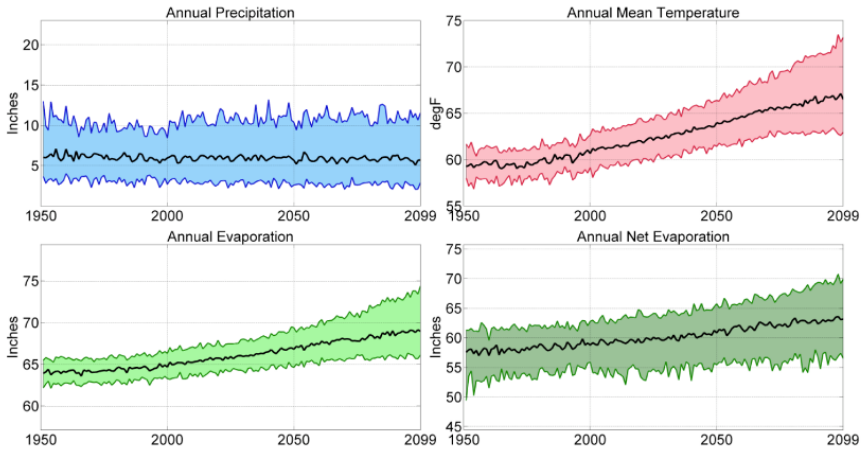


Figure 23.—Colorado River Basin – Lake Powell ensemble median and 5th and 95th percentile annual precipitation, temperature, reservoir evaporation, and net evaporation.

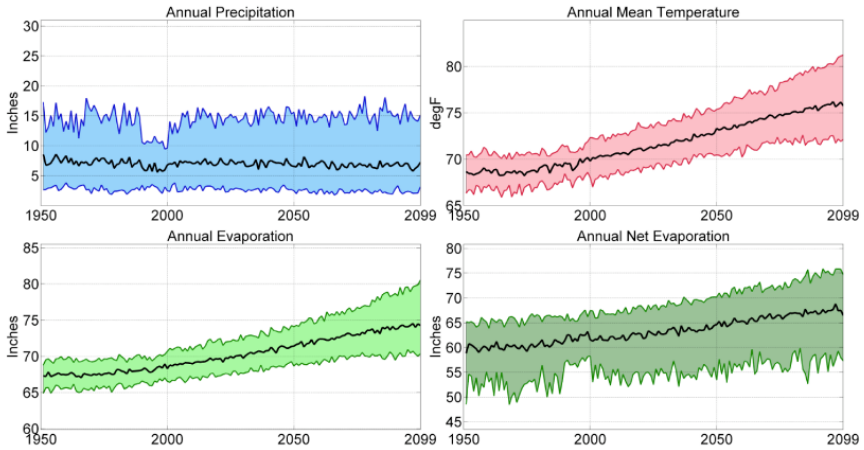


Figure 24.—Colorado River Basin – Lake Mead ensemble median and 5th and 95th percentile annual precipitation, temperature, reservoir evaporation, and net evaporation.

Figure 13: Changes in precipitation, annual mean temperature, annual evaporation and annual net evaporation (evaporation less precipitation) at Lake Mead from 1950 to 2099. Note the approximately 10% increase in evaporation from 2000 to 2099. Source: Reclamation, 2015.

Impacts to the Salton Sea

Salton Sea levels are directly and most importantly influenced by return flows from the Imperial Irrigation District. Those return flows are in turn influenced by total IID deliveries, and more

importantly, on farm practices in IID. Evaporation is also a determinant of levels. Most projections for Salton Sea levels are for steadily declining levels over the next few decades due to an emphasis on improved irrigation efficiency, which means fewer return flows. It is unclear how future evaporation increases will affect the sea, but a reasonable guess would be increased evaporation in line with that projected at Lakes Powell and Mead. Salton Sea levels may be less of an issue of climate change and more related to water transfer agreements from IID. Were IID to face delivery shortages due to low reservoir levels in Lake Mead, this would likely lead to even lower levels in the Salton Sea than currently envisioned. Low Salton Sea levels lead to a variety of impacts from human health issues due to dust to significant environmental issues from the Sea turning hyper-saline. We are not aware of studies that directly tie climate change to impacts at the Salton Sea.

Q7. What are the important underlying climate change drivers that influence demands, and how do they affect demands in each of the three major demand sectors (single family residential, multi-family residential, commercial/industrial)?

Key Points: Temperature, and to a lesser extent precipitation, are the major climate drivers influencing water demand. Here, We describe the impact of climate drivers on major end uses and the extent to which each of these end uses is associated with the three major demand sectors: single-family residential, multi-family residential, and non-residential (or commercial, industrial, and institutional).

Effect of Climate Change on End Uses of Water:

A. **Landscape Irrigation:** Landscape water demand is sensitive to temperature and, to a lesser extent precipitation. Irrigation demand is higher in hot and/or dry periods and lower during cool and/or wet periods. As a result, irrigation is a major driver of intra- and inter-annual variability in water demand. Because precipitation in California typically occurs between October and May, the effect of precipitation on irrigation demand is likely to be greatest during the winter months and early Spring. In contrast, the effect of temperature on irrigation demand is likely to be year-round, peaking in summer and fall.

   A range of techniques are available for estimating how changes in climatic factors (temperature, wind speed, humidity, solar radiation, etc.) affect evaporation and plant transpiration. For example, the FAO Penman-Monteith equation is widely used for evaluating climate impacts on irrigation demand. Crop coefficients are useful for accounting for variations from the reference condition due to, for example, crop type, phenological development, harvests, and stress.

B. **Building Cooling:** Temperature also determines building cooling requirements, with warmer temperatures increasing cooling needs. Most buildings use either air or water for cooling, although some may use geothermal processes. For those that use water for cooling, a major determinant of the water requirements is whether the building uses single-pass (or once-through) cooling, evaporative cooling, or cooling towers. Where water is used for building cooling, changes in temperature will have a direct effect on building water requirements. A related important consideration is the penetration rate of cooling systems. In much of coastal California, residential homes are built without air conditioning, but as average temperatures rise, demand for air conditioning will increase, with concomitant impacts on energy demands and the water associated with energy production.

C. **Building Heating Systems:** Temperature also affects building heating requirements, with warmer temperatures reducing heating requirements. Where water is used for building heating, such as in boilers, changes in temperature can have a direct effect on building water requirements. For water-based heating systems, a major determinant of the water requirements is whether they are equipped with a closed-loop system that

returns the water and steam condensate to the boiler for reuse or an open-loop system that expends the water or steam without return to the boiler.

D. **Electricity Generation:** Temperature also affects electricity generation. Warmer temperatures, particularly during the summer months, can increase building energy use for cooling while also reducing the thermal efficiency of power plants. This could, in turn, increase electricity generation and, depending on the energy technology employed, energy-related water use. Most renewables, like wind and solar photovoltaics, use minimal water during operation. However, thermoelectric power plants, like natural gas-fired plants or solar thermal plants, use water in boilers and, to a greater extent, in cooling systems. These cooling systems may be cooled by air or water, with once-through cooling systems more water intensive than recirculating cooling systems.

Effect of Climate Change on Major Demand Sectors: Generally, climate impacts on water demand will vary across each of the major demand sectors according to (1) the magnitude of climate change impacts on the end use, and (2) the proportion of total water use the end use represents.

A. **Single-Family Residential:** Landscape irrigation is common in single-family residences, accounting for up to 70% of household water use in some areas. As a result, climate impacts on landscape irrigation will affect household water demand. Most single-family homes do not use water-based heating and cooling systems, and consequently, temperatures would have no effect on water demand for those end uses. However, some single-family homes use evaporative coolers, such as swamp coolers, that require water during operation. For these households, warmer temperatures would increase water demand. While there are limited data on the use of evaporative coolers in California households and their water requirements, the Department of Water is studying these systems to support implementation of AB 1668/SB 606.

B. **Multi-Family Residential:** Like single-family residences, landscape irrigation is common in multi-family residences, and climate change would affect water requirements for this end use. Additionally, multi-family buildings may use water for cooling and heating systems. Typically, low-rise residences and small commercial buildings use air-based cooling systems, whereas larger buildings may use water-based cooling systems.

C. **Non-Residential (CII):** Landscape irrigation is common in the CII sector, and climate change would affect total CII water demand. Compared to the residential sector, however, landscape irrigation typically represents a lower percentage of total water use, and thus the effect on total demand is likely to be less. Buildings in the CII sector may use water for cooling and/or heating systems. While small commercial buildings typically use air-based systems, larger buildings are more likely to use water-based cooling systems.

Q8. What other recommendations do you have for our planning?

Prudent Planning and "Reasonable Worst Case Future: By this we mean, planning for a future that is both politically possible to plan for, and climatologically possible without being on the extreme tail. This requires balancing the politically possible and the "climatologically problematic". That is to say, some futures are too hard to plan for politically and too uncertain to plan for based on climate models. For example, given the strong tie between flow reductions over the last 21 years and rising temperatures in the Colorado River Basin, prudence dictates that planning use flows less than the last 21 years. It remains an active area of inquiry about how much less. Planning for California would likely require some very wet, flood prone scenarios along with drought scenarios. Ultimately, the determination of a 'reasonable worst case future' is a policy decision informed by qualitative weighting of certain and less certain science.

From Reclamation's West-Wide Climate and Hydrology Risk Assessment on what Deep Uncertainty is: "Because of the amount and nature of the uncertainty in future hydroclimate projections, however, it is also appropriate to consider concepts and techniques that provide decision makers with actionable information that does not rely on probabilities, using a subfield of decision science that deals with a deeply uncertain future. Deep uncertainty arises when, among other factors, the likelihoods of future conditions cannot be stated with confidence, and when experts do not agree on the most appropriate way to represent complex interactions between factors influencing a planning context (Lempert et al., 2003; Marchau et al., 2019).

The Society for Decision Making Under Deep Uncertainty is a great resource for additional information: https://www.deepuncertainty.org/

Key references:

Clark, M.P., R.L. Wilby, E.D. Gutmann, J.A. Vano, S. Gangopadhyay, A.W. Wood, H.J. Fowler, C. Prudhomme, J.R. Arnold, and L.D. Brekke, 2016: Characterizing uncertainty of the hydrologic impacts of climate change. *Climate Change Reports*, **2**, 55-64, doi:10.1007/s40641-016-0034-x

Clow, D. W. Changes in the Timing of Snowmelt and Streamflow in Colorado: A Response to Recent Warming. *J. Climate* **23**, 2293–2306 (2010).

Das, T., Pierce, D. W., Cayan, D. R., Vano, J. A. & Lettenmaier, D. P. The importance of warm season warming to western U.S. streamflow changes. *Geophysical Research Letters* **38**, L23403 (2012).

Deems, J. S., Painter, T. H., Barsugli, J. J., Belnap, J. & Udall, B. Combined impacts of current and future dust deposition and regional warming on Colorado River Basin snow dynamics and hydrology. *Hydrology and Earth System Sciences* **17**, 4401–4413 (2013).

Duniway, M. C. *et al.* Wind erosion and dust from US drylands: a review of causes, consequences, and solutions in a changing world. *Ecosphere* **10**, e02650 (2019).

Hall, Alex, Neil Berg, Katharine Reich. (University of California, Los Angeles). 2018. *Los Angeles Summary Report*. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-007. Los Angeles region of California's 4th Climate change assessment

Dettinger, Michael, Holly Alpert, John Battles, Jonathan Kusel, Hugh Saford, Dorian Fougeres, Clarke Knight, Lauren Miller, Sarah Sawyer. 2018. Sierra Nevada Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-004 Sierra Nevada region of California's 4th Climate change assessment

Hoerling, M. *et al.* Causes for the Century-Long Decline in Colorado River Flow. *Journal of Climate* (2019) doi:10.1175/JCLI-D-19-0207.1.

Hoerling, M. P. *et al.* Present Weather and Climate: Evolving Conditions. in *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment* (eds. Garfin, G., Jardine, A., Merideth, R., Black, M. & LeRoy, S.) 74–100 (Island Press/Center for Resource Economics, 2013). doi:10.5822/978-1-61091-484-0_5.

Lukas, J., Barsugli, J., Doesken, N., Rangwala, I. & Wolter, K. *Climate Change in Colorado A Synthesis to Support Water Resources Management and Adaptation*. http://wwa.colorado.edu/climate/co2014report/Climate_Change_CO_Report_2014_FINAL.pdf (2014).

Lukas, J. *et al.* Colorado River Basin Climate and Hydrology: State of the Science. 531 (2020).

Milly, P. C. D. & Dunne, K. A. Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation. *Science* **367**, 1252–1255 (2020).

Painter, T. H. *et al.* Response of Colorado River runoff to dust radiative forcing in snow. *Proceedings of the National Academy of Sciences* **107**, 17125–17130 (2010).

Pierce, D. W., J. F. Kalansky, and D. R. Cayan, (Scripps Institution of Oceanography). 2018. *Climate, Drought, and Sea Level Rise Scenarios for the Fourth California Climate Assessment.* California's Fourth Climate Change Assessment, California Energy Commission. Publication Number: CNRA-CEC-2018-006. California's 4th Climate Change Assessment,

Bureau of Reclamation (Reclamation), 2016: Considerations for Selecting Climate Projections for Water Resources, Planning, and Environmental Analysis, available at: https://www.usbr.gov/watersmart/wcra/docs/WWCRAClimateProjectionSelection.pdf

Reclamation (Bureau of Reclamation) 2021. Water Reliability in the West -2021 SECURE Water Act Report. Prepared for the United States Congress. Bureau of Reclamation, Water Resources and Planning Office. Denver, Colorado. Reclamation's 2021 SECURE Water Act

Reclamation. *West-Wide Climate Risk Assessments: Irrigation Demand and Reservoir Evaporation Projections*. (2015).

Udall, B. & Overpeck, J. The twenty-first century Colorado River hot drought and implications for the future. *Water Resour. Res.* **53**, 2404–2418 (2017).

Vano, J.A., Arnold, J.R., Nijssen, B., Clark, M.P., Wood, A.W., Gutmann, E.D., Addor, N., Hamman, J. and Lehner, F., 2018. DOs and DON'Ts for using climate change information for water resource planning and management: guidelines for study design. *Climate Services*, *12*, pp.1-13.

Williams, A Park, C. M. *et al.* Large contribution from anthropogenic warming to an emerging North American megadrought. **368**, 314–318 (2020).

Woodhouse, C. A., Pederson, G. T., Morino, K., McAfee, S. A. & McCabe, G. J. Increasing influence of air temperature on upper Colorado River streamflow. *Geophys. Res. Lett.* 2015GL067613 (2016) doi:10.1002/2015GL067613.

Xiao, M., Udall, B. & Lettenmaier, D. P. On the causes of declining Colorado River streamflows. *Water Resources Research* **54**, 6739–6756 (2018).

Christian-Smith, J., M. Heberger, and L. Allen. 2012. Urban Water Demand in California to 2100: Incorporating Climate Change. Pacific Institute: Oakland, CA. https://pacinst.org/wp-content/uploads/2014/04/2100-urban-water-efficiency.pdf

United States Bureau of Reclamation (USBR). 2021. West-Wide Climate and Hydrology Assessment. Technical Memorandum No. ENV-2021-001. Available at https://www.usbr.gov/climate/secure/docs/2021secure/westwidesecurereport.pdf#page=345

Item No. 5

DISCUSSION ITEM
June 2, 2021

TO: **Board of Directors**

FROM: **Robert Hunter,**
General Manager

Staff Contact: Melissa Baum-Haley

SUBJECT: **METROPOLITAN WATER DISTRICT (MET) ITEMS CRITICAL TO ORANGE COUNTY**

STAFF RECOMMENDATION

Staff recommends the Board of Directors to review and discuss this information.

DETAILED REPORT

This report provides a brief update on the current status of the following key MET issues that may affect Orange County:

a) MET Finance and Rate Issues
b) MET General Manager Recruitment Process
c) MET Review of Equal Employment Opportunity Policies and Practices
d) MET Integrated Resources Plan Update
e) MET Water Supply Conditions
f) Colorado River Issues
g) Delta Conveyance Activities and State Water Project Issues

ISSUE BRIEF #A

SUBJECT: MET Finance and Rate Issues

RECENT ACTIVITY

Current Update

Water Transactions for March 2021 totaled 105.5 thousand acre-feet (TAF), which was 9.1 TAF lower than the budget of 114.6 TAF. This translates to $94.5 million in revenues for March 2021, which were $7.5 million lower than the budget of $102.0 million.

Year-to-date water transactions through March 2021 were 1,144.1 TAF, which was 38.0 TAF lower than the budget of 1,182.1 TAF. Year-to-date water transactions through March 2021 were $1,008.2 million, which were $39.7 million lower than the budget of $1,047.9 million.

On April 14, 2020, Metropolitan's Board of Directors adopted Resolution 9266, fixing and adopting the RTS Charge for the calendar year (CY) 2021. On April 13, 2021, the Board adopted Resolution 9277, fixing and adopting the RTS Charge for CY 2022. On May 11, the Metropolitan Board adopt the resolution to continue the Standby Charge for fiscal year 2021/22. This allows for the collection of $43.9 million (approximately) through the continuation of the Standby Charge in fiscal year 2021/22 that would be applied towards the RTS Charge obligation of the participating member agencies.

ISSUE BRIEF #B

SUBJECT: MET General Manager Recruitment Process

RECENT ACTIVITY

The current steps in the General Manager Recruitment process are as follows:

- At the January 11 OP&T committee, the Hawkins Company presented the Job Description, Recruitment Brochure, and the Outreach Plan to the Metropolitan Board for review and approval.
- Nominations and submittals from interested candidates were accepted up to February 26. While the recruitment is open until the position is filled, candidates are encouraged to apply early; evaluations of all potential candidates will be done throughout the recruitment process.
- At the February 23 Executive Committee meeting, within closed session, the screening criteria, interview process, and interview questions were developed.
- Throughout the month of March, the Hawkins Company reviewed the submitted candidate applications. Only a select number of highly qualified candidates were invited to participate in the interview process.
- On March 23, the Hawkins Company presented a short list of candidates to the Executive Committee within closed session.
- The Executive Committee conducted initial interviews within closed session during the month of April.
- The full Board conducted interviews of the top candidates in closed session during the month of May.
- The next step is for the Board to approve the selection of the new General Manager and authorize the employment contract, with a potential action at the June 8 Metropolitan Board Meeting.

The MET General Manager Recruitment brochure can be found at the link:
https://thehawkinscompany.com/wp-content/uploads/2021/01/metro_water_district_v6.pdf

ISSUE BRIEF # C

SUBJECT: MET Review of Equal Employment Opportunity Policies and Practices

RECENT ACTIVITY

Metropolitan's Board of Directors and executive management are taking steps to foster and ensure a workplace that values equity, inclusion and diversity – both in policy and in practice.

The Metropolitan Board responded to employee comments alleging systemic harassment by authorizing Metropolitan's Ethics Officer in November 2020 to enter into a contract with Shaw Law Group, a certified women-owned business enterprise with extensive expertise in Equal Employment Opportunity issues. The firm is currently conducting an independent and thorough review of allegations of systemic Equal Employment Opportunity-related discrimination, harassment, retaliation and related concerns.

To help ensure greater transparency and accountability, a microsite has also been created on Metropolitan's website that include information about the Board's actions, policies, correspondence, and related matters. Additional information can be found in the attached statement.

On June 8, there will be an update on the Diversity, Equity, and Inclusion Council and the Independent Review of Workplace Concerns with outside firm Shaw Law Group (SLG). It is expected that SLG's board-directed independent review of Metropolitan's handling of Equal Employment Opportunity-related matters is expected to come to the Organization, Personnel and Technology Committee during the July meeting.

ISSUE BRIEF # D

SUBJECT: MET Integrated Resources Plan Update

RECENT ACTIVITY

The Integrated Water Resources Plan (IRP) is Metropolitan's comprehensive resource planning process and serves as Metropolitan's blueprint for long-term water reliability, including key supply development and water use efficiency goals.

For information on Metropolitan's May 25 IRP Climate Change Workshop with the expert panel, please refer to the *Discussion Item: Overview of Workshop on the IRP Expert Panel on Climate Change.*

More information and background on Metropolitan's IRP can be found at:
http://www.mwdwatertomorrow.com/IRP/index.html

ISSUE BRIEF # E

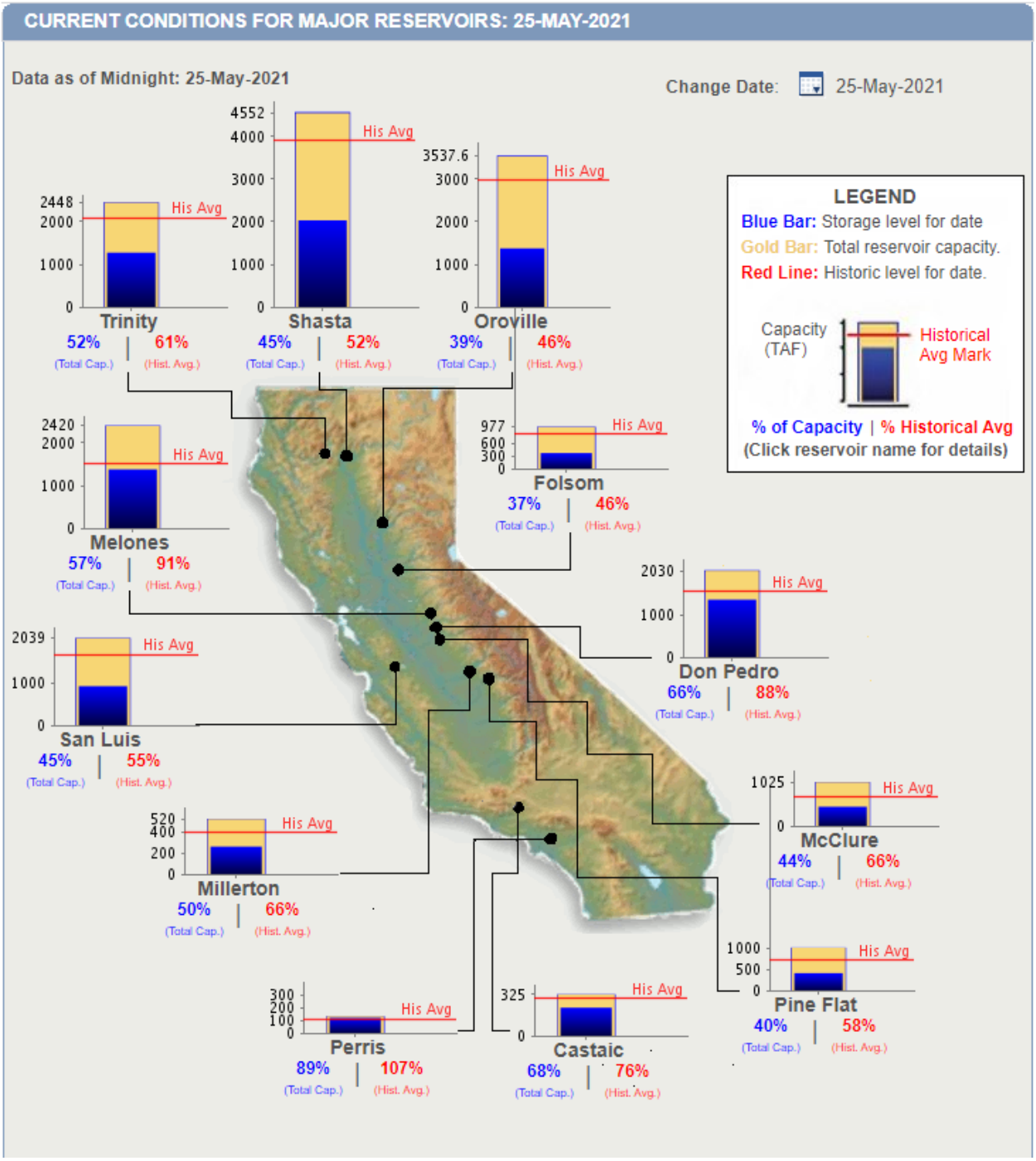
SUBJECT: MET's Water Supply Conditions

RECENT ACTIVITY

The 2020-21 Water Year (2020-21 WY) officially started on October 1, 2020. Thus far, the Northern California accumulated precipitation (8-Station Index) is reporting ***23.03 inches or 48% of normal*** as of May 26th. For 2020-21 WY, the Northern Sierra Snow Water Equivalent peaked at ***20.2 inches on March 24th***, which is ***71% of normal*** for that day. Due to the below average precipitation/snowfall, the Department of Water Resources (DWR) has reduced the initial State Water Project (SWP) ***"Table A" allocation from 10% to 5%.*** This allocation provides Metropolitan with approximately **96*,575 AF in SWP deliveries this water year.*** DWR's SWP Allocation considers several factors including existing storage in SWP, conservation reservoirs, SWP operational regulatory constraints, and the 2021 contractor demands. If the Table A allocation remains at 5%, it would be tied for the lowest allocation dating back to 1968. The last time DWR had a Table A Allocation of 5% was in 2014.

The Upper Colorado River Basin accumulated precipitation is reporting ***17.3 inches or 75% of normal as of May 26th***. On the Colorado River system, snowpack is measured across four states in the Upper Colorado River Basin. The Upper Colorado River Basin Snow Water Equivalent was reporting ***16.4 inches as of April 1st***, which is ***86% of normal*** for that day. Due to the below average precipitation/snowfall in 2020-21 WY, there is now a 60% chance of a shortage at Lake Mead in 2022 and a 82% chance of shortage in 2023.

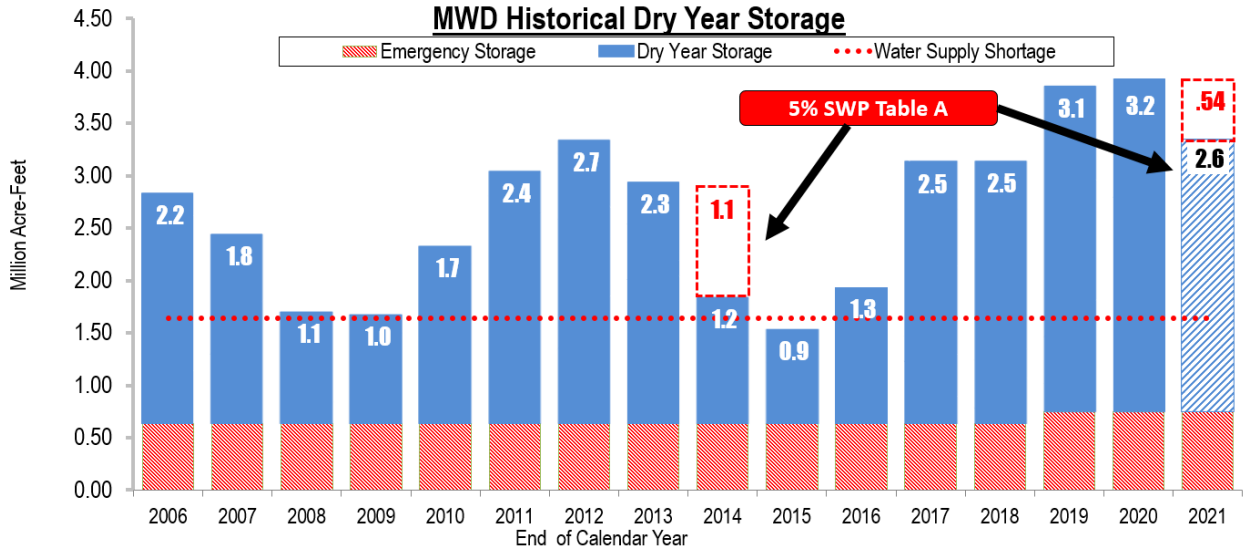
As of May 25th Lake Oroville storage is at ***39% of total capacity and 46% of normal.*** As of May 25th San Luis Reservoir has a current volume of ***45% of the reservoir's total capacity and is 55% of normal.***

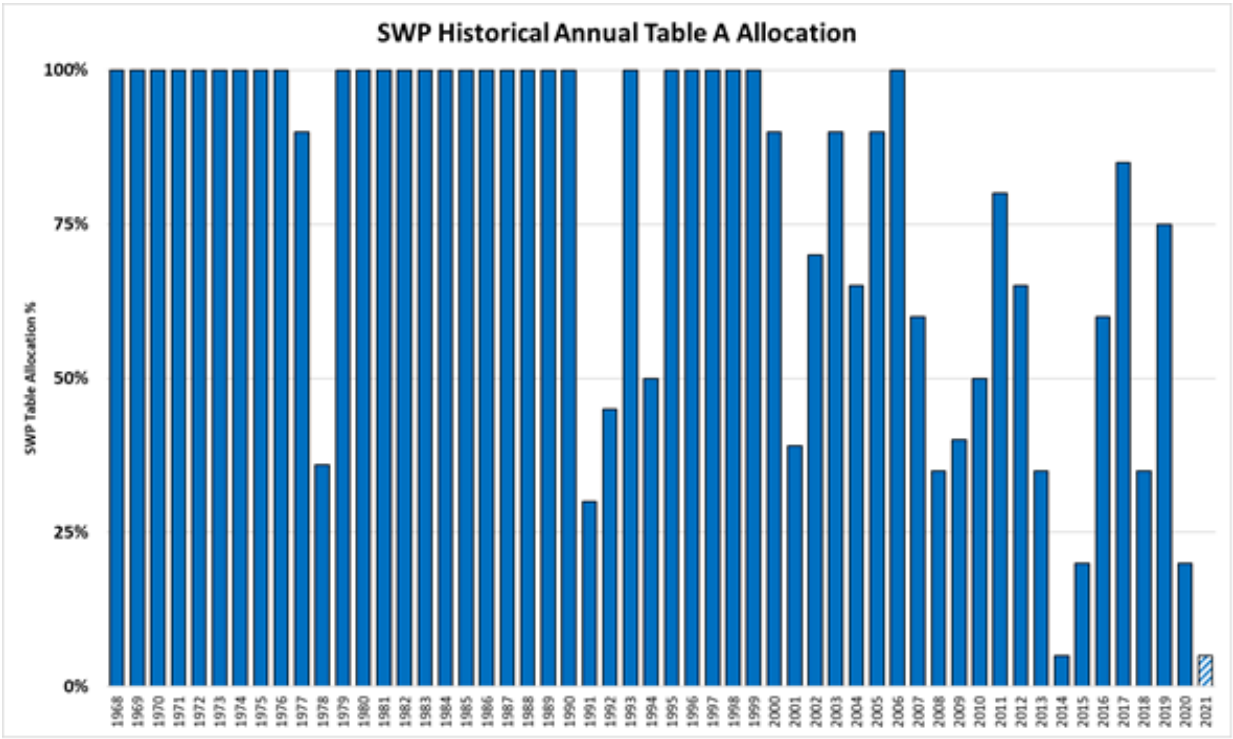


With estimated total demands and losses of 1.699 million acre-feet (MAF) and with a 5% SWP Table A Allocation, Metropolitan is projecting that demands will exceed supply levels in Calendar Year (CY) 2021. Based on this, estimated total dry-year storage for Metropolitan at the end of ***CY 2021 will go down to approximately 2.6 MAF.***

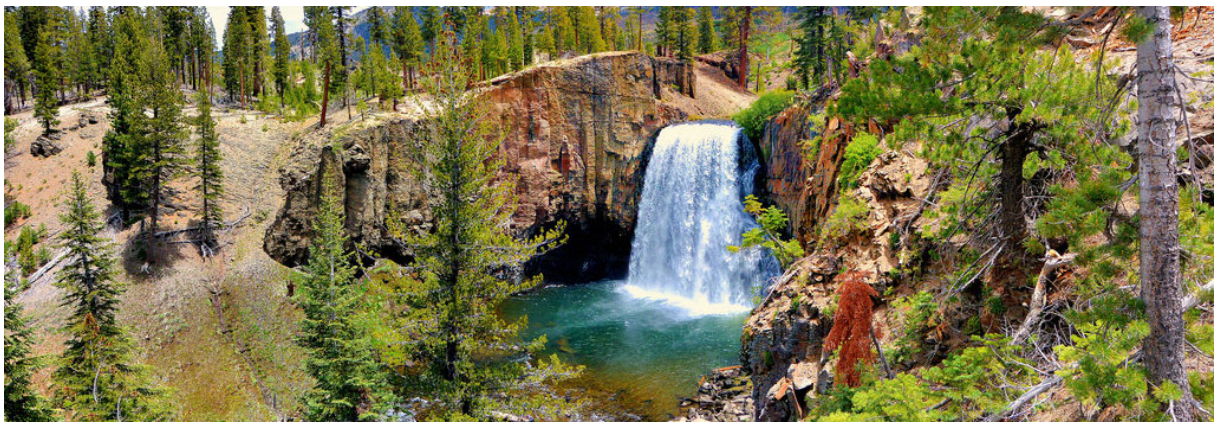
A projected dry-year storage supply of ***2.6 MAF will be the fourth highest amount for Metropolitan, a very impressive accomplishment given that the last two years have been extremely dry in Northern California***. A large factor in maintaining a high water

storage level are lower than expected water demands**.** We are seeing regional water demands reaching a 38-year low.





Attachment: Water Supply Conditions Presentation



Water Supply Conditions

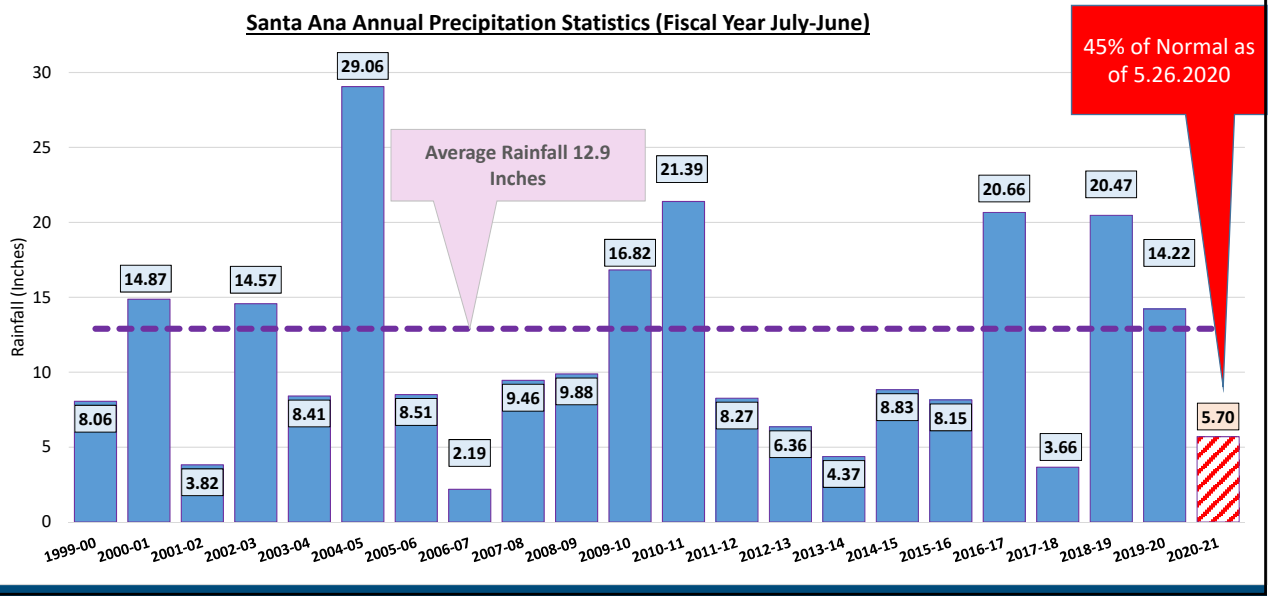
Kevin Hostert, Water Resources Analyst
Municipal Water District of Orange County

June 2nd 2021

Orange County Weather and Water Supply Conditions

Insight to local weather conditions that affect Orange County's water supply and water demand

Santa Ana Precipitation
(Station #121)



Regional Weather and Water Supply Conditions

Insight to regional weather conditions that affect California's water supply

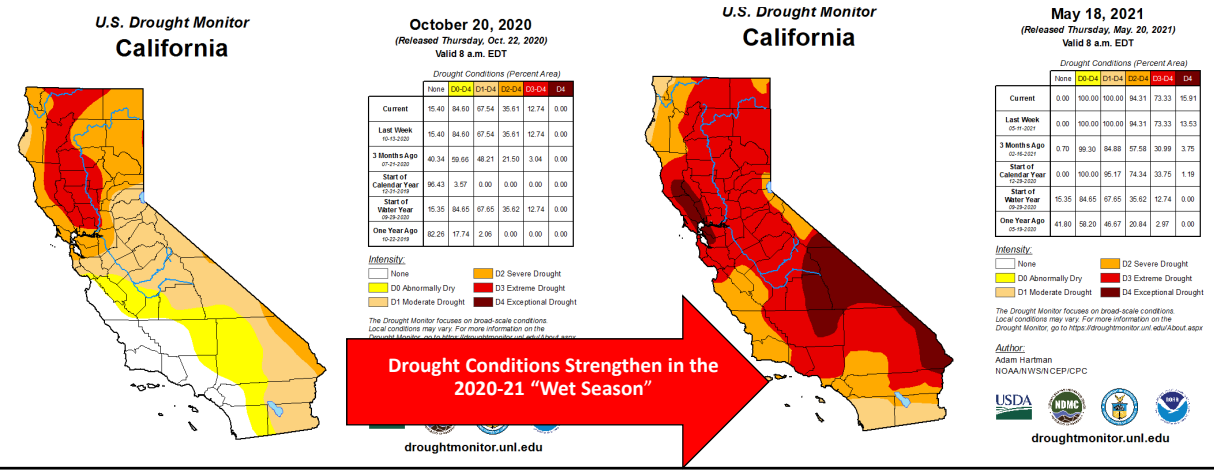
California Drought Monitor

October 2020 = 68% Moderate Drought (D1) in California

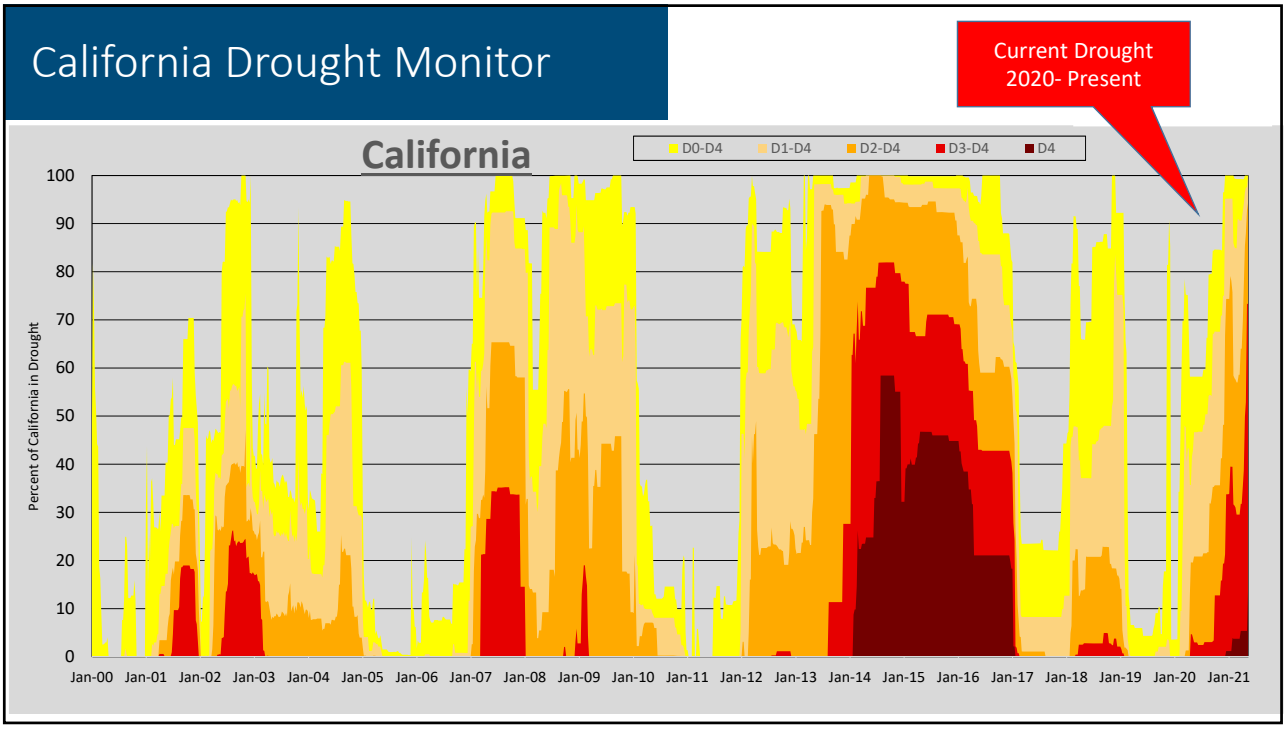
October 2020 = 36% Severe to Extreme Drought (D2 to D3) in California

May 2021 = 100% Moderate Drought (D1) in California

May 2021 = 94% Severe to Exceptional Drought (D2 to D4) in California



California Drought Monitor



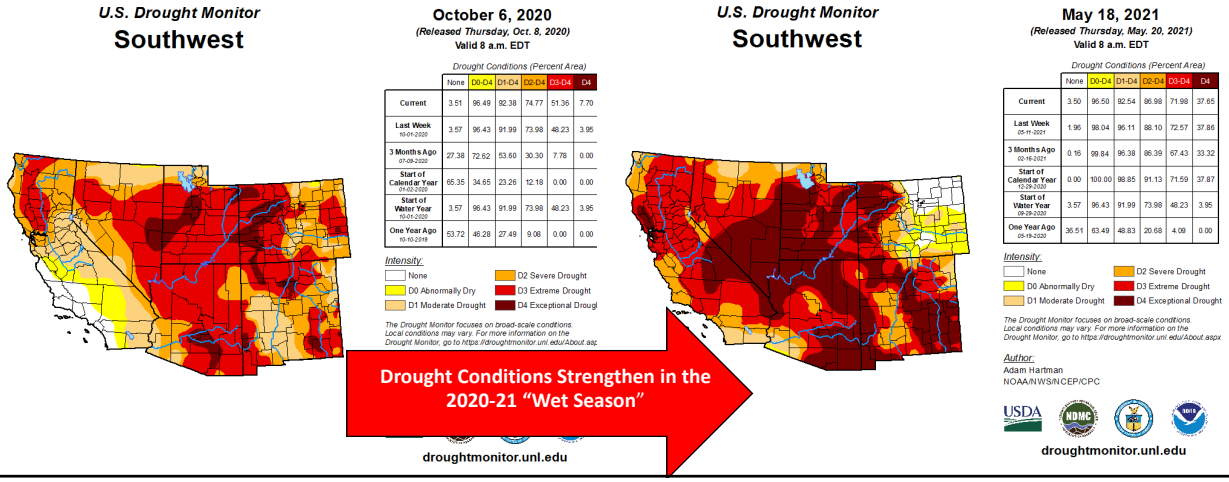
Southwest Drought Monitor

October 2019 = 2% Moderate Drought (D1) in California

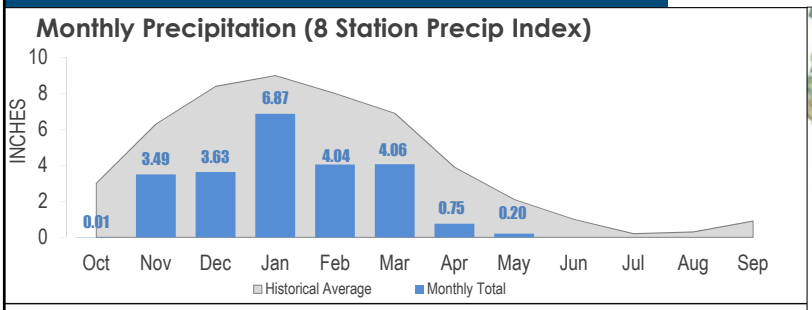
October 2019 = 0% Severe to Extreme Drought (D2 to D3) in California

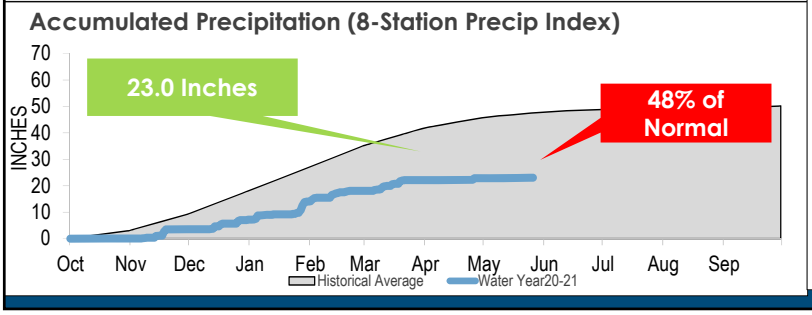
May 2021 = 92.5% Moderate Drought (D1) in Southwest

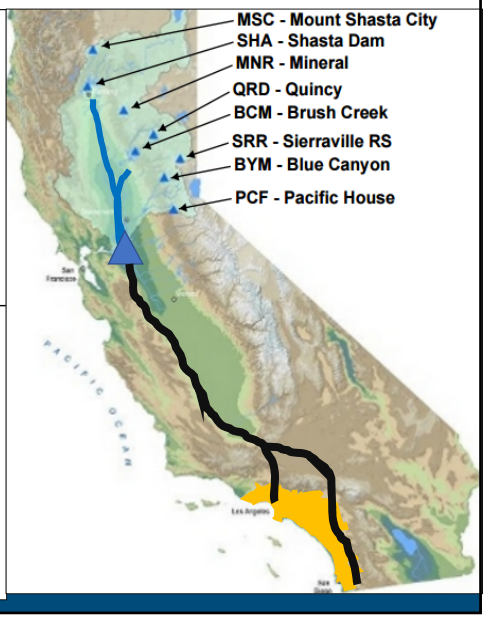
May 2021 = 87% Severe to Exceptional Drought (D2 to D4) in Southwest



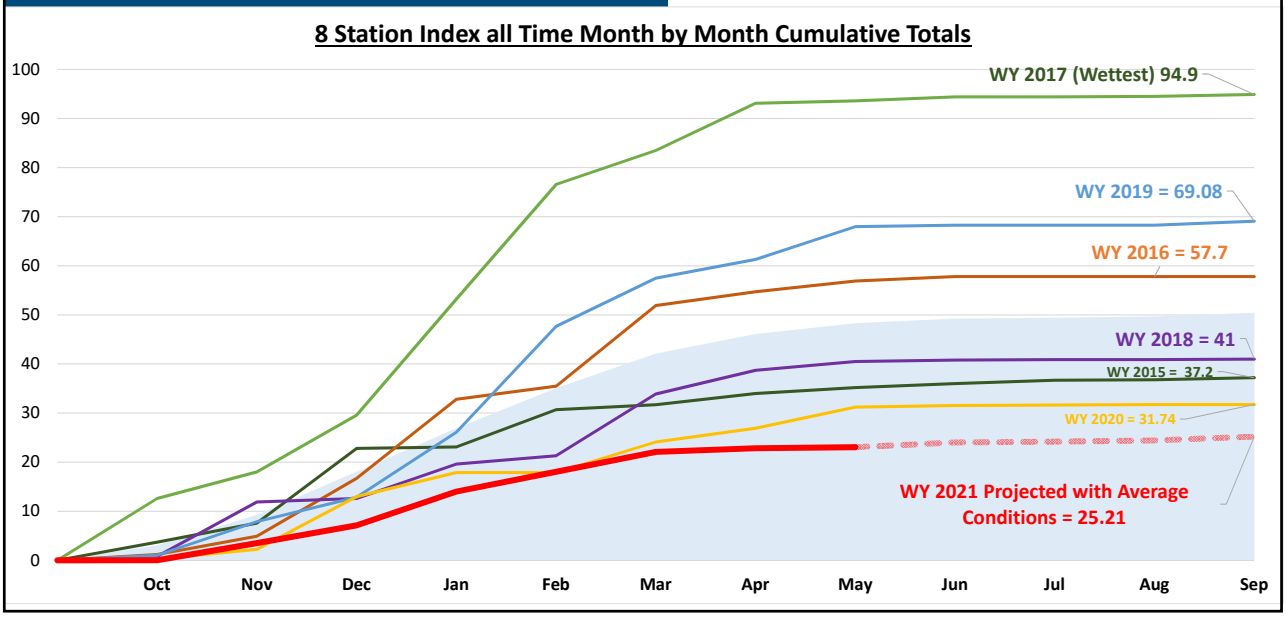
Northern California Accumulated Precipitation WY 2021



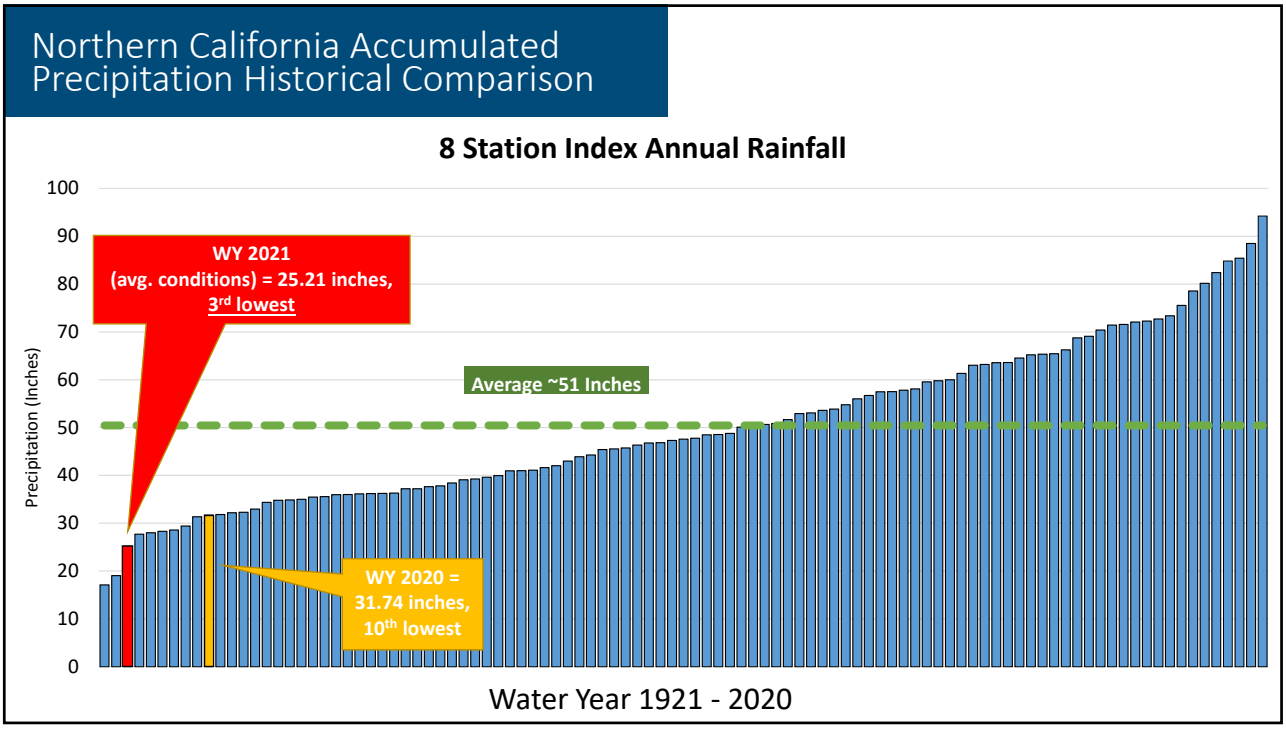




Northern California Accumulated Precipitation Historical Comparison



Northern California Accumulated Precipitation Historical Comparison



Lake Mead

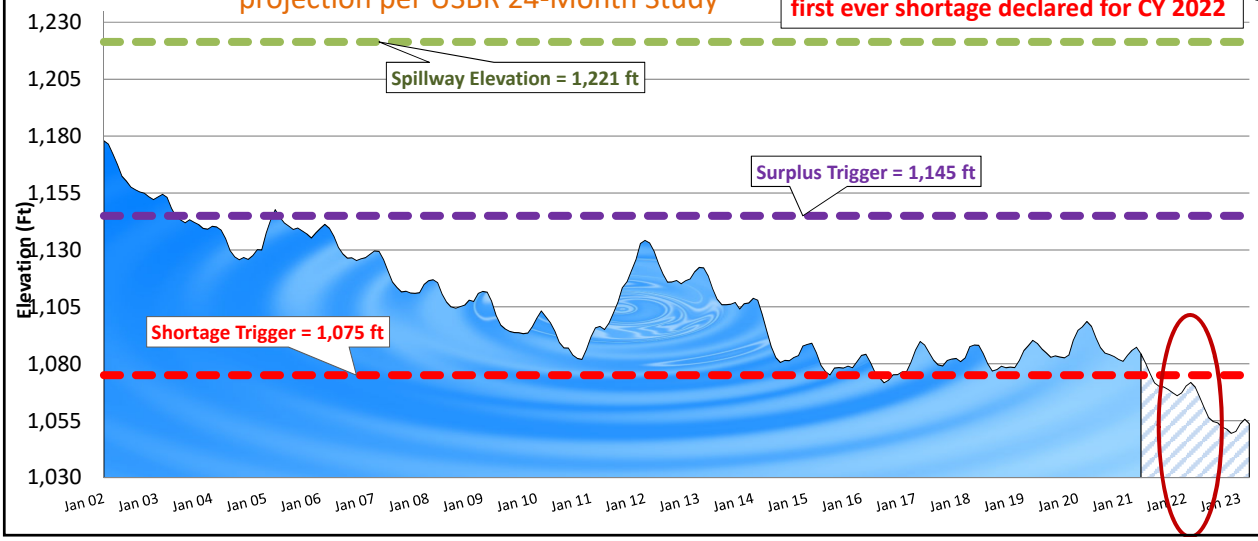
Lake Mead Levels: Historical and Projected

projection per USBR 24-Month Study

Lake Mead Shortage/Surplus Outlook

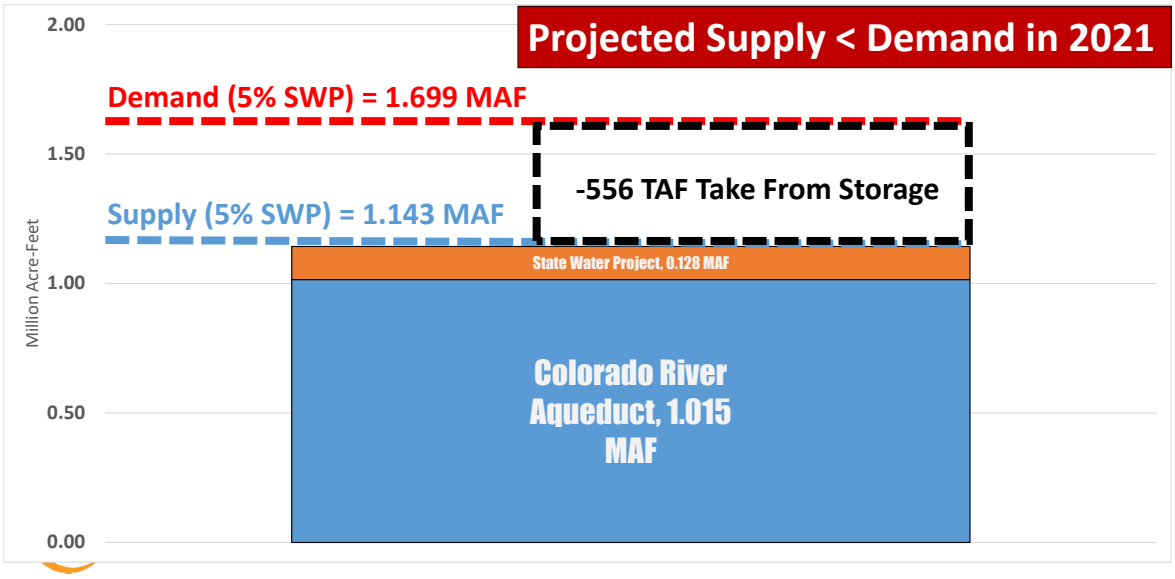
	2021	2022	2023	2024	2025
Shortage	0%	60%	82%	75%	73%
Surplus	0%	0%	0%	2%	5%

August 2021 USBR Study most likely first ever shortage declared for CY 2022



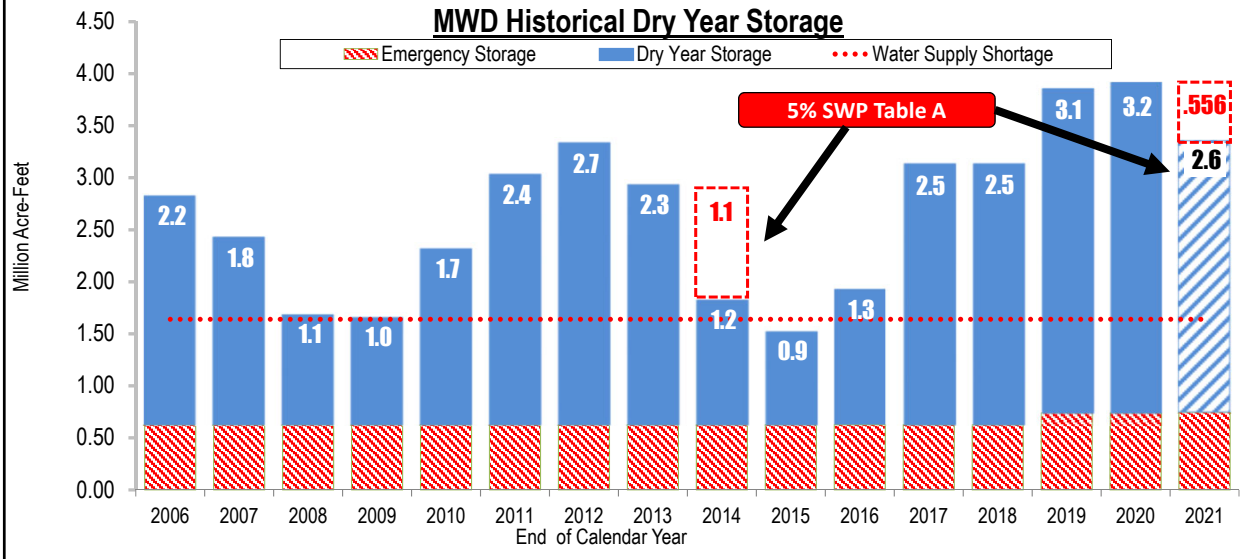
MWD 2021 Water Storage

MWD 2021 Estimated Water Storage

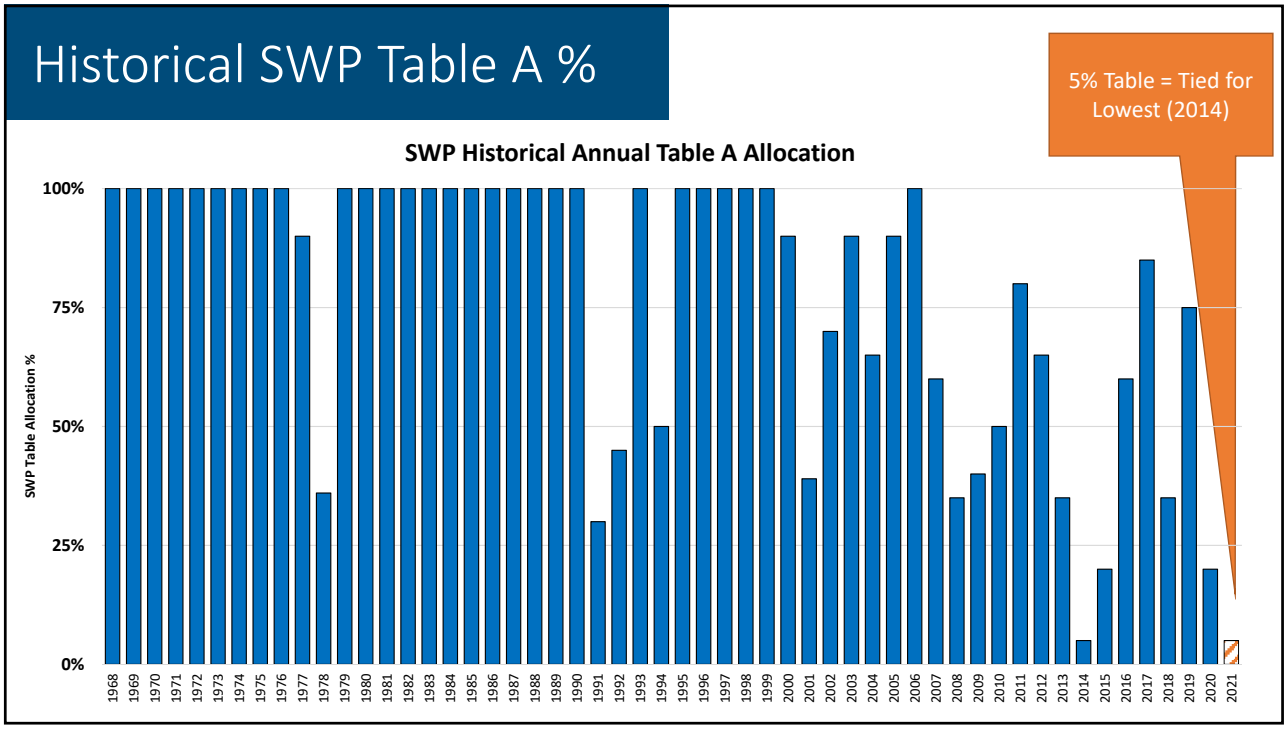


MWD 2021 Estimated Water Storage

0.43 MAF Not used compared to 2014



Historical SWP Table A %



ISSUE BRIEF # F

SUBJECT: Colorado River Issues

RECENT ACTIVITY

U.S. Bureau of Reclamation Issues April 24-Month Study

The U.S. Bureau of Reclamation (Reclamation) uses the April 24-Month Study to predict inflows into Lake Powell, model possible reservoir elevations, and pursuant to the 2007 Interim Guidelines, determine operations of Lake Powell and Lake Mead. Water Year 2021 will be governed by the Upper Elevation Balancing Tier. Since Lake Powell does not have enough storage to increase releases, there will be an 8.23 million acre-feet release from Lake Powell to Lake Mead. Runoff projections of unregulated inflow into Lake Powell between April and July 2021 are 45 percent of the 30-year average. In Water Year 2021 the Intentionally Created Surplus (ICS) Surplus Condition applies, which gives Metropolitan and other ICS contractors the option to order delivery of ICS, which Metropolitan is planning to do based on the low State Water Project allocation.

The study also reinforces the prior forecast of a first-ever shortage declaration being made in August of 2021, which would result in reduced deliveries to Arizona, Nevada, and Mexico in 2022. Metropolitan's water supplies would not be impacted unless and until Lake Mead reaches 1,045 feet, which is very unlikely to occur within in the next two years. This spring, as was the case in the spring of 2020, highlights the concerns of warming temperatures, which cause early melt of the snowpack, resulting in higher evaporation and transpiration losses and less water flowing into the reservoirs.

Testimony Submitted to Congress Requesting Funding of Salinity Control Programs

Metropolitan submitted six letters to Congress requesting funding of various programs related to salinity control in the Colorado River Basin. Testimony was submitted supporting funding for salinity control programs in the U.S. Department of Agriculture, the Bureau of Land Management and Reclamation, which provides funding for the Salinity Control Forum (Forum).

The Forum is an organization of the seven Colorado River Basin states (Basin States) that guides state and federal agency work to implement the Colorado River Basin Salinity Control Program. The Forum also works with Congress on Program reauthorization and funding, as well as promoting efforts to reduce salt loading to the Colorado River. The program keeps 1.2 million tons of salt out of the Colorado River annually. Metropolitan currently holds one of the three Governor-appointed positions representing California on the Forum's Board of Directors.

Basin States Letter for Reappointment of U.S. IBWC Commissioner

The Basin States sent a letter of support for the reappointment of Jayne Harkins as Commissioner of the U.S. Section of the International Boundary and Water Commission (IBWC). The IBWC was formed by treaty in 1944 to regulate and exercise the respective rights and obligations of the United States and the Republic of Mexico regarding boundary

disputes and the shared use of the waters of the Colorado River, the Rio Grande, and the Tijuana River. The IBWC is an international body consisting of United States and Mexican "Sections;" each Section headed by a Commissioner. Ms. Harkins was appointed to the position of United States Commissioner in 2018 but was asked to step down from the position in 2020. Because the position is still vacant, the Basin States have encouraged her reappointment based on her knowledge of binational issues heading into important negotiations with Mexico concerning the Colorado River.

ISSUE BRIEF # G

SUBJECT: Delta Conveyance Activities and State Water Project Issues

RECENT ACTIVITY

Delta Regulatory Activities

Metropolitan's Regulatory Activities Staff continued to participate in the collaborative groups called for in the 2019 Biological Opinions (BiOp) for the State Water Project (SWP) and Central Valley Project, and in the 2020 Incidental Take Permit (ITP) for Long-term Operation of the SWP, to address science needs and inform management and operation of the water projects. In April, Metropolitan staff provided input to the management questions that will guide monitoring and development of a spring-run Chinook salmon juvenile production estimate and participated in the Longfin Smelt Technical Team to provide input regarding development of a longfin smelt life cycle model and review of the draft Interagency Charter for the team. Metropolitan staff also participated in the Delta Coordination Group to provide input on the guidance document for the Delta Smelt Summer-Fall Habitat Action, the North Delta Food Subsidies Operations and Monitoring Plan, and the aquatic vegetation monitoring plan for the Suisun Marsh Salinity Control Gates operation. These science planning and monitoring documents are being developed to guide collection of data that are needed to assess the outcomes of BiOp and ITP actions.

Delta Conveyance

The California Department of Water Resources (DWR) is continuing to develop an Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA). DWR has identified a range of reasonable alternatives to analyze in the EIR, and current efforts are focused on analyzing the alternatives' potential impacts on environmental resources. The U.S. Army Corps of Engineers, as part of its permitting review under the Clean Water Act and Rivers and Harbors Act, has started preparation of an Environmental Impact Statement (EIS) to comply with the National Environmental Policy Act.

DWR conducted interviews with stakeholders in February and early March 2021 on the concept of incorporating a Community Benefits Program as part of the Delta Conveyance Project to help protect and enhance the cultural, recreational, natural resource, and agricultural values of the Delta. A summary report of the stakeholder interviews was completed and published, "Community Benefits Interview Report" which can be found on the DWR website[1]. DWR scheduled three public workshops: April 14, May 6, and May 25, and one tribal workshop on May 17, to have additional discussions and obtain feedback from a wider audience. Registration to participate in the workshops and additional information can be found on DWR's website[2]. The April 14 public workshop focused on what community benefits meant to the participants. The May 6 public workshop will ask the participants to brainstorm project ideas they would like to be included in a Community Benefits Program,

[1] https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/DeltaConveyance/Public-Information/DCP_CBP_-Interview-Summary_Final_April2021.pdf
[2] https://water.ca.gov/Programs/State-WaterProject/Delta-Conveyance/Community-Benefits-Program

and the May 25public workshop will focus on education, infrastructure, engagement, and opportunity for suggestions.

Joint Powers Authorities

During the April 15, 2021, Delta Conveyance Design and Construction Authority (DCA) Board of Directors meeting, the board was introduced to Graham Bradner, the Interim Executive Director. The board also received a presentation on the draft budget for fiscal year 2021/22 for discussion. The approval of the final budget is scheduled for the June 2021 DCA Board meeting. The proposed DCA budget of $21.5 million for the upcoming fiscal year is a significant reduction from the budget plan in the current year budget of $27 million. Planned technical work in the upcoming year will largely be focused on studies to support preparation of the Draft CEQA documents, continued execution of the geotechnical program, and consideration of a range of concepts to be further evaluated during final design.

On April 28, the DCA Stakeholder Engagement Committee met and received updates on design changes, the DWR Community Benefits Program, the environmental justice survey previously conducted by DWR, and the DWR Communications Plan.

The Delta Conveyance Finance Authority (DCFA) appointed Katano Kasine as the DCFA Treasurer at their regularly scheduled April 15 meeting. They also adopted the 2021/22 budget of $206,600 requiring no additional payments from members. An update was provided to the DCFA by Graham Bradner.

Sites Reservoir

In their April meetings, the Sites Project Authority Board (Authority Board) and the Sites Reservoir Committee (Reservoir Committee) approved the Principles for the Storage, Delivery and Sale of Sites Reservoir Project Water (formally referred to as the Storage Policy). These storage principles will serve as the basic framework for the development of additional agreements, policies, and procedures for the Project.

The Authority Board and Reservoir Committee also approved the methodology for allocating storage space in Sites Reservoir to each local Storage Partner using an approach that allocates storage space based on level of participation in the project. An important component of the Storage Policy, and a foundational principle of the Sites Project, is that each storage partner has allocated storage space in Sites Reservoir.

The Authority Board and Reservoir Committee heard an update to the revised Draft EIR/Supplemental Draft EIS and a status update regarding outreach efforts to the non-governmental organization community. They also heard an update on the Financing Action Plan and were asked to review and comment on the updated financing alternatives, an outline of the Water Storage and Supply Services Contract Guiding Principles and Preliminary Terms, and updated road map to secure a plan of finance and participation agreements to meet the Proposition 1 funding eligibility deadline in December 2021.

Science Activities

Metropolitan staff continued participating in the Collaborative Science and Adaptive Management Program, including participation on the Collaborative Adaptive Management Team (CAMT). At the April 20 meeting, CAMT received and discussed updates on the

following science activities: (1) Delta smelt Autumn Occupancy Study, which is one of the early CAMT studies started in 2016; (2) an organizational framework for Delta smelt science, monitoring, and management activities; and 3) the development of improved computer-based Decision-Support Tools for Delta smelt that are needed for evaluation of management actions.

The 11th Biennial Bay-Delta Science Conference, a forum for sharing scientific information relevant to managing the connected San Francisco Bay and Sacramento-San Joaquin Delta systems, was held virtually April 6-9. The conference theme was Building Resilience through Diversity in Science. Metropolitan staff participated in the conference as well as was a funding partner and collaborator for the following studies presented at the conference:

- Investigation of longfin smelt utilization of coastal estuaries north of the San Francisco Estuary in 2019 and 2020 to better understand longfin smelt habitat use and distribution. Longfin smelt larvae were detected in many of the tributaries sampled in 2020 and few detections in 2019. Longfin smelt larvae samples are being shared with other groups for population genetics and gut content analysis.
- Evaluation of floating wetland habitats assembled on Bouldin Island for potential food web and greenhouse gas reduction benefits and potential subsidence reversal. The study found that the floating mats of tules that were put in place in 2019 have increased levels of zooplankton compared to the adjacent waterways and show modest greenhouse gas reductions. The investigators suggest using this technique to increase the productivity of nearshore habitat along levees and over submerged islands.
- Evaluation of potential pesticide exposure in juvenile salmon rearing habitats in the Cache Slough Complex and lower Sacramento River. The study found occurrence of a variety of pesticides in water and prey samples in both habitats. The data will be used to develop exposure studies for Chinook salmon and evaluate the potential impacts of rearing in either habitat.
- Evaluation of the effects of artificial illumination on predator density and salmonid predation risk. The study found that in the Delta, artificial light increased predator density and relative predation risk of juvenile salmonids. At the Sundial Bridge in the upper Sacramento River, this study found that predation was not observed under all light treatments. This study was part of a broader effort to determine the effects of predator-prey interactions between fish, based on contact points that are commonly found in the Delta.
- Evaluation of methods to quantify predation rates on juvenile salmon using molecular analysis. The investigators reported on laboratory experiments in-progress to evaluate use of molecular methods to predict how many juvenile salmonids each predator consumed. Samples are currently being processed and results are pending.
- Presentation of the findings from the Coordinated Salmonid Science Planning Assessment for the Delta, a report prepared for the Collaborative Science and Adaptive Management Program. The presentation described the methods to identify prospective salmon activities and prioritize science, monitoring and management activities in the Delta region.

Summary Report for
The Metropolitan Water District of Southern California
Board Meeting
May 11, 2021

CONSENT CALENDAR ITEMS – ACTION

The Board:

Adopted the resolution to continue the Standby Charge for fiscal year 2021/22. **(Agenda Item 7-1)**

Approved the draft of Appendix A; authorized the General Manager, or other designee of the Ad Hoc Committee, to finalize, with changes approved by the General Manager and General Counsel, Appendix A.; and authorized distribution of Appendix A, finalized by the General Manager or other designee of the Ad Hoc Committee, in connection with the sale or remarketing of bonds. **(Agenda Item 7-2)**

Authorized increase of $200,000 in change order authority for rehabilitation of the Greg Avenue Pump Station, up to an aggregate amount not to exceed $1,848,750; and authorized increase of $350,000 to the agreement with Black & Veatch for a new not-to-exceed amount of $1,250,000. **(Agenda Item 7-4)**

Awarded $2,022,000 contract to R2BUILD to upgrade the flow monitoring equipment at Mile 12 along the Colorado River Aqueduct. **(Agenda Item 7-5)**

Reviewed and considered the city of Santa Monica's CEQA documents and take related CEQA actions, and authorized the General Manager to enter into a Local Resources Program Agreement with the city of Santa Monica for the Santa Monica Sustainable Water Supply Project for up to 2,300 AFY of advanced treated recycled water under the terms included in the Board letter. **(Agenda Item 7-6)**

Authorized the General Manager to enter into agreements to provide a cost-offset credit of up to $332 per AF in CY 2021 and $349 per AF in CY 2022 for net increased costs incurred by a member agency from shifting operations to improve regional reliability, consistent with the terms in Attachment 1 of the board letter. **(Agenda Item 7-7)**

Adopted the 2020 UWMP and its resolution for submittal to the State of California in order to comply with the Urban Water Management Planning Act in the California Water Code.; adopted Appendix 11 Addendum to the 2015 UWMP and its resolution for submittal to the State of California in order to include in Metropolitan's 2015 UWMP all of the elements described in Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs., tit. 23, § 5003, subd. (c)(1)) to support a certification of consistency for one or more future water supply covered actions in the Delta; adopted the WSCP and its resolution for submittal to the State of California in order to comply with the Urban Water Management Planning Act in the California Water Code. **(Agenda Item 7-8)**

Expressed opposition, unless amended, for AB 1195. **(Agenda Item 7-9)**

Authorized the granting of a permanent power line easement for overhead power lines to Southern California Edison. **(Agenda Item 7-10)**

Authorized an agreement with Helix Environmental Planning, Inc. in an amount not to exceed $250,000 for CEQA documentation; and authorized an agreement with Fugro USA Land, Inc. in an amount not to exceed $350,000 for geotechnical services to support the Desert Housing and Property Improvements Program. **(Agenda Item 7-11)**

Authorized the General Counsel to retain the firms listed in the board letter as Bond Counsel, Co-Bond Counsel, and Disclosure Counsel through June 30, 2024; and determined that Bond Counsel, Co-Bond Counsel, and Disclosure Counsel fees may be approved by the General Counsel in amounts sufficient to procure Bond Counsel, Co-Bond Counsel, or Disclosure Counsel services for bond issues and for legal advice, as described in the board letter. **(Agenda Item 7-12)**

Authorized an increase in the maximum amount payable under contract with Meyers Nave for legal services by $210,000 to an amount not to exceed $410,000 in the matter of *Imperial Irrigation District v. Metropolitan Water District of Southern California, et al.* **(Agenda Item 7-13)**

THIS INFORMATION SHOULD NOT BE CONSIDERED THE OFFICIAL MINUTES OF THE MEETING.

Board letters related to the items in this summary are generally posted in the Board Letter Archive approximately one week after the board meeting. In order to view them and their attachments, please copy and paste the following into your browser: http://mwdh2o.com/WhoWeAre/Board/Board-Meeting/Pages/search.aspx

All current month materials, before they are moved to the Board Letter Archive, are available on the public website here: http://mwdh2o.com/WhoWeAre/archived-board-meetings