THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

May 13, 2019

Commissioner Brenda Burman
United States Department of the Interior
Bureau of Reclamation
1849 C Street, N.W.
Washington DC 20240

Dear Commissioner Burman:

Colorado River Basin Drought Contingency Plan

On April 16, 2019, President Trump signed H.R. 2030 and the Colorado River Drought Contingency Plan Authorization Act (the "Act") became law (Public Law No. 116-14). Among other matters, the Act directs the Secretary of the Interior to execute and carry out certain agreements concerning Colorado River Drought Contingency Management and Operations after execution by the other parties thereto, including the Lower Basin Drought Contingency Plan Agreement ("LB DCP Agreement"). Exhibit 1 to the LB DCP Agreement contains the Lower Basin Drought Contingency Operations (or "LBOps") provisions for implementing drought actions in the Lower Basin. Section IV.E.2 of the LBOps provides that the parties from each State to the Lower Basin Drought Contingency Agreement "shall identify, for their respective States, such new or modified ICS Exhibits from that State that are necessary to implement the provisions of the LB DCP Agreement and these LBOps, and the Secretary shall approve and implement such new or modified ICS Exhibits." This letter is respectfully submitted on behalf of the state of California pursuant to Section IV.E.2 of the LBOps.

The ICS Exhibits necessary to implement drought actions in California under the LB DCP Agreement and LBOps are listed below and a copy of each Exhibit is attached to this letter:

LBOps ICS Exhibit	Title of Exhibit
X	Metropolitan Water District – Landscape Transformation Program
Y	Metropolitan Water District – Indoor Water Conservation Devices
Z	Metropolitan Water District – Local Resources Program Additional Groundwater Recovery Projects
AA	Metropolitan Water District – Local Resources Program Recycling Projects
AB	Metropolitan Water District – Seawater Desalination Programs
AC	Metropolitan Water District – Regional Recycled Water Programs
AD	Metropolitan Water District – Seasonal Fallowing Programs

Reclamation has coordinated informal consultations among the seven Basin States regarding California's proposed ICS Exhibits. Please indicate your approval of each of California's ICS Exhibits, effective upon execution of the LB DCP Agreement by the United States, by executing this letter in the space provided below and returning it to us together with copies of each of the other documents the Act requires the Secretary of the Interior to execute without delay.

We wish to thank you and the many Bureau of Reclamation and Department of the Interior employees who have helped us cross the finish line with this landmark series of agreements designed to help sustain the entire Colorado River System.

The Metropolitan Water District of Southern California, By: _____ Jeffrey Kightlinger Its: General Manager	
APPROVED, SUBJECT TO AND EFFECTIVE UPON EXECUTION OF THE LB DCP AGREEMENT BY THE UNITED STATES, this 20th day of May, 2019 UNITED STATES OF AMERICA, acting by and through its BUREAU OF RECLAMATION, By: _____ Dr. Terrance J. Fulp Its: Lower Colorado Regional Director	

LBOps ICS Exhibit X

Landscape Transformation Program

ICS Category: Extraordinary Conservation (EC) ICS, Other extraordinary conservation measures per Section 2.1 H of the Forbearance Agreement.

Term: January 1, 2019 – December 31, 2025, or the end of the Interim Guidelines

Project Description: About 148 million square feet of lawn turf has been removed as a result of The Metropolitan Water District of Southern California (Metropolitan) turf removal program through development of more sustainable landscapes over the two-fiscal year period of 2014-15 and 2015-16. Metropolitan estimates that turf removal conserved 24,000 acre-feet in 2017. Metropolitan recently renewed its turf removal program in July 2018 to encourage additional outdoor conservation in Southern California. With an incentive of $1 per square foot of removed lawn area and an annual budget limit of $50 million, Metropolitan hopes to save over 6,700 acre-feet per year from 2018 through 2020—a total of 20,100 acre-feet over this three- year period, conserving a total of 37,400 acre-feet in 2019 and 44,100 acre-feet in 2020. Metropolitan Water District's Landscape Transformation program is being offered as a new program designed to promote water use reduction and sustainability. Following the success of other incentive programs focusing on landscaping and turf grass removal, the new Landscape Transformation Program aims to combine turf removal, irrigation modification and rainwater retention or filtration to support reuse or soil absorption of rainwater. Metropolitan's member and retail agencies also implement local residential water conservation programs within their respective service areas and receive Metropolitan incentives. Projects include turf removal programs. To create Extraordinary Conservation Intentionally Created Surplus (EC ICS), Metropolitan would reduce its use of Colorado River water in an amount up to the amount of water conserved by the turf removal component of the Landscape Transformation Program in its service area. Absent these programs, such water would have otherwise been beneficially used.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is limited to the amount of water conserved by turf removal in Metropolitan's service area, for example, 37,400 acre-feet in calendar year 2019, and that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation by an equal amount.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could include but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: Metropolitan verifies that turf has been removed from each project by the photographs submitted by the applicant. In order to receive a rebate check, each applicant must submit a minimum of five pre-project photographs before they can obtain approval to proceed with their project. Once the project is completed, the applicant must submit at least

another five photographs of their finished project in order to receive payment. Metropolitan also randomly conducts aerial and physical inspections to ensure that project area measurements are correct. Metropolitan estimates water savings based on the amount of turf removed multiplied by a savings factor derived from previous outside agency studies. Metropolitan will, as part of its ICS Certification Report, provide records demonstrating the square footage of turf removed during that year and the corresponding amount of water conserved.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS, as amended:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit X shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.

LBOps ICS Exhibit Y

Indoor Water Conservation Devices

ICS Category: Extraordinary Conservation (EC) ICS, Other extraordinary conservation measures per Section 2.1 H of the Forbearance Agreement.

Term: January 1, 2019 – December 31, 2025, or the end of the Interim Guidelines

Project Description:

Existing Programs

The Metropolitan Water District of Southern California (Metropolitan) provides rebates to both residential and commercial consumers to encourage the use of water-efficient indoor and outdoor products. The conservation rebate program started in 1990, focusing mainly on indoor fixtures such as toilets, showerheads and faucet aerators. Current indoor rebates include high-efficiency clothes washers, premium high-efficiency toilets, zero/ultra-low water urinals, dry vacuum pumps, connectionless food steamers, air-cooled ice machines, laminar flow restrictors, and plumbing flow controls. Most rebates are processed through Metropolitan's regional rebate program, SoCal Water$mart, where customers can easily get program information, apply online for a rebate and check their rebate status. Some of Metropolitan's member agencies also have their own indoor conservation programs where they may either directly install water efficient fixtures or have large product distributions along with issuing rebates. Water savings estimates are based on the manufacturers' specifications which provide a savings factor multiplied by the product life and the quantity installed. Table 1 summarizes the number of devices installed from 1990 to 2018, the projected 2019 water savings, lifetime savings with lives between two and 20 years depending upon the device, and rebates associated with existing programs. Water savings are calculated on an annual basis and begin being credited for the entire calendar year in which Metropolitan pays the rebate. Attachment 1 is a list of existing indoor water conservation devices. As new devices become available and desired to be implemented, they will be described in the annual Plan of Creation

Table 1 - Existing Indoor Water Conservation Devices

Category	Number of Devices	2019 Yield (acre-feet)	Lifetime Savings (acre-feet)	Rebates to Date (million dollars)
Commercial	380,843	11,910	290,210	45.8
Residential	6,011,372	79,473	2,566,414	294.0
Total	**6,392,215**	**91,383**	**2,856,624**	**339.9**

Future Programs

Many of the same currently funded devices are proposed to be funded through 2026, and there are no new types of devices proposed at this time. For budgeting purposes, a consistent number of devices to be installed has been assumed, with the ongoing and new water savings beginning in 2020. Table 2 shows the number of devices from 2020-2026, the savings per year, and the lifetime savings of the devices to be installed between 2018 and 2051 with lives between five and 20 years depending upon the device.

Table 2 – Future Indoor Water Conservation Devices

Category	Number of Devices*	Yield (acre-feet per year)	Lifetime Savings (acre-feet)
Commercial	141,715	317	130,287
Residential	399,000	978	551,435
Total	**540,715**	**1,295**	**681,722**

* 2020-2026

To create Extraordinary Conservation Intentionally Created Surplus (EC ICS) as a result of indoor conservation, Metropolitan would reduce its use of Colorado River water in an amount up to the amount of water conserved indoors in its service area. Absent this program, such water would have otherwise been beneficially used.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is limited to the amount of water conserved indoor in Metropolitan's service area, for example up to 91,383 acre-feet in 2019, and that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation by an equal amount.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could include but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: There are multiple processes in place to ensure that each indoor rebate application submitted by an applicant can be verified. In order to receive a rebate check, an applicant must submit a copy of the product receipt with the rebate application. The application is then validated by verifying that the product meets program requirements and that the applicant's address is within Metropolitan's service area boundaries. Past program

participation is also checked through Metropolitan's database to ensure non-duplication. Additionally, Metropolitan randomly conducts physical inspections to ensure that projects meet program requirements. Metropolitan will, as part of its ICS Certification Report, provide records demonstrating the number and types of devices installed and the corresponding amount of water conserved from these devices in each calendar year.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS, as amended:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit Y shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.

Existing Indoor Water Conservation Devices

Commercial
Connectionless Food Steamer
Cooling Tower Conditioning Meter
Dry Vacuum Pump
Flush Valve Kit
High Efficiency Urinal - Upgrade
High-Efficiency Toilet - Melded Rate
High-Efficiency Toilet - Upgrade
High-Efficiency Toilet
High-Efficiency Urinal
High-Efficiency Washer
Ice Machine
Laminar Flow Restrictor
Cooling Tower Controller for pH
Plumbing Flow Control
Premium High-Efficiency Toilet
Pre-Rinse Spray Head
Steam Sterilizer
Ultra Low Flush Toilet - Dual Flush
Ultra Low Flush Toilet - Flush Valve
Ultra Low Flush Toilet - Tank Type
Ultra Low Flush Urinal
X-Ray Processor
Zero Water Urinal
Zero Water Urinal - Upgrade
Residential
Aerators
Flappers Replaced w/Survey
High-Efficiency Clothes Washer (WF 4)
High-Efficiency Clothes Washer (WF 5)
High-Efficiency Clothes Washer (WF 6)
High-Efficiency Toilet Melded Rate
High-Efficiency Toilet - Upgrade
High-Efficiency Toilet
High-Efficiency Washer
Premium High-Efficiency Toilet
Premium High-Efficiency Toilet (Melded Rate)
Showerheads

Showerheads - Distributed
Toilet Displacement
Ultra Low Flush Toilet - Distribution
Ultra Low Flush Toilet - Rebate
Ultra Low Flush - Dual Flush Upgrade
Ultra Low Flush Toilet - Dual Flush

LBOps ICS Exhibit Z

Local Resources Program Additional Groundwater Recovery Projects

ICS Category: Extraordinary Conservation (EC) ICS, Other extraordinary conservation measures per Section 2.1 H of the Forbearance Agreement.

Term: January 1, 2019 – December 31, 2025, or the end of the Interim Guidelines

Project Description: The Metropolitan Water District of Southern California (Metropolitan) provides financial support to its member agencies to implement groundwater recovery projects in its service area. Groundwater recovery projects treat degraded or contaminated groundwater, which would not otherwise be used by agencies, for potable purposes.

Metropolitan established the Local Resources Program (LRP) in 1982 to provide financial support to its member agencies to implement local projects that reduce a demand on Metropolitan's imported water supplies. Local agencies can apply for LRP funding for groundwater recovery projects. Metropolitan enters into an agreement to pay for water produced by an individual project for a multi-year term. Metropolitan offers three LRP incentive payment options to choose from: sliding scale incentives up to $340 per acre-foot (AF) over 25 years, sliding scale incentives up to $475 per AF over 15 years, or fixed incentives up to $305 per AF over 15 years.

In order to determine the appropriate Metropolitan contribution, agencies are required to submit to Metropolitan annual project costs and production data at the conclusion of each fiscal year of operation. Metropolitan verifies the amount of water production and associated project unit cost through an annual reconciliation process. In addition, Metropolitan periodically conducts an audit of agencies' production and costs' records pertaining to each project.

Each LRP agreement has its own terms specific to the associated project. LRP agreements for groundwater projects are usually for 25 years. A number of agreements have expired. When an agreement expires, Metropolitan stops making incentive payments for that project, but the project continues producing water and reducing a demand on imported supplies. The LRP program establishes projects and once the agreement expires the ongoing costs are funded locally.

A typical groundwater recovery project includes a treatment plant, pump stations, storage reservoirs, and connection to an existing potable water distribution system to deliver the treated groundwater to customers. The treatment level depends on the type of contamination or degradation and could include reverse osmosis, ion exchange, granulated activated carbon, or chemical and biological treatment process. Reverse osmosis is usually used to remove salt but it is capable of removing other contaminants. Ion exchange is usually used to remove nitrate and hardness from groundwater. Granular activated carbon can be used to remove organic material and heavy metals. Chemical or biological treatments are usually used to remove iron and manganese or other chemical or organic materials from groundwater.

Existing Projects

Since 1988, Metropolitan has included 25 groundwater recovery projects in the LRP and has paid about $156 million for the production of about 924,000 AF of recovered water as shown in Table 1. Attachment 1 to this LBOps ICS Exhibit contains a list of additional LRP groundwater recovery projects not covered under existing Exhibit M. These six projects listed in Attachment 1 have a contract yield of 11,875 acre-feet per year (AFY).

Table 1 - LRP Groundwater Recovery Projects Covered under Exhibit M

Existing Agreements	Number of Projects	Contract Yield (acre-feet per year)	Deliveries to Date (acre-feet)	Incentives to Date (million dollars)
Groundwater Recovery	25	116,930	924,000	156

Note: These values represent Metropolitan payment for delivered water under LRP agreements. Some LRP agreements have expired and Metropolitan no longer makes payments, but those projects are still producing water. This table does not include ongoing yields for projects once the agreements expire as these are then considered local supplies.

In addition to LRP projects, another 50,000 acre-feet per year (AFY) of groundwater recovery are produced by local agencies through other funding sources. To create Extraordinary Conservation Intentionally Created Surplus (EC ICS) as a result of recovering groundwater, Metropolitan would reduce its use of Colorado River water in an amount up to the amount of groundwater recovered in its service area. Absent these programs, such water would have otherwise been beneficially used.

Future Projects

Metropolitan continues to accept LRP applications for new projects. The difference between current and future groundwater recovery projects is that current projects are used to desalt groundwater, and future projects will primarily address removing contaminants. Currently, Metropolitan is reviewing or discussing LRP applications for four proposed groundwater recovery projects with a capacity of about 8,600 AFY. Also, local agencies have indicated that they are planning additional LRP applications for 15 groundwater recovery projects with a combined capacity of 11,418 AFY. The total yield of future projects currently being contemplated is 20,118 AFY. Metropolitan would begin providing incentive payments for those projects that are approved by Metropolitan's Board of Directors in the future. Attachment 2 to this LBOps ICS Exhibit contains a list of potential future LRP groundwater recovery projects.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is limited to the amount of groundwater recovered in Metropolitan's service area, for example up to 11,875 acre-feet in 2019, and that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation by an equal amount.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could include but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: On a contractual basis, a participating agency is required to meter and invoice Metropolitan for the amount of groundwater recovered and used each month. At the end of each fiscal year, Metropolitan verifies the amount of groundwater recovered through an annual reconciliation process in which Metropolitan reviews the metered production records and compares it to monthly invoices submitted during the fiscal year. In addition, Metropolitan periodically conducts an audit of agencies' records pertaining to groundwater recovery. Metropolitan will, as part of its ICS Certification Report, provide records to Reclamation for all of the groundwater recovery projects for which incentive payments have been provided. If a project agreement expires, Metropolitan will continue to obtain groundwater recovery data as long as the project is operational.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS, as amended:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit Z shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.

Attachment 1

Existing Local Resources Program Additional Groundwater Recovery Projects

Project Name	Contract Yield (acre-feet per year)
Perris II Brackish Groundwater	5,500
Pomona Well #37-Harrison Well Groundwater Treatment	981
Glenwood Nitrate Water Reclamation	1,600
Juan Well Filter Facility	900
Westlake Wells-Tapia Water Reclamation Facility Intertie	150
Burbank Lake Street Granular Activated Carbon Treatment Plant	2,744
Total	**11,875**

Attachment 2

Future Local Resources Program Groundwater Recovery Projects

Project Name	Contract Yield (acre-feet per year)
Santa Margarita River Conjunctive Use	3,100
CalWater	1,000
North Pleasant Valley	3,500
Elsinore Valley Municipal Water District Groundwater	1,000
Crescenta Valley Nitrate Removal Facility at Well 2	240
14 Other Identified Projects	11,178
Total	**20,118**

LBOps ICS Exhibit AA

Local Resources Program Recycling Projects

ICS Category: Extraordinary Conservation (EC) ICS, Other extraordinary conservation measures per Section 2.1 H of the Forbearance Agreement.

Term: January 1, 2019 – December 31, 2025, or the end of the Interim Guidelines

Project Description: The Metropolitan Water District of Southern California (Metropolitan) provides financial support to its member agencies to implement water recycling projects in its service area. Water recycling projects treat municipal wastewater for beneficial uses outlined in Title 22 of the California Code of Regulations. A typical water recycling project includes a treatment plant, pump stations, storage reservoirs, and distribution system to deliver the treated recycled water to end-users. The treatment level depends on the intended use. Tertiary treated recycled water can be utilized for non-potable uses such as landscape and agricultural irrigation, commercial and industrial uses, and groundwater recharge thorough spreading grounds. Advanced treated recycled water, using reverse osmosis or another treatment process, is needed for certain industrial uses, seawater barriers, and direct injections into groundwater. Recycled water for indirect potable uses such as surface water augmentation requires even further treatment.

Metropolitan established the Local Resources Program (LRP) in 1982 to provide financial support to its member agencies to implement local projects that reduce a demand on Metropolitan's imported water supplies. Local agencies can apply for LRP funding for water recycling projects. Metropolitan enters into an agreement to pay for water produced by an individual project for a multi-year term. Metropolitan offers three LRP incentive payment options to choose from: sliding scale incentives up to $340 per acre-foot (AF) over 25 years, sliding scale incentives up to $475 per AF over 15 years, or fixed incentives up to $305 per AF over 15 years.

In order to determine the appropriate Metropolitan contribution, agencies are required to submit to Metropolitan annual project costs and production data at the conclusion of each fiscal year of operation. Metropolitan verifies the amount of water production and associated project unit cost through an annual reconciliation process. In addition, Metropolitan periodically conducts an audit of agencies' production and costs' records pertaining to each project.

Each LRP agreement has its own terms specific to the associated project. LRP agreements for recycled water projects are usually for 25 years. A number of agreements have expired. When an agreement expires, Metropolitan stops making incentive payments for that project, but the project is funded locally and continues producing water and reducing a demand on imported supplies.

Existing Projects

Since 1982, Metropolitan has included 81 water recycling projects in the LRP and has paid about $475 million for the production of about 2.8 million acre-feet of recycled water as shown in Table 1. Attachment 1 to this LBOps ICS Exhibit contains a complete list of LRP water recycling projects.

Table 1 - Existing LRP Water Recycling Projects

Existing Agreements	Number of Projects	Contract Yield (acre-feet per year)	Deliveries to Date (acre-feet)	Incentives to Date (million dollars)
Water Recycling	81	312,000	2,760,000	475

Note: These values represent Metropolitan payment for delivered water under LRP agreements. Some LRP agreements have expired and Metropolitan no longer makes payments, but those projects are still producing water. This table does not include ongoing yields for projects once the agreements expire as these are then considered local supplies.

In addition to LRP projects, another 287,000 acre-feet per year (AFY) of recycled water are produced by local agencies through other funding sources. To create Extraordinary Conservation Intentionally Created Surplus (EC ICS) as a result of recycling water, Metropolitan would reduce its use of Colorado River water in an amount up to the amount of water recycled in its service area. Absent these programs, such water would have otherwise been beneficially used.

Future Projects

Metropolitan continues to accept LRP applications for new projects. Currently, Metropolitan is reviewing LRP applications for four proposed recycling projects with a total capacity of about 46,000 acre-feet per year (AFY). Also, local agencies have indicated that they will submit additional LRP applications for 22 recycling projects with a combined capacity of about 43,000 AFY. Metropolitan would begin providing incentive payments for those projects that are approved by Metropolitan's Board of Directors in the future. Attachment 2 to this LBOps ICS Exhibit contains a list of potential future LRP water recycling projects.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is limited to the amount of recycled water produced in Metropolitan's service area, for example up to 311,653 acre-feet in 2019, and that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation by an equal amount.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could

include but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: On a contractual basis, a participating agency is required to meter and invoice Metropolitan for the amount of recycled water produced and used each month. At the end of each fiscal year, Metropolitan verifies the amount of recycled water production through an annual reconciliation process in which Metropolitan reviews the metered production records and compares it to monthly invoices submitted during the fiscal year. In addition, Metropolitan periodically conducts an audit of agencies' records pertaining to recycled water production. Metropolitan will, as part of its ICS Certification Report, provide to Reclamation Metropolitan's verification file for all of the water recycling projects for which incentive payments have been provided. If a project agreement expires, Metropolitan will continue to obtain recycling production data as long as the project is operational.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS, as amended:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit AA shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.

Attachment 1

Local Resources Program Recycled Water Projects

Project Name	Contract Yield (acre-feet per year)
Alamitos Barrier Reclaimed Water Project	3,025
Anaheim Water Recycling Demonstration Project	110
Burbank Reclaimed Water System Expansion Project	850
Burbank Recycled Water System Expansion Phase II Project	960
Capistrano Valley Non Domestic Water System Expansion	1,011
Century / Rio Hondo Water Recycling Program	9,018
Development of Non-Domestic Water System in Ladera Ranch and Talega Valley	2,772
Direct Reuse Project Phase IIA	2,258
Dry Weather Runoff Reclamation Facility	210
Eastern Recycled Water Pipeline Reach 16 Project	820
El Toro Phase II Recycled Water Distribution System Expansion Project	350
El Toro Recycled Water System Expansion	1,175
Elsinore Valley Recycled Water Program	300
EMWD Recycled Water System Expansion Project	5,000
Encina Basin Water Reclamation Project Phases 1 and 2	5,000
Escondido Regional Reclaimed Water Project	993
Glendale Verdugo-Scholl and Brand Park Project	1,760
Griffith Park South Water Recycling Project	450
Groundwater Reliability Improvement Program Recycled Water Project	10,000
Groundwater Replenishment System Project	70,000
Hansen Area Water Recycling Phase I Project	2,115
Hansen Dam Golf Course Water Recycling Project	500
Harbor Water Recycling Project	5,000
Lake Mission Viejo Advanced Purification WTF	300
Leo J. Vander Lans Water Treatment Facility Expansion Project	3,475
Long Beach Reclaimed Water Master Plan Phase I System Expansion	2,750
Los Angeles Taylor Yard Park Water Recycling Project	150
Michelson/Los Alisos Water Reclamation Plant Upgrades and Distribution System Expansion Project	8,500
Moulton Niguel Water Reclamation System	9,276
North Atwater Area Water Recycling Project	50
North City Water Reclamation Project	14,566
North Hollywood Area Water Recycling Project	300

Olivenhain Recycled Project - Southeast Quadrant	1,788
Otay Recycled Water System	7,062
Oxnard Advanced Water Purification Facility Project	2,310
Padre Dam MWD Reclaimed Water System Phase I	850
Rancho California Reclamation Expansion Project	6,000
Rowland Water District Portion of the City of Industry Regional Recycled Water Project	1,017
San Clemente Recycled Water System Expansion Project	1,000
San Elijo Water Reclamation System	1,600
San Pasqual Water Reclamation Project, Phase I	1,100
Santa Maria Water Reclamation Project	400
Sepulveda Basin Sports Complex Water Recycling Project	350
Sepulveda Basin Water Recycling Project - Phase 4	445
Terminal Island Recycled Water Expansion Project	8,000
Trabuco Canyon Reclamation Expansion Project	800
USGVMWD Portion of the City of Industry Regional Recycled Water Project	2,234
Van Nuys Area Water Recycling Project	150
Walnut Valley Water District Portion of the City of Industry Regional Recycled Water Project	2,135
West Basin Water Reclamation Program	38,000
West Basin Water Recycling Program Phase V Project	8,000
Westside Area Water Recycling Project	150
Calabasas Reclaimed Water System Extension Project	700
Cerritos Reclaimed Water Extension Project	260
Conejo Creek Water Recycling Project	14,000
Eastern Reach I, Phase II Reclaimed Water System	1,700
Encina Water Pollution Control Facility Reclamation Project	165
Fallbrook Public Utility District Water Reclamation Project	1,200
Glendale Water Reclamation Expansion Project	500
Green Acres Reclamation Project (Coastal)	320
Green Acres Reclamation Project (OCWD)	2,160
Green Acres Reclamation Project (Santa Ana)	320
Irvine Reclamation Project	10,000
Lakewood Water Reclamation Project	440
Las Virgenes Reclamation - Triunfo County Sanitation District	2,700
Long Beach Reclamation Project	1,700
Los Angeles Greenbelt Project	900
Oak Park / North Ranch Recycled Water Distribution System	1,300
Oceanside Water Reclamation Project	200
Rincon Del Diablo Recycled Water Program	648
San Clemente Water Reclamation Project	500
Santa Margarita Water District Water Reclamation Expansion Project	3,600

Sepulveda Basin Water Reclamation Project	1,500
Shadowridge Water Reclamation Project	375
South Laguna Reclamation Project	860
Walnut Valley Water Reclamation Expansion Project	500
Eastern Regional Reclaimed Water System	4,830
IEUA Regional Recycled Water Distribution System	13,500
San Vicente Water Recycling Project	340
Total	**311,653**

Note: Total count is 81 projects as the following agreements have two projects:
Century / Rio Hondo Water Recycling Program
Glendale Verdugo-Scholl and Brand Park
Encina Basin Water Reclamation Project Phases 1 and 2
Moulton Niguel Water Reclamation System

Attachment 2

Future Local Resources Program Recycled Water Projects

Project Name	Yield (acre-feet per year)
Applications Under Review	
CBMWD Recycled Water Expansion Project	500
East County Advance Water Purification Project	11,600
La Puente Water Recycling Project	60
San Diego Pure Water Program - North City Phase 1	33,600
Subtotal	**45,760**
Anticipated Applications	
Culver City Water Recycling Project	400
Downtown Water Recycling Project	1,500
Glendale Chevy Oaks Homes	25
Glendale Hoover, Toll, and Keppel Schools	55
Los Angeles Groundwater Replenishment Project	5,000
IEUA proposed projects	7,790
Irvine Lake Pipeline Conversion Project	2,500
IRWD District-Wide Recycled Water Expansion	6,000
IRWD Seasonal Storage Project	2,000
Las Virgenes IPR Project	2,000
LAX Water Recycling Project	1,000
MNWD Phase V Recycled System Extension	2,000
Palos Verdes Lateral and others	1,800
Pasadena Non-Potable Water Project, Phase 1	700
San Clemente Recycled Water Expansion	250
SDCWA proposed projects	4,500
SJC Recycled Water System Expansion Project Phase 1	600
SJC Recycled Water System Expansion Project Phase 2	870
South El Monte Recycled Water Project	560
UCI Cooling Tower Project	125
West Basin Tesoro Refinery	2,500
Woodland Hills Water Recycling Project	500
Subtotal	**42,675**
Total	**88,435**

LBOps ICS Exhibit AB

Seawater Desalination Program

ICS Category: Extraordinary Conservation (EC) ICS, Desalination programs in which the desalinated water is used in lieu of Mainstream water per Section 2.1 C of the Forbearance Agreement.

Term: January 1, 2019 – December 31, 2025, or the end of the Interim Guidelines

Project Description: Seawater desalination projects treat seawater for potable purposes. A typical seawater desalination project includes a treatment plant usually using a reverse osmosis system, pump stations, storage reservoirs, and a distribution system to deliver the treated seawater to the point of connection to an existing potable water distribution system.

The Metropolitan Water District of Southern California (Metropolitan) established the Seawater Desalination Program (SDP) in August 2001 to provide financial incentives to member agencies for the development of seawater desalination projects. Metropolitan signed agreements with the City of Long Beach, Municipal Water District of Orange County, and West Basin Municipal Water District to provide incentives for projects over a 25-year term. The City of Long Beach project is no longer under consideration. To date, none of the projects included under the SDP have begun operations. Seawater desalination also has been eligible for Local Resources Program (LRP) incentives since 2014.

Carlsbad Desalination Plant

The goal of the project is to treat up to 56,000 AFY of seawater for potable purposes. The project includes the Carlsbad Desalination Plant (CDP), storage and pump station, transmission pipeline, and necessary modifications to existing facilities. A 54-inch transmission pipeline connects the CDP to the Second San Diego Aqueduct, which is modified to allow for delivery of product water northward to the Twin Oaks Valley Water Treatment Plant (WTP), where there is 15-million gallons of storage for blending purposes. From the Twin Oaks Valley WTP, the blended water is delivered to customers via San Diego Pipelines 3 and 4. In addition, project water will be delivered directly to Vallecitos Water District and Carlsbad Municipal Water District for potable purposes. This project began operation in 2015.

An agreement for seawater desalination projects is usually for 25 years. The ultimate yield of the project, which must be approved by Metropolitan's Board of Directors for LRP funding, is about 56,000 acre-feet per year. This project produced about 41,000 acre-feet in fiscal year 2017/18.

Other Seawater Desalination Projects

There are two near term LRP project applications being prepared which would yield 27,100 AFY and are currently in the environmental review and permitting stage and may apply for funding under the LRP in the future.

There are two future LRP projects in planning which together would yield 84,000 AFY and are in the advanced planning stage and may apply for funding under the LRP in the future. The combined future yield of the four proposed projects, which must be approved by Metropolitan's Board of Directors for LRP funding, for example, is about 111,100 AFY. The projected yields of each of the projects are shown in Table 1.

Table 1 - Seawater Desalination Projects		
Project Name	**Yield (acre-feet per year)**	**Year of Operation**
Existing		
Carlsbad	56,000	2015
Subtotal	**56,000**	
Future		
Doheny	5,600	2021
Huntington Beach	56,000	2022
West Basin	21,500	2023
Rosarito Beach / Otay	28,000	2025
Subtotal	**111,100**	
Total	**167,100**	

To create Extraordinary Conservation Intentionally Created Surplus (EC ICS) as a result of seawater desalination, Metropolitan would reduce its use of Colorado River water in an amount up to the amount of seawater desalinated in its service area. Absent these programs, such water would have otherwise been beneficially used.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is limited to the amount of desalted seawater produced in Metropolitan's service area, for example, up to 56,000 acre-feet in 2019, provided that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation by an equal amount.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could include but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: On a contractual basis, a participating agency would be required to meter and invoice Metropolitan for the amount of seawater desalinated and used each month. At the end of each fiscal year, Metropolitan would verify the amount of seawater desalination production through an annual reconciliation process in which Metropolitan would review the metered production records and compare them to monthly invoices submitted during the fiscal year. In addition, Metropolitan would periodically conduct an audit of agencies' records pertaining to seawater desalination production. Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for all seawater desalination projects.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS, as amended:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit AB shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.

LBOps ICS Exhibit AC

Regional Recycled Water Program

ICS Category: Extraordinary Conservation (EC) ICS, Other extraordinary conservation measure per Section 2.1 H of the Forbearance Agreement.

Term: January 1, 2025 – December 31, 2025, or the end of the Interim Guidelines

Project Description: The proposed Regional Recycled Water Program (RRWP) consists of a new advanced water treatment (AWT) plant at the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant (JWPCP) in Carson and a new regional conveyance system for indirect potable reuse. These facilities would produce and deliver a reliable source of purified water to recharge regional groundwater basins. These groundwater resources are vital to the region's water supply reliability and currently rely, in part, on imported water for replenishment.

The proposed RRWP would produce and recharge up to 168,000 acre-feet per year into the West Coast, Central, Main San Gabriel, and Orange County groundwater basins, resulting in higher, more stable groundwater levels and increased storage in the region. This would improve supply reliability for the region, particularly in dry years or other shortage conditions. It would also provide emergency storage benefits by making the basins a more reliable water supply during emergencies when in-region storage and uninterrupted recycled supplies are critical. As the Metropolitan Water District of Southern California's (Metropolitan) 2015 Integrated Resources Plan target for local resources reflects, stable local supplies for the region are essential to Metropolitan's resource planning. The timeline for completion of the full build-out of the project is from 10 to 17 years depending upon phasing. To create Extraordinary Conservation Intentionally Created Surplus (EC ICS) as a result of regionally recycling water, Metropolitan would reduce its use of Colorado River water in an amount up to the amount of water regionally recycled in its service area. Absent these programs, such water would have otherwise been beneficially used.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is limited to the amount of regionally recycled water produced in Metropolitan's service area, for example, up to 112,000 acre-feet in 2025, provided that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation by an equal amount.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could include but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: Metropolitan will verify the amount of water produced at the plant by metering the plant effluent.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS, as amended:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit AC shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.

LBOps ICS Exhibit AD

Seasonal Fallowing Programs

ICS Category: Extraordinary Conservation (EC) ICS, Fallowing of Land that currently is, historically was, and otherwise would have been irrigated in the next year per Section 2.1 A of the Forbearance Agreement.

Term: January 1, 2020 – December 31, 2025, or the end of the Interim Guidelines

Project Description: In 2016 and 2017, the Metropolitan Water District of Southern California (Metropolitan) and Bard Water District conducted a two-year pilot seasonal fallowing program with farmers in Bard Water District's service area. Metropolitan has begun discussions with the Bard Water District and the Quechan Indian Tribe regarding future seasonal fallowing programs. Under these Programs, incentive payments will be provided upon verification, for fallowing portions of land during the spring and summer months. The Programs are anticipated to begin in 2020 with an estimated water savings of up to 2 acre-feet per acre of fallowed land. Other irrigation districts may also be interested in entering into agreements with Metropolitan for voluntary seasonal fallowing or deficit irrigation programs with farmers in their service areas.

The volume of water that becomes available to Metropolitan is governed by the October 10, 2003 Quantification Settlement Agreement[1] and the October 10, 2003 Colorado River Water Delivery Agreement[2]. Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by Palo Verde Irrigation District (PVID) and holders of Priority 2 that is greater than 420,000 acre-feet in a calendar year, or
- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by Bard Water District or the Quechan Indian Tribe is an additional acre-foot that becomes available to Metropolitan. Absent the creation of Extraordinary Conservation Intentionally Created Surplus (EC ICS), such water would have otherwise been beneficially used.

Annual ICS Creation Amount: The amount of EC ICS that can be created during any year is estimated to be up to 100,000 acre-feet per year.

Quantification Methodology: A description of the method for quantifying the volume of water conservation will be developed in coordination with the Bureau of Reclamation and submitted as part of the annual Plan for Creation of Extraordinary Intentionally Created Surplus. Steps could

[1] The parties to the Quantification Settlement Agreement are Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and Metropolitan.

[2] The parties to the Colorado River Water Delivery Agreement are the United States, IID, CVWD, Metropolitan, and San Diego County Water Authority.

include, but are not limited to: identifying and acre-foot per acre calculation; measuring against a baseline; referencing applicable history of use; and implementing flow measurement devices.

Verification Methodology: Similar to Metropolitan's other fallowing programs, verification will be conducted by a Metropolitan representative visiting the participating fields, in this case, when fallowing begins and ends to verify that fallowing conditions have been met. Additionally, Reclamation would conduct third party verification of the fallowed fields. Calendar year Fallowed Land Verification Reports will be prepared by Metropolitan in cooperation with Bard Water District, the Quechan Indian Tribe and any other participating irrigation districts, with documenting photos taken from field verifications. The amount of water saved could be determined based on averaging historical past water use on the fallowed land.

Limitations on the ICS Creation Amount: The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of ICS dated December 13, 2007:

a) The amount of EC ICS that Metropolitan may create in any year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that would have been delivered for beneficial use from the Colorado River Aqueduct.

Certification: Metropolitan will submit an ICS Certification Report demonstrating the amount of ICS created under this LBOps ICS Exhibit and that the creation was consistent with an approved ICS Plan, this LBOps ICS Exhibit, and a Delivery Agreement. Metropolitan acknowledges that, in accordance with Section 2.5.B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties.

Delivery: Delivery of ICS created pursuant to this LBOps ICS Exhibit AD shall be consistent with the terms of Delivery Agreement No. 07-XX-30-W0519 entered into between the Secretary of the Interior and Metropolitan.