

**AMENDMENT NO. 1 TO AGREEMENT NO. WR-24-1000  
BETWEEN  
THE CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER,  
AND  
THE LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF SANITATION  
FOR THE CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE  
GROUNDWATER REPLENISHMENT PROJECT**

**THIS AMENDMENT NO. 1** to Agreement No. WR-24-1000 (Agreement) is made and entered into by and between the Los Angeles Department of Public Works, Bureau of Sanitation (BOS), and the Los Angeles Department of Water and Power (LADWP), hereinafter referred to individually as “Party”, and collectively as the “Parties”, for the Groundwater Replenishment Project (GWR Project).

**RECITALS**

**WHEREAS**, on December 16, 2024, the Parties entered into Agreement No. WR-24-1000 wherein the Parties agreed to collaborate on the construction and implementation of the GWR Project.

**WHEREAS**, the Agreement specifies that the objective of the GWR Project is to increase the long-term sustainability of the City’s local water supply, and the GWR Project will replenish the San Fernando Valley groundwater basin with highly purified recycled water, creating a new source of local drinking water for the City of Los Angeles (City).

**WHEREAS**, the GWR Project is one of the largest water projects in the State, designed to purify up to 25 million gallons per day (MGD) from the new Advanced Water Purification Facility (AWPF), and is currently in construction and on track to be completed and operational by 2028.

**WHEREAS**, the Agreement authorized an amount not to exceed \$740 million for the construction and performance validation of the GWR Project.

**WHEREAS**, the LADWP is committed to increasing the development of local water resources to form a more reliable and resilient water supply, and recognizes that the GWR Project can be further enhanced and optimized to produce more drought proof water supply.

**WHEREAS**, the Parties have collaborated to further expand the GWR Project, and have identified an innovative and cost-effective way to nearly double the size of the GWR Project by constructing a new underground basement below the AWPF.

**WHEREAS**, the Parties have confirmed that the GWR Project can be expanded to purify up to 45 MGD, as compared to the current design of 25 MGD, and the construction can remain on track to be completed by 2028.

**WHEREAS**, the Parties have substantially completed the engineering and design of the 45 MGD expansion of the GWR Project, and have received a Guaranteed Maximum Price from the Design-Build Contractor to construct the expansion.

**WHEREAS**, the Parties have unanimously agreed that the expansion of the GWR Project to 45 MGD is technically viable and cost-effective and have determined that it is necessary to Amend the Agreement to increase the reimbursement amount of \$740 million by \$190 million for a new not to exceed the amount of \$930 million.

**WHEREAS**, Amendment No. 1 is necessary to expand the GWR Project to a treatment capacity of 45 MGD, which will allow LADWP to produce a new sustainable water supply for over 500,000 customers.

**NOW, THEREFORE**, in consideration of the foregoing, the Parties hereby agree to amend the Agreement as follows:

### **SECTION 1: BACKGROUND AND PRINCIPAL TERMS**

The Articles below are amended and restated in their entirety as follows:

- 1.2 The GWR Project includes all the new capital facilities at DCTWRP necessary to produce Purified Recycled Water, which includes the Advanced Water Purification Facility (AWPF), and the Supporting Facilities outlined in Section 2.2 and described in Attachment A.
- 1.3 Parties agree the GWR Project is designed to purify up to 25 million gallons per day (MGD) of tertiary treated water at the AWPF, and agree that the GWR Project is expected to produce up to approximately 20 MGD of Purified Recycled Water suitable for groundwater replenishment and subsurface injection. The AWPF will include the addition of a basement, and thus the AWPF will have the potential to purify up to 45 MGD.
- 1.6 The total estimated cost to construct and implement the capital facilities associated with the GWR Project is \$930,000,000, excluding Financing Costs, and LADWP agrees to reimburse BOS up to that amount as outlined in Section 6 of this Agreement. To ensure timely payments to BOS and its contractors and consultants, LADWP will pay monthly invoices during construction within 21 days as outlined in Section 6.
- 1.8 The Parties recognize that the GWR Project requires a total capital investment of \$930,000,000, excluding Financing Costs, and the projected Operations and Maintenance Cost of treating up to 25 MGD at the AWPF is approximately \$33,000,000 for the first year of operation, and as such, have determined the GWR Project is technically viable and cost effective.
- 1.14 The GWR Project cost estimate and schedule for the work under the scope of this Agreement is outlined in Attachment B.

## **SECTION 2: PROJECT DESCRIPTION**

The Articles below are amended and restated in their entirety as follows:

- 2.2.1 Advanced Water Purification Facility (AWPF) – This includes the construction of a new 72,000 square foot facility capable of producing advanced Purified Recycled Water, and includes the building structure, a new learning and education center, the advanced treatment systems capable of purifying up to 45 MGD of tertiary treated water and producing up to 20 MGD of Purified Recycled Water, microfiltration units, reverse osmosis treatment, ultraviolet advanced oxidation process, pumps, electrical upgrades, brine discharge lines, and all other appurtenances needed for the AWPF.
- 2.2.2 Equalization Storage Facility (EQ Facility) – Designed to maximize production of recycled water from the AWPF and to allow for optimal operation, construction of the EQ Facility will be within DCTWRP and includes the capacity to store over 9.2 million gallons of primary effluent, underground pump stations, inlet and discharge piping, flow control vaults, and pipeline interconnections. The EQ Facility is also known as the Advanced Water Equalization Basin (AWEB).
- 2.2.5 Preliminary Flow Recovery Project (PFRP) – Also designed to maximize production of recycled water from the AWPF, the PFRP will be utilized to optimize the AWPF's performance and longevity, evaluate flow optimization options, improve treatment efficiency, reduce odor emissions to increase flows to the AWPF, and a grit handling system to remove abrasive materials from the organic load.

## **SECTION 3: RESPONSIBILITIES OF BOS**

The Articles below are amended and restated in their entirety as follows:

- 3.1 BOS is responsible for the final design, construction, start-up, commissioning, and performance validation for the AWPF and EQ Facility described in Section 2 of this Agreement. BOS is also responsible for implementation of the Maintenance WF and JGE Bypass, and the grit handling and odor control facilities.

## **SECTION 6: CAPITAL COSTS AND REIMBURSEMENT**

The Articles below are amended and restated in their entirety as follows:

- 6.1 The Parties have received a Guaranteed Maximum Price from the Design-Build Contractor for the AWPF, along with cost estimates for the Supporting Facilities defined in Section 2.2, and LADWP agrees to reimburse BOS up to \$930,000,000 for the following:
  - 6.1.1 \$655,000,000 for construction of the AWPF
  - 6.1.2 \$160,000,000 for design and construction of the EQ Facility
  - 6.1.3 \$20,000,000 for design and construction of the Maintenance WF
  - 6.1.4 \$15,000,000 for the design, environmental approval, and construction of the JGE Bypass;

6.1.5 \$30,000,000 for the design, environmental approval, and construction of the Preliminary Flow Recovery Project, and

6.1.6 \$50,000,000 for an overall project contingency of five percent.

- 6.2 LADWP shall reimburse BOS for all of the actual Capital Costs associated with the GWR Project, and Attachments A and B herein provide a detailed description of the GWR Project scope, cost estimate, and cost sharing breakdown. BOS will not include any other costs unrelated to the scope of this Agreement. Capital Costs and expenditures for reimbursement shall not exceed \$930,000,000.

Except as otherwise expressly amended herein, all other terms and conditions of Agreement, as amended, shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the PARTIES hereto have caused this Amendment No. 1 to Agreement to be executed by their respective duly authorized representatives on the day and year written below. By signing below, the signatories attest that they have no personal, financial, beneficial, or familial interest in this agreement.

DEPARTMENT OF WATER AND POWER  
OF THE CITY OF LOS ANGELES BY  
BOARD OF WATER AND POWER COMMISSIONERS OF

By: \_\_\_\_\_  
JANISSE QUIÑONES  
Chief Executive Officer and Chief Engineer

Date: \_\_\_\_\_

And: \_\_\_\_\_  
CHANTE L. MITCHELL  
Board Secretary

IN WITNESS WHEREOF, the PARTIES hereto have caused this Amendment No. 1 to Agreement to be executed by their respective duly authorized representatives on the day and year written below. By signing below, the signatories attest that they have no personal, financial, beneficial, or familial interest in this agreement.

DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SANITATION  
OF THE CITY OF LOS ANGELES BY  
BOARD OF PUBLIC WORKS COMMISSIONERS OF  
THE CITY OF LOS ANGELES

By: \_\_\_\_\_

President, Board of Public Works

Date: \_\_\_\_\_

By: \_\_\_\_\_

Commissioner, Board of Public Works

Date: \_\_\_\_\_

By: \_\_\_\_\_

Barbara Romero  
Director and General Manager

Date: \_\_\_\_\_

Acknowledged:

DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SANITATION  
OF THE CITY OF LOS ANGELES BY  
BOARD OF PUBLIC WORKS COMMISSIONERS OF  
THE CITY OF LOS ANGELES

By: \_\_\_\_\_

SARAI BHAGA  
Chief Financial Officer

Date: \_\_\_\_\_

Acknowledged:

DEPARTMENT OF WATER AND POWER  
OF THE CITY OF LOS ANGELES BY  
BOARD OF WATER AND POWER COMMISSIONERS

By signing below, the signatories attest that they have no personal, financial,  
or familial interest in this contract.

By: \_\_\_\_\_

ANN SANTILLI  
Chief Financial Officer

Date: \_\_\_\_\_



# **AMENDMENT NO. 1 - AGREEMENT NO. WR-24-1000**

## **ATTACHMENT A: PROJECT DESCRIPTION & SCOPE**

### **Overview**

This Attachment provides a detailed overview of the Los Angeles Groundwater Replenishment Project (GWR Project) as outlined in the Memorandum of Agreement (MOA). The GWR Project aims to enhance the long-term sustainability of the City's local water supply and recycle up to 100% of the tertiary treated water from the Donald C. Tillman Water Reclamation Plant (DCTWRP). Once operational, the project will produce purified recycled water (PRW) for groundwater replenishment in the San Fernando Valley, supplementing the City's drinking water supply.

Key components of the GWR Project include:

1. **Upgrading the DCTWRP:** Implementing significant improvements to DCTWRP to enable advanced recycled water purification using state-of-the-art treatment technologies.
2. **Water Conveyance:** Transporting PRW through existing LADWP pipelines to groundwater replenishment facilities.
3. **Groundwater Replenishment:** Recharging the San Fernando Valley Groundwater Basin (SFVGW) with PRW in collaboration with the Los Angeles County of Public Works.

Once fully operational, the GWR Project will deliver PRW to replenish the SFVGW, producing drinking water for over 500,000 customers and decreasing the City's dependence on imported water sources.

The constituent projects of the GWR Project at DCTWRP covered by this MOA are:

1. Advanced Water Purification Facility (AWPF)
2. Equalization Storage Facility (EQ Facility)
3. Maintenance and Warehouse Facility (Maintenance WF)
4. Japanese Garden Bypass (JGE Bypass)
5. Preliminary Flow Recovery Project (PFRP)

### **Project 1: Advanced Water Purification Facility (AWPF)**

The AWPF is the core of the GWR Project, designed to produce PRW. The 72,000-square-foot facility features a precast concrete and glass exterior to showcase the state-of-the-art advanced purification process through an innovative learning center. The advanced purification process consists of three distinct processes:

- Low-pressure membrane filtration using microfiltration (MF)
- High-pressure membrane filtration using reverse osmosis (RO)
- Ultraviolet advanced oxidation process (UVAOP)

These processes work together to produce PRW suitable for indirect potable reuse. This well-researched treatment process has been successfully implemented for various water reuse

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### **ATTACHMENT A: PROJECT DESCRIPTION & SCOPE**

projects worldwide, including several within the State of California. The AWPf is designed to meet the most stringent regulatory requirements for indirect potable reuse, allowing for groundwater recharge via surface spreading and/or sub-surface injection.

The facility is designed to purify 25 million gallons per day (MGD) of tertiary-treated water and can accommodate a future expansion of up to 45 MGD by adding additional treatment units and a basement underneath the AWPf rendering shown in Figure 1. Los Angeles Department of Public Works, Bureau of Sanitation and Environment (LASAN) is exploring further improvements to their sewershed to route additional flow to DCTWRP. While these improvements are not part of the GWR Project, the AWPf is prepared to accommodate future optimizations by LASAN.

The AWPf also includes chemical tanks for treatments, neutralization, and stabilization chemicals needed for advanced water purification. Additionally, the AWPf features an educational space in which the public can learn about potable reuse and advanced purification processes used at the facility. This educational space provides a safe, engaging, and inclusive environment for all audiences to explore the innovative science and engineering behind the AWPf, the City of LA's history with water, and learn more about the initiatives the City is embarking on the develop new and sustainable water sources.



*Figure 1: Rendering of AWPf exterior design.*

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**ATTACHMENT A: PROJECT DESCRIPTION & SCOPE**



*Figure 2: Rendering of AWPf treatment train and equipment.*



*Figure 3: Rendering of the educational facility inside the AWPf.*

**Project 2: Equalization Storage Facility (EQ Facility)**

The EQ Facility will maximize the production of PRW by the AWPf by increasing the current DCTWRP equalization capacity of 2.3 million gallons (MG) to over 11 MG. A collaborative effort between the City and the project team determined that at least 11 MG of equalization storage is optimal for cost-effective AWPf operation, ensuring a steady and constant wastewater flow throughout the day. This expanded equalization capacity will help manage daily diurnal variations in the wastewater flow into the DCTWRP.

The conceptual design of the EQ Facility consists of two below-grade circular concrete tanks, adding at least 9.2 MG of new equalization capacity. These tanks use gravity to manage inflow and outflow, and the circular concrete design is both cost-efficient and allows for adequate clearance from existing underground structures.

The new EQ Facility will also include odor control, pump station, control valves, meters, and other appurtenant facilities to ensure efficient operation.



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**ATTACHMENT A: PROJECT DESCRIPTION & SCOPE**



*Figure 4: Conceptual rendering of the EQ Facility.*

**Project 3: Maintenance and Warehouse Facility (Maintenance WF)**

The new Maintenance WF will include the construction of 47,000 square feet of storage, workshop, and office space to support the operation and maintenance (O&M) of the AWPf. The Maintenance WF will house the additional City staff, equipment, parts, tools, and materials required for the AWPf's ongoing O&M due to limited space within the AWPf itself.

The Maintenance WF will aim to be Gold certified in Leadership in Energy and Environmental Design (LEED), demonstrating its commitment to energy efficiency and environmental sustainability.



*Figure 5: Conceptual rendering of the Maintenance WF.*

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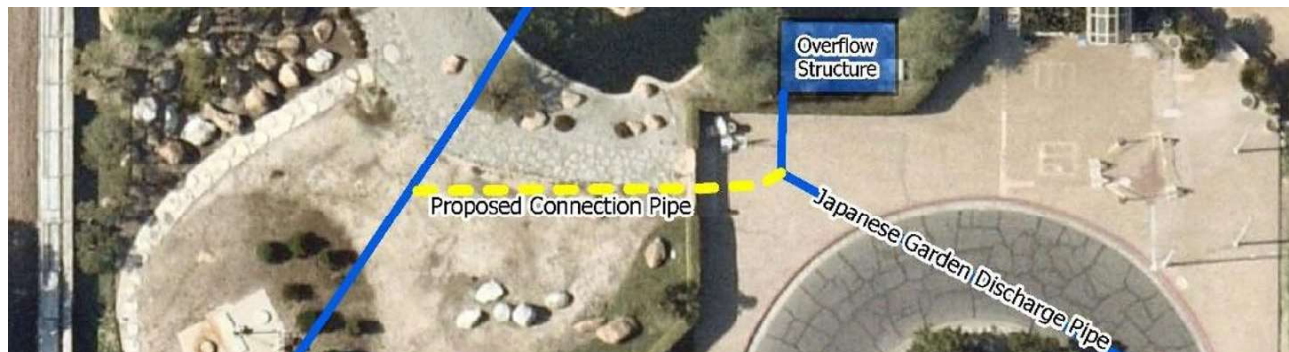
### **ATTACHMENT A: PROJECT DESCRIPTION & SCOPE**

#### **Project 4: Japanese Garden Effluent Bypass (JGE Bypass)**

The Japanese Garden currently receives recycled water from DCTWRP, which is routed through the garden before discharging into the Los Angeles River. The JGE Bypass involves constructing 100 feet of new pipelines, control valves, and appurtenances to divert additional wastewater flow back to the AWPf, thereby increasing recycled water production. The JGE Bypass will maximize the treatment capacity of the DCTWRP while preserving the beneficial use of the Japanese Garden.

As part of the GWR Project, the City will also ensure that Los Angeles River continues to receive recycled water from the DCTWRP, and the City anticipates providing the Los Angeles River with approximately 20 MGD of recycled water after the completion of the GWR Project.

The City is currently performing extensive outreach to various stakeholder, and also studying the potential environmental impacts of the JGE Bypass pipeline construction and the reduced discharge from the Japanese Garden to the Los Angeles River. Upon completion of the study, a Supplemental Environmental Impact Report (SEIR) will be prepared, and a 1211 Wastewater Change Petition will be submitted to the State Water Resources Control Board. Construction of the JGE Bypass will begin only after the SEIR and 1211 Petition are approved.



*Figure 6: Plan view of the JGE Bypass components.*

#### **Project 5 - Preliminary Flow Recovery Project (PFRP)**

The are collectively referred to as PFRP Projects and are designed to maximize production of recycled water from the AWPf, these evaluations and facilities will be utilized to optimize the AWPf's performance and longevity, improve treatment efficiency, reduce odor emissions increase flows to the AWPf, and a grit handling facility to remove abrasive materials from the organic load.

These projects will be implemented in a phased approach, first by evaluating to flow options available to utilize the 45 MGD AWPf, then by finalizing the size and scale of the required PFRP which includes grit and odor control facilities. If these facilities are determined to be required, they will likely be implemented in a progressive design-build approach consistent with the other GWR Projects.

**AMENDMENT 1 - AGREEMENT NO. WR-24-1000**  
**ATTACHMENT B: COST ESTIMATE & SCHEDULE**

Item	Agreement Description	Detailed Description	Estimated Cost
1	Advanced Water Purification Facility (AWPF)	<ul style="list-style-type: none"> <li>• AWPf Construction <ul style="list-style-type: none"> <li>○ 72,000 SF Main Structure Facility</li> <li>○ Treatment Processes and Ancillary Systems Installation</li> <li>○ Learning Center</li> <li>○ Basement</li> </ul> </li> <li>• AWPf Performance Validation (1 Year) <ul style="list-style-type: none"> <li>○ System Integration and Testing</li> <li>○ Commissioning and Start-Up</li> </ul> </li> </ul>	\$655,000,000
2	Equalization Storage Facility (EQ Facility)	<ul style="list-style-type: none"> <li>• EQ Facility 100% Design</li> <li>• EQ Facility Construction <ul style="list-style-type: none"> <li>○ 2 Circular Tanks</li> <li>○ Pumping Stations, flow control vaults, pipeline interconnections</li> </ul> </li> <li>• EQ Facility Performance Validation <ul style="list-style-type: none"> <li>○ EQ Facility Integration with AWPf</li> <li>○ Testing and Commissioning</li> </ul> </li> </ul>	\$160,000,000
3	Maintenance and Warehouse Facility (Maintenance WF)	<ul style="list-style-type: none"> <li>• Contractor Procurement</li> <li>• Maintenance WF 100% Design</li> <li>• Maintenance WF Construction <ul style="list-style-type: none"> <li>○ Main Structure Facility</li> <li>○ Office Space</li> </ul> </li> </ul>	\$20,000,000
4	Japanese Garden Effluent Bypass (JGE Bypass)	<ul style="list-style-type: none"> <li>• JGE Bypass 100% Design</li> <li>• Environmental Review and Approval</li> <li>• JGE Bypass Construction <ul style="list-style-type: none"> <li>○ 100 feet Pipeline Installation</li> <li>○ Control Valves &amp; Appurtenances</li> </ul> </li> <li>• Commissioning and Start-Up</li> </ul>	\$15,000,000
5	Preliminary Flow Recovery Project	<ul style="list-style-type: none"> <li>• Flow Optimizaiton Studies</li> <li>• Grit Handling Facility and Odor Control</li> </ul>	\$30,000,000
6	Project Contingency (5%)	<ul style="list-style-type: none"> <li>• Project Change Orders</li> <li>• Contractor Liquidated Damages</li> <li>• Injection Wells &amp; Spreading Grounds</li> <li>• Capital Equipment Replacement during O&amp;M and Validation</li> <li>• Emergency Repairs during Construction</li> <li>• Independent Advisory Panels &amp; Research</li> <li>• Regulatory Approval and Outreach</li> <li>• LA River Adaptive Management Strategies</li> </ul>	\$50,000,000
	<b>Total Cost</b>		<b>\$930,000,000</b>

***Table 1: GWR Project Cost Estimate and LADWP Costs***

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**Attachment B: COST ESTIMATE & SCHEDULE**

Start of Progressive Design-Build	February 2022
70 Percent Design and GMP	June 2024
100 Percent Design Package Approved	July 2024
Construction Start - Groundbreaking	December 2024
50% Construction	June 2026
Construction Completion	December 2027
Preliminary Flow Recovery Project	June 2032
GWR Project in Operations and Producing Purified Recycled Water	June 2028

***Table 2: Schedule for GWR Project***

Item	Agreement Description	Estimated Total Cost	LADWP Allocation Percentage of Total Cost	LASAN Allocation Percentage of Total Cost
1	Advanced Water Purification Facility (AWPF)	\$655,000,000	100%	0%
2	Equalization Storage Facility (EQ Facility)	\$160,000,000	100%	0%
3	Maintenance and Warehouse Facility (Maintenance WF)	\$40,000,000	50%	50%
4	Japanese Garden Effluent Bypass (JGE Bypass)	\$15,000,000	100%	0%
5	Preliminary Flow Recovery Project	\$30,000,000	100%	0%
6	Project Contingency	\$50,000,000	100%	0%

***Table 3: Cost Allocation between LADWP and LASAN***