

## ***ATTACHMENT 5. WORK PLAN***

The goal of the Montebello Forebay Recharge Enhancement Study (MFRES) is to quantify the additional stormwater and recycled water that can be conserved in the Montebello Forebay Spreading Grounds (MFSG) as a result of additional groundwater extraction in the Montebello Forebay. The objectives of the study are to:

1. Review and refine the groundwater flow system model in the Montebello Forebay.
2. Update information developed as part of 2001 Montebello Forebay Recharge Optimization Study (MFROS) to reflect current MFSG operating conditions.
3. Identify sources of local water supply and associated constraints to their use.

### **5.1 SCOPE OF PROPOSED PROJECT**

The following subsections summarize the tasks that will be completed for this Study.

#### **Task 1 Procure and Manage Technical Consultant**

WRD will procure a contract with and manage Technical Consultant to perform the Montebello Forebay Recharge Enhancement Study (MFRES).

#### **Task 2 Review of Existing Information**

The purpose of this task is to review and summarize existing documents related to operations of the MFSG, focusing on completed studies and operational enhancements that have been completed since 2000.

##### **2.1 2001 MFROS Study**

In 2001, WRD and the LACDPW completed the Montebello Forebay Recharge Optimization Study (MFROS). The goal of this study was to identify opportunities for the optimization of groundwater recharge in the Montebello Forebay with emphasis on the conservation of stormwater runoff. The findings of this study indicated that between 2,000 and 29,000 acre-feet of additional stormwater could be conserved in the spreading grounds with varying levels of additional pumping. These model runs were based on a 14-year period from 1980 to 1993. The purpose of this task is to concisely summarize the findings of the MFROS study and summarize the underlying assumptions on which the additional water conservation values were based. Information collected in the task will be used in Task 3 to update the groundwater model.

##### **2.2 Historical LACFCD Water Conserved Data**

Review and summarize, on a monthly basis, water conserved in the MFSG and estimate losses to the ocean. This summary shall be broken down by water type (imported, recycled or stormwater). The purpose of this task is to quantify the total water available for conservation in the MFSG.

##### **2.3 Capital Projects Completed Since 2000**

Review and summarize capital projects completed since 2000 and assess their impacts on the water conservation capacity of the MFSG. The purpose of this task is to quantify the amount of additional water conservation that has occurred as a result these capital investments.

#### 2.4 Operational Improvements Implemented Since 2000

Review and summarize operational improvements implemented since 2000. The purpose of this task is to quantify the amount of additional water conservation that has occurred as a result these operational improvements and to fully characterize and document the current operations of the MFSG (considering capital improvements identified in task 2.3).

#### 2.5 Draft Technical Memorandum

Prepare draft Technical Memorandum detailing the findings of this Task.

### **Task 3 Groundwater Model Update**

The purpose of this task is to review and update the model of the Montebello Forebay developed as part of the 2001 MFROS. Included in this task is integration into the model of improvements identified in Task 1; the compilation and analysis of available data using a GIS; identification of additional data needs; and presentation and interpretation of data in a Technical Memorandum.

#### 3.1 Review Existing Model

Review and summarize assumptions of the model generated as part of the 2001 MFROS. Summary shall contain a concise summary of the model runs performed and the underlying assumptions on which the results were obtained.

#### 3.2 Model Update and Calibration

Update and calibrate model developed as part of the 2001 MFROS with information collected in Task 2 and other recent hydrologic data.

#### 3.3 Proposed Modeling Strategy

Develop modeling strategy to evaluate opportunities for increased groundwater extraction and replenishment in the MFSG. The modeling strategy shall reflect an emphasis on the capture of locally available water.

#### 3.4 Draft Technical Memorandum

Prepare a draft Technical Memorandum summarizing the findings of Task 3.

### **Task 4 Recharge System Quantification and Optimization**

The purpose of this task is to quantify and optimize the MFSG recharge system using the model developed in Task 3. Included in this task is a review of limiting factors that currently determine the maximum amount of recharge by water type (i.e. imported, recycled or local stormwater).

#### 4.1 Alternatives formulation

Develop up to 10 alternative management scenarios for evaluation using the updated model. Scenarios shall evaluate a sufficient range of increased groundwater extraction scenarios to aid in determination of a preferred extraction / additional recharge scenario. Considerations in the determination of the preferred scenario include, but are not limited to, the quantity of additional stormwater water captured, costs of new facilities, and environmental impacts.

#### 4.2 Model Runs

Evaluate the alternatives developed in 4.1 using the updated model.

#### 4.3 Draft Technical Memorandum

Prepare a draft Technical Memorandum summarizing the assumptions and results of each of the model runs.

## **Task 5 Final Report**

### **5.1 Draft Final Report**

Prepare a draft final report that identifies opportunities to enhance groundwater recharge in the Montebello Forebay. The draft final report shall include the finalized technical memoranda from Tasks 2 through 4 and descriptions of existing groundwater/recharge water flow through the spreading basins, historical and theoretical maximum annual recharge capacities, unused recharge capacity of the existing system.

### **5.2 Final Report**

Prepare final report based on comments received on draft final report.

## **5.2 PROJECT DELIVERABLES**

The project deliverables for the MFRES study include a final report summarizing the findings of the tasks specified in the workplan and an updated model of the Montebello Forebay Spreading Grounds.

The final report will consist of the following:

1. A concise summary of the 2001 MFROS Study and the assumptions on which groundwater recharge estimates were based.
2. A summary of historical water conserved in the MFSG and estimate of the quantity of local stormwater and recycled water available for replenishment.
3. A summary of capital improvements completed since 2000 and an estimate of the quantity of local water that has been conserved as a result.
4. A summary of operational improvements, considering capital improvements that have been made since 2000.
5. A full characterization and documentation of current operations at the MFSG.
6. A detailed description of alternative model runs and groundwater extraction assumption used to quantify additional local water recharge quantities.
7. The identification of a preferred groundwater extraction / recharge scenario.

