ATTACHMENT 6

PROJECT MONITORING

City of
Santa Monica®

Project Monitoring/Quantification

In January 2011, the Santa Monica City Council directed staff to develop a plan to achieve 100% self-sufficiency on local water sources by 2020. The City understands that any true sustainable water management strategy to eliminate reliance on imported water sources, while concurrently reducing water-energy intensity must integrate all locally available non-potable water resources (i.e. such as urban/storm runoff and brackish groundwater). The City's Water-Energy Project incorporates an innovative distributed engineering concept (i.e. small scale and self-contained) that employs ready-built energy-efficient solar panels and off-the-shelf modular and containerized reverse osmosis (RO) water treatment technology to utilize this portion of the water cycle for beneficial reuse. In so doing, the City will eliminate its use of imported and local potable water supply to help meet the community's demand for recycled water, and be able to reinject the treated water for the purpose of aquifer storage and recovery.

To meet the requirements of the Water-Energy Grant Program, the City will maintain and operate the project equipment components for their estimated lifespan of 30 years. To quantify the project objective of eliminating the use of imported water or locally produced potable supply for irrigation, toilets and other recycled use, the City proposes the following monitoring measures upon completion of the proposed project.

1. To document the elimination of imported water or other potable supply sources as make-up water at the Santa Monica Urban Runoff Recycling Facility (SMURRF) in order to meet community demands for recycled water, the City shall either cap/remove or install a water flow meter on the 6-inch diameter potable supply feed pipe at the SMURRF. Assuming that the RO/SMURRF treatment equipment operates at the design capacity of 500K gallons/day, lifetime water savings are estimated to be approximately 2,463.6 MG. Produced advanced treated water will be measured by a dedicated flow meter on the City's existing recycled water distribution pipe system at the RO/SMURRF plant. Further proof of overall reduction in imported water use will be provided by wholesaler invoices (i.e. Metropolitan Water District).

2. To document energy savings produced by the project solar panel arrays, the City shall install separate power meters that will totalize and record power generated at the individual solar arrays. This data will be compared to metered energy use at the RO/SMURRF plant and Pico-Kenter pump station where a brackish water beach extraction well and pumps that transfer the

various types of non-potable water to the RO/SMURRF plant are or will be located. The estimated project lifetime energy savings are approximately 8,929,830 kWh.

3. To document reduction of greenhouse gas emissions the City shall monitor energy use/savings, including direct energy savings from energy efficiency and renewable energy sources related to the elimination of imported and locally produced potable water for recycled uses. Measured annual and calculated lifetime greenhouse gas emission reductions will be reported as part of the agreed upon monitoring requirements. The estimated lifetime greenhouse gas reduction for the project is 5,265,812 $kgCO_2e$.

Post-construction reporting of monitoring parameters will be conducted quarterly, or as finalized through the grant agreement development process. At a minimum, the reports will contain relevant CASGEM data, a comparison of current and historic water savings, energy use and greenhouse gas emission data, a discussion of any identified trends and findings, and a discussion of recommendations to further enhance project water-energy savings, if any.

The City will also conduct community outreach and education activities to inform local stakeholders and affected elected officials about the project and its benefits. To extend the outreach program beyond distribution of information, the City will engage with interested schools and universities that may find the completed project a useful teaching or research platform.