

## **ATTACHMENT 2: BACKUP INFORMATION**

### **Pre-Project Water Use**

To determine pre-project water use, an average monthly use was calculated from the utility water bills for the period 11/13 – 7/14. [Average monthly water use: 60,401 gallons] This monthly average was then broken out into the estimated amount of water used for vehicle and equipment washing and cleanings and the estimated amount used for other activities at the facility. Based on average historical usage for washings and cleanings at the facility, the pre-project water use was estimated to be 50,000 gallons per month. This amount was then multiplied by 12 months to approximate the annual water usage. [Annual water use: 600,000 gallons]

### **Water Use with Project**

The Project is designed to recycle all of the water used for vehicle and equipment washings and cleaning. However, water will be lost through evaporation and by remaining on vehicles that leave the wash rack. This quantity has been determined to average around 20% through studies conducted by the International Car Wash Association. Since the wash rack will likely use the same approximate amount of water, losses are estimated to be 120,000 gallons annually. To further reduce water use, the Project will install 15,000 gallons of rooftop rain water collection capacity. The reservoirs will require approximately 3.75 inches of rain to be filled based on the surface area of the captured roof structures. According to the Western Regional Climate Center, Placerville receives a combined total of over 7.5 inches of rain for the months of April through October. Each of the other months receives more than 3.75 inches of rain. From this we can assume that the reservoirs will fill at least 7 times. [15,000 gallons x 7 = 105,000 gallons of additional water savings] The total make-up water usage after implementation will then be 15,000 gallons per year. [120,000 gallons needed – 105,000 gallons rain water savings = 15,000 gallons usage of yearly usage]

### **Hot Water**

The Project does not use hot water.

### **Project Life**

A significant feature of the Project is the construction of a new steel building, which has a life far beyond 30 years. Some of the mechanical and treatment components such as pumps and solar panels have shorter lives, so the cost of replacing them is included in the budget. This ensures all of the Project components will still be functioning in 30 years on the allocated budget. For more details pertaining to the replacement items, refer to the documents in Attachment 3 and Attachment 4.

### **Imported Water**

The existing site depends on 100% of the water to be imported.

### **Energy Intensity of Water Use**

According to the EPA, the national average energy consumption for wastewater treatment facilities is 1,200 kWh per million gallons (MG) of wastewater generated. The national average energy consumption in drinking water treatment plants is 1,500 kWh per million gallons of water. Using these standards, we assumed that 2,700 kWh were necessary to treat each million gallons of water used. Based on information from the water supplier the energy intensity of water conveyance for the domestic and waste water systems was estimated to be 748 kWh per million gallons of water used.

### **Emissions Created by Energy Generation**

The default factor of 0.278 kg CO<sub>2</sub>e/kWh was used to calculate emissions.

### **Additional Energy Savings**

The Project will install a 10 kW solar array. According to the National Renewable Energy Laboratory, an array of this size installed in Placerville is expected to yield between 16,499 and 15,244 kWh per year. The engineering estimates for the Project energy usage are 14,976 kWh per year, as shown in the following spreadsheet. Therefore the Project will have a net surplus electrical production rate of 896 kWh per year.