IRWD IRRIGATION TRAINING PROGRAM

**Class #1**
**System Hydraulics- Building Blocks to Ensure an Optimum Working Pressure in the Irrigation System and to Minimize Recurrent Pipe Breaks:**

This class will review the hydraulic principles required to preserve the integrity of the irrigation system and minimize pressure losses, in order to ensure optimum sprinkler operation. This information will be introduced as a troubleshooting tool to help the irrigation technician identity and resolve problems affecting the performance of the irrigation system. To that end, the attendees will learn the relationship between system flow, velocity and pressure, which will allow them to understand the impact that adding sprinklers or simply changing nozzle sizes has in the hydraulic balance of the irrigation system. With this information, the attendees will be able to determine maximum system flow and read friction loss charts to effectively size irrigation equipment.

**Class #2**
**Troubleshooting & Fine-Tuning Techniques for Optimum Sprinkler Performance:**

Attendees will learn how to inspect the irrigation system to identity problems affecting sprinkler performance. Furthermore, fine-tuning and preventive maintenance techniques will be discussed in order to minimize water waste and the costly damage to structures surrounding the landscape. The ultimate goal of this class is to show the attendees how to improve the distribution uniformity and efficiency of irrigation systems so that a thriving landscape can be maintained with the least amount of irrigation water.

**Class#3**
**Valve Troubleshooting:**

The objective of this class is to clarity the operation of irrigation control valves, both forward-flow and reverse-flow. Once the attendees understand what makes a valve to open and close, they will be ready to learn a comprehensive troubleshooting method of elimination to identity the most common problems affecting valve operation, which are the valve does not open, does not close, closes very slowly, does not open completely, and leaks.

**Class#4**
**Electrical Troubleshooting:**

Attendees to this class will first learn basic electrical concepts, such as current, voltage, and resistance. This will facilitate the understanding of the most common electrical problems found in irrigation systems, which are open circuits, short circuits, partial shorts and partial connections. Then, students will learn how to use a volt-ohm meter to inspect the condition of controllers, field wiring, splices and solenoids.

**Class #5**
**Fundamentals & Application of Drip Irrigation**

This class will provide a clear understanding of drip irrigation and his application, particularly the use of in-line emitters in a grid design. This knowledge represents an invaluable tool to the landscape professional because of the numerous field situations in which conventional irrigation equipment cannot effectively irrigate a landscape area without significant plant blockage, overspray and the subsequent runoff. Under those conditions, water waste and costly damage to landscape structures are inevitable, as well as highly unsafe conditions for motorist and pedestrians.

**Class #6**
**Sustainable Water Management Principles, Beyond Efficient Irrigation:**

The goal of this class is to assist landscape professionals in maintaining plant health using sustainable water management practices. To that end, the attendees will learn how to determine plant-water requirements, different plant adaptations to dry climates, and how the soil serves as water storage for plants. Factors such as soil texture and its impact on infiltration rate and water-holding capacity will be discussed to show how to manage water efficiently in different types of soil. The attendees will also experience how to determine the texture of a variety of soils "by feel". The concept of management allowable depletion and its application in water management will be discussed as well. Likewise, the attendees will learn the role that distribution uniformity and precipitation rate play in water management and their impact on irrigation scheduling.

**Class #7**
**Practical Techniques for Irrigation Scheduling:**

A thorough explanation of water management principles and the soil moisture depletion method will aid the landscape professional in the challenging task of maintaining a healthy landscape environment. The attendees will learn how to collect the field data required to generate accurate irrigation schedules. Then, case studies will be used to illustrate, step-by-step, how to calculate irrigation schedules from field data, in order to minimize water waste and improve plant health.

**Class #8**
**Controller Programming:**

Attendees to this class will learn how to program a weather-based commercial irrigation controller to be determined by the maintenance contractor.