Irrigation Water Measurement

Introduction

- The material provided in this section is intended to serve as a framework for irrigation water measurement training.
- Trainers should modify the training material referenced as necessary to achieve the planned skill level for the trainees.
- Trainers are encouraged to include locally developed training materials to complement and/or supplement the referenced material.
- As new training materials are developed by trainers, they are encouraged to furnish copies to the National Employee Development Center for inclusion in future versions of the assembled material.

Suggested Objectives

1. Explain the importance of measuring devices.
2. List and explain the various measuring devices available for irrigation conveyance flow measurement.
3. Describe procedures for using various measuring devices available for irrigation conveyance flow measurement.
4. Apply appropriate technology to select the measuring device best suited to the planned conveyance system.

Outline

I. Introduction
II. Body
   A. Importance of water measurement devices
   B. Measuring Devices
      1. Open channel measuring devices
         a. Weirs
         b. Flumes
         c. Gates and Orifices
         d. Current meters
         e. Acoustic meters
         f. Others
      2. Closed conduit measuring devices
         a. Differential head meters
         b. Velocity meters
         c. Acoustic meters
         d. Other
      3. Secondary Measuring Devices
         a. Head and pressure measurement devices
         b. Volume totalization devices
         c. Data storage and transmission devices
Irrigation Water Measurement

C. Procedures for Using Measuring Devices
D. Selection of Best Device for Site

III. Summary

Reference Material

- NEH-15, Chapter 9.
- EFH, Chapter 3.
- NM Video in Production.
- Manufacturer’s Handbooks.

Toolbox Materials

- Publication “The Surface Irrigation Manual”, Chapter 1, Cal-Poly (Located in the Soil-Water-Plant Relationship Toolbox)
- Publication “Flow Measuring Flumes For Open Channel Systems”, ASAE
- Publication ILRI publication 58 “Water Measurement with Flumes and Weirs"

Facilitation Options

- Self-paced,
- Facilitator guided, or
- Formal training course.

Evaluation

Each state should develop an evaluation procedure which addresses the level of competence before and after training.