271 Irrigation Designs

271.1 General

This chapter provides the criteria and requirements for designing irrigation systems. For Irrigation Plan content and Construction Cost Estimate, refer to ***FDM 944***.

Irrigation is the application of water applied evenly on designated areas using a system of pipes and sprinkler heads. Irrigation systems are often included with landscape projects in areas where:

- Rainfall is irregular
- Healthy and robust plantings are desirable
- Plants are observed and enjoyed by pedestrians or slow-moving vehicular traffic (e.g., rest areas, toll plazas, streetscapes, roundabouts)
- Plants serve as a safety enhancement (e.g., roundabout central island, midblock crossings, median treatment)
- Access to the planting area during the establishment period is not practical

271.2 Irrigation System Requirements

Irrigation system designs must comply with the following requirements:

(1) Provide reliable points of connection for water and power sources with sufficient capacity for system operation. The power source may be electric, solar, or battery. Water sources, in the order of preference are:

  (a) Re-use or reclaimed water

  (b) Well water (with acceptable mineral content that will not cause staining of concrete surfaces)

  (c) Potable water

  (d) Stormwater pond

(2) Provide fully automatic controllers, including the following:

  (a) Connected to a rain sensor

  (b) Programable irrigation run time based on watering restrictions, temperature, sunshine, and humidity

(c) Grounded per the manufacturer's recommendations

(d) Communication abilities and flow monitoring when required by the district

(e) Housed in a secure cabinet (NEMA 3R) located near the power source and generally out of view of the public

(3) Use durable materials that are traffic-rated and ultraviolet light resistant.

(4) A minimum of 12 inches of cover from the top of the pipe for lateral lines and 18 inches for mainlines. Size pipes to maintain a minimum working pressure at each spray head or nozzle as per the manufacturer. The water flow rate in the pipes cannot exceed 5 feet per second without district concurrence.

(5) Provide sprinkler head-to-head coverage with uniform precipitation rate. Avoid overspray into the roadways, sidewalks, transit stops, and other similar paved areas.

(6) Compatible with the maintaining agency's preferences, abilities, and resources. Request proprietary product certification when applicable.

(7) Comply with requirements:

(a) Florida Building Code

(b) Water Management Districts

(c) Florida Administrative Code.

271.3 Landscape Irrigation Sleeves

Landscape irrigation sleeves are used in locations where a future landscape project with irrigation is planned, as determined by the District Landscape Architect. Irrigation sleeves are intended to be used on new and reconstruction projects where there is an opportunity to install the sleeves in an open trench.

Typical installations may include under paved surfaces to connect to raised medians, roundabout central islands, or under driveways.

See ***Standard Plans***, ***Index 591-001*** for landscape irrigation sleeve installation requirements.