



Irrigation Association of New Jersey  
170 Kinnelon Road, Suite 33  
Kinnelon, NJ 07405  
973-850-3366 FAX: 973-838-7124



## Irrigation Association of New Jersey

***Recommended  
Minimum Design  
Standards  
For Water  
Conservation***

### B. Valves

1. All remote control valves should be installed in a properly sized valve box.
2. Control wire connection should be properly waterproofed.

### C. Sprinklers

1. The use of low-angle heads is encouraged.
2. Pop-up sprinklers and shrub risers should be of a height to clear turf and plant materials to prevent obstruction of spray pattern.
3. Above ground risers and sprinklers should be avoided in areas of pedestrian or vehicular traffic.
4. Low head drainage should be minimized or eliminated through design or by use of check valves.
5. Sprinkler heads shall be attached to rigid lateral lines with flexible material to reduce potential for breakage.

### D. Low Volume Irrigation (drip, microspray, etc.)

1. The use of drip irrigation is recommended for plantings. The use of low volume irrigation for plantings will ensure a water conserving design.
2. In areas where constant replantings occur (annual flower beds, etc.), the use of microspray nozzles is recommended. This allows for conventional piping to be installed below depth of repeated excavation.

*Note: None of the aforementioned is intended to exclude technological advances now or later in the design or testing stage that will contribute to water conservation. Each should be considered on its individual merits.*



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[www.ianj.com](http://www.ianj.com)

**Established 1974**

## Water Conservation Goal Statement

The New Jersey Irrigation Association, in acknowledging the value of dependable water supplies to our industry, commits itself and its members to water conservation. In making this commitment we have adopted these objectives:

1. To develop water conserving design criteria as minimum standards for the industry.
2. To teach water conservation design and techniques.
3. To educate the end user about water conservation practices and efficient programming.

*A commitment to water conservation ensures a future for our industry.*

## Introduction

This document is a minimum standard for the design and management of Water Conserving Landscape Irrigation Systems. It is a uniform reference to which designers, suppliers, installers, and owners may refer.

These standards must not be considered as a specification or as being complete unto themselves. Individual designers may provide more comprehensive designs, details, and specifications for each project.

The requirements set forth herein establish a recommended minimum standard only and in no way restrict a better quality of design. They are only intended to prevent the most serious and common design deficiencies.

*The Irrigation Association of New Jersey gratefully acknowledges the assistance of the Texas Turf Irrigation Association in the development of these standards.*

### Certification of Contractors

New Jersey Statute (C.45:5AA-01 to 11) Requires that after December 31, 1996, all irrigation contractors must be tested and certified by the Department of Environmental Protection.

## Recommended Minimum Standards for Water Conservation Landscape

**I. Plan Requirements** - All irrigation designs shall contain the following minimum elements:

- A. Name of project and address location.
- B. North compass indication.
- C. Prevailing wind direction.
- D. Design scale.
- E. Date of design.
- F. Certified irrigation designers seal and signature, if applicable.
- G. System component legend: Clear, consistent symbolizing of all major components.
- H. Calculated precipitation rate for each zone as a guide for programming.
- I. Installation details and specifications shall describe and/ or illustrate all material used and the installation thereof. These may be brief statements shown on the plan or included in a supplemental document.
- J. Point of connection shall indicate:
  - location and size of meter
  - distance, size, and type of water service
  - location and type of backflow preventer
- K. Type and location of rain bypass and/ or moisture sensing device.
- L. Static pressure and design pressure.
- M. Pressure loss calculations shall be available for review.
- N. Show radius/ diameter and arc of coverage of a representative number of each type of sprinkler.

**II. Design Requirements** - The following are minimum requirements for a water conservation oriented design:

- A. *Pressure*
  1. Systems shall be designed to the lowest static pressure available in any 12-month period or otherwise noted.
  2. If static pressure exceeds design pressure by 15 PSI or more in any zone, a pressure regulating device shall be used.
  3. Pressure at any point within a zone shall not vary by more than 10% from the designed sprinkler operating pressure.

- B. *Provide separate zoning (where practical) for:*
  1. Turf.
  2. Plants with dissimilar watering requirements.

3. Areas with greater or lesser sun exposure (north and east sun exposures should be zoned separately from south and west sun exposures):
  - Slope and flat/level areas.
  - Zoning on slope shall run parallel with contours.
4. Dissimilar types of sprinklers (rotary, pop-up, spray, bubbler, drip emitter, etc.):
  - Similar types of sprinkler heads shall have matched precipitation rates for full and part circle heads. If sprinkler heads do not have matched precipitation rates, full and part circle heads shall be zoned separately.

C. *Sprinkler head location and spacing*

1. Rotary head spacing shall not exceed 60% of diameter.
2. Spacing shall make allowance for local wind conditions.
3. Trim perimeters with correct arc and radius selection to minimize water throw on to non-landscaped areas.
4. All paved walkways with a width of five feet or more, where practical, shall be bordered by sprinklers and not overthrown.
5. Avoid placing heads adjacent to areas where traffic may cause damage to sprinklers.

D. *Precipitation Rate*

1. Sprinkler head shall be selected so that precipitation rate will be compatible with the soil infiltration rate.
2. System shall be designed to provide sufficient, effective irrigation within the framework of local and municipal restrictions.

**III. Equipment** - Irrigation equipment shall meet the following minimum requirements:

A. *Controllers*

1. On/Off (rain) switch or other rain shut-off device that does not alter the program.
2. Multiple programming capability.
3. Controllers capable of a minimum of three cycles per 24-hour period.