

RESULTS OF SPRINKLER CHANGE-OUT
TESTING PERFORMED IN
THE ISLANDS AT SPANISH TRAILS

On Monday, March 31, 2008, Ted Sirkin, Irrigation Consultant, as well as Operations Manager for Valvette Systems and his crew, commenced changing out and modifying the sprinkler systems in the Islands, the easterlymost sub-division in Spanish Trails, Las Vegas, Nevada. Valvette Systems manufactures a variety of sprinkler parts and complete pop-up sprinkler heads all incorporating its proprietary LittleValve® technology that was introduced to the marketplace in 2002.

The change-out was divided into 2 areas: Area No. 1 consisted of 6 valves - 5 for turf plus one for shrubs, and is located close to the entry of the Islands. All areas front on or are accessed by Crooked Stick Way.

Area No. 2 consists of 5 valves, all turf. These valves water turf that is along Jeremy Street except for the first valve that waters along Crooked Stick Way.

The irrigation systems in Area No. 1 appear to be older than those of Area No. 2 and required moving of some sprinklers from one spot to another for better coverage. Also, in Area No. 1, some new sprinklers had to be added.

Almost all the existing sprinklers in the 10 turf areas were Rain Bird – 3” and 4” pop-ups. The 4” Rain Bird sprinklers had only their pop-up stems changed out from the existing stems to 4” LittleValve Rain Bird replacement stems, model no. **POP410**. The 3” pop-up sprinklers were removed in their entirety and replaced with Valvette Systems’ new Little Tuffy 4” pop-up sprinklers, model no. **TUF4**.

The shrub area had shrub adapters which are stationary type sprinklers typically mounted on top of above-grade ½” riser pipes. The existing shrub adapters were changed out with Valvette Systems male shrub bodies, model no. **MB200**.

Prior to change-out, all of the sprinklers in the 11 valve sections used Rain Bird radius nozzles in the various sizes nozzles come in – 5’, 8’, 10’, 12’ or 15’. After change-out all the sprinklers had only 15’ nozzles as the distances were now controlled with the LittleValve. The exceptions were 18’ Rain Bird *adjustable* nozzles used sparingly, aka VANs or Variable Arc Nozzles, and whenever it was desirable to use side strip nozzles, Hunters SS530 nozzles were used. (Hunter and Rain Bird nozzles are interchangeable.)

Prior to changing out each section, several water meter reads were taken for all 11 areas. The 4 valves that provide water to the Lakes were shut off during meter reads so that accurate flow measurements could be made. Change-outs of the 11 areas were completed on Wednesday, April 2, 2008, and meter reads were taken again for some, not all of the valve sections. Time constraints precluded taking reads of all 11 sections but that can be done at any time. All reads – before and after – were for 4 minute watering times.

The results of the 4-minute 'Before' and 'After' meter reads are as follows:

AREA NO. 1:

| Valve Number | Average gallons used before change-out | Average gallons used after change-out | water saved |
|---------------------|---|--|--------------------|
| 1 | 72 | 33 | 54 % |
| 2 | 6 | 3.5 | 42 % |
| 3 | 43.5 | 32.5 | 25.5 % |
| 4 | 35.67 | 20 | 43.5 % |
| 5 | 51.67 | 20.5 | 61 % |
| 6 | 36.3 | --- | --- |

The Average Water Savings achieved via the change-out in Area No. 1 = **45.2%**

AREA NO. 2:

| | | | |
|----------|-------------|------------|---------------|
| 1 | 27.5 | --- | --- |
| 2 | 27.5 | 25 | 10 % |
| 3 | 22 | --- | --- |
| 4 | 49 | 36 | 26.5 % |
| 5 | 25 | --- | --- |

The Average Water Savings achieved via the change-out in the valves that were able to be read in Area No. 2

= **18.3 %**

It should also be noted that in both areas, specifically Area No. 2, runoff of excess irrigation water onto the adjoining streets was significantly reduced. Additionally, the appearance of the lawns should improve due to the higher uniformity of the water application.