

WATER SAVINGS PROGRESS REPORT DUE TO MODIFICATION OF
SPRINKLER HEADS WITH “LITTLE VALVES” IN MEDIAN STRIPS
CANOGA PARK, (LOS ANGELES) CALIFORNIA

The subject median strips are located on Sherman Way running westerly from Variel Ave almost to Canoga Ave. Sherman Way runs parallel to the 101 Freeway and is located 2-3 miles north of the freeway. The two medians approach the easterly terminus of what is considered downtown Canoga Park, a suburb and part of the City of Los Angeles. The 2 medians are relatively new and were recently irrigated and planted.

The easterly median shall be referred herein as Area No. 2. Area No. 2 is located between Deering and Eton Streets. The original sprinklers were not changed-out being left as they were when the L.A. Dept. of Public Works installed them approximately 2 months ago. The westerly median, located between Eton and Milbank Streets, shall be referred herein as Area No. 3. Those sprinklers were changed out to the LittleValve system.

Each median island is approximately 75 feet long and 6’9” wide – inside curb to inside curb. Each is irrigated by a single remote control valve (RCV.) Each median is planted with shrubs and trees. The water to each median is supplied by a dedicated meter: Area No. 2 is supplied by Meter No. 96104223; Area No. 3 supplied by Meter No. 96104221.

Both irrigation systems are controlled and monitored by DIG solar-powered controllers. Area No. 2 operates at a static water pressure of 35-40 psi with 20 psi at each head. Area No. 3 operates at a static pressure of approximately 65 psi with 30-35 at each head. The controllers at each median operate 2 valves: one valve with 21 spray heads and another valve with 6 bubbler heads (for 3 trees.) The spray heads in each median are Rain Bird’s Model No. 1806. The original nozzles were 8’ radius – ½ circle nozzles therefore, area No. 2 continues with the 8’ nozzles. Area No. 3, changed-out with LittleValve parts, now carries 15’ nozzles

This project replaces the existing Rain Bird 6” pop-up riser stems in Area No. 3 with the Valvette Systems ‘LittleValve’ 6” replacement pop-up stems for the existing 21 Rain Bird 6” pop-up sprinklers. The LittleValve 6” replacement pop-up stem for Rain Bird, known as **POP610**, is designed to be interchangeable with Rain Bird’s model 1806 pop-up sprinklers.

The change-out was completed prior to October 10, 2008. The trial officially started on that same date after a review with representatives of the Dept. of Public Works.

The controller for Area No. 2 was reset on October 10th for 3-day weekly watering. The spray heads were programmed to water for 8 minutes each watering day and 2 minutes for the bubbler valve.

After the change-out in Area No. 3, its controller was also set at 3 days weekly but with 4 minutes for the spray heads and 0 minutes for the bubbler valve.

This Trial No. 2 entails comparing the ongoing water usage of area No. 3 (the area with LittleValves) with the usage of Area No. 2 (the area without LittleValves.)

On October 10th, the meter read for Area No. 2 was **000803.10**. The meter read for Area No. 3 was **000923.32**. Each unit left of the decimal equals ONE CUBIC FOOT (7.48 gallons.)

November 10th Update with November 14 modification

Both meters were read on November 10, 2008. The meter read for Area No. 2 (no Little Valves,) was **000919.29**. The meter read for Area No. 3 (with LittleValves,) was **001008.26**. During the one-month period, Area No. 2 used **116.19 cubic feet**. Area No. 3 used **84.94 cu. ft**. Therefore, The LittleValve **Area No. 3 used 26.9% less water than Area No. 2**. That represents a savings of **234 gallons** of water.

To confirm the validity of the water savings, core tests were made with a soil probe throughout both medians. The average depth of the cores was about 7 inches. On an overall basis, the moisture content was slightly higher from the cores of Area No. 3. It was noted that both ends of Area No. 2 were very dry whereas the middle section of Area No. 3 was dryer than its ends.

The problem with the ends of Area No. 2 was that 3 nozzles were plugged up. The nozzles are 8' radius nozzles, U-series. The lines were flushed cleanly but the particles in the nozzles could not be removed. The water used during this procedure was **9.02 cu. ft (67.5 gallons.)** 3 replacement nozzles will be installed on Friday, November 14th. The replacements will be regular 8' radius nozzles without the undercut feature.

The 15' nozzles in Area No. 3 were all in excellent operating condition but a few of the sprinklers in the middle of the median needed minor adjusting to increase water flow slightly. The water used during this procedure was **7.26 cu.ft. (54.3 gallons.)** Therefore, the water used to service the sprinklers in Area No. 3 was **20% less** (13.2 gallons) than what was used to service the sprinklers in Area No. 2. Further, additional work needs to be done in Area No. 2 to exchange the 3 problem nozzles. Therefore, Additional water and labor will be expended on November 14th to bring Area No. 2 back up to normal operations. Additional core tests will also be taken on the 14th.

The time spent by one person to work on the 3 plugged-up nozzles in Area No. 2 was approximately 35 minutes. The time spent to make the minor adjustments in Area No. 3 was approximately 10 minutes. It should be noted that clogging of nozzles occurs far less often in 15-foot nozzles than it does in 8-foot nozzles as the orifice of a 15-foot nozzle is 1/8" in diameter.

Modification of November 14th.

The watering days and times were left without any changes.

On November 14, 2008, 3 nozzles were replaced and the system was given a final check. This procedure used **2.20 cu. ft. (16.5 gallons.)** Time spent was 15 minutes. Therefore, the total amount of water used by Area No. 2 over the 2 days for servicing the sprinklers and insuring the area was in good working order was **11.22 cu. ft (84 gallons.)** The total time spent was 50 minutes.

The total amount of water to service Area No. 3, (with LittleValves) was **7.26 cu. ft. (54.3 gallons.)** The total time spent was 10 minutes.

The net 'Servicing' results are: Servicing Area No. 3 used **35% less water** than that used to service Area No. 2 and servicing Area No. 3 used **80% less labor** than that used to service Area No. 2.

The core tests taken on November 14th showed some improvement in the center of area No. 3 and no change in Area No. 2.

December 11th Update

Both meters were read on December 11, 2008. The meter read for Area No. 2 (no Little Valves,) was **001138.38**. The meter read for Area No. 3 (with LittleValves,) was **001103.68**. During the one-month period, Area No. 2 used **208 cubic feet**. Area No. 3 used **88 cu. ft.** Therefore, the LittleValve **Area No. 3 used 57.6% less water than Area No. 2**. That represents a savings of **897.6 gallons** of water in that one-month period. Note the above figures are net amounts after removing the water used for November's servicing in both medians.

Core tests were made with a soil probe throughout both medians. The average depth of the cores was about 7 inches. On an overall basis, as opposed to the November probes, the moisture content was slightly higher from the cores of Area No. 2.

Because of the cooler weather, the 3 days of watering each week was reduced to 2 days, (Monday and Thursday.) However, the watering times were increased: The spray sprinklers in Area 2 were increased from 8 minutes to 10 minutes and the bubbler valve from 2 minutes to 3 minutes. In Area No. 3, the time was upgraded from 4 minutes to 5 minutes. The bubbler valve which is set at 0 minutes was left at 0 minutes.

A recheck of the soil moisture in these 2 medians will take place on December 19th or 20th unless there is rain beforehand.