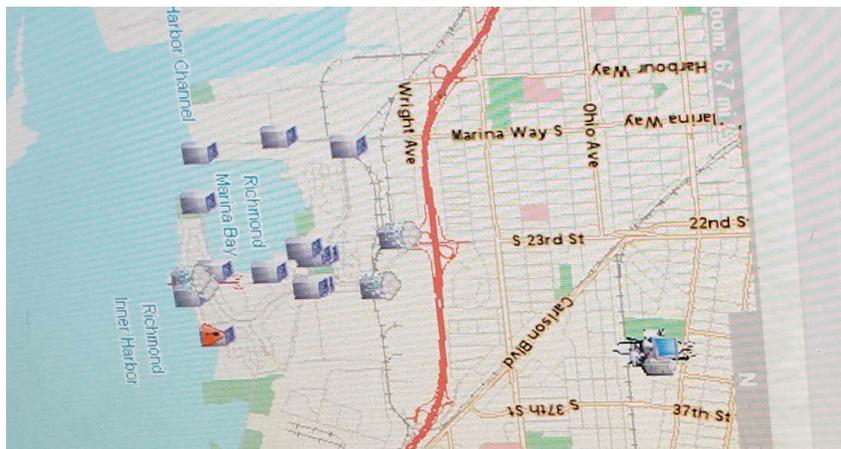


Irrigation at Marina Bay

The Marina Bay Landscape and Lighting Maintenance District is responsible for landscaping more than 1.6 million square feet of parks, trails and median strips. Much of the landscape requires irrigation, primarily in the parks. For fiscal year 2018-2019 the District has allocated a little over \$150,000, about 15% of the total budget, to pay for the water required.

Minimizing water usage is an important goal from a budgetary and an environmental perspective. Since the creation of the maintenance district City of Richmond employees have worked diligently to accomplish this. Every year EBMUD irrigation experts create a water budget for the District based on their analysis of terrain and weather conditions. Every year the District has come in under budget, saving water and money.

Efficient irrigation on this scale requires a complex system. The District system consists of 16 individual controllers, miles of pipe and tubing, emitters and more than 300 valves spread throughout the District. All this is managed by software running on a central computer. The central computer schedules watering by programming the remote controllers, modifying the schedule in response to changes in current weather conditions. It monitors water flow to generate alerts when unexpected flow indicates a malfunction. It generates reports to ensure that the system is properly tuned to meet water conservation goals.



Central software screen showing controllers' location and status.



Weather station reports real-time weather data.

As District landscaping continues to evolve, the District applies new techniques and new technology to continue to reduce water usage. This is demonstrated by two recent planting projects.

The first is the traffic island at the southeast corner of Marina Bay Parkway and Regatta Blvd. The island is landscaped with two distinctly different types of vegetation: flowers and low bushes on the north end, trees to the south. Two different irrigation technologies were employed. For the north end “drip” style irrigation was employed. Rather than using old-style driplines, newer technology was employed: Techline. This was chosen because it is more durable, reducing maintenance cost. Bubbler technology was used for the trees. Bubblers apply irrigation directly at the base of a tree so that it receives the full benefit of the water. Use technology designed specifically for the plant type results in highly efficient irrigation.



Traffic island showing the two distinct plant types



Bubbler head at a tree base

The second planting is a tree line in Marina Bay Park near the Bay Trail just north of Marina Bay Parkway. Here trees were planted to replace aged and diseased trees. When they were planted, the irrigation technology was upgraded. Once again bubbler technology was used. The resulting water savings is noteworthy - a 95% decrease in water usage for that planted area.



Tree line with healthier trees using less water

Improved irrigation efficiency will continue to be a goal in the Marina Bay Landscape and Lighting Maintenance District. Managed water usage benefits the environment and reduces water costs. There is another less obvious benefit. Focusing the water on the desired plants means that there is less water available for unwanted plants. This means fewer weeds, therefore less weeding is necessary. This is yet another benefit to the District bottom line.