How Does Water Use
Affect our Water Treatment?

In 1924, the newly built David L. Tippin Water facility provided potable water for 51,000 people in the City of Tampa. As the population grew, so did the demand and the need to expand the distribution system to get water to all areas of Tampa. Today, the City of Tampa serves over 600,000 people covering an area of almost 171 square miles. It's not surprising that with the sheer size of our city that the **David L. Tippin Water Treatment** facility is the largest surface water treatment plant in Florida serving more than 90 percent of the water that is consumed by Tampa citizens. After treatment, the finished water is pumped through 2,300 miles of pipe to those same citizens.

While Tampa uses an average of 77 million gallons a water a day, water use in our City fluctuates from season to season, from day to day and even from hour to hour. For example, in the rainy season we don't depend on our sprinklers as much to irrigate our yards. This allows the City to hold onto the water for times when we will need it more, like in the dry season. In cooler weather, our large office buildings and hotels use less water than in warmer months to operate their cooling towers. On weekends, most of our industrial locations that use water to process or produce products are closed. Looking more closely, water use fluctuates during the day. At night, when most of us are sleeping, water demands decrease. Morning showers and evening laundry chores, the daily water use in our homes fluctuate. All of these seasonal and daily fluctuations in demand are managed by using storage sites. At the water production plan, large underground storage tanks, called clearwells, are used to store treated water. When the demand for water is high, then the water is pumped by large pumps from clearwells into a web-like underground piping system that covers the entire service area. When water demand is low, the plant continues to produce millions of gallons of drinking water to refill the clearwells.

City of Tampa Florida | Water Department

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In the Tampa's rainy season – May thru October – there usually is more water available to produce drinking water for the City than during the cooler, drier months. When that happens, surplus water is treated to drinking water quality then stored in the deep underground aquifer to use when water supplies are low. This storage method is called Aquifer Storage and Recovery (ASR). Tampa's ASR system uses a series of 8 wells and is capable of storing up to 1 billion gallons of water underground for later use.

To reduce our reliance on drinking water for landscape irrigation and some industrial and commercial uses, Tampa uses reclaimed water produced by the City's wastewater treatment system. The water is treated to remove solids and impurities and then pumped into a underground piping system that is separate from our drinking water pipes for delivery to homes and businesses where reclaimed water is in use. Many homes and businesses in Tampa use reclaimed water rather than drinking water for irrigation. Tampa International Airport uses reclaimed water in place of drinking water to cool its buildings. Tampa's McKay Bay Refuse-to-Energy Facility, uses reclaimed water in the process of converting 360,00 tons of trash to electrical energy each year.

During periods when Tampa's demand for water exceed our water supplies, Tampa purchases water from Tampa Bay Water, the regional water wholesale provider, to ensure that all households and businesses in Tampa get the water they need. When water is purchased from Tampa Bay Water, the difference between local production costs and the price paid for the water is shared by everyone using City of Tampa Water by adding an additional charge, the Tampa Bay Water Pass-Through Charge, to their monthly bills. During extreme dry periods, when both local and regional water supplies can run low, Tampa generally asks people to reduce their outdoor irrigation and to look for other ways to temporarily reduce their water use.

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Use the City of Tampa Average Daily Demand graphs provided to discuss the questions below. Note that the bars on the charts show the average daily water use, by day of the week, for Tampa in million gallons per day. The drops at the top of the chart show the average daily rainfall, by day of the week, for Tampa in inches.

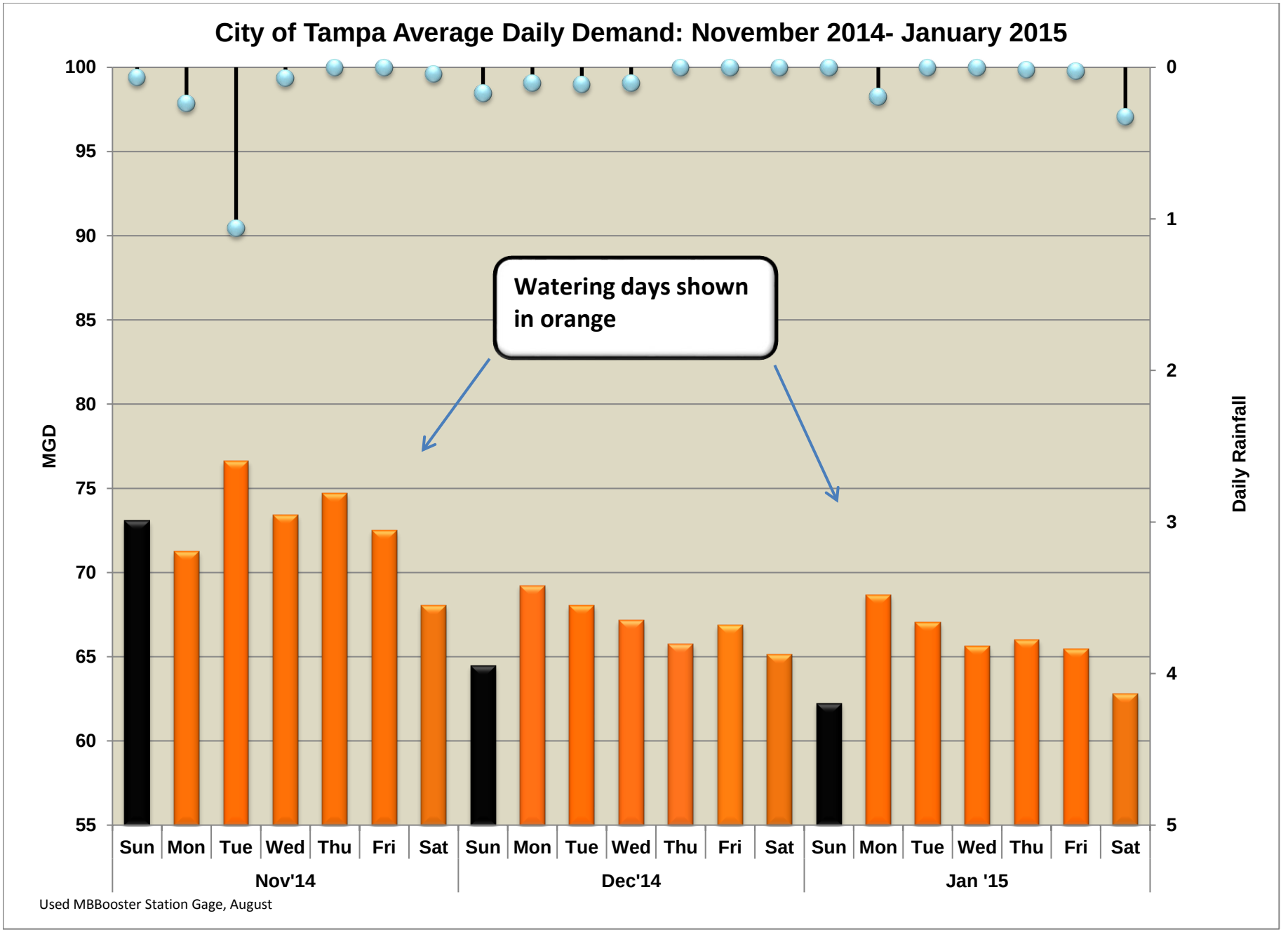
1. What factor or factors do you think account for the water use levels shown in black on the charts?
2. Does rainfall appear to affect water use in Tampa? If so, how?
3. What water uses do you think account for a drop in average daily water use in December 2014 and January 2015?

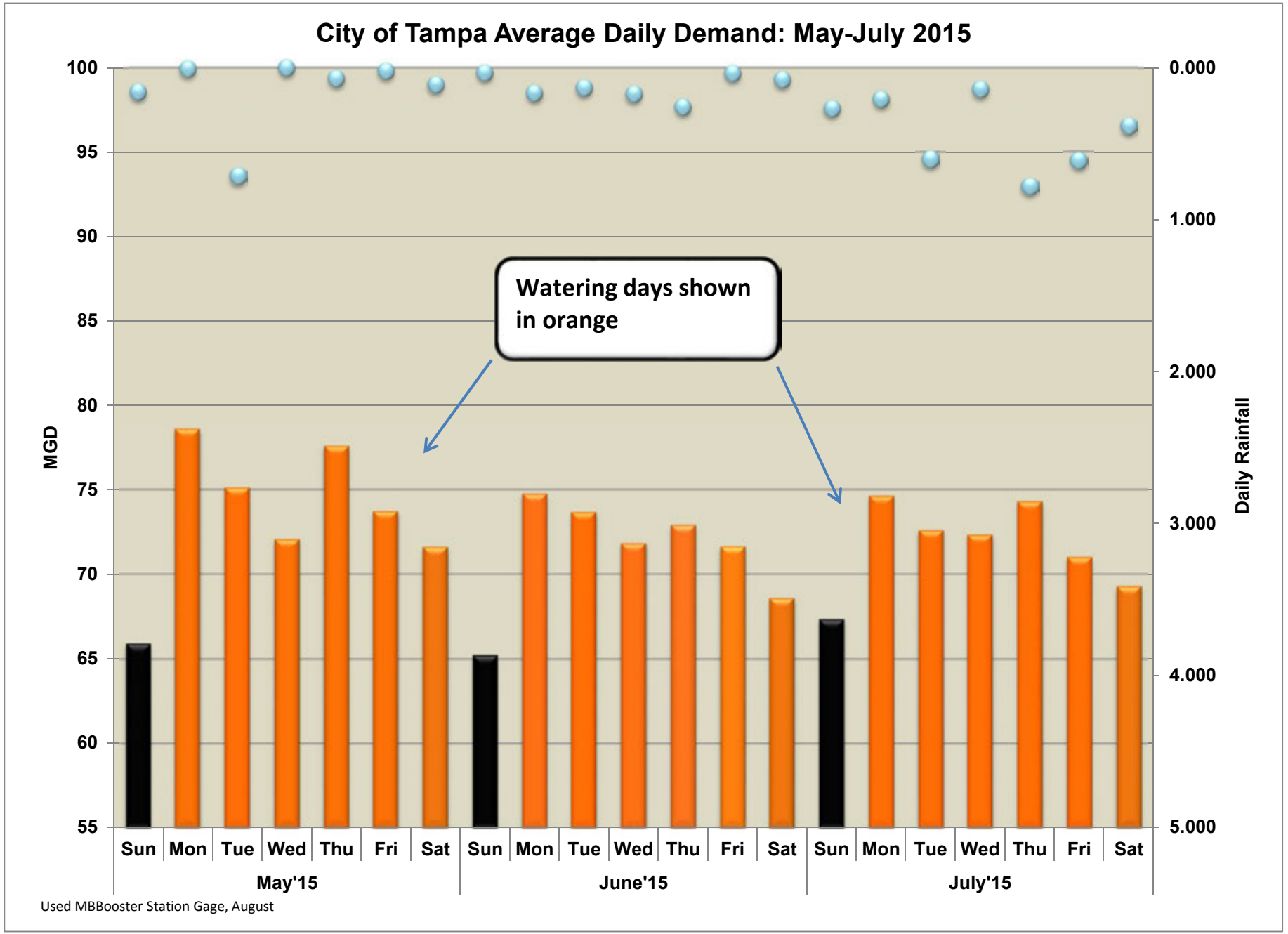
Go online to http://www.home-water-works.org/calculator to estimate how much water your family uses each day at home.

1. How does your family's annual water use compare to the average house shown in the report?
2. The average Tampa household uses 72,817 gallons of water a year. How does your family compare?
3. What are some of the factors that may contribute to Tampa's average annual household use being more than the national average shown in the report?
4. Where does your family use the most water?

Extra Credit

Go the http://www.tampagov.net/savewater and navigate to the Drinking Water Challenge. Complete the challenge to see how accurate your estimate was for the daily water use at your home.


City of Tampa Average Daily Demand: November 2014- January 2015
MGD
Daily Rainfall
100
95
90
85
80
75
70
65
60
55
0
1
2
3
4
5
Watering days shown in orange
Sun Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat
Nov'14
Dec'14
Jan '15
Used MBBooster Station Gage, August


City of Tampa Average Daily Demand: May-July 2015
MGD
Daily Rainfall
100
95
90
85
80
75
70
65
60
55
0.000
1.000
2.000
3.000
4.000
5.000
Watering days shown in orange
Sun Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat
May'15
June'15
July'15
Used MBBooster Station Gage, August