

Water Production and Demand

Referring to Figure 3, 27,061 cubic meters of water was extracted (water production) from the seepage spring and Money Lake Reservoir in 2021; a 16% increase from the previous year and a 10% increase from the five year average. Water demand (customer water billing) for the service totaled 21,519 cubic meters of water; an 11% increase from the previous year and a 23% increase from the five year average.

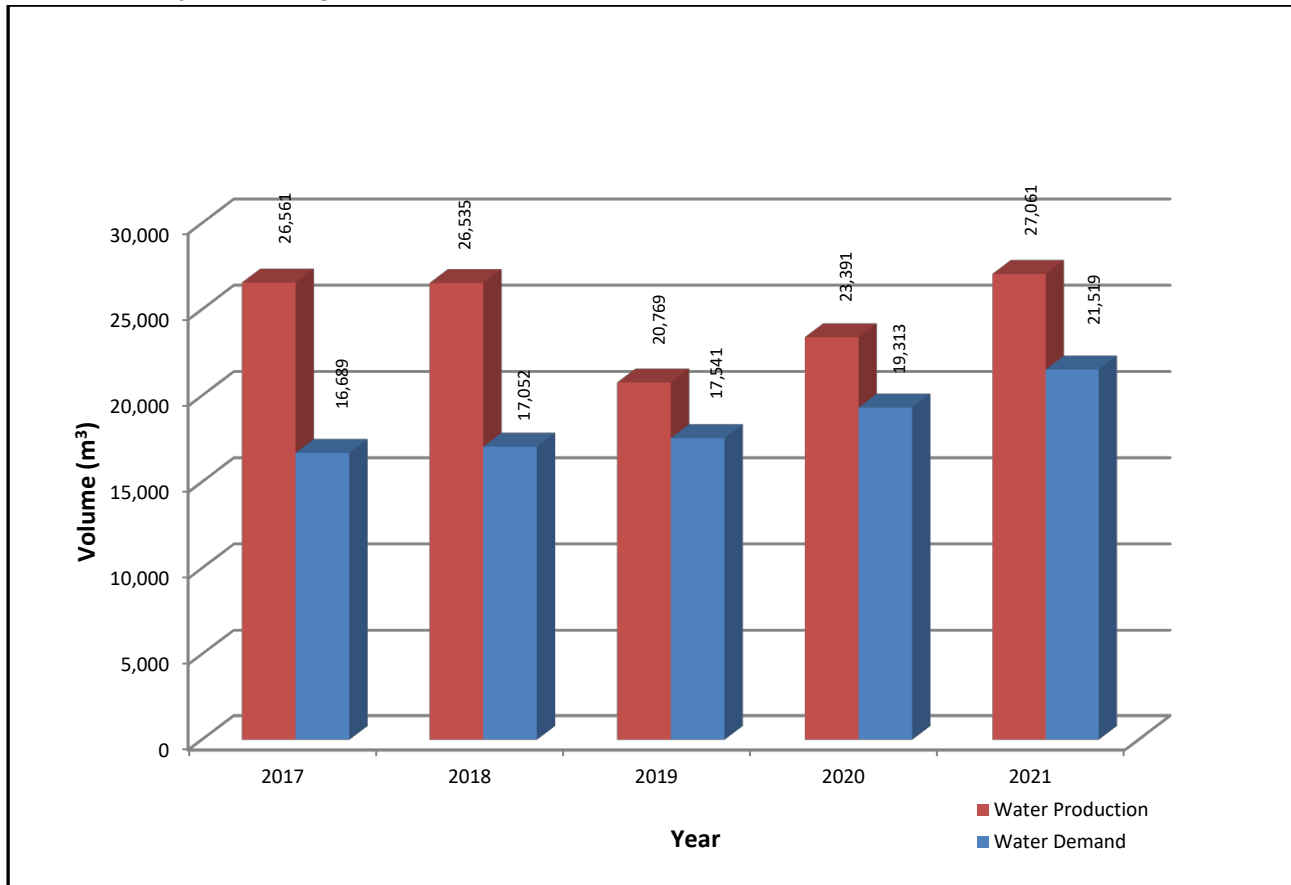


Figure 3: Lyall Harbour/Boot Cove Water System Annual Water Production and Demand

The difference between annual water production and annual customer demand is referred to as non-revenue water and can include water system leaks, water system maintenance and operational use (e.g. water main flushing, filter system backwashing), potential unauthorized use and fire-fighting use.

The 2021 non-revenue water (5,542 cubic meters) represents about 21% of the total water production for the service area. However, almost 12% of the non-revenue water can be attributed to operational use which includes water main flushing to keep chlorine residuals at acceptable levels at the extremities of the water system and water treatment filtration system backwashing activities. Therefore, the non-revenue water associated with system losses is approximately 8% which is considered acceptable for small water systems.

Figure 4 illustrates the monthly water production for 2021 along with the historical water production information. The monthly water production trends are typical for small water systems such as the Lyall Harbour/Boot Cove water system.

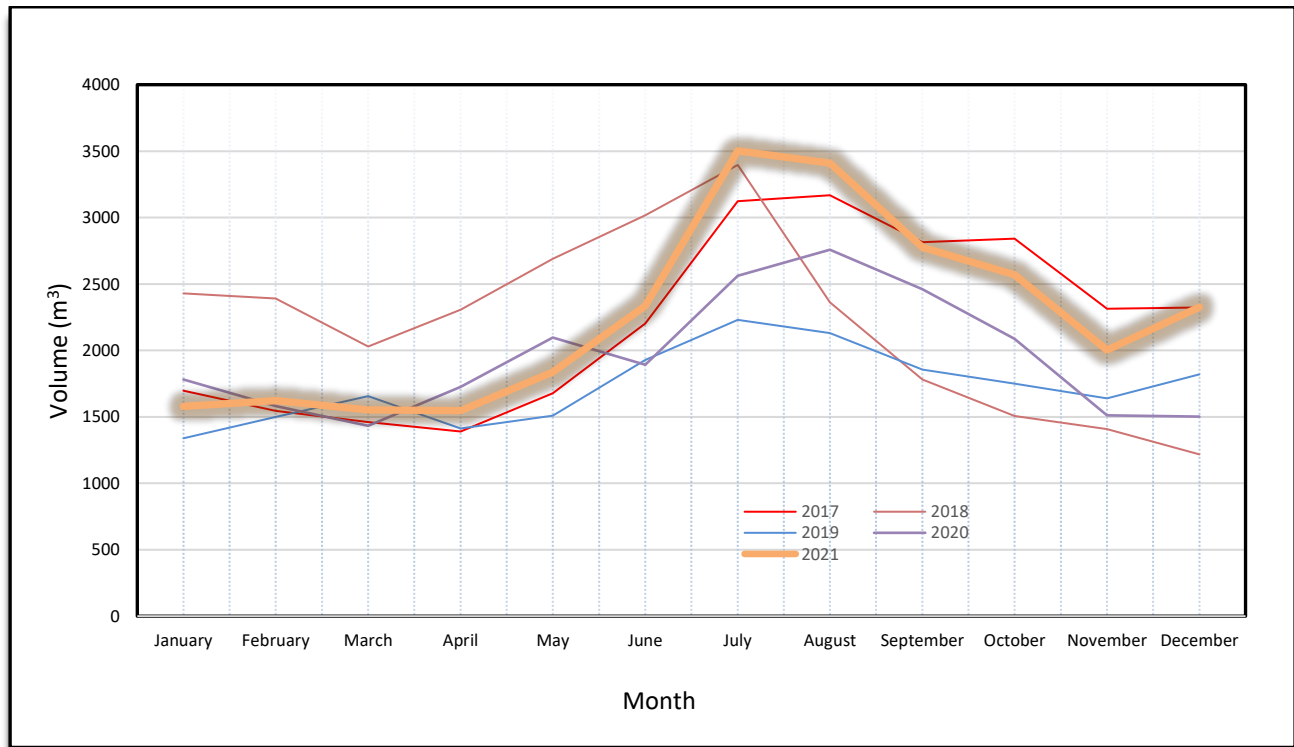


Figure 4: Lyall Harbour/Boot Cove Water Service Monthly Water Production

Drinking Water Quality

The Lyall Harbour/Boot Cove Water System uses predominantly seepage water collected from below the Money Lake dam as the primary raw water source. During the summer months this source is supplemented or completely replaced with flows from Money Lake. During summer and early fall 2021, all source water was supplied by Money Lake only, as the seepage water collection system ran dry. There is sufficient evidence to conclude that the seepage water is hydraulically connected to the lake source.

The Lyall Harbour/Boot Cove Water System had another challenging year in 2021. In total, it was under boil water advisories (BWA) for 192 days throughout the year. The first BWA was a continuation of a turbidity related event that has now developed into an annual pattern which sees the treated water turbidity starting to exceed one Nephelometric Turbidity Unit (NTU) in late fall and remaining above this threshold until the spring; typically until March. In 2021, this turbidity related BWA lasted until March 3. A second turbidity event caused another BWA from August 10 to September 24. On October 9, this aforementioned annual winter turbidity pattern set in again and necessitated another BWA that lasted into 2022. CRD staff have commenced investigations, in collaboration with scientists at the University of Victoria, to study this apparent pattern of increased turbidity readings with the onset of the wet season. There appears to be increasing evidence that dissolved organic matter may interfere with the turbidity readings. This will be studied further in 2022.

Between March and April, Money Lake was subject to an algal bloom by the diatom taxa *Synedra* sp. This bloom increased the risk of adverse taste and odour as well as accelerated filter clogging at the treatment plant. In July and August, Money Lake experienced a strong cyanobacteria bloom. Multiple cyanotoxin tests did not detect microcystin toxins in the raw water during this bloom.