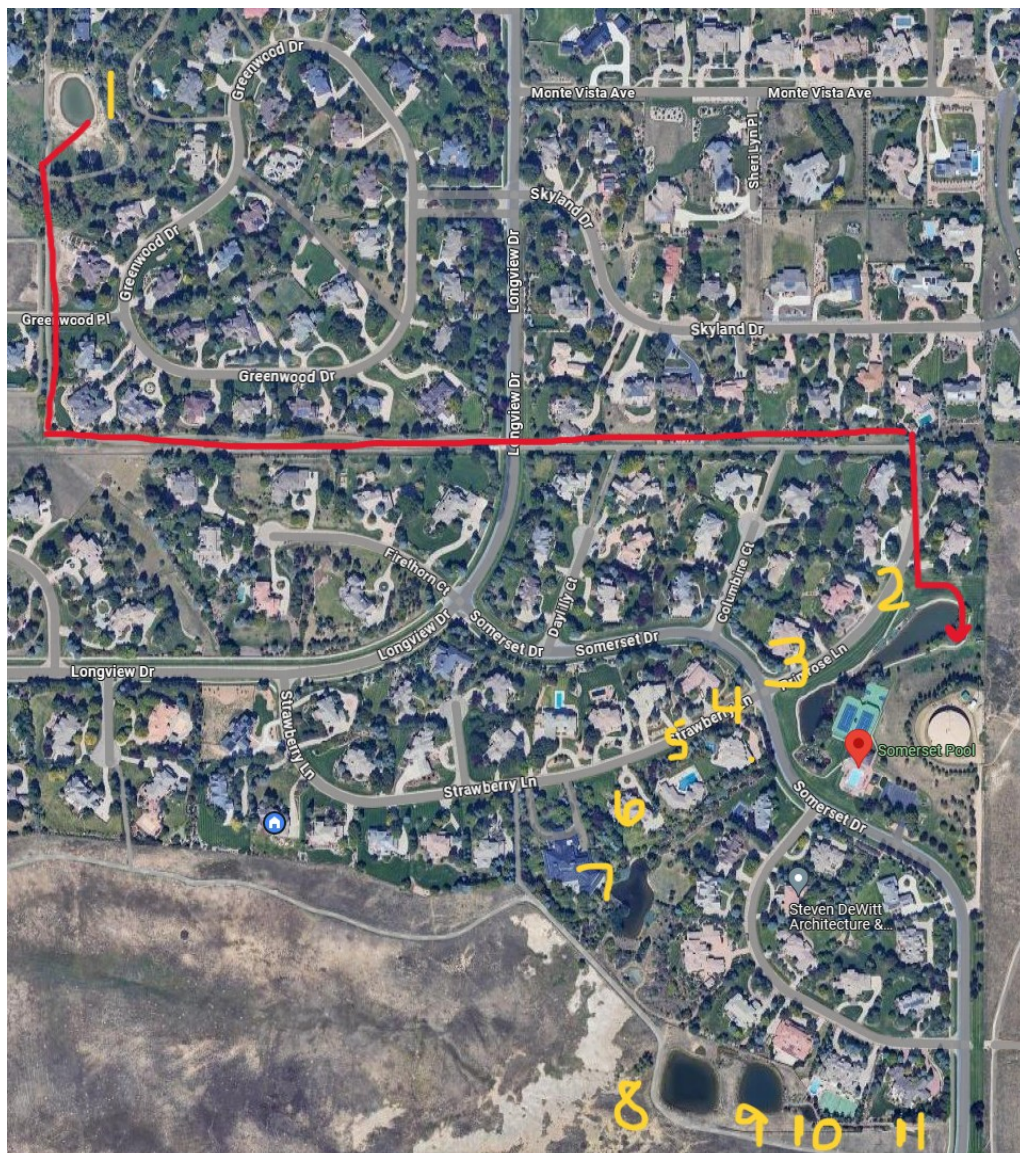


## Water in Somerset Estates

March 2025

From inception, the defining features of Somerset Estates were mountain views, water features (ponds and waterfalls), and lush lawns along road rights-of-ways (as well as on lots). The location near two ditches, Boulder and White Rock (BWR) and Boulder and Left Hand (BLH), with head gates allowing water to move to pond 1 (or West Pond) in Somerset, and the intended merger of Somerset (originally Cottonwood Hills) with Somerset Estates (originally Hillside Estates), provided a potentially inexpensive water source for the water-intensive common elements in Somerset Estates, which were marketed by the developer, Longview Associates (Longview), to buyers of lots in Somerset Estates.

Below is a map that shows the main components of the water infrastructure in SHOA and SEHOA. The ponds are labeled in yellow. The ditches run by pond 1 in SHOA. The red line represents the dedicated transfer line to SEHOA from pond 1 to the east end of pond 2 (location is approximate).



Ponds 2 and 3 are on Outlot D, ponds 8-10 are on Outlot C, and pond 11 is on Outlot B, all owned by SEHOA as common areas. The location and current owners (in parentheses – all public information) of ponds 4-7, referred to as the “Easement Ponds” in SEHOA’s Lot Easement Policy, are as follows: Pond 4 is split between Block 4/Lot 11 (Thramann) and Block 5/Lot 1 (McPherson). Pond 5 is split between Block 4/Lot 10 (Thramann), Block 5/Lot 1 (McPherson), and Block 5/Lot 2 (Shear). Pond 6 is split between Block 4/Lot 9 (Lindau) and Block 5/Lot 2 (Shear). Pond 7 is split between four Lots: Block 4/Lot 9 (Lindau), Block 4/Lot 8 (Stull), Block 5/Lot 3 (Harris), and Block 5/Lot 4 (Shellan).

Pumps: Ponds 2 and 7 each have an irrigation pump. Irrigation is run almost entirely out of Pond 2. Pond 7 also has two pumps alternately used to recirculate water to the top of the waterfall across the street on Somerset Dr. These pumps can also recirculate water to the waterfall at the east end of pond 2 but have not been used for this purpose in recent years as this waterfall is fed from the transfer line from pond 1. These pumps are near the end of their useful life. They are large commercial pumps because they are pumping water uphill over a long distance in a 10” pipe. Operating costs, especially electricity, are high. A much smaller pump has been proposed for installation near the waterfall in a redesigned pond 3. This would increase reliability so that the waterfall operates more of the time at a lower operating cost.

The surface area and volume (as originally designed) of the ponds, including pond 1, are as follows.

Pond	Surface Area (SF)	Volume (AF)
1	8801	0.70
2	28653	2.03
3	9817	0.59
4	1676	0.08
5	2604	0.13
6	2136	0.06
7	21736	1.39
8	26486	1.63
9	14659	0.72
10	1876	0.05
11	1076	0.04

Unfortunately, Longview left the future Somerset Estates HOA (SEHOA) with four issues:

1. **Inadequate Water Supply.** Longview didn’t buy enough of what should have been inexpensive ditch water to meet the needs of both Somerset and Somerset Estates. In fact, they did not buy a single drop of water to supply Somerset Estates. Colorado Adera, one of the eventual partners in Longview Associates, purchased 8 shares of BWR and a 2/3 share of BLH in 1975. Cottonwood Hills HOA purchased 11 units of Colorado Big Thompson (C-BT) in 1984. These combined shares are somewhat more than adequate for the needs of what is now SHOA, but not nearly enough for Somerset Estates as well. When Longview filed a new subdivision agreement for Somerset Estates in 1992, C-BT units could be purchased for about \$1,500, but none were bought. (A unit now costs around \$68,000.) In 2010 and 2013, SHOA was able to purchase a total of 3.5 BWR shares, but this barely made a dent in meeting water demand. BWR and BLH are rarely available for bid, so there’s no guarantee that SEHOA can buy more in the near future.

Demand. After SEHOA became a separate entity in 2018, it engaged a water attorney (Lyons Gaddis) and water engineer (Lamp Rynearson) to evaluate its position and begin negotiations with SHOA on the ownership of the water shares and the related infrastructure. In May 2020 Lamp Rynearson calculated the water demand for SEHOA as 35.7 AF, comprised of 24.9 AF for irrigation, 7.7 AF for pond evaporation (broken down by pond below, based on surface area, with half of the evaporation for pond 1 allocated to SEHOA), and 3.1 AF for the main waterfall. The irrigation demand assumes efficient irrigation (no leaks, broken sprinklers, watering the street, etc.). Lamp Rynearson only included the extra evaporative loss of the main waterfall, not the two other waterfalls (at the east end of pond 2 and between ponds 9 and 8).

Pond	Surface Area (SF)	Volume (AF)	Evaporative Loss, AF/yr
1	8801	0.70	0.29
2	28653	2.03	1.92
3	9817	0.59	0.66
4	1676	0.08	0.11
5	2604	0.13	0.17
6	2136	0.06	0.14
7	21736	1.39	1.45
8	26486	1.63	1.80
9	14659	0.72	0.98
10	1876	0.05	0.13
11	1076	0.04	0.07
<b>TOTAL</b>	<b>119,519</b>	<b>7.42</b>	<b>7.7</b>

Prior to 2022, the demand for SHOA and SEHOA relied on a calculated split of the meters out of pond 1 in SHOA as there was overlap in the irrigation systems of the two HOAs. The demand for SEHOA from 2008 – 2019 averaged 37 AF, which is close to the Lamp-Rynearson calculated demand, but with a fairly large standard deviation of 10 AF, due to curtailed supply in dry years, major leaks in high-use years, etc.

In 2022, the dedicated transfer line from pond 1 to pond 2 was completed allowing more precise measurement of SEHOA’s water use. SEHOA demand in 2022 was 35.6 AF, in 2023 was 39 AF, and in 2024 was 46.8 AF. **The average water demand over the past three years was 40.5 AF with the current infrastructure.** The higher demand in 2024 was likely due to a hot, dry summer and pond leaks. The 2024 demand of 46.8 AF was over 84 days (0.56 AF/day) compared to 39 AF over 107 days in 2023 (0.36 AF/day). Because 2024 was a drier year, the ditch companies shut off access in early September compared to early October in 2023.

Supply. The result of the negotiations with SHOA was an agreement dated June 22, 2021 that gave SEHOA the water shares in the table below. A ditch share or C-BT unit is nominally an acre-foot (AF), but the actual water delivered is adjusted according to a yield set each year. A ditch company will look at the expected available total water based on the snowpack, etc. and set a yield in the spring. The yield may be adjusted later in the season as water moves through the ditches. A typical yield for ditch shares is 0.75, meaning that one share delivers 0.75 AF. In a dry year, such as 2012, the yield on BWR ditch shares may drop to 0.2 from the typical 0.75 due to lack of snow. Conversely, the yield on C-BT is typically 0.7 but may increase in dry years to make up for the loss of ditch yield, to

possibly 0.9. This is because C-BT is designed to be a supplemental supply to ditch shares. Overall, the SEHOA supply in a dry year may be only approximately 6 AF.

<b>Supply Source</b>	<b>Shares</b>	<b>Yield - Typical</b>	<b>Total AF - Typical</b>	<b>Yield - Dry</b>	<b>Total AF - Dry</b>
BWR	7.5	0.75	5.6	0.2	1.5
C-BT	5	0.7	3.5	0.9	4.5
BLH	0.67	2	1.3	0.4	0.3
<b>Total Supply</b>			<b>10.4</b>		<b>6.3</b>

In addition, SEHOA is often allowed to take “river run” from the ditches at the start of the season (usually the end of May) to fill the ponds and begin irrigation. It is up to the ditch companies to decide when to start and end the river run (and even whether to allow it at all). In 2022, a typical year, river run lasted until July 16 for a total of approximately 16 AF to fill ponds and start irrigation. In 2023, a wet year, we were able to take river run until August 12, again for a total of approximately 16 AF (less irrigation was needed almost a month later than in 2022 because of rain in July). In 2024, the river run was cut off on July 7. In a very dry year, there may be no river run or only a small amount. An optimistic assumption is 16 AF of river run, although homeowners should be aware that this is not guaranteed.

Shortfall. Even in a typical year, the owned supply of 10.4 AF is 26.6 AF short of the demand of 37 AF (or more given the 2024 higher demand). If we assume that we can get 16 AF of river run, the shortfall drops to 10.6 AF. In a dry year, the shortfall could be as much as 31 AF. In that case, we would not run the waterfalls, fill all the ponds, or irrigate the grass to the desired green color. SEHOA typically makes up for the shortfall by leasing water from the ditch company. As long as leased water is available, this is a cost-effective option as the lease cost is only about \$65/unit (or \$93/AF at 0.7 yield). The risk in relying on leased water is that in a dry year or an extended drought, when we most need to lease water, it may not be available at all. Failing to repair pond liners because it’s “cheap” to just let them leak into the ground is a reasonable economic option as long as leased water is available. If it is not, then that water going into the ground isn’t available to irrigate the grass. The other problem is that if the ponds don’t hold water, the liner may be exposed in the 7 months of the year that we don’t have any ditch water, which can lead to additional degradation (plus it’s not attractive to have partially empty ponds).

It has been suggested that the ponds provide storage for irrigation in dry years. Setting aside that such storage is unlawful (see Dietze and Davis letter), the total volume of ponds 2-11 is 6.7 AF. Even if we assume that we could use 2/3 of the water in these ponds and leave them 1/3 full at the end of the irrigation season (once the ditches shut down, there is no way to refill them unless we want to buy treated water from the Left Hand Water District), that is 4.5 AF of extra water. As noted, in a typical year we use about 0.4 AF/day, so this would give us only 11 days of extra irrigation (around 10% of total use). This is less than the 7.4 AF of annual evaporative loss (excluding pond 1). Not a good trade-off. It has also been suggested that what we need is more storage. Such storage would need to be deep and perhaps buried, not shallow and exposed. It would also need to be permitted, and we would have to acquire a source of water to put into the storage. This could be considered by the community.

Another option is to try to buy more water shares. BWR and BLH shares are rarely available and are sold via a closed bid. In July 2022 SEHOA bid \$100,000 for 7 shares of BWR (\$14,285/share) but came in second. The winning bid is not made public. These are the only shares that have come up for bid since SEHOA was formed. We don't know what bid is required for any future shares, but \$15,000/share is a reasonable guess. C-BT units are sold on the open market, with current prices of around \$68,000 per unit. Let's assume we want to double our "owned" water supply so that instead of 10.4 AF in a typical year, we have 20.8 AF. This would meet the needs most years, assuming we get 16 AF of river run.

Supply Source	Desired AF	Shares	Cost/Share	Total Cost
BWR	10.4	14	\$15,000	\$210,000
C-BT	10.4	15	\$68,000	\$1,020,000
50/50 split of BWR and C-BT				\$615,000

To this end, the board has included in the Long-Range Planning (LRP) model a minimum reserve balance of \$200,000 to use to bid on any BWR shares that become available. Purchasing C-BT would require prior planning and a special assessment.

The final option is to reduce demand. We fix broken irrigation pipes every year. Pond liners are at the end of their useful life and failing but are expensive to replace. Major patching projects on ponds 2 and 7 have slowed the leaks but both will eventually need to be relined; patching pond 3 didn't help and its liner is beyond the useful life. Pond 10 has significant leaks. Ponds 8 and 9 are in good shape.

Beyond fixing leaks in the irrigation system and pond liners, reducing demand requires making changes. Someone asks about xeriscaping at every annual meeting. While some homeowners favor a more water friendly landscape, others insist that we keep the original Longview concept. For example, the landscape architect plans for the Hwy 52 entrance show replacing about 0.5 acres of turf grass on the east side of Somerset Dr with native grass to match what's on the west side (native grass beyond the sidewalk). The area could be larger if we extended it all the way to the pool parking lot. This would save us about 1.5 AF of irrigation, maybe more considering it is west facing exposed grass, and take some of the load off the irrigation system by removing some zones. It would also save on weekly mowing costs. Part of the goal of the Outlot D project (on hold) was to replace most of the grass that is on the Somerset Dr side of the hill from below the pool to the corner of Primrose Ln as that grass is exposed to afternoon sun and wind and is very difficult to keep green. Any such proposed changes are controversial (the Board heard opposition to any reduction in the amount of "lush" lawn turf).

2. **Inadequate Capital Funding.** Longview didn't provide a funding mechanism for the future repair of the water infrastructure; in fact, the original governing documents for Cottonwood Hills and Somerset Estates made it extremely difficult for SHOA (the joint managing association until 2018) to raise dues to even cover increases in operating expenses, let alone future capital expenses. The PVC-lined ponds installed by Longview can be thought of as a "balloon payment" for current homeowners as funds were not collected over the useful life for these liners. So far, only pond 8 in SEHOA and pond 1 in SHOA (costs split 50/50 between the two HOAs) have been completely rebuilt. The special assessment of \$5,000 in 2021 was a start but not enough, especially given updated costs on pond

relining. The 2025 analysis by Aspen Reserve Specialties provides an independent assessment of SEHOA current capital funding shortfall.

3. **Water Law Issues.** Longview didn't resolve water law issues regarding the use of ditch water in Somerset Estates. Without a storage decree from the Colorado Water Court, water that is decreed for irrigation (as is ours) must not stay in a pond for longer than 72 hours. Furthermore, water that is decreed for irrigation may not be pumped above the ditch. Longview's water attorney argued against these issues, and SHOA agreed in 1999 to accept \$20,000 as a settlement in case either of these issues were ever raised by the Water Commissioner. (These funds, which sat in a low interest account for 20+ years, were split between SHOA and SEHOA in 2021.) Letters from Dietze and Davis, Counsel to SEHOA on water law and Lyons Gaddis, prior Counsel, have been provided to homeowners.
4. **Water Features on Private Lots.** SEHOA operates under the Colorado Common Interest Owners Act (CCIOA), which gives the Association sole authority to manage the common elements owned by the Association. In general, the Association is responsible for the common areas and owners are responsible for their lots. On the advice of counsel, SEHOA has taken the position that improvements in easements may also be considered common elements and adopted a Lot Easement Policy to clarify the responsibility for maintenance of improvements in easements. A letter from Scott Osgood, Counsel to SEHOA, addresses these water features.
5. **Storm Drainage.** Questions were raised about the role, if any, of the ponds in Somerset Estates for stormwater drainage. Clint Brown, P.E., of Engineering Analytics advised SEHOA that ponds 2-7 are not required storm drainage structures based on a review of the JR Engineering drawings from 1997. This was disputed, so SEHOA contacted David Webster, P.E., Boulder County Engineer for a definitive opinion. Mr. Webster reviewed all the relevant documents, including from nearby subdivisions, and wrote his conclusions in a March 3, 2025 letter that has been provided to homeowners. He concluded that ponds 2-11 are not considered integral to the final drainage plan and could be removed as part of an application process to CP&P (Community Planning & Permitting) subject to maintaining conveyance of local runoff (e.g., the area around the ponds) in their place, such as grass or rock lined channels or swales. Doing so would not be associated with an increased risk of flooding to private properties. This would be a normal permitting process for landscaping changes, not a hearing before the county commissioners. He also noted that he couldn't find any record of the ponds being permitted in the first place.