Supply and Demand

- The current total urban water demand is 10.4 mgd
- The current safe yield of our existing system is 12.8 mgd
- This gives us a current 2.4mgd surplus!

Supply and Demand

- By 2055, Rivanna projects demand to increase to 18.7 mgd
- By 2055, Rivanna projects safe yield to decrease to 8.8 mgd
- This would seem to give us a 9.9mgd deficit in 50 years

Supply and Demand

However:

- Rivanna's 2055 population figures have been criticized by DEQ for being 7 percent higher than VEC projections
- Rivanna's demand projections are based on a 5 percent conservation target, despite the fact that our own drought response and contingency plan anticipates 10 to 15 percent reductions. DEQ has commented that the 5 percent conservation target seems low. During the 2002 drought, consumption decreased by more than 40 percent.
- The 2055 demand analysis was calculated based on historical demand data through 2001 and assuming this pattern of water usage per capita continues. Since 2001, urban demand has actually DROPPED from 11.2mgd to 10.4mgd, due to water conservation, rather than increasing as Rivanna projected

Supply and Demand

- Bringing our population projections in line with VEC, increasing conservation from 5 percent to 10 percent and starting with a baseline demand of 10.4mgd instead of 11.2mgd reduces our 2055 demand by to 2.2 mgd, to 16.5mgd and reduces the projected 50 year deficit to 7.7 mgd

Planning Horizon

- State planning law only requires a 30 year planning period although 50 years is “encouraged … to ensure that the most appropriate and sustainable alternatives are identified”.

- Ironically, Rivanna has insisted on a 50 year planning period in order to eliminate the most appropriate and sustainable alternatives as “not being able to meet the full 50 year “deficit”

Planning Horizon

- The 30 year deficit is 3/5 of the 50 year "true deficit" or 4.6 mgd.

Capacity

- Total reservoir storage is 2,024 million gallons.
- Only 1,586 million gallons are considered “usable”
- 438 million gallons or 21.6 percent is considered “dead storage” because it is below the level of the intake. Most of this is at SFRR, which has 355 million gallons of dead storage.

Capacity

- SFRR was originally designed to have 450 million gallons of dead storage, of which about 95 million gallons has been filled with sediment. With regular maintenance of the reservoir, and allowing for a more typical dead storage of 10 percent, it may be possible to recover another 280 million gallons be lowering the intake. This could increase the amount of storage gained by dredging from 5.5 mgd to 7.0 mgd