

SUMMARY

The public wants action – **NOW**.

We've waited long enough. We've already had two dredging companies come to the RWSA with solutions during the past four years, only to be ignored – which we learned only through FOIA'd emails. Now, we have a proposal from a highly-qualified, well-financed local company that owns an ideal site within ½ mile of the reservoir. Let's not blow it again.

Let's perform a quality dredging survey **NOW**. If it confirms what appears to be the best solution, let's dredge to get 30 years of water for \$25 million (plus \$3.8 million to fix the Ragged Mountain Dam).

Then, while that is being done we can finalize an engineering plan that cost-effectively provides 50 years of water using realistic baselines and assumptions.

The RWSA plan spends at least \$142 million – and probably *much* more – to meet a 50 year exaggerated demand at huge financial and environmental cost. It clear-cuts 50,000 trees, builds a 9-1/2 mile pipeline across Albemarle County, extends a reservoir under an Interstate highway, and turns the Rivanna into a swamp. We all need to say NO to this approach unless it is proven as the only feasible option.

In 2002, we had the third-lowest water rates of Virginia cities we use as benchmarks.

Now, we have the third-highest – with Albemarle County being the second highest. And we've just begun. It's going to get much worse with the RWSA plan.

We want good decisions made using valid data. No more hyperbole, prevarication, and guesstimates.

Ignorance is not a defense in court and it shouldn't be in environmental resource planning. There's too much at stake.

Get the data, make good decisions, and wisely invest the public's money . **NOW**.

CITIZENS FOR A SUSTAINABLE WATER PLAN

for more information WWW.CVILLEWATER.INFO



The Charlottesville-Albemarle water supply system is at a crossroads. Overseen and managed by the Rivanna Water and Sewer Authority (RWSA), the South Fork Rivanna Reservoir (SFRR), our primary reservoir, has been neglected for 42 years and has partially filled with sediment, losing 34% of its original usable capacity.

RWSA is moving to abandon the SFRR and spend \$142 million to expand Ragged Mountain Reservoir plus build a \$60 million, 9-mile pipeline across Albemarle County. This solution is based upon exaggerated values for current water demand and artificially high projections of future growth. This plan clear-cuts 50,000 trees, extends the Ragged Mountain Reservoir under Interstate-64, and allows the SFRR to ultimately become a swamp. The Virginia Department of Health has documented that this solution will lower the quality of water entering our water system.

RWSA has scrupulously avoided any normal and proper study of dredging – thus, it is impossible for anyone to make an informed decision on the best and most cost-effective solution to meet our needs. RWSA has publicly stated that they have done so because 'they know' dredging will cost \$223 million.

Our investigation indicates that dredging the SFRR – coupled with other changes – can meet our water supply needs for 30 years. Then, adding some more environmentally responsible alternatives, we can meet a 50 year outlook.

Our group includes engineers, a recent Charlottesville City Councilor, a past RWSA board member, and a former Charlottesville mayor. They all recognize that the ultimate solution must be based upon sound engineering, reasonable assumptions, and accurate cost estimates.

A key to our proposal is that – before funding any ultimate solution or starting cutting down trees – the local governments first contract with a trustworthy third-party dredging engineering firm with impeccable credentials to perform a technical survey and accurately assess the cost, timeframe and effectiveness of dredging the SFRR.

We have identified one such firm that is a nationally-recognized expert in the field, has performed similar reservoir dredging studies right here in Virginia, and has successfully managed dredging projects throughout the US. At no charge for their time or expenses, they have spent days on the SFRR and met with local landowners and RWSA officials to perform a preliminary assessment. Based upon the evidence, they now believe that:

- dredging is perhaps our best alternative and a basic engineering survey (30-60 days of work) must be done to obtain data needed for an informed decision;
- SFRR topography and hydrology are highly consistent with an excellent outcome and a reasonable cost; and
- it is possible to complete all dredging within a year, if desired.

From their meetings with local landowners, at least one ideal dredging site has been offered along with a proposal to perform dredging for a total cost of \$25 million.

If dredging can deliver the benefits we expect, this approach will save the SFRR, meet 50 years of projected water needs, and save \$50 – 100+ million, including finance costs.

None of us will know for certain unless we perform the required studies that any responsible water authority and engineering firm would commission before making such a permanent and costly decision.

DEMAND CALCULATIONS

RWSA projects daily usage of 18.7 mgd in 2055. This is artificially high because of 3 faulty premises.

1. RWSA uses 2001 demand (pre-drought) as a baseline. But, in 2002 a massive installation of low-flow devices and other changes permanently reduced usage from 11.08 mgd to 9.98mgd (2007 data).
2. This false baseline is further inflated by the compounding affects of 50 years of population growth estimates that are 7% higher than the accepted state (VEC) accepted numbers.
3. Demand is based on a 5% conservation target – while our adopted local plan assumes 10-15%

Using realistic figures:

- 2055 daily demand drops from 18.7 mgd to 16.2 mgd and
- the daily deficit drops from 9.9 mgd to 7.4 mgd

**THE
RWSA
PLAN**

Ragged Mountain Dam – 45 foot increase	\$ 36,450,000
Build new SFRR to RMR 36 inch pipeline + pump stations + pretreatment	\$ 55,350,000
RMR to Observatory Water Treatment Plant Pipeline (30")	\$ 8,550,000
Observatory Water Treatment Plant upgrade to 10mgd	\$ 21,300,000
South Fork Water Treatment Plant upgrade to 16mgd	\$ 9,000,000
50-Year Raw Water Pumping Cost (Electricity only)	\$ 12,300,000
Total RWSA Project Cost	\$ 142,850,000

Some major expenses missing from this estimate:

- annual cost of chemicals for turbidity removal (sodium permanganate, etc.)
- annual costs for sludge removal
- maintenance costs for pumps and pipeline
- any budget for 'maintenance' dredging.

Easements:

- Easement costs may be off by 10x (assumes paying 40 cents per square foot, or an average of \$3,772 for each of 66 properties).
- assumes pipeline can be placed on the 'western bypass' right of way – but, RWSA knows that VDOT may sell-back the land, since that bypass design will probably never be built ... so where will it actually run and how much will it cost for easements?

**OUR
BEST
CASE**

Repair Ragged Mountain (RMR) Dam Spillway at existing height	\$ 4,000,000
Restoration SFRR Dredging of initial 2 million yards	\$ 24,000,000
Build SFRR sediment traps and periodically dredge them for 50 years	\$ 15,000,000
Install Flow control valves on Beaver Creek Reservoir	\$ 500,000
Install Flow control valves on Lake Albemarle	\$ 500,000
Install Flow control valves on Chris Green Lake for 5' drawdown	\$ 500,000
Lower Intake at SFRR to draw currently inaccessible water (dead zone)	\$ 1,000,000
Replace RMR to Observatory Water Treatment Plant pipeline, with 18"	\$ 4,000,000
Renovate Observatory Water Treatment Plant at 4mgd	\$ 6,000,000
Upgrade SFRR Water Treatment Plant to 16 mgd	\$ 9,000,000
Replace Sugar Hollow to RMR pipeline with 18"	\$ 16,200,000
Best Case – Total Project Cost	\$ 80,700,000

RESULTS:

- Provides safe yield of 17.3 mgd – 7% above the requirement.
- Keeps at least 2mgd of flow in the Moormans river with 0.6mgd of reserve.
- Relies on Beaver Creek, Lake Albemarle and Chris Green Lake to provide an extra 2.0 mgd in times of drought, with even higher flows (up to +1.0 mgd) actually available.
- Quoted dredging costs may be lower if the sediment can be resold to concrete/ asphalt suppliers, etc.

**OUR
MODERATE
CASE**

Repair Ragged Mountain Dam Spillway at existing height	\$ 4,000,000
Perform SFRR Restoration Dredging of initial 2 million yards	\$ 30,000,000
Build SFRR sediment traps + periodic dredging for 50 years	\$ 21,000,000
Install Flow control valves on Beaver Creek Reservoir	\$ 500,000
Install Flow control valves on Lake Albemarle	\$ 500,000
Install Flow control valves on Chris Green Lake for 5' drawdown	\$ 500,000
Lower SFRR water intakes to use some of existing dead storage	\$ 1,000,000
Replace RMR-to-Observatory Pipeline with 18"	\$ 4,000,000
Renovate Observatory Water Treatment Plant at 4 mgd	\$ 6,000,000
Upgrade South Fork Water Treatment Plant to 16 mgd	\$ 9,000,000
Replace Sugar Hollow-to-RMR pipeline with 18"	\$ 16,200,000
Moderate Case – Total Project Cost	\$ 92,700,000

ASSUMES:

- dredging costs more than anticipated.
- there are no cost savings associated with building SFRR sediment traps (forebays).
- the dredged material has no commercial value.

RESULTS: Same as best case – only difference is costs.

**OUR
WORST
CASE**

Repair Ragged Mountain Dam, increasing height by 13 feet	\$ 11,000,000
Restoration Dredging of initial 2 million yards	\$ 30,000,000
Build SFRR sediment traps and periodically dredge them for 50 years	\$ 21,000,000
Install Flow control valves on Beaver Creek Reservoir	\$ 500,000
Install Flow control valves on Lake Albemarle	\$ 500,000
Install Flow control valves on Chris Green Lake for 5' drawdown	\$ 500,000
RMR to Observatory Pipeline upgrade to 24"	\$ 6,000,000
Observatory WTP Upgrade to 6 mgd	\$ 10,000,000
South Fork WRP upgrade to 18 mgd	\$ 12,000,000
Sugar Hollow to RMR pipeline – upgrade to 24"	\$ 20,000,000
Worst Case – Total Project Cost	\$ 111,500,000

ASSUMES:

- use the inflated 2055 demand of 18.7mgd
- there are no cost savings from building SFRR sediment traps
- the dredged material has no value
- dredging costs more than anticipated
- RMR dam increase uses the existing base (to build a new base, add +\$9 million)

RESULTS:

- provides safe yield of 19.1mgd

**COMPARE
ALL 4
PLANS**

PLAN	DAILY WATER YIELD	COST
RWSA	18.7 mgd	\$ 142,850,000
Our Worst-Case	19.1 mgd	\$ 111,500,000
Our Moderate-Case	17.3 mgd	\$ 92,700,000
Our Best-Case	17.3 mgd	\$ 80,700,000

ALL 3 OF OUR PLANS:

- **Preserve the SFRR.**
- **Provides at least 2mgd minimum instream flow to the Moormans River.**
- **Optimize the quality of our drinking water by utilizing Sugar Hollow as a water source.**
- **maximize our historic investment and avoid wasting our community's resources and money.**