

Drinklocalwater.org
**A Coalition of Groups and Citizens Working to Protect
the Future of Charlottesville/Albemarle's Water Supply**

May 27, 2005

The Honorable Dennis Rooker, Chair
Albemarle County Board of Supervisors

The Honorable David Brown, Mayor
City of Charlottesville City Council

Subject: A Local Solution for the Urban Service Area Community Water Supply Plan

Dear Chairman Rooker and Mayor Brown,

We, the undersigned, wish to offer a solution that we believe will provide adequate water resources for humans for the next 25 to 50 years as well as for beneficial in-stream uses. We are encouraged by what we've heard about the RWSA's current planning direction and that there is growing momentum for a solution within our local watershed. Since we don't know the details of these discussions, we make the following suggestions with the intent of being helpful. We believe that these proposed components will support the current planning effort and, most importantly, will meet the regulatory requirements of "practicable and least environmentally damaging."ⁱ

This multi-faceted and incremental approach includes water conservation measures, watershed protection measures to decrease siltation, and a planning horizon that allows for phased solutions and time for new technologies to become available. Such an approach is consistent with proposed revisions to state regulations, which include a requirement for more frequent review of water supply plans.ⁱⁱ

We have used information gleaned from RWSA memoranda, Gannett-Fleming analyses and projections, previous studies, community-based experts and our own collective knowledge from public participation. We have applied the principles of Integrated Resource Management as a guide in developing this plan.ⁱⁱⁱ We believe this combination of components will be found cost-effective, adequate for our community's water supply needs, and practicable.

It is our belief that this plan is also the least environmentally damaging. It offers a model of sustainability and local source water protection that can become an object of community pride. Furthermore, this plan is consistent with the adopted objective in the previously approved Community Water Supply Plan: "A multi-step, integrated water supply strategy."

We strongly encourage you to evaluate this combination of components as you prepare for the pre-application meeting with regulatory officials. We welcome the opportunity to work with you to come to agreement on population projections and safe yield analyses, upon which any plan must be based.

On behalf of the undersigned, and very truly yours,

Jeffrey B. Werner, AICP
Charlottesville-Albemarle Land Use Field Officer
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Components of the Plan

- Increase water storage capacity at Ragged Mountain Reservoir (RM) by proceeding with the initial increase of the dam, with the capability to raise it at a later date, incrementally as needed. Engineer and build the foundation to accept future increase in height.
- Build a pipeline from the South Fork Rivanna Reservoir (SFRR) to RM. Utilize this pipeline to move water from SFRR to RM reservoir during normal flow to keep RM at capacity and to provide raw water to the Observatory Hill WTP (OH). (During normal flow, approximately 97% of the SFRR flows over the dam.) During periods of low flow, release water back to SFRR to utilize its larger WTP capacity. If feasible, utilize the hydro-electric turbine at the SFRR to operate the pumps sending water to RM.
- Perform some level of maintenance dredging of SFRR to maintain or improve SFRR capacity. Review potential for a planned drawdown of the SFRR in order to facilitate “dry” excavation of sediment.
- Implement aggressive riparian buffer/stream restoration measures within the watershed to reduce the amount of sediment being deposited into the SFRR.
- Plan for drought-period release from Beaver Creek Reservoir. Evaluate potential modifications that will increase its storage capacity.
- Develop, adopt and implement a comprehensive Drought Management Plan well before effects of multi-year drought require mandatory restrictions. Monitor in-stream flow and groundwater levels. Utilize all available data to elicit proactive community response well before the onset of full drought conditions.
- Establish minimum in-stream flow values for the watershed. Refer to ongoing analysis by The Nature Conservancy.
- Develop a comprehensive, regional Water Conservation Plan to institutionalize water conservation measures across all sectors of our community.
- Review the practicability of installing auxiliary intake valves at lower levels in the RM and SFRR that would be available for use only during periods of drought.
- Review potential for increased storage at Chris Green Lake (CGL). Increase capacity at the North Rivanna WTP or construct a short pipeline from CGL to a tributary of the SFRR. In a drought emergency, if North Fork WTP lacks capacity to meet any deficits, CGL withdraw could supplement SFRR supply and be treated at SFRR WTP.
- Reevaluate projected demand and conservation rate. A more probable growth scenario, coupled with a modest 10% conservation rate—versus the 5% proposed by GF—results in reduction of demand by approximately 1.6 mgd.^{iv}

Practicability of the Proposal

- Increases the storage capacity at RM and utilizes the larger watershed of the SFRR to keep it full. With other components of the plan and in lieu of a James River pipeline, this pumped storage potentially eliminates the need for crest controls at the SFRR and the resultant environmental impacts.
- Keeps and improves existing, local infrastructure: all reservoirs, dams and treatment plants.
- Incorporates dam safety improvements at RM, which are already required. Permit for required spillway work can be a component of the larger plan.
- Keeps water resources within our jurisdictional control and within our own watershed. The James River pipeline alternative comes with the attendant and increasing risk of withdrawals being limited by the needs of other localities, especially during droughts. Eliminates concern for existing and emerging pollutants in the James River.
- Allows for versatility and redundancy in water delivery and treatment options by linking the SFRR and the RM by pipeline.
- A properly designed system (two-way) will allow water to be transported for storage at Ragged Mountain but also allow ready return of water to the SFRR system for treatment at the SFRR WTP. (Note: In lieu of pumping or to limit pumping, gravity could facilitate the transportation of RM water back to the SFRR. Current pool elevation at RM is 654.7 feet; at SFRR it is 382 feet.) This could eliminate the need for an expanded WTP at OH. While repairs and upgrades may be in order at OH, the costs for expansion may be avoided.

Cost variables to consider when comparing this plan with others:

- This plan includes a recommendation to design and build the foundation necessary to support a future increase in dam height at RM.
- This plan eliminates the need to increase capacity at OH WTP.
- Eliminates need to replace the Sugar Hollow-RM pipeline and the need to refurbish the Mechums River pump station.
- Costs for the approximately 10-mile SFRR-RM pipeline could conservatively be estimated at one-half the cost of pipeline from the James River to RM.
- Water treatment costs could be impacted by use of higher quality raw water. According to RWSA data, compared to the James River, raw water from the Rivanna watershed is less alkaline, has a lower level of TOC, and is lower in hardness and pH.^v

“Least Environmentally Damaging”

Known environmental impacts of this plan:

- 4.0 acres of wetlands would be inundated with a 45-foot increase at RM. (An estimated 0.23 acres of wetlands would be impacted by the James River pipeline.)
- There would be significantly fewer stream crossings of pipeline between SFRR and RM when compared with the James River option. (Approximately 30 crossings are estimated with the James River pipeline. A review of 1:24000 USGS maps suggests a SFRR-RM pipeline might impact two perennial streams and possibly two or three intermittent streams.)

This plan eliminates environmental impacts of some of the other plans:

- Allows maintenance of a more natural in-stream flow for the upper Rivanna Watershed (Moormans River and Mechums River) by abandoning the Mechum’s pump station and the Ragged Mountain/Sugar Hollow pipeline. This is cited as a concern by VDGIF and US Army Corp of Engineers.
- No further inundation of SFRR mitigates concern for wetlands and possible James spiny mussel habitat.

Signatories:

Advocates for Sustainable Albemarle Population (Charlottesville/Albemarle)

Jack Marshal, president (Albemarle)

Rich Collins (Charlottesville)

League of Woman Voters (Charlottesville/Albemarle)

Lois Rochester (Albemarle)

League of Woman Voters, Natural Resources Committee (Charlottesville/Albemarle)

Liz Palmer (Albemarle)

Voters to Stop Sprawl – Albemarle

Tony Vanderwarker (Albemarle)

Piedmont Environmental Council (Charlottesville/Albemarle)

Jeff Werner (Charlottesville)

Southern Environmental Law Center (Charlottesville/Albemarle)

Morgan Butler (Charlottesville)

Citizens for Albemarle (Albemarle)

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Piedmont Group of Sierra Club (Charlottesville/Albemarle)

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Rick Barnett (Charlottesville)

Friends of the Moormans River (White Hall)

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Citizens Against the Pipeline (Scottsville/Southern Albemarle)

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Jane Barbour

Richards Maxwell

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Letitia Swaine

Ann Morrill

Scott Morrill

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Sharon Cosselte

E Sykes Scherman

Jacqueline Broughton

(Fluvanna)

Judy Brown (Buckingham)

Albemarle Residents

Edgar Imhoff

Nathan Passen

Scott Neese

Hunter Price

Evelyn Edson

Ruth Klippstein

Thomas Klippstein

Mary Janet Fowler

Joan Rough

Katherine Brooks

Kirsta Weih

Susan Shafarzek

Helen Gratling-Austin

Kathleen Pond

Rex Linville

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Charlottesville Residents

Martha Levering
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William Hinckley
Renate Hinckley
Leslie Middleton
Robert Inlow
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Jim Respass
Patrick Punch
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Wendi J. Price
Erik Wilke
Kimberly Flash
Marianne Sullivan

Nancy Hurrelbrinck
Scott DeVeaux
Danielle Scott
Alyson H. Ball
Rebecca Barns
Chad Freckmann
John Foster

ⁱ Virginia Water Protection Permit Program Regulations provide that the permit applicant "must demonstrate to the satisfaction of the [State Water Control] board that practicable alternatives, including design alternatives, have been evaluated and that the proposed activity, in terms of impacts to water quality and fish and wildlife resources, is the least environmentally damaging practicable alternative." Reference 9VAC25-210-115

ⁱⁱ See proposed changes to Chapter 210, VA Water Protection Permit Program Regulation; 9 VAC 25-780. Local and Regional Water Supply Planning. Page 3, first paragraph. "...localities are required to review, revise, and resubmit their water supply planning program every 10 years." (<http://www.deq.virginia.gov/waterresources/pdf/watersupplydr.pdf>)

ⁱⁱⁱ In brief, "Integrated Resource Management" implies using and managing the environment and natural resources to achieve sustainable development

^{iv} Two sources suggest as unrealistic the (May 2004) Gannett Fleming projected 2025 demand for the Urban Service Area. According to the Virginia Employment Commission, the projected 2030 combined population for Charlottesville and Albemarle is 157,000. (GF cites the use of VEC projections in developing their demand forecasts.) According to NPA Data Services, in a 2004 estimate completed for VDOT's VTrans 2025 plan, the projected 2025 combined population for Charlottesville and Albemarle is 158,730. If the latter, higher estimate is assumed, a conservative 2025 population of Urban Service Area can be estimated by deducting the current population of Scottsville, Crozet and the Rural Area—approximately 48,000 people. This suggests a maximum population of 110,730 in the Urban Service Area for 2025. Gannett Fleming projects a population of 113,737. In other words, even with NO additional growth in Crozet, Scottsville and the County's Rural Area, employing a population projection that exceeds VEC estimates, the GF conclusions suggest an exaggerated analysis. If, by 2025, we conservatively assume Crozet's population will only increase from 3,000 to 6,000, Scottsville will remain unchanged and the Rural Area will gain approximately 11,000 new residents; approximately 14,000 new residents that will reside outside of the Urban Service Area. This suggests that in 2025, approximately 62,000 County residents will NOT reside in the Urban Service Area. The result is a conservative projection of approximately 96,730 people in the Urban Service Area. At 93 gallons per day per capita, 17,000 people equates to approximately 1.5 mgd.

^v RWSA memo, 3/2/2005, Response to Water Supply Inquiries, page 5, answer to question 22.

CC:

Mr. Ken Boyd, Albemarle County Board of Supervisors
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Ms. Sally Thomas, Albemarle County Board of Supervisors
Mr. David Wyant, Albemarle County Board of Supervisors
Mr. Lindsey Dorrier, Albemarle County Board of Supervisors
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Mr. Blake Caravati, City of Charlottesville City Council
Mr. Robert Schilling, City of Charlottesville City Council
Ms. Kendra Hamilton, City of Charlottesville City Council
Mr. William Brent, Albemarle County Service Authority
Ms. Judith Mueller, Public Works, City of Charlottesville
Mr. Mike Gaffney, Rivanna Water & Sewer Authority
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