

# RIVANNA WATER & SEWER AUTHORITY

695 Moores Creek Lane  
Charlottesville, VA 22902-9016  
(434) 977-2970

May 20, 2009

## REQUEST FOR PROPOSALS RWSA: RFP #08-03

**For:** PRELIMINARY FEASIBILITY STUDY: SOUTH RIVANNA  
RESERVOIR DREDGING

**Proposal Due Date:** June 17, 2009  
2:00 p.m., local time

**Mailing and Delivery Address:** 695 Moores Creek Lane  
Charlottesville, VA 22902-9016

**Procurement Contact:** Lonzy E. Wood  
Director of Finance and Administration  
(434) 977-2970, Ext. 198

**Technical Contact:** Charles E. Kent, P. E.  
Capital Projects Engineer  
(434) 977-2970, Ext. 201

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### **A. INTRODUCTION and PURPOSE, BACKGROUND, and SELECTION SCHEDULE:**

**Introduction:** The Rivanna Water & Sewer Authority (RWSA) is a regional non-profit corporation and political subdivision of the Commonwealth chartered in 1972 under the Virginia Water and Sewer Authorities Act (1950, as amended). RWSA supplies drinking water to and treats the sewage to an Urban Service Area that consists of the City of Charlottesville and certain areas designated by Albemarle County that surround the City. The RWSA is a wholesale agency with two customers that are the retail agencies: the City of Charlottesville's Public Utilities Division and the Albemarle County Service Authority. Existing raw water reservoirs for supply to the Urban Service Area include: the South Fork Rivanna Reservoir (dam built in 1966), the Sugar Hollow Reservoir, and Upper and Lower Ragged Mountain Reservoirs. RWSA also operates a "run-of-the-river" water supply intake on the North Fork Rivanna River that serves a portion of the Urban Service Area. RWSA operates a separate Beaver Creek Reservoir that currently has surplus supply available in an emergency only to supplement the Urban Service Area, but the Beaver Creek Reservoir is the sole long-term supply for a separate Crozet Service Area and is expected to be fully dedicated to that service area as its needs grow.

The South Fork Rivanna Reservoir stores raw water for treatment at the South Rivanna Water Treatment Plant and in the future is proposed to provide water for transfer to an enlarged Ragged Mountain Reservoir. River flow into the reservoir is from a drainage area, almost entirely within Albemarle County, of approximately 258 square miles, or approximately 36% of County lands. Large portions of this drainage area are forested (73%). The majority of the remainder is in agriculture (24%), with developed areas (1.4%) making up approximately half of the remaining acreage. Soil erosion from natural events, from land use in the agricultural area, from land disturbances in the developed areas, and from re-suspension of flood plain deposits created during the 19<sup>th</sup> century (stream bank erosion), are likely the causes of significant amounts of sediment becoming trapped within the reservoir. The initial

design of the reservoir anticipated the accumulation of these sediments, and a significant portion of the total volume of storage was designated for this purpose.

Water demand within the Urban Service Area is approaching the safe yield of the water supply contained within the three reservoirs (South Rivanna, Sugar Hollow, and Ragged Mountain), prompting RWSA to pursue its Community Water Supply Plan (CWSP) to assure adequate drinking water supplies for the next 50 years. Gannett Fleming Engineers and Vanasse Hangen Brustlin, Inc. (VHB) were the lead consultants assisting RWSA with development of the Plan. The final CWSP was developed following many years of studies and intensive public involvement in a community-wide decision making process. Expansion of the Ragged Mountain Reservoir, to provide a five-fold increase in raw water storage within the Ragged Mountain reservoir system, and a raw water pipeline from South Rivanna Reservoir, were selected along with other elements of the CWSP, as the “least environmentally damaging, practicable alternative” for assuring the 50 year water supply.

Joint permit applications for the recommended alternative in the CWSP were prepared by Gannett Fleming and VHB, and were filed with the Virginia Department of Environmental Quality and with the US Army Corps of Engineers in June, 2006. Environmental Permits to implement the CWSP were issued by DEQ in February 2008 and the Corps in June 2008. Environmental mitigation requirements of these permits include wetlands mitigation, stream restoration, and in-stream flow releases into the streams downstream of each of the dams impounding water for the Urban Service Area.

As part of the selection process which led to creation of the CWSP, dredging of sediments from the South Rivanna Reservoir was considered as a water supply alternative, but was not selected as the preferred alternative for purposes of the CWSP. However, dredging outside of the CWSP was retained as a possible future project and interest in dredging has been maintained by interests within the community. In June 2008 the City of Charlottesville and Albemarle County Board of Supervisors asked that the feasibility of dredging the South Fork Reservoir be evaluated in a resolution that also reinforced support for the implementation of the preferred alternative of the CWSP. Shortly afterward a task force of thirteen citizens was convened to provide RWSA additional input on the scope of a feasibility study, and the task force provided a report to a joint meeting of four local boards in March 2009. Recommendations of the task force are summarized in a “Bullet Summary of Task Force Recommendations” (attached to this RFP as Exhibit A) and include legal advice on the viability of removal of present and future wetlands created by present and future sedimentation, feasibility of constructing a forebay for the reservoir to capture future sediment, maintaining a dialogue on recreational uses, continuing efforts to slow future sedimentation, studying effective management options for hydrilla, and “selective dredging” of the reservoir. A minority report was also published that affirms some of the task force recommendations but calls for a more comprehensive study of “varying degrees” of dredging the reservoir in contrast to “selective dredging”. At the March 2009 meeting the four local boards agreed to support the first five bullets on the “Bullet Summary of Task Force Recommendations”, and while there was no complete consensus among the four boards on the extent of dredging to be explored by a feasibility study, there was an interest by several members of those boards, including a consensus among City Councilors, to evaluate dredging feasibility for the purpose of restoring as much of the original water supply pool as practical. This RFP is being pursued in response to these discussions, to understand the feasibility of dredging and expected costs sufficient to make public decisions if dredging is in the public interest, and if so, how to proceed with budgeting, financing, design and implementation. This RFP requests qualified firms to conduct a feasibility study for restoring as much of the original water supply pool of the reservoir as practical, and to address the extent of further steps that should be taken now if continued dredging is desired in the future as further sediment enters the reservoir or a forebay area. This request also asks for an evaluation of the feasibility of a forebay area. Further studies may also address “selective” alternatives, which may be defined and added at any phase of the prosecution of the work under this RFP.

**Background:**

**Available Reference Materials:** A number of studies have been carried out and reports have been issued related to sediments in the Rivanna Reservoir watershed:

- South Fork Rivanna Reservoir and Watershed: Reflecting on 36 years, Anticipating 50 years. Stephen P. Bowler, spring, 2003.
- Bathymetric Surveys: 2002, 2001(digital format); 1994, 1988, 1980, 1976 (paper).
- Topographic maps of reservoir area prior to construction.
- Numerous documents and presentations on alternatives for Community Water Supply, including a Technical Memorandum on concept-level alternative analysis of Dredging the South Fork Reservoir, prepared in December 2004.
- Joint Permit Application for the U.S. Army Corps of Engineers No. 06-1574
- Permit Support Document  
Community Water Supply Project  
May 17, 2006, Gannett Fleming and Vanasse Hangen Brustlin, Inc.
- South Fork Stewardship Task Force Report, January 2009 and its appendices, and the Minority Report

**Proposal Requirements:** The proposal package should demonstrate, but not be limited to:

- Experience performing designs and construction engineering for appropriate-scale dredging projects, with some experience in non-coastal reservoir dredging for water supply preferred. Access for consultation during the study with contractors who have successfully completed several appropriate-scale dredging projects similar in nature to the South Fork Reservoir is also preferred.
- Qualifications and experience of key staff.
- Familiarity with laws and regulations of the Commonwealth and the federal government with regard to dredging and spoils transport and disposal, to include related issues such as land use or acquisition, federal, state, and local permitting issues, and public education and support to include logistical issues.
- Availability of key staff to perform this work in a timely manner.
- Innovative ways to expedite the project to reduce the overall project costs, including but not limited to the services available from university research, government agencies, or other sources that may provide data needed at a lower cost of investigation.
- Firm's general approach to the scope of services.
- Timeliness, ability and/or methodology to be used to respond to task orders as presented.
- A minimum of ten client references with current contact information, focused on examples of similar current or past projects.
- Other background or information as determined by individual firms.
- Proposed method of determining fees for professional services.

The Scope of Services is provided in Section C.

The Request for Proposal (RFP), plus the resulting agreement, shall be consistent with and governed by the Virginia Public Procurement Act (VPPA) and the Rivanna Water & Sewer Authority Purchasing Regulations.

**Selection Schedule Process:** As a guideline, the Rivanna Water & Sewer Authority anticipates the following timetable for selection of Engineering Firm to perform this work:

1.	Request for Proposal Issued	May 20, 2009
2.	Submission of Proposals (Part 1)	June 17, 2009
3.	Interviews (Part 2)	On or after July 14, 2009
4.	RWSA Board approval of Contract Award	Estimated July or August, 2009
5.	Award of Contract	After approval by RWSA Board

## **B. GENERAL PROVISIONS:**

**Submission of Proposals:** Sealed proposals to provide professional engineering services to conduct the **South Rivanna Reservoir Dredging Feasibility Study** will be received by the Rivanna Water & Sewer Authority until **2:00 p.m., June 17, 2009**. Fourteen (14) copies may be either mailed, hand delivered, or express mailed to: 695 Moores Creek Lane, Charlottesville, VA 22902-9016.

Each proposal must be sealed and properly identified as specified herein and include a return address.

The lower left corner of the envelope should include the following:

RFP #08-03  
SOUTH RIVANNA RESERVOIR DREDGING FEASIBILITY STUDY  
June 17, 2009 2:00 p.m.  
*NAME OF FIRM*

**Late Proposals:** It is the responsibility of the firm to ensure that the Rivanna Water & Sewer Authority receives the submittal by the proposal due date and time. No submittals or modifications to submittals will be accepted after the proposal due date and time. Late proposals will be unopened, rejected, stored for 60 days by RWSA, and then disposed of or returned at firm's expense.

**Acceptance or rejection of proposals:** The Rivanna Water & Sewer Authority reserves the right to waive informalities in proposals, to reject any or all proposals after all have been examined or to accept the proposal(s) of the offeror(s) which it deems most favorable to the interests of the Rivanna Water & Sewer Authority in accordance with the VPPA.

**Inquiries: The Rivanna Water & Sewer Authority will assume no responsibility for oral instructions or interpretation.** Any procurement questions regarding this solicitation that may change the specifications in this RFP must be received in writing at least seven days prior to the proposal due date. Inquiries must identify the RFP by title and due date. The Rivanna Water & Sewer Authority reserves the right to issue written addenda to any inquiries that alter the scope of the proposal. Technical questions with the Rivanna Water & Sewer Authority concerning this solicitation may be made by contacting Charles Kent, P. E. Questions regarding the procurement process should be addressed to Lonzy Wood. Contact information is included on the first page of this RFP.

Interested firms may visit Rivanna facilities at their own cost to view the facilities covered in this request. Appointments are required and can be obtained by contacting David Golladay, Water Manager, at (434) 973-5709.

**ADA reasonable accommodation clause:** If you need any reasonable accommodation for any type of disability in order to participate in this procurement, please contact the Rivanna Water & Sewer Authority at (434) 977-2970 Extension 0 to make arrangements.

**Two Part Process:** This Request is for Part 1 of a two-part Request for Proposal to hire a dredging consultant/engineering firm. See section D for clarifications. Offerors who do not submit information for Part 1 will not be considered for Part 2. The Rivanna Water & Sewer Authority will be the sole judge as to which firms it will interview for Part 2.

**Proprietary Information:** Proposal sections containing trade secrets or proprietary information submitted by an offeror in connection with a procurement transaction shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the offeror must invoke the protection of this section prior to or upon submission of the data or other materials, and must identify the specific data or other materials for which protection is being requested and state one or more valid and legal reasons why such protection is appropriate.

**Insurance:** The selected firm shall provide certificates of insurance coverage, pay premiums and keep in force until the expiration of this contract the following policies (*minimum coverage amounts listed*):

General liability - \$1,000,000 primary and \$2,000,000 excess.

Professional liability - \$3,000,000 aggregate  
Auto liability - \$1,000,000 aggregate  
Workman compensation coverage as required by Virginia Statute.

All subcontractors must maintain workman compensation insurance as required by Virginia Statute.

**Non-discrimination:** Rivanna Water and Sewer Authority does not discriminate on the basis of race, religion, color, sex, national origin, age or disability, or against faith-based organizations as defined under the Virginia Public Procurement Act on the basis of such organization's religious or charitable character.

### **C. SCOPE OF SERVICES**

The goal of this project is to evaluate the feasibility of dredging the South Rivanna Reservoir sufficient for public officials to determine if it warrants proceeding with a commitment to budget and finance the design, property commitments, and construction. Accordingly, cost estimates need to be within accuracy expected at the "preliminary design" level based on market conditions in the month the estimates are completed, with clear logistical direction such that estimated cost cover all major logistical issues within the study's recommendations to the fullest foreseeable extent at time of preparation. It is the intent of RWSA to permit firms to be as innovative as possible and alternative approaches to the following scope will be considered if it is thoroughly explained how such alternative approaches achieve RWSA's purpose. The use of subconsultants for technical surveys and analyses is encouraged, particularly if it can reduce overall project costs, provided the consultant maintains overall direction and coordination to assure the completed product meets RWSA's objectives. It is suggested that proposals include a means of addressing each of the following:

**Technical Support for Legal Opinion on Wetlands:** This task supports RWSA with technical information in defining to what degree permitting is feasible and steps involved in dredging sediment that has or is likely to remove areas that have become wetlands or jurisdictional areas under Section 404 of the Clean Water Act.

**Bathymetric Survey:** This task includes understanding the current bathymetry of the reservoir in sufficient detail to provide a reliable estimate of what volume of sediment needs to be removed within the water supply pool by dredging and where it is located within the reservoir. A new bathymetric survey of the South Rivanna Reservoir is anticipated. The final work product will include digital and paper documents showing submerged topographic contours of the reservoir.

**Pre-Dredge Survey:** This task will supplement the bathymetric survey with information concerning potential barriers to efficient dredging operations (e.g., high stumps with sediment beds, hard rock shoals which would impede movement of dredge from one location to another, low bridges which would impede dredging equipment access or require lowering of reservoir in order to pass beneath, etc.). The final work product will be a report and map showing any factors which will impede efficient dredging operations, along with recommendations for the most cost efficient means of overcoming these barriers, if feasible. This report should also include an analysis of whether there are any areas where sediments can be efficiently removed at relatively low unit-cost, and areas that may result in high unit costs.

**Volume Analysis:** This task includes computation of the volume of South Rivanna Reservoir using the newly generated bathymetric survey data, along with estimation of "recoverable" total and useable storage volumes. Factors identified in the pre-dredge survey of barriers to efficient dredging should be incorporated into the analysis of recoverable volume, with relative costs associated with increasing quantities of sediments removed. This discussion should also include areas of low unit-cost removal, with the extent and estimated volume of sediments which can be removed from these areas. It may also include areas within the water supply pool where dredging is not recommended due to high costs or other barriers, if appropriate.

**Sediment Analysis:** This task includes creation of a plan to sample sediments at a number of locations sufficient to adequately characterize the material(s) with regard to engineering and agricultural characteristics. This plan will also include testing of sediments to determine whether regulated concentrations of organics and or inorganics exist within the sediments in sufficient quantity to require special handling by a dredging contractor. Analysis should include marketability of materials for use as structural or non-structural fill, or as a soil amendment.

**Processing and Disposal Site Analysis:** This task includes evaluation of potential processing and disposal sites for dredged spoils; a minimum of four potential disposal sites will be identified for more detailed investigations that include contacting the property owner and on-site investigations. Through discussions with the property owner, the consultant will determine the extent to which the property owner is interested in the use of the subject site for processing and/or disposal as well as the extent to which the property owner is willing to make commitments, the property owner's terms and conditions, and the property owner's limitations. The consultant will also identify for RWSA essential needs in site use for a successful project that remain uncommitted or contingent. Cost estimates are to be prepared for each site identified, along with an analysis of all major logistical factors including but not limited to pumping and trucking needs to use the site, method of dewatering, suitability of existing roads and need for additional roads for heavy trucks, clearing of trees required, facilities required for dewatering of sediment, neighborhoods which will be affected, size and number of trucks required to efficiently utilize the site, expected repairs to roads used to haul spoils, final site dress-up, site limitations due to environmentally sensitive areas including jurisdictional areas under Section 404 of the Clean Water Act, limitations on stockpiling of material due to local codes and ordinances, permitting requirements (including federal, state, and local) etc. Limitations on the use of the site by property owners, as well as all additional requirements or contingencies necessary to use the site shall also be identified and included in the cost estimate. If any potential costs cannot be estimated to a level of "preliminary design", the risks and a probable range of costs shall be developed.

**Dredging Alternatives Analysis:** This task includes an analysis of issues and proposed sequence of events whose purpose is to remove as much sediment as practical from within the water supply pool of the South Fork Rivanna Reservoir using the alternative processing and disposal sites discussed above. The recommended dredging method and type of equipment, schedule, means of addressing public concerns, and other important logistical considerations shall be summarized in a report, as well as cost estimates. Included in this analysis will be Federal, State and local permits required, benefits to water supply from implementing the alternative, expected impacts to reservoir shoreline and costs for restoration of reservoir banks, and annual operation and maintenance costs. As this analysis is performed, the Virginia Department of Game and Inland Fisheries should be contacted for advice regarding how the dredging operations may affect the spread or control of hydrilla in the reservoir, short-term as well as long-term. RWSA reserves the right at any times to request additional alternatives to look at a defined "selective dredging" scenario for which additional fee and scope would be negotiated.

**Forebay Analysis:** This task includes analysis of the bathymetry results and pre-dredge survey results at the upper end of the reservoir, and available topographic information just upstream of the reservoir, as part of an analysis to determine if and to what extent a "forebay" area for the South Fork Rivanna Reservoir is feasible for capture of future volumes of sediment that would likely settle in the reservoir after dredging is performed. The analysis should include identifying a proposed layout to include surface area and depth or forebay based on sediment size and the wide variety of storm events likely to occur in the future, an estimate or range of estimates of the potential effectiveness of a forebay (percent capture), identification of wetland and stream impacts, endangered species, or other 404 jurisdictional impacts, depth and methods of excavation beyond dredging such as rock blasting. If a forebay is considered feasible, the report should discuss logistics of construction such as access, type of equipment required, noise and other public concerns, and provide an estimate of project costs. The use of a "forebay" within the existing footprint of the reservoir should also be considered, if feasible.

**Miscellaneous:** In addition to the services listed above, ancillary services will need to be provided in the following areas:

**Related Services:** Other related work items may include, but are not limited to, the following:

- Meetings with Public. Attendance at one or more public meetings to summarize the work and to receive public comment. A schedule for such meeting(s) will be coordinated with RWSA and may be requested by RWSA as deemed appropriate during study progress.
- Monthly Reports. General project management during design to include monthly written reports and timelines for RWSA Board of Directors meetings.
- Final Report. A final report summarizing all important findings of the dredging feasibility study.

**Additional Services:** Certain additional services, as needed, may be authorized by RWSA. If Additional Services are requested, additional work scope and fee will be negotiated prior to authorization. These additional services may include:

- Preparation of Dredging Plans and Specifications. This task includes producing a bid-ready set of documents so that a dredging project can be bid and carried out by a dredging contractor.
- Construction Monitoring. This task includes monitoring of the dredging project during progress of the work to assure that specifications are being followed and that removal targets are being met.
- Other Technical Assistance or Public Information. This includes ancillary tasks that become necessary to implement the completion of a dredging project.

A basis for determining the costs for any additional services will be addressed in the negotiation stage, or as the need arises.

**Final Determination of Scope of Work:** The final contract will be negotiated to include any of the work items listed above. Only work authorized in a specific Work Authorization will be carried out. The RWSA reserves the right to modify the scope of work, including the possibility of eliminating some tasks, in order to serve the best interests of RWSA, the City of Charlottesville, Albemarle County, and the Albemarle County Service Authority.

#### **D. SELECTION PROCEDURE**

This Request for Proposals is divided into two parts:

- Part 1 – Submission of the Experience and Qualification proposals; and
- Part 2 – Interviews and presentations from Part 1 short-listed firms only.

In general, the following process will be followed in the selection of the engineering firm for the Dredging Feasibility Study:

##### **Part 1:**

1. Statements of the firm's experience and qualifications must be submitted in the form defined under SUBMITTAL REQUIREMENTS (Section E).
2. A Selection Committee composed of management and technical personnel will evaluate and rank the firms.

##### **Part 2:**

3. Based on the results of the Part 1 process, the highest ranked firms will be invited to make a presentation to the Selection Committee. The Selection Committee will conduct formal interviews with these firms.
4. The Selection Committee will evaluate and rank the firms in order to identify the firm whose professional qualifications and proposed services are deemed most meritorious.

In compliance with VA Code 2.2-4301, negotiations shall then be conducted, beginning with the top ranked offeror. If an agreement, satisfactory and advantageous to the Rivanna Water & Sewer Authority can be negotiated with conditions considered fair and reasonable, the award shall be made to that offeror. Otherwise, negotiations with the offeror ranked first shall be formally terminated and negotiations conducted with the offeror ranked second, and so on until an agreement can be reached.

The Selection Committee shall recommend the selected firm to the RWSA Board of Directors for Award of Contract.

## **E. SUBMITAL REQUIREMENTS**

The Rivanna Water & Sewer Authority seeks professional environmental engineering firms having the experience, qualifications, and qualities described herein. Proposals should be clear and concise, avoiding excessive content and unrelated work samples.

**Submittal Content – Part 1:** The proposal submittal shall contain at a minimum the following information presented in the following order:

1. The firm's proposal should list the ten (10) most relevant projects completed by the firm, and the three (3) most relevant projects completed **using substantially the same team as proposed for the current project**, within the last five years. Provide short descriptions, dates and client references (including client contact person, address and phone number) for these representative projects. Describe the scope of services provided for each project. Documented experience is required in the planning, site evaluation, permitting, and design of stream and wetland mitigation plans.
2. Summary qualifications of key individuals (and office location for each) to be assigned to the work. A Project Manager must be assigned. Full resumes may be attached as an appendix. Resumes must exhibit qualifications and experience of the individual in the type of work to be conducted with emphasis on projects similar in nature to the work expected in this study. A member of the project team must be a licensed Professional Engineer in the Commonwealth of Virginia.
3. List the outside services to be used. Describe the anticipated scope of work by sub-consultants and how they will be coordinated.
4. Show that the firm has a working knowledge of the regulations and processes of the Virginia Department of Environmental Quality, United States Army Corps of Engineers, Virginia Department of Conservation and Recreation, Virginia Department of Health, Virginia Marine Resources Commission, Rivanna Water & Sewer Authority, and Albemarle County. Explain applicable experience with each agency.
5. Evidence of required insurance coverage:
  - General liability - \$ 3,000,000
  - Professional liability - \$3,000,000
  - Auto coverage - \$ 1,000,000
  - Workers comp. - Statutory

The successful firm's insurer must issue annually a certificate of insurance and name the Authority as an additional insured with respect to all liability coverages.

**Submittal Content – Part 2:** Expectations of firms invited to participate in Part 2 of this selection process should be prepared for the following:

1. Presentation by Firms and Formal Interview. Presentation should depict how the project team will be organized to accomplish the work and where they will be located. Demonstrate the availability of resources for the successful completion of the study and its individual work sub-tasks, including office locations and percentage of time that the project manager and staff members will be allocated to the study. Question and answer period.
2. The presentation should also include discussion of the approach to carrying out the design. The firm should effectively demonstrate that it has given significant thought and effort to the proposed scope of services and should provide specific suggestions and improvements or alternative means of more effectively and/or efficiently achieving RWSA's desired end product as well as specific tasks anticipated to reach the end product.
3. Provide non-binding costs estimate for carrying out all necessary engineering functions.

The Rivanna Water & Sewer Authority reserves the right to award this contract on the basis of proposals received (Part 1) without formal presentations or interviews as stated in Part 2.

**F. CONTRACT TERM**

The awarded contract shall be effective for the extent of the project awarded. All contracts must be reviewed by the Authority's General Counsel and approved by the Board of Directors for execution by the Executive Director.

EXHIBIT A  
BULLET SUMMARY OF TASK FORCE RECOMMENDATIONS

Qualification of Task Force Recommendations: “. . .consistent with the Task Force mandate which places the fundamentals of the Water Supply Plan beyond the Task Force purview. .”

Task Force Recommendations:

- Investigate if inflowing sediment will likely create new wetlands and if so, seek legal counsel and engineering advice toward understanding if these wetlands can be removed by permit under federal and state law at some future date when water storage beyond the storage currently permitted at Ragged Mountain is needed.
- Investigate technical feasibility (including effectiveness and probable cost) through a consultant, and the permitability through discussions with federal and state agencies, of constructing a sediment forebay for the reservoir.
- Maintain a dialogue with the University of Virginia and “recreational users” of the South Fork Reservoir on conditions that inhibit future rowing and “recreational pursuits”, and discuss maintenance programs that may correct such conditions to the extent the financial investment required for maintenance is considered “important”.
- Continue “Community” efforts to reduce sediment and pollutants entering the Reservoir, to include “strengthening and enforcing” water protection ordinances and programs “such as those of the Thomas Jefferson Soil & Water Conservation District.”
- Continue to monitor growth of hydrilla and study effective management options.
- Investigate “selective dredging” when “decision makers” conclude that benefits may be “worth the cost” by:
  - Developing a map identifying priority areas and cleared depths for recreational uses;
  - Identify areas for selective dredging to prevent wetland creation from sedimentation;
  - Identify physical obstacles (e.g., tree stumps) to selective dredging of reservoir;
  - Undertake bathymetric surveys “in the critical areas for [selective] dredging”;
  - Take and analyze sediment core samples “in the critical areas for [selective] dredging”;
  - Identify access, staging, and dewatering areas for selective dredging;
  - Explore “opportunistic dredging” based on attractiveness of “market conditions”;
  - Estimate impact and duration of selective dredging on residents and aquatic habitat, and assess prevention, preparedness and response measures for water quality and treatment impacts.
- Determine in relation to other infrastructure financial priorities if the public interest is served by issuing a Request for Proposals for “removal of sediment”.