

**DRAFT Meeting Summary**  
**Technical Advisory Committee**  
Rivanna River Basin Commission

November 17, 2009 9:00 am– 12:00 pm  
Ivy Creek Natural Area, 1776 Earlysville Road, Charlottesville

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**Technical Advisory Committee:**

Tamara Ambler (RWSA)  
Darren Coffey (Fluvanna County)  
Missy Creasy (City of Charlottesville)  
Joanna Curran (UVA)  
Louise Finger (DGIF)  
Greg Harper (Albemarle County)  
John McClain (VDOT)  
John Murphy (StreamWatch)  
Gregor Patsch (Albemarle County)  
Kristel Riddervold (City of Charlottesville)  
Alyson Sappington (TJSWCD, TAC Vice Chair)  
Todd Scalon (UVA)  
Jeff Sitler (UVA)

**Commission:**

John Martin  
Marvin Moss (RRBC Chair)  
Robbi Savage (RRBC Vice Chair)  
Sally Thomas  
Leslie Middleton (Executive Director)  
Rose Brown (Recording Secretary)

**Guests:**

Joe Battiata (Center for Watershed Protection)  
James Fulcher (FieldWorks)  
Daniel Michaelson (UVA)  
Steve Williams (TJPDC)  
Erin Yancey (TJPDC)

**1. Introductions**

Alyson Sappington reported that Sam Austin was unable to attend and had asked her to chair the meeting. Introductions were made.

**2. Review and adopt meeting agenda**

Marvin Moss requested that Agenda Item 10 [Announcements from the Commission] be moved up to before the presentation on nutrient trading. John Murphy observed that the agenda included several presentations and no science discussion and that he hoped that a future meeting

would include a discussion of the primary drivers of watershed health. Leslie Middleton reported that the January 12, 2010, TAC meeting will help bring some focus to these questions. Jeff Sitler requested five minutes to discuss a funding proposal, and Alyson Sappington agreed to add this to the end of the agenda.

### **3. Review and approve TAC Meeting Summary September 15, 2009**

The September 15, 2009 summary was approved without changes.

### **4. Adopt meeting days for 2010 meetings**

Those present agreed to the following meetings dates in 2010, roughly quarterly, all Tuesday mornings from 9am – noon: 3<sup>rd</sup> week of February, May, September, and November. In addition, the TAC planning meeting will be held at Albemarle County Office Building on January 12, 2010 (with January 26 as a back-up date). Alyson Sappington invited any TAC members to provide input on the organization of the meeting.

### **5. Update on Land Cover Map (Greg Harper)**

Greg Harper gave a brief overview of the Land Cover Map. A couple of years ago, John Murphy became interested in obtaining this kind of map to better understand the correlation between stream health and land cover. StreamWatch, along with other interested partners, including The Nature Conservancy, RRBC, and Albemarle and Fluvanna counties, decided to procure such a map that will provide detailed (1-meter resolution) views of land cover in the localities. Worldview Solutions is creating the map using 2009 aerial photo data and showing the following categories of land cover and use: deciduous forest, evergreen forest, open land, water, impervious surface, forest harvest, pine plantations, bare earth, golf course, orchard/vineyards. StreamWatch will be using this map to in the Land Use Effects study.

The localities will be able to use the land cover data for a variety of uses, such as deriving stormwater utility fees. The map will be available to the public. The delivery date from WorldView is now December 7, 2009. Leslie Middleton reported that Greene County might use the land cover map in their upcoming Comprehensive Plan. Kristel Riddervold asked if there is a way to do an analysis comparing current land use to historic maps. Greg said it would be difficult to compare 2009 with 2007 because the 2007 aerial images were flown half leaf-on and half-leaf-off. John Murphy said that in the past there were no consistent ways to measure land cover and land use. Old aerials are available (from the 1930s through the present), but a methodology for making comparisons would have to be created and could be difficult. In addition, the older maps have lower resolution.

### **5. Presentation: StreamWatch 2009 Report (John Murphy)**

John Murphy stated that the 2009 Stream Conditions Report was released about 6 weeks ago. From now on, this will be an annual report. The report is available online at <http://www.streamwatch.org/stream-conditions>. Twenty-eight per cent (28%) of the Rivanna long-term monitoring sites meet the Virginia aquatic life standard set by the Department of Environmental Quality (DEQ). There have been no major changes at representative sites over the last six years of monitoring. Though StreamWatch believes that the sites selected are representative and the data that are being collected are useful in gauging long-term stream health, the StreamWatch methodology would not necessarily reflect early stages of any trend. The sites

selected for local “reference condition sites” are significantly healthier than even the healthiest of the representative sites.

StreamWatch continues to gather data about possible impacts in watersheds, such as particle size, bacteria, and cattle density. John showed how Google Earth is being used to conduct cattle counts for the Land Use Effects study to be released in the spring (2010), noting that the data should be considered “relative cattle density” as opposed to an exact count. Leslie Middleton asked if the TAC should contribute to the discussion about future monitoring sites and methods of choosing sites. John stated that the StreamWatch method has been effective for selecting sites and that TAC guidance will not be needed at this time. Using this method, StreamWatch will expand the number of representative sites in the next couple of years. StreamWatch biological monitoring probably cannot pick up very small changes in the watershed, such as 0.5% increase in impervious surfaces and that it is difficult to predict if there will be an (observable) incremental response at some particular point of stream degradation or watershed development. Louise Finger noted that standards for water quality might not be high enough to detect more subtle degradation. John stated that StreamWatch reports on stream health using DEQ’s standard and DEQ’s metrics. Sally Thomas noted that localities will soon be dealing with the Chesapeake Bay TMDL and asked if any StreamWatch studies include phosphorous and nitrogen. John reported that StreamWatch does not collect phosphorous or nitrogen data. However, the StreamWatch Rivanna database that StreamWatch has been developing does include other types of water monitoring, including monitoring for nutrients. And that StreamWatch data could be used as supplemental information for certain aspects of the TMDL. John also stated that some TMDLs are now keyed toward land use and imperviousness.

## **6. Presentation:**

### **Sediment Transport in the Rivanna (Todd Scanlon, PhD/UVA)**

Todd Scanlon explained that his research deals primarily with watershed hydrologic modeling and offered a brief description of various aspects of his research. For many years, overland flow has been thought to be the dominant mechanism for phosphorous transport, and this has driven efforts at remediation. However, the research is starting to show that there is not a close link between phosphorous discharge, overland flow, and phosphorous concentrations. On the other hand, shallow subsurface storm flow (flow that occurs in the top 1-meter of soil) is linked closely with phosphorous concentrations. Another contradiction to the concept that overland flow is the dominant mechanism is that near-stream areas are sometimes enriched with phosphorous. Subsurface transport of phosphorous could help explain why riparian buffers can be ineffective in reducing phosphorous flow. Tamara Ambler asked where the monitoring physically occurs, and Todd replied that it has been in-stream monitoring.

Another aspect of Todd’s research is measuring mercury in streams. There are statewide advisories for mercury in many New England states resulting from acid deposition of mercury from coal-fired plants (in Virginia, from as far away as China). Marvin Moss asked if some states are monitoring more than others. Todd replied that that is a possibility because monitoring programs are developed by each state, not by the federal government. There are three automatic samplers in Shenandoah National Park to measure mercury in the air and in soils. In spring, vegetation accumulates mercury, and during other seasons, it is released into the atmosphere. Jeff Sitler noted that about a year ago, EPA re-evaluated regulations for boilers that use coal in order to address the amounts of mercury being discharged. Within this next year, EPA will be

releasing potential new controls and regulations. Robbi Savage noted that the Quicksilver Caucus was a national coalition formed in 2001 to reduce mercury concentrations in the environment.

Todd Scalon then described his sediment research in the Rivanna basin. He and Dan Michaelson, a 4<sup>th</sup> year UVA student, have been analyzing 1990 – 2005 data from 21 sites in the Rivanna basin. (Data were mostly collected by DEQ.) The average Total Suspended Solids (TSS) is not an adequate measure of sediment transport, because it has to do mostly with when sample was taken. After storm events, TSS is higher than before storm events. Discharge is factored in to get the actual sediment transport. Todd and Dan have used discharge data from the discharge gauge nearest to each assessment site. Since there are only two discharge gauges, some assessment sites are relatively far from the gauge. It is assumed that there is some error from this method, but there is no other option at this time.

Sediment Yield (SY) is tons of sediment that pass a point per year. SY tends to increase with discharge area. Specific Sediment Yield (SSY) is tons of sediment per hectare per year. SSY tends to decrease in larger catchment areas. It is presumed that the sediment is being deposited somewhere downstream from where it enters the stream. However, in the Rivanna River basin the trend is just the opposite: SSY increases in larger catchment areas. Also, the Rivanna River basin shows less overall sediment than other watersheds of similar size. John Murphy noted that the mainstem of the Rivanna River is incised and that perhaps there is not an opportunity for deposition downstream. Gregor Patsch asked if overall slope of the watershed is a factor. Dan Michaelson replied that he and Todd would be considering slope, elevation, land use, soil type, and precipitation. Todd stated that other upcoming research includes; determining where sediment is deposited; relating SSY to benthic data; and looking for changes in SSY over time (by comparing with pre-1990 data).

#### **7. Announcements from the Commission: Bylaws changes**

Marvin Moss advised the TAC to read the Bylaws changes and discuss at the next TAC meeting if necessary. Robbi Savage noted that the RRBC wants to have a close relationship with the TAC and does not want to interrupt any of the good work of the TAC. Leslie Middleton apologized for the fact that these changes were made to the Bylaws without consulting the TAC. She stated that the changes are relatively minor, but if the TAC feels strongly about amending any of these, the TAC can make recommendations back to the RRBC. The recent changes to the Bylaws that affect the TAC are:

- Term lengths (2-year, renewable)
- Number of non-TAC staff (unlimited)
- Commissioner liaison (includes the Vice Chair as well as the Chair)

#### **8. Presentation: Nutrient Trading and Offset Programs (Joe Battiata/Center for Watershed Protection)**

Joe Battiata stated that the Center for Watershed Protection (CWP) has been discussing a Nutrient Trading program for over a year, posing these questions: What if all new development minimized its impact? What if all new development had no impact? What if all new

development had a positive impact? The VA Stormwater regulations proposed in 2005 were impossible to implement, and there was an overwhelmingly negative response, resulting in significant redesign. In addition, interests that wanted a vehicle to create a market for nutrient offsets promoted House Bill 2168. The Department of Conservation and Recreation (DCR) then had to develop guidance for stormwater non-point nutrient offsets. There were negative responses from the community. Proposed stormwater regulations were altered to allow for special circumstances. During the development of regulations, the discussions held by the advisory committee were not cohesive, and there was not a final determination of recommendations. Toward end of development, there were compromises and discussions to bring the advisory committee together. In late 2009, regulations were adopted and immediately suspended. This gave the community an opportunity to make comments on the recent set of changes. If the regulations are adopted, they will be in effect starting July 2010. Localities will have up to 18 months to implement the new regulations.

Joe Battiatia said that the old regulations made it impossible to pursue “ultra-urban” development, and the new regulations provide more tools for these types of developments. Nutrient offsets create a mechanism for targeted development. Joe then went through a chart showing how local programs can be developed. The nutrient buy-down program applies only to localities in the Chesapeake Bay watershed. For localities outside of the Chesapeake Bay watershed, remediation must be done on site. If a locality has a nutrient buy-down program, the developer must use it. The funds that go to DCR from stormwater fees will be used in various ways, such as for local stormwater projects, agriculture BMPs, and other projects.

Joe stated that localities have the opportunity to use these funds to complete the priorities of the individual watersheds. Leslie Middleton asked if there are other groups similar to the RRBC that are considering creating a local program. Joe replied that some are considering it, but none have made the same amount of progress as the RRBC. The CWP wants to encourage collaboration at a watershed scale. CWP expects that those operators (of waste treatment plants) involved in nutrient credit exchange programs will object to the new regulations, and CWP hopes to provide DCR with potential responses to those objections.

## **9. Presentation:**

### **VDOT Stream Restoration & MS4 Compliance (John McClain/VDOT)**

John McClain explained that VDOT has its own individual MS4 permit and does not fall within a general permit. VDOT has implemented new programs and requirements in order to manage stormwater. However, most of VDOT’s Erosion and Sedimentation (E&S) monitors were recently laid off. All VDOT inspectors are now expected to do their own E&S inspection. As mitigation for some projects, VDOT has restored streams, constructed mitigation banking sites, and purchased stream restoration credits. John then gave details and showed pictures of several restoration projects. As part of the restorations, VDOT has also dealt with non-native invasive species management.

Alyson Sappington asked about the final cost of the South Fork Rockfish River restoration. John stated that the project cost \$250,000. Original estimates were \$1 - \$2 million, but VDOT lowered costs by hiring their own equipment and managing the project themselves. Leslie Middleton asked how the particular restoration projects were chosen. John stated that the

restorations were required to mitigate for road constructions and willing landowners came forth. Leslie asked how the RRBC could get more restoration within the Rivanna watershed. John replied that mitigation has to happen within the same HUC as the impact. Mitigation banks are a local option.

#### **10. UVA Community Grants**

Jeff Sitler stated that there is a UVA grant program that funds students to do projects outside of UVA. The program is called Jefferson Community Scholar Grants. Projects can be local or international. The “stormwater faculty” at UVA is interested in obtaining a grant to extend stormwater monitoring outside of UVA and could be of assistance to the NFWF stormwater monitoring program. The grant proposal is due Dec 5<sup>th</sup>. UVA will need a letter of support from the RRBC. Leslie Middleton agreed to write a letter.

#### **11. Field trip**

Leslie invited the meeting attendees to visit the Charlottesville High School bioswale after the meeting.

#### **12. Warp up and adjourn.**

Alyson Sappington adjourned the meeting at 12:17 pm.

#### **Attachments:**

Agenda

09Nov17\_John\_Murphy\_presentation

09Nov17\_Todd\_Scanlon\_presentation

09Nov17\_Joe\_Battiata\_presentation

09Nov17\_Joe\_Battiata\_Virginia\_Trading\_FactSheet

09Nov17\_Joe\_Battiata\_CWP\_Flow\_Chart\_Nutrient

09Nov17\_John\_McClain\_presentation

09Nov16\_Memo\_Bylaw\_changes