

December 30, 2012

Dear Director Paylor:

Enclosed please find the final report of the State Water Supply Plan Advisory Committee. This report reflects the work of the Committee and its consensus recommendations on eight issues the Committee was tasked with examining by the General Assembly in 2011 (Va. Code § 62.1-44.38:2.), namely:

1. procedures for incorporating local and regional water supply plans into the state water resources plan and minimizing potential conflicts among various submitted plans;
2. the development of methodologies for calculating actual and anticipated future water demand;
3. the funding necessary to ensure that the needed technical data for development of a statewide planning process;
4. the effectiveness of the planning process in encouraging the aggregation of users into common planning areas based on watershed or geographic boundaries;
5. the impact of consumptive use and reuse on water resources;
6. opportunities for use of alternative water sources, including water reuse and rainwater harvesting;
7. environmental flows necessary for the protection of instream beneficial use of water for fish and wildlife habitat, and
8. the role of the State Water Control Board in complying with the state water resources plan.

In addition, the Committee has made recommendations regarding five other issues that we hope may enhance the effectiveness of water supply and water resources planning in Virginia. Those issues include: interbasin transfer, methods for calculating water supply, critical data gaps, extension of the Water Supply Plan Advisory Committee, and permitting for Water Supply Projects.

Not only did the full Committee meet several times since its inception in 2010, but there were also multiple sub-Committee meetings addressing the specific issues assigned by the General Assembly. The diversity of the membership you selected ensured that committee meetings did not lack for lively discussion. At the same time, the work of the committee was marked with respectful dialogue, a significant increase in mutual understanding among the interests represented, and a will for collaborative problem solving.

The Committee also considered input from non-Committee members. All of the Committee and sub-Committee meetings were open to the public, and non-Committee attendees provided helpful comments on the issues under consideration.

The Committee most sincerely thanks you for the opportunity to advise DEQ on the issues pertaining to the management of the waters of the Commonwealth, which we recognize as both life-sustaining and economically essential. We also commend DEQ staff for their consistent and dedicated work in support of the Committee, and for the greater purpose of wisely managing this public trust resource.

We respectfully request that you forward a copy of this report to the State Water Commission.

Committee Members

Name

Signature

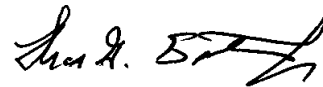
John Aulback, II, PE



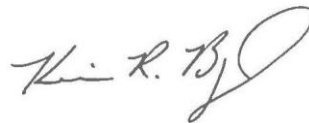
Mark Bennett



Tom Botkins



Kevin Byrd



John Carlock



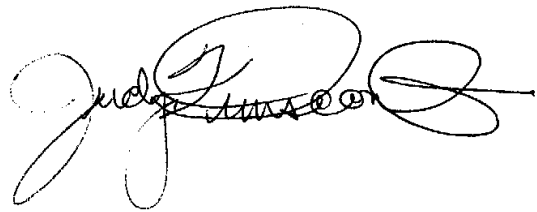
William Cox

A handwritten signature in cursive script that reads "William Cox".

Larry Dame

A handwritten signature in cursive script that reads "Larry Dame".

Judy Dunscomb

A handwritten signature in cursive script that reads "Judy Dunscomb".

Katie Frazier

A handwritten signature in cursive script that reads "Katie Frazier".

Mike Lawless

A handwritten signature in cursive script that reads "Mike Lawless".

Rick Linker

A handwritten signature in cursive script that reads "Rick Linker".

Mark Mansfield

(retired)

Rob McClintock



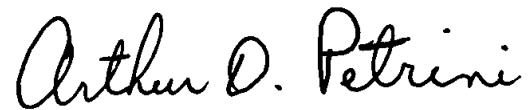
Chuck Murray



John O'Dell



Art Petrini



Tom Roberts

Thomas J. Roberts

Digitally signed by Thomas J. Roberts
DN: cn=Thomas J. Roberts, o=RockTenn CP LLC,
ou=West Point Mill,
email=tjrobert@rocktenn.com, c=US
Date: 2013.01.07 15:23:44 -05'00'

Scott Smith



John Staelin

A handwritten signature in black ink that reads "John Staelin". The letters are cursive and connected, with a long horizontal stroke at the end.

Ed Tankard

A handwritten signature in black ink that reads "Ed Tankard". The letters are cursive and connected, with a large loop at the end.

Bob White

A handwritten signature in black ink that reads "Bob White". The letters are cursive and connected, with a long horizontal stroke at the end.

Beate Wright

A handwritten signature in black ink that reads "Beate Wright". The letters are cursive and connected, with a large loop at the end.

Report of the State Water Supply Plan Advisory Committee to Virginia Department of Environmental Quality

Background

In 2003, the General Assembly tasked the State Water Control Board with developing a state water supply planning process and local, regional, and state water supply plans. Va. Code § 62.1-44.38:1. The State Water Control Board promulgated regulations in 2005 establishing the local and regional water supply planning process. 9 VAC 25-780-10 *et seq.* In accordance with those regulations, all local and regional water supply plans were submitted to DEQ by November 2011.

In 2010, the General Assembly required DEQ to establish a State Water Supply Plan Advisory Committee (the “Committee”) to do two things: (1) advise DEQ in developing, revising and implementing a state water resources plan and (2) examine and make recommendations on eight different issues, as discussed in more detail below. Va. Code § 62.1-44.38:2. The Committee terminates on December 31, 2012. *Id.*

This report reflects the work of the Committee and its recommendations.

Mission Statement

The Committee agreed upon the following mission statement to guide its work:

Advise DEQ on the process of developing, implementing, and revising the Commonwealth's State Water Resources Plan (SWRP) to ensure water resources are utilized equitably/reasonably, efficiently, and sustainably for all beneficial uses.

Membership

A list of the Advisory Committee participants is attached as Appendix 1. The participants represent a diverse group of stakeholders. Additionally, all of the committee and subcommittee meetings were open to the public, and input was received from a number of people that attended and participated in the meetings as interested parties. The meeting minutes reflect input from both members and non-members.

Subcommittees

In addition to conducting its work through meetings of the Committee, the following subcommittees were established:

- Subcommittee 1 - Procedures for incorporating local and regional water supply plans into the SWRP
- Subcommittee 2 - Minimization of potential conflicts among various submitted plans
- Subcommittee 3 - Development of methodologies for calculating actual and anticipated future water demand
- Subcommittee 4 - impacts of consumptive water use and reuse on water resources; opportunities for use of alternative water sources, including water reuse and rainwater harvesting; environmental flows necessary for the protection of instream beneficial use of water for fish and wildlife habitat
- Subcommittee 5 – Other policies and procedures that may enhance the effectiveness of water supply planning and water resources planning in Virginia: interbasin transfer
- Subcommittee 6 – format of the final committee report to DEQ
- Subcommittee 7 – Other policies and procedures that may enhance the effectiveness of water supply and water resources planning in Virginia: Water Supply

The Committee accepted the recommendations of each subcommittee.

Meetings

The Committee met regularly to discuss issues and review the work of the subcommittees. The subcommittees met between the Committee meetings.

A list of the meetings held by the Committee and subcommittees is attached as Appendix 2.

Assumptions:

In making its recommendations, the Committee made the following assumptions:

- The primary purpose of the Committee is to provide advice on the eight issues listed in Va. Code § 62.1-44.38:2(B).
- The focus of the Committee is on how these issues will impact the state water supply planning process in Virginia.
- The evaluation of these issues must be done in the context of the existing regulatory framework.
- The terms “state water supply plan” and “State Water Resources Plan” are used interchangeably in the Code and the regulation. The Committee’s intent is that they are one and the same and uses the term State Water Resources Plan (SWRP) in this report.
- Future work of the Committee, if its term is extended, could include evaluation of changes to the existing regulatory framework to resolve existing regulatory conflicts and other issues identified through initial and subsequent drafts of the SWRP.

Recommendations:

The Committee reached consensus on the following recommendations, organized by topics identified at Va. Code § 62.1-44.38(B). The reports of each of the subcommittees are attached as appendices to this Final Report. Those reports provide context and explanations for the recommendations included in this Final Report.

1. Procedures for incorporating local and regional water supply plans into the State Water Resources Plan and minimizing potential conflicts among various submitted plans.

A. Review of local and regional water supply plans.

Recommendations:

- i. For the first local and regional water supply plan submittals, DEQ's review should consist of a determination of whether the local/regional plan is consistent with the water supply planning regulation. If it is not consistent with the regulatory requirements, DEQ should send the locality or region a letter identifying the components that are missing or incomplete and asking for a revision.
- ii. DEQ should use the local/regional plans to identify potential issues such as potential conflict, public concern, and flaws in the alternatives analysis. Even though the local/regional plan may be consistent with the regulation, DEQ will outline these issues and request that the locality or region report on the progress toward resolving such issues in future submittals.
- iii. The local/regional plans, along with DEQ's proposed findings, should be subject to public notice and comment in accordance with the state water supply planning regulation. Following the public notice and comment, DEQ will issue the consistency determination letter. The public comments received on the plans should be used by DEQ as part of the identification of potential issues or flaws in the plan that should be addressed before the next plan submittal cycle. The local/regional plans should not be presented to the State Water Control Board for approval.

B. Minimizing Potential Conflicts

Recommendations:

- i. The SWRP should be used as an informational tool for future water supply decisions. The information derived from local and regional plans can be used to evaluate alternative water sources and to determine the extent of hydrologic conflicts between localities, regions, existing users, and other instream and offstream beneficial uses. This evaluation will also assess cumulative impacts to streams. DEQ will request that the locality(ies) address any conflict and report on the outcome in the next iteration of their local/regional water supply plan. Specifically, locality(ies) should identify the parties to the conflict and detail the final resolution or, if a resolution is not achieved, an explanation of attempts to resolve the conflict. These analyses will be included in the SWRP, which will identify conflicts and efforts to resolve the conflicts.
- ii. When conflicts are identified, attempts should be made by the locality(ies) to address the conflict at the local level, with informal facilitation with DEQ staff, localities, and water users.
- iii. DEQ does not currently have any authority to resolve conflicts within the context of the SWRP beyond identifying them and facilitating discussion between localities and regions. Under the current regulatory framework, conflict arising from efforts to implement the SWRP can be resolved through the following methods:
 - Issuance of Virginia Water Protection permits,
 - Litigation among parties,
 - Creation or use of a legislative or voluntary body (such as a river basin commission), and
 - Regulations (such as declaration of a Surface Water Management Area or Ground Water Management Area).

Because these procedures are available, the Committee recommends no additional authority be created to resolve conflict at this time.

C. Incorporating Local/Regional Plans into State Water Resources Plan

Recommendations:

- i. Development of a SWRP offers the opportunity to assess statewide water resources and plan for the future. The initial version of the SWRP should identify state water management policies and programs for maximizing the beneficial use of water in the Commonwealth. The SWRP should include an overview of state management programs currently available to facilitate water's beneficial use.
- ii. The Committee recommends that the SWRP follow the proposed structure and contents found at Appendix 4.

2. The Development of Methodologies for calculating actual and anticipated future water demand

Recommendations:

- A. Each locality and region in Virginia is unique. The individual needs and resources of the localities and regions may result in application of different methodologies for calculating demand. The plan should allow for flexibility in the type of methodology applied.
- B. All of the methodologies employed in the initial local and regional water supply plan submittals were reasonable and should be found to be consistent with the requirements of the planning regulation.
- C. Further analysis will be needed as the planning process moves forward to determine whether a given methodology allows comparison across multiple plans.
- D. DEQ should develop recommendations on demand methodologies and reasonable applicability that preserves flexibility and allows professional judgment in the choice of method to best characterize and address local circumstances, but enables comparison across multiple plans.

3. Funding necessary to ensure that the needed technical data for development of a statewide planning process.

Budget cuts at both the state and local levels have impacted the ability to obtain accurate data about the availability of surface and ground water in the Commonwealth. In addition to the costs associated with the equipment and manpower necessary to obtain the data, resources must also be devoted to ensuring that the data is properly understood, analyzed, managed, and made available for use in future local and regional water supply planning and permitting efforts. The availability of these data to support both permitting and planning decisions will significantly affect the reliability and sustainability of our water supplies.

Additionally, adequate staffing at DEQ is needed to ensure the thorough and timely review and approval of local/regional plans and development of a SWRP. Local/regional plans were submitted to DEQ between 2008 and 2011. None of the plans have been approved to date. Such a lengthy review process adversely impacts the planning process because localities lose momentum and engagement in the planning process; and it is difficult to maintain a consistency of thought, understanding, and interest.

Recommendations:

- A. The Committee recommends that adequate resources be dedicated to enable DEQ to conduct timely reviews of the local and regional water supply plan submittals.
- B. Dedicated funding for water supply-related staff and monitoring equipment should be included in the DEQ budget.
- C. Tighter timeframes for the plan review process should be set to allow for a more effective and consistent planning effort.

4. Effectiveness of the planning process in encouraging the aggregation of users into common planning areas based on watershed or geographic boundaries.

The vast majority of localities participated in the development of a regional plan. Many of the regions are large and cover the entire territory within a given river basin. There are several regions, however, where greater regional cooperation would make sense in order to develop a truly sustainable water supply plan. Many of the planning areas and divisions were based on political jurisdictions which do not necessarily reflect watershed boundaries.

Allowing the additional time for localities working in a region to submit the plan was an effective way to encourage regional planning. Additional incentives are needed to ensure continued cooperation among regions and also to encourage greater regional planning efforts. The goal is to establish a planning process that allows for a more strategic determination of how to optimize Virginia's water resources through regional and watershed based planning. Broader regional plans that include consideration of the larger watershed are more likely to result in identification of more cost-effective water supply options that support a greater number of beneficial uses.

Recommendations:

- A. As part of DEQ's review, recommendations should be made about which localities/regions should be working together. DEQ should facilitate regional cooperation and encourage regionalization in water supply planning through education, incentives, and other appropriate means.
- B. The Committee supports the concept of regional water supply planning. The use of regional planning bodies, such as the planning district commissions and the Interstate Commission on the Potomac River Basin, allows for development of technical support and knowledge of the watershed for purposes of optimizing the resource and the planning effort. The Committee supports the concept of establishing other similar bodies (such as in the James River basin).

5. Impact of consumptive use and reuse on water resources.

The existing regulations do not always differentiate between consumptive and non-consumptive uses. Consumptive use has the greatest impact on water availability. The impact of consumptive uses on beneficial uses is and should continue to be evaluated in water supply planning and permitting. Currently the VWP regulation requires consultation with other agencies. The Water Reclamation and Reuse Regulation and its proposed amendments lack a requirement for agency consultation where there is a consumptive use.

Recommendations:

- A. The water supply planning regulation should be amended to require localities and regions to estimate consumptive uses by purpose and volume in the planning area, to the extent practicable.
- B. Consideration should be given to whether consumptive water users should be required to mitigate for their impact, possibly by constructing or financially contributing to reservoirs to be used for low flow augmentation.

Where consumptive uses are identified by DEQ as the source of conflict in a basin, the SWRP should include recommendations for what types of offsets for consumptive uses could occur, including construction of or financial contributions to reservoirs to be used for low flow augmentation.

6. Opportunities for use of alternative water sources, including water reuse and rainwater harvesting.

No single type of alternative water supply may be appropriate in all situations. Local conditions and cumulative impacts must all be taken into account. The planning process will help identify where alternative water sources are viable.

Water reclamation and reuse are alternative water sources that are useful and sometimes essential means of meeting water demand or other regulatory requirements. At the same time discharge of wastewater and ground water recharge are important sources of water to support instream and offstream beneficial uses.

Existing permitted discharges under the VPDES system may constitute important sources of water to downstream users. Conversion of VPDES regulated discharges to water re-use could have significant impacts to other beneficial uses.

Stormwater runoff can have a significant impact on instream hydrology. Stormwater reclamation and reuse efforts – including rainwater harvesting – are alternative water sources and may also have the potential to alter streamflow in ways that positively or negatively impact instream and offstream beneficial uses and groundwater. Currently there is not a strong regulatory connection between stormwater capture and instream flow protection. The issues associated with stormwater management require more thoughtful consideration and improved regulatory coordination.

Recommendations:

- A. The Committee supports the cumulative impact analysis included in the proposed amendments to the Water Reclamation and Reuse Regulation as a tool to address potential impacts of water reuse projects on downstream users.
- B. The Committee recommends that DEQ, DCR, and VDH evaluate stormwater as an alternative water source and opportunities for improved regulatory consideration of stormwater management issues, as part of the state water supply planning process.

7. Environmental flows necessary for the protection of instream beneficial use of water for fish and wildlife habitat.

The Virginia Code does not define environmental flows. For purposes of the Committee's evaluation, environmental flows are considered to be equivalent with flows needed to protect instream beneficial uses as defined by the Code.

Recommendations:

- A. DEQ should continue to evaluate impacts to instream and offstream beneficial uses in evaluating local and regional water supply plans and permits, and develop improved technical tools and methodologies to quantify instream flow needs, non-permitted withdrawals and uses, ground water discharge to streams and other critical information needs.
- B. DEQ should evaluate impacts of hydrologic and meteorological changes on a wide range of issues associated with water supply including sustainability, water quality, and demand patterns, as well as impacts to stream hydrology and biological communities.

8. Role of the State Water Control Board in complying with State Water Resources Plan.

During the 2012 General Assembly session, legislation was enacted that directs the State Water Control Board to “consult with and give full consideration to any relevant information contained in the state water supply plan.” Va. Code § 62.1-44.15:20(C). The Committee makes the following recommendations about the role of the SWCB in complying with the SWRP.

Recommendations:

- A. Planning should inform decision making but not dictate specific outcomes. Inclusion of an individual water development project in a local/regional plan does not constitute approval or endorsement.
- B. The SWRP, in order to serve its intended purpose, should receive consideration in permitting decisions, together with all other relevant information. However, the SWRP itself will not include or endorse specific projects.
- C. Permitting fact sheets employed in state proceedings should describe how local/regional water supply plans were evaluated in the permit process. The documentation in local/regional plans may be used to support a permit application.

9. Other Policies and Procedures that the Director of the Department of Environmental Quality determines may enhance the effectiveness of water supply and water resources planning in Virginia.

The following are issues and proposed solutions identified by the WSPAC and subcommittees that could enhance the effectiveness of water supply and water resources planning in Virginia.

A. Role of interbasin transfer in water management

Local/regional plans may identify alternative water sources that can only be accessed through an interbasin transfer. Several interbasin transfers already take place in Virginia. Interbasin transfers play a role in water supply management.

Recommendation:

Interbasin transfer is a basic water management tool that should be evaluated on a case-by-case basis, using the same process by which other proposed water uses are evaluated.

B. Methodology for Calculating Supply

Reasonable and defensible methods for evaluating safe yield are necessary to ensure the plans submitted support the objectives of the water supply planning regulation.

Recommendation:

DEQ should provide guidance to localities and their agents on safe yield evaluation for incorporation during the second iteration of plan submissions.

C. Data Gaps

Information requested by the regulation is not always available. This is due, in part, to a lack of reporting by the regulated community. There is also a lack of dedicated resources at both state and local levels to develop, gather, ground truth, and analyze the requested data. The resulting gaps in available data may compromise the ability of DEQ to develop a SWRP that fulfills its statutory obligations.

Recommendation:

DEQ should be given additional resources and authority to obtain data on ground water resources and unreported surface water and ground water withdrawals to give a more complete picture of available water supply to meet Virginia's needs now and in the future.

The SWRP should include recommendations regarding other critical sources of information needed to effectively manage water resources in the state, such as VDH's private well permitting program data.

D. Extension of Water Supply Plan Advisory Committee

The General Assembly directed the Water Supply Plan Advisory Committee to advise DEQ in developing, revising and implementing a SWRP. The SWRP has not yet been drafted. The committee terminates December 31, 2012.

Recommendation:

The Committee believes it would be useful to extend its term for another two years so that it can continue to advise DEQ on the development and implementation of the SWRP.

E. Permitting for Water Supply Projects

Major surface water supply and surface water withdrawal projects are subjected to permitting by agencies at both the state and federal levels. Given the time and resources DEQ has devoted to water supply management, permitting, and planning, DEQ can be an important advocate in related permitting proceedings.

Recommendation:

Projects that receive VWP permits from DEQ should receive full DEQ support in the federal permitting process.

Appendices

1. List of SWSP Advisory Committee Members and Subcommittee Members
2. Meeting Schedule for Committee and Subcommittees
3. Subcommittee Reports
4. Proposed Table of Contents for the SWRP

Appendix 1

List of State Water Supply Plan Advisory Committee Members
and Subcommittee Members

Name	Representing	Email
John Aulbach II, PE (Susan Douglas)	VDH	JOHN.AULBACH@VDH.VIRGINIA.GOV
Mark Bennett, Director Water Science Center	USGS, Virginia	mrbenet@usgs.gov
Tom Botkins	MeadWestVACO	thomas.botkins@mwv.com
Kevin Byrd	New River Valley PDC	kbyrd@nrvpdc.org
John Carlock	HRPDC	jcarlock@hrpdcva.gov
Dr. William Cox	VT-208	cox@vt.edu
Larry Dame, Director Public Utilities Dept.	New Kent County	ladame@co.newkent.state.va.us
Judy Dunscomb	The Nature Conservancy	jdunscomb@tnc.org
Katie Frazier Blair Krusz	VA Agribusiness	katie.agribusiness@att.net blair@agribusiness@att.net
Michael Lawless	Draper Aden	mlawless@daa.com
Rick Linker	Dominion Virginia Power	Rick.r.linker@dom.com
Mark Mansfield	Norfolk District, USACE	Mark.T.Mansfield@usace.army.mil
Rob McClintock	VEDP(Economic Development Partnership)	RMCCCLINTOCK@YESVIRGINIA.ORG
Charles Murray General Manager	Fairfax Water	cmurray@fairfaxwater.org
John O'Dell	Water Well Solutions, LC	John@waterwellsolutions.net

Art Petrini Dept. of Public Utilities	Henrico County	Pet12@co.henrico.va.us
Tom Roberts	Smurfit Stone/Mission H2O	tjroberts@smurfit.com
Scott Smith	DGIF	Scott.smith@dgif.virginia.gov
John Staelin	Clarke County Board of Supervisors	jstaelin@earthlink.net
John E. "Ed" Tankard	Tankard Nurseries	ed@tankardnurseries.com OR Sharon@tankardnurseries.com
Bob White	Region 2000	bwhite@region2000.org
Ms. Beate Wright Manager of Water Quality Loudoun Water	VA AWWA	bwright@loudounwater.org

ALTERNATES

Name	Representing	Email
Sam Austin Alt for Mark Bennett	USGS	
Paul Peterson Alt. for Beate Wright		
Andrea Wortzel Alt. for Tom Roberts	Hunton & Williams LLP	awortzel@hunton.com

<u>Subcommittee 1:</u> Procedures for incorporating local and regional water supply plans into a state plan 62.1-44.38:2.B.(i)	<u>Subcommittee 2:</u> (Identification) Minimization of potential conflicts among various submitted plans. 62.1-44.38:2.B.(i)	<u>Subcommittee 3:</u> Development of methodologies for calculating actual and anticipated future water demand 62.1-44.38:2.B.(ii)
John Carlock (Whitney Katchmark)	Rick Linker	Art Petrini
Tom Roberts (Andrea Wortzel)	Chuck Murray	Wes Kleene
Judy Dunscomb	Donna Johnson for Katie Frazier	Mike Lawless
Scott Smith	Tom Botkins	Beate Wright
Bill Cox	Rob McClintock	Larry Dame (Mike Lang)
John Staelin	John O'Dell	Mark Bennett
Kevin Byrd	Greg Garman	Tom Roberts
Bob White	Mark Mansfield	Ed Tankard

<u>Subcommittee 4:</u> Impact of consumptive use alternative water sources, including water reuse and rainwater harvesting; Environmental flows necessary for protection of instream beneficial use of water for fish and wildlife habitat 62.1-44.38:2.B.(v) (vi) (vii)	<u>Subcommittee 5:</u> Other policies and procedures that may enhance the effectiveness of water supply and water resources planning in Virginia: INTERBASIN TRANSFERS; DATA GAPS; EXTENSION OF WATER SUPPLY PLAN ADVISORY COMMITTEE; PERMITTING FOR WATER SUPPLY PROJECTS 62.1-44.38:2.B.(ix)	Subcommittee 6: Draft final report for WSPAC
Larry Dame	Bill Cox	Bill Cox
Beate Wright	Mike Lawless	Mike Lawless
John Staelin	Rick Linker	Andrea Wortzel
Tom Botkins	Tom Botkins	John Carlock
Rick Linker	Bob White	Judy Dunscomb
Chuck Murray (Traci Goldberg)	John Staelin	Rick Linker
Scott Smith	John Carlock	
Judy Dunscomb (Nikki Rovner)		

Subcommittee 7:

Other policies and procedures that may enhance the effectiveness of water supply and water resources planning in Virginia: WATER SUPPLY

62.1-44.38:2.B.(ix)

Chuck Murray

Beate Wright

Rick Linker

Appendix 2

Meeting Schedule for Committee and Subcommittees

WSPAC Meetings

August 31, 2010	February 29, 2012
December 2, 2010	May 3, 2012
March 29, 2011	June 28, 2012
August 3, 2011	October 3, 2012
November 4, 2011	December 12, 2012

Subcommittee #1

June 7, 2011
July 8, 2011
October 25, 2011

Subcommittee #2

June 30, 2011
August 1, 2011
October 13, 2011
August 8, 2012

Subcommittee #3

June 29, 2011
February 28, 2012

Subcommittee #4

February 28, 2012
April 5, 2012
April 30, 2012
December 12, 2012

Subcommittee #5

February 28, 2012

Subcommittee #6

April 30, 2012

Subcommittee #7

June 26, 2012

Appendix 3

Subcommittee Reports

Water Supply Plan Advisory Committee

Subcommittee #1

Develop procedures for incorporating local and regional water supply plans into a state plan.

The subcommittee has three recommendations:

Recommendation #1 - Preliminary Outline: State Water Resources Plan

Local and regional water supply plans provide essential input to the state water resources plan (SWRP). In order to identify contributions of these plans to the state plan more specifically, a preliminary outline for the SWRP is presented below.

Local and regional plans will make their major contributions to outline sections V through VIII while the earlier parts of the outline will be based primarily on statewide data collection programs and water management activities. In the original SWRP, sections V-VIII will be more preliminary in nature than the earlier sections due to the need to resolve inconsistencies among plans, address lack of completeness, and correct inaccuracies. While many of the local and regional plans may not display these deficiencies, the potential for problems exists due to lack of experience with the planning process and the evolving nature of standards to guide planning efforts.

- I. Overview of Virginia's water resources planning process
 - a. Background
 - b. The 2003 legislation
 - c. Implementation of a continuous planning process and creation of a state water resources plan
 - d. Planning precepts
 - e. Role of planning in water management
 - i. Role of local water resources plans
 - ii. Role of the state water resources plan and its relation to water-use permitting
- II. Virginia's water resources
 - a. The State's hydrology and water budget
 - b. Streamflows in principal rivers
 - c. Ground water resources
- III. Water use
 - a. Water withdrawal and consumption
 - i. Virginia's water use reporting system
 - ii. History and current trends in offstream water use
 - iii. Current water withdrawals and consumption

1. Public water supply
2. Self-supplied domestic use
3. Self-supplied industrial use
4. Energy-related use
5. Other use
- iv. Instream/environmental water use
 1. Water quality considerations
 2. Fish and wildlife considerations
 3. Recreational considerations
 4. Special instream needs determinations
- IV. Water management framework
 - a. Federal-state relationship
 - b. State water policy
 - c. State controls over water use
 - i. Virginia Water Protection Permit
 - ii. Surface Water Management Area Act
 - iii. Ground Water Management Act
 - iv. Virginia water quality programs
- V. Comparison of water supply and water use
 - a. Identification of water planning areas
 - i. Hydrologic boundaries vs. political boundaries
 - b. Projections of future offstream water demand
 - c. Potential impact of climate change on water availability
 - d. Current and future supply/demand comparisons by water planning area
- VI. Current and potential water supply problems
 - a. Types of conflict
 - i. Offstream water use conflict
 - ii. Offstream/instream water use conflict
 - iii. Ground water conflict
 - iv. Ground water use/surface water use conflict
 - v. Water quality impairment of water supply
 - vi. Reservoir site protection
 - b. Current means to resolve conflict
 - c. Water management limitations
 - i. Inconsistent/incomplete policy
 - ii. Data/data collection inadequacies
 - iii. Limitations on state authority to regulate water withdrawal
- VII. Potential management strategies to address water problems
 - a. Increased conservation/water reuse
 - b. Regionalization/interconnection of water supplies

- c. Increased storage
- d. Water transfers
- e. Desalination
- f. Water quality protection
- VIII. Issues of special concern
 - a. Water supply/environmental problems requiring early attention
 - b. Critical infrastructure deficiencies
 - c. Needed changes to address water management deficiencies

Recommendation #2 – Approval of Local Water Supply Plans and the State Water Supply Plan

The water supply plan approval process will occur in two phases.

I. Local/Regional Plan Approval

DEQ's review will result in a determination of whether the local/regional plan is consistent with the water supply planning regulation. If it is not consistent with the regulatory requirements, DEQ will send the locality or region a letter identifying the components that are missing or incomplete and asking for a revision.

DEQ will also conduct a cumulative impact analysis by watershed and identify potential issues raised by the plan such as flaws in the alternatives analysis, potential conflict, public concern, etc. Even though the plan may be consistent with the regulation, DEQ will outline these issues and request that the locality or region work to resolve them before the next plan submittal cycle.

The local/regional plans, along with DEQ's proposed findings, will be subject to public notice and comment. Following the public notice and comment, DEQ will issue the consistency determination letter. The local/regional plans will not be presented to the Board for approval.

II. State Water Resources Plan

DEQ shall evaluate the local/regional plans on a cumulative basis, by watershed. The data produced in the plans shall be included in DEQ's Hydrologic Model. The data will be used to complete the SWRP, which shall be based on the outline above. The SWRP shall be subject to public notice and comment. The State Water Resources Plan will be presented to the Board, but the Board will not take any formal action on the Plan.

Recommendation #3 – Permitting and Water Supply Planning

Permitting fact sheets should describe how local/regional water supply plans were evaluated in the permit process. Projects that require federal permits that have been included in the SWRP shall receive the full support of DEQ, and DEQ will serve as an advocate for such projects in the federal permitting process.

State Water Supply Plan Advisory Committee
Subcommittee #2
Report - November 2011

Focus: (Identification) Minimization of potential conflicts among various submitted plans

Subcommittee Members: John O'Dell, Tom Botkins, Rick Linker, Rob McClintock, Mark Mansfield, Chuck Murray/Traci Goldberg, Greg Garman, Donna Johnson

Subcommittee Concurrence:

- A. Subcommittee #2 submits the following observations to support their recommendation:
- The water supply planning process is not intended to be an allocation process; the permitting process addresses allocations. Instead, the planning process should be a source of information to the permitting and planning processes, riparian landowners, grandfathered users, and other instream and offstream beneficial users.
 - The water supply planning process should only inform the permitting process. The State Water Control Board (SWCB) is not required to consider a plan in relation to a permit request. While no criteria exist for the use of plans in a permitting decision, the SWCB could ask DEQ staff for water supply plan input. However, information from a plan may not be the sole basis for a permit denial or issuance.
 - Regulations contemplate that the first round of plans need a completeness certification from DEQ. If a locality meets all the requirements of the water supply planning regulation, even if source conflicts exist (e.g. (i) a plan lists ground water as a future source but ground water is not available, (ii) the plan conflicts with another submitted plan or (iii) the plan conflicts with current uses), they will be deemed consistent. For revised or updated plans, DEQ could exercise two choices if a conflict exists, 1) deem the plan inconsistent with regulations if known conflicts are not identified, or 2) provide a consistency determination if the plan properly identifies conflicts and reports on the efforts to resolve the conflicts in the plan.
 - The initial iteration of the State Water Resources Plan (SWRP) will identify conflicts and when the subsequent regional/local plans are submitted these conflicts should be addressed. Language authorizing DEQ to require localities to address conflicts is found in 9 VAC 25-780-140-G of the water supply planning regulation which provides:

G. In conjunction with the compliance determination made by the board, the state will develop additional information and conduct additional evaluation of local or regional alternatives in order to facilitate continuous planning. This additional

information shall be included in the State Water Resources Plan and used by localities in their program planning. This information shall include:

- 1. A cumulative demand analysis, based upon information contained in the State Water Resources Plan and other sources;*
- 2. The evaluation of alternatives prepared pursuant to 9 VAC 25-780-130 B and C;*
- 3. The evaluation of potential use conflicts among projected water demand and estimates of requirements for in-stream flow; and*
- 4. An evaluation of the relationship between the local plan and the State Water Resources Plan.*

- The SWRP has no completion deadline and the SWCB is not required to approve the SWRP.
 - These recommendations are based on the current regulatory/legal framework and the subcommittee recommends no changes to the regulation regarding conflict resolution at this time.
- B. Subcommittee # 2 recommends that the conflict resolution process could include four steps:
- Conflict Identification – After all local/regional water supply plans are submitted and evaluated, the alternative sources presented will be modeled within river basins to determine the extent of hydrologic conflicts between localities, regions, existing users and other instream and offstream beneficial uses, and whether an optimum combination of alternatives can meet the basin need with the available supply. DEQ will issue a letter to the locality(ies) with identified conflicts and explain the identified conflict, recommend the involved parties work out the conflict before their next update of the local/regional water supply plan, explain the recommended conflict resolution process (informal), and identify who at DEQ can be contacted for assistance. DEQ will request that the locality(ies) address the conflict and report on the outcome in the next iteration of their local/regional water supply plan. Specifically, locality(ies) should identify the parties to the conflict and detail the final resolution or, if a resolution is not achieved, an explanation of attempts to resolve the conflict. These analyses will be included in the State Water Resources Plan, which will identify conflicts and efforts to resolve the conflicts.
 - Informal party-to-party resolution – When conflicts are identified, attempts should be made to address the conflict at the local level, with informal facilitation with DEQ staff, localities, and water users.
 - Formal conflict mechanism (cooperative body/commission) – For certain identified conflicts, it might be an option to engage or create a legislative or voluntary body (such as a river commission) to resolve the issue.

- Very formal/regulatory (Surface Water Management Area, regulatory action) – For certain identified conflicts, it might be an option to declare a surface water management area or take other regulatory action.

State Water Supply Plan Advisory Committee

Subcommittee #3

Final Report

March 13, 2012

Develop methodologies for calculating actual and anticipated future water demand.

Subcommittee members: Art Petrini, Beate Wright, Larry Dame/Mike Lang, Tom Roberts, Ed Tankard, Mark Bennett, Wes Kleene, Mike Lawless

Subcommittee #3 was charged with developing methodologies for calculating actual and anticipated future water demand. Early in the process the subcommittee agreed that methodologies available must be flexible and not overly prescriptive. The subcommittee conducted an inventory of demand projections used in the Local and Regional Water Supply Plans submitted to DEQ. A summary table is attached.

Based on that inventory it was concluded that the methodologies used to determine future water demand were diverse but well documented. The water demand projections are based on currently available data and predictions of residential, commercial and industrial growth. Due to the uncertainty in such predictions and the length of the 30 to 50 year planning period, the demand projections should be carefully evaluated during each plan review and resubmittal cycle.

The water demand projections are based on population projections and water use projections. The water use projections are based on the nature of the projected population growth including type (e.g., residential vs. commercial), location with regard to water source and infrastructure, and future land use patterns.

Sources of population data and associated projections include:

- US Census (2000 or 2010, depending on date of plan)
- Weldon Cooper Center
- Virginia Employment Commission
- Comprehensive Plans
- Historic Growth Rates

Water demand projection methods include:

- Per capita consumption (gross vs. disaggregated)
- Land use / zoning maps / complete or partial build out

The single greatest variable in demand projection calculation process was the values used for per capita consumption. The values varied from gross per capita consumption (248 gpd/person) to disaggregated residential usage (75 gpd/person). The sources of the data and assumptions used were well documented in the plans so the differences among the plans can be fairly evaluated.

An additional source of uncertainty in the water demand projections is lack of data on agricultural use and lack of data regarding groundwater availability and use.

The subcommittee reached the following conclusions:

- Demand projection methodologies should not be prescriptive.
- The methodologies should maintain adequate flexibility to address local circumstances.
- Methodologies, data sources and assumptions should be well documented in the plans.
- As the planning process matures, or potential water supply shortages or conflicts are identified, some degree of standardization of methodology and data sources and assumptions should be considered so accurate comparisons and conclusions can be drawn from the projections. Particular consideration should be given to data used for per capita consumption in such cases.
- Local governments and water providers within watersheds should cooperate in evaluating future water demand and available supply in order to accurately manage water resources.

Subcommittee #3 has fulfilled its charge and no longer needs to meet.

State Water Supply Plan Advisory Committee

Subcommittee #4

Final Report

December 12, 2012

Subcommittee members: Judy Dunscomb, Larry, Dame, Beate Wright, John Staelin, Tom Botkins, Rick Linker, Chuck Murray/Traci Goldberg, Scott Smith

Impact of consumptive use and reuse on water resources

All uses are consumptive to some degree. It is the difference between what is withdrawn and what is returned to the stream that determines the impact on water availability. Water reuse is one use that generally affects the volume of water returned to the stream. The impact of all consumptive uses on beneficial uses is and should continue to be evaluated in water supply planning and permitting. Currently the VWP regulation requires consultation with other agencies. The Water Reclamation and Reuse Regulation and its proposed amendments lack a requirement for agency consultation where there is a consumptive use which could result in failure to identify conflicts with other beneficial uses.

Recommendation:

- DEQ should require localities and regions to estimate consumptive uses by purpose and volume in the planning area, to the extent practicable.
- DEQ should ensure that agency consultation occurs where there is a consumptive use of concern.

Where consumptive uses are identified by DEQ as the source of conflict in a basin, the SWRP should include recommendations for what types of offsets for consumptive uses could occur, including construction of or financial contributions to reservoirs to be used for low flow augmentation.

Opportunities for use of alternative water sources

Water reclamation and reuse are alternative water sources that are useful and sometimes essential means of meeting water demand or other regulatory requirements. At the same time discharge of wastewater and ground water recharge are important sources of water to support instream and offstream beneficial uses. Existing permitted discharges under the VPDES system may constitute important sources of water to downstream users. Conversion of VPDES regulated discharges to water re-use could have significant impacts to other beneficial uses.

Stormwater runoff can have a significant impact on in stream hydrology. Stormwater reclamation and reuse efforts – including rainwater harvesting – are alternative water sources and may also have the potential to alter streamflow in ways that positively or negatively impact instream and offstream beneficial uses and groundwater. Currently there is not a strong regulatory connection between stormwater capture and instream flow protection. The issues associated with stormwater management require more thoughtful consideration and improved regulatory coordination.

Recommendations:

- The Committee supports the cumulative impact analysis included in the proposed amendments to the Water Reclamation and Reuse Regulation as a tool to address potential impacts of water reuse projects on downstream users.
- The Committee recommends that DEQ evaluate stormwater as an alternative water source and opportunities for improved regulatory consideration of stormwater management issues.

Environmental flows for protecting beneficial instream water use

Environmental flows can be described as the quantity and timing of water flows required to maintain the components, functions, processes and resilience of aquatic ecosystems and sustain the goods and services they provide to people ([TNC](#)). Environmental flows include the instream beneficial uses described in Virginia Code § 62.1-10-11.

Recommendations:

- DEQ should continue to evaluate impacts to instream and offstream beneficial uses in evaluating local and regional water supply plans and permits, and develop improved tools to quantify instream flow needs, non-permitted withdrawals and uses, groundwater discharge to streams and other critical information needs.

DEQ should evaluate impacts of climate change on a wide range of issues associated with water supply including sustainability, water quality, and demand patterns, as well as impacts to stream hydrology and biological communities

Subcommittees 5, 6, and 7 had no final report, but took discussion to the full committee for inclusion in this report. See Section 9.

Appendix 4

Proposed Table of Contents for The State Water Resources Plan

- I. Overview of Virginia's water resources planning process
 - a. Background
 - b. The 2003 legislation
 - c. Implementation of a continuous planning process and creation of a state water resources plan
 - d. Planning precepts
 - e. Role of planning in water management
 - i. Role of local water resources plans
 - ii. Role of the state water resources plan and its relation to water-use permitting
- II. Virginia's water resources
 - a. The State's hydrology and water budget
 - b. Streamflows in principal rivers
 - c. Ground water resources
- III. Water use
 - a. Water withdrawal and consumption
 - i. Virginia's water use reporting system
 - ii. History and current trends in offstream water use
 - iii. Current water withdrawals and consumption
 - 1. Public water supply
 - 2. Self-supplied domestic use
 - 3. Self-supplied industrial use
 - 4. Energy-related use
 - 5. Other use
 - iv. Instream/environmental water use
 - 1. Water quality considerations
 - 2. Fish and wildlife considerations
 - 3. Recreational considerations
 - 4. Special instream needs determinations
- IV. Water management framework
 - a. Federal-state relationship
 - b. State water policy
 - c. State controls over water use
 - i. Virginia Water Protection Permit
 - ii. Surface Water Management Area Act
 - iii. Ground Water Management Act
 - iv. Virginia water quality programs
- V. Comparison of water supply and water use
 - a. Identification of water planning areas
 - i. Hydrologic boundaries vs. political boundaries

- b. Projections of future offstream water demand
- c. Potential impact of climate change on water availability
- d. Current and future supply/demand comparisons by water planning area
- VI. Current and potential water supply problems
 - a. Types of conflict
 - i. Offstream water use conflict
 - ii. Offstream/instream water use conflict
 - iii. Ground water conflict
 - iv. Ground water use/surface water use conflict
 - v. Water quality impairment of water supply
 - vi. Reservoir site protection
 - b. Current means to resolve conflict
 - c. Water management limitations
 - i. Inconsistent/incomplete policy
 - ii. Data/data collection inadequacies
 - iii. Limitations on state authority to regulate water withdrawal
- VII. Potential management strategies to address water problems
 - a. Increased conservation/water reuse
 - b. Regionalization/interconnection of water supplies
 - c. Increased storage
 - d. Water transfers
 - e. Desalination
 - f. Water quality protection
- VIII. Issues of special concern
 - a. Water supply/environmental problems requiring early attention
 - b. Critical infrastructure deficiencies
 - c. Needed changes to address water management deficiencies