A REPORT TO

THE HONORABLE MARK R. WARNER, GOVERNOR,

AND

THE GENERAL ASSEMBLY OF VIRGINIA

STATUS OF VIRGINIA'S WATER RESOURCES

A Report on Virginia's Water Supply Planning Activities

Department of Environmental Quality
COMMONWEALTH OF VIRGINIA

October 2003

October 1, 2003

MEMORANDUM

TO: The Honorable Members of the General Assembly

RE: Status of Virginia's Water Resources Report

The "Status of Virginia's Water Resources," prepared pursuant to Chapter 3.2 of Title 62.1 of the Code of Virginia is available from the Department of Environmental Quality's (DEQ) website at: http://www.deq.state.va.us/regulations/reports.html. A hard copy can be obtained by calling Scott Kudlas, Water Policy Manager, at (804) 698-4456.

The report provides information from 2002 on the status of Virginia's surface and ground water resources. The document also includes data on water use, discussion of activities related to surface and ground water management areas, and a summary of the water supply planning process initiated last year. The report also identifies some improvements needed to some of the ground water models used in DEQ permit programs.

I look forward to working with you in the coming Session and in the future to manage and protect Virginia's water resources.

Sincerely,

Robert G. Burnley
Director

EXECUTIVE SUMMARY

The report provides information from 2002 on the status of Virginia's surface and ground water resources. The document also includes data on water use, discussion of activities related to surface and ground water management areas, and a summary of the water supply planning process initiated last year. The report also identifies some improvements needed to some of the ground water models used in DEQ permit programs.

TABLE OF CONTENTS

I. Introduction

The Commonwealth of Virginia is rich in water resources, both in terms of number and diversity. However, as the impacts of the recent drought have demonstrated this resource cannot be taken for granted. The Commonwealth and its localities must work together to manage and protect our water resources to meet long term human and environmental needs. Improved coordination of drought response and water resources management activities at the local, regional and state levels are essential to guaranteeing the adequacy of Virginia's water supplies to meeting the needs of Virginia's citizens in an environmentally sound manner. This report, submitted to the Governor and the Virginia General Assembly in accordance with Chapter 3.2 of Title 62.1 of the Code of Virginia, describes the status of the Commonwealth's water sources, both surface and ground water. Section VII, entitled "Water Supply Planning and Policies" summarizes Governor Warner's Virginia Water Supply Initiative.

II. Water Resources Data

A summary of Virginia's water resources is provided in **Table 1**. Virginia has an estimated 49,350 miles of streams and rivers divided into nine major basins (**Figure 1**). Annual statewide rainfall averages almost 43 inches. The total combined flow of all freshwater streams in the state is estimated at about 25 billion gallons per day. The 248 publicly owned lakes in the Commonwealth have a combined area of 162,230 acres. Additionally, many thousands of other small, privately owned lakes and ponds are distributed throughout the state. Other significant water features of Virginia include approximately 236,900 acres of tidal and coastal wetlands, 808,000 acres of freshwater wetlands, 120 miles of Atlantic Ocean coastline, and more than 2,500 square miles of estuaries.

Table 1. Virginia's Water Resources Data

State Population (2002 Census) - 7,078,515

State Surface Area - 40,741 square miles

Major River Basins:

Potomac/Shenandoah
Rappahannock
York
James
Chesapeake Bay/Small Coastal
Chowan River/Albemarle Sound
Roanoke
New
Tennessee/Big Sandy

Perennial River Miles (freshwater) - 49,350 miles

Publicly Owned Lakes and Reservoirs

Larger than 5,000 acres	5	109,838 acres
Smaller than 5,000 acres	243	52,392 acres
Total	248	162,230 acres

Freshwater Wetlands - 808,000 acres

Tidal and Coastal Wetlands - 236,900 acres

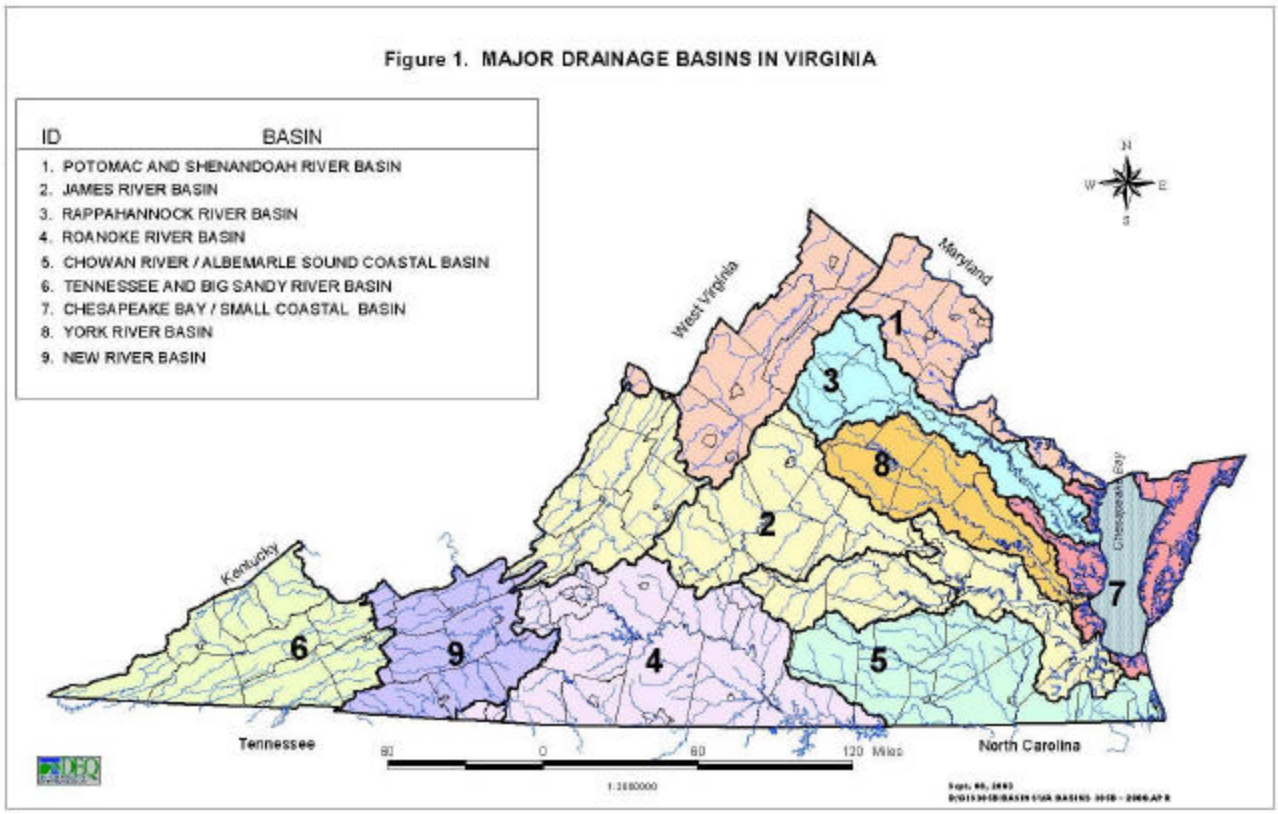
Estuary - 2,500 Square Miles

Atlantic Ocean Coastline - 120 Miles

Statewide Average Annual Rainfall - 42.8 inches

Average Freshwater Discharge of All Rivers - Approximately 25 billion gallons per day

Figure 1. Major River Basins in Virginia



III. Hydrologic Data Gathering

A. Surface Water

The Department of Environmental Quality (DEQ) and the U.S. Geological Survey (USGS) are the primary agencies responsible for collecting hydrologic data in Virginia. The two agencies have worked cooperatively since 1925, except for a period between 1957 and 1967 when they operated independently. Virginia is one of only four states with such a cooperative agreement with the USGS. The other three are California, Colorado and Illinois. Individually, the agencies carry out their own agendas in the collection of hydrologic data. Together, they provide a comprehensive picture of hydrologic conditions in the Commonwealth.

To collect systematic hydrologic data on surface water levels, flow volumes, and other streamflow data, the DEQ operates 67 continuous-record stream- gaging stations and more than 90 miscellaneous measurement sites. The continuous-record gages are located primarily on larger, free- flowing streams whereas the DEQ miscellaneous measurement sites are in support of the TMDL program. The USGS operates 94 continuous-record gages and more than 100 miscellaneous measurement sites in Virginia. The USGS collects water quality data at 18 continuous-record gaging stations. The USGS also operates 13 gages that provide stage (surface level height) data on lakes and reservoirs. The flow, lake level, water quality, and miscellaneous measurement data are published in *Volume 1, Water Resources Data – Virginia*, an annual report cooperatively prepared by the DEQ and the USGS. The gages farthest downstream in each major river basin are used to summarize or index the hydrologic condition of the Commonwealth for any given water year; water years run from October 1 through September 30.

The drought conditions evident throughout most of Virginia in 2002 began to dissipate with the onset of above average rainfall in October of 2002. This period of above average rainfall continued through September 2003 with eleven of the twelve months receiving above average rainfall. On a statewide basis rainfall received between October 2002 and September 2003 represents approximately 150% of expected rainfall during the same period. All drought impacts in Virginia were eliminated by early spring of 2003. Streamflows across the Commonwealth have remained above normal flow levels for the majority of the year and numerous daily high flow records have been set. Major reservoirs across the Commonwealth filled early in the calendar year and continue to operate at near full conditions.

B. Ground Water

The DEQ collects data on ground water level at 183 wells. The USGS collects similar data at 84 wells, with water quality data collected at 62 of those wells. These data are published in Volume 2 of the *Annual Water Resources Data Report*, which is cooperatively prepared by the DEQ and the USGS. The water level data collected by the DEQ contributes to the long-term ground water modeling project with the USGS; this cooperative project is designed to improve ground water modeling abilities in the Virginia Coastal Plain. Wells in the counties of Buchanan, Buckingham, Clarke, Fairfax, Loudoun, Louisa, Montgomery, Rockingham, and Westmoreland and in the cities of Colonial Heights and Suffolk were monitored as examples of the Commonwealth's

unconfined water table aquifers. Wells in James City and Isle of Wight Counties are used to monitor water levels in the deep confined Coastal Plain aquifers. These index wells are considered representative of large areas of the Commonwealth with similar geologic, climatologic, and physiographic characteristics. Data on ground water levels was collected by monthly tape measurements to water surfaces or by continuous data recorders. The water levels in water table wells generally returned to levels within the range of average conditions in early spring and have remained there through the summer. Water levels in the confined aquifers of the Virginia Coastal Plain, however, continued their steady decline due to cumulative withdrawals indicating that ground water levels have not reached steady-state in reference to current withdrawal levels.

IV. Water Withdrawals

The Virginia Water Withdrawal Reporting Regulation (9 VAC 25-200-10 et seq.) requires that individuals or facilities that withdraw water at volumes greater than 10,000 gallons per day (one million gallons per month for crop irrigators) must measure and report annually to DEQ the monthly volume of water withdrawn. The Virginia Water Use Data System (VWUDS) database contains withdrawal data collected for 20 years under this regulation.

A summary of the water withdrawal data for the years 1998 through 2002 is presented in **Table 2**. The data are aggregated by category of use and by source type. Withdrawals by hydroelectric power generating facilities are exempt from reporting requirements and are not included in this report.

During 2002, VWUDS recorded a total average water withdrawal of 8,519 million gallons per day (mgd) for offstream water uses, a decrease of less than one percent from the 2001 reported withdrawals. **Table 2** and **Figure 5** represent water withdrawals by individuals or facilities covered by the water withdrawal reporting regulation. Withdrawals of less than 10,000 gpd are exempt from the reporting requirements and are not included in the table. **Figure 5** shows the distribution of water withdrawals by category of use, excluding withdrawals associated with electric power generation. The major electric power generating plants in Virginia utilize withdrawals as once-through cooling water. Currently, approximately 90 to 95 percent of the water withdrawn for electric power generation in Virginia is returned to the source. Newer power plants, however, usually use cooling towers that consume more water than the older plants. Excluding electric power facilities, public water supply systems were the largest consumers of water in the Commonwealth, accounting for 54 percent of the remaining withdrawals. The second largest consumer of water in Virginia is manufacturing, which accounted for 38 percent of withdrawals after electric power facilities are excluded (see **Figure 5**).

The most recent water use report by the USGS, entitled “Estimated Use of Water in the United States in 1995,” estimated that 75 percent of Virginia’s population is served by public water supply systems and 25 percent is supplied through private wells. The relative contribution of surface and ground water sources to non-power generation withdrawals is illustrated in **Figure 6**. The figure shows that large water demands are primarily met by surface water sources. Users of ground water sources outnumber surface water users; however, the amount of water withdrawn from aquifers is less than is withdrawn from streams and reservoirs. Surface water sources provide 87 percent of

the public water supply, and ground water sources provide the remaining 13 percent. The 1995 publication is the latest in print.

Table 3 lists the top 50 individual water users ranked by the amount of their 2002 withdrawals. The top eight water users were electric power generators.

Table 2
Virginia WaterWithdrawal Summary(1998 - 2002)
(Million Gallons per Day - MGD)

	Category	1998	1999	2000	2001	2002
Groundwater	**Agr**	12.72	13.68	14.7	13.07	13.16
	Com	6.71	6.61	7.52	8.51	9.92
	Man	105.37	100.43	102.33	96.07	93.83
	Min	1.12	5.54	5.66	6.06	1.33
	PF	1.06	0.95	1.15	1.01	0.87
	PN	0.05	0.39	0.35	0.37	0.31
	PWS	67.16	67.44	64.44	68.69	72.84
	Irr	9.72	9.75	15.5	10.84	18.49
	Subtotal(GW)	203.91	204.79	211.65	204.62	210.75
Surface Water						
	Agr	4.95	4.8	4.58	4.52	4.58
	Com	10.45	10.82	7.77	15.62	9.58
	Man	477.53	441.38	419.12	390.63	420.4
	Min	35.58	38.81	38.39	32.24	29.99
	PF*	3294.24	3234.52	3405.22	3421.28	3015.45
	PN*	4105.93	4074.85	4092.35	3717.92	4070.66
	PWS	684.35	680.15	657.7	733.75	748.27
	Irr	16.96	12.23	7.77	10.52	9.63
	Subtotal(SW)	8629.99	8497.56	8632.9	8326.48	8308.56
Combined Totals						
Grand Total		8834	8702	8845	8531	8519
Total Excluding Power		1433	1392	1345	1391	1432

Legend

GW - Groundwater
SW - Surface Water
Agr - Agriculture
Com - Commercial
Man - Manufacturing
Min - Mining
PF - Power, Fossil Fuel
PN - Power, Nuclear
PWS - Public Water Supply
Irr - Irrigation

* Approximately 90-95% of withdrawal is returned to the source.

Figure 2. 2002 Water Withdrawal by Category
(8519 MGD)
(Including Power Generation)

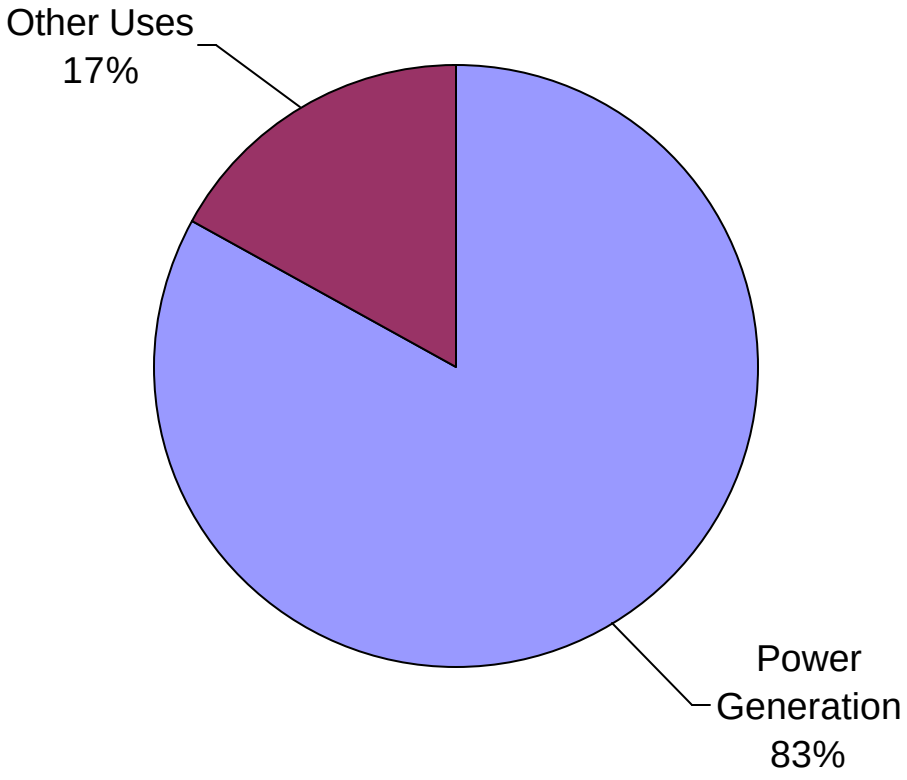


Figure 5.
2002 Water Withdrawals By Category
(Excluding Power Generation)
(1432 mgd)

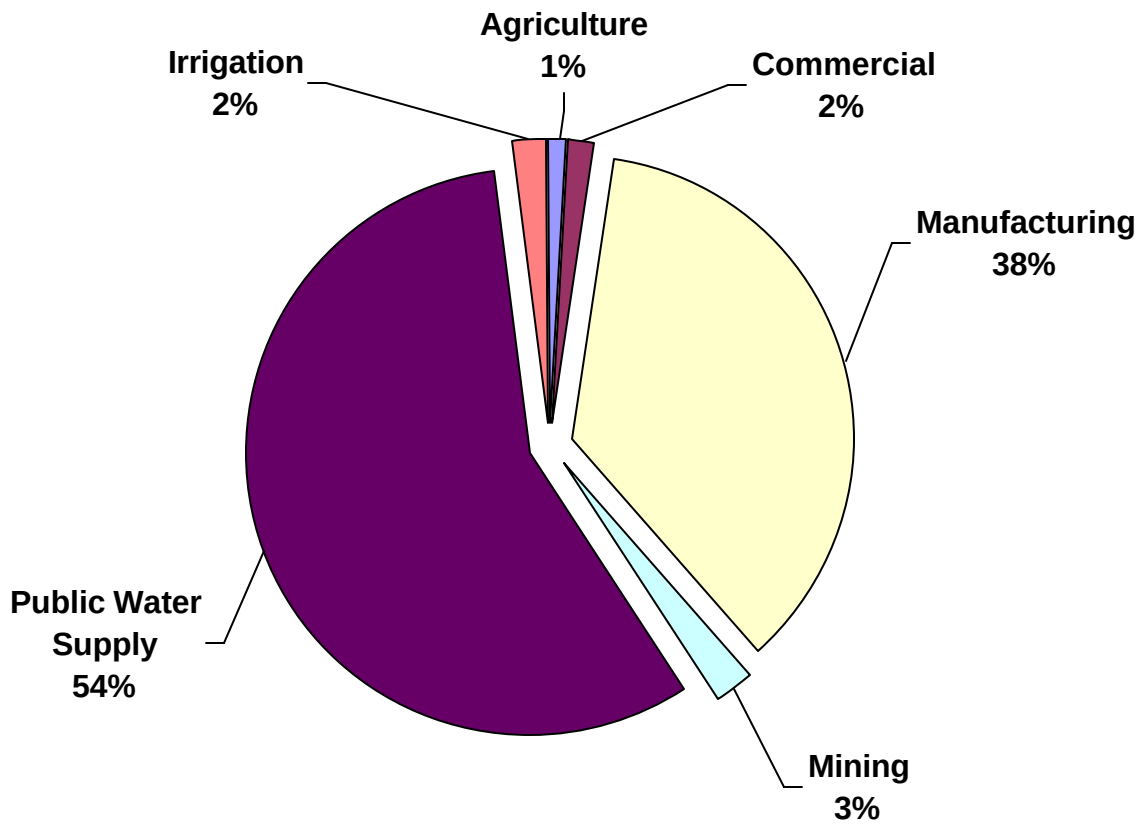


FIGURE 6. 2002 WATER WITHDRAWAL BY SOURCE TYPE (1432 mgd) (Excluding Power Generation)

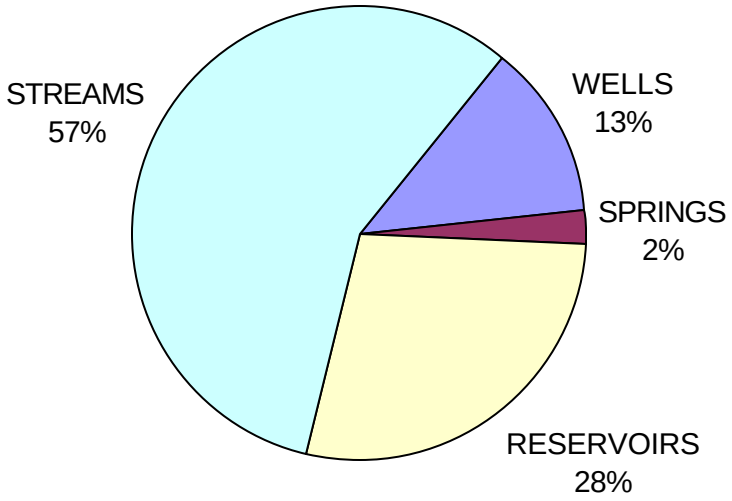


	Table 3. Top 50 Water Withdrawers During 2002			
	OWNER NAME	**SYSTEM**	**CATEGORY**	**TOTAL (MGD)**
1	DOMINION VIRGINIA POWER	SURRY NUCLEAR POWER PLANT	PN	2039.564
2	DOMINION VIRGINIA POWER	NORTH ANNA NUCLEAR POWER PLANT	PN	2031.099
3	DOMINION VIRGINIA POWER	YORKTOWN FOSSIL POWER PLANT	PF	918.047
4	DOMINION VIRGINIA POWER	CHESTERFIELD POWER STATION	PF	844.803
5	DOMINION VIRGINIA POWER	CHESAPEAKE ENERGY CENTER	PF	488.704
6	MIRANT POTOMAC RIVER LLC	POTOMAC RIVER GENERATION STAT	PF	366.636
7	APPALACHIAN POWER CO.	GLEN LYN POWER PLANT	PF	265.844
8	UNITED STATES GOVERNMENT	WASHINGTON AQUEDUCT DIVISION	PWS	154.698
9	HONEYWELL INTERNATIONAL INC	HOPEWELL PLANT	MAN	128.627
10	NEWPORT NEWS, CITY OF	NEWPORT NEWS	PWS	104.480
11	DOMINION VIRGINIA POWER	BREMO BLUFF POWER PLANT	PF	98.987
12	RICHMOND, CITY OF	RICHMOND, CITY	PWS	95.688
13	NORFOLK, CITY OF	NORFOLK	PWS	87.384
14	FAIRFAX COUNTY WATER AUTHORITY	POTOMAC RIVER	PWS	85.031
15	CELANESE ACETATE L.L.C.	CELCO PLANT	MAN	62.789
16	FAIRFAX COUNTY WATER AUTHORITY	OCCOQUAN	PWS	58.296
17	GIANT YORKTOWN INC	YORKTOWN REFINERY	MAN	57.822
18	WESTVACO CORPORATION	COVINGTON PLANT	MAN	57.635
19	INTERNATIONAL PAPER CORP	FRANKLIN PLANT	MAN	33.683
20	DUPONT E I DE NEMOURS & CO.	SPRUANCE PLANT	MAN	27.736
21	VIRGINIA BEACH, CITY OF	VIRGINIA BEACH	PWS	27.658
22	APPOMATTOX R WATER AUTHORITY	LAKE CHESDIN	PWS	25.490
23	HONEYWELL INTERNATIONAL INC	CHESTERFIELD PLANT	MAN	23.098
24	PORTSMOUTH, CITY OF	PORTSMOUTH	PWS	21.799
25	UNITED STATES GOVERNMENT	WASHINGTON AQUEDUCT DIVISION	PWS	21.751
26	VIRGINIA AMERICAN WATER CO.	HOPEWELL DISTRICT	PWS	20.622
27	AMERICAN ELECTRIC POWER CO	CLINCH RIVER POWER PLANT	PF	17.781
28	ROANOKE, CITY OF	ROANOKE, CITY OF	PWS	15.937
29	ST LAURENT PAPER PRODUCTS CORP	WEST POINT PLANT	MAN	15.788
30	U.S. SILICA	MONTPELIER PLANT	MIN	14.400
31	FAIRFAX, CITY OF	FAIRFAX, CITY OF	PWS	12.400
32	LYNCHBURG, CITY OF	LYNCHBURG	PWS	11.352
33	SMURFIT-STONE CONTAINER CORP	HOPEWELL PLANT	MAN	11.285
34	ROANOKE COUNTY	SPRING HOLLOW RESERVOIR	PWS	10.673
35	MANASSAS, CITY OF	MANASSAS	PWS	10.421
36	DOMINION/OLD DOMINION EL	CLOVER POWER STATION	PF	10.319
37	RIVANNA WATER & SEWER AUTH.	ALCSA & CHARLOTTESVILLE	PWS	9.591
38	VIRGINIA, COMMONWEALTH OF	COURSEY SPRING FISH STATION	AGR	9.591
39	NEWPORT NEWS SHIPBUILDING	NEWPORT NEWS SHIPBUILDING	MAN	9.358
40	STAFFORD COUNTY	STAFFORD COUNTY	PWS	8.531
41	GEORGIA-PACIFIC CORPORATION	BIG ISLAND PLANT	MAN	8.475
42	WINCHESTER, CITY OF	WINCHESTER	PWS	8.108
43	SPOTSYLVANIA COUNTY	MOTTS RUN WTP	PWS	8.024
44	DANVILLE, CITY OF	DANVILLE-MUNICIPAL	PWS	7.702
45	BLACKSBURG-CBURG-VPI WTR AUTH	BLACKSBURG-CHRISTIANSBURG-VPI	PWS	7.232
46	HARRISONBURG, CITY OF	HARRISONBURG	PWS	6.780
47	GRIEF BROS. CORPORATION	RIVERVILLE MILL	MAN	6.344
48	SALEM, CITY OF	SALEM	PWS	5.828
49	WASHINGTON COUNTY SERVICE AUTH	WASHINGTON COUNTY	PWS	5.542
50	CHESTERFIELD COUNTY	CHESTERFIELD COUNTY	PWS	5.523

AGR=Agriculture, COM=Commercial, MIN=Mining, MAN=Manufaturing, PF=Power, Fossil, PN=Power, Nuclear, PWS=Public Water Supply

V. Surface Water Management Act (SWMA)

In 1989, the General Assembly enacted the Surface Water Management Area Act (SWMA) for the purpose of protecting instream uses from excessive surface water withdrawals and to enable water users to develop plans for allocation of available surface water resources during low flow conditions. The legislation authorizes the State Water Control Board (SWCB) to establish surface water management areas in places where the levels or supply of surface waters could be potentially adverse to public welfare, health and safety. The SWCB has initiated the regulatory process for designating the James River in the Richmond metropolitan area as the first Surface Water Management Area. A draft regulation has been developed that will designate the James River upstream from the southeastern toe of the Interstate 95 bridge in the City of Richmond to the southwestern toe of the US Route 522 bridge in Powhatan County as a surface water management area. The area will include the mainstem of the James River and all tributaries to the James River and their watersheds in this river reach. A public hearing was held on May 20, 2003, to collect comments regarding this draft regulatory action. DEQ staff continues to meet with the City of Richmond and Henrico County regarding their comments to the draft regulation. DEQ has requested and received authorization to delay final action on this draft regulation until the State Water Control Board's spring 2004 meeting. During this time period staff will continue to work with Richmond and Henrico to attempt to reach consensus on final regulatory language. In addition, consideration is being given to suggesting changes to the Virginia Water Permitting Program that would require VWP permits for all surface water withdrawals in the Commonwealth. This potential change in the VWP program would eliminate the need for the development of a surface water management area and the development of a surface water withdrawal permitting program.

V. Ground Water Withdrawal Management

In 1992, the General Assembly repealed the Ground Water Act of 1973, and enacted the Ground Water Management Act of 1992. The new act establishes ground water withdrawal permitted amounts based on need as opposed to the repealed legislation, which established ground water withdrawal rights based on maximum daily withdrawals. The GWMA of 1992 limits the term of ground water withdrawal permits to ten years. It requires all users with withdrawals of more than 300,000 gallons per month within designated ground water management areas, including agricultural withdrawals, to obtain ground water withdrawal permits. The SWCB has designated two ground water withdrawal management areas, the Eastern Virginia GWMA and the Eastern Shore GWMA, and all withdrawals in excess of 300,000 gallons per month within these areas require a ground water withdrawal permit.

The regional ground water flow model that is used as the basis for examining ground water conditions in the Virginia Coastal Plain was originally developed in the mid-1980s. A select group of scientists from the USGS and agency staff met in the spring of 1999 to evaluate the existing regional model and develop a plan of action to address any problems identified. This group included scientists who developed the original model, the authors of the model code utilized in the regional model, and developers of other regional models in coastal plain settings. The group identified several areas of concern with the existing model. The major areas of concern included: (1) the model is based on scientific knowledge of the Virginia Coastal Plain that is twenty years old and does not include

significant new discoveries such as the existence of the Chesapeake Bay Impact Crater, (2) the level of detail contained in the hydrogeologic framework that forms the basis of the model varies significantly across the coastal plain with a significant lack of ground water data in the Northern Neck and Middle Peninsula, and (3) the computer model relies on data management techniques from the mid-1980s that are very cumbersome when compared with current techniques.

Agency staff continues to work in collaboration with the staff of the Virginia District USGS Water Resources Division and the Hampton Roads Planning District Commission in the production of a new ground water flow model for the Virginia Coastal Plain that will serve as the basic tool to manage ground water withdrawals. It is anticipated that the model will be completed in late 2005. In addition, DEQ staff has worked collaboratively with the USGS staff to collect a suite of ground water samples from the Eastern Shore of Virginia. These ground water samples will be age-dated and utilized to calibrate a new ground water flow model for the Eastern Shore. Both of these models are being developed with the capability to examine salt-water intrusion issues.

DEQ staff continues to use the existing USGS Coastal Plain Ground Water Flow Model to evaluate requests for ground water withdrawal permits. While simulations of the potential impact of new or expanded ground water withdrawals from this model have allowed for the approval of requested withdrawal permits, many recent evaluations have indicated drawdowns in ground water levels closely approaching the limit allowed by regulation. This means we are approaching a point where, in certain areas of the coastal plain, an application for an increased or new ground water withdrawal will likely be denied based on outputs of the Coastal Plain Ground Water Flow Model. The shortcomings in the model are well known and recognized by the consulting community. However, the USGS Coastal Plain Ground Water Flow Model is currently the best available tool to evaluate the potential impacts of large proposed withdrawals in the Virginia Coastal Plain. These recent evaluations emphasize the need to revise the existing model that is used to guide ground water management decisions in the Coastal Plain.

VII. Water Supply Planning and Policies

Informed management of Virginia's water resources is crucial to the health and welfare of Virginia's citizens and environment and continued economic prosperity. In recognition of the importance of water supply planning and water resources management, Governor Warner launched the Virginia Water Supply Initiative in the fall of 2002. The core of this new policy will be improved state support for and coordination of local and regional water supply planning. In addition, this initiative required the development of a drought assessment and response plan for the Commonwealth.

DEQ constituted a Drought Response Technical Advisory Committee (DRTAC) in the winter of 2003. This committee was composed of a broad representation of local governments, agricultural interests, landscaping and nursery interests, golf course operators, car wash operators, tourism and travel interests, environmental interests, irrigation companies, public water providers, and other water users affected by the recent drought. Members of the existing Virginia Drought Monitoring Task force also actively supported the DRTAC. The DRTAC developed a consensus plan that outlines a

systematic drought assessment mechanism and offers a range of suggested water use reducing activities during three drought stages: drought watch, drought warning, and drought emergency. The draft plan was circulated to local governments, manufacturing interests, and environmental interests for comment and was recently finalized. The development of this Drought Assessment and Response Plan assures that the Commonwealth can react to future drought conditions to assure that citizens have an adequate supply of water for essential uses. DEQ staff has developed a drought ground water monitoring system and is currently developing capabilities to collect real-time ground water levels from these wells to support future drought assessment activities. DEQ staff is also coordinating with the State Climatology Office in the development of a near real-time radar composite system to monitor precipitation conditions. These two data projects will greatly improve the Commonwealth's ability to quickly assess the advancement of future droughts.

The protracted drought the Commonwealth recently experienced emphasized the need for more proactive water supply planning, more efficient and effective water delivery systems, and more innovative financing methods to maximize available resources for drinking water improvements. To begin the development of this water supply planning effort, the Secretary of Natural Resources, in coordination with the State Water Commission and the Virginia Department of Health (VDH), formed the Water Policy Technical Advisory Committee (Water Policy TAC).

The mission of the Water Policy TAC was:

> *To identify the roles and responsibilities of state and local governments to assure groundwater and surface water resources are used in a sustainable way that protects the environmental resources and meets citizen water needs (agricultural, business and residential) now and in the future.*

The Water Policy TAC began meeting in October 2002 and developed recommendations for beginning a statewide water supply planning process. Specifically, the Water Policy TAC recommended that:

1. The state should be in the lead for water policy and planning, but the role of localities must be recognized;
2. Localities should develop plans according to criteria established by DEQ;
3. Regional plans should be encouraged;
4. The Water Policy TAC should continue to look at these issues and develop further recommendations;
5. DEQ should begin a rule making process according to the above.

Based upon these recommendations, the State Water Commission endorsed legislation (SB1221) that directed DEQ to begin the planning process. This legislation was passed by the 2003 Session of the General Assembly and requires the development of draft criteria for local and regional water supply plans and the development of a preliminary state water resources plan by December 1, 2003.

The Water Policy TAC was reconstituted with additional members in April of 2003 and continues to meet in an attempt to provide DEQ with consensus-based water supply planning recommendations. DEQ has published a NOIRA advertising its intent to adopt

water supply planning regulations. DEQ staff has solicited existing water supply plans from all local governments for inclusion into the preliminary state water resources plan.

The activities of the Water Policy TAC have been very intensive and constructive. Working with a group that has so much representative diversity presents many challenges to drafting and reaching consensus. It is important to recognize that all parties to the process are still actively participating and there continues to be a sincere desire by all parties to advance water supply planning. The Water Policy TAC is on course to provide a list of draft requirements for local or regional water supply plans by December 1, 2003.

VIII. Conclusion

Comprehensive water supply and water resources planning is critical to ensuring the adequacy of water supplies for current and future needs and for beneficial uses. DEQ will continue to work as a partner with local governments and other interested parties to develop a state water resources plan.

The Virginia Water Supply Initiative establishes new priorities for water supply managers. The Initiative lays the groundwork for managing Virginia's water resources for decades to come by linking DEQ's responsibility to protect and manage water supplies for human and environmental uses with encouraging regional water supply planning efforts and recognizing the role of local governments in meeting local water supply needs.