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MARINE RESOURCES
COMMISSION

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

November 20, 2015

James River Water Authority
c/o Mr. Steven M. Nichols, Fluvanna County Administrator
132 Main Street
P.O. Box 540
Palmyra, Virginia 22963

SENT VIA E-MAIL: snichols@fluvannacounty.org
RECEIPT CONFIRMATION REQUESTED

Re: Virginia Water Protection (VWP) Individual Permit Number 14-0343
James River Water Supply Project, Fluvanna County, Virginia
Draft Permit and Public Notice

Dear Mr. Nichols:

Pursuant to the VWP Permit Program Regulation 9 VAC 25-210-10 and § 401 of the Clean Water Act Amendments of 1977, Public Law 95-217, the Department of Environmental Quality has enclosed the VWP Individual Permit for the "James River Water Supply Project" project.

This permit is valid for 15 years from the date of issuance. No re-issuance or extension of the permit may occur, as the permit term cannot exceed the maximum of 15 years.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have **30 calendar days** from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period. Refer to Part 2A of the Rules of the Supreme Court of Virginia for additional requirements governing appeals from administrative agencies.

Alternatively, an owner may request a formal hearing for the formal taking of evidence upon relevant fact issues under Section 2.2-4020 of the Administrative Process Act. A petition for a formal hearing must meet the requirements set forth in 9 VAC 25-230-130.B of the Virginia Administrative Code. In cases involving actions of the board, such petition must be filed within 30 calendar days after notice of such action is sent to such owner by certified mail.

Should you have any questions, please contact Brian McGurk at (804) 698-4180, Brian.McGurk@deq.virginia.gov, or at the above address.

Respectfully,

Scott W. Kudlas
Director, Office of Water Supply

Enclosures: Permit Cover Page, Part I - Special Conditions, Part II - General Conditions, Attachment A, Attachment B: Monthly VWP Permit Inspection Checklist, Attachment C: VWP Permit Construction Status Update Form, Permit Fact Sheet

cc: Mr. Goodman B. Duke, Chairman of James River Water Authority – VIA EMAIL
Mr. Christian Goodwin, Louisa County Administrator – VIA EMAIL
Mr. David J. Saunders, Timmons Group – VIA EMAIL
Mr. Joseph C. Hines, Timmons Group – VIA EMAIL
Mr. Randy Owen, Virginia Marine Resources Commission – VIA EMAIL
Mr. Steven Vanderploeg, U.S. Army Corps of Engineers – VIA EMAIL
Ms. Amy Ewing, Virginia Department of Game and Inland Fisheries – VIA EMAIL
VDH Office of Drinking Water – VIA EMAIL

November 20, 2015

FACT SHEET
Virginia Water Protection Individual Permit No. 14-0343
James River Water Supply Project, Fluvanna County, Virginia

DEQ has reviewed the application for the Virginia Water Protection (VWP) Individual Permit Number 14-0343 and has determined that the project qualifies for a revoke and reissuance of an individual permit. Based on the information provided in the application and in compliance with § 401 of the Clean Water Act as amended (33 USC 1341 et seq.) and the State Water Control Law and regulations, DEQ has determined that there is a reasonable assurance that the activity authorized by this permit will protect instream beneficial uses, will not violate applicable water quality standards, and will not cause or contribute to significant impairment of state waters or fish and wildlife resources, provided the permittee complies with all permit conditions.

Surface water impacts have been avoided and minimized to the maximum extent practicable. The proposed permit also addresses no net loss of wetland acreage and function through compensatory mitigation. Permitted wetland impacts have been inventoried in evaluating this proposed permit.

The following details the application review process and summarizes relevant information for developing the Part I - Special Conditions for permit issuance.

1. Contact Information:

Permittee Legal Name and Address:

James River Water Authority
c/o Fluvanna County Administrator
132 Main Street
P.O. Box 540
Palmyra, Virginia 22963
Attn: Mr. Steven M. Nichols, Fluvanna County Administrator

Permittee Contact Information:

Mr. Goodman B. Duke, Chairman of James River Water Authority (primary contact)
Phone: (540) 894-7982
Email: Bbd304@comcast.net

Mr. Steven M. Nichols, Fluvanna County Administrator
Phone: (434) 591-1910
Email: snichols@fluvannacounty.org

Mr. Christian Goodwin, Louisa County Administrator
Phone: (540) 967-3400
Email: CGoodwin@louisa.org

Property Owner Legal Name and Address:

Point of Fork Farm, LP
P.O. Box 847
Columbia, Virginia 23038
Attn: Ms. Barbara S. Gillam, POF Development Corporation

Agent Legal Name and Address:

Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, Virginia 23225

Attn:	David J. Saunders, PE	Joseph C. Hines, PE
Phone:	(804) 200-6388	(804) 200-6380
Email:	David.Saunders@timmons.com	Joe.Hines@timmons.com

2. JPA Processing Dates:

Received Application for Revoke and Reissuance:	March 14, 2014
Letters sent to VDH, VDGIF, VDCR, VMRC:	March 26, 2014
Coordinated with Water Supply Planning Program:	March 27, 2014
1st Request for Additional Information Sent:	March 28, 2014
Response to 1st Request for Additional Information Received:	June 11, 2014
2nd Request for Additional Information Sent:	July 8, 2014*
Response to 2nd Request for Additional Information Received:	September 12, 2014
Letter(s) sent to Local Government(s):	
Fluvanna and Cumberland Counties:	September 16, 2014
Town of Columbia	September 17, 2014
Letters sent to Commissioner of Revenue:	N/A (Information provided in JPA)
Letters sent to Riparian Land Owners:	September 25, 2015
3rd Request for Additional Information Sent:	September 26 and 30, 2014
Response to 3rd Request for Additional Information Received:	October 30, 2014
4th Request for Additional Information Sent:	November 10, 2014
Response to 4th Request for Additional Information Received:	December 5, 2014
5th Request for Additional Information Sent:	December 12 and 16, 2014
Response to 5th Request for Additional Information Received:	December 17 and 23, 2014 and January 27, 2015
Joint Publication with VMRC of Received JPA:	May 6, 2015, revision on May 7, 2015
6th Request for Additional Information Sent:	May 6, 2015 and May 13, 2015
Permit Fee Deposited by Accounting:	May 14, 2015
Application Complete:	May 14, 2015
Response to 6th Request for Additional Information Received:	May 20, 2015
Draft Permit Package Issued:	August 20, 2015
Copy of Public Notice sent to DEQ Central Office:	August 20, 2015
Public Notice Published:	August 22, 2015
Copy of Public Notice sent to Admin. Board Planning:	August 24, 2015
Received Verification of Publication:	August 26, 2015
Processing Deadline (120 days from Complete Application):	September 10, 2015

End of 30-Day Public Comment Period:	September 21, 2015
Permit Issuance Date:	November 20, 2015

*The second request for additional information was provided in a meeting format. The meeting was unable to be held within 15 days of receiving the additional information submittal; however it was scheduled within the 15 day timeframe. At the time of scheduling, staff informed the permittee the Joint Permit Application (JPA) was incomplete.

3. Project Location:

The proposed intake is located on the north bank of the James River, just upstream of the confluence with the Rivanna River at the end of Route 624, near the Town of Columbia in Fluvanna County, Virginia.

City/County:	Fluvanna County
Waterbody:	James River
Basin:	James River Basin
Subbasin:	Upper Middle James River
Section:	10
Class:	III
Special Standards:	None
HUC:	02080203
Latitude & Longitude of Intake:	38°44'58" N, -78°10'13"W
U.S.G.S. Quadrangle:	Columbia and Lakeside Village
State Watershed No.:	H20R

4. Project Description:

Project Purpose
The James River Water Authority (JRWA) proposes to construct and operate a new raw water intake to withdraw surface water from the James River, just upstream of its confluence with the Rivanna River, and installation of associated water lines to meet the water demands associated with the Counties of Fluvanna and Louisa. The types of water use are residential, commercial, and industrial. This permit action is a revoke/reissuance of VWP Permit No. 04-0805 with an issuance date of June 12, 2006, in which the intake was proposed to be located further upstream at Bremo Bluff. The activity will be reissued under VWP Permit No. 14-0343.

The construction activities of the proposed project consist of the following: intake structure, pump station, electrical/control building and installation of a raw water transmission pipe from the intake structure to Route 6 within the vicinity of the Rivanna River. Extension of water transfer lines past Route 6 will be evaluated under separate application at an unknown future date.

Existing VWP Permit
The project permitted under VWP Permit No. 04-0805 was never constructed. The original proposed intake was to be located on the north bank of the James River at Bremo Bluff, at the end of Route 657, off of Route 15. The water volumes authorized in that permit was a maximum daily withdrawal of 5.7 million gallons per day (mgd) and a maximum annual volume of 1.1 billion gallons (bg). The permit included a condition to reduce the maximum annual volume by 54.75 million gallons (mg) should the Department of Corrections pursue a renewal of VWP Permit No. 95-0957 (permit expires March 5, 2017)

to withdraw from Mechunk Creek and by 460 mg if Louisa County pursued an alternative water supply system to provide water to the Zion Crossroads area from Bowlers Mill Reservoir. Additionally, VWP Permit No. 04-0805 restricted sale of water to East Coast Transport Inc., Central Water Storage Corporation, or Tenaska Virginia Partners Power Plant in Fluvanna County near Cunningham or to the proposed power plant in Buckingham due to a separate water allocation to those entities that was provided under VWP Permit No. 01-1282. The proposed water demand for this reissuance did not include any of the above anticipated water demands and thus, further review or restrictions in this permit was not needed.

5. Water Withdrawal Use, Need and Demand:

Purpose of Water Uses
The JRWA proposes to construct and operate a new raw water intake to withdraw surface water for public water supply on the James River to meet the water demands for the Counties of Fluvanna and Louisa. The proposed public water supply use includes, but is not limited to, residential, commercial, and industrial. The intake is proposed to be located on the north bank of the James River, just upstream of the confluence with the Rivanna River. The permittee projects an average daily demand of 4.12 mgd and 6.98 mgd and a peak day demand of 7.79 mgd and 12.80 mgd in the Years 2030 and 2045, respectively.

Basis of Need
The JRWA's stated need is to construct and operate a new raw water intake to withdraw surface water to meet the long term water demands of the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April 2010 and June 2011, respectively. Existing water supply sources, a combination of surface and groundwater, were identified in the water supply plans as insufficient to meet long term demands of existing service areas or designated growth areas identified by the Counties. The James River Water Supply Project is proposed to meet the long term demands of those service areas that are located in reasonable proximity to the intake.

The Counties' populations are anticipated to continue to grow steadily over the time period reviewed in their respective water supply plans. The population projections for each County are based upon linear extrapolations. The Louisa County Long Range Regional Water Supply Plan dated June 2011 identified that a new water source should be developed for areas proposed to be supplied by municipal community water systems by 2021 and by 2034 to support growth in existing service areas. In the Fluvanna County Regional Water Supply Plan dated April 2010, existing supplies were also reported as inadequate to support continued growth. The plan also identified that for some service areas, such as the Fork Union Community Water System, that existing supplies were adequate, however; continued use was undesirable due to limited quantity and poor quality resulting in the desire to discontinue reliance upon groundwater sources.

The table below provides the anticipated population growth trends for Fluvanna and Louisa Counties.

Table 1. Population Projections

Year	Louisa County[1]		Fluvanna County[2]
	Louisa County Comprehensive Plan	VEC Community Profile	VEC
2000	25,407	25,627	Not available
2010	30,003	33,153 (Census data)	28,971
2020	34,599	41,889	37,433
2030	39,195	50,739	47,010
2040	43,791	57,474	58,763
2050	48,387	65,183	73,453

Notes:

(1) Obtained from Table 3: Population Projection by Source of the Louisa County Long Range Regional Water Supply Plan dated June 2011

(2) Obtained from Table 7-3: Projected Population, 2010-2060 of the Fluvanna County Regional Water Supply Plan dated April 2010.

The Counties also propose to use the new water source to meet the water demands of future business prospects. The Counties are currently engaged in economic development marketing efforts to attract new industry prospects to the region, particularly along the Interstate 64 corridor. Based upon information provided in the additional information response dated September 12, 2014, and the letter from the Central Virginia Partnership for Economic Development dated September 12, 2014, both counties are proactively marketing to the following industries: business and financial services, information technology (data centers), advanced manufacturing, bioscience and medical devices, agribusiness and food processing, and defense and security. The Counties have indicated their marketing efforts are limited due to insufficient water supply to meet water requirements of these targeted industries. As a result, the Counties have either been unable to respond to bids or have been eliminated from site searches due to the lack of available water supply.

For additional information, see page 1 of Appendix C of the Joint Permit Application (JPA) dated March 12, 2014, Comment Nos. 1 and 2 of additional information response dated September 12, 2014, and the letter from the Central Virginia Partnership for Economic Development dated September 12, 2014.

Water Demand Projection

The water demands for municipal water systems in Louisa County were estimated in terms of residential and commercial water uses and based upon historical water system data and population information to calculate the typical daily water use rate per person for existing service areas. This estimate was also used as a basis for estimates of the water use rate per person in designated growth areas or proposed municipal service areas in Louisa County. Water demands for Fluvanna County were projected based on the 2009 Comprehensive Plan and the 2029 Future Land Use Map along with population projections and existing water system data. The total water demands for the project were increased by 7.5 percent to account for leakage, non-metered use and water production losses.

Due to the diverse nature of industries the Counties are targeting, the water needs for each varies due to type of business. The Counties estimate the potential range of water needs for each type based upon the information obtained from the Central Virginia Partnership for Economic Development, recent project inquiries and consulted with Dominion Virginia Power regarding minimum water capacity requirements to become a certified data center (obtained from additional information response dated September 12, 2014):

Brewery	225,000 to 280,000 gallons per day (gpd)
Advanced Manufacturing	300,000 to 750,000 gpd
Pharmaceutical	80,000 to 690,000 gpd
Agri-Business	80,000 to 230,000 gpd
Certified Data Center Site	500,000 gpd

The above water demands result in an average demand of 322,960 gpd for all industry types. This average was used to develop reasonable demands associated with future business prospects. The total water demand for the James River Water Supply Project assumes 1 to 2 new business prospects will locate to each County within the 15 year permit term.

All proposed service areas for the new withdrawal are currently supplied by groundwater, with the exception of Northeast Creek Water Treatment Plant (WTP) Service Area (encompassing Louisa County Water Authority, Town of Louisa, Town of Mineral and Lake Anna), which is supplied by surface water from the Northeast Creek Reservoir. This surface water supply and new and existing groundwater supplies are anticipated to be inadequate to meet all of the identified demand. The proposed withdrawal from the James River is the Counties' preferred alternative to meet the identified future demands.

The Northeast Creek Reservoir has a Virginia Department of Health permitted capacity of 1 million gallon per day (mgd). As the water demands for the Northeast Creek WTP Service Area are proposed to be met both by the Northeast Creek Reservoir and the proposed James River withdrawal, JRWA took that in consideration by subtracting the permitted capacity of the reservoir from the total anticipated demand for the proposed project. Staff reviewed the method JRWA used and found it adequate to account for the demand that would continue to be met by another water supply source.

A summary of the JRWA's water demand projections is provided in the below table (information obtained from the table entitled "Summary of County Approved Water Supply Plans with Project Demands" dated March 5, 2014, and revised December 17, 2014, submitted by email dated December 17, 2014):

Table 2: Water Demands by Service Area

Service Area	Average Daily Demand (gpd)		Peak Daily Demand (gpd)	
	Year 2030	Year 2045	Year 2030	Year 2045
Louisa County:				
Gum Spring	118,409	185,455	177,614	278,182
Ferncliff	154,773	242,844	232,160	364,266
Shannon Hill	77,500	122,037	116,250	183,054
Zion Crossroads	712,045	989,837	1,068,068	1,484,755
LCWA	73,020	71,798	109,530	107,697
Town of Louisa	392,736	532,043	589,104	798,064
Town of Mineral	148,317	223,338	222,476	335,007
Lake Anna	1,009,242	1,582,930	1,513,863	2,374,394
Economic Development Prospects	400,000	750,000	600,000	1,125,000
Subtotal	*3,086,042*	*4,700,282*	*4,629,063*	*7,050,419*
Fluvanna County:				
Columbia CWS	5,158	7,768	7,736	11,651
Fork Union CWS	226,020	339,030	339,030	508,545
Palmyra CWS	70,730	125,634	106,095	188,450
Proposed Fluvanna CWS	1,070,541	1,724,246	1,605,812	2,586,367
Economic Development Prospects	300,000	525,000	450,000	787,500
Subtotal	*1,672,449*	*2,721,676*	*2,508,674*	*4,082,513*
James River Water Supply Project				
TOTAL	*4,758,491*	*7,421,955*	*7,137,737*	*11,132,933*
7.5 percent water losses	356,887	556,647	535,330	834,970
Minus 1 mg WTP capacity provided from the Northeast Creek Reservoir	-1,000,000	-1,000,000	-1,000,000	-1,000,000
GRAND TOTAL	*4,115,378*	*6,978,602*	*6,673,067*	*10,967,902*
Peak Daily Demand for a 6 day per week operating schedule			7,785,245	12,795,886

To determine the maximum day and monthly volumes, the Counties proposed a peak day factor of 1.89 and a peak month factor of 1.62 for the 15 year permit term. As the proposed intake does not have historical data upon which to base the proposed peak factors, surrogate data was used from historic water well production and water billings in the Zion Crossroads Service Area for the summer months from 2008 through 2012. The Counties requested a higher peak day factor to accommodate their proposed operations of the intake, which is a six day per week operating schedule. The peak day factor was calculated from the difference between peak day demand and peak day withdrawal needed to meet that demand if only operating the intake six days per week. The peak month factor of 1.62 is proposed based upon historic records for the system at Zion Crossroads. Justifications given by the Counties for the proposed peak factors are that the proposed intake is a new system which is anticipated to be operated consistent with the system at Zion Crossroads (which is proposed to be one of the first areas serviced by the new water source), as well as consistent with the water supply plans for each County. The Counties commented that because the system is proposed, there are unknown variables associated with its operation. They suggested that during the next reissuance of the project, this aspect could be revised to reflect actual usage. These proposed factors are higher than the standards used by DEQ for a peak day (1.6) and peak month (1.25).

DEQ reviewed the proposed peak day and month factors using historical water withdrawal data reported annually to DEQ using information from the Virginia Water Users Database (VWUDS). Data for the service areas served by the Louisa County Water Authority were queried and reviewed because the permittee reviewed the records for this Authority in developing their proposed peak factors. As the proposed project is a new source, there is no historical data to which to refer. Of these service areas, only the Northeast Creek Reservoir is a surface water supply, the rest being groundwater supplies. Staff notes the Northeast Creek Reservoir source is a reservoir system while the proposed system is a direct stream withdrawal without storage.

Staff reviewed the data associated with several systems reported by Louisa County Water Authority, including the Zion Crossroads system, for reference. The peak day factors for the Northeast Creek Reservoir ranged from 1.5 to 2.26, with the five year average of 1.93. The peak month factor for this source ranged from 1.09 to 1.26, with a five year average of 1.16. For comparison, the peak day and peak month factors for the two Zion Crossroads wells ranged from 1.30 to 12.17 and 1.63 to 12.17, respectively. The two wells averaged together over the previous five years results in a peak month of 4.01. The wide ranges are due to zero or very low pumpage from the wells during many months. As the groundwater sources are not operated continuously throughout the year, it is staff opinion that this type of system is less representative than the Northeast Creek Reservoir which is operated continuously throughout the year, of the proposed project. For this reason, staff believes the data for Northeast Creek Reservoir is the most representative data set to use as a comparison with the proposed peaking factors.

Based upon this review, staff concurs with the use of the proposed peak day factor of 1.89 based the data reviewed and the Counties' proposed operations of the intake. However, staff does not find sufficient justification for the proposed peak month factor of 1.62 based upon the data reviewed. Therefore, DEQ proposes to use the standard peak month factor of 1.25.

Staff evaluated the permittee's demand using the average daily demand of 4.12 mgd projected for Year 2030

- Average Daily: 4.12 mgd
- Peak (maximum) day: 4.12 x 1.89 x 1.10 = 8.57 mgd
  - Peak Day Factor (1.89) obtained from application.
  - VDH certification (10 percent capacity)
- Maximum Monthly: 4.12 x 1.25 x 1.10 x 31 = 175.62 million gallons (mg)
  - Peak Month Factor (1.25) using standard factor.
  - VDH certification (10 percent capacity)
- Maximum Annual: (4.12 x 366) = 1,507.92 mg

The requested and calculated water demand volumes for the intake on the proposed project are summarized in the below table:

Table 3: Requested Water Demands and Calculated Withdrawal Limits

	JPA Water Demand Volumes for Year 2030	Staff Calculated Withdrawal Limits (Tier 3)(3)
Average Daily Volume (mgd)	4.12	4.12
Peak Day Volume (mgd)	7.79(1)	8.57
Maximum Monthly Volume (mg)	226.64(2)	175.62
Maximum Annual Volume (mg)	1,474.6(2)	1,507.92

Notes:

(1) The peak day volume requested is that which enables demands to be met through a six day per week operating schedule.
(2) The maximum monthly and annual volumes were not updated since the original submittal of the JPA. These values are included here for reference only and do not reflect revisions made to the demands through the application process.
(3) See Permit Withdrawal Limitations and Instream Flow Requirement subsection under Section 7 below.

The volumes calculated above by staff are the basis for limits in the permit for this project.

Staff concluded that the water demand and statement of need is reasonable and has been adequately justified by the applicant through the information submitted in the VWP permit application process.

6. Alternatives Reviewed:

JRWA reviewed three locations for the proposed new placement of the withdrawal intake as part of this permit application. The three sites considered were:

- The selected site located just upstream of the confluence of the James and Rivanna Rivers near the Town of Columbia.
- Downstream of the confluence of the James and Rivanna Rivers and the Town of Columbia
- Upstream of the confluence of the James and Rivanna Rivers at the Colonial Pipeline crossing.

The permittee selected the proposed intake site based upon ranking each of the three locations using 10 criteria, such as proximity to a power source and a maintained road, security and potential environmental impacts. Impacts to the James River were minimized by positioning infrastructure as close as possible to the river bank. Impacts to surface waters due to the raw water transmission line were minimized through using perpendicular crossings and directional drilling the crossing of the Rivanna River.

Based upon staff review of the proposed project, the preferred alternative avoids and minimizes surface water impacts to the maximum extent practicable and it is the least environmentally damaging and practicable alternative.

Information regarding project alternatives can be found under No. 9 of the JPA Narrative submitted with the JPA dated March 12, 2014.

7. Water Withdrawal Volumes and Instream Flow Requirements:

Staff reviewed the proposed withdrawal using the water demand volumes forecasted for Years 2030 to evaluate cumulative impacts as this is near the scope of the 15-year permit term. This was the period reviewed because the project consists of a direct stream intake with no proposed storage. Therefore, water withdrawal limits for this permit cycle are based on water demand projections for the Year 2030. The demand for the Year 2045 was reviewed only for an understanding of the long term projections.

Water Withdrawal Volumes Requested in JPA
JRWA requested authorization of the following withdrawal volumes based upon the water demand projected for the Year 2030:

- Average Daily: 4.12 mgd
- Maximum Daily: 7.79 mgd
- Maximum Monthly: 170 mg
- Maximum Annual: 1,117 mg

See Table 3 under Section 6 for information regarding the permittee's proposed maximum daily, monthly and annual volumes.

Return Flow / Consumptive Use
As this system is proposed, historic information is not available so estimates were based upon reasonable projections. The permittee anticipates water production losses will be approximately 7.5 percent. Also, the permittee projects that of the total raw water withdrawn, the total return flow projected for the Year 2030 will be 41 percent and 39.4 percent for Louisa and Fluvanna Counties, respectively.

Cumulative Impact Analysis
A cumulative impact analysis was conducted by staff on the proposed water withdrawal. This analysis reviewed the withdrawal volumes requested to evaluate any potential cumulative impacts to existing beneficial uses and existing water users and determine instream flow requirements to limit any impacts to those existing beneficial uses. Based upon the results of the analysis, staff determined the proposed project as limited in the draft permit, will protect existing beneficial uses while meeting the permittee's purpose and need.

A summary of staff's modeling analysis is attached to this fact sheet (Attachment A).

Permit Withdrawal Limitations and Instream Flow Requirements
The permit limits surface water withdrawals to the volume justified based upon the application materials submitted and staff modeling analyses. Based upon this information, the permit proposes the following limits on the withdrawal volumes that are based upon the completion of capital improvements to areas proposed to be serviced by the JRWA, as identified in the JPA and additional informational submittals.

- The withdrawal of water from the James River shall not exceed the limits established in the table below. The withdrawal limits are to be phased in based upon completion of capital improvements necessary to begin water service to areas identified for each Tier:

Tier	Maximum Daily Withdrawal (mgd)	Maximum Monthly Withdrawal (mg)	Maximum Annual Withdrawal (mg)
1	5.82	119.35	1,024.8
2	7.69	157.71	1,354.2
3	8.57	175.62	1,507.92

a. Tier 1 contains the withdrawal limits to meet the justified demands of the service areas of Zion Crossroads and Ferncliff in Louisa County and Fluvanna CWS in Fluvanna County and the economic development prospects as identified in the application for both Counties.

b. Tier 2 contains the withdrawal limits to meet the justified demands of the service areas identified in Tier 1 and the service areas of Shannon Hill, Town of Louisa, Town of Mineral, Louisa County Water Authority and Lake Anna in Louisa County.

c. Tier 3 contains the withdrawal limits to meet the justified demands of the service areas identified in Tier 2 and the service areas of Gum Springs in Louisa County and the Fork Union, Columbia and Palmyra CWS in Fluvanna County

The withdrawal limits for Tier 3 represents the total withdrawal volume for the entire permitted project (the withdrawal limit identified in Section 5) for the 15 year permit term. The service areas associated with Tiers 1 and 2 are based upon the capital improvements schedule provided in the additional information response dated September 12, 2014. The withdrawal limits for Tiers 1 and 2 were calculated in the same manner as identified in Section 5. Authorization to withdraw at the limits identified under each Tier may be requested by the permittee upon completion of the capital improvements to provide water to the service areas identified for each Tier.

- The permittee shall estimate flows at the James River intake in units of cubic feet per second (cfs) on a daily basis by monitoring the stream flow gage detailed herein and by applying the equation "Flows at the intake = $(Q_{SC} + Q_{HD} + Q_{SL}) * 1.03$," where:

  a. Q_{SC} is the previous day's provisional mean daily flow at the U.S. Geologic Survey (USGS) gage No. 02029000 (James River at Scottsville, Virginia);

  b. Q_{HD} is the previous day's provisional mean daily flow at the USGS gage No. 02030000 (Hardware River BL Briery Run near Scottsville, Virginia);

  c. Q_{SL} is the previous day's provisional mean daily flow at the USGS gage No. 02030500 (Slate River near Arvonia, Virginia);

  d. 1.03 is the adjustment factor for drainage area.

The calculation to estimate flows at the intake uses three upstream gages closest to the intake that best represents the drainage area of the intake. Additionally, as the gages are located upstream of the intake and also of the release from the Cobbs Creek Reservoir, provisional stream flows measured at the gage do not include withdrawals from the proposed intake or releases from the Cobbs Creek Reservoir. This equation is to be used to estimate the fourteen (14) day rolling average of flows at the intake to determine

compliance with the drought triggers for implementing the voluntary and mandatory drought stages identified in Part I.F.9.

Drought triggers identified in Part I.F.9.a were constructed based on recommendations from the James River Instream Flow Study: Henrico County Water Supply Withdrawal Final Report, dated September 1991, and which are compatible with the triggers in use by other water users in this portion of the James River such as Henrico County and the City of Richmond. Because of varying rates of inflow between the JRWA intake and the fall line of the James River, area-scaled flow triggers were adjusted to produce a better synchronization with downstream users, and to provide time for drought response implementation. These triggers are aimed at reducing demands during drought to protect aquatic habitat from substantial loss during critical low flow periods. By scaling upstream the drought triggers from the existing beneficial users at the fall line, the drought response framework will greatly increase the likelihood that during low flows, all these users will be conserving water in an equitable manner. This drought condition is designed to reduce the possibility of the JRWA withdrawals causing existing beneficial users downstream to go into conservation more frequently.

JRWA requested the requirement to implement drought stages based upon drought triggers be correlated with initiating withdrawal volumes above their previously authorized withdrawal volume. DEQ found this request reasonable as the previous permit did not include drought flow triggers and these triggers were proposed by staff in response to concerns received from Henrico County and the City of Richmond regarding JRWA's request for an increase in their withdraw volume. Withdrawal volumes identified as Tier 1 (Part I.F.3) closely correlate with the volumes of the previous permit. Therefore, the permit requires drought triggers be implemented once withdrawal volumes above Tier 1 are authorized.

- The permittee shall make reasonable effort to coordinate with the operators of the Cobbs Creek Reservoir when provisional stream flow at the permittee's intake estimated in accordance with Part I.F.6 is equal to or less than the 10th percentile flow of 778 cfs. Coordination shall occur in accordance with the DEQ approved protocol required by Part I.F.8.

The permittee is required to coordinate with the operators of the Cobbs Creek Reservoir (permitted under VWP Permit No. 05-0852 and currently held by Henrico County) when provisional stream flows at the permittee's intake estimated in accordance with Part I.F.6 is equal to or less than the 10th percentile flow of 778 cfs. The purpose for this condition is to promote communication between the permittee and the operators of the Cobbs Creek Reservoir during low flow events for improved management of the resource due to the close proximity of the projects to one another and to ensure downstream uses for which the releases from Cobbs Creek Reservoir are being provided are not impacted by the permittee's withdrawals. At a minimum, coordination between the two entities should entail JRWA informing the operators of the Cobbs Creek Reservoir of their current and intended operations and providing periodic updates during extended low flow events as stipulated in the approved protocol. The protocol for coordination is required by Part I.F.8 to be developed prior to withdrawing water from the James River. It is to be developed, to the extent reasonable, in coordination with the operators of the Cobbs Creek Reservoir, with assistance by DEQ.

The value selected to trigger this coordination represents the estimated lowest 10th percentile flow at the intake based upon the lowest 10th percentile that occurred over the period of record for each of the three upstream stream gages used to estimate flows at the intake. This value was calculated in the same manner as the provisional stream flow at the intake using the below 10th percentile flows (lowest of which all occurred in September) for each of the three gages:

- USGS gage No. 02029000 (James River at Scottsville, VA): 11 cubic cfs
- USGS gage No. 02030000 (Hardware River BL Briery Run near Scottsville, VA): 21.9 cfs
- USGS gage No. 02030500 (Slate River near Arvonia, VA): 722 cfs

Safe Yield of the Project

The safe yield of a surface water withdrawal project is the maximum volume of water that can be withdrawn on an average daily basis during the drought of record (for the area in which the withdrawal is located) to meet the needs of the project while still protecting the existing beneficial uses of the waterbody. This value is subject to change should one or a combination of the following occur: the annual average daily demands of the project change, a new drought of record occurs, or changes to withdrawal limitations in the permit are considered to protect beneficial uses. It should be noted that this value does not represent the total volume of water present at the intake location in the James River during the drought of record.

The safe yield of this surface water withdrawal project was determined based upon the operating rules included in the permit under the conditions of the drought of record for the area in which the project is located. The safe yield of the surface water withdrawal project under these operating rules is the annual average daily volume of 4.12 mgd based upon the 2002 drought of record.

See Attachment A for more information on the modeling analysis.

8. Water Supply Plan Review:

The JPA was coordinated with Water Supply Planning staff on March 27, 2014, who responded on May 2, 2014. The Louisa County Long Range Regional Water Supply Plan dated June 2011 and the Fluvanna County Regional Water Supply Plan dated April 2010 (Plans), submitted for Louisa and Fluvanna Counties, respectively, were developed in accordance with the Water Supply Planning Regulation 9VAC25-780.

In the Plans, the proposed project consisting of a new intake on the James River and the currently authorized VWP Permit No. 04-0805 was the selected alternative to meet the identified projected water demands. However, at the time the Plans were written, the project was not being actively pursued by the Counties. Since that time, the Counties have decided to continue to pursue this regional water supply project identified in the Plans. The Counties formed the James River Water Authority (JRWA), which was established as a wholesale water authority to provide retail delivery to the identified service areas within each County.

The water demand projections considered in this application review are the same as those discussed in the Plans, with the exception of water demands proposed for economic development prospects, which were not considered in the Plans. The water demands for municipal water systems in Louisa County were estimated in terms of residential and commercial water uses and based upon historical water system data and population information to calculate the typical daily water use rate per person for existing service areas. Water demands for Fluvanna County were projected based on the 2009 Comprehensive Plan and the 2029 Future Land Use Map along with population projections and existing water system data. The permittee requested staff consider in this application water demands associated with economic development prospects under the assumption that 1 to 2 new business prospects will locate to each

County within the 15 year permit term. Staff determined this difference in projected water demands between the Plan and the JPA were reasonable.

The preferred alternative proposed in the JPA is consistent with the Plan as described with the minor exception noted in the paragraph above. The applicable sections of the plan were considered in staff's evaluation of the proposed project.

9. Surface Water Impacts:

Surface water impacts due to the proposed water line were minimized by crossing surface waters perpendicularly when possible and following existing roads and easements. Impacts to the Rivanna River will be avoided by directionally drill the crossing.

This permit authorizes the following surface water impacts:

- Impacts to the James River associated with the construction of the intake structure are authorized for 0.09 acre (64 linear feet) of permanent impact and 0.90 acre (485 linear feet) of temporary impact.

- Impacts associated with the construction of a raw water transmission pipe are authorized to permanently impact 0.01 acre of palustrine forested (PFO) wetland and temporarily impact 0.001 acre of palustrine emergent (PEM) wetland and 120 linear feet of a perennial stream channel.

Authorized impact areas shall be as depicted on Sheets 1 and 2 of the plans entitled "JRWA Raw Water Intake, Pump Station and Force Main, Environmental Impact Summary" dated December 19, 2014, revised May 18, 2015, and received May 20, 2015.

Water quality impacts are expected to be temporary and minimal provided the permittee abides by the conditions of the permit. A loss of state waters shall occur. However, the impacts have been avoided and minimized to the greatest extent practicable.

10. Compensation for Unavoidable Impacts:

Compensation for the permanent impact of 0.01 acre of PFO wetland shall be provided at a mitigation to loss ratio of 2:1 through the purchase of 0.02 wetland credit from the Virginia Aquatic Resources Trust Fund and/or a DEQ approved mitigation bank that is authorized to sell credits for area in which the permitted impact site is located. The credit sale must be in accordance with the approved Mitigation Banking Instrument for the mitigation bank.

Compensation for permanent stream channel impacts associated with installation of the intake in the James River were not required for this proposed project as staff determined impacts to the stream channel from construction of the new intake will be minimal and the channel's existing functions and values will remain.

The compensation conforms with the preference hierarchy of the 2008 Compensatory Mitigation Rule issued by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers (USACE) and DEQ's Guidance Memorandum No. 09-2004 (Applying Compensatory Mitigation Preferences Provided in the EPA Mitigation Rule to Virginia Water Protection Permitting).

11. Site Inspection:

A site visit was conducted on February 13, 2015. A summary of the site inspection is located in VWP Permit File No. 14-0343.

12. Relevant Regulatory Agency Comments:

As part of the application review process, DEQ contacted the appropriate state regulatory agencies. Any relevant agency comments were addressed in the VWP individual permit Part I - Special Conditions. Therefore, the staff anticipates no adverse effect on water quality and fish and wildlife resources provided the permittee adheres to the permit conditions.

Summary of State Agency Comments and Actions
By email dated March 26, 2015, comments were requested from the following state agencies: Virginia Department of Game and Inland Fisheries (DGIF), Virginia Department of Conservation and Recreation (DCR), Virginia Marine Resources Commission (VMRC) and the Virginia Department of Health (VDH). Failure to provide comments within 45 calendar days of the DEQ request for comments infers that the agency has no comments on the project activities. Comments were not received from VDH or USFWS.

VMRC
VMRC provided comments in a letter dated and transmitted by email on April 29, 2014, that the proposed project fall within their jurisdiction and a permit would be required. They commented that they were waiting for a response to their request for additional information before proceeding with the public interest review and state agency review.

DEQ coordinated with VMRC on April 30, 2014, and July 8, 2014, during which VMRC said they were still waiting for information they requested from the permittee on March 19, 2014.

DEQ received a copy of a letter on October 13, 2014, from VMRC to the permittee dated October 6, 2014. VRMC's letter stated they had not received the additional information requested on March 19, 2014, and therefore, they were formally inactivating the application request.

DEQ coordinated with VMRC on October 17, 2014 to inquire about the letter and status of VMRC's review. VMRC informed DEQ on October 17, 2014 that the application would remain inactive until the additional information they requested was received.

DEQ contacted VMRC on March 20, 2015, to inquire on the status of their review of the proposed project. VMRC said the application continued to be inactive as the requested information still had not been received. VMRC confirmed that they had not proceeded with the public interest review, which includes public notice of the application, because the application was inactive. As such, a joint notification of the application with VMRC and DEQ was unable to occur.

DEQ informed VMRC as to the status of their review and that a draft permit would not be provided until a joint notification of the application could occur. DEQ requested VMRC contact DEQ when VMRC could move forward with such notification.

VMRC received the requested information enabling them to move forward in April 2015. VMRC published a joint public notice of the application on May 6, 2015, and republished on May 7, 2015, to

correct a printing error that occurred in the first publication of the notice. VMRC coordinated the status of publishing the joint public notice with DEQ by copying staff on their correspondence with JRWA's consultant, Timmons Group, regarding the publication. Additionally, VMRC asked and obtained DEQ's input on the draft joint public notice on April 30, 2015.

DCR

DCR provided the following comments in a memorandum dated May 6, 2014, and transmitted by email on May 6, 2014:

- The Rivanna River to Mouth at James Stream Conservation Unit is within the project site, which include the following natural heritage resources: Yellow lance (not listed) and Green floater (state threatened). Additionally, the federally and state endangered James spinymussel has been historically documented in the James River. Lastly, the Rivanna River and James River have been designated by DGIF as "Threatened and Endangered Species Waters" due to Atlantic pigtoe (state threatened) in the Rivanna River and Brook floater (state endangered) in the James River.
- Recommended the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations.
- Recommended coordination with DGIF and U.S. Fish and Wildlife Service as those agencies have regulatory authority for the management and protection of the identified threatened and endangered species.

Staff requested comments from DGIF on the proposed project on March 26, 2014 and coordinated with USFWS on March 20, 2015.

VDH

VDH corresponded with DEQ on May 7, 2014, to receive another copy other JPA, which was provided the same day. No comments were received from VDH regarding this proposed project.

DGIF

DGIF provided comments to DEQ by email dated May 13, 2014. Although the comments were not received within the 45 day comment period, DEQ accepted the comments as the comments were late by only one day. The comments are summarized below:

Withdrawal and Intake Structure:

- State threatened Atlantic pigtoes are documented in the project area. The James River has been designated a Threatened and Endangered Species waters due to the presence of this species, state endangered brook floaters, and state threatened green floaters. The Rivanna River has been designated a Threatened and Endangered Species waters due to the presence state threatened Atlantic pigtoes and state threatened green floaters. Recommended protection of these species from instream work by the following:
    - The permittee performing a mussel survey and relocation 100 meters upstream through 400 meters downstream of impact area in the James River. The survey is to be performed by a qualified, permitted biologist, preferably no more than six months prior to the start of construction. The survey shall be conducted in accordance with Virginia Department of Game and Inland Fisheries and U.S. Fish and Wildlife Services draft Freshwater Mussel Guidelines for Virginia dated March 7, 2008. Survey results should be coordinated with

DGIF, upon which they will make final recommendations regarding the protection of listed species known from the area. All survey reports should reference the ESSLog# 22598.
- Adhere to a time of year restriction on all instream work from April 15 through June 15 and August 15 through September 30 of any year.

The recommended survey and time of year restriction was added as special conditions of the permit.

- Recommend that all instream work in the James River adhere to a time of year restriction from March 15 through June 30 of any year to protect anadromous fish as the James River and Rivanna River has been designated Potential Anadromous Fish Use Areas.

  The recommended time of year restriction was added as special condition of the permit.

- Recommended conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time, stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures. To minimize harm to the aquatic environment and its residents resulting from use of the Tremie method to install concrete, installation of grout bags, and traditional pouring of concrete, we recommend that such activities occur only in the dry, allowing all concrete to harden and cure prior to contact with open water.

  The special conditions of the permit address these activities.

- Recommended that the intake be fitted with a 1mm mesh screen and that the intake through velocity not exceed 0.25 fps to protect resident aquatic species from impingement and entrainment.

  The recommendation was included as a special condition of the permit.

- Recommended that no more than 10 percent of flow be withdrawn at any time. Requested DEQ confirm that no more than 10 percent of flow is withdrawn at any time, or at least is minimized to the greatest extent possible (with DGIF's review and input).

  The results of staff's cumulative impact analysis predicts the withdrawal volume will be less than DGIF's recommended flow-by in most flow events during the drought of record. DEQ coordinated with DGIF on May 11, 2015, the results of the cumulative impact analysis and staff's proposal to include this recommendation. However, in response to concerns voiced by significant downstream users in June 2015 that this limitation was not restrictive for this withdrawal, staff proposed instead flow triggers scaled to flows at the intake for when the permittee shall implement voluntary and mandatory conservation measures to reduce water use. It is staff position that DGIF's comment is addressed through the requirement for drought flow triggers. Staff communicated to DGIF the change from a flow-by requirement to drought flow triggers in a phone conversation on July 29, 2015.

In response to public comments received by DEQ during the draft permit, a maximum instantaneous limit on the withdrawal during the Mandatory Drought stage was included in Part I.F.9 as it was identified during low flow events, the instantaneous withdrawal rate may exceed 10 percent of the instream flow.

- Documented bald eagle nests are in the general project vicinity. Although DGIF does not anticipate this project to result in adverse impacts upon this species, recommended coordination with the USFWS regarding possible impacts upon eagles.

  DEQ coordinated with USFWS on March 20, 2015. Further information regarding this coordination can be found under this section in the subsection pertaining to coordination with federal agencies.

- Recommend coordination with DCR's Department of Natural Heritage as the project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species.

  Staff requested comments from DCR on the proposed project on March 26, 2014.

New pipeline or other structures to be constructed:

- Recommend that the permittee avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable to minimize overall impacts to wildlife and our natural resources. DGIF also recommended maintaining undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams.

  Staff reviewed the proposed impacts to surface waters and determined those proposed have been minimized to the maximum extent practicable. It is impracticable to require a setback as the activities are water dependent.

- Recommended that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape.

  Oversight of stormwater management and erosion and sediment control measures is the responsibility of DEQ-Stormwater Management or the locality, if such responsibility has been delegated. Any such requirements will be implemented under the oversight of that program.

- Recommended that all tree removal and ground clearing adhere to a time of year restriction protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

  This time of year restriction was not included in the permit as its not associated with a threatened or endangered species. The recommendation was forwarded to the permittee for their consideration.

- Recommended adherence to erosion and sediment controls during ground disturbance.

Oversight of stormwater management and erosion and sediment control measures is the responsibility of DEQ-Stormwater Management or the locality, if such responsibility has been delegated. Any such requirements will be implemented under the oversight of that program.

Summary of Federal Agency Comments and Actions
The project qualifies for a U.S. Army Corps of Engineers (USACE) permit, which was under review by the USACE as of the date of this document.

At the recommendation of DGIF, staff coordinated with the U.S. Fish and Wildlife Service (USFWS) on March 20, 2015 regarding potential for the project to impact the bald eagle. No response was received from USFWS within the 45 day comment period. Therefore, DEQ infers that USFWS has no comments on the project activities.

13. Public Involvement during Application Process:

Pre-Application
In accordance with 9 VAC 25-210-75.B.3 of the VWP Permit Program regulations, those who intend on submitting an application for a new or expanded major surface water withdrawal provide an opportunity for public comment on the proposed project, and shall assist in identifying public concerns or issues prior to filing a VWP individual permit application. The regulation also says that if the potential permittee receives a request for a public information meeting, at least one meeting must be held.

The permittee public noticed the proposed project in "*Daily Progress*" from January 13, 2014, through January 19, 2014. The permittee also held an informational meeting on February 4, 2014, during which a presentation of the proposed project was given. A copy of the presentation given can be found under Appendix I of the JPA dated March 12, 2014. The permittee did not receive any comments during the meeting or during the period advertised for accepting comments.

Riparian/Adjacent Landowner Notification and Inquiries during the Application Process
Staff received a copy of letter sent from C. James Summers, Attorney at Law, dated April 7, 2014, that was sent to the Fluvanna County Administrator. The letter was in response to a County meeting held on March 27, 2014, during which concerns were voiced by citizens present on the proposed project. Those concerns pertained to the potential impact on historic resources, noise pollution and disrupted views due to the project activities. These concerns are not within the purview of the VWP Permit Program, but were being addressed by the County through its site plan approval authority.

The permittee provided staff with information on the riparian and adjacent landowners by email dated September 16, 2014. Staff reviewed this information and noticed that landowners in Fluvanna County were not included. Staff obtained this information from Fluvanna County's website.

Staff notified riparian landowners located adjacent to the impact area and within one-half mile downstream of each distinct impact area by letter dated September 25, 2014. In response to this notification, staff received a response from Fred Hardy on September 29, 2014, who questioned the potential impact from noise pollution, extent of DEQ's notification, and likelihood of a permit being issued. DEQ responded to Mr. Hardy's inquiry on October 7, 2014. An additional inquiry was received from Mr. Hardy on December 22, 2014, to which staff responded the same day.

During a site inspection staff conducted on February 13, 2014, with representatives from the Timmons Group, consultant for the permittee, staff was informed that they had met with Mr. Hardy several times, including the day prior, to address his concerns. Some of these actions include placement of the intake in the preferred location (not located within a rapid) and locating the pump station further back from the river behind a group of trees to help shield the building from view. Staff was informed Timmons Group would continue to work with the citizen, on the permittee's behalf, to address any concerns.

Staff received an email on November 23, 2014, from the Doug Smith, President of the Lake Anna Civic Association, requesting a copy of the application and additional information submittals, which was provided on November 25, 2014, and December 1, 2014.

Notifications of riparian and adjacent landowners were conducted in accordance with DEQ's Guidance Memorandum No. 11-2005 (Revised Local Government, Riparian Property Owner, Adjacent Property Owner or Resident, and General Public Notification Procedures for VPDES, VPSA and VWP Permit Applications and Draft Permits).

Significant Stakeholder Meeting
Staff met with representatives from the City of Richmond and Henrico County on June 3, 2015. The purpose of the meetings was for staff to present to representatives from each locality the results from DEQ's analysis of the proposed project and aspects of a draft permit as both localities are significant downstream users from the project. DEQ extended the cumulative impact analysis down to the fall line to evaluate the potential impacts from this project to water uses by the City of Richmond and Henrico County and on the operations of the Cobbs Creek Reservoir. Based upon staff's analysis, the proposed project is predicted to have minimal effect on the significant downstream users and operations of the Cobbs Creek Reservoir. A summary of both meetings and a copy of the presentation provided to the localities can be found in the file for VWP Permit No. 14-0343.

14. Draft Permit Public Comment Period:

Comments received during Public Comment Period
The public notice was published in the *Richmond Times Dispatch* on August 22, 2015. The public comment period ran from August 23, 2015 to September 21, 2015.

During the public comment period, staff received the following inquiries on the project:

- Nature of the project and proposed changes requested from Susan Lascolette, Chair of the Goochland Board of Supervisors and Anne Darby with the Richmond Regional Planning District Commission.
- Paul Peterson with ARCADIS requested information on the status of the public comment period and inquired on the applicability of the time-of-year restrictions on instream work.
- DEQ addressed an inquiry from Art Petrini with Henrico County regarding any precedence the proposed project may set for future James River withdrawals and potential for the proposed project to affect the Cobbs Creek project.

During the public comment period, staff received one (1) set of written comments from the City of Richmond. Staff did not receive any requests for a public hearing.

The following comments were received by DEQ from the City of Richmond (City), which includes reiterations of statements previously provided to DEQ by email on June 29, 2015, in response to their review of an informal draft permit.

- Statement that any increase in withdrawal volumes above the currently permitted amounts in the James Basin is viewed by the City in context of what they consider their water rights and actions they believe will infringe on those rights.
- The draft permit should not authorize a withdrawal volume on a daily or instantaneous basis above 5.7 mgd, which is the existing authorized maximum limit in VWP Permit No. 04-0805.
- The draft permit should include water conservation measures that are as stringent as those required by VWP Permit No. 88-0898 for Henrico County's James River withdrawal for their Water Treatment Plant.
- Statement that the proposed project should be treated as an entirely new permit due to the magnitude of the proposed changes, including a more detailed review of the withdrawal's proposed impacts.
- Fifteen (15) specific comments regarding the permit conditions contained within the draft VWP permit, which are identified in detail under Attachment B of this fact sheet.

A summary of the City's comments and staff responses to those comments are provided under Part I of Attachment B of this fact sheet. Staff met with the City on November 6, 2015, to discuss their concerns regarding the City's rights to use the water in the James River. At the meeting, staff provided to the City the draft fact sheet which contained responses to their comments under Attachment B. The City provided additional comments to DEQ by email on November 17, 2015, to which DEQ replied by letter dated November 19, 2015.

Comments received after the Close of the Public Comment Period

Following the close of the public comment period on September 21, 2015, the following comments were received by DEQ from the Richmond Regional Planning District Commission (RRPDC) and Goochland County on September 24, 2015 (RRPDC submitted revised comments on September 25, 2015, to include those provided by Goochland County).

- Cumulative impacts from multiple projects affect the water levels of the James River, putting a strain on the water resources for the Richmond Region. (RRPDC)
- Concerns of what the cumulative impacts of the proposed project and Cobbs Creek project (currently authorized under VWP Permit No. 05-0852), which are located in close vicinity of one another, may be on water resources in Goochland County. (Goochland County)
- An additional comment was received from Goochland County that is not within the purview of the VWP Permit Program as it pertains to historic resources.

Although the above comments were received after the close of the official comment period, staff considered the comments. Staff responses to the above comments are provided under Part II of Attachment B of this fact sheet.

The following comments and inquiries were received by DEQ from four (4) citizens near the end October 2015, approximately one month after the close of the official public comment period. DEQ found there was not sufficient reason to consider these comments and reopen the public comment period as the concerns are either similar to those received during the comment period or are not within the jurisdiction of the VWP Permit Program.

- Concerns of potential adverse impacts to the historical resources located in the area of the proposed intake.
- Concerns of potential impacts to the land on which the proposed project will be located, including comments about property rights.
- Concerns about the potential hydrologic impacts that may result from the project.

DEQ received an inquiry from a reporter with the Central Virginian on October 20, 2015, for information on the status of the permit and comments received during the comment period. This information was provided to the reporter the same day the inquiry was received.

Revisions to the Draft Permit in Response to Public Comments
Staff considered the comments received and revised portions of the draft permit in response to those comments. The portions of the draft permit revised in response to public comments are summarized below:

- Part I.F.9 of the permit was revised to include an instantaneous maximum withdrawal limit of 13,980 gpm (31.1 cfs) to be implemented when the Mandatory Drought Stage flow trigger is reached. This revision is in response to the City of Richmond's comment the permit did not include a maximum hourly or instantaneous limit and that such a limit should be added to protect downstream uses during periods of low flow. Staff considered the comment in terms of the Virginia Department of Game and Inland Fisheries (DGIF) recommendation that no more than 10 percent of the flow be withdrawn at any time. Staff found that during periods of low flow, although the maximum day withdrawal of 8.57 mgd is less than 10 percent of the James River flow, the instantaneous withdrawal may be more than 10 percent. Staff revised the draft permit to limit withdrawal rate to that which is protective of aquatic resources and downstream beneficial uses during low flow events when the withdrawal rate may exceed 10 percent of stream flow.

- Part I.F.12. of the permit was revised to lower the flow meter accuracy standard from 10 percent to 5 percent in response to the City of Richmond's comment that a flow meter accuracy of 10 percent was not sufficient and that the permit should be revised to require a lower tolerance. Based upon staff review available standards and discussion with other operators, the percent accuracy of flow meters for 90-10,000 gallons per minute varies between 2.5 percent and 5 percent for new installations, depending on system specifics. Staff revised the permit to reflect current standards for flow meter accuracy.

During the final review of the draft permit, staff identified an error in Part I.F.13 in the list of data monitoring requirements that pertains to recordation of data. Staff revised this condition to accurately require data monitoring and recordation that reflects the permit requirements.

15. Special Conditions:

The following conditions were developed to protect instream beneficial uses, to ensure compliance with applicable water quality standards, to prevent significant impairment of state waters or fish and wildlife resources, and to provide for no net loss of wetland acreage and function through compensatory mitigation and success monitoring and reporting.

Section A Authorized Activities

Nos. 1-2 addresses the activities authorized by this permit, including the withdrawal of surface water, impact types and limits.
No. 3 states that the authorized activities shall be conducted in accordance with the application materials and any subsequent materials received during the application process.
No. 4 requires the permittee to notify DEQ of any changes to the authorized activities or of new activities which require a VWP permit.

Section B Permit Term

Nos. 1 and 2 addresses the permit term and re-issuance process to ensure that all permit conditions are completed.

Section C Standard Project Conditions

No. 1 addresses the requirement for the minimization of adverse impacts to instream beneficial uses.
No. 2 ensures that the project will be executed in a manner that limits the disruption of the movement of aquatic life.
No. 3 ensures that downstream flows will be maintained to protect both instream and off-stream beneficial uses
No. 4 ensures the minimization of adverse effects on navigation.
No. 5 ensures the passage of high flows.
No. 6 requires maintenance of continuous flow of perennial springs for the protection of instream beneficial use.
No. 7 requires that the permittee adhere to time-of-year restrictions recommended by the Department of Game and Inland Fisheries for the protection of fish and wildlife resources.
No. 8 ensures that dredging and filling operations will minimizes stream bottom disturbances and turbidity.
No. 9 requires instream activities to be conducted during low-flow conditions to protect instream beneficial uses.
Nos. 10 through 12 provide requirements and limitations on the entry of various materials (including concrete, fill, construction and waste material, fuels, lubricants, and untreated stormwater runoff) into state waters.
Nos. 13 and 14 limit the use of machinery and equipment in surface waters to protect beneficial uses
Nos. 15 through 19 require temporary disturbances to surface waters during construction to be avoided and minimized to the maximum extent practicable and the restoration of such temporary disturbances.
No. 20 prohibits the violation of Water Quality Standards in surface waters as a result of project activities
No. 21 requires the identification of all non-impacted surface waters in the vicinity of the proposed activity to prevent unpermitted impacts
Nos. 22 through 26 set forth all reporting requirements concerning construction, monitoring, compensation, and restoration as required by current law and regulations.

Section D Stream Modifications, Including Intake/Outfall Structures

No. 1 requires the permittee conduct a mussel survey and relocation in the James River no more than six months prior to commencing work in the James River or along its shoreline. All surveys and review

and approval of the survey results are required to be completed prior to work in the James River being initiated.

No. 2 requires that concrete installation work be conducted in the dry to minimize harm to the aquatic environment and its residents resulting from use of the Tremie method. This permit condition was included at the recommendation of DGIF.

No. 3 prohibits the use of stream substrate for erosion control to avoid additional impacts to state waters.

No. 4 requires upland disposal of material removed from stream substrate to avoid unpermitted impacts to surface waters.

No. 5 ensures riprap placement conforms to current law and regulation.

Nos. 6 and 7 direct the placement and contents of materials for the construction of submerged structures, and on-bank storage and staging of materials, to protect water quality and fish and wildlife resources.

Section E Installation of Utilities

No. 1 requires the minimization of disturbance to surface waters and restoration to preconstruction conditions following utility line installation.

No. 2 sets a 90-day time limit for temporary sidecasting during trench excavation to minimize impacts to surface waters.

No. 3 provides the requirements for trench construction to avoid the drainage of surface waters.

Section F Surface Water Withdrawals

No. 1 states the use of the water withdrawal is only for public water supply.

No. 2 identifies the safe yield for the surface water withdrawal project as authorized under this permit.

No. 3 establishes the water withdrawal limit for the intake on the James River. The limits were evaluated based upon the anticipated demand for 2030, the time period that coincides with the 15 year permit term. The withdrawal limits are phased based upon anticipated capital improvement plans to provide water service from the new intake to service areas identified in the JPA and additional information submittals. The limits in the permit were determined through staff evaluation of the water demand using standard calculations (see Section 5 for more details).

No. 4 requires the localities (Fluvanna and Louisa Counties) through the permittee submit a plan(s) that outlines the specific infrastructure and associated schedule for Fluvanna and Louisa Counties to complete improvements necessary to begin treatment and transport water withdrawn from the James River intake to service areas identified for a specific Tier. The intent of this condition is to clearly identify the capital improvements associated with each Tier that must be completed by Fluvanna and Louisa Counties in order for the water to be withdrawn, transported and utilized within a service area or areas. Additionally, the permittee shall identify the wastewater treatment facilities, both private and municipal, and the location of any return flows from those facilities. The intent of this information is to identify return flows, which at the time of permit issuance, are assumed to be zero, limiting future water available in the water budget. Water discharged directly back to the James River or one of its tributaries needs to be reallocated back to the system water budget as known to keep it current. Completion of capital improvements identified in this plan will serve as the permittee's justification in any request for authorization of withdrawal limits for a particular Tier as identified in Part I.F.3

No. 5 establishes the schedule for completion of the capital improvements identified in the plan required by Part I.F.4 prior to the permittee being granted authorization to operate at the withdrawal volumes associated with each Tier identified in Part I.D.3. The deadlines provided for each Tier are based upon the additional informational submittal dated September 12, 2014. The intent of the condition is

for an increase in withdrawal limits to coincide with completion of infrastructure necessary to transmit water from the new intake to the identified service area or areas to prevent allocation of water withdrawal volumes which may not be realized due to unforeseen circumstances and thus, are not put to beneficial use within the permit term. Should capital improvements for a particular Tier be completed later than anticipated, the condition allows the permittee to request authorization at a later date. Additionally, should only a portion of the capital improvements be completed for a particular Tier, the condition acknowledges that the permittee may request a revision to the Tier volumes, not to exceed the volumes identified for Tier 3 in Part I.F.3. This type of change will require a modification of the permit, which may be considered under a minor modification action as this change constitutes only a change in project plans because the maximum withdrawal volumes evaluated and approved for this project under this permit will not be affected. However, any request to increase the withdrawal volumes above that identified for Tier 3 in Part I.F.3 may require a major modification of the permit.

No. 6 identifies the method the permittee shall use to estimate the previous day's provisional stream flow at the intake. This equation is to be used to estimate the fourteen (14) day rolling average to determine compliance with the drought triggers identified in No. 9.

No. 7 requires the permittee to coordinate with the operators of the Cobbs Creek Reservoir project. This coordination is required only when provisional flows at the permittee's intake estimated in accordance with Part I.F.6 is equal to or less than the 10th percentile flow of 778 cfs. The permittee is only required to coordinate during low flows as these are the timeframes when it is also more likely releases from the Cobbs Creek Reservoir may occur. The intent of this condition is to promote communication during low flow events for improved management of the resource due to the close proximity of the projects to one another and to ensure downstream uses for which the releases from Cobbs Creek Reservoir are being provided are not impacted by the permittee's withdrawals. Staff acknowledges that this requirement does not bind any entity other than JRWA, the permittee of this permit. Therefore, the permittee may demonstrate compliance with this condition by making a reasonable effort to coordinate, as may be evidenced through documenting the submittal of information to the operators of the Cobbs Creek Reservoir in accordance with the approved protocol.

No. 8 requires the permittee to develop a protocol outlining how the permittee will carry out the requirement to coordinate with the operators of the Cobbs Creek Reservoir.

No. 9 requires the permittee to develop a drought management plan for DEQ review and approval that identifies the conservation measures to be implemented for each drought stage. This condition identifies the instream flow triggers to be implemented once withdrawal volumes above Tier 1 (Part I.F.3) are authorized, which are based upon a fourteen (14) day rolling average of James River flows at the intake, for implementing the voluntary and mandatory drought stages. Additionally, the permittee is required to comply with an instantaneous withdrawal limit once the mandatory drought stage is implemented to ensure the rate of withdrawal does not exceed 10 percent of the stream flow to protect aquatic resources and downstream beneficial uses. The emergency drought stage shall be implemented in accordance with No. 10.

No. 10 requires conservation measures be implemented to protect instream flows when a drought emergency is declared.

No. 11 ensures that intake structure specifications and monitoring protect aquatic wildlife resources.

No. 12 requires the permittee to monitor withdrawals from the James River daily using flow totalizer technology to determine compliance with the permit. The condition also includes percent accuracy for such meters and measures the permittee should take in case of a defective meter.

Nos. 13 through 15 requires monitoring and reporting to protect all beneficial uses. Flexibility is provided as to the method by which the reports are submitted to allow for future improvements in the form DEQ receives data.

Section G Construction Monitoring and Submittals (Impact Site)

Nos. 1 through 6 addresses monitoring, submittals and notifications required for monitoring construction activities within authorized impact areas.

Section H Compensatory Mitigation

No. 1 describes the compensatory mitigation required to mitigate for the permitted impacts.
Nos. 1 and 2 identifies the requirement to submit documentation of the purchase of mitigation bank credits prior to initiating impacts to surface waters to ensure no net loss of surface water area and function.

16. General Conditions:

General Conditions are applied to all VWP individual permits, as stated in the VWP Permit Program regulation.

17. General Standard:

This project may result in minimal, temporary impacts to beneficial uses related to the propagation and growth of aquatic life as defined in the General Standard. Provided the permittee abides by the conditions of the permit, no substances shall enter state waters in concentrations, amounts or combinations that would contravene established standards or interfere with beneficial uses or are inimical or harmful to human, animal, plant, or aquatic life.

18. Staff Findings and Recommendations:

- The proposed activity is consistent with the provisions of the Clean Water Act and State Water Control Law, and will protect beneficial uses.
- The proposed permit addresses avoidance and minimization of surface water impacts to the maximum extent practicable.
- The effect of the impact will not cause or contribute to significant impairment of state waters or fish and wildlife resources.
- The proposed permit conditions address no net loss of wetland acreage and function through compensatory mitigation.
- This permit is proposed to prevent unpermitted impacts.
- The draft permit reflects the required consultation with and full consideration of the written recommendations of VMRC, VDH, DCR and DGIF. The staff invited, but did not receive, comments from VDH and USFWS.

Staff recommends VWP Individual Permit Number 14-0343 be issued as proposed.

Approved:

Director, Office of Water Supply

11/20/15
Date

Attachment A – DEQ Modeling Summary

Part I – Summary of Model Development

Introduction

An analysis was performed to determine the feasibility of withdrawing surface water from the James River from a new intake structure Fluvanna County, Virginia. The James River Water Authority (JRWA) proposes to construct and operate a new raw water intake to withdrawal surface water from the James River to meet the water demands for the Counties of Fluvanna and Louisa. The intake is proposed to be located on the north bank of the James River, just upstream of the confluence with the Rivanna River. This permit will replace existing VWP Permit No. 04-0805, issued to the JRWA, for a new intake located further downstream on the north bank of the James River at Bremo Bluff, which is located at the end of Route 657, off of Route 15.

The withdrawal volumes proposed as limitations of the permit are as follows:

Table 1. Permit Withdrawal Limitations

Tier	Maximum Daily Withdrawal (mgd)	Maximum Monthly Withdrawal (mg)	Maximum Annual Withdrawal (mg)
1	5.82	119.35	1,024.8
2	7.69	157.71	1,354.2
3	8.57	175.62	1,507.92

The Tiers identified in the above table correspond with the completion of capital improvements to transfer water from the new intake to areas proposed to be serviced by the JRWA, as identified in the JPA and additional informational submittals. The volumes identified by Tier 3 were evaluated in the cumulative impact analysis (CIA).

A series of water budget modeling simulations were conducted using the VAHydro operational model to evaluate the propose withdrawal's potential affect on stream flows.

Model Inputs

Estimation of Stream Flow at the Intake Location

A comparison of estimated stream flow rates at the proposed intake location was made using two methods, the VAHydro operational model and available data from the closest USGS stream gauging station, No. 02035000 (James River at Cartersville, Virginia), located approximately 9.3 miles downstream. The USGS gage is located downstream of the proposed intake location, with a drainage area of 6,252 square miles compared to the drainage area of the proposed intake of 5,076 square miles.

Daily mean stream flow rates at the intake location were estimated by multiplying the daily mean flow rates reported by the USGS stream gauging station, No. 02035000 (James River at Cartersville, Virginia) by 0.81, which is the ratio of the intake drainage area (5,076 square miles) to that of the gauged drainage area (6,252 square miles). The comparison indicated that the stream flows estimated by VAHydro are more conservative than those of the USGS estimated stream flows. Therefore, VAHydro was selected for estimating stream flows for the modeling simulations.

Daily mean flow at intake in cubic feet per second (cfs) = (daily mean discharge at USGS gaging Station No. 02045500 (cfs) * 0.81)

Determination of Drought Period

The time series of estimated daily flow using VAHydro at the proposed intake location for the period from January 1, 1984 through December 31, 2005, was examined to determine the drought of record at the intake location during which the proposed withdrawal should be evaluated. The simulation showed that the duration of low flows in the James River occurred from 1998 through 2002 (as shown in Figure 1). Staff then conducted a comparison of the lowest recorded flows at USGS stream gauging station, No. 02035000 (James River at Cartersville, Virginia) to identify if there were other years outside of the period of flows simulated by VAHydro that warrant consideration. This review identified that lowest flows at the USGS gage occurred in 1966 and 2002. Based upon the historical flow data as measures at the USGS gage, the Drought of Record at the intake occurred in 2002. Therefore, the simulation period for the modeling analysis was 2002.

Figure 1. VA Hydro Estimated Monthly Mean Stream Flows at the Intake

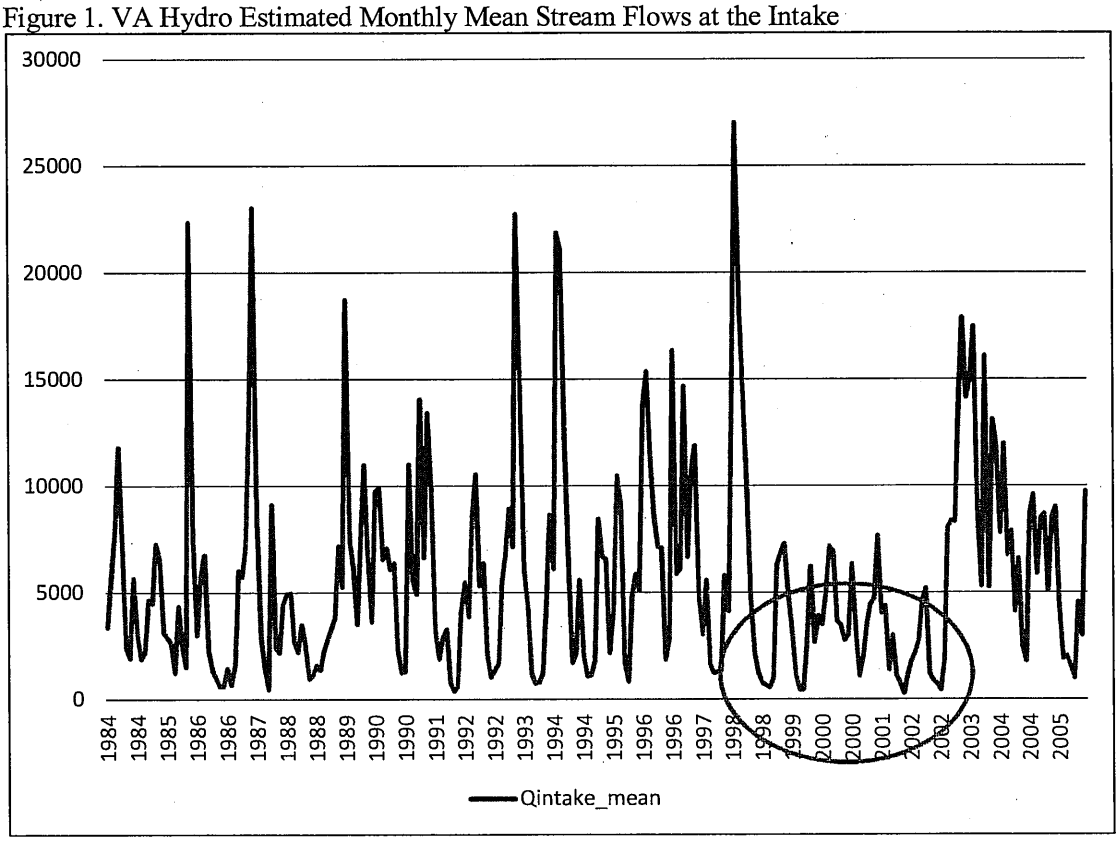


Table 2. Comparison of Percentile Stream Flows from July through October of 1966 and 2002 at the USGS stream gauging station, No. 02035000 (James River at Cartersville, Virginia)

Month	1966			2002		
	# days with flow < 25th pctile	# days with flow < 10th pctile	# days with flow < 5th pctile	# days with flow < 25th pctile	# days with flow < 10th pctile	# days with flow < 5th pctile
July	31	31	31	30	22	17
August	31	27	18	29	22	18
September	14	14	14	27	26	19
October	0	0	0	15	6	2
Total	**76**	**72**	**63**	**101**	**76**	**56**

Calculation of Annual Percent Distribution

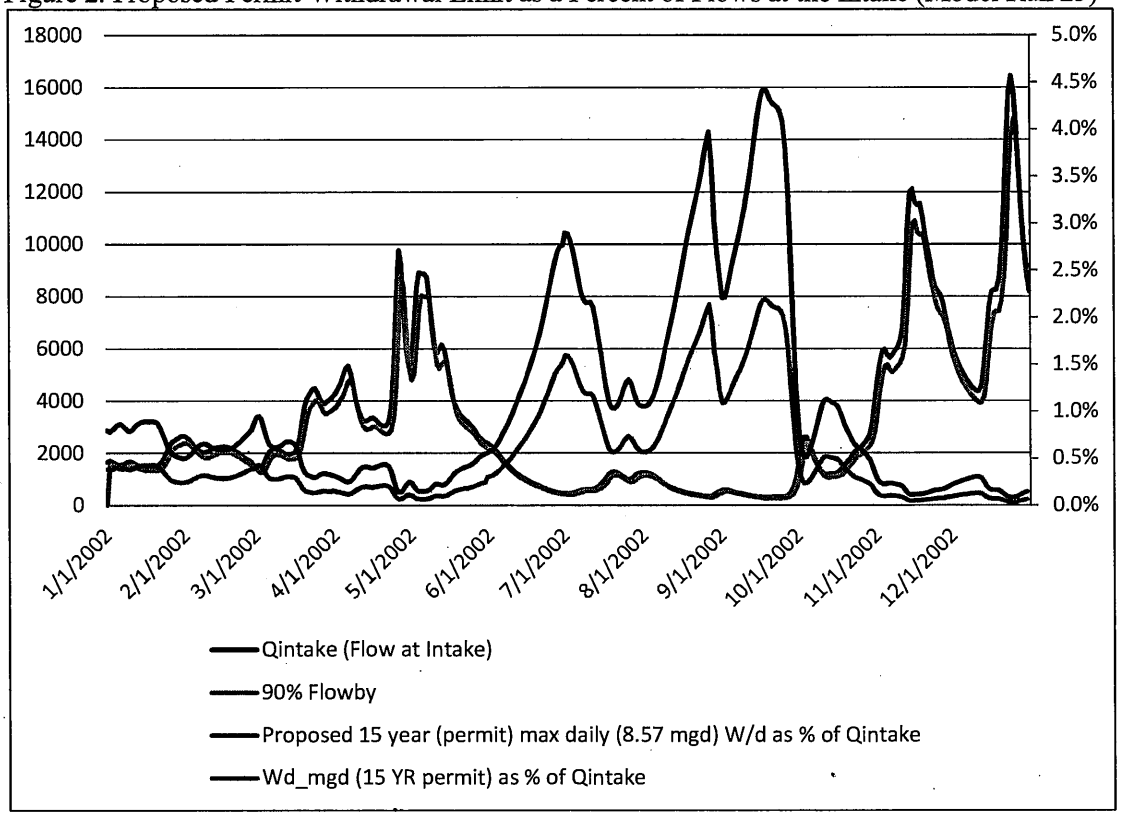
The annual percent distribution informs the simulation as to how to distribute the maximum annual demand over the twelve months of the year. Staff calculated an annual percent distribution using historical water withdrawal data reported annually to DEQ through the Virginia Water Users Database (VWUDS). Data for the service areas served by the Louisa County Water Authority were queried and reviewed because the permittee reviewed the records for this Authority in developing their proposed peak factors. As the proposed project is a new source, there is no historical data to which to refer. Of these service areas, only the Northeast Creek Reservoir is a surface water supply, the rest being groundwater supplies. Staff notes the Northeast Creek Reservoir source is a reservoir system while the proposed system is a direct stream withdrawal without storage. Staff reviewed the data associated with several systems reported by Louisa County Water Authority, including the Zion Crossroads system, for reference. However, as the groundwater sources are not operated continuously throughout the year, it is staff opinion that this system is less representative than the Northeast Creek Reservoir which is operated continuously throughout the year. For this reason, staff chose the data for Northeast Creek Reservoir for use in the development of an annual percent distribution for modeling purposes.

Stream Flow Analysis

Flows Just Past the Proposed Intake Site

Stream flows in the James River were reviewed by conducting a simulation using the proposed withdrawal permit limitations (based upon Year 2030 projected demands). In this simulation (Model Run 25), which included a flow-by of 90 percent, the proposed project was modeled at comprising less than 4.5 percent of stream flows during the 2002 Drought of Record.

Figure 2. Proposed Permit Withdrawal Limit as a Percent of Flows at the Intake (Model Run 25)



Part II – Cumulative Impact Analysis Summary

Executive Summary

Cumulative impacts to the James River between the proposed JRWA intake and the tidal zone below the City of Richmond intakes were analyzed for potential impacts to assimilative capacity, instream flows, and off-stream water supply needs. Estimates of upstream withdrawals were based on permitted and exempt amounts at their maximum expected values during the permit term ending between 2015 through 2030. Impacts to water quality were the most substantial, ranging from -5 percent at the intake to -4.3 percent below the USGS stream gauging station, No. 02035000 (James River at Cartersville, Virginia) (Table 3, "Change in 7Q10"). Flows during the drought of record were predicted to decrease by -3.1 percent at the JRWA intake and -2 percent at the City of Richmond intake (Table 3, "Drought of Record Minimum 30-day Flow"). Storage in the Cobb's Creek pump-store reservoir was predicted to decrease by -1 percent, and releases were expected to increase +1 percent during the simulated drought of 2002 (see Table 4). The analysis predicted that the Henrico County and City of Richmond intakes would experience no change in either frequency of drought restrictions or unmet demands. Because maximum permitted amounts generally exceed actual use amounts during a permit term, the potential changes to the flow metrics of interest is considered to be a worst case scenario.

Table 3: Impacts to flow metrics.

River Location	Change in 7Q10	Change in August Low Flow	September Drought Warning Flow	Drought of Record Minimum 30-day flow
James above Cartersville below Rivanna (Cobbs release)	+1.7%*	-0.3%	-2.0%	-1.9%
James River @ Cartersville	+1.2%*	-0.2%	-1.8%	-1.8%
James below Cartersville	-4.3%	-0.2%	-1.5%	-1.7%
James River @ Huguenot Bridge (Below Henrico Intake)	-1.7%	-0.2%	-0.3%	-1.5%
Fall Line below Richmond Intake†	-4.2%**	-0.3%	-1.3%	-2.0%

Notes:

* Due to flow alterations from Gathright Dam and Cobb's Creek, 7 day low flows are expected to decline between 4-5 percent, though 7Q10 values increase. EPA guidelines question the use of 7Q10 under significant flow alterations.

** 7Q10 calculations are not applicable in tidal areas.

†Henrico County may purchase up to 35 MGD from City of Richmond. Lists design capacity of intake at 45 in SWRP. Modeled flows at Fall line of James river may be artificially low due to failure to fully account for transfers from Richmond to Henrico.

Table 4: Operations impacts at Cobb's Creek and downstream users in Richmond and Henrico during the simulated drought of 2002.

Run Description	Cobbs Minimum Storage	Change in Min Storage %	Mean Cobbs Refill (MGD)	Mean Cobbs Release (cfs)	Change in Mean Release%	Unmet Demand in Richmond & Henrico	Change to Frequency of Drought Restrictions
Permit Term Existing (2002)	4,800	n/a	41.8	46.5	n/a	n/a	n/a
Permit Term Existing + JRWA (2002)	4,734	-1%	41.8	46.8	+1%	0%	0%

Modeling Details

The JRWA intake was modeled using the VAHydro operational model. Intake flow-by was set at 90 percent of instantaneous flow at the intake location. This flow-by provided adequate water to satisfy the requested annual demand of 1507.92 MG (monthly variations in JRWA demands shown in Figure 3). The VAHydro model was run from 1984-2005 with demands set to the maximum allowable withdrawal for permitted users active during the proposed permit term 2015-2030. Table 5 shows a comparison between the demands in this simulation ("Permit Term Max 2015-2030"), present day demands (Table 5,

"Current Demands"), and projected demands in the year 2040 (Table 5, "State Water Plan 2040"). Flow-by rules for Henrico and City of Richmond demands were modeled according to Army Corps of Engineers 401 certificate. In addition to flow-by rules, the systems were modeled with conservation reductions of 5 percent, 10 percent and 15 percent at Drought watch, warning and emergency conditions. As a result of these conservation reductions, the Max withdrawal for the City of Richmond of 95 MGD amounted to 93.4 MGD in practice during 1984-2005 simulation period.

Table 5: Withdrawal comparison between Current, VWP Permit term max, and State Water Resource Plan 2040 projected demands in the James River watershed above the Cobbs Creek intake.

Location	Permit Term Max 2015-2030	Current Demands (2009-2013)	% Difference Permit Max vs. Current	State Water Plan 2040	% Difference Permit Max vs. SWP
Above Cobb's Creek Intake	311 MGD	220 MGD	+41%	281 MGD	+11%
James River At Fall Line	451 MGD††	317 MGD†	+42%	401 MGD	+12%

Notes:

† Henrico 25.8 MGD Current, 75.2 MGD Permit max, 35 MGD may come from City of Richmond, resulting in only 42.5 MGD withdrawal from James at Henrico intake.

†† City of Richmond increasing from 73 - 82 MGD in State Water Plan, with a Max of 95 MGD.

Figure 3: Monthly demand patterns simulated for JRWA intake.

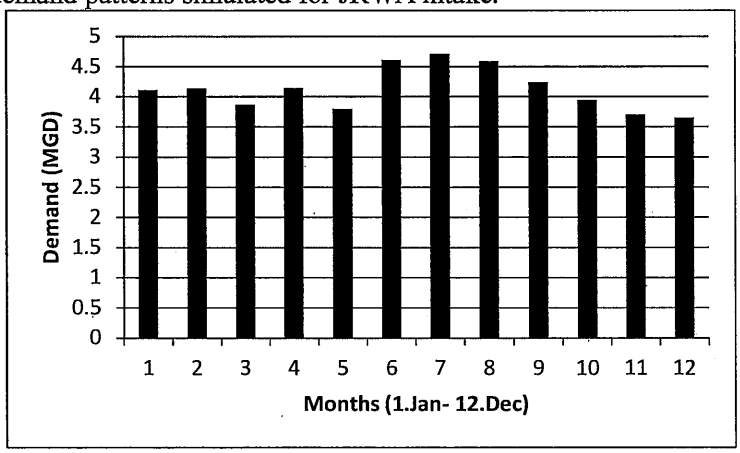


Figure 4: Modeled Percent change in September Drought Warning Flow (10th %) due to the proposed JRWA intake.

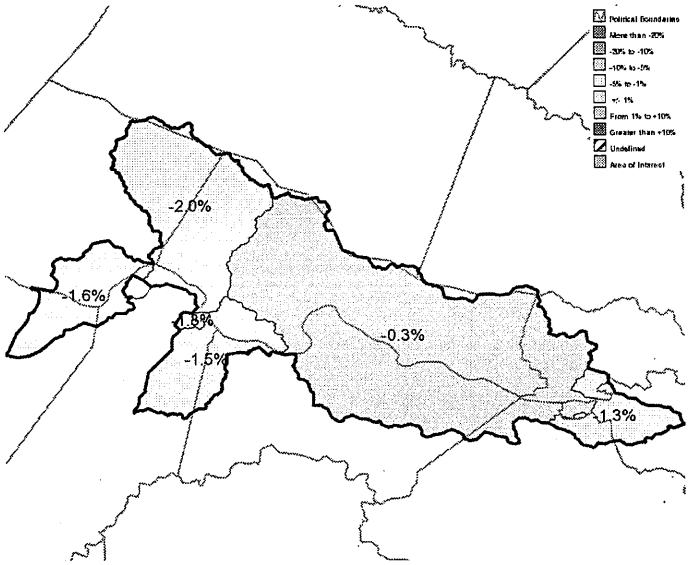


Figure 5: Modeled Percent change in drought of record flow due to the proposed JRWA intake. Based on cumulative flow and withdrawal timeseries during September of 2002.

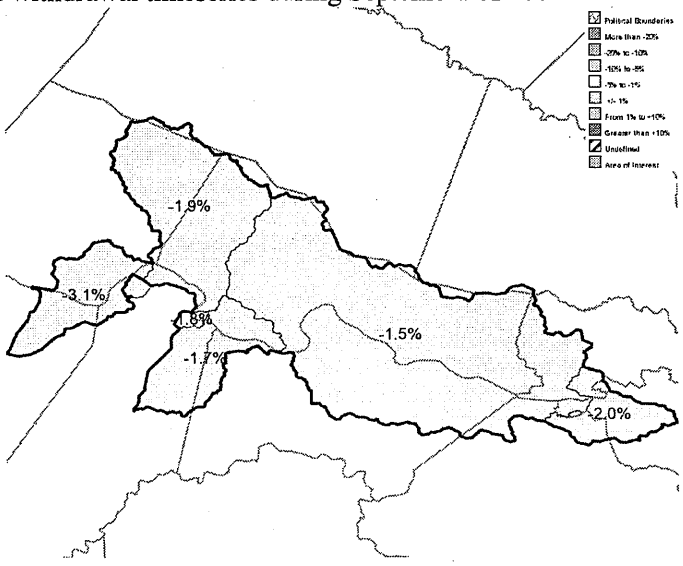


Figure 6: Modeled Percent change in 7Q10 flow due to the proposed JRWA intake. Based on cumulative flow and withdrawal timeseries during from 1984-2005 meteorological and flow conditions.

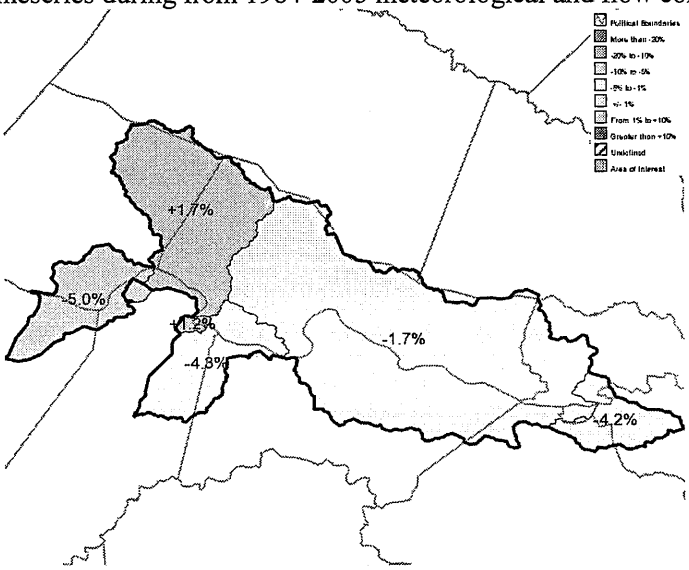
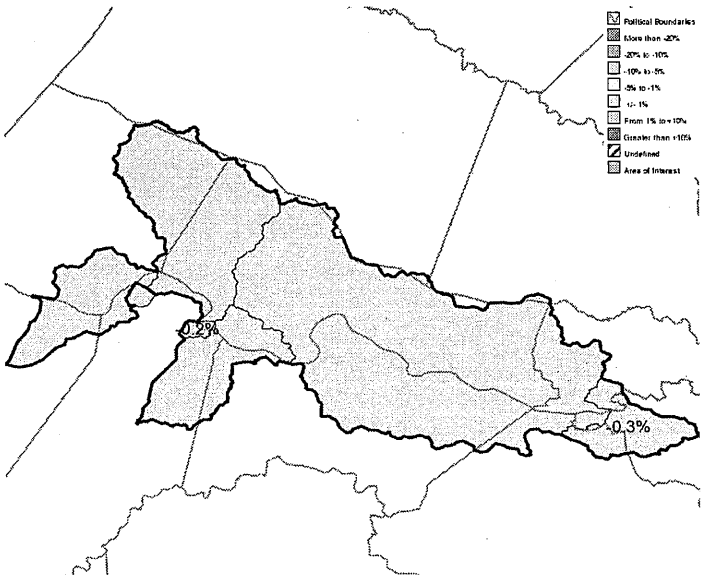


Figure 7: Modeled Percent change in August Low Flow flow due to the proposed JRWA intake. Based on cumulative flow and withdrawal timeseries during from 1984-2005 meteorological and flow conditions.



Attachment B – Summary of Public Comments and Staff Responses

Comments received in response to the public notice of the draft permit during the official comment period from the City of Richmond are summarized in the first section of this Attachment. Comments received after the close of the public comment period from the Richmond Regional Planning District Commission and Goochland County are summarized in the second section of this Attachment.

Part I - Comments from the City of Richmond (City)

General comments received on September 21, 2015:

1. *The City stated their water supply premise under which they operate and base their assessment of all DEQ legislative and administrative proposals is in light of their common law riparian rights and their property right, obtained through private conveyances, to withdraw at least 645 cubic feet per second (cfs), or 417 million gallons per day (mgd) of water from the James River. The City stated that "These rights are reinforced an (sic) supplemented by the City's riparian rights and rights derived from the contracts with the James River and Kanawha Company in 1880 and 1890. The rights now owned by the City were affirmed in 1914 by the Supreme Court of Virginia in a case involving a predecessor in title." The City stated they will "view any increase in the proposed water withdraw from the currently permitted amounts in the James River basin in context of the City's water rights and will vigorously defend against actions which we believe will infringe on those rights."*

   The Code of Virginia dictates that surface waters are natural resources which should be regulated by the Commonwealth and further that the regulation, control, development, and use of such waters for all purposes beneficial to the public are with the jurisdiction of the Commonwealth which in the exercise of its police powers may establish measures to effectuate the proper and comprehensive utilization and protection of such waters. *See* Va. Code § 62.1-11. While each riparian proprietor has an equal right to the reasonable use of the water running by or through his land for every useful purpose to which it can be applied without material diminution to the prejudice of the lower proprietor unless he has acquired a right to do so by grant, prescription or license, the right of a lower riparian owner of the natural flow of the stream is subject to a reasonable use of the water by the upper riparian owners as it runs through their land before reaching his. As described on Attachment A, the proposed withdrawal is reasonable and will not materially diminish the quantity of water in the River.

   Finally, the State Water Control Board and the Department of Environmental Quality are without authority to determine private property rights and the fact that any owner holds a certificate issued by the Board or the Department under the State Water Control Law shall not constitute a defense in any civil action involving those rights. *See* Va. Code §62.1-44.22.

2. *The City commented the draft permit should not authorize a withdrawal volume on a daily or instantaneous basis above 5.7 mgd, which is the existing authorized maximum limit in VWP Permit No. 04-0805. Additionally, they commented that the proposed project should be treated as an entirely new permit due to the magnitude of the proposed changes, including a more detailed review of the withdrawal's proposed impacts.*

The permit action for the proposed project is a revoke/reissuance of VWP Permit No. 04-0805, of which the James River Water Authority (JRWA) is the current permittee. The administrative process for a reissuance is same as a new issuance, with the exception that the reissued permit supersedes the permit previously authorized. Therefore, an application for reissuance must also submit a complete application that meets the informational requirements in the current regulation and any reissued permit must meet the requirements of the current VWP Permit Program laws and regulation. Therefore, staff's review of the proposed project was conducted on the applicant's stated purpose and need and projected water demands for the entire project, not just the proposed increase in volume above that which is currently authorized under VWP Permit No. 04-0805.

In accordance with the application requirements of 9VAC25-210-80.B.2, applicants may submit their water supply plans to demonstrate the need established through the water supply planning process. JRWA's stated purpose and need is to construct and operate a new raw water intake to meet the long term water demands of the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April 2010 and June 2011, respectively. The water demand projections considered in this application review are the same as those discussed in the Plans, with the exception of water demands proposed for economic development prospects. The permittee requested staff consider in this application water demands associated with economic development prospects under the assumption that 1 to 2 new business prospects will locate to each County within the 15 year permit term, which staff found reasonable.

The review by staff also included a cumulative impact analysis of the potential effect of the project on downstream users, such as the City. The analysis looked at the worst case scenario, which consisted of permitted or known excluded users operating at their maximum expected values during the permit term during the drought of record (2002). The analysis took a conservative approach by assuming the proposed project was a 100 percent consumptive with no conservation measures. The analysis predicted that the Henrico County and the City intakes would experience no change in either frequency of drought restrictions or unmet demands. Based upon concerns voiced by the City and Henrico County during the application process, staff included low flow values in the draft permit (Part I.F.9.a) that requires JRWA initiate conservation measures when those triggers are met during low flow events. These flow values were developed based upon those used by Henrico County and the City. Based upon the results of the analysis, staff determined the proposed project as limited in the draft permit, will not adversely affect existing beneficial uses.

3. *Commented that the draft permit should include water conservation measures that are as stringent as those required by VWP Permit No. 88-0898 for Henrico County's James River withdrawal for their Water Treatment Plant. More specifically, the City commented that the following provision found in Henrico's VWP Permit should also be applied to this permit:*

> *"The permittee shall enact a water conservation plan during low flow conditions. Specifically, the permittee shall take steps to call for voluntary conservation whenever the 14 day rolling average of natural streamflow falls below 1700 cubic feet per second (cfs) from November 1st through June 30th or below 1200 cfs from July 1st to October 31st. The permittee shall also take steps to enact a mandatory conservation plan whenever the 14 day rolling average of natural streamflow falls below 1250 cfs from November 1st to June 30th or below 700 cfs from July 1st to October 31st."*

Based upon concerns voiced by the City and Henrico County during the application process, staff included low flow values in the draft permit (Part I.F.9) that requires JRWA implement conservation measures when those triggers are met during low flow events. These flow triggers controlling the implementation of water conservation measures were constructed based on recommendations from the James River Instream Flow Study: Henrico County Water Supply Withdrawal Final Report, dated September 1991, and are compatible with the triggers in use by Henrico County and the City and the above provision, which is included in Part I.D.5 of Henrico County's permit (VWP Permit No. 88-0898). Because of varying rates of inflow between the JRWA intake and the fall line of the James River, area-scaled flow triggers were adjusted to produce a better synchronization with downstream users, and to provide time for drought response implementation. By scaling upstream the drought triggers from the existing beneficial users at the fall line, the drought response framework will greatly increase the likelihood that during low flows, all of these users will be conserving water in an equitable manner. This drought condition is designed to reduce the possibility of the JRWA withdrawals causing existing beneficial users downstream to go into conservation more frequently.

Specific comments received September 21, 2015, on permit conditions:

1. *Part I.A – Comment that the permit does not specifically authorize a withdrawal of water as drafted. If the intent is to authorize a withdrawal from the James River, the City views any change of the permit to clarify that intent as a significant change that would require a new public comment period.*

   Staff disagrees that the permit is vague regarding the authorized activities and that the permit does not clearly authorize a withdrawal of water from the James River. The permit clearly states the withdrawal of surface water is an authorized activity under Part I.A.1 in the phrase "...operation of a new surface water intake structure on the James River." However, staff revised the "Activity Description" of permit coverage page and Part I.A of the permit to clarify the operation of the intake means to withdraw surface water.

2. *Part 1.C.3 – Comment downstream uses in the Richmond area, including existing public water supply uses, will be negatively impacted by the withdrawal. Comments that the permit does not provide adequate requirements or information as to what the permittee will do to protect downstream uses or will do to augment flows in the James River to offset the withdrawal.*

   9VAC25-210-110 of the VWPP Program regulations require that instream flow conditions be established that limit the volume and rate of the withdrawal while giving consideration of the withdrawal's effect on the hydrologic regime within the affected reach. The VWPP Program regulations do not require that a permit for a water withdrawal include a requirement to offset a withdrawal through augmentation of flows.

   The cumulative impact analysis conducted by staff reviewed the potential impacts from the proposed withdrawal on the hydrologic regime and downstream existing beneficial uses. This analysis evaluated the worst case scenario, which consisted of permitted or known excluded users operating at their maximum expected values during the permit term during the drought of record (2002). The analysis took a conservative approach by assuming the proposed project was a 100 percent consumptive with no conservation measures. The draft permit (Part I.F.4.b)

requires information be submitted to DEQ on returns flows to improve the water budget for any future reissuance application.

The analysis predicted that downstream flows during the drought of record decrease by -3.1 percent at the JRWA intake and -2 percent at the City of Richmond intake. In response to concerns voiced by the City and Henrico County during the application process, staff included low flow values in the draft permit (Part I.F.9.a) that requires JRWA initiate conservation measures when those triggers are met during low flow events. These flow values were developed based upon those used by Henrico County and the City. Based upon the results of the analysis, the proposed withdrawal will not adversely affect existing beneficial uses and the project as limited in draft permit is protective of existing beneficial uses.

3. *Part I.C. and D – Concerns that the construction of the James River intake has the potential to adversely affect the water quality of downstream public water supply intakes for Henrico County and the City of Richmond.*

   JRWA proposes to use a cofferdam to allow construction of the intake to occur in the dry. Adherence to the conditions contained within Parts I.C and I.D will minimize any potential adverse impacts to existing downstream beneficial uses that may occur during the construction of the water supply intake on the James River.

4. *Part I.F.2 – Questions regarding the basis for a safe yield of 4.12 mgd annual average safe yield and how it was determined. The City asked what the safe yield is during recurring periods of low river levels during summer/fall seasons.*

   The safe yield of a surface water withdrawal project is the maximum volume of water that can be withdrawn on an average daily basis during the drought of record (for the area in which the withdrawal is located) to meet the needs of the project while still protecting the existing beneficial uses of the waterbody. The safe yield of this surface water withdrawal project was determined based upon the operating rules included in the permit under the conditions of the drought of record for the area in which the project is located. The safe yield of the surface water withdrawal project under these operating rules is the annual average daily volume of 4.12 mgd based upon the 2002 drought of record. This value is subject to change should one or a combination of the following occur: the annual average daily demands of the project change, a new drought of record occurs, or changes to withdrawal limitations in the permit are considered to protect beneficial uses. It should be noted that this value does not represent the total volume of water present at the intake location in the James River during the drought of record.

5. *Part I.F.3 – Commented the proposed withdrawal limits above that of the existing VWP Permit No. 04-0805 appear unjustified at this time. Additionally, the City stated they view the proposed increase above the currently permitted volume as infringing upon their recognized legal rights to the first 645 cfs of flow in the James River.*

   As mentioned above under No. 2 of the General Comments subsection, in accordance with the application requirements of 9VAC25-210-80.B.2, applicants may submit their water supply plans to demonstrate the need established through the water supply planning process. JRWA's stated purpose and need is to construct and operate a new raw water intake to meet the long term water demands of the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans

dated April 2010 and June 2011, respectively. The water demand projections considered in this application review are the same as those discussed in the Plans, with the exception of water demands proposed for economic development prospects. The permittee requested staff consider in this application water demands associated with economic development prospects under the assumption that 1 to 2 new business prospects will locate to each County within the 15 year permit term, which staff found reasonable. The water demands for municipal water systems in Louisa County were estimated in terms of residential and commercial water uses and based upon historical water system data and population information to calculate the typical daily water use rate per person for existing service areas. Water demands for Fluvanna County were projected based on the 2009 Comprehensive Plan and the 2029 Future Land Use Map along with population projections and existing water system data.

The JRWA requested authorization of withdrawal volumes sufficient to meet water demands projected for the Year 2030, which is within the 15 year permit term, for both residential growth and economic development within the service areas of the project. Based upon the application and additional supplemental information provided during the application process, staff concluded that the water demand and statement of need is reasonable and has been adequately justified.

As mentioned under No. 2 of the "Specific Comments" subsection, based the results of the cumulative impact analysis conducted by staff, the proposed withdrawal will have a minimal impact on downstream flows and the project as limited in draft permit is protective of existing beneficial uses.

The withdrawal limits under Part I.F.3 propose to authorize a withdrawal with a maximum daily limit of 8.57 mgd, which is to be phased in based upon completion of capital improvements as the proposed project is in the development stage. The intent of the condition is for an increase in withdrawal limits to coincide with completion of infrastructure necessary to transmit water from the new intake to the identified service area or areas to prevent allocation of water withdrawal volumes which may not be realized due to unforeseen circumstances and thus, are not put to beneficial use within the permit term.

6. *Part I.F.3 – Commented that the withdrawal limits do not include a maximum hourly or instantaneous withdrawal limit. The City requested that a maximum instantaneous limit no higher than the maximum daily limit be added to protect downstream uses during periods of low flow in the James River.*

   Staff considered the comment in terms of the Virginia Department of Game and Inland Fisheries (DGIF) recommendation that no more than 10 percent of the flow be withdrawn at any time. The proposed Tier 3 maximum daily withdrawal rate of 8.57 mgd represents 4 percent of the period-of-record lowest daily mean discharge (195 mgd), calculated using the three upstream USGS stream gage stations identified in Part I.F.6. However, staff identified there are times when the withdrawal may result in more than 10 percent of the lowest recorded daily mean flow of 302 cubic feet per second. Staff revised Part I.F.9 of the permit to include an instantaneous maximum withdrawal limit of 13,980 gpm (31.1 cfs) to be implemented when the Mandatory Drought Stage flow trigger is reached, which is the period of time when the withdrawal rate may exceed 10 percent of stream flow.

7. *Part I.F.4. – Comment that the implication of this permit condition is that capital improvement plans have not be developed to transport or treat the withdrawal, which the City believes clearly indicates there is no actual need for the increase in withdrawal above those in the existing VWP Permit No. 04-0805.*

   Demonstration of a project's purpose and need may be established by an applicant using a variety of resources. VWP Permit Program regulations do not require applicants include as justification of their purpose and need documentation that identifies the project as part of a capital improvement plan. In accordance with the application requirements of 9VAC25-210-80.B.2, applicants may submit their water supply plans to demonstrate need established through the water supply planning process. The justification for JRWA's stated purpose and need is based upon their adopted water supply plans of the Counties of Fluvanna and Louisa dated April 2010 and June 2011, respectively, and on-going efforts for economic development. The JRWA requested authorization of withdrawal volumes sufficient to meet water demands projected for the Year 2030, which is within the 15 year permit term, for both residential growth and economic development efforts for the service areas of the project. Based upon the application and additional supplemental information provided during the application process, staff concluded that the water demand and statement of need is reasonable and has been adequately justified.

   As mentioned previously, the withdrawal limits under Part I.F.3 propose to authorize a withdrawal with a maximum daily limit of 8.57 mgd, which is to be phased in based upon completion of capital improvements as the proposed project is in the development stage. The intent of the phasing withdrawal limits is for any increase to coincide with completion of infrastructure necessary to transmit water from the new intake to the identified service area or areas to prevent allocation of water withdrawal volumes which may not be realized due to unforeseen circumstances and thus, are not put to beneficial use within the permit term. The purpose of the information required by Part I.F.4 is to identify the capital improvements necessary to service areas identified for each Tier and completion of those identified capital improvements will serve as the permittee's justification in any request for authorization of withdrawal limits for a particular Tier as identified in Part I.F.3

8. *Part I.F.5.d and e – Comment that these conditions of the draft permit cause the schedule for completing capital improvements for each withdrawal Tier meaningless. The City stated the request by JRWA to increase the withdrawal above the current limits established in VWP Permit No. 04-0805 is called into question by what the City believes is a the lack of defined need and JRWA's failure to act under the existing VWP Permit No. 04-0805.*

   Prior performance under a previous or existing permit does not preclude an applicant from requesting revisions to their project. Staff reviews any such request based upon demonstrated purpose and need as justified in the application and any additional information materials. As stated in previous responses above, staff's review of the project concluded that the water demand and statement of need is reasonable and has been adequately justified.

   The draft permit proposes to authorize a withdrawal with a maximum daily limit of 8.57 mgd, which is to be phased in based upon the completion of capital improvements as the proposed project is in the development stage. Part I.F.5 of the permit establishes the schedule for completion of the capital improvements identified in the plan required by Part I.F.4 prior to the permittee being granted authorization to operate at the withdrawal volumes associated with each

Tier identified in Part I.D.3. JRWA requested the draft permit allow for flexibility due to the uncertainty that exists in projecting the completion of capital improvements. Staff considered this request and found it reasonable as staff's intent for phasing the withdrawal is that authorization of any volume up to 8.57 mgd occur concurrent with immediate need to use the water.

9. *Part I.F.7 – The City questioned what is meant by the condition that requires JRWA to coordinate with the operators of Cobbs Creek Reservoir. The City states the condition is too vague and needed clarification.*

   The intent of Part I.F.7 is to promote communication during low flow events for improved management of the resource due to the close proximity of the projects to one another and to ensure downstream uses for which the releases from Cobbs Creek Reservoir are being provided are not impacted by the JRWA's withdrawals. The protocol of the nature of the coordination is addressed under Part I.F.8, which requires JRWA submit for DEQ approval a plan that stipulates the specifics of that coordination with the operators of the Cobbs Creek Reservoir. Part I.F.8 outlines the minimum requirements of such a plan while providing flexibility in the specifics of the plan to best meet the needs of the entities involved and enable the plan to evolve based upon actual implementation. Public notice is not required for submission or approval of plans not required to be submitted as part of an application (9VAC25-210-140.E).

10. *Part I.F.8 – Comment that the condition was not meaningful with respect to providing for augmentation of flow in the James River to offset the withdrawal by JRWA and does not provide protection of existing downstream. The City also commented that this protocol needed to be an enforceable provision of the permit that is subject to review and public comment.*

    As stated in the above response, the intent of this condition is to promote communication during low flow events for improved management of the resource and to ensure downstream uses for which the releases from Cobbs Creek Reservoir are being provided are not impacted by the JRWA's withdrawals. This condition is not intended to address augmentation of JRWA's withdrawal through releases from the Cobbs Creek Reservoir. Rather, the condition requires JRWA develop a protocol that outlines how communication will occur with the operators of the Cobbs Creek Reservoir. Plans required by a permit condition become are an enforceable part of the permit. Public notice is not required for submission or approval of plans not required to be submitted as part of an application (9VAC25-210-140.E).

11. *Part I.F.9 – Commented that the table under Part I.F.9.a for Drought Stage thresholds was blank and Part I.F.9.b appeared to be incomplete and thus could not be fully evaluated. The City requested this information be provided and the draft permit put out for public comment again.*

    The draft permit public noticed on August 22, 2015, included flow values in the table under Part I.F.9.a. These flow triggers controlling the implementation of water conservation measures were constructed based on recommendations from the James River Instream Flow Study: Henrico County Water Supply Withdrawal Final Report, dated September 1991, and are compatible with the triggers in use by Henrico County and the City.

    Part I.F.9 requires the permittee to develop a drought management plan for DEQ review and approval. Part I.F.9.b provides the permittee flexibility to develop the specific conservation measures in their drought management plan that is appropriate for their system. Public notice is

not required for submission or approval of plans not required to be submitted as part of an application (9VAC25-210-140.E).

12. *Part I.F.12 – Comment that the proposed 10 percent accuracy for metering withdrawal flows is not adequate for pumped and piped raw water transmission system. The City recommends an accuracy tolerance of plus or minus 2 percent.*

    Based upon information staff obtained through review of available standards for flow meters and consulting with other operators, the percent accuracy of flow meters for 90-10,000 gallons per minute varies between 2.5 percent and 5 percent for new installations, depending on system specifics. Staff revised Part I.F.12 of the permit to lower the flow meter accuracy standard from 10 percent to 5 percent to reflect current accuracy standards for flow meters.

13. *Part II.H – The City requested that the provision for "automatic transfer" be stricken from the permit.*

    Part II of the draft permit consists of general permit conditions required by VWP Permit Program regulation (9VAC25-210-180.E) for all VWP permits and may not be revised.

14. *Part II.I – The City commented that the proposed increase in withdrawal above the current permitted limits in VWP Permit No. 04-0805 will infringe on property rights held by the City to water in the James River.*

    See response to No. 1 under General Comments subsection.

    Part II of the draft permit consists of general permit conditions required by VWP Permit Program regulation (9VAC25-210-180.E) for all VWP permits and may not be revised.

15. *Attachment A – Comment that this section only addresses mandatory water use restrictions during a State declared Drought Emergency. The City requested that JRWA implement water restrictions in a manner consistent with and coordinated with other downstream public water supply systems supplied by the James River (City of Richmond, Henrico County, Chesterfield County and Hanover County). The City also commented that the provisions for water use restrictions contained in Attachment A are not as detailed or restrictive as those used in the metro Richmond area.*

    Attachment A is included with any surface water withdrawal permit and represents the minimum measures that must be implemented during a drought emergency.

    This comment is most relevant for consideration in the development of the drought management plan required by Part I.F.9 that is to address conservation measures in each drought stage. Staff believes the comment has merit and will encourage JRWA to develop their plan in light of this comment.

Additional comments received on November 17, 2015:

1. *The City reiterated their previous statement regarding their water supply premise under which they operate and base their assessment of all DEQ legislative and administrative proposals is in*

light of their common law riparian rights and their property right, obtained through private conveyances, to withdraw at least 645 cubic feet per second (cfs), or 417 million gallons per day (mgd) of water from the James River. The City stated they view "any increase in proposed withdrawals from the James River that could adversely reduce flows in the Richmond area within the context of the City's water rights and will vigorously defend against actions which we believe will infringe on those rights."

The Code of Virginia dictates that surface waters are natural resources which should be regulated by the Commonwealth and further that the regulation, control, development, and use of such waters for all purposes beneficial to the public are with the jurisdiction of the Commonwealth which in the exercise of its police powers may establish measures to effectuate the proper and comprehensive utilization and protection of such waters. *See* Va. Code § 62.1-11. While each riparian proprietor has an equal right to the reasonable use of the water running by or through his land for every useful purpose to which it can be applied without material diminution to the prejudice of the lower proprietor unless he has acquired a right to do so by grant, prescription or license, the right of a lower riparian owner of the natural flow of the stream is subject to a reasonable use of the water by the upper riparian owners as it runs through their land before reaching his. As described in Attachment A, the proposed withdrawal is reasonable and will not materially diminish the quantity of water in the River.

Finally, the State Water Control Board and the Department of Environmental Quality are without authority to determine private property rights. The issuance of a VWP permit does not and, by law, cannot affect private property rights, and the fact that any owner holds a certificate issued by the Board or the Department under the State Water Control Law shall not constitute a defense in any civil action involving those rights. *See* Va. Code § 62.1-44.22.

2. *The City voiced concerns that DEQ did not provide adequate notice and opportunity for comment of the draft VWP permit. This concern included a comment that the existence of a permit fact sheet was not clearly made known during the comment period and that the draft permit proposes vague permit requirements such as development of plans after permit issuance, and thus, were not available for comment.*

   DEQ believes adequate notice and opportunity was provided for the public and specifically, for the City, to comment on the draft VWP permit. The public notice for this project consisted of standard template language used for all VWP draft permits, which was prepared in accordance with the requirements of Va. Code § 62.1-44.15:01. The last section of the published draft permit public notice clearly identified to the reader that documents and additional information were available to the public upon request. As a courtesy, DEQ notified the City of the upcoming public comment period and provided a copy of the draft permit. Based upon DEQ's files, the City did not contact DEQ for additional information or documents.

   Plans required for compliance with a permit are developed after permit issuance and become an enforceable part of the permit. Such plans are not subject to public comment as public notice is not required for submission or approval of plans not required to be submitted as part of an application (9VAC25-210-140.E).

3. *Comment that many of the City's earlier technical comments are still valid but highlighted their main concern that the permit fact sheet does not contain sufficient data to support DEQ's*

statements that the proposed withdrawal will not have adverse downstream impacts. The City questioned why an assessment of potential impacts related to dissolved oxygen (D.O.) levels and algae blooms was not conducted.

The purpose of a permit fact sheet is to summarize DEQ's review of a proposed project, justification for the Agency's permit decision and any needed clarification of permit conditions. While the document summarizes the data analysis, it does not contain the data reviewed; however, this information is part of the permit file.

The cumulative impact analysis conducted by staff reviewed potential impacts from the proposed withdrawal through an analysis of flow. This is the primary surrogate for analyzing potential impacts to existing beneficial uses such as aquatic habitat, waste assimilation, and downstream water supply. Results from the flow analysis that identify minimal change to downstream flows indicate minimal change to water quality and thus, do not warrant further analysis. The analysis of the proposed withdrawal predicted that downstream flows during the drought of record decrease by -2 percent at the City of Richmond intake.

4. *The City questioned the accuracy of the data in the fact sheet as it pertains to the City's raw water intake and Henrico County's raw water intake.*

   The value of 95 mgd was used for the City based upon staff's review of the City's unpermitted raw water intake. The reported maximum capacity (887 mgd) of the City's unpermitted intake on the James River is more than 9 times greater than the maximum annual average withdrawal (95.69 mgd) reported to DEQ through the Virginia Water Users Database System (VWUDS). However, the description of the intake given on the City's VWP Exclusion Form submitted to DEQ indicates that the 887 mgd capacity includes the capacity of the gates connecting the river at Williams Dam with the Kanawha Canal, not just the intake that is located on the canal. Therefore, the reported maximum annual average withdrawal was used. This withdrawal rate (95.69 mgd) dates from 2002 and is greater than the projected demand listed in the City's water supply plan document. DEQ determined this value was reasonable for use in the analysis projecting for the proposed permit term of 2015-2030.

   Staff conducted a similar review of the withdrawal volumes for Henrico County, which is a permitted withdrawal. The VWP permit limits the withdrawal to 75.21 mgd; however, the County's maximum annual average withdrawal reported to DEQ through VWUDS is 28.88 mgd with a permitted daily maximum of 46.33. The permitted value of 75.21 mgd was used in the cumulative impact analysis projecting for the proposed permit term of 2015-2030s.

   Upon further review of the cumulative impact analysis section of the fact sheet, staff identified typographical error in using the term "permit max" for the value of 95 million gallons per day (mgd) for the City in the footnotes for Table 5 and the paragraph above this table. The word "permit" should be revised to "unpermitted" when referenced to the City's maximum volumes. Additionally, staff identified a typographical error in the footnote for Henrico County. The value of 45 mgd should be 42.5 mgd. Corrections were made to the fact sheet to address these errors.

5. *The City commented that DEQ should recognize property rights even though issuance of a VWP permit does not convey any property rights as the City believes it's proper and prudent for DEQ to*

do so. Additionally, the City believes it's appropriate for DEQ to consider possible adverse impacts to beneficial uses protected by the City's water rights.

DEQ may not adjudicate property rights as it's not within the Agency's purview or authority to do so. Moreover, the issuance of a VWP permit does not, and by law, cannot affect private property rights. DEQ does have responsibility for reviewing activities within the jurisdiction of VWP Permit Program to determine potential impacts that may result to existing beneficial uses. Such review was conducted for the proposed withdrawal project and based upon our analysis; staff determined the proposed project, as limited in the draft permit, will protect existing beneficial uses while meeting the permittee's purpose and need.

Part II - Richmond Regional Planning District Commission (RRPDC) and Goochland County

Comments from RRPDC:

1. *Comment that cumulative impacts from multiple projects affect the water levels of the James River, putting a strain on the water resources for the Richmond Region.*

   Staff agrees that multiple projects can result in cumulative impacts on a waterbody that may affect water supply. To assess this type of impact, staff conducts a cumulative impact analysis on all application for surface water withdrawals. Staff's review of this project looked at its potential effect on existing downstream users using the worst case scenario, which consisted of permitted or known excluded users operating at their maximum expected values during the permit term during the drought of record (2002). The analysis took a conservative approach by assuming the proposed project was a 100 percent consumptive with no conservation measures. The analysis predicted that the Henrico County and the City intakes would experience no change in either frequency of drought restrictions or unmet demands. Based upon concerns voiced by the City of Richmond and Henrico County during the application process, staff included low flow values in the draft permit (Part I.F.9.a) that requires JRWA initiate conservation measures when those triggers are met during low flow events. These flow values were developed based upon those used by Henrico County and the City. Based upon the results of the analysis, staff determined the proposed project as limited in the draft permit, will not adversely affect existing beneficial uses.

Comments from Goochland County:

2. *Concern of what the cumulative impacts of the proposed project and Cobbs Creek project (currently authorized under VWP Permit No. 05-0852), which are located in close vicinity of one another, may be on water resources in Goochland County.*

   Staff's review of the proposed withdrawal included a cumulative impact analysis to evaluate the project's potential effect on existing downstream users. The model, which included the operating rules for the Cobbs Creek Reservoir, was based upon the worst case scenario consisting of permitted or known excluded users operating at their maximum expected values during the permit term during the drought of record (2002). The analysis took a conservative approach by assuming the proposed project was a 100 percent consumptive with no conservation measures. The analysis predicted that downstream flows during the drought of record were predicted to decrease by -3.1 percent at the JRWA intake and -2 percent at the City of Richmond (City) intake. In response to

concerns voiced by the City and Henrico County during the application process, staff included low flow values in the draft permit (Part I.F.9.a) that requires JRWA initiate conservation measures when those triggers are met during low flow events. These flow values were developed based upon those used by Henrico County and the City. Based upon the results of the analysis, the proposed withdrawal will not adversely affect existing beneficial uses and the project as limited in draft permit is protective of existing beneficial uses.

3. *Comment that a Monocan Indian village, Rassawek, is located in the vicinity of the proposed intake.*

   The oversight of historic resources is not within the purview of the VWP Permit Program. The U.S. Army Corps of Engineers does have oversight of historic resources and staff recommends the commenter coordinate with this agency.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

VWP Individual Permit Number 14-0343
Effective Date: November 20, 2015
Expiration Date: November 19, 2030

VIRGINIA WATER PROTECTION PERMIT ISSUED PURSUANT TO THE STATE WATER CONTROL LAW AND SECTION 401 OF THE CLEAN WATER ACT

Based upon an examination of the information submitted by the owner, and in compliance with § 401 of the Clean Water Act as amended (33 USC 1341 et seq.) and the State Water Control Law and regulations adopted pursuant thereto, the State Water Control Board (board) has determined that there is a reasonable assurance that the activity authorized by this permit, if conducted in accordance with the conditions set forth herein, will protect instream beneficial uses and will not violate applicable water quality standards. The board finds that the effect of the impact, together with other existing or proposed impacts to surface waters, will not cause or contribute to a significant impairment to state waters or fish and wildlife resources.

Permittee: James River Water Authority

Address: c/o Fluvanna County Administrator
132 Main Street, P.O. Box 540, Palmyra, Virginia 22963

Activity Location: The proposed intake is located on the north bank of the James River, just upstream of the confluence with the Rivanna River at the end of Route 624, near the Town of Columbia in Fluvanna County, Virginia.

Activity Description: This permit authorizes the construction and operation of a new surface water withdrawal intake to withdraw surface water from the James River as described in Part I.F and the installation of a raw water transmission pipe from the intake structure to Route 6 within the vicinity of the Rivanna River. Impacts to the James River associated with the construction of the intake structure are authorized for 0.09 acre (64 linear feet) of permanent impact and 0.032 acre 0.90 acre (485 linear feet) of temporary impact. Impacts associated with the construction of a raw water transmission pipe are authorized to permanently impact 0.01 acre of palustrine forested wetland and temporarily impact 0.001 acre of palustrine emergent wetland and 120 linear feet of a stream channel. Compensation for the permanent impact of 0.01 acre of palustrine forested wetland shall be provided through the purchase of 0.02 wetland credit from the Virginia Aquatic Resources Trust Fund and/or a DEQ approved mitigation bank that is authorized to sell credits for area in which the permitted impact site is located. The credit sale must be in accordance with the approved Mitigation Banking Instrument for the mitigation bank. Compensation for permanent stream channel impacts is not required.

The permitted activity shall be in accordance with this Permit Cover Page, Part I - Special Conditions, and Part II - General Conditions.

Director, Office of Water Supply

11/20/15
Date

Part I – Special Conditions

A. Authorized Activities

1. This permit authorizes the construction and operation of a new surface water withdrawal intake to withdraw surface water from the James River as described in Part I.F and the installation of a raw water transmission pipe from the intake structure to Route 6 within the vicinity of the Rivanna River.

2. This permit authorizes the following surface water impacts:

    a. Impacts to the James River associated with the construction of the intake structure are authorized for 0.09 acre (64 linear feet) of permanent impact and 0.90 acre (485 linear feet) of temporary impact.

    b. Impacts associated with the construction of a raw water transmission pipe are authorized to permanently impact 0.01 acre of palustrine forested wetland and temporarily impact 0.001 acre of palustrine emergent wetland and 120 linear feet of a stream channel.

3. Authorized impacts shall be as depicted on Sheets 1 and 2 of the plans entitled "JRWA Raw Water Intake, Pump Station and Force Main, Environmental Impact Summary" dated December 19, 2014, revised May 18, 2015 and received May 20, 2015. Authorized activities shall be conducted as described in the Joint Permit Application dated March 12, 2014, and received March 14, 2014, and supplemental materials, revisions and clarifications received through May 20, 2015.

4. The permittee shall notify the DEQ prior to any additional impacts to surface waters, including wetlands; of any modifications of the intake structure; and of any change to the type of surface water impacts associated with this project. Any additional impacts, modifications, or changes shall be subject to individual permit review and/or modification of this permit.

B. Permit Term

1. This permit is valid for fifteen (15) years from the date of issuance. A new permit may be necessary for the continuance of the authorized activities, including water withdrawals, or any permit requirement that has not been completed, including compensation provisions.

2. The permittee shall notify DEQ in writing at least 120 calendar days prior to the expiration of this permit if an extension of the permit term is required.

C. Standard Project Conditions

1. The activities authorized by this permit shall be executed in such a manner that any impacts to beneficial uses are minimized. As defined in § 62.1-10(b) of the Code, "beneficial use" means both instream and offstream uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to,

domestic (including public water supply), agricultural, electric power generation, commercial, and industrial uses. Public water supply uses for human consumption shall be considered the highest priority.

2. No activity shall substantially disrupt the movement of aquatic life indigenous to the water body, including those species that normally migrate through the area, unless the primary purpose of the activity is to impound water.

3. Flows downstream of the project area shall be maintained to protect all uses.

4. No activity shall cause more than minimal adverse effect on navigation, and no activity shall block more than half of the width of the stream at any given time.

5. The activity shall not impede the passage of normal or expected high flows, and any associated structure shall withstand expected high flows.

6. Continuous flow of perennial springs shall be maintained by the installation of spring boxes, French drains, or other similar structures.

7. Construction activities shall be conducted in accordance with the below Time-of-Year Restrictions:

    a. No instream work in any stream channel shall occur from April 15 through June 15 and August 15 through September 30 of any year to protect the state endangered brook floater and state threatened Atlantic pigtoe and green floater. Construction activities within the confines of the cofferdam are not included within this Time-of-Year Restriction.

    b. No instream work in the James River shall occur from March 15 through June 30 of any year to protect anadromous fish. Construction activities within the confines of the cofferdam are not included within this Time-of-Year Restriction.

8. All excavation, dredging, or filling in surface waters shall be accomplished in a manner that minimizes bottom disturbance and turbidity.

9. All in-stream activities shall be conducted during low-flow conditions whenever practicable.

10. All construction, construction access, and demolition activities associated with this project shall be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by this permit. Wet, excess, or waste concrete shall be prohibited from entering surface waters.

11. All fill material placed in surface waters shall be clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations.

12. Measures shall be employed at all times to prevent and contain spills of fuels, lubricants, or other pollutants into surface waters.

13. Machinery or heavy equipment in temporarily impacted wetlands shall be placed on mats or geotextile fabric, or other suitable means shall be implemented, to minimize soil disturbance to the maximum extent practical. Mats, fabrics, or other measures shall be removed as soon as the work is complete in the temporarily impacted wetland.

14. Heavy equipment is authorized for use within the stream channel during project construction or stream restoration activities when site conditions prohibit access from the streambank. The equipment shall be stationed on cobble bars and the activities conducted in the dry or during low flow conditions, whenever possible.

15. Temporary disturbances to wetlands, stream channels, and/or stream banks during project construction activities shall be avoided and minimized to the maximum extent practicable.

16. All temporarily disturbed wetland areas shall be restored to preconstruction conditions within 30 calendar days of completing work in the areas, which shall include re-establishing pre-construction contours, and planting or seeding with appropriate wetland vegetation according to cover type (emergent, scrub/shrub, or forested), except for invasive species identified on DCR's Invasive Alien Plant Species of Virginia list. The permittee shall take all appropriate measures to promote and maintain the revegetation of temporarily disturbed surface waters through the second year post-disturbance.

17. All temporarily impacted streams and stream banks shall be restored to their original elevations and contours within 30 calendar days following the construction at that stream segment, and the banks shall be seeded or planted with the same vegetative cover type originally present along the banks, including supplemental erosion control grasses if necessary but not including invasive species identified on DCR's Invasive Alien Plant Species of Virginia list.

18. All materials (including fill, construction debris, excavated materials, and woody materials, that are temporarily placed in wetlands, in stream channels, or on stream banks) shall be placed on mats or geotextile fabric, shall be immediately stabilized to prevent the material or leachate from entering surface waters, and shall be entirely removed within 30 calendar days following completion of that construction activity. After removal, disturbed areas shall be returned to original contours, shall be stabilized, and shall be restored to the original vegetated state within 30 calendar days.

19. Temporary in-stream construction features such as cofferdams shall be made of non-erodible materials.

20. Virginia Water Quality Standards shall not be violated in any surface waters as a result of the project activities.

21. All non-impacted surface water and any required upland buffers that are within the project or right-of-way limits, and that are within fifty feet of any project activities, shall be clearly flagged or demarcated for the life of the construction activity within that area. The permittee shall notify all contractors and subcontractors that *no activities are to occur in these marked areas*.

22. All required notifications and submittals shall include project name and permit number and be submitted to the DEQ office stated below, to the attention of the Water Withdrawal Permit Manager, unless directed in writing by DEQ subsequent to the issuance of this permit: Department of Environmental Quality-Office of Water Supply, P.O. Box 1105, Richmond, Virginia 23219.

23. All reports required by this permit and other information requested by DEQ shall be signed by the permittee or a person acting in the permittee's behalf, with the authority to bind the permittee. A person is a duly authorized representative only if *both* criteria below are met. If a representative authorization is no longer valid because of a change in responsibility for the overall operation of the facility, a new authorization shall be immediately submitted to DEQ.

    a. The authorization is made in writing by the permittee.

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

24. All submittals shall contain the following signed certification statement:

    "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

25. Any fish kills or spills of fuels or oils shall be reported to DEQ immediately upon discovery at (804) 698-4000. If DEQ cannot be reached, the spill shall be reported to the Virginia Department of Emergency Management (DEM) at 1-800-468-8892 or the National Response Center (NRC) at 1-800-424-8802.

26. DEQ shall be notified in writing within 24 hours or as soon as possible on the next business day when potential environmentally threatening conditions are encountered which require debris removal or involve potentially toxic substances. Measures to remove the obstruction, material, or toxic substance or to change the location of any structure are prohibited until approved by DEQ.

D. Stream Modifications, Including Installation of the James River Intake

1. Prior to commencing work in the James River or along its shoreline, the permittee shall:

    a. Perform a mussel survey and relocation 100 meters upstream through 400 meters downstream of the James River authorized impact area no more than six months prior to the start of construction unless otherwise approved by Virginia Department of Game and Inland Fisheries

(DGIF) and DEQ. The survey shall be performed by a qualified, permitted biologist and conducted in accordance with DGIF and U.S. Fish and Wildlife Services draft Freshwater Mussel Guidelines for Virginia dated March 7, 2008.

b. Submit a report summarizing survey results to DGIF and DEQ for review and approval. The agencies review and approval shall be completed prior to commencing work in the James River or along its shoreline. The report shall reference DGIF's project number: ESSLog# 22598. Based upon the results, DGIF will provide final recommendations regarding the protection of listed species known from the area.

2. To minimize harm to the aquatic environment and its residents resulting from use of the Tremie method to install concrete, installation of grout bags, and traditional pouring of concrete, such activities shall occur only in the dry, allowing all concrete to harden and cure prior to contact with open water.

3. Redistribution of existing stream substrate for erosion control purposes is prohibited.

4. Material removed from the stream bottom shall not be deposited into surface waters unless otherwise authorized in this permit.

5. Riprap apron for all outfalls shall be designed in accordance with Virginia Erosion and Sediment Control Handbook, Third Edition, 1992, or the most recent version in effect at the time of construction.

6. For streambank protection activities, structures and backfill shall be placed as close to the streambank as practical, while still avoiding and minimizing impacts to surface waters to the maximum extent practical. No material shall be placed in excess of the minimum necessary for erosion protection.

7. Asphalt and materials containing asphalt or other toxic substances shall not be used in the construction of submerged sills, breakwaters, dams, or weirs.

E. Installation of Utilities

1. All utility line work in surface waters shall be performed in a manner that minimizes disturbance in each area. Temporarily disturbed surface waters shall be restored in accordance with Part I.C.16, C.17, and C.18, unless otherwise authorized by this permit.

2. Material resulting from trench excavation may be temporarily sidecast into wetlands not to exceed a total of 90 calendar days, provided the material is not placed in a manner such that it is dispersed by currents or other forces.

3. The trench for a utility line cannot be constructed in a manner that drains wetlands (e.g., backfilling with extensive gravel layers creating a French drain effect).

F. Surface Water Withdrawals

1. Surface water withdrawn from the James River and authorized under this permit shall be only used for public water supply.

2. The safe yield of the surface water withdrawal project as authorized under this permit is the annual average daily volume of 4.12 million gallons per day (mgd).

3. The withdrawal of water from the James River shall not exceed the limits established in the table below. The withdrawal limits are to be phased in based upon completion of capital improvements necessary to begin water service to areas identified for each Tier:

Tier	Maximum Daily Withdrawal (mgd)	Maximum Monthly Withdrawal (mg)	Maximum Annual Withdrawal (mg)
1	5.82	119.35	1,024.8
2	7.69	157.71	1,354.2
3	8.57	175.62	1,507.92

   a. Tier 1 contains the withdrawal limits to meet the justified demands of the service areas of Zion Crossroads and Ferncliff in Louisa County and Fluvanna CWS in Fluvanna County and the economic development prospects as identified in the application for both Counties.

   b. Tier 2 contains the withdrawal limits to meet the justified demands of the service areas identified in Tier 1 and the service areas of Shannon Hill, Town of Louisa, Town of Mineral, Louisa County Water Authority and Lake Anna in Louisa County.

   c. Tier 3 contains the withdrawal limits to meet the justified demands of the service areas identified in Tier 2 and the service areas of Gum Springs in Louisa County and the Fork Union, Columbia and Palmyra CWS in Fluvanna County.

4. The localities (Fluvanna and Louisa Counties) through the permittee shall provide to DEQ for review no later than June 30, 2017 for Tier 1 and within three (3) years of permit issuance for Tier 2 and 3, a plan(s) that identifies the specific capital improvements and associated schedule for completion that Fluvanna and Louisa Counties must implement to treat and transport water withdrawn from the authorized intake to service areas identified for each Tier in Part I.F.3. Any changes to the plan(s) that relates to this permit shall be submitted to DEQ for review. The plan(s) shall include, at a minimum, the following for each Tier:

   a. Summarize the capital improvements that must be completed for water to be transported from the authorized intake, treated and distributed to the service areas identified for each Tier. These capital improvements shall include infrastructure such as pipelines, water treatment plants and associated storage facilities.

b. Identify the location(s) of wastewater treatment facilities, both private and municipal, that will treat any part of the water withdrawn from the authorized intake and the watershed to which the return flow will be discharged.

c. The anticipated dates to complete each phase of the identified capital improvements.

5. The withdrawal limits established in Part I.F.3 are authorized in accordance with the following:

a. Tier 1: The permittee shall submit to DEQ for review and approval by January 1, 2018 written confirmation that capital improvements identified in the plan required by Part I.F.4 for Tier 1 are complete to obtain authorization to withdraw water at the volumes identified under this Tier.

b. Tier 2: The permittee shall submit to DEQ for review and approval by January 1, 2021 written confirmation that capital improvements identified in the plan required by Part I.F.4 for Tier 2 are complete to obtain authorization to withdraw water at the volumes identified under this Tier.

c. Tier 3: The permittee shall submit to DEQ for review and approval by January 1, 2023 written confirmation that capital improvements identified in the plan required by Part I.F.4 for Tier 3 are complete to obtain authorization to withdraw water at the volumes identified under this Tier.

d. Should capital improvements necessary to begin water service to areas identified for a specific Tier be completed later in the permit term than identified above, the permittee may submit to DEQ for review and approval a request for authorization of withdrawal limits established for a specific Tier. Any such request shall include written confirmation that capital improvements identified in the plan required by Part I.F.4 for a specific Tier are complete to obtain authorization to withdraw water at the volumes identified under that Tier and discussion of project status including justification for the request.

e. If capital improvements for a specific Tier are complete for only a portion of the service area or areas identified for that Tier, the permittee may submit to DEQ for review and approval a request for a portion of the withdrawal volumes for a specific Tier sufficient to meet the demands of those service area or areas. Any such request shall include the following: proposed revision to the specific Tier, including water demands associated with the service area or areas as identified in the application materials, written confirmation that capital improvements identified in the plan required by Part I.F.4 are complete for those service area or areas, and discussion of project status including justification for the request. Any such request will require a modification of the permit, which may be considered under a minor modification, to adjust the withdrawal volumes for a particular Tier, not to exceed the volumes identified for Tier 3 in Part I.F.3.

6. The permittee shall estimate flows at the James River intake in units of cubic feet per second (cfs) on a daily basis by monitoring the stream flow gages detailed herein and by applying the equation "Flows at the intake = $(Q_{SC} + Q_{HD} + Q_{SL}) * 1.03$," where:

a. Q_{SC} is the previous day's provisional mean daily flow at the U.S. Geologic Survey (USGS) gage No. 02029000 (James River at Scottsville, Virginia);

b. Q_{HD} is the previous day's provisional mean daily flow at the USGS gage No. 02030000 (Hardware River BL Briery Run near Scottsville, Virginia);

c. Q_{SL} is the previous day's provisional mean daily flow at the USGS gage No. 02030500 (Slate River near Arvonia, Virginia);

d. 1.03 is the adjustment factor for drainage area.

7. The permittee shall make reasonable effort to coordinate with the operators of the Cobbs Creek Reservoir when provisional stream flows at the permittee's intake estimated in accordance with Part I.F.6 is equal to or less than the 10th percentile flow of 778 cfs. Coordination shall occur in accordance with the DEQ approved protocol required by Part I.F.8.

8. Prior to withdrawing surface water from the James River, the permittee shall develop and submit for DEQ approval a protocol for coordinating with the operators of the Cobbs Creek Reservoir when provisional stream flows at the intake fall below the 10th percentile, as identified in Part I.F.7. Such protocol, to the extent reasonable, should be developed in coordination with the operators of the Cobbs Creek Reservoir, with assistance by DEQ. The protocol shall include, at a minimum, the permittee informing the operators of the Cobbs Creek Reservoir of their current and intended operations and stipulating the frequency of periodic updates during extended low flow events. DEQ shall have 30 days from receipt of the proposed protocol to review and provide comments.

9. The permittee shall submit a drought management plan to DEQ for review and approval 90 days prior to initiating the surface water withdrawal. Any revisions to the approved plan shall be submitted to DEQ for review and approval prior to implementing the change. The plan shall include, at a minimum, the following:

   a. Development of drought stages, including when and how each stage will be implemented. The emergency drought stage shall be initiated when a drought emergency is declared by the Commonwealth of Virginia in the Northern Piedmont Drought Evaluation Region or the Middle James Drought Evaluation Region or by either Fluvanna or Louisa County in accordance with either County's Drought Management Ordinance. Once authorization is granted by DEQ to the permittee to withdrawal volumes above those identified in Tier 1 (Part I.F.3), voluntary and mandatory drought stages shall be initiated when the fourteen (14) day rolling average of James River flows at the intake are equal to or less than the values in the below table. James River flows at the intake shall be estimated in accordance with Part I.F.6.

Drought Stage	James River Flow at Intake, 14-day Rolling Average (cfs)	
	November - June	July - October
Voluntary	≤ 1,241	≤ 975
Mandatory	≤ 913	≤ 750

b. Requirement to operate the James River intake in a manner that ensures the instantaneous withdrawal does not exceed 13,980 gallons per minute (31.1 cfs) during the Mandatory Drought Stage.

c. A description of the conservation measures to be implemented during each drought stage.

10. When a drought emergency is declared by the Commonwealth of Virginia in the Northern Piedmont Drought Evaluation Region or the Middle James Drought Evaluation Region or by either Fluvanna or Louisa County in accordance with either County's Drought Management Ordinance, the permittee shall implement either the provisions directed by the Commonwealth, the Drought Management Ordinance, the Drought Management Plan required by Part I.F.9 of this permit or the mandatory conservation measures as detailed in Attachment A of this permit, whichever is the most restrictive. The permittee shall be responsible for determining when drought emergencies are declared. The permittee shall retain records documenting that mandatory conservation measures were implemented during declared drought emergencies.

11. The intake screens shall be designed so that screen openings are not larger than 1 millimeter in width and height and the screen face intake velocities are not greater than 0.25 feet per second.

12. The permittee shall monitor withdrawals from the James River on a daily basis using flow totalizer technology to confirm that the withdrawals are in compliance with this permit. Such meters shall produce volume determinations within plus or minus 5 percent of actual flows. A defective meter or other device must be repaired or replaced within 60 days. A defective meter is not grounds for not reporting the withdrawals. During any period when a meter is defective, generally accepted engineering practice shall be used to estimate withdrawals and the period during which the meter was defective must be clearly identified in the report.

13. On each day that pumping occurs, the permittee must monitor and record the following, for each pump:

    a. Date and time.

    b. Total amount of water withdrawn each day.

    c. The maximum rate of withdrawal that occurred each date (in gpm).

    d. The provisional stream flow in cfs as measured at the following stream gages: USGS gage No. 02029000 (James River at Scottsville, Virginia), USGS gage No. 02030000 (Hardware River BL Briery Run near Scottsville, Virginia), and USGS gage No. 02030500 (Slate River near Arvonia, Virginia).

e. The provisional stream flow at the intake in cfs as estimated in accordance with Part I.F.6.

f. Identify whether stream flows at the intake fell below the 10th percentile requiring coordination with the operators of the Cobbs Creek Reservoir and if water supply storage releases from the upstream Cobbs Creek Reservoir occurred.

14. The permittee shall submit a water withdrawal monitoring report to DEQ semi-annually. The semi-annual monitoring period shall be as follows: January through June and July through December. The daily records shall be tabulated by month. The report shall be submitted to DEQ by January 31st and July 31st of every year within the permit term. Submittal of the report may take the form of electronic reporting or another form determined to be acceptable by DEQ. In the event the electronic reporting system is not available, the permittee may submit the report by electronic mail. The report shall include the following information:

a. The permittee's name and address.

b. The permit number.

c. The source(s) from which water is withdrawn.

d. The location (latitude and longitude) of the water withdrawal.

e. Information listed in Part I.F.13.

f. The cumulative volume (million gallons) of water withdrawn each month and for the calendar year.

g. The average daily volume (mgd) of water withdrawn as calculated the last day of the monitoring period.

h. In the last report for the calendar year, the largest single day withdrawal volume (mgd) that occurred in the year and the month in which it occurred.

i. The method of measuring each withdrawal.

j. Documentation of any coordination conducted in accordance with Part I.F.7 during the reporting period.

k. If during a semi-annual reporting period a drought emergency is declared, the report shall include a summary of mandatory conservation measures implemented during the drought event.

15. Water withdrawal monitoring and reporting activities shall comply with this section, Part I.C, and Part II. All records and information that result from the monitoring and reporting activities required by this permit, including any records of maintenance activities to the withdrawal system,

shall be retained for the life of the permit. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or as requested by the State Water Control Board.

G. Construction Monitoring and Submittals (Impact Site)

1. Final plans for the project construction activities authorized by this permit shall be submitted thirty (30) calendar days prior to initiating any land disturbance or construction in permitted impact areas. Construction shall be performed in accordance with the final construction plans submitted to DEQ, which shall be in compliance with the permit. Any changes to the final plans for permitted areas shall be submitted to DEQ immediately upon determination that changes are necessary. DEQ approval shall be required prior to implementing the changes.

2. The permittee shall submit written notification at least ten (10) calendar days prior to the initiation of land disturbance or construction activities in permitted areas. The notification shall include a projected schedule for initiating and completing work at each permitted impact area.

3. Site inspections shall be conducted at least once every calendar month and recorded on the *Monthly VWP Permit Inspection Checklist* (Attachment B) by the permittee or the permittee's qualified designee during active construction within authorized surface water impact areas. Monthly inspections shall be conducted in the following areas: all authorized permanent and temporary impact areas; all avoided surface waters, including wetlands, stream channels, and open water; surface water areas within 50 feet of any land disturbing activity; and all on-site areas designated for permanent preservation. The *Monthly VWP Permit Inspection Checklist* (Attachment B) shall be completed in its entirety for each monthly inspection and shall be kept on-site and made available for review by DEQ staff upon request during normal business hours.

4. The *VWP Permit Construction Status Update Form* (Attachment C) shall be completed in June and December and shall be submitted and received by DEQ no later than January 31st and July 31st of every year for the duration of this permit. The *VWP Permit Construction Status Update Form* (Attachment C) shall include reference to the VWP permit authorization number and one of the following statements for each authorized surface water impact location:

    a. Construction activities not yet commenced;

    b. Construction activities have commenced;

    c. Construction activities have commenced but are currently inactive, or;

    d. Construction activities are complete.

5. The permittee shall notify DEQ within 24 hours of discovering impacts to surface waters including wetlands, stream channels, and open water that are not authorized by this permit. The notification shall include the completed *Monthly VWP Permit Inspection Checklist* (Attachment B), photographs, estimated acreage and/or linear footage of impacts, and a description of the impacts.

6. The permittee shall submit written notification of completion within 30 calendar days after the completion of all activities in all permitted impact areas authorized under this permit.

H. Compensatory Mitigation

1. Compensation for the permanent impact of 0.01 acre of palustrine forested wetland shall be provided through the purchase of 0.02 wetland credit from the Virginia Aquatic Resources Trust Fund and/or a DEQ approved mitigation bank that is authorized to sell credits for area in which the permitted impact site is located. The credit sale must be in accordance with the approved Mitigation Banking Instrument for the mitigation bank.

2. Documentation that an approved wetland mitigation bank has debited the required mitigation credits from the mitigation bank ledger shall be submitted to and received by DEQ prior to initiating work in permitted impact areas.

Part II – General Conditions

A. Duty to Comply

The permittee shall comply with all conditions of the VWP permit. Nothing in the VWP permit regulations shall be construed to relieve the permittee of the duty to comply with all applicable federal and state statutes, regulations and prohibitions. Any VWP permit violation is a violation of the law, and is grounds for enforcement action, VWP permit termination, revocation, modification, or denial of an application for a VWP permit extension or reissuance.

B. Duty to Cease or Confine Activity

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which a VWP permit has been granted in order to maintain compliance with the conditions of the VWP permit.

C. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any impacts in violation of the permit which may have a reasonable likelihood of adversely affecting human health or the environment.

D. VWP Permit Action

1. A VWP permit may be modified, revoked and reissued, or terminated as set forth in 9 VAC 25-210 et seq.

2. If a permittee files a request for VWP permit modification, revocation, or termination, or files a notification of planned changes, or anticipated noncompliance, the VWP permit terms and conditions shall remain effective until the request is acted upon by the board. This provision shall not be used to extend the expiration date of the effective VWP permit. If the permittee wishes to continue an activity regulated by the VWP permit after the expiration date of the VWP permit, the permittee must apply for and obtain a new VWP permit or comply with the provisions of 9 VAC 25-210-185 (VWP Permit Extension).

VWP permits may be modified, revoked and reissued or terminated upon the request of the permittee or other person at the board's discretion, or upon board initiative to reflect the requirements of any changes in the statutes or regulations, or as a result of VWP permit noncompliance as indicated in the Duty to Comply subsection above, or for other reasons listed in 9 VAC 25-210-180 (Rules for Modification, Revocation and Reissuance, and Termination of VWP permits).

E. Inspection and Entry

Upon presentation of credentials, any duly authorized agent of the board may, at reasonable times and under reasonable circumstances:

1. Enter upon any permittee's property, public or private, and have access to, inspect and copy any records that must be kept as part of the VWP permit conditions;

2. Inspect any facilities, operations or practices (including monitoring and control equipment) regulated or required under the VWP permit; and

3. Sample or monitor any substance, parameter or activity for the purpose of ensuring compliance with the conditions of the VWP permit or as otherwise authorized by law.

F. Duty to Provide Information

1. The permittee shall furnish to the board any information which the board may request to determine whether cause exists for modifying, revoking, reissuing or terminating the VWP permit, or to determine compliance with the VWP permit. The permittee shall also furnish to the board, upon request, copies of records required to be kept by the permittee.

2. Plans, specifications, maps, conceptual reports and other relevant information shall be submitted as required by the board prior to commencing construction.

G. Monitoring and Records Requirements

1. Monitoring of parameters, other than pollutants, shall be conducted according to approved analytical methods as specified in the VWP permit. Analysis of pollutants will be conducted according to 40 CFR Part 136 (2000), Guidelines Establishing Test Procedures for the Analysis of Pollutants.

2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic recordings for continuous monitoring instrumentation, copies of all reports required by the VWP permit, and records of all data used to complete the application for the VWP permit, for a period of at least three years from the date of the expiration of a granted VWP permit. This period may be extended by request of the board at any time.

4. Records of monitoring information shall include:

   a. The date, exact place and time of sampling or measurements;

   b. The name of the individuals who performed the sampling or measurements;

   c. The date and time the analyses were performed;

d. The name of the individuals who performed the analyses;

e. The analytical techniques or methods supporting the information such as observations, readings, calculations and bench data used;

f. The results of such analyses; and

g. Chain of custody documentation.

H. Transferability

This VWP permit may be transferred to a new permittee only by modification to reflect the transfer, by revoking and reissuing the permit, or by automatic transfer. Automatic transfer to a new permittee shall occur if:

1. The current permittee notifies the board within 30 days of the proposed transfer of the title to the facility or property;

2. The notice to the board includes a written agreement between the existing and proposed permittee containing a specific date of transfer of VWP permit responsibility, coverage and liability to the new permittee, or that the existing permittee will retain such responsibility, coverage, or liability, including liability for compliance with the requirements of any enforcement activities related to the permitted activity; and

3. The board does not within the 30-day time period notify the existing permittee and the new permittee of its intent to modify or revoke and reissue the VWP permit.

I. Property rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize injury to private property or any invasion of personal rights or any infringement of federal, state or local law or regulation.

J. Reopener

Each VWP permit shall have a condition allowing the reopening of the VWP permit for the purpose of modifying the conditions of the VWP permit to meet new regulatory standards duly adopted by the board. Cause for reopening VWP permits includes, but is not limited to when the circumstances on which the previous VWP permit was based have materially and substantially changed, or special studies conducted by the board or the permittee show material and substantial change, since the time the VWP permit was issued and thereby constitute cause for VWP permit modification or revocation and reissuance.

K. Compliance with State and Federal Law

Compliance with this VWP permit constitutes compliance with the VWP permit requirements of the State Water Control Law. Nothing in this VWP permit shall be construed to preclude the institution of any legal action under or relieve the permittee from any responsibilities, liabilities, or other penalties established pursuant to any other state law or regulation or under the authority preserved by § 510 of the Clean Water Act.

L. Severability

The provisions of this VWP permit are severable.

M. Permit Modification

A VWP permit may be modified, but not revoked and reissued except when the permittee agrees or requests, when any of the following developments occur:

1. When additions or alterations have been made to the affected facility or activity which require the application of VWP permit conditions that differ from those of the existing VWP permit or are absent from it;

2. When new information becomes available about the operation or activity covered by the VWP permit which was not available at VWP permit issuance and would have justified the application of different VWP permit conditions at the time of VWP permit issuance;

3. When a change is made in the promulgated standards or regulations on which the VWP permit was based;

4. When it becomes necessary to change final dates in schedules due to circumstances over which the permittee has little or no control such as acts of God, materials shortages, etc. However, in no case may a compliance schedule be modified to extend beyond any applicable statutory deadline of the Act;

5. When changes occur which are subject to "reopener clauses" in the VWP permit; or

6. When the board determines that minimum instream flow levels resulting from the permittee's withdrawal of water are detrimental to the instream beneficial use and the withdrawal of water should be subject to further net limitations or when an area is declared a Surface Water Management Area pursuant to §§ 62.1-242 through 62.1-253 of the Code of Virginia, during the term of the VWP permit.

N. Permit Termination

After notice and opportunity for a formal hearing pursuant to Procedural Rule No. 1 (9 VAC 25-230-100) a VWP permit can be terminated for cause. Causes for termination are as follows:

1. Noncompliance by the permittee with any condition of the VWP permit;

2. The permittee's failure in the application or during the VWP permit issuance process to disclose fully all relevant facts or the permittee's misrepresentation of any relevant facts at any time;

3. The permittee's violation of a special or judicial order;

4. A determination by the board that the permitted activity endangers human health or the environment and can be regulated to acceptable levels by VWP permit modification or termination;

5. A change in any condition that requires either a temporary or permanent reduction or elimination of any activity controlled by the VWP permit; and

6. A determination that the permitted activity has ceased and that the compensatory mitigation for unavoidable adverse impacts has been successfully completed.

O. Civil and Criminal Liability

Nothing in this VWP permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability

Nothing in this VWP permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under § 311 of the Clean Water Act or §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Unauthorized Discharge of Pollutants

Except in compliance with this VWP permit, it shall be unlawful for the permittee to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;

2. Excavate in a wetland;

3. Otherwise alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, to animal or aquatic life, to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses;

4. On or after October 1, 2001 conduct the following activities in a wetland:

a. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions;

b. Filling or dumping;

c. Permanent flooding or impounding;

d. New activities that cause significant alteration or degradation of existing wetland acreage or functions.

R. Permit Extension

Any permittee with an effective VWP permit for an activity that is expected to continue after the expiration date of the VWP permit, without any change in the activity authorized by the VWP permit, shall submit written notification requesting an extension. The permittee must file the request prior to the expiration date of the VWP permit. Under no circumstances will the extension be granted for more than 15 years beyond the original effective date of the VWP permit. If the request for extension is denied, the VWP permit will still expire on its original date and, therefore, care should be taken to allow for sufficient time for the board to evaluate the extension request and to process a full VWP permit modification, if required.

Attachment A – Water Conservation

Mandatory Non-essential Water Use Restrictions

The following non-essential water uses will be prohibited during periods of declared drought emergencies. Please note the exceptions that follow each prohibited use. These prohibitions and exceptions will apply to uses from all sources of water and will only be effective when the Governor of Virginia or the Virginia Drought coordinator declares a Drought Emergency. Water use restrictions shall not apply to the agricultural production of food or fiber, the maintenance of livestock including poultry, nor the commercial production of plant materials, *provided that best management practices are applied to assure the minimum amount of water is utilized.*

1. ***Unrestricted irrigation of lawns is prohibited.***

   - Newly sodded and seeded areas may be irrigated to establish cover on bare ground at the minimum rate necessary for no more than a period of 60 days. Irrigation rates may not exceed one inch of applied water in any 7-day period.

   - Gardens, bedding plants, trees, shrubs and other landscape materials may be watered with hand held containers, hand held hoses equipped with an automatic shutoff device, sprinklers or other automated watering devices at the minimum rate necessary but in no case more frequently than twice per week. Irrigation should not occur during the heat of the day.

   - All allowed lawn irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.

   - Irrigation systems may be tested after installation, routine maintenance or repair for no more than ten minutes per zone.

2. ***Unrestricted irrigation of golf courses is prohibited.***

   - Tees and greens may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary.

   - Localized dry areas may be irrigated with a hand held container or hand held hose equipped with an automatic shutoff device at the minimum rate necessary.

   - Greens may be cooled by syringing or by the application of water with a hand held hose equipped with an automatic shutoff device at the minimum rate necessary.

   - Fairways may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary not to exceed one inch of applied water in any ten-day period.

- Fairways, tees and greens may be irrigated during necessary overseeding or resodding operations in September and October at the minimum rate necessary. Irrigation rates during this restoration period may not exceed one inch of applied water in any seven-day period.

- Newly constructed fairways, tees and greens and areas that are re-established by sprigging or sodding may be irrigated at the minimum rate necessary not to exceed one inch of applied water in any seven-day period for a total period that does not exceed 60 days.

- Fairways, tees and greens may be irrigated without regard to the restrictions listed above so long as:

    - The only water sources utilized are water features whose primary purpose is stormwater management;

    - Any water features utilized do not impound permanent streams;

    - During declared Drought Emergencies these water features receive no recharge from other water sources such as ground water wells, surface water intakes, or sources of public water supply; and,

    - All irrigation occurs between 9:00 p.m. and 10:00 a.m.

- All allowed golf course irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.

- Rough areas may not be irrigated.

3. ***Unrestricted irrigation of athletic fields is prohibited.***

- Athletic fields may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at a rate not to exceed one inch per application or more than a total of one inch in multiple applications during any ten-day period. All irrigation water must fall on playing surfaces with no outlying areas receiving irrigation water directly from irrigation heads.

- Localized dry areas that show signs of drought stress and wilt (curled leaves, foot-printing, purpling) may be syringed by the application of water for a cumulative time not to exceed fifteen minutes during any twenty four hour period. Syringing may be accomplished with an automated irrigation system or with a hand held hose equipped with an automatic shutoff device at the minimum rate necessary.

- Athletic fields may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. during necessary overseeding, sprigging or resodding operations at the minimum rate necessary for a period that does not exceed 60 days. Irrigation rates during this restoration period may not exceed one inch of applied water in any seven-day period. Syringing is permitted during signs of drought stress and wilt (curled leaves, foot-printing, purpling).

- All allowed athletic field irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.

- Irrigation is prohibited on athletic fields that are not scheduled for use within the next 120-day period.

- Water may be used for the daily maintenance of pitching mounds, home plate areas and base areas with the use of hand held containers or hand held hoses equipped with an automatic shutoff device at the minimum rate necessary.

- Skinned infield areas may utilize water to control dust and improve playing surface conditions utilizing hand held containers or hand held hoses equipped with an automatic shutoff device at the minimum rate necessary no earlier than two hours prior to official game time.

4. ***Washing paved surfaces such as streets, roads, sidewalks, driveways, garages, parking areas, tennis courts, and patios is prohibited.***

- Driveways and roadways may be pre-washed in preparation for recoating and sealing.

- Tennis courts composed of clay or similar materials may be wetted by means of a hand-held hose equipped with an automatic shutoff device at the minimum rate necessary for maintenance. Automatic wetting systems may be used between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary.

- Public eating and drinking areas may be washed using the minimum amount of water required to assure sanitation and public health.

- Water may be used at the minimum rate necessary to maintain effective dust control during the construction of highways and roads.

5. ***Use of water for washing or cleaning of mobile equipment including automobiles, trucks, trailers and boats is prohibited.***

- Mobile equipment may be washed using hand held containers or hand held hoses equipped with automatic shutoff devices provided that no mobile equipment is washed more than once per calendar month and the minimum amount of water is utilized.

- Construction, emergency or public transportation vehicles may be washed as necessary to preserve the proper functioning and safe operation of the vehicle.

- Mobile equipment may be washed at car washes that utilize reclaimed water as part of the wash process or reduce water consumption by at least 10% when compared to a similar period when water use restrictions were not in effect.

- Automobile dealers may wash cars that are in inventory no more than once per week utilizing hand held containers and hoses equipped with automatic shutoff devices, automated equipment that utilizes reclaimed water as part of the wash process, or automated equipment where water consumption is reduced by at least 10% when compared to a similar period when water use restrictions were not in effect.

- Automobile rental agencies may wash cars no more than once per week utilizing hand held containers and hoses equipped with automatic shutoff devices, automated equipment that utilizes reclaimed water as part of the wash process, or automated equipment where water consumption is reduced by at least 10% when compared to a similar period when water use restrictions were not in effect.

- Marine engines may be flushed with water for a period that does not exceed 5 minutes after each use.

6. ***Use of water for the operation of ornamental fountains, artificial waterfalls, misting machines, and reflecting pools is prohibited.***

   - Fountains and other means of aeration necessary to support aquatic life are permitted.

7. ***Use of water to fill and top off outdoor swimming pools is prohibited.***

   - Newly built or repaired pools may be filled to protect their structural integrity.

   - Outdoor pools operated by commercial ventures, community associations, recreation associations, and similar institutions open to the public may be refilled as long as:

     - Levels are maintained at mid-skimmer depth or lower;

     - Any visible leaks are immediately repaired;

     - Backwashing occurs only when necessary to assure proper filter operation;

     - Deck areas are washed no more than once per calendar month (except where chemical spills or other health hazards occur);

     - All water features (other than slides) that increase losses due to evaporation are eliminated; and

     - Slides are turned off when the pool is not in operation.

   - Swimming pools operated by health care facilities used in relation to patient care and rehabilitation may be filled or topped off.

- Indoor pools may be filled or topped off.

- Residential swimming pools may be filled only to protect structural integrity, public welfare, safety and health and may not be filled to allow the continued operation of such pools.

8. ***Water may be served in restaurants, clubs, or eating-places only at the request of customers.***

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY VWP PERMIT INSPECTION CHECKLIST (Attachment B)

An inspection of all permitted impact areas, avoided waters and wetlands, and permanently preserved waters, wetlands and upland areas must be conducted at least once every month during active construction activities. Maintain this record on-site and available for inspection by DEQ staff.

Project Name	James River Water Supply Project	**VWP Permit #**	14-0343	**Inspection Date**	
Inspector Name & Affiliation		**Phone # & Email Address**			

Based on a reading of VWP Permit No. 14-0343, including authorized impacts depicted on Sheets 1 and 2 of the plans entitled "JRWA Raw Water Intake, Pump Station and Force Main, Environmental Impact Summary" dated December 19, 2014, revised May 18, 2015 and received May 20, 2015, and my inspection on the date referenced above, to the best of my knowledge this project (____is in compliance / ____ is not in compliance) with the VWP Permit.

I certify that the information contained in this report is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Inspector _____ Date _____

REVIEWED DURING SITE INSPECTION	Yes	No	N/A	Notes & Corrective Action Taken / Date Completed (use back of page if necessary)
Unauthorized impacts to surface waters, including wetlands, or upland preservation areas **have occurred.*** *(This includes sedimentation impacts due to inadequate or failed erosion controls.)*	☐	☐		
Non-impacted wetlands, streams and preservations areas within 50 feet of construction are clearly marked to prevent unpermitted impacts.	☐	☐	☐	
Temporary impacts are being restored to original contours, stabilized, and allowed to re-establish with wetland vegetation.	☐	☐	☐	
Construction activities are **not** substantially disrupting aquatic life movement.	☐	☐	☐	
E&S controls are present, properly maintained, and functioning.	☐	☐	☐	
In-stream work is being performed in the dry with the appropriate use of cofferdams, sheetpiling, etc., to minimize stream bottom disturbance and turbidity.	☐	☐	☐	
Pipes and/or culverts for road crossings are countersunk to provide for the re-establishment of low flow fish passage and/or a natural stream bottom.	☐	☐	☐	
Time-of-year restrictions regarding impacts to surface waters are being adhered to.	☐	☐	☐	
Water quality monitoring is being conducted during stream impacts.	☐	☐	☐	
Streams and wetlands are free from any sheen or discoloration that may indicate a spill of oil, lubricants, concrete or other pollutants. **	☐	☐	☐	
Heavy equipment is placed on mats or geotextile fabric when working in wetlands.	☐	☐	☐	
Exposed slopes/stream banks are stabilized immediately upon completion of work in each impact area.	☐	☐	☐	

* If unauthorized impacts have occurred, you **must** email or fax a copy of this report to DEQ within 24 hours of discovery. Email: Craig.Nicol@deq.virginia.gov or Fax: 804-698-4302

** Any fish kills, or spills of fuels or oils must be reported **immediately upon discovery** to DEQ at 804-527-5020. If outside of normal business hours, contact Virginia Dept. of Emergency Management at 1-800-468-8892 or the National Response Center at 1-800-424-8802.

Notes
Please note that the permit contains additional construction conditions other than those listed above. The permittee is responsible for compliance with all conditions in the permit. Problems or concerns associated with these other conditions should be noted below.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

VWP PERMIT CONSTRUCTION STATUS UPDATE FORM (Attachment C)

Attached to VWP Permit No. 14-0343, issued on November 20, 2015

Date (check one):

☐ June____, _____

☐ December _____, _____

VWP Permit No: _____14-0343_____

Project Name: _____James River Water Supply Project_____

Status within each authorized surface water impact location, as identified on Sheets 1 and 2 of the plans entitled "JRWA Raw Water Intake, Pump Station and Force Main, Environmental Impact Summary" dated December 19, 2014, revised May 18, 2015 and received by DEQ on May 20, 2015: (check one of the following status options for each impact number/location.)

Impact number	Construction activities started	Construction activities not started	Construction activities started but currently not active	Construction activities complete
AA				
O				
Q				
R				
S				
T				
Y				
Z				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Authorized Signature: _____

Print Name: _____

Title: _____ Phone: _____

Date: _____ Email: _____

SEND TO: Craig.Nicol@deq.virginia.gov or VA DEQ, Office of Water Supply (Attn: Craig Nicol), P.O. Box 1105, Richmond, VA 23218