INTRODUCED: September 10, 2018

A RESOLUTION No. 2018-R080

To approve and adopt a water supply plan for the City entitled "Water Supply Plan Update," prepared by the Department of Public Utilities and dated July, 2018.

Patron – Mayor Stoney

Approved as to form and legality
by the City Attorney

PUBLIC HEARING: SEPT 24 2018 AT 6 P.M.

WHEREAS, the State Water Control Board, through 9 VAC 25-780-50, requires the City to adopt a local program as defined in 9 VAC 25-780-30; and

WHEREAS, 9 VAC 25-780-50(A) requires that the City Council hold a public hearing to approve the water supply plan for the City and any amendments thereto; and

WHEREAS, the City Council adopted a local program and water supply plan, entitled "Water Supply Plan," ("2008 Water Supply Plan") prepared by the Department of Public Utilities and dated August 29, 2008, in accordance with the requirements of 9 VAC 25-780-50, by Resolution No. 2008-R144-151 on October 13, 2008; and

AYES:	9	NOES:	0	ABSTAIN:	
ADOPTED:	SEPT 24 2018	REJECTED:		STRICKEN:	

WHEREAS, the Virginia Department of Environmental Quality confirmed its conditional compliance determination of the 2008 Water Supply Plan by letter dated December 13, 2013; and

WHEREAS, the Virginia Department of Environmental Quality communicated its conditions of compliance for the 2008 Water Supply Plan by letter dated August 23, 2013, and in Appendix C of the "State Water Resources Plan" dated October, 2015; and

WHEREAS, 9 VAC 25-780-50(D) and 9 VAC 25-780-50(E) require that the City review the 2008 Water Supply Plan within five years of compliance determination and revise if necessary, and that the 2008 Water Supply Plan be revised within at least ten years of the last approval; and

WHEREAS, the Department of Public Utilities, acting to administer diligently the local program, and in accordance with the requirements of 9 VAC 25-780-50, has prepared an updated water supply plan dated July, 2018, which addresses the Virginia Department of Environmental Quality's conditions of compliance for the 2008 Water Supply Plan; and

WHEREAS, the Council believes that it is in the best interests of the citizens of the City of Richmond that the Council approve the water supply plan entitled "Water Supply Plan Update," prepared by the Department of Public Utilities and dated July, 2018;

NOW, THEREFORE,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF RICHMOND:

That the Council approves and adopts the water supply plan for the City entitled "Water Supply Plan Update," prepared by the Department of Public Utilities and dated July, 2018, a copy of which is attached to and incorporated into this resolution.

BE IT FURTHER RESOLVED:

That the City Clerk is hereby directed to forward a certified copy of this resolution and a copy of the minutes of the meeting during which the Council held a public hearing on and adopted this resolution to the Chief Administrative Officer for submission to the Virginia Department of Environmental Quality, in accordance with 9 VAC 25-780-50.

O & R REQUEST
4-8068
AUG 13 2018
Office of the
Chief Administrative Officer

CITY OF RICHMOND
INTRACITY CORRESPONDENCE

O&R REQUEST

DATE: August 9, 2018 **EDITION:** 1

TO: The Honorable Members of City Council

THROUGH: The Honorable Levar M. Stoney, Mayor 8/12/18

THROUGH: Selena Cuffee-Glenn, Chief Administrative Officer

THROUGH: Robert C. Steidel, Deputy Chief Administration Officer

THROUGH: Calvin D. Farr, Jr., Director Department of Utilities

FROM: Rosemary H. Green, Deputy Director of Public Utilities RHG 08-09-18

RE: Resolution to Approve the City of Richmond Water Supply Plan in Accordance with State Water Control Board Regulation, 9 VAC 25-780, Local and Regional Water Supply Planning.

ORD. OR RES. No. _____

PURPOSE: Request the City Council accept and approve the Water Supply Plan Update dated July 2018, a copy of which is attached to this request, prepared by the City Department of Public Utilities. The Water Supply Plan Update was developed as required by State Water Control Board Regulation, 9 VAC 25-780, Local and Regional Water Supply Planning.

REASON: The State Water Control Board Regulation at 9 VAC 25-780 establishes a comprehensive water supply planning process for the development of local, regional, and state water supply plans. The process shall be designed to (i) ensure that adequate and safe drinking water is available to all citizens of the Commonwealth; (ii) encourage, promote, and protect all other beneficial uses of the Commonwealth's water resources; and (iii) encourage, promote, and develop incentives for alternative water sources, including but not limited to desalination. The regulation establishes the required planning process and criteria that local governments shall use in the development of local and regional plans.

The City of Richmond Water Supply Plan dated August 29, 2008 was adopted by City Council by resolution 2008-R144-151 on October 13, 2008.

The State Water Control Board Regulation 9 VAC 25-780-50(D) requires the water supply plan be reviewed no later than five years after compliance determination. Compliance determination was received on November 15, 2013 and therefore requires an update to the water supply plan by November 15, 2018.

9 VAC 25-780-50(A) Preparation and submission of a program, states the following:

> *Local governments must adopt a local program as defined in this section, including any revisions to comprehensive plans, water supply plans, water and sewer plans, and other local authorities necessary to implement this chapter[i]. A local public hearing consistent with §15.2-1427 of the Code of Virginia is required during the development of the local program[ii].*

RECOMMENDATION: DPU recommends acceptance and approval of this Water Supply Plan Update.

BACKGROUND: The COR Water Supply Plan Update concludes the City has sufficient water treatment capacity to meet projected average day demands beyond 2070, and projected peak day demands through 2050. In addition, the James River has adequate safe yield capacity to support the City's projected water withdrawals beyond 2070. Ongoing conservation efforts and downward trending water use per person indicate that future water demands may be lower than projected.

FISCAL IMPACT / COST: $0

FISCAL IMPLICATIONS: N/A

BUDGET AMENDMENT NECESSARY: No

REVENUE TO CITY: None.

DESIRED EFFECTIVE DATE: Upon adoption.

REQUESTED INTRODUCTION DATE: September 10, 2018

CITY COUNCIL PUBLIC HEARING DATE: September 24, 2018

REQUESTED AGENDA: Regular Agenda

RECOMMENDED COUNCIL COMMITTEE: Land Use

CONSIDERATION BY OTHER GOVERNMENTAL ENTITIES: Planning Commission

AFFECTED AGENCIES: Department of Public Utilities

RELATIONSHIP TO EXISTING ORD. OR RES.: City of Richmond Resolution # 2008-R144-151.

REQUIRED CHANGES TO WORK PROGRAM(S): None

ATTACHMENTS:

- Water Supply Plan dated July 2018

STAFF: Rosemary H. Green, Deputy Director DPU
Calvin D. Farr, Jr., Director DPU
Robert C. Steidel, Deputy Chief Administrative Officer, Operations

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[i] The City of Richmond (COR) Department of Public Utilities (DPU) has completed a local program in accordance with 9 VAC 25-780-50(C)(1-8) Preparation and submission of a program. DPU studies determined that there is no deficits in water supply to service the COR projected water demand consistent with the comprehensive plan and existing wholesale water contracts.

[ii] The requirements of 9 VAC 25-780-50(C)(9-11) must be completed prior to 15 November 2018 submission of the Water Supply Plan Update and they are:

9. A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
10. A resolution approving the plan from each local government that is party to the plan; and
11. A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received.

In order to comply with these requirements:

1. A resolution will be introduced to approve and accept the Water Supply Plan Update dated July 2018.
2. It is expected that the resolution will be heard by the Planning Commission.
3. The resolution will go before City Council and a public hearing will be held that is consistent with *§ 15.2-1427 of the Code of Virginia* before the regulatory submittal deadline of November 15, 2018.

Water Supply Plan Update

City of Richmond, Virginia
Department of Public Utilities

July 2018

City of Richmond
Department of Public Utilities

Water Supply Plan Update

July 2018

Whitman, Requardt & Associates, LLP
9030 Stony Point Parkway, Suite 220, Richmond, VA 23235

Appendices

List of Tables

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Executive Summary

The Richmond Water Supply Plan (WSP) is prepared in accordance with the Regulation 9 VAC 25-780 to facilitate the process of developing water supply solutions for the City of Richmond and its wholesale customers. According to Regulation 9 VAC 25-780-50 C, the Richmond WSP contains the elements listed in **Table ES-1**.

Table ES-1
Elements Required by Regulation

	Element Required by Regulation *9 VAC 25-780-50C*	WSP
1	Existing Water Sources, *9 VAC 25-780-70*	Section 2
2	Existing Water Use, *9 VAC 25-780-80*	Section 3
3	Existing Water Resource Conditions, *9 VAC 25-780-90*	Section 4
4	Projected Water Demand, *9 VAC 25-780-100*	Section 5
5	Water Demand Management, *9 VAC 25-780-110*	Section 6
6	Drought Response and Contingency Plans, *9 VAC 25-780-120*	Section 7
7	Statement of Need, *9 VAC 25-780-130*	Section 8
8	Alternative Analysis to address projected water supply deficit	Not applicable (1)
9	Maps Identifying Important Elements	Section 2-5
10	A copy of adopted program documents (including any local plans or ordinances or amendments)	Appendix A
11	A resolution approving the plan from local government	Appendix A
12	A record of the local public hearing Note: The City has no record of written comments	Appendix A

(1) Alternative analysis is not required in the Richmond WSP because the City has sufficient water supply to all citizens and existing wholesale customers until 2070.

The purpose of the state regulation is to establish a comprehensive water supply planning process for the development of local, regional and state water supply plans. The Richmond WSP is consistent with the objectives of the Commonwealth of Virginia and the Department of Environmental Quality (DEQ) and is designed to:

(i) Ensure that adequate and safe drinking water is available to all citizens and wholesale customers served by Richmond until 2070,

(ii) Encourage, promote, and protect all other beneficial uses of the Commonwealth's water resources, and

(iii) Encourage, promote, and develop incentives for alternative water sources.

Richmond Population

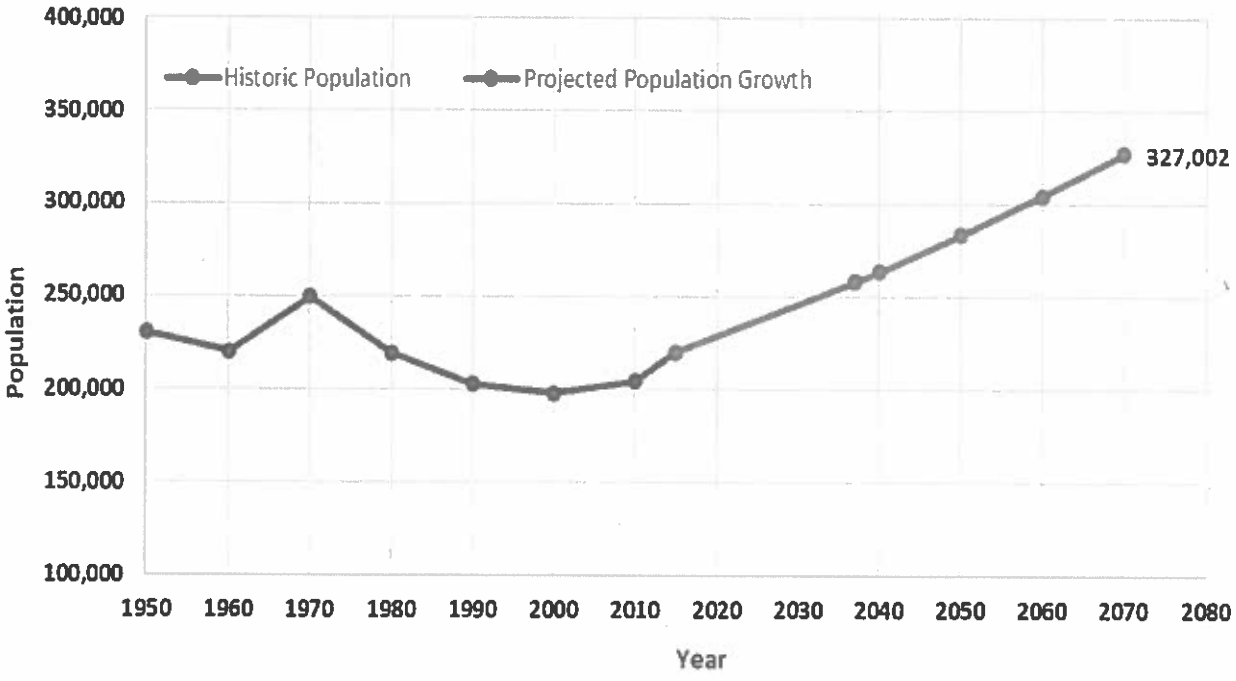
The City experienced a decline in population between 1970 and 2000; however, the City has experienced a steady rate growth since 2006. Historical population data for the City of Richmond from 1950 to 2015 was obtained from the US Census Bureau and Weldon Cooper Center for Public Service. Population projections through 2037 were obtained from the City's *Land Use, Housing, and Demographic Analysis* (LUHDA) prepared as part of the Citywide Master Plan, Richmond 300. Beyond 2037, a compounded annual growth rate of 0.72%, derived from the LUHDA, was used to extend the projections to 2070. The historical population trend and population projections for the City of Richmond are shown in **Table ES-2** and **Figure ES-1**.

Table ES-2
Population in the City of Richmond (1970-2070)

Year	1970	1975	1980	1985	1990	1995	2000
City of Richmond	249,431	227,700	219,214	212,700	202,798	199,600	197,790

Year	2010	2015	2037	2040	2050	2060	2070
City of Richmond	204,214	220,289	257,998	263,617	283,247	304,339	327,002

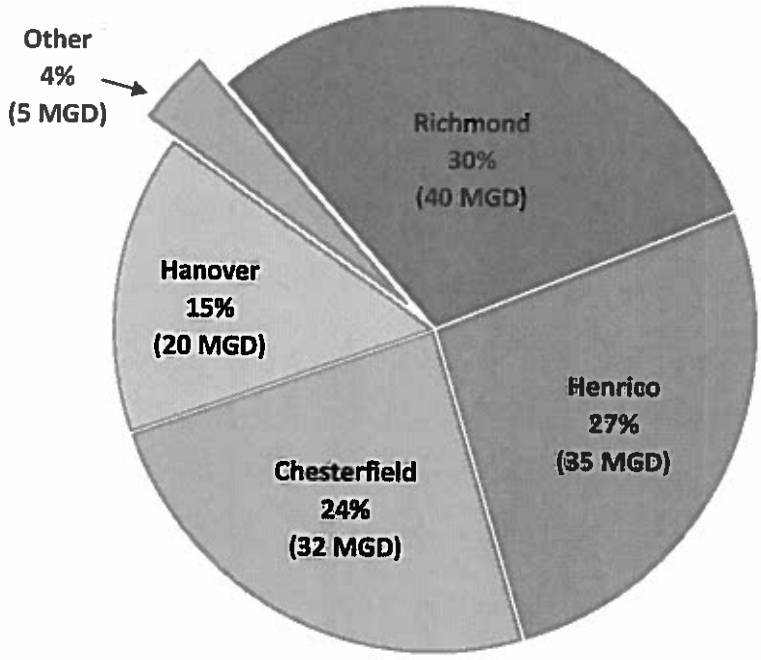
Figure ES-1
Population in the City of Richmond (1970-2070)



City of Richmond Water Use and Demand Projection

Extensive analysis of water use was done for the City and its wholesale customers including Henrico County, Chesterfield County, and Hanover County. The existing water supply capacity of Richmond WTP is 132 MGD. Its current allocation to each locality is shown in **Figure ES-2**. Considering Richmond existing peak day demand of 40 MGD, the City has 5 MGD of extra supply capacity in its water system.

Figure ES-2
City of Richmond WTP Supply Capacity Allocation, Existing



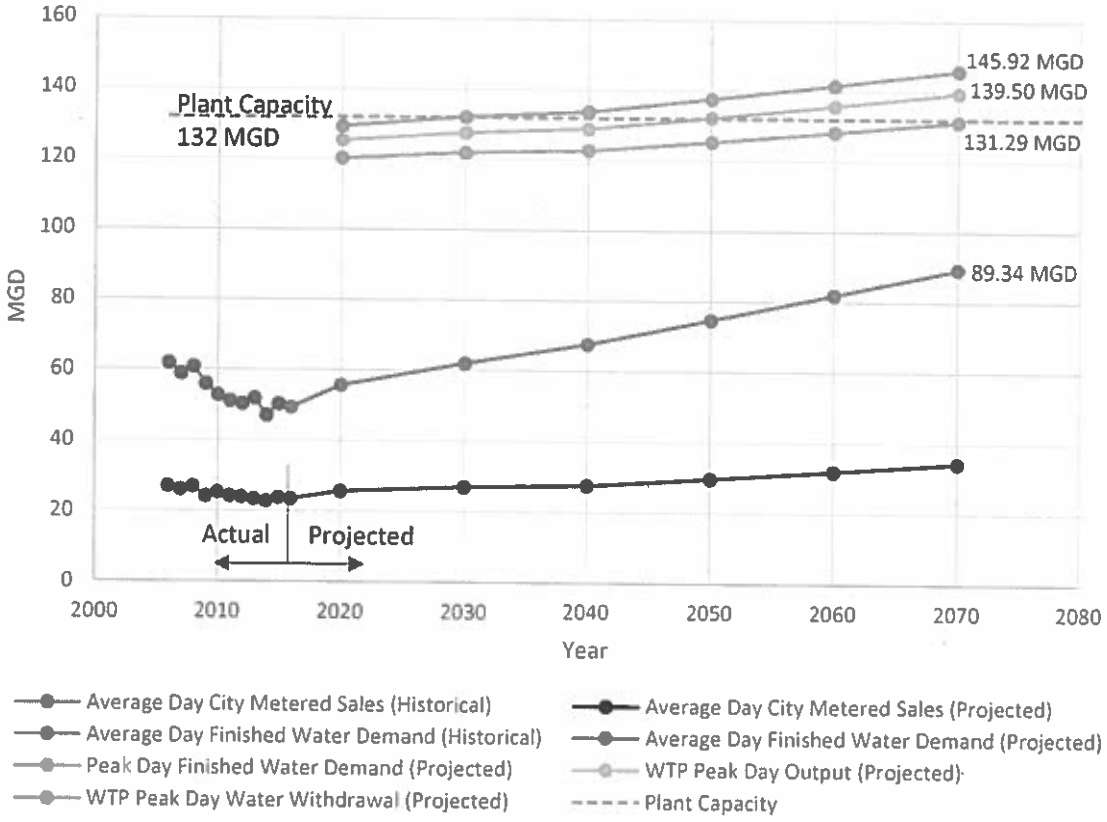
The projected average day and peak day water demand for the City of Richmond is shown in **Table ES-3** and **Figure ES-3**. The City water demand projection includes expected redevelopment within the City boundary. The City of Richmond water supply capacity is sufficient to meet the projected water demand for the City and its wholesale customers in 2020 – 2070.

Table ES-3
City of Richmond, Water Demand Projection (mgd)

	2020	2030	2040	2050	2060	2070
WTP Output, Average Day (MGD)	60.89	67.80	73.90	81.61	89.49	97.55
WTP Output, Peak Day (MGD)	125.36	127.65	128.93	132.23	135.75	139.50

(1) Coincidental with counties. Coincidental Max Day Demand = 1.29 x Ann. Ave. Demand
NOTE: Includes wholesales to Henrico 35MGD, Chesterfield 32MGD, and Hanover 20MGD.

Figure ES-3
City of Richmond, Water Demand Projection (mgd)



Drought Response and Contingency Plans

The city of Richmond has detailed drought response and contingency plans, which are in effect when the following conditions occur:

- Winter/Spring season including November, March through June; Summer/Fall season including July through October, and
- The natural river flow (NRF) is equal to or less than 1800 cfs (Winter/Spring) or 1300 cfs (Summer/Fall), and
- The total withdrawals (TWDs) are equal to or greater than 90 percent of the available allocation.

Conclusions

City of Richmond has sufficient water treatment and supply capacity to meet City and its wholesale customers' water demand for the period of 2020-2070.

Section 1 Introduction

1.1 Regulation 9 VAC 25-780

The Code of Virginia, as amended by Senate Bill 1221 in 2003 (Section 62.1-44.38:1) requires the development of a comprehensive statewide water supply planning process to manage and protect water resources to meet long term human and environmental needs in the Commonwealth of Virginia, and to guarantee the adequacy of Virginia's water supplies to meet the current and future needs of Virginia's citizens in an environmentally sound manner. In addition, the amended Code Section provides that local or regional water supply plans shall be prepared and submitted to the Department of Environmental Quality in accordance with criteria and guidelines developed by the State Water Control Board. The Local and Regional Water Supply Planning Regulation (*9 VAC 25-780*) was developed to implement the mandates of this section of the Code.

The Richmond Water Supply Plan is prepared in accordance with Regulation *9 VAC 25-780* to (i) ensure that adequate and safe drinking water is available to all citizens of the City, (ii) encourage, promote, and protect all other beneficial uses of the City's water resources, and (iii) encourage, promote, and develop incentives for alternative water sources and alternative water supplies.

According to Regulation 9 VAC 25-780-50 C, "Local programs shall contain the elements listed below. This information may be derived from existing, readily available information and additional detailed studies shall not be required."

1. *A description of existing water sources in accordance with the requirements of 9 VAC 25-780-70;*
2. *A description of existing water use in accordance with the requirements of 9 VAC 25-780-80;*
3. *A description of existing water resource conditions in accordance with the requirements of 9 VAC 25-780-90;*
4. *An assessment of projected water demand in accordance with the requirements of 9 VAC 25-780-100;*
5. *A description of water management actions in accordance with the requirements of 9 VAC 25-780-110 and 9 VAC 25-780-120;*
6. *A statement of need in accordance with the requirements of 9 VAC 25-780-130;*
7. *An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9 VAC 25-780-130;*
8. *A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;*
9. *A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;*
10. *A resolution approving the plan from each local government that is party to the plan; and*
11. *A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received.*

The City of Richmond Water Supply Plan was submitted in October 2008 and conditionally determined to be compliant with the water supply planning regulation by the Virginia Department of Environmental Quality in December 2013. This Water Supply Plan update serves as the required five-year review of the plan.

1.2 City of Richmond Water Supply Plan

This Water Supply Plan comprises eight Sections to cover the elements listed above. **Section 1** is a brief introduction to Regulation *9 VAC 25-780* and general background of the City of Richmond; **Section 2** is a description of existing water sources in the City of Richmond; **Section 3** is a description of existing water use including water use within the service areas and outside the service areas; **Section 4** is a description of water resource conditions including geologic, hydrologic, and meteorological conditions and various

environmental conditions; **Section 5** is an assessment of projected water demand in the City of Richmond; **Section 6** is a description of water management actions including minimum in-stream flows, River Management Plan, and existing water conservation practices in the City; **Section 7** is a description of drought response and contingency plans in the City; **Section 8** is a statement of water need in the City of Richmond, water need for the region is also included. Maps identifying important elements of the Program are included in corresponding sections. A copy of adopted program documents including local plans or ordinances or amendments, a resolution approving the plan from local government, and a record of the local public hearing are all included in **Appendix A**.

1.3 General Background of the City of Richmond

The City of Richmond was founded in 1607 at the fall line of the James River in the Piedmont region of Virginia. It is an independent city and not part of any county. Richmond is at the center of the Richmond Metropolitan Statistical Area (MSA) and the Greater Richmond Area. The city is located at the intersections of Interstate 95 and Interstate 64 in central Virginia, surrounded by Henrico County on the north and Chesterfield County on the south as shown in **Figure 1-1**. The James River is the major water body in the City, crossing the City from the west to the southeast. The average annual discharge of the James River at Cartersville, VA, 40 miles upstream from the City, is about 6,900 cfs (cubic foot per second) for the past century. The City has a total area of 62.5 square miles (162.0 km²), 96% of which is land and 4% water (the United States Census Bureau). Since 2003, the annual precipitation in the City is around 47 inches, with a monthly average of 3.9 inches. The coldest month in the City is January with average temperature of 38 °F, and the hottest month is July with average temperature of 80 °F.

The City's population was estimated to be 220,289 in 2015 by US Census Bureau, American Community Survey. Assuming a moderate growth rate as presented in the City's *Land Use, Housing, and Demographic Analysis* (LUHDA), prepared as part of the Citywide Master Plan, Richmond 300, the City's population will grow to a population of 258,000 by the year 2037.

Richmond Water Supply System

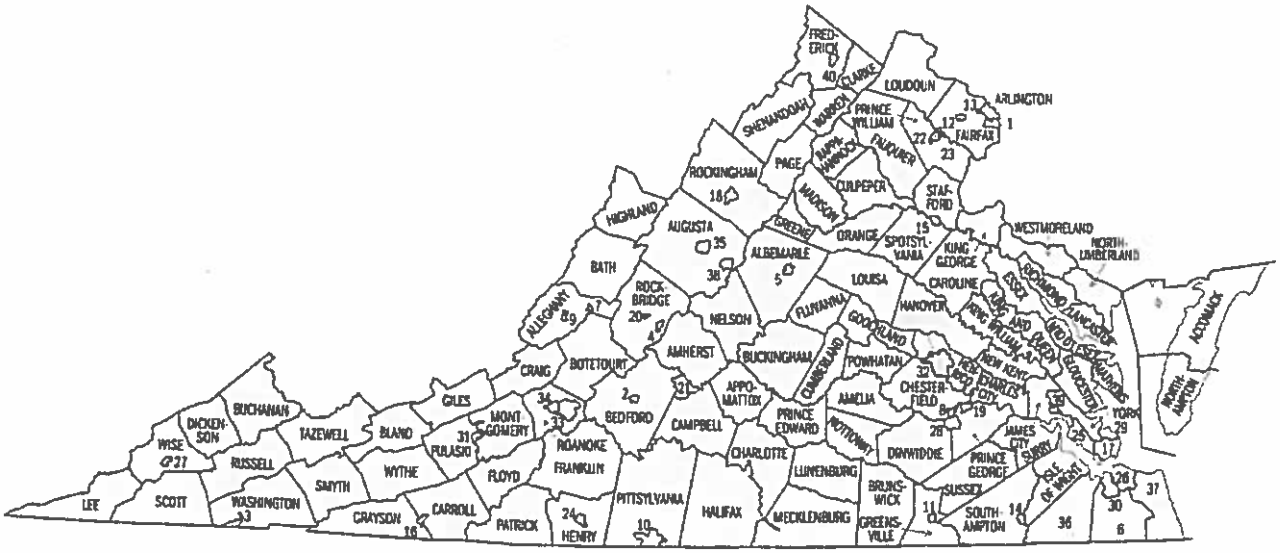
The City originally formed its water system in 1829 and has expanded and upgraded it over the years. The City's water treatment plant was completed along the James River in 1924, expanded in 1950 and has been upgraded over the years. Serving as one of the largest water producers in Virginia, the City of Richmond has a modern plant that can treat up to 132 million gallons of water a day from the James River. The treatment plant and distribution system provide water to approximately 62,000 customers in the City. The water distribution system includes over 70 million gallons of water storage, bolstering the City's ability to reliably provide water to users during high demand periods and during fire or other emergencies. The facility also provides water to the surrounding areas through wholesale contracts with Henrico, Chesterfield, and Hanover counties.

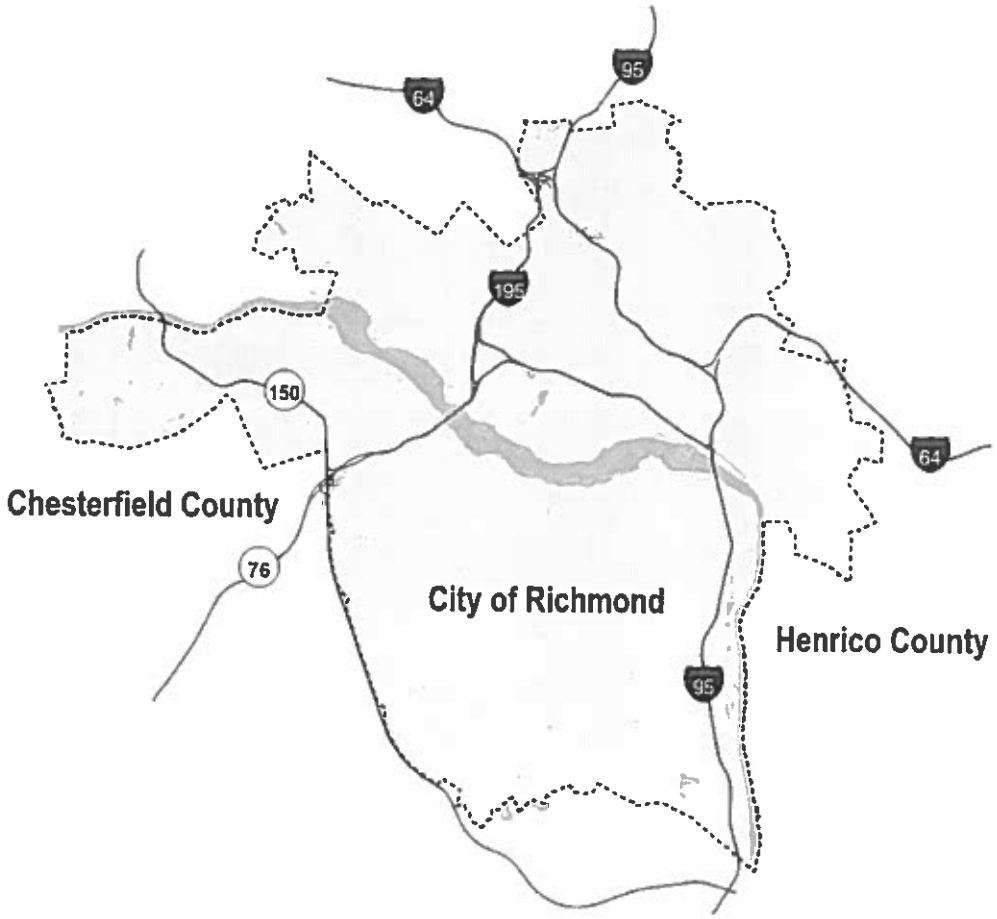
The City water is filtered, disinfected and tested to safeguard public health. Highly trained personnel, modern laboratories and millions of dollars in treatment facilities ensure that Richmond's water meets or exceeds federal and state water quality standards.

The water utility has an ongoing program of upgrading its pumping stations and distribution system. The water treatment plant is protected from the James River by a floodwall similar to the one protecting the downtown Richmond area.

The City of Richmond has adopted a Continuity of Operations Plan (COOP) and developed an Emergency Operations Plan (EOP) for resiliency. In addition, the City conducts vulnerability analyses to confirm the water system's reliability.

Figure 1-1
City of Richmond Map





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Section 2 Existing Water Sources

In accordance with the requirements of 9 VAC 25-780-70.

2.1 Introduction

Water sources for a community water system usually include ground water, surface water reservoirs, and streams or rivers. The City of Richmond obtains more than 99.9% of its total water supply from the James River, a surface water source. Table 2-1 provides a breakdown of water sources in the City of Richmond. A slight portion of the City's water supply (less than 0.1%) is from groundwater and is mainly used for golf course irrigation at the Country Club of Virginia.

Table 2-1
Water Supply Sources in the City of Richmond (2011-2016)

Year	Total Water Use (mgd)	Surface Water Use (mgd)	Ground Water Use (mgd)	Surface Water %	Ground Water %
2011	63.2	63.2	0.000	100.00%	0.00%
2012	63.1	63.1	0.013	99.98%	0.02%
2013	58.5	58.5	0.012	99.98%	0.02%
2014	61.1	61.1	0.003	99.99%	0.01%
2015	70.4	70.4	0.005	99.99%	0.01%
2016	66.2	66.2	0.029	99.96%	0.04%
			Average	99.98%	0.02%

Note: Annual water use data was provided by DEQ.

2.2 Ground water

The Country Club of Virginia is the only user on record that uses ground water for its golf course irrigation purpose. The average annual withdrawal from its Westhampton GC Well is approximately 4.5 million gallons based on annual water usage information from 2011-2016.

2.3 Streams

The Water Treatment Plant (WTP) in the City of Richmond withdraws raw water from the James River. The primary raw water intake is located on the James River at Williams Island Dam where there is an intake structure with four 5'×6' sluice gates. These gates direct river water to the 2,000 foot long Feeder Channel that directs the water to the headwall of the North Subsiding Basin at the WTP. During periods of low river flow, two alternate raw water intakes may be utilized. One alternate raw water intake is from the Kanawha Canal (West Canal Intake) at the head of the North Subsiding Basin where there are two 3'×5' sluice gates that allow water from the Canal to enter the North Subsiding Basin when necessary. The second alternate raw water intake is from the Kanawha Canal (East Canal Intake) just downstream from the flood wall west canal gate structure. The alternate intakes are part of the Bosher Dam operations. If the canal intakes are placed into service, the river intake gates are closed. The City currently has no plans to modify the intakes at the WTP.

A summary of the raw water intake and design capacities is provided in **Table 2-2.**

Table 2-2
City of Richmond Water Treatment Plant Raw Water Source Information

Stream or River Name	Drainage Area of Intake (square mile)	Sub-Basin in Which Intake is Located	Design Capacity for Withdrawal (mgd)		Safe Yield	Lowest Daily Flow of Record (mgd)	Design Capacity of Pump Station (mgd)	Design Capacity of WTP (mgd)	Capacity of the System Permitted by the VDH	Limitation on Withdrawal
			Firm	Installed						
James River	6753	Middle James-Willis	160	220	381 (Note 1)	190 (Note 2)	200/150 (Note 3)	132	132	Note 4

Note 1: An updated Safe yield was modeled and calculated for the purpose of this Water Supply Plan.
Note 2: Lowest daily flow of record calculated with historical flows in the James River, Kanawha Canal and augmentation from Lake Moomaw.
Note 3: Installed capacity=220 mgd, Firm capacity=160 mgd. Firm capacity is installed capacity with the largest pump out of service for maintenance.
Note 4: The City of Richmond has established the right to withdraw 417 mgd of water from the James River. In September 1994, the City conveyed 80 mgd of its water rights to Henrico County.

The City has long-standing water withdrawal rights from the James River in excess of the projected Public Water Supply needs beyond the study year 2070. A regional water conservation plan was developed to protect the water supply from the James River during low river flow conditions. This plan was submitted to the Virginia Department of Environmental Quality in 1998. During drought conditions the City is allowed to continue to withdraw water from the James River provided that water conservation measures are in place.

2.3.1 City of Richmond Water System

The existing water system in the City of Richmond has a Water Treatment Plant with a design capacity of 132 mgd. It has twelve finished water pumping stations with firm capacities that vary from 2.7 mgd to 56 mgd (**Table 2-3**) and eleven finished water storage facilities with capacities of 0.25 to 54.8 million gallons (**Table 2-4**). The capacity of the WTP finished water transmission system is 162 mgd. The water distribution system is comprised of approximately 978.2 miles of pipe as summarized in **Table 2-5**.

Byrd Park Reservoir in the City of Richmond serves as a treated water storage facility for the water treatment plant and therefore is a part of the City's distribution system. The 55 MG Byrd Park Reservoir was originally constructed as an open-air reservoir from March 1874 to June 1876. Earth berms comprise the perimeter walls and an earth berm divides the reservoir into two basins: an east basin and a west basin, with each basin 429'-5" in width, 417'-10" in length, and averagely 20'-6" in depth. In 1970 and 1971 the reservoir was converted to an enclosed system. The basins were re-roofed in 1982.

Regardless of the diligence in locating and correcting distribution leaks and faulty water meters, urban areas typically experience between 8 and 12% of unaccounted for water. Unaccounted for water includes distribution leaks, water-metering discrepancies, fire flows, pipe flushing and other water uses for distribution system maintenance activities. The City's average unaccounted-for water during the period between fiscal year 2011 and 2017 was about 9.19% of the finished water treatment plant output, which is in acceptable bounds.

The City has previously completed a comprehensive cleaning and lining program to assist in maintaining adequate water distribution system capacity. The City's water distribution system is considered to be in better condition than most systems in cities of similar age. The City of Richmond Water Treatment Plant will be able to continue to meet regulatory requirements and the projected water demands through the year 2050. The facility will continue to provide safe and affordable drinking water for its customers.

Table 2-3
Pumping Station Inventory

Station	Number of Pumps	Station Capacity	Firm Capacity (1)
Korah No. 1	2	34 mgd @ 181'	17 mgd @ 181'
Byrd Park Main	3	50 mgd @ 165'	30 mgd @ 165' (2)
Byrd Park Reserve- Zone 1	1	11.5 mgd @ 166'	11.5 mgd @ 166'
Korah No. 2	5	70 mgd @ 248'	56 mgd @ 248'
Korah No. 3	5	35 mgd @ 378'	28 mgd @ 378'
Byrd Park Reserve- Zone 2	3	24.9 mgd @ 110'	16.6 mgd @ 110'
Trafford	5	66.8 mgd @ 145'	51.3 mgd @ 145'
Columbus	4	60 mgd @ 145'	45 mgd @ 145'
Westhampton	4	24 mgd @ 132'	16 mgd @ 132'
Jahnke Road –City Zone 5	2	12 mgd @ 234'	6 mgd @ 234'
Jahnke Road- Chesterfield County	4	31.5 mgd @ 250'	21.5 mgd @ 250'
Huguenot Road	2	5.4 mgd @ 135'	2.7 mgd @ 135'
Church Hill	3	34.5 mgd @ 125'	21.5 mgd @ 125'
Cofer Road	4	35 mgd @ 185'	26.3 mgd @ 185'

(1) Firm capacity is calculated with the largest pump out of service
(2) With one 20 mgd Byrd Park main pump out of service

Table 2-4
Distribution System Water Storage Facilities

Storage Facility	Pressure Zone	Total Storage Volume (MG)	Useable Volume (MG)	Notes
Byrd Park Reservoir	1N	54.8	41.8	Main Reservoir
Ginter Park	2N	1.00	1.0	
Church Hill	3	4.90	2.2	
Cofer Rd. No. 1	1S	2.00	1.2	
Cofer Rd. No. 2	1S	2.10	1.2	
Woodside	2S	1.00	1.0	
Warwick Rd.	2S	2.00	2.0	
Stratford Hills	2S	0.25	0.0	Not used for storage
Jahnke Rd.	5	2.40	1.4	
Hioaks	5	2.00	2.00	
Huguenot Rd.	7	0.75	0.38	
Total Storage		73.2	54.18	

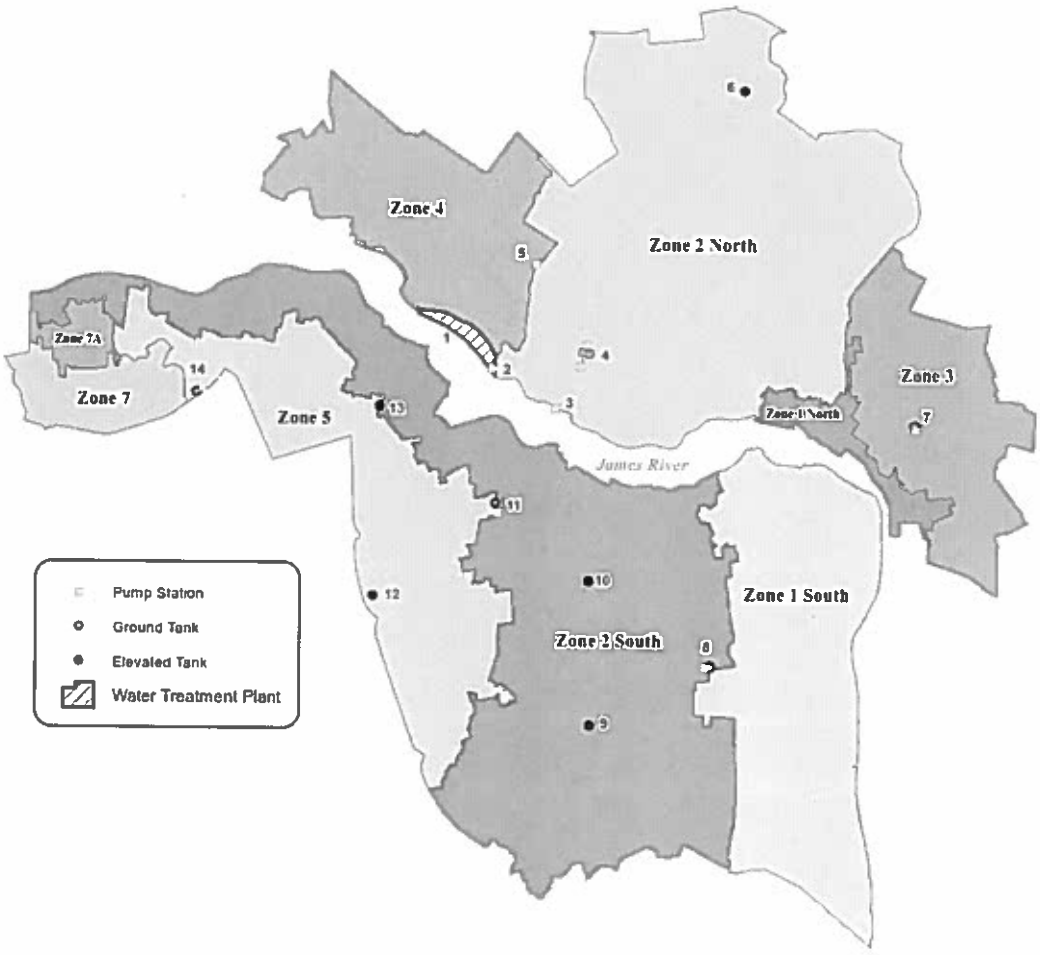
Table 2-5
Water Distribution System Piping

Pipe Diameter (Inch)	Pipe Length (mile)
8 or Less	715.7
10	24.8
12	108.8
16	46.2
20	17.0
24	27.5
30	13.9
36	18.3
42	1.4
48	3.7
60 or Greater	0.8
Total	978.2 miles

2.3.2 Service Area of City's Water System

The City's water system service area is divided into a total of six pressure zones as shown in **Figure 2-1** and includes all areas located within the City limits. Some pressure zones are further subdivided. Water is also provided to the Counties of Henrico, Chesterfield and Hanover through wholesale contract master meters.

Figure 2-1
Water System Service Area, Pressure Zones and Facilities



LOCATION	
1.	Water Treatment Plant
2.	Korah Pump Stations
3.	Byrd Park Reservoir, Trafford and Columbus Pump Stations
4.	Byrd Park Pump Station
5.	Westhampton Pump Station
6.	Ginter Park Elevated Tank
7.	Church Hill Pump Station and Ground Tank
8.	Cofer Road Pump Station and Ground Tanks
9.	Warwick Road Elevated Tank
10.	Woodside Elevated Tank
11.	Jahnke Road Pump Station and Ground Tank
12.	Hioaks Elevated Tank
13.	Stratford Hills Elevated Tank
14.	Huguenot Road Pump Station and Ground Tank

2.4 Self-supplied users (>300,000 gallons/month, for nonagricultural use)

There are two self-supplied nonagricultural users that use more than 300,000 gallons per month of surface water or ground water in the City of Richmond. The surface water users are the Willow Oaks Country Club, and Country Club of Virginia - Westhampton (**Table 2-6**). The Country Club of Virginia - Westhampton pulls additional water from ground water sources (**Table 2-7**).

Table 2-6
Self Supplied Users of More Than 300,000 gal/mo of Surface Water for Non-Agricultural Uses

User Name	Name of the Waterbody Utilized	Withdrawal (mgd)		Limitation Established by Permit
		Daily Avg(1)	Daily Max	
Country Club of Virginia - Westhampton	James River	0.069 (2011-2016)	NA	Not Applicable
Willow Oaks Country Club	Rock Quarry	0.078 (2011-2016)	NA	Not Applicable

(1): Daily Averages were estimated using annual water use data provided by DEQ.

Table 2-7
Self Supplied Users of More Than 300,000 gal/mo of Ground Water for Non-Agricultural Uses

User Name	Well Name	Well ID No.	Withdrawal (mgd)		Limitation Established by Permit
			Daily Avg(1)	Daily Max	
Country Club of Virginia - Westhampton	West Hampton GC Well	60012	0.012 (2011-2016)	NA	Not Applicable

(1): Daily Averages were estimated using annual water use data provided by DEQ.

2.5 Purchased Water / Water Available to be Purchased

Regulation 9 VAC 25-780-70H requires that information of water to be purchased from water supply systems or any other source outside the planning area should be included in this Water Supply Plan. The City of Richmond has sufficient water supply to satisfy the projected demands of the City and its wholesale customers. The James River has adequate capacity to meet the City and wholesale Counties' demands projected beyond the next 50 years. Therefore there is no need for the City to purchase water from outside.

The City of Richmond has been a significant water supplier in the region and has agreements with Henrico County, Chesterfield County, and Hanover County for water supplies (**Table 2-8**).

Table 2-8
Surface Water Available to be Purchased from the City's Water Supply System

Water Supplier (Water Body Utilized) (WTP Capacity)	Water Receiver	Contractual Limitation	
		Maximum Day Demand (mgd)	Contract or Agreement Term
Richmond City (James River) (132 mgd)	Henrico County	35	1994-2040
	Chesterfield County	32	1994-2045
	Hanover County	20	1994-2035
	Other	TBD	TBD

2.6 Agricultural Users (>300,000 gallons/month)

According to attainable information, there is no agricultural user using more than 300,000 gallons water per month in the City of Richmond.

2.7 Residences & Businesses (Self-supplied by Wells, <300,000 gallons/month)

According to attainable information, there is no reported residences and businesses in the City of Richmond that are self-supplied by individual wells withdrawing less than 300,000 gallons per month.

2.8 VDH Source Water Assessment

The Virginia Department of Health conducted a source water assessment of the City of Richmond system during 2002. The Richmond Water Treatment Plant was determined to be of high susceptibility to contamination, using criteria developed by the state in its EPA-approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last five years from the date of assessment.

2.9 Existing Water Sources Summary

The James River is the major water source for the City of Richmond. The City withdraws raw water from the James River and provides finished water to the City's citizens and wholesale customers including Henrico County, Chesterfield County and Hanover County. According to attainable information, the City also has two non-agricultural self-supplied users using more than 300,000 gallons per month of surface water or ground water. However their water usage is negligible compared to the City's major water treatment system. There are no agricultural users in the City with more than 300,000 gallons per month water use; and there are no residences or businesses that are supplied by individual wells in the City.

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Section 3 Existing Water Use

In accordance with the requirements of 9 VAC 25-780-80.

According to the requirements of 9 VAC 25-780-80, this Section should include information on existing water use. The City supplies water to users within its service area, and to its wholesale customers. Within the service area, the City does not have any self-supplied agricultural users that use more than 300,000 gallons per month of water, neither does the City have residences and business users that are self-supplied by individual wells.

3.1 General Water Use in City of Richmond's Water System

Served population, connections, average and maximum daily withdrawal, and water usage information for Richmond water systems are listed in **Table 3-1** based on Fiscal Years 2011 through 2017. Served population within the geographical boundary of the City of Richmond in 2016 was 223,170 residents and the number of water connections was 65,451. Considering the City also provides water to Henrico County, Chesterfield County, and Hanover County as wholesale customers, the actual population and water connections served by the City of Richmond's water system is much greater. During the period FY2011 – FY2017, the Richmond WTP average daily raw water withdrawal from the James River was 64.0 mgd (Max Day of 99.4 mgd), and its average daily finished water production was 57.8 mgd (Max Day of 93.7 mgd). Over the same period, the water production water loss from raw water withdrawal to finished water sent out from the plant was an average of 6.57% of the raw water withdrawal.

Table 3-1
Connections, Population, Raw Water Withdrawal, and Finished Water Production, FY2011–FY2017

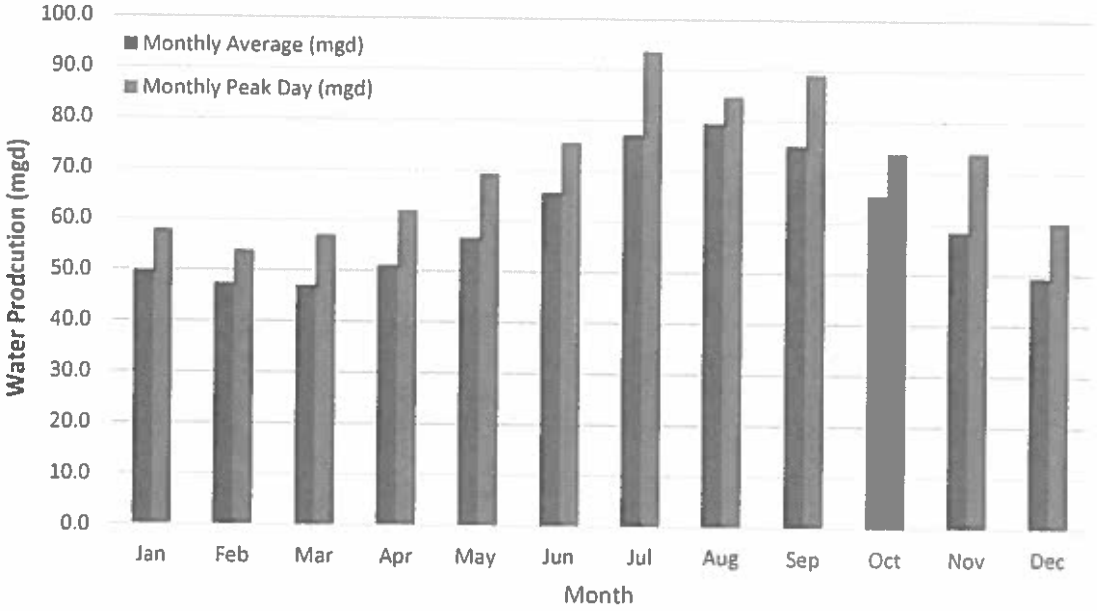
Community Water System	Served Population	Number of Connections	Raw Water Withdrawal (mgd)		Finished Water Production (mgd)		Production Water Loss (% of raw water withdrawal)
			Average Daily	Maximum Daily	Annual Average	Maximum Daily	Annual Average
Richmond Water Treatment Plant	223,170 (2016)	65451 (2016)	64.0	99.4 (July 2016)	57.8	93.7 (July 2016)	6.57%

Average and peak daily water use in each month in FY2017 is shown in **Table 3-2** and **Figure 3-1**. Generally, water usage is higher in May to November and lower in December to April. July, August and September were the water use peak months. Peak day water use in FY2017 was 93.7 million gallons per day, approximately 71% of the design capacity of the water treatment plant (132 mgd).

Table 3-2
Average Day and Peak Day Water Production by Month, FY2017

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Average (mgd)	49.8	47.4	47.0	51.1	56.6	65.6	77.1	79.5	75.1	65.3	58.3	49.3
Peak Day (mgd)	57.9	53.9	57.0	61.9	69.2	75.6	93.7	84.8	89.2	73.7	73.9	60.3

Figure 3-1
Average Day and Peak Day Water Production by Month (FY2017)



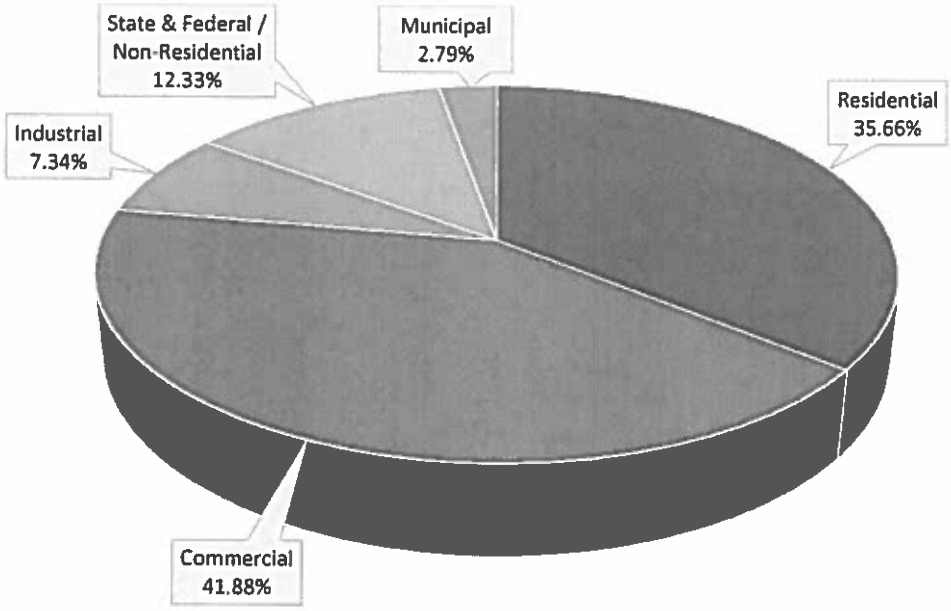
3.2 City of Richmond Water Use

During Fiscal Years 2011 through 2017, average daily metered water sales for the City was 23.82 mgd. In addition, the City provided an average daily 26.35 mgd to its wholesale customers. Disaggregated water use in the City of Richmond is summarized in **Table 3-3** and **Figure 3-2**.

Table 3-3
Disaggregated Water Use, FY2011-FY2017

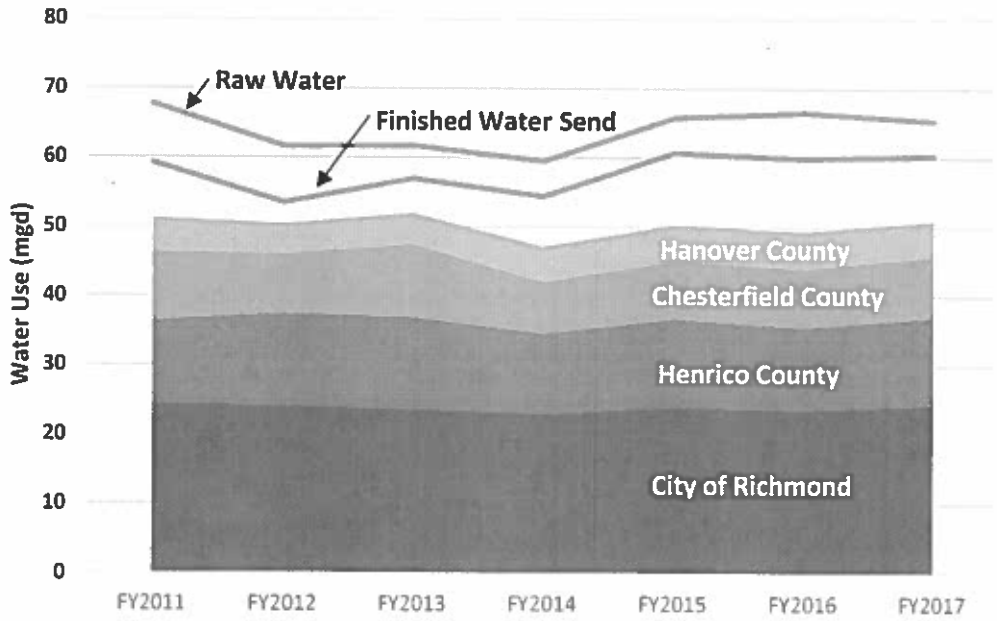
	Average Daily Metered Water Sales (mgd)						
	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
City Metered Sales							
Residential	9.44	9.05	8.68	8.30	8.48	7.92	8.66
Commercial	9.80	9.92	9.82	9.39	9.80	10.22	10.17
Industrial	1.75	1.83	1.78	1.91	1.72	1.83	1.78
State & Federal / Non-Residential	2.70	2.54	2.56	2.64	3.19	2.85	2.99
Municipal	0.66	0.73	0.74	0.71	0.77	0.72	0.68
Subtotal City Metered Sales	**24.36**	**24.08**	**23.58**	**22.95**	**23.95**	**23.54**	**24.28**
Sales to Other Water Systems							
Henrico County	12.03	13.36	13.25	11.60	12.74	11.89	12.65
Chesterfield County	9.88	8.53	10.53	7.43	8.36	8.53	8.78
Hanover County	4.91	4.42	4.56	5.12	5.26	5.41	5.20
Subtotal Sales to Counties	**26.82**	**26.32**	**28.34**	**24.15**	**26.37**	**25.83**	**26.62**
Total Water Sales	51.18	50.40	51.92	47.10	50.31	49.38	50.90
Unaccounted for Finished Water Loss	8.05	3.06	4.99	7.29	10.40	10.52	9.38
Total WTP Send-Out	59.23	53.46	56.92	54.38	60.71	59.89	60.28

Figure 3-2
Disaggregated City Metered Water Sales, FY2011-FY2017



The City of Richmond provides water to Henrico County, Chesterfield County and Hanover County. Wholesale water use is shown in **Table 3-3.** Between FY2011 and FY2017, the City on average provided 26.35 mgd finished water to the Counties. A summary of the total metered City water sales, water transmitted to the wholesale customers, total water plant production, and raw water withdrawal is presented in **Figure 3-3.**

Figure 3-3
Total Water Use, Production and Raw Water Withdrawal, FY2011-FY2017



3.3 Water Use by Self-supplied Nonagricultural User (>300,000 gallons/month)

Information on self-supplied nonagricultural users with more than 300,000 gallons per month in the City of Richmond is very limited. The following water use analysis is based on available data requested from VA DEQ. Two self-supplied users are listed in the City of Richmond, among which the Country Club of Virginia - Westhampton is the biggest water user with average annual water usage around 29.8 million gallons, comprising 51% of the total water used by self- supplied users. Both users use water for the purpose of golf course irrigation. Country Club of Virginia withdrawals ground water from Westhampton GC Well and surface water from the Westhampton Pump House, whereas Willow Oaks Country Club solely withdrawals surface water from Rock Quarry. Both golf clubs have seasonal water use from March to October/November. Water used by these self-supplied users is shown in **Table 3-4**.

Table 3-4
Self-Supplied Non-Agriculture Users of More than 300,000 gal/mo (2011-2016)

Non-Agricultural User	Water Source [1]	Annual Water Usage (Million Gallons)						
		2011	2012	2013	2014	2015	2016	Average
Country Club of Virginia - Westhampton	GW		4.64	4.5	1.15	1.67	10.45	4.5
	SW	28.75	34.95	12.54	28.85	25.94	20.95	25.3
Willow Oaks Country Club	SW	36.68	28.32		28.1	26.35	23.69	28.6
	Total	65.4	67.9	17.0	58.1	54.0	55.1	58.4

[1] GW: Ground Water; SW: Surface Water.

3.4 Impact of the Community Water System on in-Stream Beneficial Uses

Recreation, fishery and aquatic life are three main in-stream beneficial uses within or outside the planning area (**Table 3-5**). Principal recreational activities on the James River include canoeing and rafting. The River provides habitat for various fish species, including American Shad, largemouth bass, black crappie, blue catfish, etc.

Habitat and recreational conditions of the James River should not and will not be negatively impacted by the water withdrawal for Richmond Water Treatment Plant. Richmond's WTP is in compliance with all existing state and federal regulatory requirements.

Table 3-5
In-Stream Beneficial Uses within and Outside the Planning Area

Community Water System	Name of Stream or River	Drainage Areas of Intake	Sub-Basin in Which Intake Is Located	Within the Planning Area, Existing In-Stream Beneficial Uses	Outside the Planning Area, Existing In-Stream Beneficial Uses
Richmond WTP	The James River	6753 (sq. mile)	Middle James-Willis	Recreation Fishery Aquatic Life	Recreation Fishery Aquatic Life

3.5 Existing Water Use Summary

The City of Richmond Water Treatment Plant provides finished water to the City and wholesale customers; Henrico County, Chesterfield County, and Hanover County. In FY2017, the daily average metered water sales in the City of Richmond was 24.28 mgd, wholesale to Henrico County was 11.89 mgd, wholesale to Chesterfield was 8.78 mgd, and wholesale to Hanover County was 5.20 mgd.

For the disaggregated metered water sales in the City of Richmond, approximately 41.88% water was provided for commercial use, 35.66% for residential use, 7.34% for industrial use, 12.33% for non-residential use, and 2.7% for municipal use.

The City has two self-supplied nonagricultural water users: Country Club of Virginia and Willow Oaks Country Club. Average annual water use for these self-supplied users from 2011 to 2016 was 58.4 million gallons (equivalent to 0.16 mgd), with 92% coming from surface water sources.

Richmond's water treatment plant is in compliance with all existing state and federal regulatory requirements. Habitat and recreational conditions of the James River should not and will not be negatively impacted by the withdrawal point of the City of Richmond WTP.

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Section 4 Existing Water Resource Conditions

In accordance with the requirements of 9 VAC 25-780-90.

4.1 Geologic, Hydrologic, and Meteorological Conditions

4.1.1 Geologic Conditions

The City of Richmond is located near the Fall Line of the James River, with the older crystalline rocks of the Piedmont Plateau physiographic province on the west and the younger sediments of the Atlantic Coastal Plain on the east. The topography of the City of Richmond is characterized by a broad, moderately dissected upland which has an eastward slope of approximately 9 feet per mile, locally it has steeper slopes towards the major drainages. Dissection of this upland has created valleys and broad interfluves that comprise about 75% of the area. Maximum and minimum elevations, and total relief values for the City of Richmond are as follows (**Table 4-1**):

Table 4-1
Elevation and Total Relief of the City of Richmond

Elevation (ft)		Total Relief (ft)
Maximum	Minimum	
330+	7	243

The stratigraphy shown in **Figure 4-1** indicates that the City of Richmond has Petersburg Granite as the "basement" rocks and has five types of depositional sediment layers including Patuxent Formation (Lower Cretaceous age), Mattaponi Formation (Teritary and Upper Cretaceous age), Clayey Silt, Sand and Gravel, and Alluvium, from bottom to the top.

The "basement" rocks that underlie the sedimentary section in the City of Richmond consist mostly of Petersburg Granites (Pzpb), which are granitic igneous and metamorphic rocks or derived saprolite. Exposures of the Petersburg granite are restricted to the west side of Richmond (also include north section of Joseph Bryan Park) and primarily occur in/ along the James River. The Petersburg granite is more than 350 feet thick along the western margin and about 120 feet thick along the eastern margin of the City.

The Patuxent Formation (Kptx) of Lower Cretaceous age unconformably overlies the "basement" rocks and is unconformably overlain by Upper Cretaceous and Tertiary sediments (TK). The Patuxent consists primarily of coarse, feldspathic fluvial sands and gravels with subordinate interbedded fluvial or lacustrine clays. The Patuxent is absent in the western part of the City and is about 100 feet thick along the eastern margin. It is exposed along the James River and Gillies Creek.

The Mattaponi Formation (TK) of Upper Cretaceous age overlies the Patuxent Formation. The upper surface of Mattaponi Formation is an erosional unconformity and is overlain by the clayey silt. The Mattaponi Formation consists of drab gray and green, very glauconitic, clayey silt to fine sand. It is also absent in the western part of the City and has a thickness of 20 to 50 feet in the eastern part of the City. It is exposed along the James River and the intersection of Interstate Highway I-64 and I-95.

The Clayey Silts (cs) (transgressive Sediments) unconformably overlie the Mattaponi, Patuxent, and Petersburg formations. Where not exposed at the surface, they are overlain by various facies of the Tertiary-Quaternary sand and gravel unit (regressive sediments). The Clayey Silts are drab gray, bluish-gray, and greenish-gray silts, clays, and silty clays. It pinches out against the Petersburg Granite and Patuxent Formation in western Richmond and generally thickens eastward through Richmond to a maximum thickness of approximately 100 feet. It is exposed in natural drainages (James River, Gillies Creek, and Shockoe Creek).

Sand and Gravel (sg) (regressive sediments, Tertiary and Quaternary age) unconformably overlies the Petersburg Granite along the western part of the City, the Patuxent Formation along the James River and its tributaries, and the Clayey Silts in the middle and eastern part of the City. They are light to bright-colored oxidized sediments, mainly sands and gravels, some clay, and dominantly fluvial. This unit blankets most of the City area. It is approximately 80 feet thick in the western area and 20 feet thick in the eastern area of the City.

Alluvium (Al) overlies a small portion of the regressive sediments in the City of Richmond. They are organic and poorly sorted fluvial sediments ranging from clay to gravel in size occur in the stream channels or as a veneer on flood plains. Their composition and volume can vary rapidly and in proportion to fluctuations in the hydraulic regime.

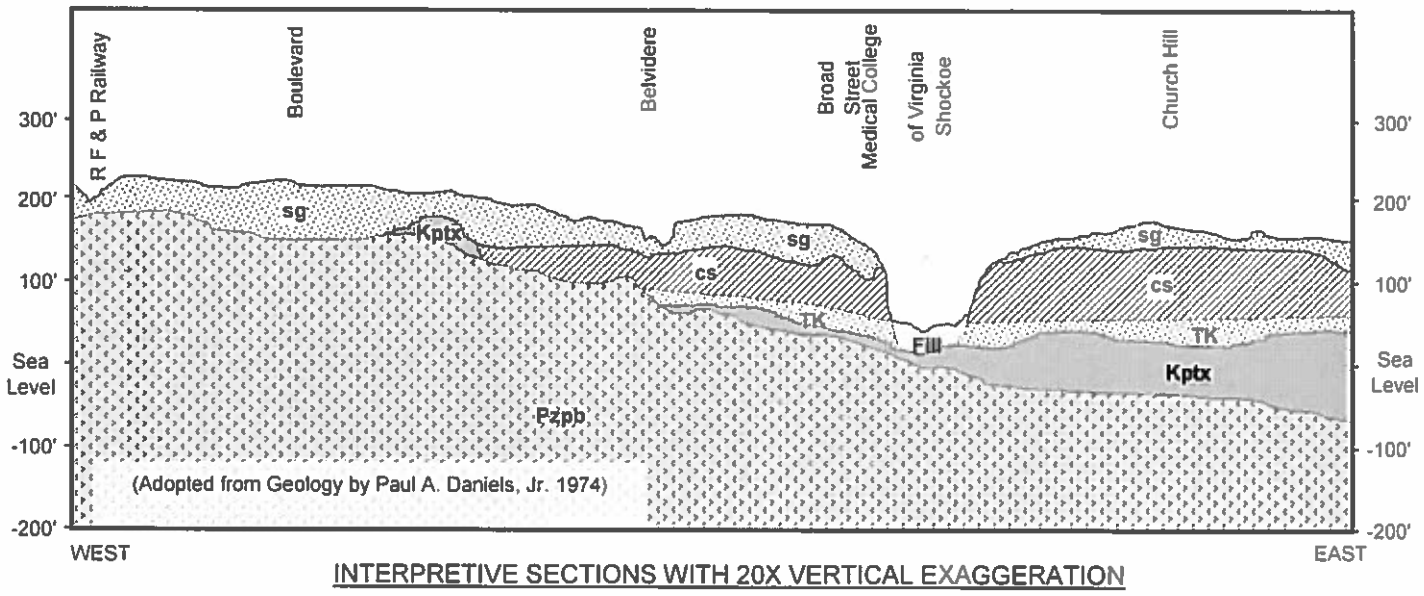
4.1.2 Hydrologic Conditions

The City of Richmond is drained by the James River. Major rapids in the James River prevent further upstream navigation and mark the Fall Line between the Piedmont and Coastal Plain physiographic province. The James River is tidal downstream from Mayo's Island and has a mean tidal range of 3.2 feet at Richmond. In addition to the James River, City of Richmond has several (over 10) creeks with various length and flow discharge. The River and the creeks are shown in **Figure 4-2**.

Natural river flow (NRF) in the James River in the City of Richmond refers to the gauge at Cartersville, Va, which is about 40 miles upstream of the City. Based on the past 118 years of flow record, natural river flow in the James River varies significantly with the seasons (**Figure 4-3a**). July through November have the lowest NRF (around 4000 cfs), while February through April have highest NRF (over 10,000 cfs). Temperature of water in the James River (**Figure 4-3b)** also varies with months. The highest water temperature occurs in August (29 °C) and the lowest water temperature occurs in February (5 °C).

The average annual precipitation in the City is around 47 inches, with the monthly average around 3.9 inches. Historically August is the month with maximum precipitation (**Figure 4-4a**). July is the month with highest average temperature of 79.9 °F (**Figure 4-4b**). The coldest month in the City is January at 38.4 °F.

Figure 4-1
Stratigraphy of the City of Richmond, Interpretive Sections

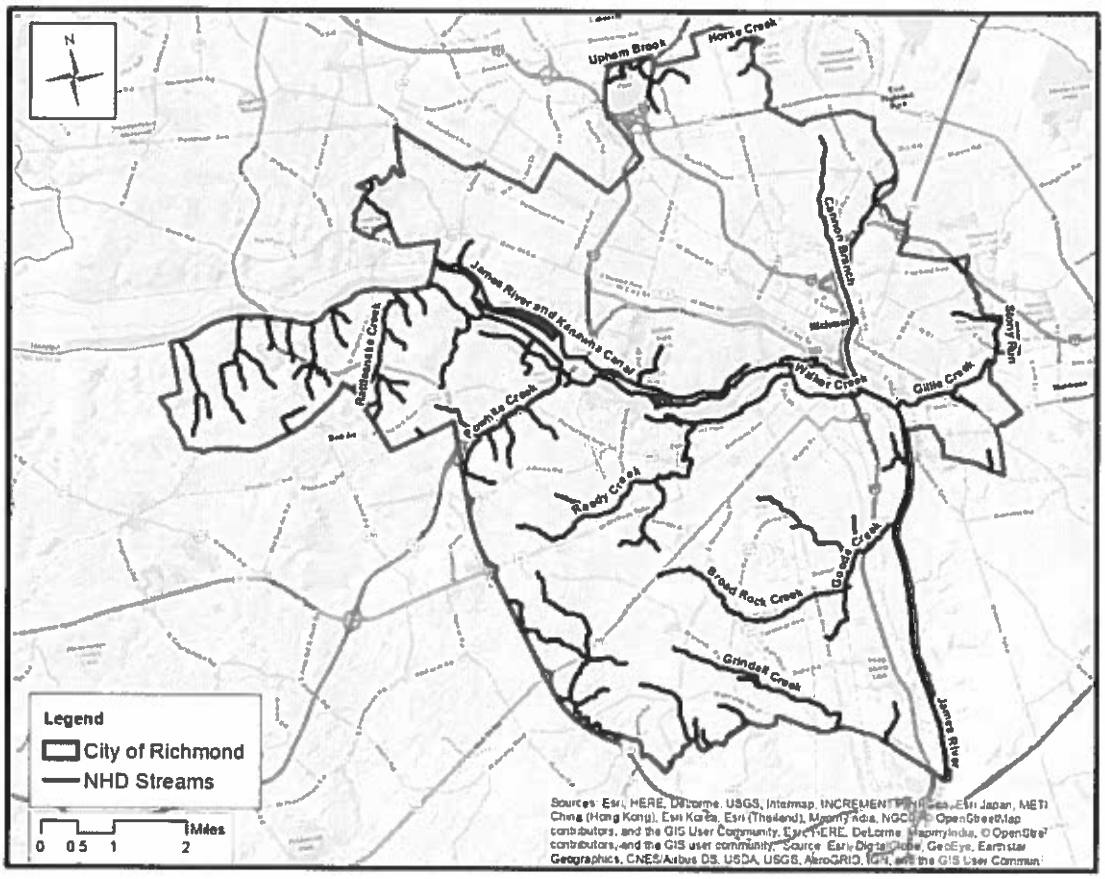


INTERPRETIVE SECTIONS WITH 20X VERTICAL EXAGGERATION

LEGEND

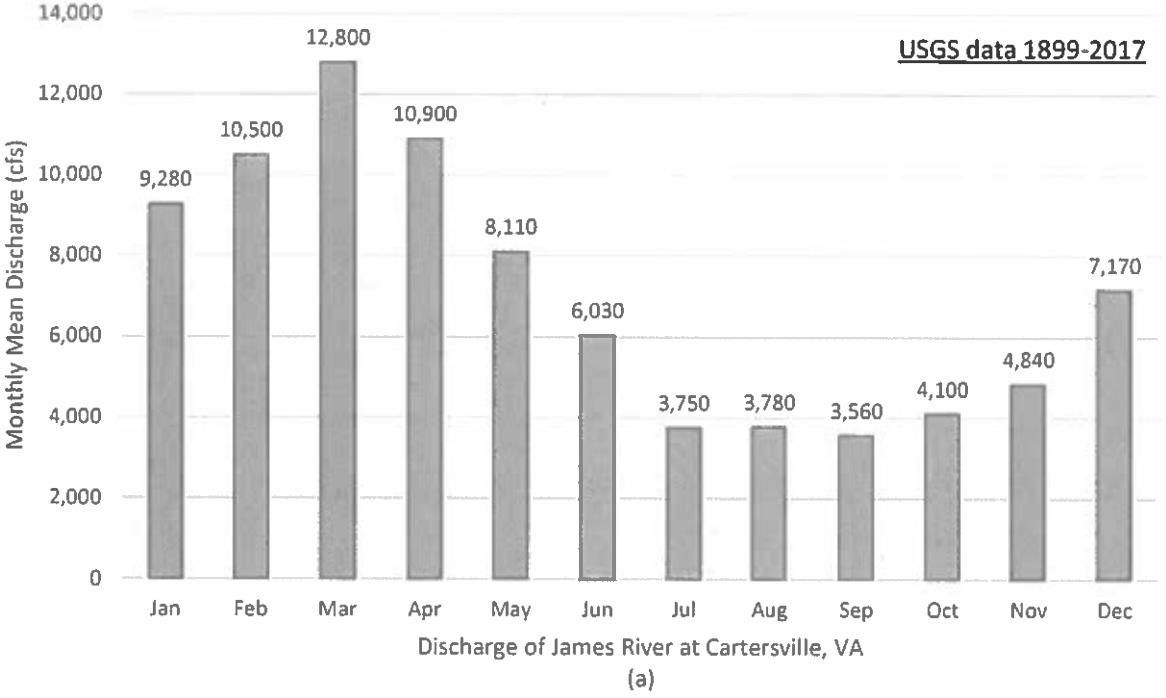
Pzpb	Kptx	cs	sg	TK
Petersburg Granite	Patuxent Formation	Clayey Silt	Sand and Gravel	Tertiary and Cretaceous Sediments

Figure 4-2
Streams in the City of Richmond



Source: United States Geological Survey (USGS). 2017. National Hydrography Dataset (NHD). Links to Data Products and Map Services. Retrieved from https://nhd.usgs.gov/data.html.

Figure 4-3
Monthly Natural River Flow and Water Temperature of the James River



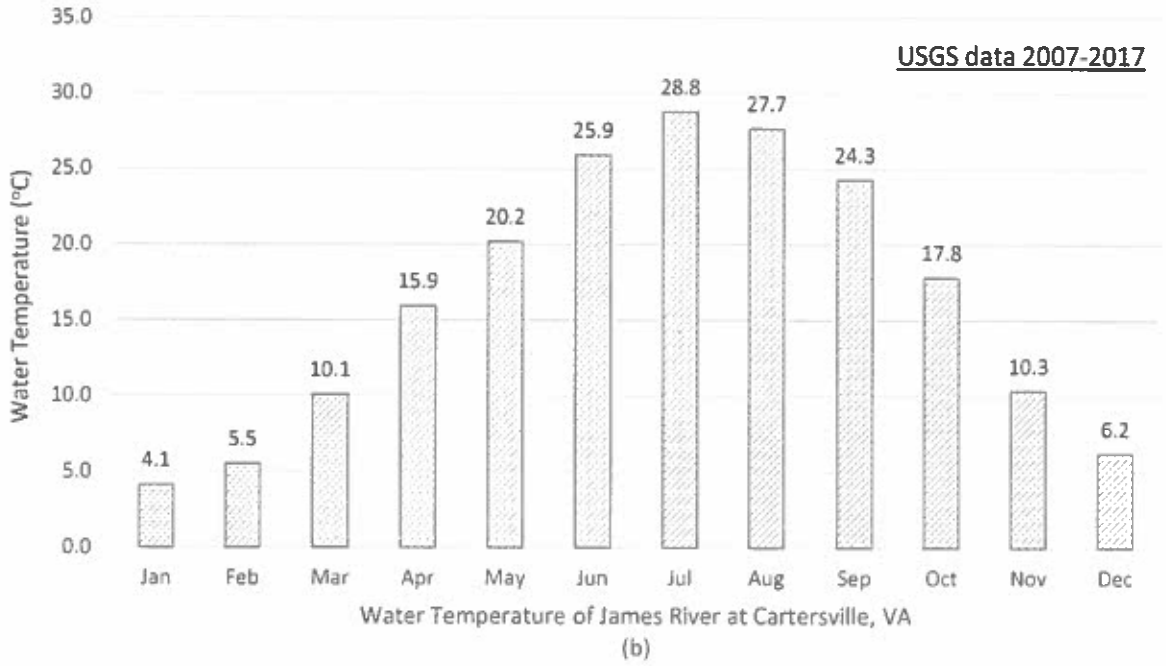
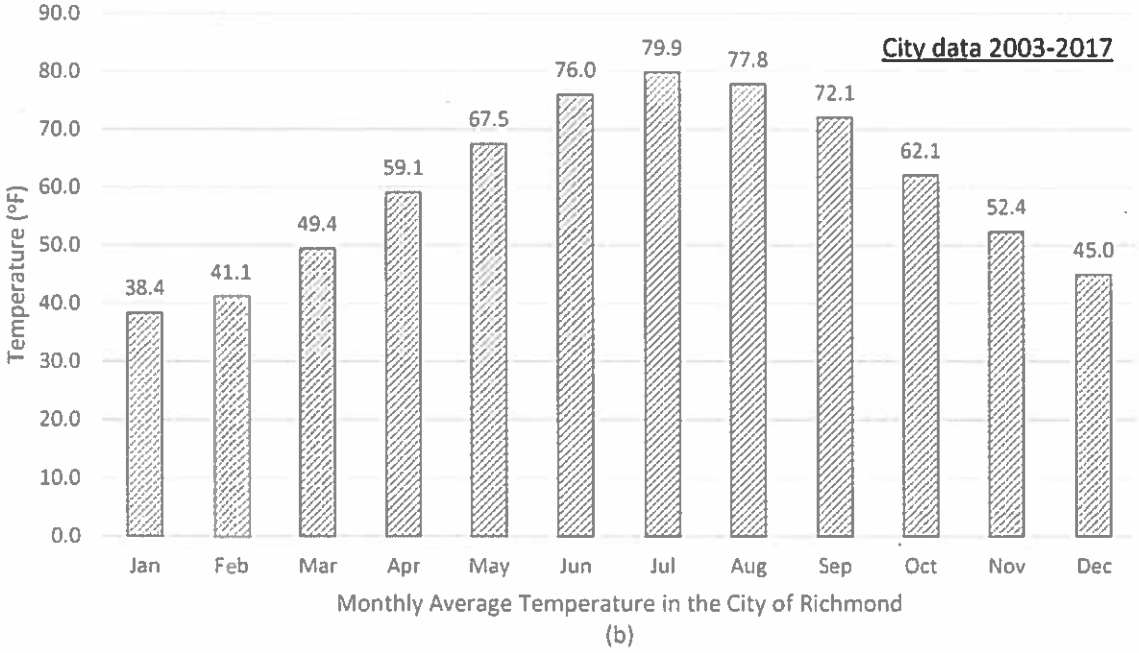
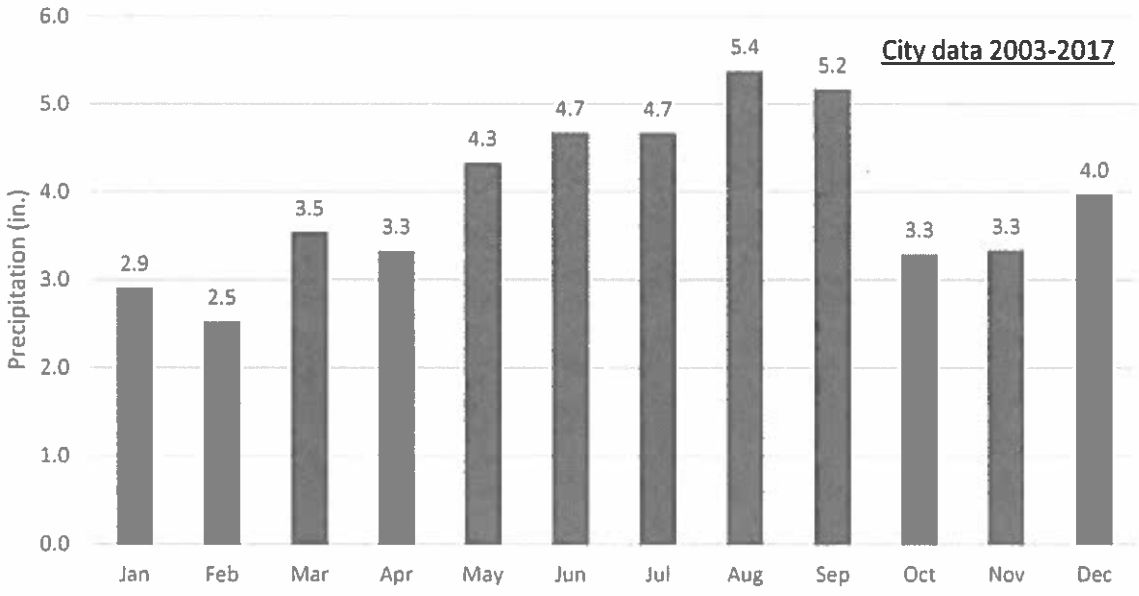


Figure 4-4
Monthly Precipitation and Temperature in the City of Richmond



Monthly Average Temperature in the City of Richmond
(b)



Monthly Average Precipitation in the City of Richmond
(a)

4.2 Environmental Conditions

4.2.1 Threatened or Endangered Species or Species of Concern

Information on threatened or endangered species or species of concern in the City of Richmond was obtained from the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) service, Virginia Department of Game and Inland Fisheries (VDGIF) Virginia Fish and Wildlife Information Service (VAFWIS), and the Virginia Department of Conservation and Recreation – Division of Natural Heritage (DCR-DNH) Natural Heritage Data Explorer.

As part of the City of Richmond's development of water resources, coordination with USFWS, VDGIF, and VDCR during the project planning and design process is necessary to ensure proper identification, evaluation, and mitigation for adverse effects to these species, if required.

The results of these database searches are shown in **Table 4-2**.

4.2.2 Fisheries

4.2.2.1 Fisheries in the James River

According to the VDGIF website, the James River in the City of Richmond offers a wide range of angling opportunities and settings, both tidal and non-tidal.

The tidal James River and its tributaries support a nationally recognized largemouth bass and trophy blue catfish fishery. Several largemouth bass competitions including the Bass Masters Classic, the 2003 FLW Tour Championship, and the 2016 Priority Fishing Series have been held locally. This tidal river system also provides the best fishing for blue catfish in the state, with anglers traveling from near and far for the opportunity to catch the hundreds of 30 to 60- pound blue catfish which are caught from the tidal James and its tributaries each year. Striped bass (rockfish) fishing has been excellent in the tidal James River in recent years. Other species which can be caught include black crappie, hickory shad, white perch, sunfish, common carp, and on rare occasion, walleye. Fishing is primarily done from shore access and via boat. Public boat access in the freshwater fishing section of the tidal James River is available at several locations in the metropolitan Richmond area including Ancarrow Landing, Osborne Landing, Deep Bottom, and Dutch Gap.

For the non-tidal portion of the James River, a wide range of angling opportunities and settings are available. The dominant game species within the non-tidal portion of the river is Smallmouth bass, but spotted and largemouth bass can also be caught in large numbers. Fish populations vary slightly from one spot to another and excellent fishing is determined by finding the locations where the fish are holding and using whatever bait or lure they might want that day. Other species including channel catfish, flathead catfish, and various sunfish species (redbreast, bluegill, and rock bass) are also plentiful in the non-tidal James River. Muskies are annually stocked in the river, but are typically found west of Lynchburg, well outside of City of Richmond's metropolitan area. Access to the non-tidal James River is provided by canoeing/kayaking, small john boats, and bank and wade fishing.

Table 4-2
Threatened or Endangered Species or Special Species in the City of Richmond

Scientific Name	Common Name	Status	Resource Database			Brief Description[1,2]
			IPaC	VAFWIS	DCR-DNH	
Acipenser oxyrinchus	Atlantic sturgeon	FE, SE		C		All sturgeons are fully protected in Virginia by laws pertaining to Fisheries of Tidal Waters.
Aeschynomene virginica	Sensitive joint-vetch	FT, ST	X			Listed as FT by USFWS in 1992. This species is rare, and known to occur in freshwater reaches of the James, Chickahominy, Mattaponi, Pamunkey, Rappahannock, and Potomac rivers and their major tributary creeks.
Alasmidonta heterodon	Dwarf wedgemussel	FE, SE		X		Listed FE by USFWS in 1990. Listed as SE in 1987. Thought to be extirpated from Virginia by 1989, but populations have been discovered in Aquia Creek and the Upper Nottoway River.
Alasmidonta varicosa	Brook floater	SE		X		Listed as SE in 1992. This species is thought to be extirpated in Virginia. Only live specimens have been found in the Potomac River.
Clemmys gutta	Spotted turtle	CC		C		Spotted turtle numbers have dwindled due to pet trade. This species prefers bottomland hardwood wetlands.
Corynorhinus rafinesquii macrotis	Rafinesque's eastern big-Eared bat	SE		X		Listed as SE in 1987. Prefers forests, but will live in human-made structures. This bat is particularly vulnerable to human disturbance.
Elliptio lanceolata	Yellow lance	FP		X		USFWS proposed this species for listing on April 5, 2017. This species is found in clean, fast-flowing water free from siltation.
Falco peregrinus	Peregrine falcon	ST		C	X	Listed as SE in 1992. Also protected by the MBTA. Lives in coastal and terrestrial areas, and in manmade and natural structures.
Fusconaia masoni	Atlantic pigtoe	ST		X		Listed as SE in 1987. Prefers clean, quick moving waters, usually above the fall line.
Hyla gratiosa	Barking treefrog	ST		X		Listed as ST in 1992. Requires temporarily ponded areas for breeding. Major threats include continued logging of stands of native pine and pet trade.
Lanius ludovicianus	Loggerhead shrike	ST		X		Listed as ST in 1992. Prefers mowed grasslands with perching sites. Decline may be caused by habitat loss, predation, pesticides, and/or vehicle collisions.
Lanius ludovicianus migrans	Migrant loggerhead shrike	ST		X		Listed as ST in 1992. Prefers mowed grasslands with perching sites. Decline may be caused by habitat loss, predation, pesticides, and/or vehicle collisions.
Lasmigona subviridis	Green floater	ST		X		Listed as ST in 2006. Species is found in clean, fast-flowing water free from siltation.
Myotis lucifugus lucifugus	Little brown bat	SE		X		Listed as SE in 2016. Lives in manmade and natural structures. Sensitive to human diseases, DDT, and car exhaust.
Myotis septentrionalis	Northern long-eared bad	FT, ST	X	X		Listed as FT in 2016. Species prefers forested hillsides. Threats include white nose syndrome.
Perimyotis subflavus	Tri-colored bat	SE		X		Listed as SE in 2016. Species is found in caves, vegetation, and buildings. Threats include white nose syndrome.
Pleurobema collina	James spinymussel	FE, SE		X		Listed as FE in 1988. Listed as DE in 1987. Species is found in second and third order streams that are unpolluted, well oxygenated, and sand or cobble substrate.

FE = federal endangered; FT = federal threatened; FP = federal proposed; SE = state endangered; ST = state threatened; CC = collection concern; C = confirmed occurrence.

[1]Fauna data retrieved from VDGIF, 2017a. [2]Flora data retrieved from Virginia Botanical Associated, 2017

Sources: USFWS IPaC: https://ecos.fws.gov/ipac/ Consultation Code: 05E2VA00-2018-SLI-0430, Oct 27, 2017; VDGIF VAFWIS: https://vafwis.dgif.virginia.gov/fwis/ Oct 27, 2017; VDCR-DNH: https://vanhde.org/species-search Oct 27, 2017

4.2.2.2 Fisheries in Richmond Lakes

According to the VDGIF website, the City of Richmond has multiple lakes which support fishing activities.

Bryan Park contains two adjacent lakes of approximately six acres each, and is owned and operated by the City of Richmond. It is located just north of the intersection of I-64 and I-95. The lakes contain channel catfish, which are stocked annually, as well as reproducing populations of largemouth bass, bluegill, and pumpkinseed sunfish. Additional species include black crappie, brown bullhead, creek chubster, warmouth, and golden shiners.

Shields Lake is located in Byrd Park, which is owned and operated by the City of Richmond. Byrd Park is located on Boulevard Avenue in downtown Richmond. Channel catfish are stocked annually, and the lake also contains reproducing populations of largemouth bass, bluegill, green sunfish, yellow perch, and brown bullheads. Additionally, catchable-size rainbow trout and brown trout are stocked in the lake from November through February. During a 2014 fish community survey, one large koi was also found in Shields Lake.

Swan Lake is located in Byrd Park, which is owned and operated by the City of Richmond. Byrd Park is located on Boulevard Avenue in downtown Richmond. Although no boats are allowed, the entire shoreline is accessible to anglers. Channel catfish are stocked annually, and the lake also contains populations of bowfin, largemouth bass, bluegill, and yellow perch.

4.2.3 River Segments with Recreational Significance

The Virginia Scenic Rivers Program is managed by the state with intent to identify, designate and help protect rivers and streams that possess outstanding scenic, recreational, historic and natural characteristics of statewide significance for future generations. According to Virginia Department of Conservation and Recreation's website, the James River in the City of Richmond is designated as a scenic river and river segment of recreational significance from the western city limits to Orleans Street. From Orleans Street to the southern Richmond City limits, the James River is qualified as a scenic river and river or recreational significance.

4.2.4 Historical Sites

Based on the National Register Information System (NRIS), two hundred and sixteen (216) locations, including fifty-one (51) historic districts and fifteen (15) National Historic Landmarks have been identified as sites of historical significance in the City of Richmond. The NRIS is a database of information about places listed on or determined eligible for the National Register of Historic Places (NRHP). The NRHP is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.

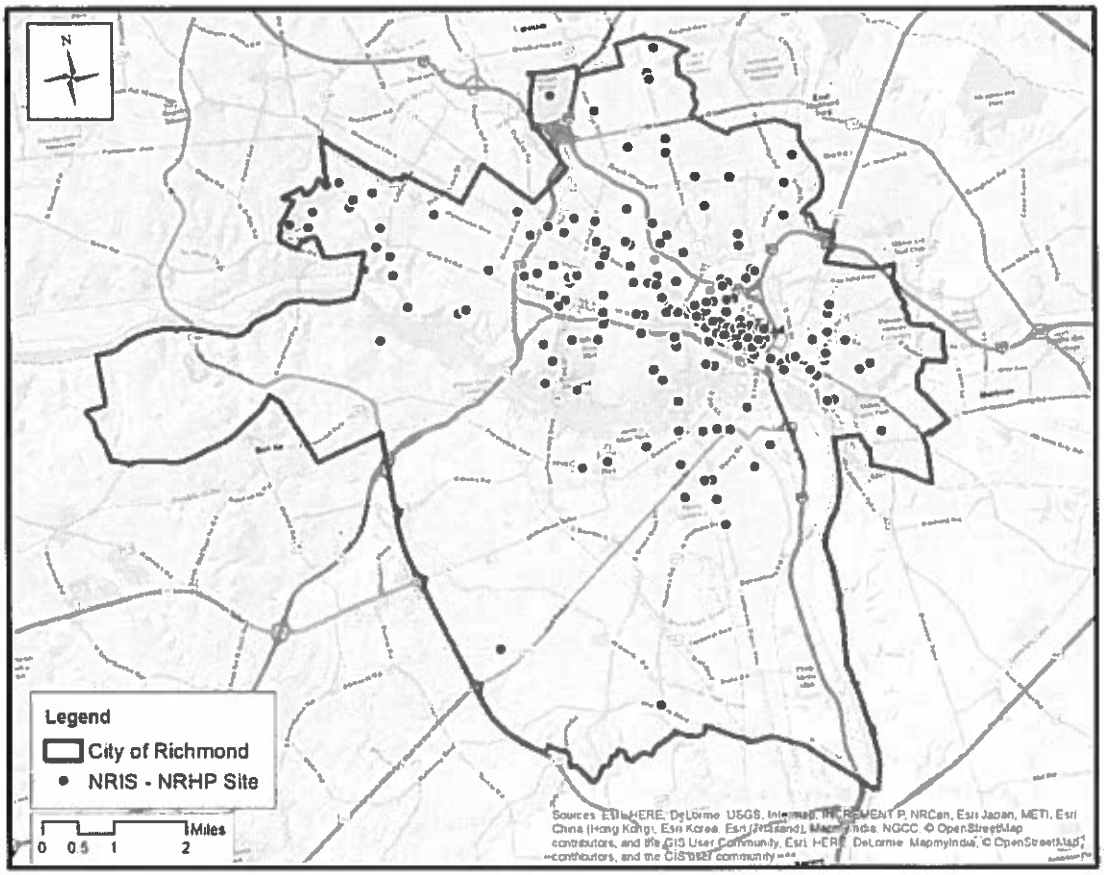
Under the NHRP program, the Virginia Department of Historic Resources (DHR) is identified as the State Historic Preservation Office (SHPO). As the SHPO, DHR is responsible for identifying, evaluating, and protecting historic and archeological resources listed, or to be potentially listed, within the National Register. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.

Figure 4-5 shows the locations of the 216 NRIS historical sites in the City of Richmond.

In addition to the known resources identified by NRIS, DHR has indicated that there are numerous additional resources that have not been identified due to an absence of systematic surveys within portions of the region. These resources include historic buildings, structures, and archeological sites.

As part of the City of Richmond's development of water resources, coordination with DHR during the project planning and design process is necessary to ensure proper identification, evaluation, and mitigation for adverse effects, if required.

Figure 4-5
Historical Sites in the City of Richmond



Source: National Register of Historic Places listings in Richmond, Virginia. (2018, March 02). Retrieved March 08, 2018, from https://en.wikipedia.org/wiki/National_Register_of_Historic_Places_listings_in_Richmond,_Virginia

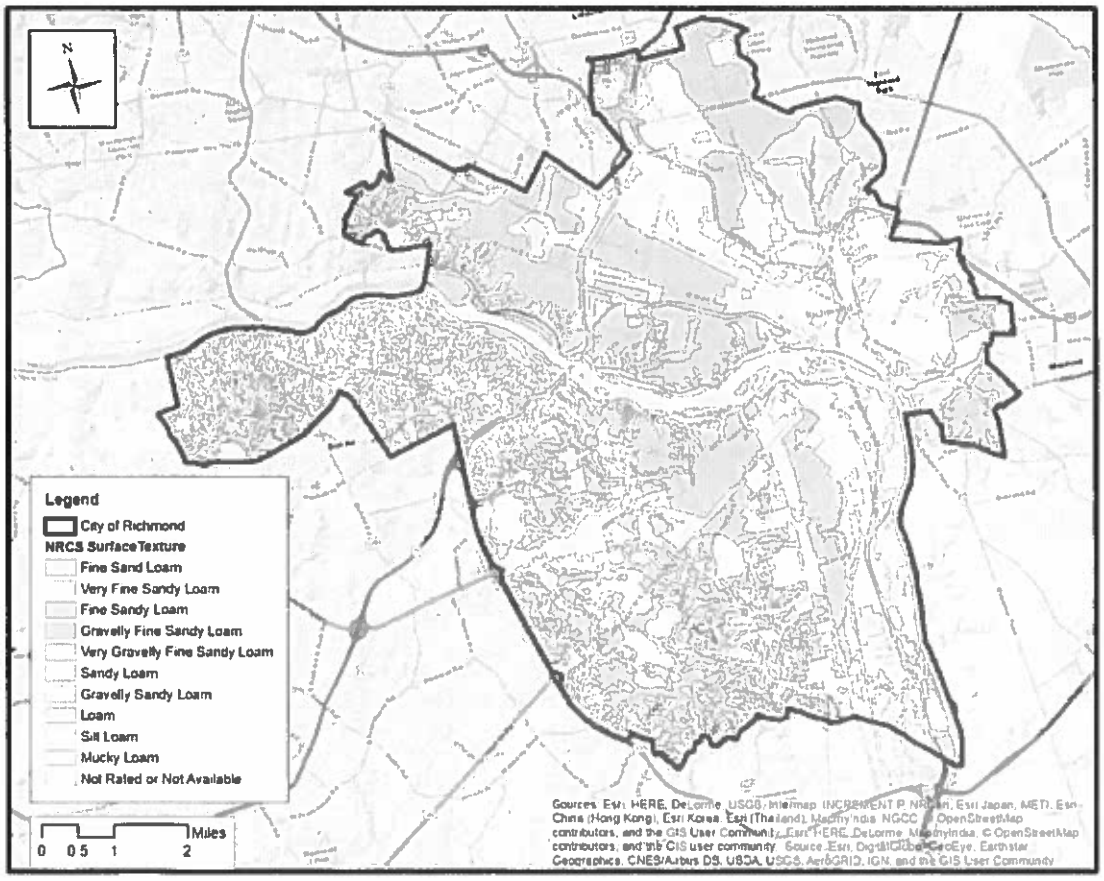
Special Soil Type

The information of soil type was obtained from Web Soil Survey (WSS) which is supported by the United States Department of Agriculture (USDA) Natural Resources Conservation Service. Surface texture in the City of Richmond is shown in **Figure 4-6** and Hydrologic Soil Group (HSG) information is shown in **Figure 4-7**. Approximately 34% of the City surface texture is rated as fine sandy loam and 11% is sandy loam. Approximately 11% of the City land belongs to HSG Group C (soils have a slow infiltration rate when thoroughly wet), and 53% belongs HSG Group B (soils have a moderate infiltration rate when thoroughly wet).

4.2.5 Wetlands

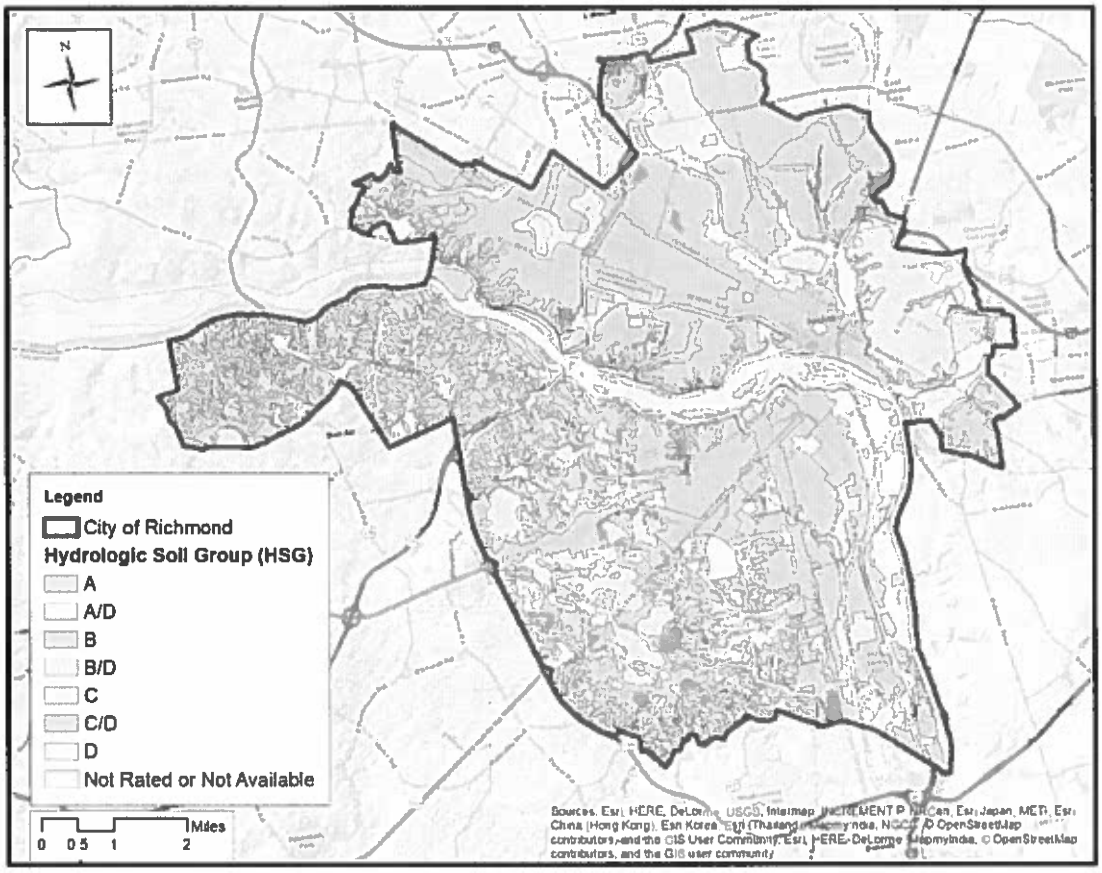
Information on wetlands within the City of Richmond was obtained from National Wetland Inventory (NWI) which is supported by US Fish and Wildlife Service (USFWS). The majority of features mapped within the City of Richmond are defined under the Cowardin Classification system as palustrine or riverine and are typically interconnected within defined topographic drainage features. Richmond's NWI Wetlands are shown in **Figure 4-8**.

Figure 4-6
Soil Type—Surface Textures in the City of Richmond



Source: United States Department of Agriculture (USDA). 2017. Natural Resource Conservation Service (NRCS). Links to Download Soils Data. Retrieved from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Figure 4-7
Soil Type—Hydrologic Soil Groups in the City of Richmond

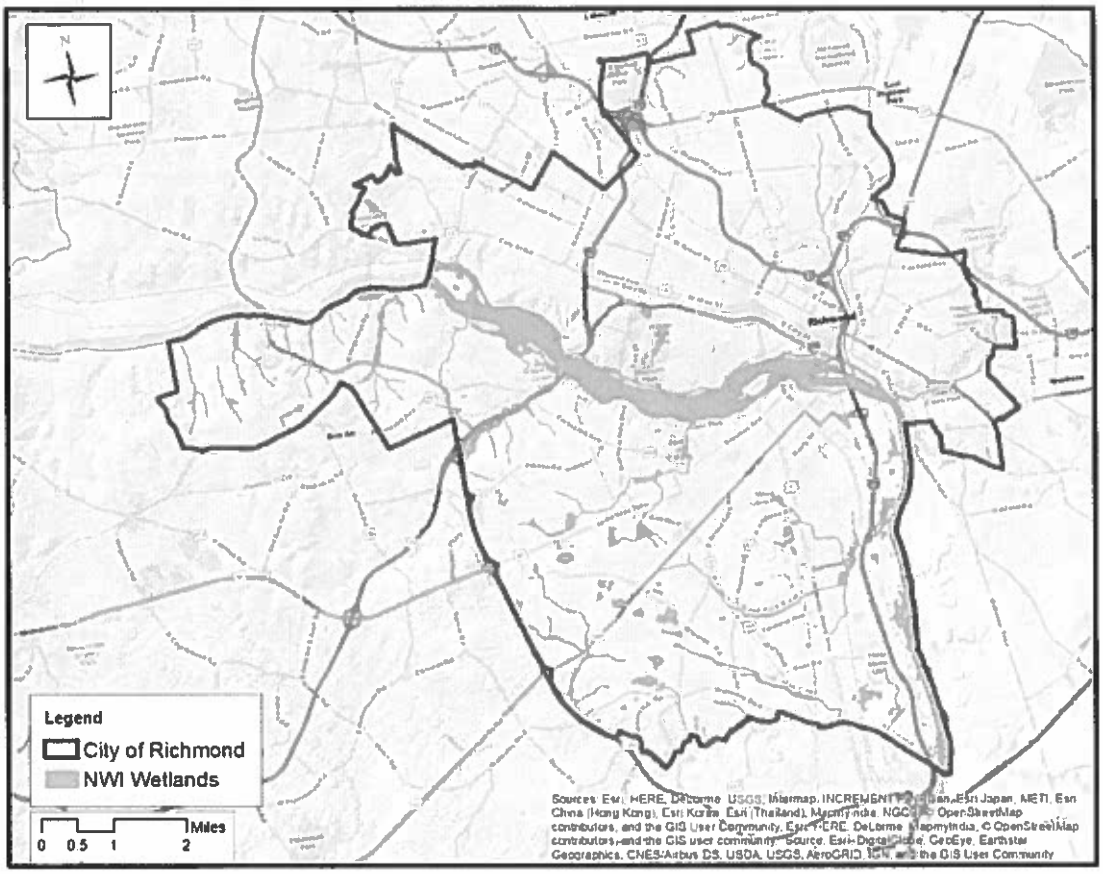


Source: United States Department of Agriculture (USDA). 2017. Natural Resource Conservation Service (NRCS). Links to Download Soils Data. Retrieved from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

- **Group A** is sand, loamy sand or sandy loam types of soils. It has low runoff potential and high infiltration rates
- **Group B** is silt loam or loam. It has a moderate infiltration rate
- **Group C** is sandy clay loam. It has a low infiltration rate
- **Group D** is clay loam, silty clay loam, sandy clay, silty clay or clay. It has the highest runoff potential

Group B/D: Dual hydrologic groups for certain wet soils that can be adequately drained. The first letter applies to the drained condition, the second to the undrained

Figure 4-8
Wetlands in the City of Richmond



Source: United States Fish and Wildlife Service (USFWS). 2017b. National Wetlands Inventory Wetlands Mapper. Retrieved from https://www.fws.gov/wetlands/data/mapper.html.

4.2.6 Riparian Buffers and Conservation Easements

Riparian Buffers

A riparian buffer is an area of land adjacent to a body of water that is managed to promote water quality, to provide habitat for fish and wildlife, and to benefit landowners and communities. The width of the buffer and the type of vegetation needed to provide these benefits are determined by local soils and hydrology and the objectives of the landowner.

In compliance with the Chesapeake Bay Preservation Act enacted by the Virginia General Assembly (1989), the City of Richmond has designated Chesapeake Bay Preservation Areas which are comprised of a Resource Protection Area (RPA), a Resource Management Area, and Intensely Developed Areas (IDA). The RPA is the most protective category and includes "*lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or [lands which] are sensitive to impacts which may cause significant degradation to the quality of state waters.*" In its RPA designation, the City has included areas of (1) tidal wetlands; (2) non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow; (3) tidal shores; (4) buffer areas 100 feet in width along both sides of any water body with perennial flow; and (5) such other lands considered by the City to meet the provisions of the Act and deemed necessary to protect

the quality of state waters. The RMA areas include the limits of any soil polygons that were identified as "highly erodable," "steep slopes," or "highly permeable" soils and which intersected the edge of any RPA features. IDA areas are a subset of the RPA. They include areas of RPA that have no natural vegetation and have been served by sewer and water prior to 1991. The City of Richmond's RPA and RMA buffers and limits of the IDA are shown in **Figure 4-9**.

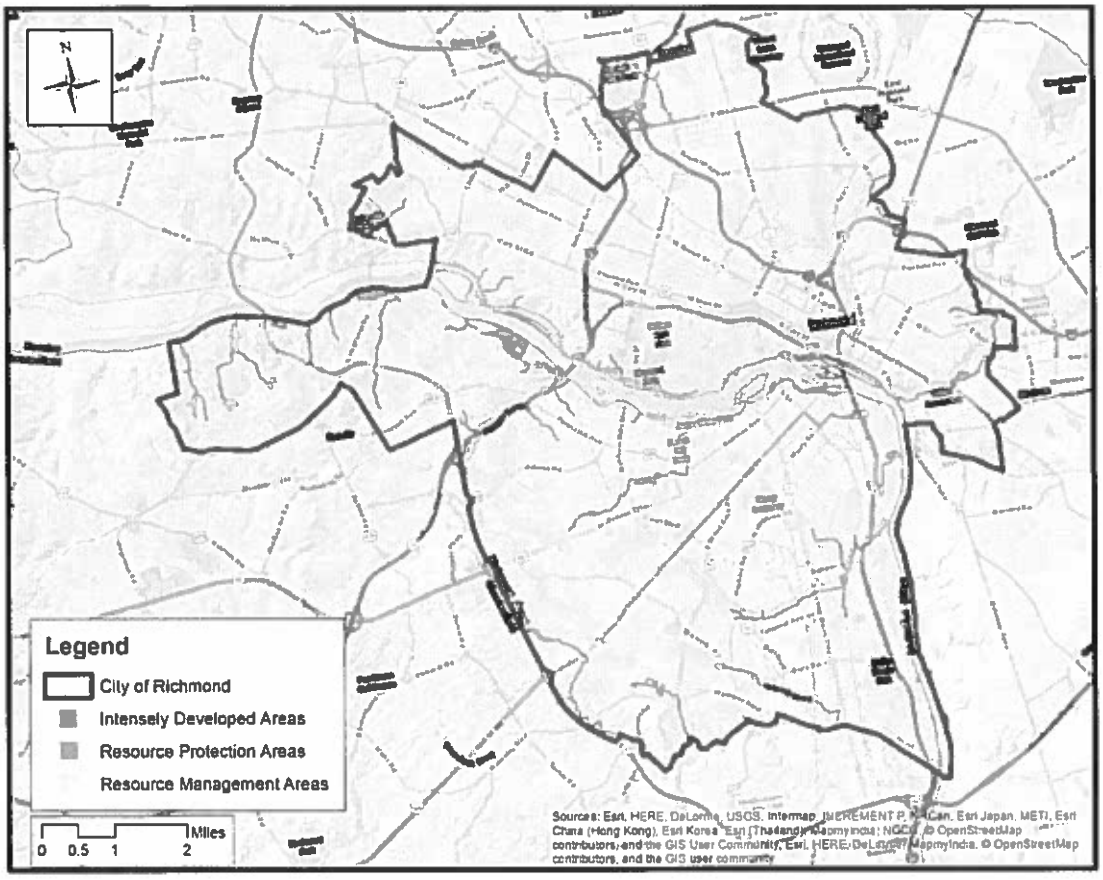
Conservation Easements

Conservation easements are perpetual legal agreements between a private property owner and a qualified conservation agency (such as a land trust, conservation organization, or public agency). The easement voluntarily places restrictions on the type and amount of activity that may take place on that property (for example, activities that would destroy natural, scenic, or historic features). The City of Richmond has two easements with detail information shown in **Table 4-3**.

Table 4-3
Conservation Easements in the City of Richmond

Easement Name	Total Acre	Owner
Anthony Turner House	0.12	Anthony Turner House Foundation
James River Park System	280	CRLC, RRPF, & VDCR
Bandy Field	18.294	Friends of Bandy Field, Inc.
Reed Square	0.12	Reed Square Foundation

Figure 4-9
City of Richmond, Chesapeake Bay Preservation Areas



4.2.7 Land Use and Land Coverage

The existing land use patterns in the City of Richmond are described in the following:

- The City is almost completely developed, with limited opportunities for new development; the few vacant parcels that exist are primarily in the southwest or within redevelopment projects.
- The existing impervious surfaces in the City total 14,268 acres, or 36% of the City's total area.
- Commercial service centers, located throughout the City and along key transportation corridors, provide convenient goods and services to adjacent neighborhoods and areas beyond.
- Residential uses occupy more land area in the City than any other type of use.
- Industrial uses are concentrated within four primary areas: the I-95/James River corridor; west of the Jefferson Davis Highway corridor to the CSX rail line; Scott's Addition and the Hermitage Business Park areas north of West Broad Street; and Shockoe Valley in the East District.
- The City benefits from a well-developed radial highway system that provides easy access to Downtown and surrounding local and regional destinations.
- There are significant public open spaces throughout the City in the form of parks, public school grounds and cemeteries, in addition to large public spaces along the James River.

The existing land uses and land use patterns should generally continue as they currently exist. This City-wide land use strategy has been well incorporated in the City's Land Use Plan.

Current land use projects in the City of Richmond are shown in **Figure 4-10**. This information was obtained from the Land Use Administration Department, City of Richmond in June 2018 (06-04-2018)

4.2.8 Impaired Streams

The presence of impaired streams and the type of impairment in the City of Richmond are summarized in **Table 4-4** (2016), with detailed information including ID, Water Body, Category, Impairment Distance, Impairment Cause, and Impairment Source.

4.2.9 Point Source Discharge

The location of point source discharges is shown in **Figure 4-11.**

4.2.10 Other Potential Threats

The list above has covered most of the concerns regarding water quantity and quality. There is no other foreseeable threat to the existing water quantity and quality.

Figure 4-10
Current Land Use Projects in the City of Richmond

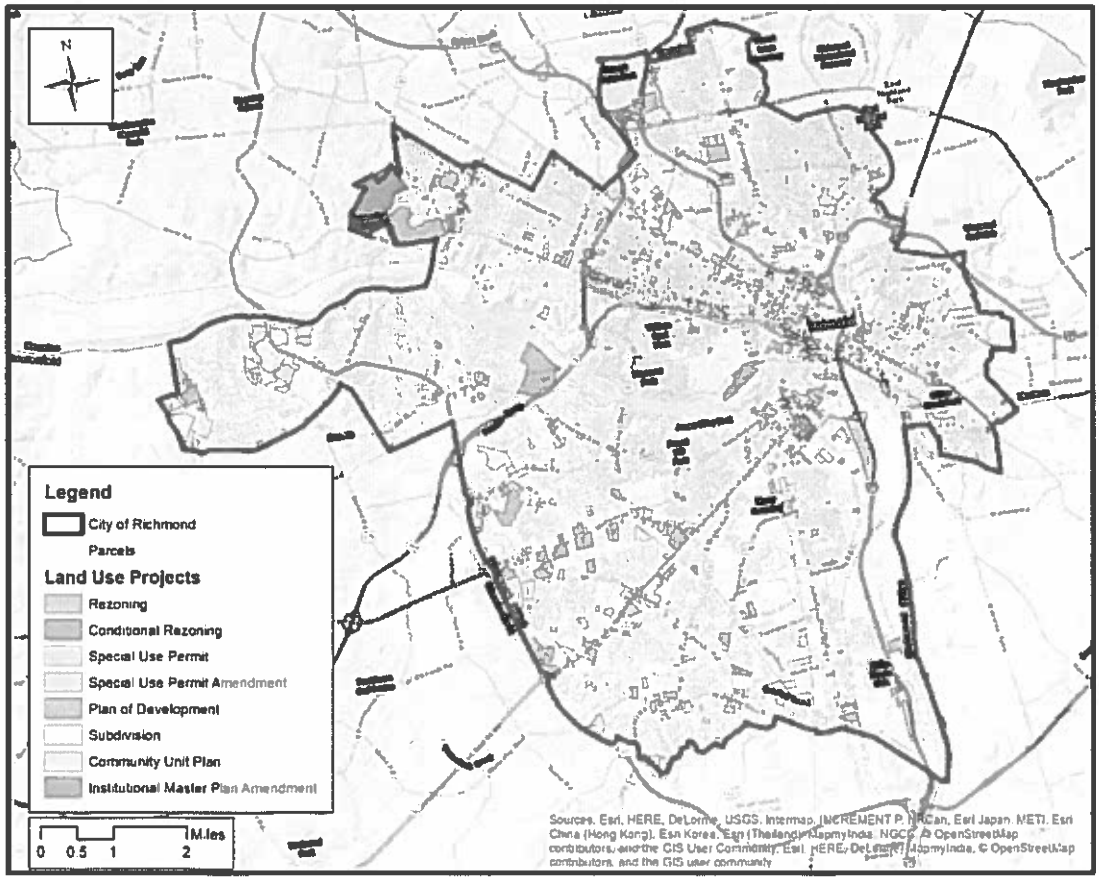


Table 4-4
2016 Impaired Waters —City of Richmond

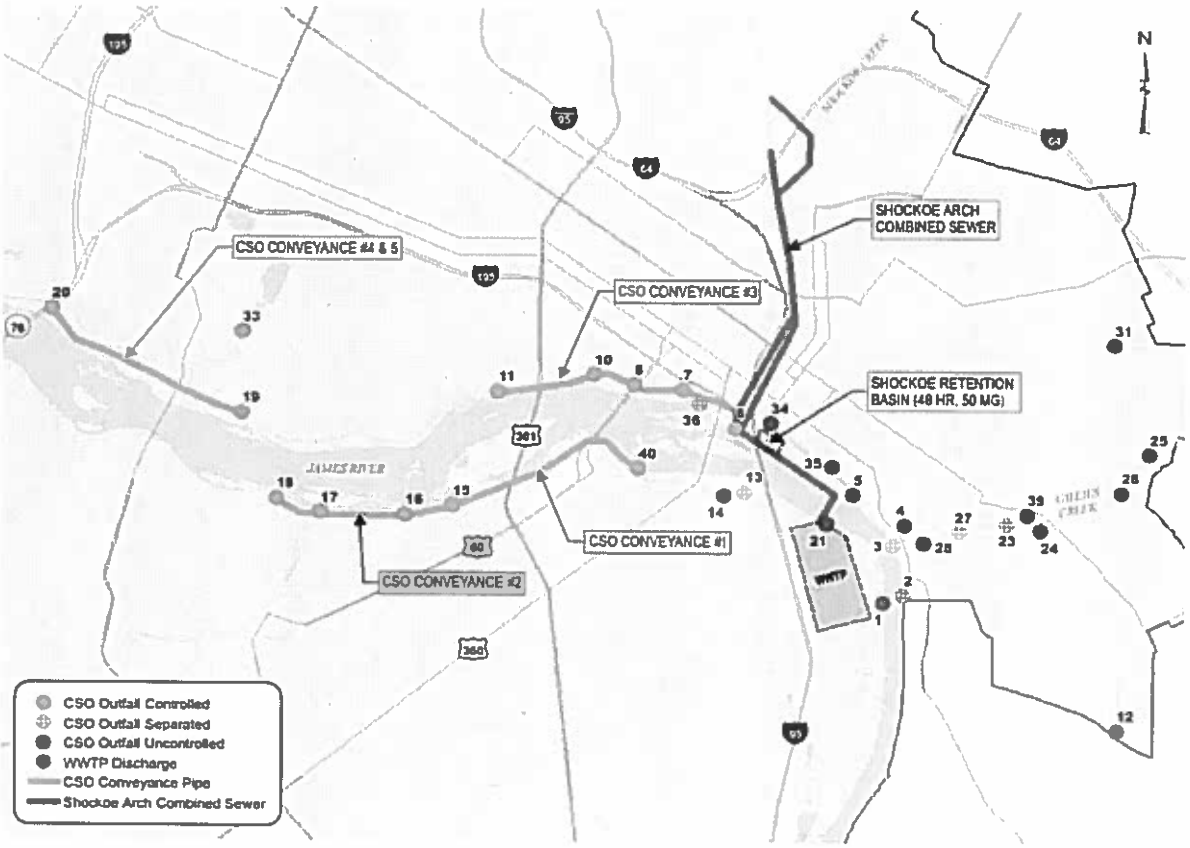
Riverine					
ID	Water Body	Category	Length of Impairment in Richmond (miles)	Impairment Cause	Impairment Source
VAP-G01R_BDO01A06	Broad Rock Creek	4A	3.12	E. coli	Discharges from MS4s, Municipal Point Source Discharges
VAP-G01R_GIL01A04	Gillies Creek	5D	1.63	E. coli, pH, PCB in Water Column	Combined Sewer Overflows, Discharges from MS4s, Source Unknown, Non-Point Source
VAP-G01R_GOD01A00	Goode Creek	5D	1.21	E. coli, PCB in Water Column	Discharges from MS4s, Source Unknown, Non-Point Source
VAP-H39R_JMS01A98	James River	5A	0.23	PCB in Fish Tissue	Source Unknown
VAP-H39R_JMS03A98	James River	5D	2.94	Chlordane, DDE, DDT, E. coli, Mercury in Fish Tissue, PCB in Fish Tissue	Atmospheric Deposition – Toxics, Combined Sewer Overflows, Municipal Point Source Discharges, Source Unknown, Non-Point Source
VAP-H39R_JMS02A98	James River	5A	3.36	PCB in Fish Tissue	Source Unknown
VAP-H39R_JMS03B14	James River – South Channel	5D	0.95	Chlordane, DDE, DDT, E. coli, Dissolved Oxygen, Mercury in Fish Tissue, PCB in Fish Tissue	Atmospheric Deposition – Toxics, Combined Sewer Overflows, Municipal Point Source Discharges, Source Unknown, Non-Point Source
VAP-G05R_JOP1A14	Jordans Branch	5D	0.49	Benthic-Macroinvertebrate Bioassessments, E. coli	Sanitary Sewer Overflows (Collection System Failures), Source Unknown, Non-Point Source
VAP-H39R_MAN01A12	Manchester Canal (aka Walker Creek)	4A	0.86	E. coli	Discharges from MS4s, Municipal Point Source Discharges, Non-Point Source
VAP-G01R-PSK01A04	Pocoshock Creek	4A	0.13	E. coli	Discharges from MS4s, Municipal Point Source Discharges, Non-Point Source
VAP-H39R_PWT01A98	Powhite Creek	5F	2.20	Benthic-Macroinvertebrate Bioassessments	Source Unknown
VAP-H39R_RTL01A08	Rattlesnake Creek	4A	2.05	E. coli	Municipal Point Source Discharges, Non-Point Source
VAP-H39R_RDD01C10	Reedy Creek	4A	1.09	E. coli	Discharges from MS4s, Non-Point Source
VAP-H39R_RDD01B10	Reedy Creek	5D	0.36	E. coli, pH	Discharges from MS4s, Source Unknown, Non-Point Source
VAP-H39R_RDD01A00	Reedy Creek	4A	2.38	E. coli	Discharges from MS4s, Source Unknown, Non-Point Source
VAP-G01R_SNH01A08	Stony Run	4A	0.73	E. coli	Discharges from MS4s, Municipal Point Source Discharges, Non-Point Source
VAP-G05R_UPM01A02	Upham Brook	5D	0.74	Benthic-Macroinvertebrate Bioassessments, E. coli	Sanitary Sewer Overflows (Collection System Failures), Source Unknown, Non-Point Source
VAP-G05R_ZZZ01B02	Upham Brook Tributaries	4A	1.44	E. coli	Sanitary Sewer Overflows (Collection System Failures), Non-Point Source

Riverine					
ID	Water Body	Category	Length of Impairment in Richmond (miles)	Impairment Cause	Impairment Source
VAP-H39R_XBH01A14	XBH – Reedy Creek, UT	5D	0.12	E. coli, Dissolved Oxygen	Discharges from MS4s, Source Unknown, Non-Point Source
VAP-H39R_XCK01A14	XCK – Powhite Creek, UT	4A	1.25	E. coli	Discharges from MS4s, Non-Point Source
VAP-G01R_XFU01A16	XFU – Pocoshock Creek, UT	5A	2.81	pH	Source Unknown

Estuarine					
ID	Water Body	Category	Impairment in Richmond (Acres)	Impairment Cause	Impairment Source
VAP-G01E_JMS01A02	James River	5D	154.08	Chlorophyll – a, E. coli, Estuarine Bioassessments, PCB in Fish Tissue, Aquatic Plants (Macrophytes)	Atmospheric Deposition – Nitrogen, Clean Sediments, Combined Sewer Overflows, Discharges from MS4s, Industrial Point Source Discharge, Internal Nutrient Recycling, Loss of Riparian Habitat, Municipal Point Source Discharge
VAP-G01E_JMS02A02	James River	5D	10.04	Chlorophyll – a, E. coli, Estuarine Bioassessments, PCB in Fish Tissue, Aquatic Plants (Macrophytes)	Atmospheric Deposition – Nitrogen, Clean Sediments, Combined Sewer Overflows, Discharges from MS4s, Industrial Point Source Discharge, Internal Nutrient Recycling, Loss of Riparian Habitat, Municipal Point Source Discharge
VAP-G01E_JMS03A02	James River	5D	297.38	Chlorophyll – a, E. coli, Estuarine Bioassessments, PCB in Fish Tissue, Aquatic Plants (Macrophytes)	Atmospheric Deposition – Nitrogen, Clean Sediments, Combined Sewer Overflows, Discharges from MS4s, Industrial Point Source Discharge, Internal Nutrient Recycling, Loss of Riparian Habitat, Municipal Point Source Discharge
VAP-G01E_KAN01A14	Kanawha Canal	4A	0.35	Aquatic Plants (Macrophytes)	Atmospheric Deposition – Nitrogen, Clean Sediments, Industrial Point Source Discharge, Internal Nutrient Recycling, Loss of Riparian Habitat, Municipal Point Source Discharges, Wet Weather Discharges (Point Source and Combination of Stormwater, SSO, or CS)
VAP-G01E_ZZZ01A14	Unsegmented Estuaries in G01	4A	1.26	Aquatic Plants (Macrophytes)	Atmospheric Deposition – Nitrogen, Clean Sediments, Industrial Point Source Discharge, Internal Nutrient Recycling, Loss of Riparian Habitat, Municipal Point Source Discharges, Wet Weather Discharges (Point Source and Combination of Stormwater, SSO, or CS)

Reservoirs					
ID	Water Body	Category	Impairment in Richmond (Acres)	Impairment Cause	Impairment Source
VAP-G01L_FAC01A98	Falling Creek Reservoir	5F	9.70	Dissolved Oxygen	Source Unknown

Figure 4-11
Point Source Discharge in the City of Richmond



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Section 5 Projected Water Demand

In accordance with the requirements of 9 VAC 25-780-100.

5.1 Population

Population is an important factor considered in water demand projections.

Historical population data for the City of Richmond from 1950 to 2015 was obtained from the US Census Bureau and Weldon Cooper Center for Public Service. The City had been experiencing a steady decline in population between 1970 and 2000, but in recent years, the City's population has shown a resurgence and has grown annually since 2006.

For consistency among City of Richmond planning documents, the population projections are derived from the City's *Land Use, Housing, and Demographic Analysis* (LUHDA) prepared as part of the Citywide Master Plan, Richmond 300. The LUHDA presents the historic population from 1950 to 2015, and then projects population through 2037. Starting with a City population in 2015 of 220,289 people, the projected population in 2037 is 258,000 people, using a moderate growth model.

To project population beyond 2037, a compounded annual growth rate for the LUHDA moderate growth model (0.72% compounded annually) was continued to year 2070. The historical and projected populations are presented in **Figure 5-1** and **Table 5-1**.

Figure 5-1
Historical and Projected Population

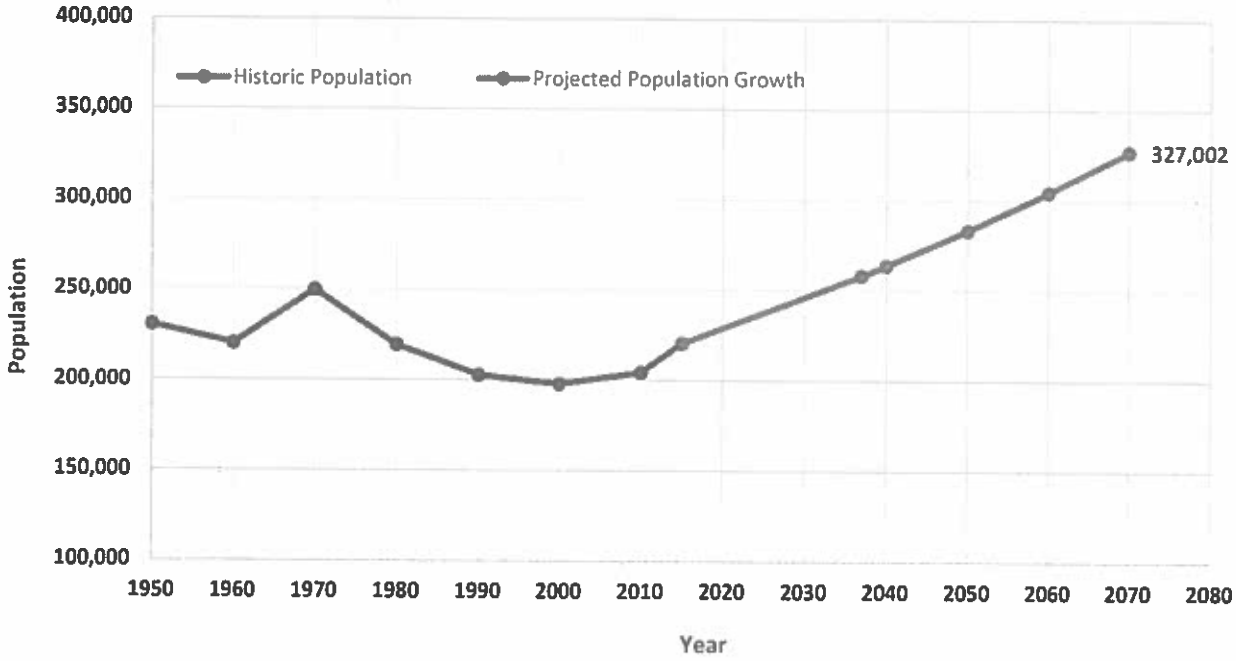


Table 5-1
Projected Population through 2070

Year	Population
2015	220,289
2037	257,998
2040	263,617
2050	283,247
2060	304,339
2070	327,002

5.2 Disaggregated Water Demand Projections in the City of Richmond

City of Richmond population has increased annually since 2006. Over the same period, average day total water use and average day water use per person has steadily declined as shown in **Figure 5-2** and **Figure 5-3**.

Figure 5-2
Historical Disaggregated Water Use in City of Richmond

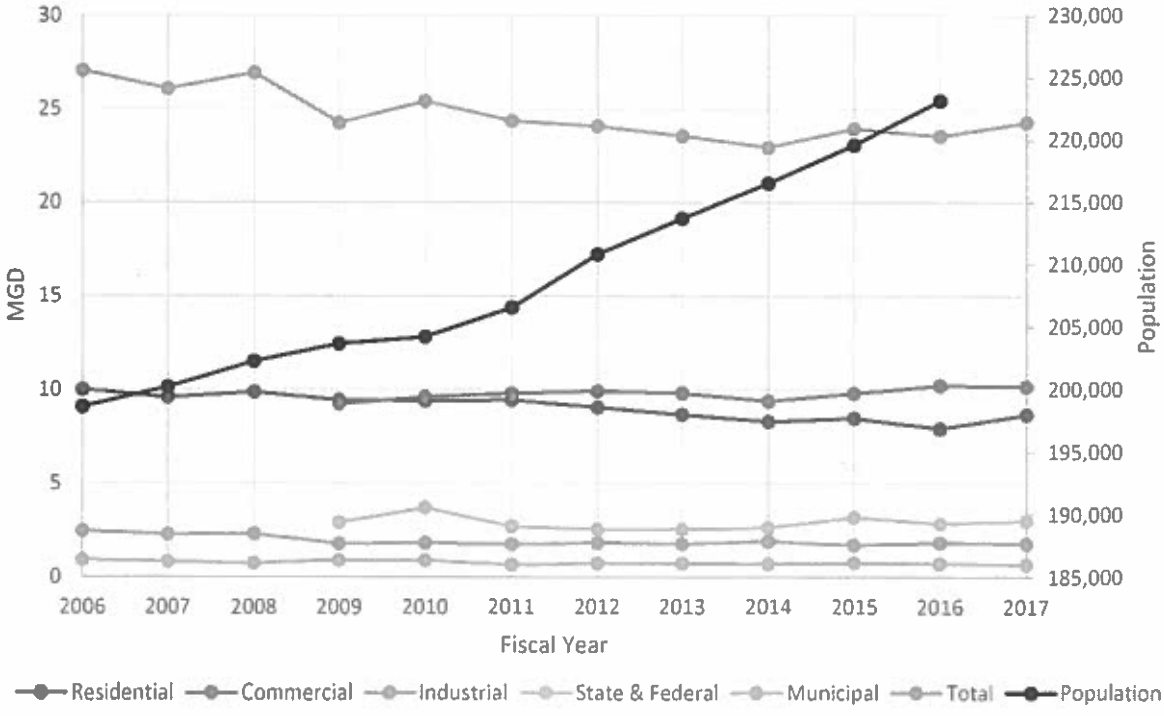
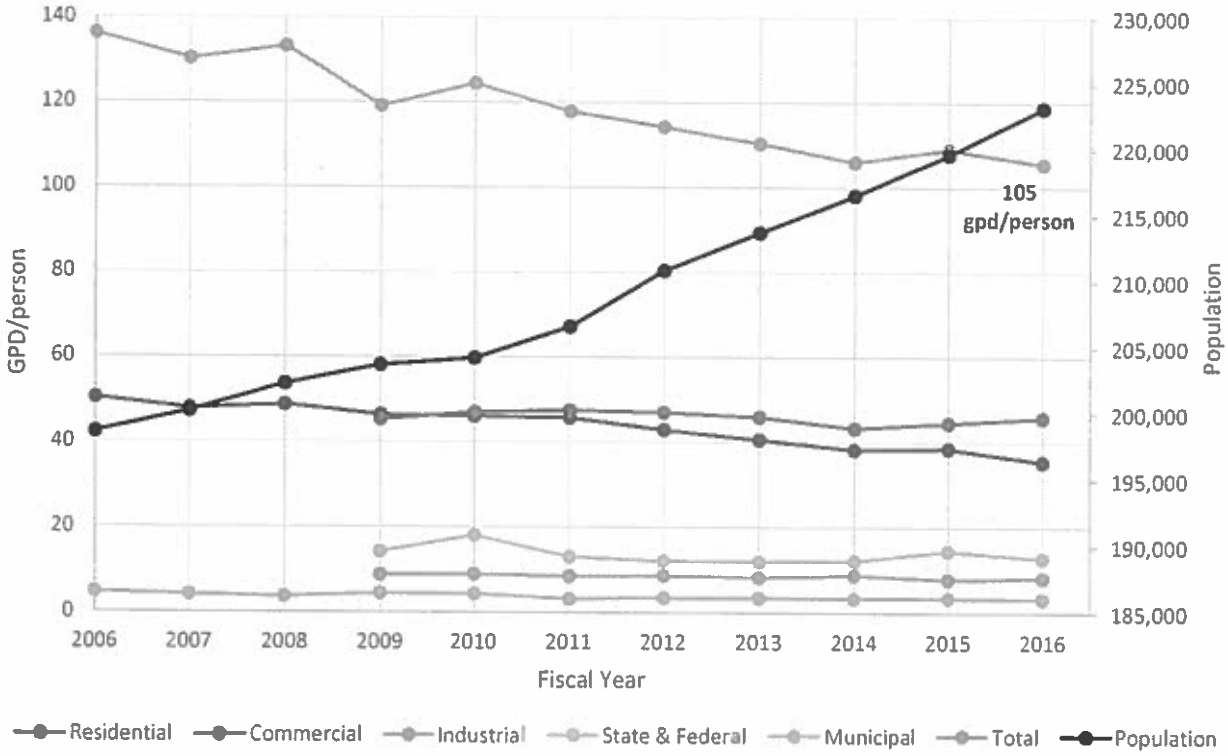


Figure 5-3
Historical Disaggregated Water Use per City Resident



Demand among all water use categories remained consistent, except for the residential category which showed an overall downward trend. This decline in water use per person is likely attributed to City implemented conservation efforts and general water conservation awareness.

5.3 Richmond/County Water Agreements

The City has long-term wholesale water supply agreements with Henrico County, Chesterfield County and Hanover County, which are summarized in **Table 5-2**. The City has an active program of regional cooperation with neighboring localities.

Table 5-2
Richmond and County Water Agreements

Item		Henrico	Chesterfield	Hanover
Contract Date		1994	1994	1994
Contract Period (Minimum)		46 years	51 years	41 years
Long Term Capacity	- Max. Day	35 mgd	32 mgd [2]	20 mgd
	- Max. Hour	40 mgd		
WTP Capacity		--	20.5%	15.15%
Option to Obtain Additional Capacity		No	Yes	Yes [1]
Annual Projections (10 yr.)				
From County		May 1	July 1 [2]	July 1 [2]
City Reply (System Improvements)		August 1	October 1	October 1
County Approval for Improvements		December 1	January 1	January 1
County Review of Improvements				
Plans and Specifications		No	Yes	Yes
Bid Awards		No	Yes	Yes
Contract Change Orders		No	Yes	Yes
Maximum Peak Day Volumes		--	105% [2]	105% [2]
Capacity Phases		--	--	1994 @ 5 mgd 1999 @ 10 mgd 2004 @ 15 mgd 2009 @ 20 mgd
Demand Charge		Yes	--	--
Commodity Charge		Yes	--	--
Direct County Capital Costs		Yes	Yes	Yes
Joint Capital Costs		--	Yes	Yes
Operating Expenses		--	Yes	Yes
Capacity Billings		--	--	Yes
Water Transmission Surcharge		--	--	Yes

[1] Chesterfield has first option

[2] Past projections used if new projections not provided

5.4 City of Richmond Projected Water Demand

The City's population has steadily grown since 2006 and this trend is expected to continue. Over the same time period, total water usage in the City and water usage per person has declined. Historical water demand trends and anticipated population are used to project future in the City water demand.

5.4.1 Disaggregated Metered Water Demand Projections in the City of Richmond

Based on the historical trends, total projected average day City of Richmond metered water sales is estimated to be equivalent to 105 gpd/person. The percentage of each water use category has been averaged over the past five years and the composition of the demand among the use categories is expected to remain consistent.

Table 5-3 summarizes the projected average daily City metered water sales, by decade, to year 2070.

Table 5-3
Metered Water Demand Projection for City of Richmond (MGD)

Classification	Disaggregated Water Sales Percentage	Year					
		2020	2030	2040	2050	2060	2070
Residential	36.27%	9.34	9.83	10.04	10.79	11.59	12.45
Commercial	41.28%	10.63	11.18	11.43	12.28	13.19	14.17
Industrial	7.54%	1.94	2.04	2.09	2.24	2.41	2.59
State & Federal / Non-Residential	11.89%	3.06	3.22	3.29	3.54	3.80	4.08
Municipal	3.02%	0.78	0.82	0.84	0.90	0.97	1.04
TOTAL		25.76	27.09	27.68	29.74	31.96	34.34

5.4.2 Average Day Water Demand Projections

The City's wholesale customer water sales have remained very consistent over the period FY2011 through FY2017, with a total average daily demand of 26.35 MGD. Average day wholesale customer metered sales are far below the total contract maximum of 87 MGD. While sales to Henrico, Chesterfield, and Hanover Counties have been steady with no discernable trend increase, to provide a conservative estimate of projected water demands, it is assumed that average day wholesale customer demands will increase by 5 MGD by the beginning of each decade.

Total average day finished water demand, water treatment plant output, and raw water withdrawal projections through 2070 are shown in **Table 5-4.** To project water loss in the water distribution system and to account for water utilized in the production of finished water at the treatment plant, historical averages as a percentage of total water treatment plant output were calculated and utilized for the future water projections. System water loss has averaged 9.19% of finished water treatment plant output. Water used by the treatment plant has averaged 6.58% of total water treatment plant output.

Table 5-4
Average Day Water Demand, Water Treatment Output, and Raw Water Withdrawal Projection (MGD)

Classification	Year					
	2020	2030	2040	2050	2060	2070
City Metered Sales	25.76	27.09	27.68	29.74	31.96	34.34
Wholesale	30.00	35.00	40.00	45.00	50.00	55.00
Total Finished Water Demand	55.76	62.09	67.68	74.74	81.96	89.34
System Water Loss	5.12	5.71	6.22	6.87	7.53	8.21
Total WTP Output	60.89	67.80	73.90	81.61	89.49	97.55
WTP Production Loss	4.01	4.46	4.86	5.37	5.89	6.42
Raw Water Withdrawal	64.89	72.26	78.76	86.98	95.38	103.96

Note: Self-supplied users are water users that do not receive water from a community water system. Water use from self-supplied users in the City of Richmond is reported in Table 3-4. Based on historical water use, projected self-supplied user demand is expected to remain flat through 2070 at approximately 0.16 MGD.

Based on the water demand projections, the City of Richmond's water plant permitted for 132 MGD has sufficient capacity to meet water demands beyond 2070.

5.4.3 Peak Day Water Demand Projections

Peak day water demand is the sum of the City's water system peak demand and the maximum day demand of the City's wholesale customers. Consistent with other City of Richmond planning documents, the City of Richmond water system demand maximum day peaking factor is 1.29 times the average day demand, coincidental with peak demands of the wholesale Counties. Total maximum day demand to the City's wholesale customers is 87 MGD and is established in the respective water agreements with Henrico (35 MGD), Chesterfield (32 MGD), and Hanover (20 MGD) Counties. Peak day finished water and raw water withdrawal projections through 2070 are shown in **Table 5-5**.

Table 5-5
Peak Day Water Demand, Water Treatment Output, and Raw Water Withdrawal Projection (MGD)

Classification	Year					
	2020	2030	2040	2050	2060	2070
City Demand	33.23	34.95	35.71	38.37	41.22	44.29
Wholesale Demand	87.00	87.00	87.00	87.00	87.00	87.00
Total Finished Water Demand	120.23	121.95	122.71	125.37	128.22	131.29
System Water Loss	5.12	5.71	6.22	6.87	7.53	8.21
Total WTP Output	125.36	127.65	128.93	132.23	135.75	139.50
WTP Production Loss	4.01	4.46	4.86	5.37	5.89	6.42
Raw Water Withdrawal	129.36	132.11	133.79	137.60	141.64	145.92

5.5 Water Projection outside the Service Areas of Community Water System

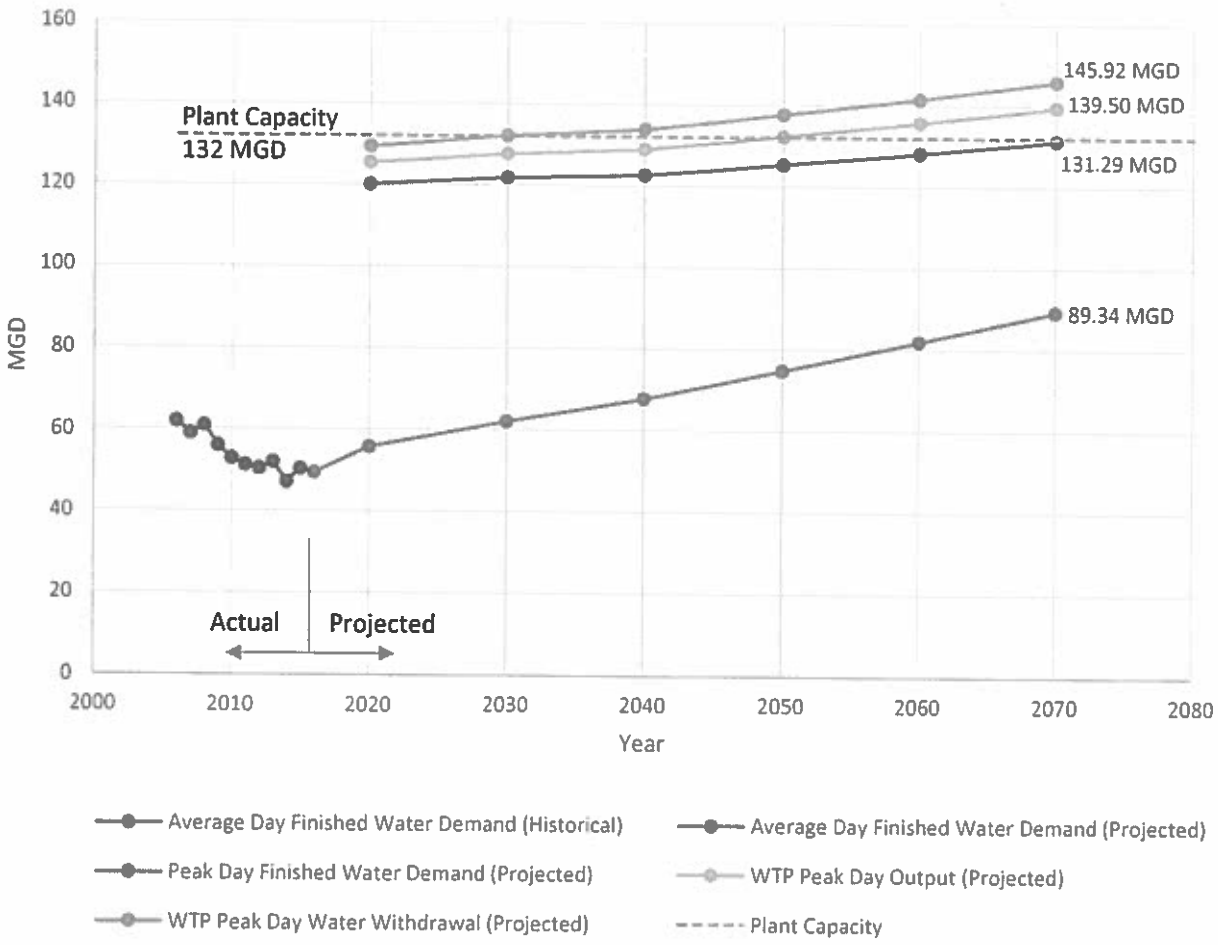
The City does not provide water supply to self-supplied users outside the service areas, and does not expect to have self-supplied users from outside the City in the future.

5.6 Water Treatment Capacity

The City of Richmond's water treatment plant is currently permitted for 132 MGD. Typically, the plant operates well below its rated capacity. The average finished water plant output in 2017 was 60.28 MGD, and the required average day finished water plant output in 2070 is projected to be 97.55 MGD. The existing water treatment plant has sufficient capacity to meet average day water demands beyond 2070.

The projected water demands for the City of Richmond and the wholesale County demands as are shown in **Figure 5-4.**

Figure 5-4
Demand Projections and Water Treatment Capacity



While peak demands are projected to exceed the current plant capacity in 2050, the demand projection methodology is very conservative. This projected demand assumes extension of the existing water contracts beyond their current expiration years and full utilization of the water agreement by all three wholesale customer Counties. To date, wholesale customers have never fully exercised their allowable maximum daily water capacity. The historical maximum monthly wholesale customer demand occurred in September 2014, equating to 52.8 MGD, and coincided with a City water demand of 25.7 MGD.

The City continues to monitor water demands, and the following measures will reduce the anticipated future water demands:

1. Reconsideration of the wholesale water customer agreements.
2. Continued water conservation efforts.
3. New water rates that incentivize limited water consumption and discourage excess water consumption.
4. Additional water rate increases during voluntary and mandatory drought response conservation stages.

5.6.1 Projected Raw Water Withdrawal

The projected raw water withdrawals required to meet the City of Richmond water treatment production demands are shown in **Table 5-6.**

Table 5-6
Projected Raw Water Withdrawals (MGD)

	Year					
	2020	2030	2040	2050	2060	2070
WTP Output, Average Day (MGD)	60.89	67.80	73.90	81.61	89.49	97.55
Raw Water Withdrawal, Average Day (MGD)	64.89	72.26	78.76	86.98	95.38	103.96
WTP Output, Peak Day (MGD)	125.36	127.65	128.93	132.23	135.75	139.50
Raw Water Withdrawal, Peak Day (MGD)	129.36	132.11	133.79	137.60	141.64	145.92

5.7 James River Safe Yield Capacity

The James River is the source water for the City for Richmond's water treatment plant, and the City has long established riparian, prescriptive, and property rights for water in the river. The City maintains that said water rights include, but are not limited to, the right to prohibit withdrawals to the extent necessary to ensure the City's legal water withdrawal, and the City's right to have water left in the river for instream uses. The City's water rights predate State water withdrawal permitting and planning requirements. Thus, the City's water withdrawal is exempt from DEQ water withdrawal permitting requirements.

In accordance with the water supply planning regulations, a safe yield analysis of the James River at the City of Richmond was conducted. However, the City does not view the safe yield as a limitation or representation of its water rights.

As defined by the Virginia Administrative Code Section 12 VAC 5-590-830, the safe yield is the minimum withdrawal rate available during a day and recurring every 30 years (1Q30). The safe yield was calculated using a 91-year period of historical record for the James River at the City of Richmond, ensuring that periods of severe drought were incorporated in the analysis. The analysis reflects the historical operation of Lake Moomaw and, more recently, Henrico County's Cobbs Creek Reservoir. These operations provide supplemental flows to the James River during dry hydrologic conditions.

The analysis determined that the safe yield of the James River at the City of Richmond is 381 MGD. The safe yield was calculated based on the modeled river flow prior to any diversions or upstream water withdrawals.

5.7.1 Virginia Water Protection Permits

Virginia Department of Environmental Quality has issued Virginia Water Protection (VWP) permits for several diversions from the James River that may impact the available river flow at the City of Richmond.

- Haxall and East Canals (VWP Permit 95-0057) – During low river flow conditions, flow is diverted to the Haxall and East Canals at rate of 64.6 MGD.
- Henrico County (VWP Permit 88-0898) – Henrico County's water treatment plant intake withdrawals water from the James River, upstream of the City of Richmond. The County is permitted to withdraw an annual average of 75 MGD and a maximum of 132 MGD from the river,

which includes the additional allowable withdrawal with the operation of Cobbs Creek Reservoir currently under construction.

- James River Water Authority (VWP Permit 14-0343) – Located upstream of the City of Richmond, in Fluvanna County, the James River Water Authority (JRWA) has been issued a VWP permit which allows for the annual average withdrawal of 4.1 MGD and a maximum withdrawal of 8.6 MGD. The intake structure for JRWA is not currently constructed and JRWA does not currently withdraw water from the James River.

  During the DEQ permit issuance comment period, the City of Richmond documented their concerns regarding the permit in two letters dated September 21, 2015 and November 17, 2015, included in **Appendix B**. The City's stated concerns included:

  - Proposed increased permitted water withdrawal from the James River
  - Requirement for strict water conservation measures
  - Impacts on water quality standards

The impacts of other withdrawals from the James River on the available flow at the City of Richmond is summarized in **Table 5-7**.

Table 5-7
Summary of Diversions from the James River

Source	Average Withdrawal Rate (MGD)	Maximum Withdrawal Rate (MGD)
Canal Diversion (permitted)	64.6	64.6
Henrico County Withdrawal (permitted)	75	132
JRWA Withdrawal (permitted)	4.1	8.6
James River Safe Yield	381	
Available Flow at City of Richmond (Safe Yield less upstream permitted)	237.3	175.8

5.8 Projected Water Demand Summary

The City of Richmond has sufficient water treatment capacity to meet projected average day demands beyond 2070, and projected peak day demands through 2050. In addition, the James River has adequate safe yield capacity to support the City's projected water withdrawals beyond 2070.

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Section 6 Water Demand Management

In accordance with the requirements of 9 VAC 25-780-110.

The City of Richmond has adopted the James River Regional Flow Management Plan (RMP) for balancing water withdrawals and protecting instream uses.

In addition, the City of Richmond also adopts various water conservation practices to promote efficient water use, encourage water conservation, and to reduce water loss. The City developed its water conservation plan in 1998. Conservation plan framework and operation rules are included in this section. State of the art technologies in efficient water use and reuse that might be considered for the future water demand/supply management are also discussed.

6.1 James River Regional Flow Management Plan for the Falls of the James Area

The James River in the vicinity of Richmond supports a dynamic system that provides for a variety of beneficial uses. Since colonial times, the River has served as a fishery, water supply, and recreation area. The River has also supported economic development as the source of water for a system of canals that were used for navigation, industrial water supply and power and hydroelectric generation. Today, interest in the River continues to include the River's value for fisheries and recreation and as a public water supply.

In 1972, the Commonwealth of Virginia created the Historic Falls of the James Scenic River and designated the City of Richmond to administer this section of the James River. Because of the River's legal status and widespread interest in promoting and protecting all beneficial uses of the river system, the Richmond area has adopted a policy for balancing water withdrawals and protecting instream uses. This policy has been formulated into a River Flow Management Plan (RMP) which addresses instream uses, regional economic needs and preserves the historical, recreational, environmental and cultural attributes of the area.

The RMP provides for management of water withdrawals from the River, canal flows and protection of instream uses in the James River between Henrico County water supply intake west of Bosher's Dam and the fall line. The RMP has been designed to incorporate requirements and concepts as follows: (1) Use of RMP area for withdrawals for regional public water supply for water treatment facilities operated by the City of Richmond and Henrico County. Water conservation and use restriction provisions are part of the regional water supply program; (2) Protection of instream uses for fisheries and recreational conditions; (3) Providing for adequate canal flows for the protection, restoration and operations of the canals system through a program of establishing base canal withdrawals with short term modulating withdrawals; and (4) Installation of a system of structures and support facilities to monitor and control canal withdrawals.

The concepts associated with the flow management plan have been organized into a set of operating rules to govern withdrawals in the RMP area, including (i) Seasonal conditions related to withdrawals and instream use; (ii) Flow tiers or triggers to activate procedures, changes in operation and restrictions; and (iii) A modulating and test withdrawals program for the canals system.

6.2 Minimum Instream Flows and Allocation

The RMP establishes minimum instream flows (MIFs) in the Falls of the James area. The MIFs apply seasonally and are listed in **Table 6-1**. MIFs were established for natural river flow (NRF) rates between 5000 cfs and equal to or less than 750 cfs. Flow above the MIF is the rate available for withdrawal. The withdrawal available equals the NRF minus the MIF. **Table 6-1** is modified from SCHEDULE B in the RMP by adding extra columns for showing Maximum Withdrawals Available.

The City had previously been required to adhere to the MIF requirements as part of the US Army Corps of Engineers permit 95-0057-80. The permit, however, was valid for 10 years following its publication in 1996 and was issued for the City's Combined Sewer Overflow (CSO 3) and Richmond Riverfront Redevelopment projects. The City of Richmond's allowable water withdrawal is correspondingly no longer regulated by the USACE permit's MIF requirements.

The MIFs provide protection for instream uses over the range of river flow rates that are critical for instream uses. Maintaining minimum instream flow is necessary to ensure adequate water supply of suitable quality and to sustain aquatic habitat.

Table 6-1
James River Minimum Instream Flows [1]

Natural River Flow (NRF) Rates (CFS) [2]	Period 11/1 - 6/30		Period 7/1 - 10/31	
	MIF[3] (CFS)	Maximum Withdrawal Available (CFS)	MIF (CFS)	Maximum Withdrawal Available (CFS)
≥5000	4100	[4]	4100	[4]
5000	4100	900	4100	900
4900	4000	900	4000	900
4800	3900	800	3900	900
4700	3900	800	3900	800
4600	3800	700	3800	800
4500	3800	700	3800	700
4400	3700	700	3700	700
4300	3600	700	3600	700
4200	3500	600	3500	700
4100	3500	600	3500	600
4000	3400	600	3400	600
3900	3300	600	3300	600
3800	3200	600	3200	600
3700	3100	600	3100	600
3600	3100	500	2600	1000
3500	3000	500	2600	900
3400	2900	500	2500	900
3300	2800	500	2400	900
3200	2700	500	2400	800
3100	2600	500	2300	800
3000	2500	500	2200	800
2900	2400	500	2100	800
2800	2400	400	2100	700
2700	2300	400	2000	700
2600	2200	400	2000	600
2500	2100	400	1800	700
2400	2000	400	1800	600
2300	1900	400	1600	700
2200	1800	400	1600	600
2100	1700	400	1500	600
2000	1600	400	1400	600
1900	1500	400	1400	500
1800	1400	400	1300	500
1700	1300	400	1200	500
1600	1200	400	1100	500
1500	1100	400	1000	500
1400	1000	400	933	467
1300	900	400	863	437
1200	800	400	800	400
1100	700	400	700	400
1000	600	400	600	400
900	500	400	500	400
800	400	400	400	400
≤ 750[5]	400	350	400	350

(1) The following schedule indicates the minimum flows that must remain in the James River during certain periods of the year. The permittee shall operate all withdrawals and diversions in a manner which will not exceed the minimum in-stream flow rules in the schedule.
(2) 7-day rolling average of natural river flow upstream of the Henrico County intake structure as calculated by the sum of the measurements taken from the Roslyn gage, the Westham gage and the withdrawal at the Henrico County intake.
(3) The permittee will interpolate between tabulated values to develop operating rules for in-stream requirements. Flowby rates may be reduced during canals modulating periods at NRF ≤ 1700 cfs 11/1-6/30; and NRF ≤ 1200 cfs 7/1-10/31 for modulating rates and periods as follows:
   a. At and above Boshers Dam, not more than 350 cfs once per week for 24 hours or the rate established from the Canals System Modulating and Test Withdrawal Program; whichever modulating rate/period is less.
   b. At and above Brown's Island Dam, not more than 350 cfs twice per day for 1 hour each period (allowing 1 hour each to ramp up to and ramp down from the base withdrawal rate) or the rate established from the Canals System Modulating and Test Withdrawal Program; whichever modulating rate/period is less.
   c. As part of the Canals System Modulating and Test Withdrawal Program, the permittee shall test modulating flow rates in 50 cfs increments at and below 350 cfs in an effort to reduce modulating flows to the lowest rates possible.
(4) All flow above 4100 cfs.
(5) Contravention of 400 cfs will occur only after water conservation measures are implemented.

6.3 Current Water Conservation Practices in the City of Richmond

Current conservation practices in the City include water efficiency, water conservation, and water loss reduction practices. According to a questionnaire prepared by VA DEQ on water conservation practices, current water conservation practices in the City of Richmond are summarized in the following three tables: **Table 6-2** describes practices to address water loss in the maintenance of water system to reduce unaccounted for water loss in the City; **Table 6-3** describes practices for more efficient use of water that are used in the City; and **Table 6-4** describes water conservation measures to reduce water use in the City.

6.4 Water Conservation in the City of Richmond

Water conservation is part of overall water demand management in the City of Richmond. The types of conservation measures include, but are not limited to, the adoption and enforcement of the Virginia Uniform Statewide Building Code sections that limit maximum flow of water closets, urinals and appliances; proposing Gathwright operational efficiency; proposing water reuse program; leak detection and repair; and old distribution line replacement.

The City's water conservation plan includes two fundamental categories: (1) basic water conservation measures, which comprise programs or activities common to all river conditions and generally in effect at all seasons; and (2) multi-stage water conservation program, which comprise specific actions or measures to be implemented during drought seasons under low river flow conditions (**Section 7**). Operating rules for water conservation plan have been designed so that the basic water conservation measures and monitoring apply when total withdrawals (TWDs) are less than 90 percent of the allocation allowed (withdrawal available above minimum instream flow) and during the winter months of December, January, and February. When TWDs are equal to or greater than 90 percent of the allocation allowed, staged and phased conservation measures that include water use restrictions become effective.

Table 6-2
Water Demand Management in the City of Richmond—Water Loss Reduction Practices

Water Loss Reduction Practices	Application
Do water systems in your locality have source and service connection meters? If yes, Type: ☒**Source** ☒**Service** How frequenter are the meters read? ☒**Automatic (AMR)** ☐Weekly ☒**Monthly** ☐Bimonthly ☐Quarterly ☐ Other	☒**Yes** ☐No
Does your locality have an ordinance or policy in place that requires water users to repair leaking fixtures, appliances, or plumbing?	☐Yes ☒**No**
Do local water suppliers implement operating strategies for leak detection and regularly scheduled water audits to reduce water loss?	☐Yes ☒**No**
Has your locality used Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to install water meters in its distribution system and/or develop and implement water audit and leak detection practices?	☐Yes ☒**No**
Does your locality have practices or policies in place to track unauthorized connections (ex: tapping of fire hydrants)?	☒**Yes** ☐No
Do local water suppliers implement operating strategies for the repair of water mains, service connections, fire hydrants, valves, etc., to reduce water loss?	☐Yes ☒**No**
Do local capital improvement plans (CIP) include dedicated funds to upgrade existing facility infrastructure, water mains, lines, fire hydrants, valves, etc., to reduce water use?	☐Yes ☒**No**
Has the locality developed and implemented educational programs to reduce customer-side water loss (ex: offer leak detection tablets, conduct customer leak detection audits, etc.)?	☒**Yes** ☐No
Does your locality implement additional water loss reduction practices that are not mentioned above?	☐Yes ☒**No**

Table 6-3
Water Demand Management in the City of Richmond—Water Use Efficiency Practices

Water Use Efficiency Practices	Application
When did your locality adopt the VA Uniform Statewide Building Code sections that limit maximum flow of water closets, urinals, and appliances? Year: **1993** Ordinance Number: **2004-369-332** Is a copy of this ordinance included in your water supply plan?	☒Yes ☐No ☐Yes ☒No
Has your locality adopted ordinances and/or developed and implemented a master landscape plan for water efficient landscaping?	☐Yes ☒No
Do any Homeowner's Associations in your locality have policies regarding the use of low-water use landscaping?	☐Yes ☒No
Has your locality adopted ordinances declaring wasteful water use and/or running of water unlawful?	☐Yes ☒No
Does your locality implemented practices to increase irrigation efficiency? Such practices may include, but are not limited to, not offering sewer credits during irrigation months, requiring irrigators to invest in irrigation meters, water recycling, etc.	☐Yes ☒No
Do Water suppliers (municipal and/private) in your locality implement water use efficiency measures? **A: Period water rates**	☒Yes ☐No
Are Water Suppliers in your locality WaterSense partners? Partners are listed on EPA's WaterSense website: https://www.epa.gov/watersense/partners-directory	☒Yes ☐No
Are landscape irrigation professionals in your locality WaterSense partners?	☐Yes ☒No
Does your locality implement additional efficient water use practices that are not mentioned above? **A: Period water rates**	☒Yes ☐No

Table 6-4
Water Demand Management in the City of Richmond—Water Conservation Practices

Water Conservation Practices	Application
Does your locality have ordinances in place that address water conservation practices through reduction of use?	☒Yes ☐No
Have water suppliers in your locality adjusted their standard operating procedures to improve water conservation (ex: reducing frequency of filter back wash?)	☐Yes ☒No
Have water suppliers in your locality installed low-flow and/or no-flow fixtures (faucets, showers, urinals) in their facility that result in water savings to the locality through reduction of use? **A: VA Uniform Statewide Building Code Plumbing**	☒Yes ☐No
Have low-flow and/or no-flow fixtures (faucets, showers, urinals) been installed in local government buildings/facilities to improve water savings to the locality through reduction of use? **A: VA Uniform Statewide Building Code Plumbing**	☒Yes ☐No
Has your locality used Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to upgrade/retrofit facility fixtures, or purchase efficient landscape irrigation equipment for publicly owned facilities (buildings, parks, golf courses, etc.)?	☐Yes ☒No
Does your locality have a dual pipe distribution system or parallel distribution network to distribute reclaimed water to residential, industrial, business, institutional, or irrigational (ex: golf courses) users for non-portable water use purposes?	☐Yes ☒No
Do water suppliers in your locality offer "yard taps" to customers, so customers can monitor and reduce outdoor water use?	☐Yes ☒No
Has the locality developed and implemented public education programs that address water conservation through water use reduction?	☒Yes ☐No
Has your locality used Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to promote water conservation education through development and implementation of water conservation plans, public education programs, and/or ordinances or regulations to conserve water?	☐Yes ☒No
Does your locality and/or local water suppliers offer incentive programs to customers to retrofit or replace older fixtures (faucets, shower heads, urinals) and appliances to reduce water use?	☒Yes ☐No
Does your locality and/or local water suppliers offer funding incentive programs such as, but not limited to, rebates, tax breaks, and/or vouchers to encourage customers to reduce water use?	☐Yes ☒No
Does your locality implement a water conservation rate structure that encourages reduction of water use by increasing water rates with increasing water usage?	☒Yes ☐No
Does your locality implement additional water conservation practices that are not mentioned above?	☐Yes ☒No

6.4.1 Water Conservation Incentives

Water rates in the City of Richmond prior to July 2018 were $4.04/Ccf with no water conservation incentives for consumers. Since July 1, 2018, the City of Richmond has imposed new water utility rates incentivizing single-family residential households with 5/8" meters to conserve water use. The new rates reduce the cost per Ccf to $2.58 for the first 4 Ccf consumed each month, and increase the cost per Ccf to $5.11 for usage greater than 4 Ccf/month. All other consumers (multi-family, commercial, industrial, state & federal, and municipal) received a flat volumetric rate increase of $0.27/Ccf to $4.31/Ccf.

In addition to the rate increase disincentive for single family residences using in excess of 4 Ccf, during voluntary water conservation periods in the City of Richmond charges 150% of the base rate for each Ccf used that exceeds the conservation charge threshold (this threshold is equal to 140% of a customer's winter monthly consumption). This charge increases to 200% of the base rate under mandatory water conservation periods.

6.4.2 Operation Rules for Water Conservation Plan

The basic activation rules for the water conservation plan are diagrammed on and detailed in **Table 6-5**. The framework for establishing operating rules for the regional water conservation plan under the RMP has been developed based on the following considerations:

- The winter months of December, January and February are periods of normally high river flows and when the fishery is dormant. Additionally, public water use during these months is typically lowest and normal public use restrictions such as reduced outdoor watering are not practicable. The basic water conservation measures have, therefore, been established to provide the conservation management during these months.
- The other months, including November, March, April, May, June in the Winter/Spring season and July, August, September, October in the Summer/Fall season, are periods that require monitoring of NRF and withdrawals (TWDs), and possible water use restriction as drought response.
  - As long as 14-day rolling average of NRF is greater than 1800 cfs in the Winter/Spring season and 1300 cfs in the Summer/Fall season, the basic water conservation measures would apply but no public water use restrictions would be necessary.
  - As long as TWDs are less than 90 percent of the allocation available above the MIF and the basic water conservation measures are being implemented, it should not be necessary to impose water use restrictions on the public.
  - When TWDs are equal to or greater than 90 percent of the allocation allowed, a phased plan, including drought watch stage, drought warning stage and drought emergency stage, would be implemented.

Because river flow rates fluctuate, minimum periods for conditions to persist need to be established before actual imposition of a public water use restriction. Since MIFs are protective and cannot be contravened except during extremely rare drought conditions, being at or below some "action" or "trigger" level for some minimum period should not be environmentally damaging and will serve to mitigate unnecessary administration and public disruption. The plan has, therefore, been designed so that conditions which require a conservation measure or activity exist for a minimum of 14 or 7 consecutive days (depending on conditions) before actual imposition of the conservation measure or activity. Likewise, when a public water use restriction is actually imposed, the measures will remain in effect until the 14-day rolling average NRF rises above an "action" level for a period of 14 consecutive days.

Figure 6-1
Water Conservation Activation Rules

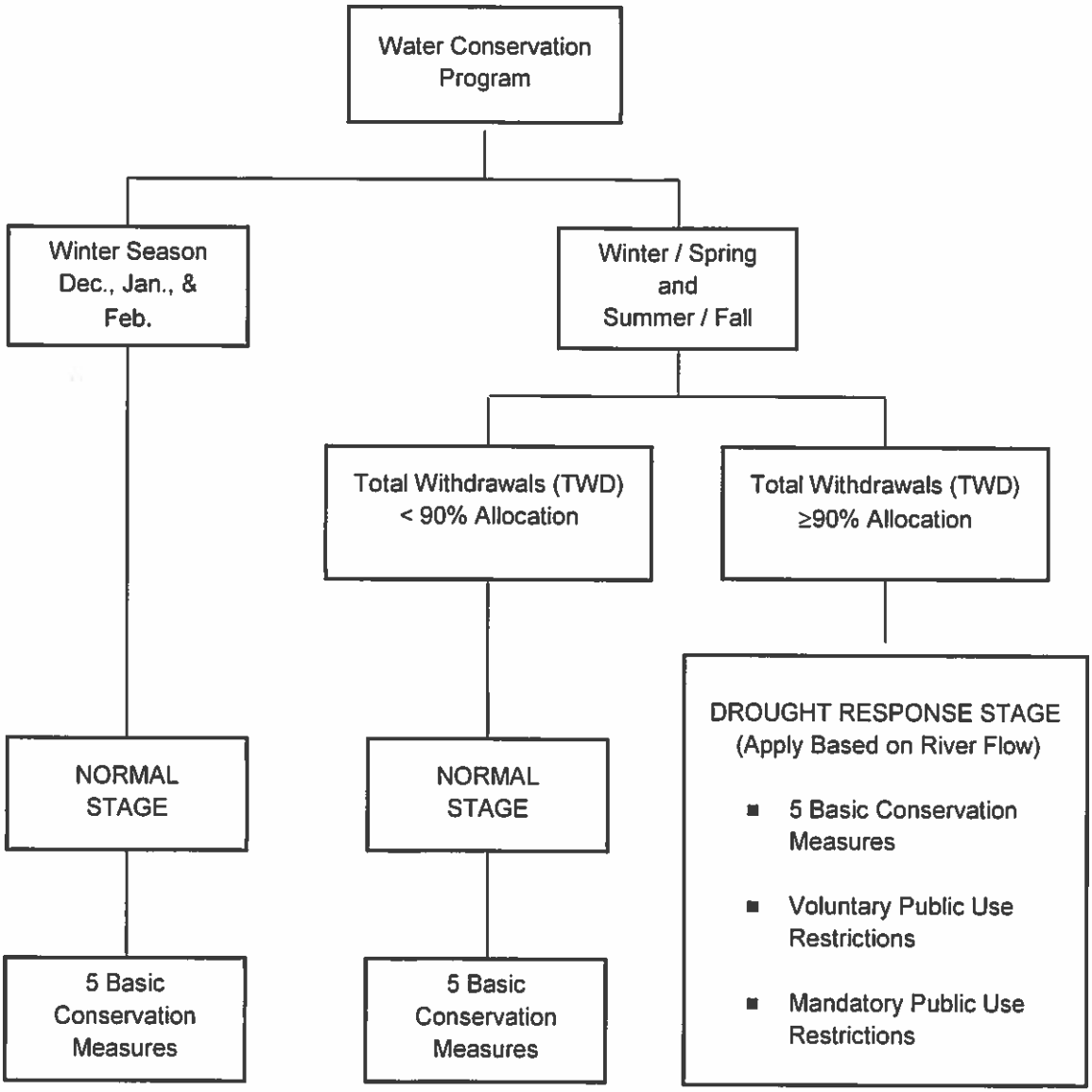

Table 6-5
Water Conservation and Drought Response Operating Rules

Period (months)	Water Conservation Program Condition		Conservation Stage Conditions[1]				Drought Response Stage
	14-D R/A NRF (CFS)	Conservation Stage	Total withdrawals < 90% MIF Allocation		Total Withdrawals ≥ 90% MIF Allocation		
			Activity	Conservation Measure	Activity	Conservation Measure	
Dec, Jan, Feb	n/a	NORMAL	1. Withdrawals for public water supply not to exceed individual VWTP allocations 2. Canal withdrawals based on RMP rules (VWTP allocations) 3. COE Minimum Instream Flows (MIFs) to be maintained 4. Water use codes (plumbing fixtures requirements) apply 5. Enforcement Authority				
Nov and Mar-Jun or Jul-Oct	> 1800 > 1300	NORMAL	1. Same as December through February				
Nov and Mar-Jun or Jul-Oct	≤ 1800 ≤ 1300	READY	1. Monitor total withdrawals (TWD) (e.g., all permitted or RMP withdrawals, public or private water supply, canals).	1. Monitor TWD until 14-D R/A NRF > 1800 (>1300) cfs for 14 consecutive days. 2. Same as Items 1-5 for December-February	1. Monitor TWD. If 14-D R/A NRF ≤ 1800 (>1300) cfs for 14 consecutive days initiate ALERT STAGE-PHASE I.	1. Monitor TWD 2. Same as Items 1-5 for December-February	**Trigger**
Nov and Mar-Jun or Jul-Oct	≤ 1800 ≤ 1300	ALERT PHASE I			1. Monitor TWD. Prepare operations and public for possible water use reductions.	1. Monitor TWD 2. Same as Items 1-5 for December-February 3. Issue preparation notice.	**Watch Stage I**
Nov and Mar-Jun or Jul-Oct	< 1700 < 1200	ALERT PHASE II			1. Monitor TWD. If 14-D R/A NRF < 1700 (<1200) cfs for 14 consecutive days initiate REDUCTION STAGE	1. Monitor TWD 2. Same as Items 1-5 for December-February 3. Set date for REDUCTION STAGE to go into effect.	**Watch Stage II**
Nov and Mar-Jun or Jul-Oct	< 1700 <1200	REDUCTION (VOLUNTARY)			1. Monitor TWD 2. Maintain REDUCTION STAGE in effect until 14-D R/A NRF ≥1700 (≥1200) cfs for 14 consecutive days	1. Monitor TWD 2. Same as Items 1-5 for December-February 3. Reduction measures (voluntary type)	**Warning Stage**
Nov and Mar-Jun or Jul-Oct	≤ 1250 ≤ 750	RESTRICTION (MANDATORY)			1. Monitor TWD 2. Prepare operations and public for possible mandatory use restrictions on day following 14-D R/A NRF ≤ 1250 (≤750) cfs. 3. Initiate RESTRICTION measures when 14-D R/A NRF ≤ 1250 (≤750) cfs for 7 consecutive days. 4. Maintain RESTRICTION STAGE in effect until 14-D R/A NRF > 1250 (≤750) cfs for 14 consecutive days.	1. Monitor TWD 2. Same as Items 1-5 for December-February 3. Issue preparation notice. 4. Restriction measures (mandatory type)	**Emergency Stage**

[1] 14-D R/A NRF without parenthesis is Winter/Spring rate. Value in parenthesis is Summer/Fall rate.

6.4.3 Basic Water Conservation Measures

Basic water conservation measures that have been incorporated into the regional water conservation plan are summarized as follows:

- **Public water supply allocations**. Individual Virginia Water Protection Permits (VWPPs) include allocations for withdrawals for public water supply purposes which may not be exceeded.
- **Canals withdrawals**. The RMP and the City's permits from the Corps and DEQ include requirements to reduce base withdrawals to 50 cfs during low river flows. Programs are also included to test base and modulating withdrawals at reduced rates and to operate at the reduced rates as long as such reduced rates do not create detrimental quality conditions in the canals.
- **MIF maintenance**. The minimum instream flows for the Falls of the James area are required to be maintained by water withdrawers through Corps and DEQ permits.
- **Water use codes**. The City and the County have adopted codes that limit water use in plumbing fixtures to be used in new, remodeling and/or replacement installations based on the Virginia Uniform Statewide Building Code. Jurisdictions served by the City and County water systems will be required to have equal codes.
- **Enforcement**. Officials in the City and the County and those jurisdictions served by the City and County water systems will have the authority to enforce codes and rules for water conservation through appropriate ordinances.

The basic measures, implemented at any seasons, provide for substantial water conservation on a day-to-day basis regardless of season or river condition. These measures constitute a high degree of environmental protection for the James River and require that State and local governments cooperate to continually plan for the region's water needs.

Basic water conservation measures alone would satisfy conservation need in following scenarios:

- The winter months of December, January and February;
- The rest of months with NRF greater than 1800 cfs in Winter/Spring season, and 1300 cfs in Summer/Fall season;
- The rest of months with total withdrawals less than 90 percent of MIF allocation.

6.5 Water Reuse

Unreliable water supplies, coupled with increased demand, are prompting many cities and municipalities to pursue innovative water supply approaches. Among these are water reuses that treat secondary effluent for indirect potable reuse. Water is naturally recycled through the hydrologic cycle and eventually makes its way back to fresh water supplies. The aim of water reuse is to incorporate advanced technologies to expedite this natural process. Using reclaimed or repurified water, scarce water sources are augmented, putting less strain on portable supplies and providing a sustainable resource for agriculture, irrigation, industrial operations and seawater intrusion prevention for costal aquifers. Water reuse also reduces wastewater discharge to oceans, lakes and rivers, making it an environmentally conscious option.

The level of treatment is linked to the potential for public contact and its intended use. Using innovative water reuse technologies, communities have the ability to treat existing water sources to a quality at or above their existing drinking water standards. However, because of public concern about the idea of treating wastewater for eventual human consumption, water professionals and municipalities must be cognizant of their approach when educating the public about water reuse, especially when it comes to the public and its drinking water.

City of Richmond has a 45-MGD wastewater treatment facility that can be considered when investigating possible water reuse projects. As the use of reclaimed water becomes a more widely accepted practice, it is expected that the use of highly treated wastewater for augmenting raw water sources will become an acceptable approach.

6.6 Efficient Water Use

Water demand management encompasses a spectrum of water measures that improve the efficiency and timing of water use. This approach differs from traditional water supply management, which aims at increasing the supply whatever the demand. Water demand management targets the water user rather than the supply of water to achieve more desirable allocations and sustainable use of water. A general list of water use efficiency measures is shown in **Table 6-6**.

Table 6-6
Examples of Measures that Meet Water Use Efficiency Requirements

Indoor Residential	Outdoor	Industrial/Commercial/ Institutional
✓ Toilet or urinal retrofit	✓ Workshops for landscape professionals	✓ Recycling or reuse
✓ Rebate program	✓ Soil moisture sensors	✓ Commercial pre-wash sprayers
✓ Showerhead or faucet replacement	✓ Rain sensors	✓ Showerhead or faucet replacement
✓ Indoor water audit	✓ Irrigation timers	✓ Cooling tower improvements
✓ School outreach	✓ Xeriscaping (low water use landscaping)	✓ Toilet or urinal retrofit
✓ Displays at fairs and events	✓ Demonstration garden	✓ Cooling systems retrofit
✓ Speakers bureau	✓ Turf replacement rebate	✓ Air-cooled refrigeration
✓ Targeted marketing	✓ Landscape ordinances	✓ Water use audits (including irrigation systems)
✓ Advertising (media)	✓ Drip irrigation	✓ Water bill showing consumption history
✓ Conservation rates	✓ Landscape water audit	✓ Using reclaimed water
✓ Customer leak detection education (indoor leak repair)	✓ Irrigating with reclaimed water	
✓ Water bill showing consumption history		

Source: Water Use Efficiency Guidebook, Washington State Department of Health. July 2007.

City of Richmond will cooperate with the region to promote efficient water use measures, and reduce water demand in the future. This will be an effective way to lower the stress on the regions water supply deficit into the future.

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Section 7 Drought Response and Contingency Plans

In accordance with the requirements of 9 VAC 25-780 -120.

Drought response and contingency plans are in effect when the following conditions occur:

- Winter/Spring season including November, March through June; Summer/Fall season including July through October, and
- The natural river flow (NRF) is equal to or less than 1800 cfs (Winter/Spring) or 1300 cfs (Summer/Fall), and
- The total withdrawals (TWDs) are equal to or greater than 90 percent of the available allocation

The various drought response stages are summarized in **Table 7-1**, including Trigger Stage, Watch Stage, Warning Stage, and Emergency Stage. Each Stage becomes effective depending on TWDs as a percent of the allocation allowed and the natural river flow (**Table 6-5**). In accordance with the established MIFs, the NRF for the drought response and contingency plan is the 14-day rolling average NRF (14-D R/A NRF).

Table 7-1
Drought Response Stages and Measures

Drought Response Stage (TWD ≥ 90% MIF Allocation)	Conservation Measures
NORMAL	Basic Measures
TRIGGER	- Monitor TWD - Basic Measures
WATCH STAGE I	- Same as TRIGGER - Notify public of possible water use restrictions
WATCH STAGE II	- Same as TRIGGER - Set date for WARNING stage
WARNING STAGE (VOLUNTARY REDUCTION)	- Same as TRIGGER - Voluntary public water use restrictions
EMERGENCY STAGE (MANDATORY RESTRICTION)	- Same as TRIGGER - Notify public of possible change from voluntary to mandatory water use restrictions - Mandatory public water use restrictions as natural river flow declines

7.1 Drought Trigger Stage

As part of the RMP public water use restriction requirements, the Virginia Department of Game and Inland Fisheries (VDGIF) has suggested that a river flow "trigger" level be established at 100 cfs above the "action" level to initiate preparations for use restrictions. The "trigger" levels have, therefore, been established in **Table 7-2**.

Table 7-2
Action and Trigger Levels of Drought Response and Contingency Plan

Season[1]	Natural River Flow (cfs) [2]	
	Trigger Level	Action Level
Winter/Spring	1,800	**1,700**
Summer/Fall	1,300	**1,200**

(1) Winter/Spring – November, and March through June; Summer/Fall – July through October.

(2) Based on 14-day rolling average.

During the Trigger Stage, the responsible utility or monitoring agency is required to commence daily monitoring of total withdrawals under permit or included in the RMP. If the 14-D R/A NRF is equal to or less than the Trigger Level for 14 consecutive days, a Watch Stage will be initiated.

7.2 Drought Watch Stage

During the Trigger Stage, if the 14-D R/A NRF is equal to or less than the Trigger Level for 14 consecutive days, a Watch Stage I is initiated. In this stage, the agency is required to continue the withdrawal monitoring and to prepare its operations and notify the public for possible voluntary water use reductions.

When the 14-D R/A NRF is less than 1700 cfs (1200cfs)*, a Watch Stage II is in effect. During this stage, the responsible utility or monitoring agency is required to continue the monitoring initiated for the Trigger Stage above. Additionally, the agency is required to set a date for the Warning Stage (Reduction) to go into effect.

If the 14-D R/A NRF is less than 1700 cfs (1200cfs)* for 14 consecutive days, a Warning Stage is initiated (**Table 7-3**).

7.3 Drought Warning Stage

During Watch Stage II if the 14-D R/A NRF is less than 1700 cfs (1200cfs)* for 14 consecutive days, a Warning Stage is initiated. The Warning Stage stays in effect until the 14-D R/A NRF is equal to or greater than 1700 cfs (1200 cfs)* for 14 consecutive days. During the Warning Stage, the responsible utility or monitoring agency is required to continue the monitoring. Additionally, voluntary water use reduction measures summarized in **Table 7-4** are in effect.

7.4 Drought Emergency Stage

If the 14-D R/A NRF is equal to or less than 1250 cfs (750 cfs)*, an Emergency STAGE is in effect (**Table 7-3**). The Emergency Stage stays in effect until the 14-D R/A NRF is greater than 1250 cfs (750cfs)* for 14 consecutive days. During the Emergency Stage, the responsible utility or monitoring agency is required to continue the monitoring. Additionally, the agency is required to prepare its operations and notify the public for possible mandatory water use. When the 14-D R/A NRF is equal to or less than 1250 cfs (750cfs)*for seven consecutive days, the responsible utility or monitoring agency is required to initiate the Restriction water use shown in **Table 7-5**.

Table 7-3
Requirements for Voluntary and Mandatory Public Water Restrictions

Type of Public Use Restriction	Season[1]	Natural River Flow ("action" level, cfs) at Which Restriction Becomes Effective [2]
Warning State (Voluntary)	Winter/Spring	< 1,700
	Summer/Fall	< 1,200
Emergency Stage (Mandatory)	Winter/Spring	≤ 1,250
	Summer/Fall	≤ 750

(1) Winter/Spring – November, and March through June; Summer/Fall – July through October.
(2) Based on 14-day rolling average.

7.5 Local Ordinance and Procedures

Drought response and contingency plans shall include references to local ordinances, if adopted, and procedures for the implementation and enforcement of drought response and contingency plans.

Water conservation measures, including both voluntary and mandatory water conservation measures are included in the Code of Ordinance, City of Richmond, VA, under Chapter 28 (Utilities), Article V. (Water), Division 11 (Water Conservation), which is applicable for enforcing the City's drought responses.

7.6 Emergency Preparedness

The City of Richmond has performed vulnerability analyses for the City and subsequently developed and maintained an Emergency Operations Plan (EOP) to prepare against natural and man-made hazards. In addition to the implementation of the EOP, the City is taking the necessary steps to preserve governmental operations as distinguished by the City of Richmond's Continuity of Operations (COOP) planning, in the event the City experiences a disruptive disaster or emergency.

Table 7-4
REDUCTION Stage Voluntary Water Use Reduction Measures

Category	Water Use Reduction Measures[1] (Voluntary Measures)[2]
1. All Uses	▪ 5 Basic Conservation Measures ▪ Recycling exempted ▪ Education program to encourage use reductions by any means available
2. Fountains	▪ Reduce to 2-days per week except 8 PM thru 10 AM
3. Paved Areas (Streets, Drives, Patios, Walks, Etc.)	▪ Reduce to 2-days per week except for health & safety
4. Swimming Pools	▪ Reduce filling to health & safety needs
5. Vegetable Gardens	▪ Reduce to 2-days per week except 8 PM thru 10 AM ▪ Bucket watering (5 gal max) permitted any time
6. Vehicle Washing (Commercial Businesses Exempt)	▪ Reduce to 2-days per week with hand held hose with positive shut-off nozzle
7. Restaurants	▪ Same as No. 1
8. Public Utilities	▪ Reduce scheduled sewer and hydrant flushing by 50 percent, health & safety needs exempt
9. Established Landscape Watering [3]	▪ Monday - none ▪ Odd - Tues, Thurs, Sat, except 8 PM thru 10 AM ▪ Even - Wed, Fri, Sun, except 8 PM thru 10 AM ▪ Bucket watering (5 gal max) permitted any time
10. New Landscape Watering	▪ Unrestricted for first 10 days, then conform to No. 9
11. Golf Courses (Greens Exempted)	▪ Reduce to 8 PM to 10 AM

(1) Measures in addition to those listed may be imposed on user categories listed and other user categories by action of local government
(2) Request general public, business and public agencies to implement measures listed
(3) Odd-Even designated by last digit of address number

Table 7-5
RESTRICTION Stage Mandatory Water Use Reduction Measures

Category	Water Use Reduction Measures[1] (Mandatory Measures)[2]
12. All Uses	▪ 5 Basic conservation measures ▪ Recycling exempted ▪ Education program to encourage use reductions by any means available
13. Fountains	▪ Prohibited
14. Paved Areas (Streets, rives, Patios, Walks, Etc.)	▪ Prohibited except for health & safety
15. Swimming Pools	▪ Filling prohibited
16. Vegetable Gardens	▪ Restrict to 2-days per week except 8 PM thru 10 AM ▪ Bucket watering (5 gal max) permitted any time
17. Vehicle Washing (Commercial Businesses Exempt)	▪ Prohibited
18. Restaurants	▪ Serve water to customers only on request
19. Public Utilities	▪ Restrict to health and safety needs
20. Established Landscape Watering [3]	▪ Monday, restrict to none ▪ Odd, restrict to Tues, Thurs, Sat, except 8 PM thru 10 AM ▪ Even, restrict to Wed, Fri, Sun except 8 PM thru 10 AM ▪ Bucket watering (5 gal max) permitted any time
21. New Landscape Watering	▪ Unrestricted for first 7 days, then conform to No. 9
22. Golf Courses (Greens Exempted)	▪ Restrict to 6 days per week, 8 PM to 10 AM ▪ Hand held hose (1-inch dia max) permitted 10 AM to 8 PM anytime

(1) Measures in addition to those listed may be imposed on user categories listed and other user categories by action of local government
(2) Noncompliance subject to enforcement action
(3) Odd-Even designated by last digit of address number

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Section 8 Need

In accordance with the requirements of 9 VAC 25-780-130.

8.1 City of Richmond Water Need

The City of Richmond has sufficient capacity at the existing water treatment plant to meet projected average day demands beyond 2070 and projected peak day demands through 2050 as shown in **Table 8-1** and **Figure 8-1**. In addition, the James River has adequate safe yield to support the City's required raw water withdrawals beyond 2070 as shown in **Table 8-1** and **Figure 8-2**.

Table 8-1
Finished Water and Raw Water Withdrawal Demand Projections (MGD)

	Year					
	2020	2030	2040	2050	2060	2070
WTP Output, Average Day (MGD)	60.89	67.80	73.90	81.61	89.49	97.55
WTP Output, Peak Day (MGD)	125.36	127.65	128.93	132.23	135.75	139.50
WTP Capacity (MGD)	132					
Raw Water Withdrawal, Average Day (MGD)	64.89	72.26	78.76	86.98	95.38	103.96
Raw Water Withdrawal, Peak Day (MGD)	129.36	132.11	133.79	137.60	141.64	145.92
James River Safe Yield (MGD)	381					
Available Flow with Max Upstream Withdrawals	175.8					

Figure 8-1
Finished Water Demand and WTP Capacity (MGD)

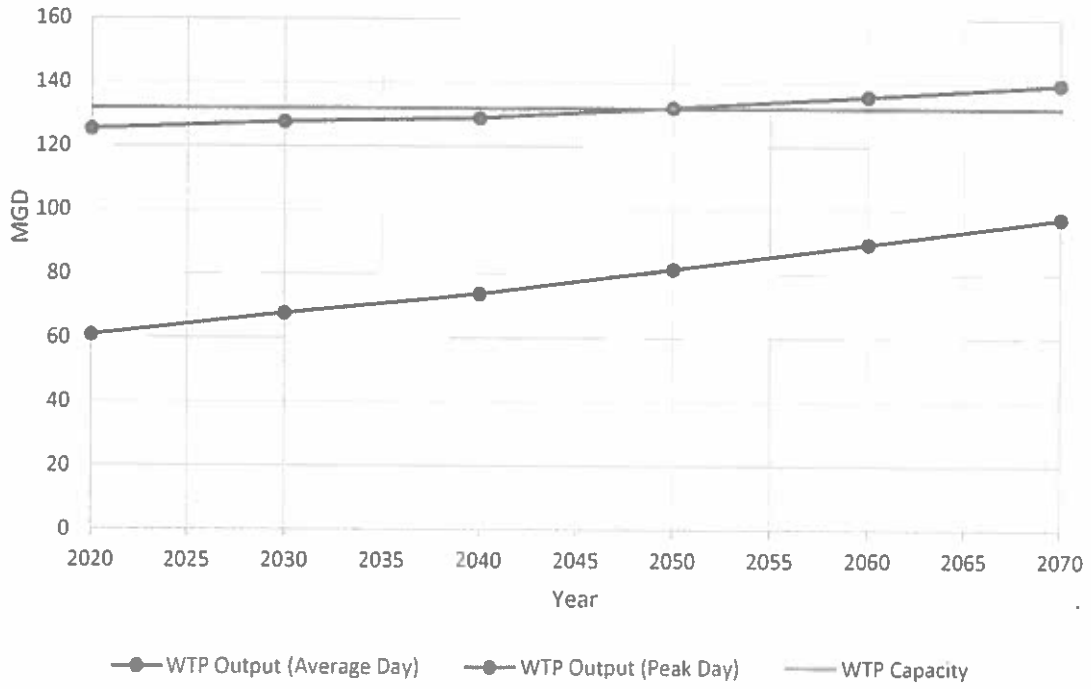
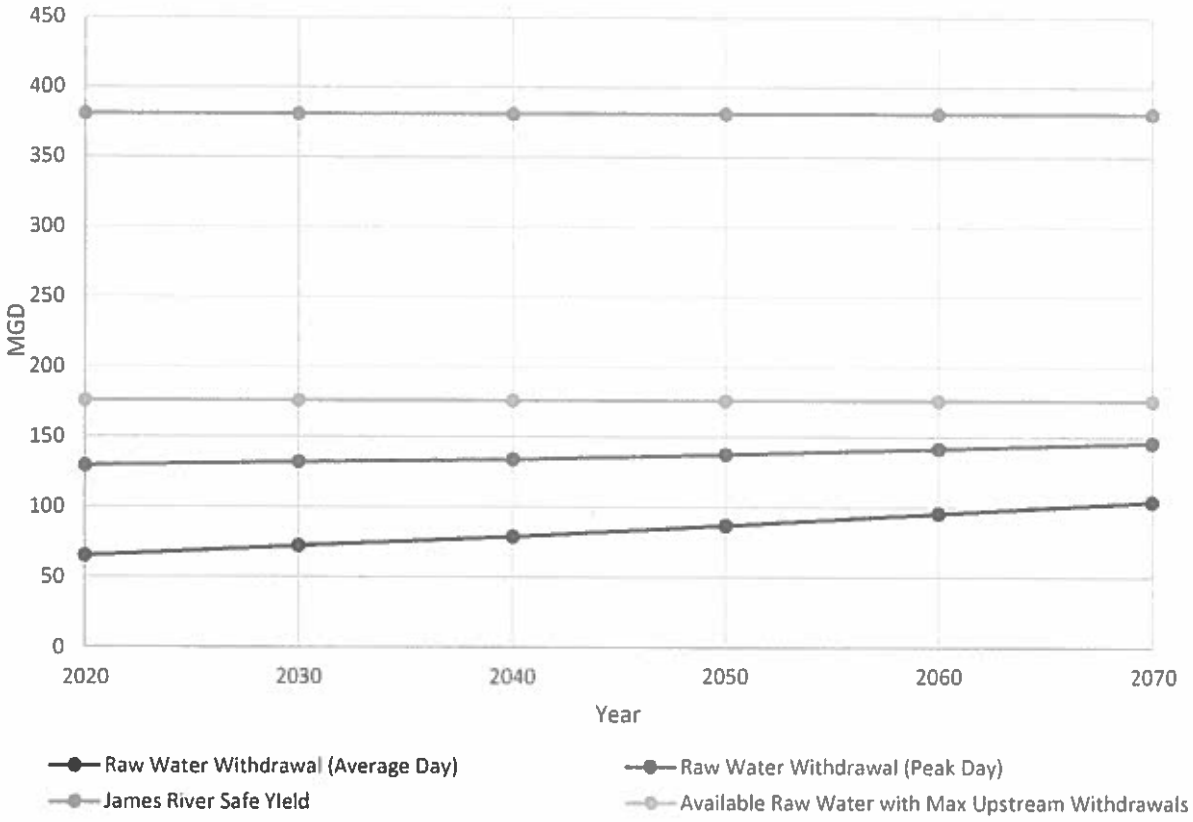


Figure 8-2
Raw Water Withdrawal Demand and James River Safe Yield (MGD)



The City continually reviews current and future water demands to ensure they can satisfactorily meet the requirements of their water users. As the owner of a regional water treatment plant that provides finished water to the surrounding Counties, the City recognizes that the capacity of finished water supply is a regional concern. The *City of Richmond, Regional Water Supply Alternatives Report (Draft – January 28, 2008)*, identified three regional water supply alternatives to add new water treatment and transmission if necessary to meet future water demands.

The City will continue to review and revise treatment capacity alternatives as needed in addition to continuously assessing options on how to improve existing drought response and water conservation plans.

Appendix A

Adopted Program Documents, Resolution, & Public Hearing

A Copy of Adopted Program Documents Including Local Plans or Ordinances or Amendments

A Resolution Approving the Plan from Local Government

A Record of the Local Public Hearing

(The City of has no record of written comments. See page 11 of October 13, 2008 Council Meeting minutes.)

INTRODUCED: SEP 2 2 2008

A RESOLUTION No. 2008-R 144 - 151

To adopt and approve a water supply plan for the City entitled "Water Supply Plan," prepared by the Department of Public Utilities and dated August 29, 2008.

Patron – Mayor Wilder

Approved as to form and legality
by the City Attorney

PUBLIC HEARING: OCT 1 3 2008 AT 6 P.M.

WHEREAS, the State Water Control Board, through 9 VAC 25-780-50, requires the City to adopt a local program as defined in 9 VAC 25-780-30; and

WHEREAS, 9 VAC 25-780-50(C)(9) requires that the City Council adopt a resolution to approve the water supply plan for the City; and

WHEREAS, 9 VAC 25-780-50(B)(1) requires the City to submit its local program, including the water supply plan and the Council's resolution approving such plan, to the State Water Control Board by no later than November 2, 2008; and

WHEREAS, the Department of Public Utilities has prepared a local program in accordance with the requirements of 9 VAC 25-780-50 and a water supply plan dated August 29, 2008; and

AYES: 8 NOES: 0 ABSTAIN: _____

ADOPTED: OCT 1 3 2008 REJECTED: _____ STRICKEN: _____

WHEREAS, the Council believes that it is in the best interests of the citizens of the City of Richmond that the Council approve the water supply plan prepared by the Department of Public Works and dated August 29, 2008;

NOW, THEREFORE,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF RICHMOND:

That the Council adopts and approves the water supply plan for the City entitled "Water Supply Plan," prepared by the Department of Public Utilities and dated August 29, 2008, a copy of which is attached to and incorporated into this resolution.

BE IT FURTHER RESOLVED:

That the City Clerk is hereby directed to forward a certified copy of this resolution and a copy of the minutes of the meeting during which the Council held a public hearing on and adopted this resolution to the Acting Chief Administrative Officer for submission to the State Water Control Board in accordance with 9 VAC 25-780-50.

A TRUE COPY:
TESTE:

Lyon Brown Ali
City Clerk

Office of the City Clerk
ORDINANCE AND RESOLUTION TRACKING SYSTEM

Printed: 10/24/20083:39:12 PM [Print] [Close Print-Friendly Window]

ORDINANCE 2008-R144-151

Tracking Details

Patron/s: MAYOR WILDER
Keywords: WATER, WATER SUPPLY PLAN, DPU
Status: APPROVED
Standing Committee: 2007-2008 Governmental Operations

To adopt and approve a water supply plan for the City entitled "Water Supply Plan," prepared by the Department of Public Utilities and dated August 29, 2008. (Governmental Operations – September 25, 2008)

Introduced: 9/22/2008
Continued Date:
Amended Date:
Public Hearing: 10/13/2008

Consent Agenda? YES
Expedited? NO
Advertised? NO

Action Date: 10/13/2008 **Action:** ADOPTED **Vote:** 8------0---------0---------1---------0
Aye---No---Abs---Exc

Voting History

Action	Date	Dist. 1	Dist. 2	Dist. 3	Dist. 4	Dist. 5	Dist. 6	Dist. 7	Dist. 8	Dist. 9
Introduced	9/22/2008									
Final Vote On	10/13/2008	Yes	Yes	Yes	Yes	Yes	Yes	Absent	Yes	Yes

Richmond City Council

INFORMAL SESSION
THE COUNCIL CHAMBER
CITY HALL – SECOND FLOOR

ORDER OF BUSINESS

Monday, October 13, 2008
3:00 P.M.
DRAFT

I. DOCKET REVIEW

II. COUNCIL ITEMS

- **Legislative Agenda Update**
  Daisy E. Weaver, Council Chief of Staff

III. COUNCIL STANDING COMMITTEE REPORTS AND RECOMMENDATIONS

IV. CITY ADMINISTRATION REPORTS

V. OTHER BUSINESS

*NOTE: All persons scheduled to brief Council during the meeting are required to bring a minimum of **twenty (20)** copies of all handouts.

RICHMOND CITY COUNCIL

The Honorable:
William J. Pantele
President
2nd District

Rev. Delores L. McQuinn
Vice-President
7th District

Bruce W. Tyler
1st District

Chris A. Hilbert
3rd District

Kathy C. Graziano
4th District

E. Martin Jewell
5th District

Ellen F. Robertson
6th District

Reva M. Trammell
8th District

Douglas G. Conner, Jr.
9th District

Daisy L. Weaver
Council Chief of Staff

Lou B. Ali
City Clerk

Norman B. Sales
City Attorney

AGENDA

MONDAY, OCTOBER 13, 2008 6:00 P.M.

ORDER OF BUSINESS

Invocation

Pledge of Allegiance

Roll Call

Chamber Emergency Evacuation Plan Announcement

Action on Appointments

PUBLIC RECOGNITION PERIOD

Awards and Presentations
(Applause permitted during this portion of the meeting only)

Citizen Comment

BUSINESS MEETING

Approval of Minutes of Previous Meeting(s)

Agenda Review and Amendments

Reports/Announcements
- Members of Council
- The Mayor
- The President
- The Chief Administrative Officer

Action Items

- Consent Agenda
- Regular Agenda and Motions

Introduction of New Ordinances and Resolutions

Adjournment

The Public is invited and encouraged to attend and participate in the City Council meetings which are held on the **second and fourth Monday of each month.** A summary of the guidelines for citizen participation is listed on the reverse side of this page.

THE COUNCIL OF THE CITY OF RICHMOND
WELCOMES YOUR INPUT AND PARTICIPATION . . .

The City Council is the City of Richmond's local legislative body and is composed of one Council representative elected from each of nine districts. Council members are elected to serve a two year term of office. The Council elects one of its own to serve as the President and presiding officer for a two year term.

Time and Place of Meetings

The City Council meets in **informal work session at 3:00 PM** and in **formal session at 6:00 PM**, on the second and fourth Monday of each month, in the City Hall 2nd Floor Council Chamber, located at 900 East Broad Street. **All meetings of the Council are open to the public.**

Consent Agenda

Items listed on the Consent Agenda are considered routine and non-controversial. The consent agenda provides a method for the expeditious handling of items that do not require discussion and will be approved unanimously by a single roll-call vote of Council. **The public may speak to any item on the Consent Agenda when the public comment period is announced by the President. Any person speaking to one or more items on the Consent Agenda will be allotted a total of three minutes.**

Citizen Comment Period

The Citizen Comment Period is an opportunity for citizens to address Council concerning the services, policies, and affairs of the City and to discuss issues not on the agenda for the business meeting. However, you must schedule your appearance with the Office of the City Clerk no later than 12:00 noon on the date of the meeting. **Each speaker will be allotted three (3) minutes to make their comments.**

An individual may appear before Council during the Citizen Comment Period no more than four (4) times per year and no more than once within a three-month period.

Guidelines for Citizen Participation *

The maximum time allotted to persons speaking to any matter under consideration by the Council **shall not exceed thirty (30) minutes for the proponents and thirty minutes (30) for the opposition.**

Speakers should state their **full legal name**, any organization(s) they represent and any economic or professional relationship(s) that would benefit by the adoption of the paper(s) they are addressing.

Speakers will not be permitted to address or question the Chief Administrative Officer, the City Attorney, the City Clerk, or any staff member directly.

Questions should be directed to the President, who may at his discretion, solicit a response.

Applause is permitted during the Awards and Presentations Period only.

Persons speaking to Agenda items shall be limited to **three (3) minutes**; however, no individual from the public may speak for more than **ten (10) minutes total during the business meeting.**

Citizens may express their views in writing in lieu of an oral presentation.

Citizens with disabilities who need assistance are encouraged to contact the City Clerk's Office at least ten days in advance, at 804-646-7955. Reasonable accommodations will be made.

* The full text of the **Council's Rules of Procedure** is available on the City's website at www.richmondgov.com or in the Office of the City Clerk located in City Hall, 900 East Broad Street, Suite 200.

THE CONSENT AGENDA

Items listed on the Consent Agenda are considered routine and non-controversial. The consent agenda provides a method for the expeditious handling of items that do not require discussion and will be approved unanimously by a single roll-call vote of the Council. **However, the public may speak to any item, on the Consent Agenda when the public comment period is announced by the President.**

1. **Ord. No. 2008-159** (Patron: President Pantele, By Request) - To authorize the special use of *** 1020 West Franklin Street for the purpose of permitting a multi-family dwelling consisting of no more than four units in the main building and one unit in the second story of the carriage house ***.

2. **Ord. No. 2008-194** (Patron: President Pantele) - To approve the First Amended Articles of Incorporation of the Central Virginia Waste Management Authority and to *** file the same with the State Corporation Commission.

3. **Ord. No. 2008-211** (Patron: Ms. Robertson) - To amend *** the *** Code *** concerning the response required for audit findings.

4. **Ord. No. 2008-212** (Patron: President Pantele, By Request) - To amend and reordain Ord. No. 83-198-171, *** for the purpose of authorizing the special use of the property for an art gallery, offices, or a personal service business.

5. **Ord. No. 2008-230** (Patron: Mayor Wilder, By Request) - To close, to public travel only, the alley in the block bounded by W. Main St., S. Adams St., W. Cary St., and S. Jefferson St. ***.

6. **Ord. No. 2008-231** (Patron: Mayor Wilder, By Request) - To close, to public use and travel, a portion of the north end of Myers Street, north of Leigh Street ***.

7. **Ord. No. 2008-232** (Patron: President Pantele, By Request) - To close, to public use and travel, a portion of Old Midlothian Turnpike and of an irregular strip on the south side of Midlothian Turnpike and east side of Division Street ***.

*** Denotes omission. The full text of all ordinances and resolutions are available on the City's website at www.richmondgov.com, by clicking on the "City Clerk link", then on Ordinances and Resolutions. Copies are also available for review in the Office of the City Clerk, City Hall, 900 E. Broad Street, Suite 200 and in the City's Main Library, at 101 E. Franklin Street.

8. **Ord. No. 2008-233** (Patron: Ms. Graziano, By Request) - To close, to public use and travel, a portion of Railroad Avenue near the intersection of Semmes Avenue and Cowardin Avenue ***.

9. **Ord. No. 2008-234** (Patron: Mayor Wilder, By Request) - To authorize the special use of *** 101 Tempsford Lane for the purpose of construction and occupancy of up to 10 multi-family dwellings ***.

10. **Ord. No. 2008-235** (Patron: President Pantele, By Request) - To authorize the special use of *** 107 South Colonial Avenue for the purpose of permitting a new multi-family dwelling consisting of no more than four units ***.

11. **Ord. No. 2008-236** (Patron: President Pantele, By Request) - To authorize the special use of *** 6801 Patterson Avenue for the purpose of a private school with a same sex dormitory ***.

12. **Ord. No. 2008-237** (Patron: President Pantele, By Request) - To authorize the special use of *** 1100, 1102 and 1114 Hull Street for the purpose of waiving certain height and parking requirements to permit the construction of a mixed-use building with up to fifty-eight (58) dwelling units and accessory parking ***.

13. **Ord. No. 2008-245** (Patron: Mayor Wilder, By Request) - To declare surplus and direct the sale of certain City-owned real estate located along Semmes Avenue *** to Trustworthy Real Estate, L.L.C. for $50,000.

14. **Res. No. 2008-R123** (Patron: All Members of Council) - To appoint James H. Starkey, III as a member of the Board of Directors of Lewis Ginter Botanical Garden, Inc. ***.

15. **Res. No. 2008-R125** (Patron: All Members of Council) - To appoint Helen R. Pinckney as a member of the Board of Directors of Lewis Ginter Botanical Garden, Inc. ***.

16. **Res. No. 2008-R137** (Patron: All Members of Council) - To appoint Dexter C. White as a member of the Central Virginia Waste Management Authority ***.

17. **Res. No. 2008-R138** (Patron: All Members of Council) - To appoint Peter Blake as a member of the Richmond Public Library Board ***.

*** Denotes omission. The full text of all ordinances and resolutions are available on the City's website at www.richmondgov.com, by clicking on the "City Clerk link", then on Ordinances and Resolutions. Copies are also available for review in the Office of the City Clerk, City Hall, 900 E. Broad Street, Suite 200 and in the City's Main Library, at 101 E. Franklin Street.

18. **Res. No. 2008-R139** (Patron: All Members of Council) - To appoint Steven J. Danish as a member of the Richmond Behavioral Health Authority ***.

19. **Res. No. 2008-R140** (Patron: All Members of Council) - To appoint Umar Abdul-Mateen Kenyatta as a member of the Sister Cities Commission ***.

20. **Res. No. 2008-R141** (Patron: All Members of Council) - To appoint My Lan Tran as a member of the Sister Cities Commission ***.

21. **Res. No. 2008-R142** (Patron: All Members of Council) - To appoint David L. Herring as a member of the Slave Trail Commission ***.

22. **Res. No. 2008-R143** (Patron: All Members of Council) - To reappoint Robert E. Comet, Jr. as a member of the Local Community College Board for Region 19, J. Sargeant Reynolds Community College ***.

23. **Res. No. 2008-R144** (Patron: Mayor Wilder) - To adopt and approve a water supply plan for the City ***.

THE REGULAR AGENDA

24. **Ord. No. 2008-208** (Patron: Mayor Wilder) - To approve an amendment to the Master Plan for the City of Richmond, *** to adopt the Downtown Master Plan ***.

* * *

City Council's October 2008 Meeting Schedule is attached.

*** Denotes omission. The full text of all ordinances and resolutions are available on the City's website at www.richmondgov.com, by clicking on the "City Clerk link", then on Ordinances and Resolutions. Copies are also available for review in the Office of the City Clerk, City Hall, 900 E. Broad Street, Suite 200 and in the City's Main Library, at 101 E. Franklin Street.

RICHMOND CITY COUNCIL

Meeting Schedule – OCTOBER 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2 4:00 PM Slave Trail Commission Meeting East District Initiative Center 701 N. 25th St. Vice-President McQuinn, Chair	3	4
5	6 5:00 PM Organizational Development Standing Committee (Council Chambers) President Pantele, Co-Chair Vice-President McQuinn, Co-Chair 6:30 PM City Council Special Meeting (Council Chambers)	7	8	9	10	11
12	13 3:00 PM Informal Council Meeting (Council Chambers) 6:00 PM Formal Council Meeting (Council Chambers)	14 3:00 PM (Legislation will be heard at 4:00 PM) Land Use, Housing and Transportation Standing Committee (Council Chambers) Councilwoman Graziano, Chair	15 5:00 PM Health, Human Services and Education Standing Committee (Council Chambers) Councilman Hilbert, Chair	16 4:00 PM Finance Standing Committee (Council Chambers) Councilwoman Robertson, Chair	17	18
19	20 5:00 PM Public Safety Standing Committee (Council Chambers) Vice-President McQuinn, Chair	21	22	23 4:00 PM Governmental Operations Standing Committee Large Conference Room City Hall, 2nd Floor Councilman Tyler, Chair	24	25
26	27 3:00 PM Informal Council Meeting (Council Chambers) 6:00 PM Formal Council Meeting (Council Chambers)	28	29	30	31	

For additional City of Richmond events, visit http://www.ci.richmond.va.us/applications/citycalendar/frmEventsMCalendar.asp
For additional information, please call the City Clerk's Office at (804) 646-7955

Sept. 9, 2008

MONDAY, October 6, 2008
5th Floor Conference Room
City Hall
1:30 P. M.

News Agenda

CITY OF RICHMOND PLANNING COMMISSION

1. Call to Order

2. Roll Call

3. Approval of Minutes:
   - Regular meeting of September 15, 2008

4. Chairman's Comments

5. Director/Secretary's Report

6. Consideration of Continuances and Deletions from Agenda

CONSENT AGENDA

The CONSENT AGENDA consists of items that appear relatively non-controversial in nature and for which there was no known opposition at the time this agenda was set. The Consent Agenda items will be considered by the Commission as a group, and there will be a single combined staff presentation and a single combined public hearing held for all items listed on the Consent Agenda.

7. Preliminary Subdivision Plat Approval: The Battery at Old Gun (4 lots)

8. Ord. No. 2008-212: To amend and reordain Ord. No. 83-198-171, adopted Sept. 12, 1983, as amended by Ord Nos. 85-139-132, adopted Jun 10, 1985, and 88-247-223, adopted Oct. 10, 1988, which authorized the use of the property known as 5610 Grove Avenue for educational consultant's and child psychologist's offices, for the purpose of authorizing the special use of the property for an art gallery, offices, or a personal service business.

9. Ord. No. 2008-230: To close, to public travel only, the alley in the block bounded by W. Main St., S. Adams St., W. Cary St., and S. Jefferson St., consisting of 5,028 ± square feet, upon certain terms and conditions.

10. Ord. No. 2008-231: To close, to public use and travel, a portion of the north end of Myers Street, north of Leigh Street, consisting of 4,613 + square feet, upon certain terms and conditions.

11. Ord. No. 2008-232: To close, to public use and travel, a portion of Old Midlothian Turnpike and of an irregular strip on the south side of Midlothian Turnpike and east side of Division Street, consisting of 22,239 + square feet, upon certain terms and conditions.

12. Ord. No. 2008-233: To close, to public use and travel, a portion of Railroad Avenue near the intersection of Semmes Avenue and Cowardin Avenue, consisting of 13,677 + square feet, upon certain terms and conditions.

13. Ord. No. 2008-237: To authorize the special use of the properties known as 1100, 1102 and 1114 Hull Street for the purpose of waiving certain height and parking requirements to permit the construction of a mixed-use building with up to fifty-eight (58) dwelling units and accessory parking, upon certain terms and conditions.

14. Ord. No. 2008-245: To declare surplus and direct the sale of certain City-owned real estate located along Semmes Avenue and shown on DPW Drawing. No. N-28235 to Trustworthy Real Estate, L.L.C. for $50,000.

15. Location Character and Extent: Fox Elementary ADA improvements

REGULAR AGENDA

16. Res. No. 2008-R144: To adopt and approve a water supply plan for the City entitled "Water Supply Plan," prepared by the Department of Public Utilities and dated August 29, 2008.

17. Ord. No. 2008-199: To approve and adopt a Spot Blight Abatement Plan adopted pursuant to Va. Code § 36-49.1:1 for the structure located at 816 Riverside Park.

AND

18. Ord. No. 2008-200: To declare that a public necessity exists and to authorize the acquisition of the property known as 816 Riverside Park for the public purpose of implementing a Spot Blight Abatement Plan adopted in accordance with Va. Code § 36-49.1:1 for such property.

19. Ord. No. 2008-201: To approve and adopt a Spot Blight Abatement Plan adopted pursuant to Va. Code § 36-49.1:1 for the structure located at 401 North 27th Street.

AND

20. Ord. No. 2008-202: To declare that a public necessity exists and to authorize the acquisition of the property known as 401 North 27th Street for the public purpose of implementing a Spot Blight Abatement Plan adopted in accordance with Va. Code § 36-49.1:1 for such property.

21. Ord. No. 2008-203: To approve and adopt a Spot Blight Abatement Plan adopted pursuant to Va. Code § 36-49.1:1 for the structure located at 133 West Jackson Street.

AND

22. Ord. No. 2008-204: To declare that a public necessity exists and to authorize the acquisition of the property known as 133 West Jackson Street for the public purpose of implementing a Spot Blight Abatement Plan adopted in accordance with Va. Code § 36-49.1:1 for such property.

23. Ord. No. 2008-234: To authorize the special use of the property known as 101 Tempsford Lane for the purpose of construction and occupancy of up to 10 multi-family dwellings, upon certain terms and conditions.

24. Ord. No. 2008-235: To authorize the special use of the property known as 107 South Colonial Street for the purpose of permitting a new multi-family dwelling consisting of no more than four units, upon certain terms and conditions.

25. Ord. No. 2008-236: To authorize the special use of the property known as 6801 Patterson Avenue for the purpose of a private school with a same sex dormitory, upon certain terms and conditions.

New Business/Upcoming Items

Adjournment

All persons attending the meeting are requested to register on the attendance sheets that have been placed on the chairs and are also available at the table by the conference room entrance. Once you have completed an attendance sheet, it should be provided to the Commission staff.

Richmond City Council
Governmental Operations Committee
Meeting Agenda

4:00 P.M.
Thursday, September 25, 2008
Large Conference Room - 2nd Floor, City Hall

Committee Members: Councilmember Tyler – Chair
Councilmember Jewell – Vice-Chair
Councilmember Conner – Member
Councilmember Robertson – Alternate

Call To Order

Public Comment Period

Approval of Minutes

Thursday, August 7, 2008
Wednesday, September 10, 2008
Thursday, September 11, 2008
Friday, September 19, 2008

Presentations

Umesh Dalal, City Auditor

- Service Efforts and Accomplishments Survey
- Fleet Follow-up Audit Report

Standing Committee Staff Report

Papers for Consideration

1. Ord. No. 2008-194 (Patron: President Pantele) - To approve the First Amended Articles of Incorporation of the Central Virginia Waste Management Authority and to authorize the President of the Council to execute the First Amended Articles of Incorporation for and on behalf of the City Council and file the same with the State Corporation Commission.

2. Res. No. 2008-R144 (Patron: Mayor Wilder) – To adopt and approve a water supply plan for the City entitled "Water Supply Plan," prepared by the Department of Public Utilities and dated August 29, 2008.

Discussion Item(s)

eVA Procurement System

RPS/City Joint Health Care Study

Audit Consolidation Feasibility Study

Charter Review Commission

Council General Assembly Legislative Agenda – Ron Jordan, Advantus Strategies

Boards Vacancies

Richmond Public Library Board
Shennen L. Dean – (Appointment)

Richmond Retirement System Board of Trustees (Classified Service)
Karla E. Peters – (Appointment)

Audit Committee
Joseph Jenkins – (Reappointment)

Next Meeting: October 23, 2008 - 4:00 p.m. Large Conference Room, 2nd Floor City Hall
Staff Contact: Eden Dixon 646-5011 or eden.dixon@richmondgov.com

RICHMOND CITY COUNCIL
STANDING COMMITTEE MINUTES

Committee:	**Governmental Operations**
Meeting Date:	**Thursday, August 7, 2008 @ 4:00 p.m.**
Location:	**Large Conference Room 2nd Floor, City Hall**

Chairman: Bruce Tyler

Council Members and Staff in Attendance:

Vice-Chair Marty Jewell
Committee Member Doug Conner
Committee Alternate Ellen Robertson
Councilwoman Kathy Graziano
Daisy Weaver, Council Chief of Staff
Lou Ali, City Clerk
Valerie Salaam, Council Policy Analyst
Ralph Harris, Council Fiscal Analyst
Anthony Dale, Council Budget Analyst
Joyce Davis, Council Policy Analyst
Felicia Craighead, Deputy City Clerk
Eden Dixon, Assistant City Clerk

Call To Order

Chairman Tyler called the meeting to order at 4:05 p.m.

Public Comment Period

Silver Persinger addressed the Committee to:

- Request that the Committee meeting time be moved to 6:00 p.m. to allow more citizen participation.
- Express his dissatisfaction with the Richmond Times Dispatch report (i.e. lack of more information) regarding the resignation of the Chief Administrative Officer, Sheila Hill-Christian.
- Inquire as to whether the Council will take action regarding discrepancies noted on Mayor Wilder's Statement of Economic Interest.

Approval of Minutes

The minutes of the July 24, 2008 meeting were approved. (Vote 2/0 – Mr. Jewell had not yet arrived.)

Presentation(s)

<u>eVA (Virginia web-based purchasing system) Status Update</u>

Rita Henderson, Director of the Office of Minority Business Development, presented information regarding minority business participation rates and the potential negative impact the eVA system will have on minority firms in the City.

A copy of the presentation is filed with these minutes.

Eric Mens, Director of Procurement Services, presented an update on how Procurement plans to incorporate the use of eVA into the Richmond Supply Schedule.

A copy of the presentation is filed with these minutes.

Standing Committee Staff Report

Valerie Salaam, Council Policy Analyst, presented a staff report that included a review of follow-up items including the lack of sufficient election officers for the November election,

Council's legislative schedule, the Committee's Work Plan and the consolidation study of City and Richmond Public Schools Audit Departments.

A copy of the report is filed with these minutes.

Papers for Consideration

The following papers were forwarded to Council with the recommendation to APPROVE: (Vote 3/0)

1. Ord. No. 2008-190 (Patron: President Pantele) - To amend City Code § 2-836, concerning the eligibility of members of boards, commissions and committees to succeed themselves and terms of such members, to provide that members of the Monroe Park Advisory Committee may serve three successive full terms.

   Support
   Turk Sties, member of the Monroe Park Advisory Committee
   Charles Howell

2. Ord. No. 2008-191 (Patron: Mayor Wilder, By Request) - To authorize the Chief Administrative Officer and the Deputy Chief Administrative Officer for Operations to execute a natural gas supply prepayment purchase agreement providing for the purchase by the City from the Municipal Gas Authority of Georgia of natural gas for a term of approximately 20 years.

   Wayne Lassiter, Utilities Comptroller, Department of Public Utilities, introduced the paper.

Discussion Item(s)

Charter Commission
The Committee discussed the selection criteria for members of the Charter Commission.

Legislation
Ron Jordan, Advantus Strategies, discussed with the Committee the results of the Council's 2008 Legislative Priorities. Mr. Jordan recommended that Council set their 2009 Legislative Priorities by the middle of November.

Follow-Up Items

Adjournment

There being no further business, the meeting adjourned at 6:50 p.m.

Next Meeting: September 25, 2008 @ 4:00 p.m. – Large Conference Room, 2nd Floor City Hall
Staff Contact: Eden Dixon 646-7955 or eden.dixon@richmondgov.com

The Council of the City of Richmond
Governmental Operations Standing Committee
September 10, 2008

A Special Meeting of the Governmental Operations Standing Committee of the City of Richmond, Virginia convened on Wednesday, September 10, 2008 in the Large Conference room located on the Second Floor of City Hall.

Councilmembers Present

Chairman Bruce Tyler
Vice-Chair Marty Jewell
Committee Member Doug Conner
Councilwoman Kathy Graziano

Others Present

Daisy Weaver, Council Chief of Staff
Lou Ali, City Clerk

Chairman Bruce Tyler called the meeting to order at 4:30 p.m. and presided.

Closed Session

Closed Session Motion

Councilman Doug Conner moved that the Governmental Operations Standing Committee of the City Council go into Closed Session pursuant to Section 2,2-3711(A)(1) of the Virginia Freedom of Information Act to interview prospective candidates for appointment to the City Charter Review Commission.

The Motion was seconded and adopted.

CERTIFICATION OF CLOSED MEETING
September 10, 2008

WHEREAS, the Council has convened in closed meeting on this date pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

WHEREAS, Section 2.2-3712 (D) of the Code of Virginia requires a certification by this Committee that such closed meeting was conducted in conformity with Virginia law; NOW, THEREFORE,

BE IT RESOLVED:

That the Council hereby certifies that to the best of each member's knowledge (i) only public matters lawfully exempt from open meeting requirements by Virginia law were discussed in the closed meeting to which this certifying resolution applies; and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the Council.

WITNESS the following vote of Council members, as recorded by Daisy Weaver, Council Chief of Staff:

The Council of the City of Richmond
Governmental Operations Standing Committee
September 10, 2008

CERTIFYING:

Mr. Tyler
Ms. Graziano
Mr. Jewell
Mr. Conner

DECLINING TO CERTIFY:

Adjournment

There being no further business, the meeting adjourned at 6:48 p.m.

The Council of the City of Richmond
Governmental Operations Standing Committee
September 11, 2008

A Special Meeting of the Governmental Operations Standing Committee of the City of Richmond, Virginia convened on Thursday, September 11, 2008 in the Large Conference room located on the Second Floor of City Hall.

Councilmembers Present

Chairman Bruce Tyler
Vice-Chair Marty Jewell
Committee Member Doug Conner
Councilwoman Kathy Graziano

Others Present

Daisy Weaver, Council Chief of Staff
Felicia Craighead, Deputy City Clerk

Chairman Bruce Tyler called the meeting to order at 4:33 p.m. and presided.

Closed Session

Closed Session Motion

Councilman Doug Conner moved that the Governmental Operations Standing Committee of the City Council go into Closed Session pursuant to Section 2,2-3711(A)(1) of the Virginia Freedom of Information Act to interview prospective candidates for appointment to the City Charter Review Commission.

The Motion was seconded and adopted.

CERTIFICATION OF CLOSED MEETING
September 11, 2008

WHEREAS, the Council has convened in closed meeting on this date pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

WHEREAS, Section 2.2-3712 (D) of the Code of Virginia requires a certification by this Committee that such closed meeting was conducted in conformity with Virginia law; NOW, THEREFORE,

BE IT RESOLVED:

That the Council hereby certifies that to the best of each member's knowledge (i) only public matters lawfully exempt from open meeting requirements by Virginia law were discussed in the closed meeting to which this certifying resolution applies; and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the Council.

WITNESS the following vote of Council members, as recorded by Daisy Weaver, Council Chief of Staff:

The Council of the City of Richmond
Governmental Operations Standing Committee
September 11, 2008

CERTIFYING:

Mr. Tyler
Ms. Graziano
Mr. Jewell
Mr. Conner

DECLINING TO CERTIFY:

Adjournment

There being no further business, the meeting adjourned at 6:20 p.m.

The Council of the City of Richmond
Governmental Operations Standing Committee
September 19, 2008

A Special Meeting of the Governmental Operations Standing Committee of the City of Richmond, Virginia convened on Wednesday, September 19, 2008 in the Large Conference room located on the Second Floor of City Hall.

Councilmembers Present

Chairman Bruce Tyler
Vice-Chair Marty Jewell
Committee Member Doug Conner

Others Present

Norman Sales, City Attorney
Daisy Weaver, Council Chief of Staff
Lou Ali, City Clerk
Faye Smith, Senior Assistant City Clerk
Valerie Salaam, Council Policy Analyst

Chairman Bruce Tyler called the meeting to order at 12:15 p.m. and presided.

Closed Session

Closed Session Motion

Councilman Doug Conner moved that the Governmental Operations Standing Committee of the City Council go into Closed Session pursuant to Section 2.2-3711(A)(1) of the Virginia Freedom of Information Act to discuss prospective candidates for appointment to the City Charter Review Commission.

The Motion was seconded and adopted.

Will Jones, reporter for the Richmond Times Dispatch objected to the closed session and stated that the reason for closure is not justified by any closed meeting exception. City Attorney Norman Sales clarified the justification and added that he had contacted the Freedom of Information Advisory Council about the closed session. The Advisory Council rendered an informal opinion and noted that the meeting could be properly closed.

CERTIFICATION OF CLOSED MEETING
September 19, 2008

WHEREAS, the Council has convened in closed meeting on this date pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

WHEREAS, Section 2.2-3712 (D) of the Code of Virginia requires a certification by this Committee that such closed meeting was conducted in conformity with Virginia law; NOW, THEREFORE,

BE IT RESOLVED:

The Council of the City of Richmond
Governmental Operations Standing Committee
September 19, 2008

That the Council hereby certifies that to the best of each member's knowledge (i) only public matters lawfully exempt from open meeting requirements by Virginia law were discussed in the closed meeting to which this certifying resolution applies; and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the Council.

WITNESS the following vote of Council members, as recorded by Daisy Weaver, Council Chief of Staff:

CERTIFYING:	DECLINING TO CERTIFY:
Mr. Tyler	
Mr. Jewell	
Mr. Conner	

In addition to the Council members, the following persons were also in attendance during the closed session:

Daisy Weaver, Council Chief of Staff
Valerie Salaam, Council Policy Analyst
Jennifer Walle, Council Liaison, District 1
Sandra Robinson, Chief of Staff, Mayor's Office

Adjournment

There being no further business, the meeting adjourned at 12:40 p.m.

CITY OF RICHMOND
INTRACITY CORRESPONDENCE

O&R REQUEST

DATE: September 8, 2008 **EDITION:** 1

TO: The Honorable Members of City Council

THROUGH: L. Douglas Wilder, Mayor

THROUGH: Christopher L. Beschler, Deputy Chief Administrative Officer

FROM: Robert C. Steidel, Deputy Director Department of Public Utilities

RE: Resolution to Approve the City of Richmond Water Supply Plan in Accordance with State Water Control Board Regulation, 9 VAC 25-780, Local and Regional Water Supply Planning

ORD. OR RES. No. _____

PURPOSE: Request the City Council accept and approve the Water Supply Plan dated August 29 2008, a copy of which is attached to this request, prepared by the City Department of Public Utilities and reviewed by the City Department of Community Development. The Water Supply Plan was developed as required by State Water Control Board Regulation, 9 VAC 25-780, Local and Regional Water Supply Planning.

REASON: The State Water Control Board Regulation, 9 VAC 25-780 Local and Regional Water Supply Planning, purpose is to establish a comprehensive water supply planning process for the development of local, regional and state water supply plans. This process shall be designed to (i) ensure that adequate and safe drinking water is available to all citizens of the Commonwealth; (ii) encourage, promote, and protect all other beneficial uses of the Commonwealth's water resources; and (iii) encourage, promote, and develop incentives for alternative water sources, including but not limited to desalinization. The regulation establishes the required planning process and criteria that local governments shall use in the development of local and regional plans. 9 VAC 25-780-50 **Preparation and submission of a program, A.** states the following:

200809007

Local governments must adopt a local program as defined in this section, including any revisions to comprehensive plans, water supply plans, water and sewer plans and other local authorities necessary to implement this chapter[1]*. A local public hearing consistent with § 15.2-1427 of the Code of Virginia is required during the development of the local program*[2]*.*

RECOMMENDATION: DPU recommends acceptance and approval of this Water Supply Plan.

BACKGROUND: The COR Water Supply Plan concludes the James River water supply source and the treatment capacity of the existing 132 million gallon per day water treatment plant with the existing water pumping, storage and distribution system ensures adequate water for the COR and existing wholesale customers until 2060. To provide for additional future water reserves within the planning period for the metropolitan region the James River water source will require additional watershed storage in new reservoirs and addressing minimum instream flows for living resources and recreational uses.

FISCAL IMPACT:

FISCAL IMPLICATIONS:

BUDGET AMENDMENT NECESSARY:

REVENUE TO CITY:

DESIRED EFFECTIVE DATE: Upon adoption

REQUESTED INTRODUCTION DATE: September 8, 2008

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[1] The City of Richmond (COR) Department of Public Utilities (DPU) has completed a local program in accordance with 9 VAC 25-780-50 **Preparation and submission of a program, C 1 – 8.** DPU studies determined that there is no deficits in water supply to serve the COR projected water demand consistent with the comprehensive plan and existing wholesale water contracts.

[2] The requirements of 9 VAC 25-780-50 **Preparation and submission of a program, C 9 – 11** must be completed prior to 2 November 2008 submission of the COR water supply plan and they are:

9. A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
10. A resolution approving the plan from each local government that is party to the plan; and
11. A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received.

In order to comply with these requirements:

1. A resolution will be introduced to approve and accept the final draft COR Water Supply Plan date August __ 2008 (attached).
2. It is expected that the ordinance and resolution will be heard by the Planning Commission and City Council Land Use Committee.
3. The resolution will go before Richmond City Council and a public hearing will be held that is consistent with *§ 15.2-1427 of the Code of Virginia* before the regulatory deadline of 2 November 2008.

CITY COUNCIL PUBLIC HEARING DATE: September 22, 2008

REQUESTED AGENDA: Regular agenda

RECOMMENDED COUNCIL COMMITTEE: Land Use

CONSIDERATION BY OTHER GOVERNMENTAL ENTITIES: Planning Commission

AFFECTED AGENCIES: Department of Public Utilities, Department of Community Development

RELATIONSHIP TO EXISTING ORD. OR RES.:

REQUIRED CHANGES TO WORK PROGRAM(S):

ATTACHMENTS: Water Supply Plan dated August 29 2008

STAFF: Christopher L. Beschler, Deputy Chief Administrative Officer, Director DPU; Robert C. Steidel, Deputy Director, DPU

The Council of the City of Richmond met in Council Chambers on Monday, October 13, 2008 at 6:00 p.m.

Invocation was offered by Rev. John Westbrook, Associate Minister, Morning Star Baptist Church, 14502 Rivers Mill Road, Capron, VA 23829.

Members of the Council and the audience recited the "Pledge of Allegiance."

Present:

The Honorable William J. Pantele, President

The Honorable Doug G. Conner
The Honorable Kathy C. Graziano
The Honorable Chris A. Hilbert
The Honorable E. Marty Jewell
The Honorable Ellen F. Robertson
The Honorable Reva M. Trammell
The Honorable Bruce W. Tyler

Reported Absent:

The Honorable Delores L. McQuinn, Vice-President

****

CHAMBER EVACUATION GUIDELINES

President William Pantele called the meeting to order and presided. Upon the President's request, a fire marshal with the Department of Fire and Emergency Services provided information on the appropriate manner in which the Council Chamber is to be evacuated in the event of an emergency.

****

BOARD APPOINTMENTS

Councilwoman Kathy Graziano moved to expedite the Resolutions entitled:

A Resolution No. 2008-R147-138

Patrons: All Members of Council

To appoint Orran L. Brown to serve as a member of the City Charter Review Commission for an indefinite term commencing upon the adoption of this resolution and terminating upon the completion of the Commission's duties.

A Resolution No. 2008-R148-139

Patrons: All Members of Council

To appoint John B. Thompson to serve as a member of the City Charter Review Commission for an indefinite term commencing upon the adoption of this resolution and terminating upon the completion of the Commission's duties.

A Resolution No. 2008-R149-140

Patrons: All Members of Council

To appoint John V. Moeser to serve as a member of the City Charter Review Commission for an indefinite term commencing upon the adoption of this resolution and terminating upon the completion of the Commission's duties.

A Resolution No. 2008-R150-141

Patrons: All Members of Council

To appoint Frederick H. Marsh to serve as a member of the City Charter Review Commission for an indefinite term commencing upon the adoption of this resolution and terminating upon the completion of the Commission's duties.

The motion was **ADOPTED:** Ayes 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

A Resolution No. 2008-R123-142

To appoint James H. Starkey, III as a member of the Board of Directors of Lewis Ginter Botanical Garden, Inc. for a term commencing upon adoption of this resolution and terminating September 22, 2012.

A Resolution No. 2008-R125-143

To appoint Helen R. Pinckney as a member of the Board of Directors of Lewis Ginter Botanical Garden, Inc. for a term commencing upon adoption of this resolution and terminating September 22, 2012, succeeding Eric C. Anderson.

which were continued from September 22, 2008 for consideration and action on this date, and

A Resolution No. 2008-R137-144

To appoint Dexter C. White as a member of the Central Virginia Waste Management Authority for a term commencing upon adoption of this resolution and terminating April 11, 2009, succeeding Andrew Glenn, Jr., resigned.

A Resolution No. 2008-R138-145

To appoint Peter Blake as a member of the Richmond Public Library Board for a term commencing July 1, 2008 and terminating June 30, 2012.

A Resolution No. 2008-R139-146

To appoint Steven J. Danish as a member of the Richmond Behavioral Health Authority for a term commencing upon adoption of this resolution and terminating October 13, 2011, succeeding Sandra Fowler-Jones.

A Resolution No. 2008-R140-147

To appoint Umar Abdul-Mateen Kenyatta as a member of the Sister Cities Commission for a term commencing upon adoption of this resolution and terminating October 13, 2011.

A Resolution No. 2008-R141-148

To appoint My Lan Tran as a member of the Sister Cities Commission for a term commencing upon adoption of this resolution and terminating October 13, 2011.

A Resolution No. 2008-R142-149

To appoint David L. Herring as a member of the Slave Trail Commission for a term commencing upon adoption of this resolution and terminating October 13, 2011.

which were introduced on September 22, 2008 for consideration and action on this date, were considered.

All appointment resolutions were **ADOPTED:** Ayes 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

Prior to the vote on the resolutions and pursuant to Council's Rules of Procedure, the President asked the initial Board appointees to stand and be recognized.

****

AWARDS AND PRESENTATIONS

President William Pantele and Councilman Chris Hilbert recognized David Hudson, Jr. for his participation and accomplishment in winning the 2008 Kids Week Reunion tournament on the game show Jeopardy! Flanked by his parents, David thanked Council for recognizing his achievement.

A Community Service Award was presented by President Pantele and Councilwoman Reva Trammell to Linwood Austin for his work and efforts in helping to restore and revitalize the historic Hull Street corridor.

****

CITIZEN'S COMMENT PERIOD

Charles Willis, representing the Jefferson Davis Neighborhood Civic Association, provided information on the successful Southside reunion held in September 2008.

Kurt Crampton appeared before the Council to request assistance in working with the Caritas Family Shelter. Mr. Crampton also asked for help to reduce trespassing in the City.

Donald Hatcher spoke to the Council regarding race relations in the City.

Gina Burgin, owner of Meridian Legal Advisors, requested Council's help in collecting fees allegedly owed to her by the City in connection with the terminated refinancing of the Theatre Row Building.

On behalf of S.O.L.E. (Sports, Opportunity, Literacy, Enrichment – a collaborative effort of various youth service organizations in Richmond), volunteer Christy Harris thanked Council for including S.O.L.E. in the City's FY2008 budget. Surrounded by members of the Metropolitan Junior Baseball League (MJBL) and dancers from the Department of Parks Recreation and Community

Facilities (DPRCF), Ms. Harris explained that the funding enabled the two groups to successfully compete in national competitions.

Melvin Jones addressed Council and stated there was a delayed emergency response to a call he placed on October 6th wherein he reported hearing gunfire.

****

APPROVAL OF MINUTES

Councilwoman Ellen Robertson moved to approve the minutes of the following meetings of City Council: the Informal Council Session held on Monday, September 22, 2008 at 3:00 p.m. and the Formal Council Session held on Monday, September 22, 2008 at 6:00 p.m. The minutes were **ADOPTED:** Ayes 7, Conner, Graziano, Hilbert, McQuinn, Trammell, Tyler, Pantele. Noes, None. Councilman Jewell was temporarily excused.

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DOCKET ADMENDMENTS

Councilman Doug Conner moved to amend the agenda and take disposition on the following ordinances and resolutions entitled:

An Ordinance No. 2008-212

To amend and reordain Ord. No. 83-198-171, adopted Sept. 12, 1983, as amended by Ord Nos. 85-139-132, adopted Jun 10, 1985, and 88-247-223, adopted Oct. 10, 1988, which authorized the use of the property known as 5610 Grove Avenue for educational consultant's and child psychologist's offices, for the purpose of authorizing the special use of the property for an art gallery, offices, or a personal service business.

which was introduced on September 8, 2008 and advertised for public hearing and action on this date be **CONTINUED** to **MONDAY, OCTOBER 27, 2008**, and

An Ordinance No. 2008-235

To amend and reordain ch. 66, art. VII, div. 1 of the City Code by adding therein a new section 66-319 concerning solicitation from occupants of motor vehicles.

which was introduced on September 8, 2008 and advertised for public hearing and action on this date be **CONTINUED** to **MONDAY, NOVEMBER 10, 2008**, and

An Ordinance No. 2008-237

To authorize the special use of the properties known as 1100, 1102 and 1114 Hull Street for the purpose of waiving certain height and parking requirements to permit the construction of a mixed-use building with up to fifty-eight (58) dwelling units and accessory parking, upon certain terms and conditions.

which was introduced on September 8, 2008 and advertised for public hearing and action on this date be **CONTINUED** to **MONDAY, OCTOBER 27, 2008**, were considered.

The motion was **ADOPTED**: Ayes 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

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STANDING COMMITTEE REPORTS/ANNOUNCEMENTS

Councilwoman Kathy Graziano, Chair of the Land Use, Housing and Transportation Standing Committee announced that the October Committee meeting will be held on Tuesday, October 14th at 4:00 p.m. in Council Chambers.

Councilwoman Ellen Robertson, Chair of the Finance Standing Committee reported that the Committee met on September 18th. She mentioned that the Committee received reports regarding the City's vacancy and turnover rate, overtime expenses, Capital Improvement Projects and a follow up report of the fiscal impact of the Henrico/Richmond overlapping boundaries.

Ms. Robertson stated that the Finance Committee will meet again on Thursday, October 16th at 4:00 p.m. in Council Chambers.

Councilman Bruce Tyler, Chair of the Governmental Operations Standing Committee announced that the Committee will meet on Thursday, October 23rd at 4:00 p.m. in the 2nd Floor Large Conference room of City Hall.

Councilwoman Reva Trammell encouraged citizens to call 646-1526 (Fire Safety) to have smoke detectors installed.

Councilman Chris Hilbert, Chair of the Health, Human Services and Education Standing Committee, stated that the Committee will meet on Wednesday, October 15th. He mentioned that the Committee will receive reports from Richmond Public Schools Administration regarding the truancy rate and single gender education at the middle school level.

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CONSENT AGENDA

The following ordinances entitled:

An Ordinance No. 2008-159-219

To authorize the special use of the property known as 1020 West Franklin Street for the purpose of permitting a multi-family dwelling consisting of no more than four units in the main building and one unit in the second story of the carriage house, upon certain terms and conditions.

which was continued from September 22, 2008 for consideration and action on this date, and

An Ordinance No. 2008-194-220

To approve the First Amended Articles of Incorporation of the Central Virginia Waste Management Authority and to authorize the President of the Council to execute the First Amended Articles of Incorporation for and on behalf of the City Council and file the same with the State Corporation Commission.

which was introduced on July 28, 2008 and advertised for public hearing and action on this date, and

An Ordinance No. 2008-231-221

To close, to public use and travel, a portion of the north end of Myers Street, north of Leigh Street, consisting of 4,613 + square feet, upon certain terms and conditions.

An Ordinance No. 2008-232-222

To close, to public use and travel, a portion of Old Midlothian Turnpike and of an irregular strip on the south side of Midlothian Turnpike and east side of Division Street, consisting of 22,239 + square feet, upon certain terms and conditions.

An Ordinance No. 2008-233-223

To close, to public use and travel, a portion of Railroad Avenue near the intersection of Semmes Avenue and Cowardin Avenue, consisting of 13,677 + square feet, upon certain terms and conditions.

An Ordinance No. 2008-234-224

To authorize the special use of the property known as 101 Tempsford Lane for the purpose of construction and occupancy of up to 10 multi-family dwellings, upon certain terms and conditions.

An Ordinance No. 2008-236-225

To authorize the special use of the property known as 6801 Patterson Avenue for the purpose of a private school with a same sex dormitory, upon certain terms and conditions.

which were introduced on September 8, 2008 and advertised for public hearing and action on this date, and

An Ordinance No. 2008-245-226

To declare surplus and direct the sale of certain City-owned real estate located along Semmes Avenue and shown on DPW Dwg. No. N-28235 to Trustworthy Real Estate, L.L.C. for $50,000.

which was introduced on September 22, 2008 and advertised for public hearing and action on this date, and

The following resolutions entitled:

A Resolution No. 2008-R143-150

To reappoint Robert E. Comet, Jr. as a member of the Local Community College Board for Region 19, J. Sargeant Reynolds Community College for a term commencing upon adoption of this resolution, and terminating October 13, 2012.

A Resolution No. 2008-R144-151

To adopt and approve a water supply plan for the City entitled "Water Supply Plan," prepared by the Department of Public Utilities and dated August 29, 2008.

which were introduced on September 22, 2008 for consideration and action on this date were considered.

There were no further comments and the **CONSENT AGENDA** was **ADOPTED:** Ayes: 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None. (**Ord. No. 2008-236-225** was **ADOPTED** by a vote of Ayes 7, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Pantele. Noes, None. Abstain 1, Tyler.)

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CONFLICT OF INTERESTS DISCLOSURE STATEMENT

Pursuant to the State and Local Government
Conflict of Interests Act

COUNCIL MEMBER: Bruce Tyler
TRANSACTION INVOLVED: Ord. No. 2008-236-225

(X) I have a personal interest in this transaction and I hereby disqualify myself from participation in it.

( ) I have a personal interest in this transaction but I am permitted to participate and will participate in the transaction because I am a member of a business, profession, occupation, or group the members of which are affected by the transaction, and I make the following disclosures, as required by Va Code Section 2.1-639.11 (A)(2) and 2.1-639.14(G). I HEREBY CERTIFIY THAT I AM ALBLE TO PARTICIPATE IN THE TRANSACTION FAIRLY, OBJECTIVELY, AND IN THE PUBLIC INTEREST.

THE NATURE OF MY INTEREST IN THE TRANSACTION IS:

My firm and I represent the applicant for this special use permit.

(If applicable) I AM A MEMBER OF THE FOLLOWING BUSINESS, PROFESSION, OCCUPATION, OR GROUP, THE MEMBER OF WHICH ARE AFFECTED BY THIS TRANSACTION:

Date: October 13, 2008

Signature: Bruce Tyler
(Original copy signed by Mr. Hilbert)

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REGULAR AGENDA

The ordinance entitled:

An Ordinance No. 2008-208-227

To approve an amendment to the Master Plan for the City of Richmond, adopted by the City Planning Commission on November 6, 2000, and approved by the City Council by Ordinance No. 2000-371-2001-11 on January 8, 2001, to adopt the Downtown Master Plan, to be referred to as the "Downtown Plan."

which was introduced on September 8, 2008 and advertised for public hearing and action on this date was considered.

In response to an inquiry from Council, Brooke Hardin, Deputy Director of Community Development, reviewed the process of creating the Master Plan and the priorities for implementation.

Rachel Flynn, Director of Community Development, presented seven foundations of the Master Plan. The seven foundations are:

1. A traditional city

2. The river as a centerpiece

3. Usage of urban architecture

4. Provision of variety and choice

5. Green (environmental stewardship)

6. Historical preservation

7. Mixed-income/diverse communities

A copy of the presentation is filed with these minutes.

Opposition
Jim Theobald, Attorney with Hirschler Fleischer on behalf of USP Echo Harbor, LLC
Mark Baker, Baker Development Resources/Consultant with Echo Harbor
Angela Jones

Support
Tom Robinson
David Herring, Director of ACORN (Alliance to Conserve Old Richmond Neighborhoods)
Tom Pomp, Fountainhead Development
Harry Bert, St. Paul's Episcopal Church
Maury Pearsall
Dave Johannes
Shiela Shephard, Partnership for Smarter Growth
Laura Lafayette, Senior Vice-President of Richmond Association of Realtors
Jim Ukrop, Chairman of Ukrop's Super Markets and First Market Bank
Mesa Dean, Virginia Department of Conservation and Recreation
Stewart Schwartz, Executive Director of Coalition for Smarter Growth
Antoine Green, President of Crusade for Voters
Ford Webber, Executive Director of Virginia LISC (Local Initiatives Support Corporation)
Malcolm Holmes, Special Assistant to the President for Community Relations at J. Sargeant Reynolds Community College
Kimberly Chen

John Johnson, representing Church Hill Association and Chimborazo Park Association
Mimi Sadler
Leighton Powell, Executive Director of Scenic Virginia and Vice-President of Historic Jackson Ward Association
Colder Lose, Architecture Historian with Historic Preservation
Diane Worthington

Each Councilmember expressed their support for the Master Plan and commended staff for the extensive communication provided to citizens in an effort to solicit their input on this initiative. Councilman Bruce Tyler mentioned that although he would like to see amendments, he supports the overall plan. President William Pantele thanked the Planning Commission for their work on the Master Plan.

Ordinance No. 2008-208-227 was **ADOPTED:** Ayes 8, Conner, Graziano Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

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MOTION TO AMEND AND CONTINUE

Councilman Marty Jewell moved that the Ordinances entitled:

An Ordinance No. 2008-211
As Amended

To amend ch. 2, art. III, div. 2 of the City Code by adding therein a new section 2-103, concerning the response required for audit findings.

which was continued from September 22, 2008 for consideration and action on this date be **AMENDED** and **CONTINUED** to **MONDAY, OCTOBER 27, 2008** as

shown on the printed attachment as follows:

Page 1, Line 19

After the title "Chief Administrative Officer", insert the words "in accordance with this section."

Page 1, Line 20

After the word "submit", delete "such written response to audit findings, management letter comments or recommendations by the City Auditor to the Audit Committee and the City Council within"

Page 2, Line 2

After the deleted number "60", delete "ten days of the issuance of the audit findings, management letter comments or recommendations; provided, however that the City Auditor may grant extensions in writing of this deadline for a period of up to 20 days. In any event, the Chief Administrative Officer shall submit"

and,

An Ordinance No. 2008-230
As Amended

To close, to public use and travel [~~only, the~~] an alley in the block bounded by W. Main St., S. Adams St., W. Cary St., and S. Jefferson St., consisting of 5,028 ± square feet, upon certain terms and conditions.

which was introduced on September 8, 2008 and advertised for public hearing and action on this date be **AMENDED** and **CONTINUED** to **MONDAY, OCTOBER 27, 2008** as shown on the printed attachment as follows:

Page 1, Line 4

After the word "public", insert the words "use and"

Page 1, Line 4

After the word "travel", delete the words "only, the" and insert the word "an"

Page 1, Line 14

After the word "public", insert the words "use and"

Page 1, Line 14

After the word "travel", insert the phrase "and abandoned as a public alley"

Page 1, Line 16

At the beginning of the line, "delete" "No. N-28227" and insert "No. N-28227A"

Page 1, Line 16

After the word "dated", delete "August 7, 2008" and insert "October 1, 2008"

Page 1, Line 17

After the word "Closing", delete the words "to Public Travel Only"

Page 1, Line 17

After the word "Alley", insert the words "in the Block"

Page 1, Line 18

After the word "such" delete the phrase "property still being necessary for public use" and insert the phrase "alley no longer being needed for the public convenience"

Page 2, Line 1

After the words "as to the closing of the" delete the phrase "right-of-way-

area" and insert the word "alley"

Page 2, Line 10

After the phrase "facilities are in the", delete the phrase "right-of-way area" and insert the word "alley"

Page 2, Line 19

After the phrase "closing of the", delete the phrase "right-of-way area" and insert the word "alley"

Page 2, Line 19

After the word "public" insert the words "use and"

Page 3, Line 3

After the word "public" insert the words "use and"

Page 3, Line 4

After the word "travel", delete the word "only"

Page 3, Line 5

After the words "And expenses" delete the word "or" and insert the word "of"

Page 3, Line 7

After the word "alley", delete the phrase "to public travel only"

Page 3, Line 10

After the word "satisfied", insert the phrase "within 12 months of the adoption of this ordinance"

Page 3, Line 13

After the phrase "across the termini of", delete the phrase "and around the right-of-way area" and insert the words "the alley"

Page 3, Line 14

At the beginning of the line, delete the words "or abuts"

Page 3, Line 14

After the word "closed", delete the phrase "right-of-way area" and insert the word "alley"

Page 3, Line 15

After the word "is" delete the phrase "not a publicly accessible right-of-way and is"

Page 3, Line 16

After the Letter "(f)", delete the sentences "The applicant enters into a license agreement for the use by the applicant of the right-of-way area proposed to be closed to public travel. Such license agreement must first be approved by the City Council and approved as to form by the City Attorney." and insert the sentence "The applicant pays the City the fair market value as determined by a mutually agreeable independent appraiser.

Page 4, Line 7

After "§ 3.", delete "the right-of-way area closed to public travel by the preceding sections of this ordinance shall not be deemed abandoned or vacated by the City, which shall retain all right, title and interest in such right-of-way area." and insert "the City shall retain a full width utility easement in the area to be closed, such easement being more particularly shown on DPW Drawing No. N-28227A."

Page 4, Line 12

After the word "shall" delete "retain all legal interests in the closed portion and the applicant shall enter into a license agreement with the City of Richmond of any uses of the alley area as approved by the City Council" and insert "have no further right, title, or interest in said alley other than

expressly retained or granted to satisfy terms and conditions set out in this ordinance"

The motion was **ADOPTED:** Ayes 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

****

EXPEDITED CONSIDERATION

Councilman Chris Hilbert moved to expedite the Resolution entitled:

A Resolution No. 2008-R151-152

Patron: Ms. Graziano

To provide for the nomination of Linda G. Broady-Myers, James M. Johnson and Michael C. Rohde as the City of Richmond's three Directors and the election of the Board of Directors of the Greater Richmond Transit Company for the period commencing October 15, 2008, upon election and qualification of these nominees as Directors, and terminating on the date of the 2009 annual meeting of shareholders upon the election and qualification of the successors to these Directors.

The motion was **ADOPTED:** Ayes 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

The resolution which was introduced on this date for consideration and action was considered.

Resolution No. 2008-R151-152 was **ADOPTED:** Ayes 8, Conner, Graziano, Hilbert, Jewell, Robertson, Trammell, Tyler, Pantele. Noes, None.

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INTRODUCTION OF NEW PAPERS

The following ordinances were introduced and advertised for public hearing on **Monday, October 27, 2008 at 6:00 p.m.** and referred to the City Council Standing Committee as indicated:

An Ordinance No. 2008-256

Patrons: Ms. Graziano and Ms. Robertson

To amend City Code § 58-113, concerning the appointment and terms of the Affordable Housing Trust Fund Oversight Board, to provide that the City Council, rather than the Mayor, shall make the initial appointments to the Board. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-257

Patron: Ms. Trammell

To amend and reordain City Code § 110-37, concerning rates to be charged passengers by certificate holders or drivers of taxicabs, to increase the rate for each succeeding one-fifth mile from $0.40 to $0.50 and to increase the rate for each one minute of waiting time from $0.30 to $0.50, effective November 1, 2008. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-258

Patron: Mayor Wilder

To amend ch. 2, art. IV of the City Code by adding therein a new div. 24, consisting of sections 2-828 through 2-830, and to amend and reordain City Code §§ 2-483, 2-1112, 14-4, 14-5, 50-33, 50-62, 50-64, 50-65, 50-91, 50-93, 50-121, 50-122, 50-124, 50-125, 50-192, 50-193, 50-194, 50-196, 50-302, 50-341, 90-463 and 98-141, for the purpose of creating a new Department of Permits and Inspections headed by the Commissioner of Buildings. **(COMMITTEE: Land Use, Housing and Transportation,**

Tuesday, October 14, 2008, 4:00 p.m.; COMMITTEE: Finance, Thursday, October 16, 2008, 4:00 p.m.)

An Ordinance No. 2008-259

Patron: Mayor Wilder

To amend the pay plan adopted by Ord. No. 93-117-159 on May 24, 1993, to exclude the classification of Commissioner of Buildings from the unclassified service in pay range 24 and to include the classification of Commissioner of Buildings in the executive service in pay range 25 to reclassify the position of Commissioner of Buildings as an agency head. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.; COMMITTEE: Finance, Thursday, October 16, 2008, 4:00 p.m.)**

An Ordinance No. 2008-260

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer, on behalf of the City of Richmond, to execute the Agreement for use of Federal Highway Administration Congestion Mitigation Air Quality – Fiscal Year 2005 funds between the City of Richmond and the Virginia Department of Rail and Public Transportation for the purpose of granting the City $650,000 to continue ongoing maintenance, operations and security at Main Street Station. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-261

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer on behalf of the City of Richmond, to execute an Amendment to the Project Agreement for use of Commonwealth Transportation Funds between the City of Richmond and the Virginia Department of Rail and Public Transportation for the purpose of granting the City $162,500 to continue ongoing maintenance, operations and security at Main Street Station. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-262

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer on behalf of the City of Richmond, to execute Amendment No. 1 to the 2008 Master Agreement for use of Commonwealth Transportation Funds between the City of Richmond and the Virginia Department of Rail and Public Transportation for the purpose of increasing the contract amount threshold required to follow bonding rules. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-263

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer, on behalf of the City of Richmond, to execute the Project Agreement for use of Commonwealth Transportation Funds – Fiscal Year 2009 between the City of Richmond and the Virginia Department of Rail and Public Transportation for the purpose of granting the City $179,533 to continue ongoing maintenance, operations and security at Main Street Station. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-264

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer to execute the 2008 Master Agreement for use of Commonwealth Transportation Funds between the City of Richmond and the Virginia Department of Rail and Public Transportation for the purpose of accepting grant proceeds for ongoing maintenance, operations and security for Main Street Station. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-265

Patron: Ms. Graziano

To direct the City Planning Commission to prepare and consider additional

amendments for incorporation into the Downtown Master Plan as provided in Charter § 17.06 and Va. Code § 15.2-2229. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-267

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer on behalf of the City of Richmond, to execute a First Amendment to Comprehensive Agreement between the City of Richmond, the Virginia Performing Arts Foundation, Richmond Performing Arts Center, L.L.L.P., and RPAC, Inc. for the purpose of adding RPAC, Inc. as a party to the Comprehensive Agreement and making certain modifications to the Comprehensive Agreement. **(COMMITTEE: Finance, Thursday, October 16, 2008, 4:00 p.m.)**

An Ordinance No. 2008-268

Patron: Mayor Wilder

To provide for the granting by the City of Richmond, Virginia, to the person, firm or corporation to be ascertained in the manner prescribed by law, of the lease, franchise, right and privilege to use and maintain certain property located on the northeast corner of the intersection of Grace St. and 6th Street in the City of Richmond, together with the Carpenter Theatre, being the property designated as the "Carpenter Center" and described in Exhibit A and Exhibit B of the Lease and Franchise Agreement attached hereto and made a part hereof, and in particular to grant the right to exclusive use, possession and control of the Carpenter Center subject to certain responsibilities to be imposed by lease, and subject further to all retained rights of the City of Richmond. **(COMMITTEE: Finance, Thursday, October 16, 2008, 4:00 p.m.)**

An Ordinance No. 2008-269

Patron: Mayor Wilder

To declare surplus and direct the sale of certain City-owned real estate located at the northeast corner of the intersection of 6th Street and East Grace Street known as the Carpenter Center to Richmond Performing Arts Center, L.L.L.P.

for nominal consideration, upon certain conditions. **(COMMITTEE: Finance, Thursday, October 16, 2008, 4:00 p.m.; Planning Commission, Monday, October 20, 2008, 1:30 p.m.)**

An Ordinance No. 2008-271

Patron: Mayor Wilder

To authorize the Acting Chief Administrative Officer, for and on behalf of the City of Richmond, to enter into a Police Mutual Aid Joint Aviation Agreement between the County of Henrico, Virginia, the County of Chesterfield, Virginia, and the City of Richmond, Virginia for the purpose of operating a joint aviation unit to support aerial law enforcement activities in the party jurisdictions. **(COMMITTEE: Public Safety, Monday, October 20, 2008, 5:00 p.m.)**

An Ordinance No. 2008-272

Patron: Mayor Wilder

To amend City Code § 106-342, concerning the costs of original water connections and maintenance, and to amend the fees set forth in Appendix A to the City Code by adding new fees for City Code § 106-342(c), for the purpose of implementing a rate structure for fireline connection rates in accordance with a cost of services and rate study by the Department of Public Utilities. **(COMMITTEE: Governmental Operations, Thursday, October 23, 2008, 4:00 p.m.)**

The following resolutions were introduced for public hearing on **Monday, October 27, 2008 at 6:00 p.m.** and referred to the City Council Standing Committee as indicated:

A Resolution No. 2008-R152

Patrons: Mr. Hilbert

To implement policies requiring the application of green, high performance building standards to all City construction projects and incentive programs

to encourage the private sector to apply green high performance building standards to private sector construction projects; and that all new building or facility construction, major renovation or improvement projects undertaken on existing buildings or facilities which exceed 10,000 gross square feet shall meet the Leadership in Energy and Environmental Design (LEED) Green Building Rating System's Silver rating. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

A Resolution No. 2008-R153

Patron: Ms. Robertson

To request that a traffic study be conducted to determine the feasibility of removal of "No Parking" and "Loading Zone" signs and bus stops on Hull Street from Commerce Rd. to Cowardin Ave. to improve parking and traffic flow. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

A Resolution No. 2008-R154

Patron: Ms. Robertson

To request that a traffic study be conducted to determine the feasibility of removing unnecessary "No Parking" and "Loading Zone" signs on North Avenue from Overbrook Avenue to Poe Street to improve parking and traffic flow. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

A Resolution No. 2008-R155

Patrons: Ms. Robertson, Mr. Hilbert and Ms. Graziano

To support the Department of Parks, Recreation and Community Facilities' grant application to the Virginia Department of Transportation for Transportation Enhancement grant funds for the construction of a bicycle and pedestrian commuter trail, family recreation and environmental education features, landscaping, and scenic beautification the Cannon Creek Greenway and to express the Council's commitment to work cooperatively with the City Administration to either identify appropriate matching funds in

the current Capital Improvement Plan or to include matching funds in the 2010-2014 Capital Improvement Plan. **(COMMITTEE: Health, Human Services, and Education, Wednesday, October 15, 2008, 5:00 p.m.)**

A Resolution No. 2008-R156

Patron: Ms. Robertson

To endorse the American Civil War Center's grant application to the Virginia Department of Transportation for TEA-21 grant funds to program certain capital improvements at the American Civil War Center to include the refurbishing of deteriorating historical features, restoration and renovation of pathways and replacement of directional and interpretive way finding signage at the American Civil War Center and along the Riverfront at 5th and Tredegar Streets. **(COMMITTEE: Health, Human Services, and Education, Wednesday, October 15, 2008, 5:00 p.m.)**

A Resolution No. 2008-R157

Patron: All Members of Council

To endorse, for the City of Richmond, legislative proposals set forth within the document entitled "Richmond City Council – 2009 Legislative Agenda"; to request the Richmond delegation to the General Assembly of Virginia to take legislative action consistent with and in vigorous support of such recommendations; to support other legislative recommendations and to encourage other organizations and individuals to support such recommendations.

A Resolution No. 2008-R158

Patron: All Members of Council

To appoint Susan Nolan as a member of the Sister Cities Commission for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R159

Patron: All Members of Council

To appoint Lawrence Eugene Glidewell, Jr. as a member of the Board of Trustees of the Richmond Retirement System for a term commencing upon adoption of this resolution and terminating October 27, 2011, succeeding Lt. Frank M. Sasser.

A Resolution No. 2008-R160

Patron: All Members of Council

To appoint Don Harrison as a director of the Capital Region Arts and Cultural Funding Consortium for a term commencing upon the adoption of this resolution and terminating October 27, 2009.

A Resolution No. 2008-R161

Patron: All Members of Council
To appoint Shennen L. Dean as a member of the Richmond Public Library Board for a term commencing upon adoption of this resolution and terminating October 26, 2012, succeeding Jacquelyn Bolden.

A Resolution No. 2008-R162

Patron: All Members of Council

To appoint Gilbert L. Carter as a member of the Clean City Commission for a term commencing upon adoption of this resolution and terminating October 27, 2010, succeeding Robert Swisher.

A Resolution No. 2008-R163

Patron: All Members of Council

To appoint Edmond Turner as a member of the Disability Services Board (Business Representative) for a term commencing upon adoption of this resolution and terminating October 27, 2010.

A Resolution No. 2008-R164

Patron: All Members of Council

To appoint Scottie R. Sibley as a member of the Slave Trail Commission for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R165

Patron: All Members of Council

To appoint Dr. Shawn O. Utsey as a member of the Slave Trail Commission for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R166

Patron: All Members of Council

To reappoint Thomas H. Spence as a member of the Port of Richmond Commission for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R167

Patron: All Members of Council

To reappoint Joseph R. Jenkins as a member of the Audit Committee of the City of Richmond for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R168

Patron: All Members of Council

To reappoint John F. Winter, II as a member of the Port of Richmond Commission for a term commencing upon the adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R169

Patron: All Members of Council

To reappoint Robert A. Strickland as a member of the Port of Richmond Commission for a term commencing upon the adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R170

Patron: All Members of Council

To reappoint Thad A. Jones as a member of the Highway Safety Commission for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R171

Patron: All Members of Council

To reappoint Rose Stith Singleton as a member of the Disability Services Board (City Representative) for a term commencing upon adoption of this resolution and terminating October 27, 2011.

A Resolution No. 2008-R172

Patron: All Members of Council

To reappoint Anne Gordon Greever as a director of the Economic Development Authority of the City of Richmond for a term commencing upon the adoption of this resolution and terminating October 27, 2012.

The following ordinances were introduced and advertised for public hearing on **Monday, November 10, 2008 at 6:00 p.m.** and referred to the City Council Standing Committee as indicated:

An Ordinance No. 2008-270

Patrons: President Pantele – By Request and Mr. Hilbert – By Request

To amend Ord. No. 2003-296-255, adopted Sep. 8, 2003, which authorized a Community Unit Plan at 1300 Westwood Avenue for a mixed-use

development consisting of a maximum of one hundred forty residential units, a community center with reception facility and non-medical office, a preventative healthcare facility, two private schools, and a fifty unit dormitory, to modify the plan for the fence required between the subject property and 1409 Palmyra Avenue. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, October 14, 2008, 4:00 p.m.)**

An Ordinance No. 2008-273

Patron: Mr. Jewell – By Request

To authorize the special use of the property known as 3 South Granby Street for the purpose of permitting a ground floor residential use and waiving certain public street frontage requirements, upon certain terms and conditions. **(Planning Commission, Monday, November 3, 2008, 1:30 p.m.)**

The following ordinance was introduced and advertised for public hearing on **Monday, November 10, 2008 at 6:00 p.m**. and referred to the City Council Standing Committee as indicated:

An Ordinance No. 2008-266

Patron: Ms. Robertson

To remove all-way stop signs at the intersections of 4th Ave. and Rady St. and 4th Ave. and Pollock Street. **(COMMITTEE: Land Use, Housing and Transportation, Tuesday, November 18, 2008, 4:00 p.m.)**

Adjournment

There being no further business before the Council, the meeting adjourned at 9:19 p.m.

Appendix B

James River Water Authority VWP Permit – City Comments to DEQ

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.***

DEQ
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.

DEQ
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

CITY OF RICHMOND

DEPARTMENT OF PUBLIC UTILITIES
OFFICE OF THE DIRECTOR

November 17, 2015

Sarah Marsala
Virginia Department of Environmental Quality
P.O. Box 1105
Richmond, VA 23218

Via email: sarah.marsala@deq.virginia.gov

Re: Additional Comments related to Virginia Water Protection Permit action revoke/reissuance of James River Water Authority Permit No. 04-0805

Dear Ms. Marsala:

Thank you and the other members of the Virginia Department of Environmental Quality for taking the time to meet with us on November 6 to discuss DEQ's proposed action to revoke and reissue the James River Water Authority (JRWA) permit No. 04-0805, and comments earlier provided by the City of Richmond concerning the proposed permit action. We also appreciate DEQ providing a fact sheet for the proposed permit during the meeting.

As noted during the meeting, in our written comments, and as previously noted in earlier correspondence with DEQ, we feel it is necessary to restate our water supply premise under which the City operates and assesses legislative and DEQ proposals: in addition to its common law riparian rights, the City has obtained by conveyance the right to withdraw at least 337 million gallons per day (mgd) of water from the James River. This right is a property right obtained through private conveyances, originating in a grant from the Commonwealth of Virginia over two centuries ago. The rights are reinforced and supplemented by the City's riparian and prescriptive use rights. 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 views 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 City views the rights as important both from a water withdrawal standpoint for the City's water utility, and from an instream standpoint for minimum flows in the James River and in the and Kanawha Canal.

After our discussion on November 6 and review of the fact sheet provided at the meeting, we still believe the available record does not support issuance of the proposed JRWA permit for an increased water withdrawal. Our concerns fall into two general categories – procedural and technical.

Our procedural concerns center on the need for adequate notice and opportunity for comment. DEQ released the proposed permit for Public Notice in late August, with a 30-day comment period. However, as our previous comments demonstrate, the record is inadequate to provide reasonable support for issuance of the proposed permit. We recently learned that the fact sheet generated in connection with the proposed permit may have existed during the public comment period, but the public availability of the fact sheet does not appear to have been clearly made known, and, in fact, the City was unaware of its availability until the November 6 meeting. The lack of an openly available fact sheet made it impossible for the City or any other interested party to adequately review and provide comments concerning the proposed permit during the comment period. Many of our earlier comments noted the vagueness of the proposed permit requirements and this is directly related to the lack of an adequate record.

For instance, we commented on the proposed requirement that the permittee "coordinate" with the Cobb Creek Reservoir operator. The proposed permit contains no specific actions for accomplishing the proposed coordination requirement. The fact sheet provided at the November 6 meeting includes a short response to comment which indicates that the proposed coordination would be tied to a requirement in the permit for JRWA to provide a plan for DEQ approval. Vague permit conditions and requirements to develop plans instead of including specific permit requirements make objective review of the proposed permit very difficult. Among other things, the City is concerned that DEQ has proposed to impose as a permit condition the management plan proposed by the applicant, but the information available concerning the proposed plan includes very few specifics. The public, therefore, has not been provided an adequate opportunity to comment.

Given that the proposed permit was released for public notice without clear supporting documentation providing an adequate basis for review, we believe the process in this instance does not meet the minimum statutory requirements for an adequate opportunity for notice and comment.

With regard to technical issues, we believe many of our earlier stated comments are still valid; however, our main concern is the lack of data in the fact sheet to support DEQ's numerous statements that the proposed increased water withdrawal will not adversely affect downstream water quality standards. The proposed permit and fact sheet both indicate that downstream flows will be maintained to protect downstream uses. However, despite the fact that water quality standards are designed to protect aquatic life and that one of the primary measures to assess protection of aquatic life is dissolved oxygen, the fact sheet fails to include data to show that an assessment has been undertaken of the impact of the proposed withdrawals on dissolved oxygen in the River or that DEQ has otherwise considered dissolved oxygen. Yet, the James River is currently listed in the State's most recent integrated report as being impaired, due to low dissolved oxygen levels. Given that the River currently is impaired, it is hard to understand how a proposed permit designed to reduce the flow in the River could possibly not contribute to further degradation of the aquatic habitat specific to dissolved oxygen. At a minimum, an assessment of the impact on dissolved oxygen levels should be conducted prior to moving forward with the proposed permit.

We also believe the assessment of potential for adverse impact due to reducing the flow in the River should include impacts related to algae, especially harmful algal blooms (HABs). The potential for HABs in the area below the Falls of the James is well documented in connection with low flow periods of the River.

The fact sheet also includes data that do not seem accurate based upon what is known about current water withdrawals. For instance, as noted earlier, the City has obtained the right to withdraw at least 337 mgd from the James River. Further, the City's plant is rated for a 132 mgd send-out, which in turn requires a raw water intake of about 140 mgd. The fact sheet indicates the City has a permit max of 95 mgd. The City does not have a VWP permit for its plant and so it is not at all clear where the number comes from. The fact sheet also indicates the City is providing 35 mgd of Henrico's 75.2 mgd permitted amount. Henrico's plant capacity was initially 55 mgd when built and is now expanded, or very close to completing expansion, to 80 mgd. (The City conveyed Henrico County James River water rights to 80 mgd in 1994 as part of arrangements for the County's water treatment plant).

Although the City appreciates that the issuance of a VWP permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does such a permit authorize injury to private property or any invasion of personal rights, the City believes it's proper and prudent that DEQ recognize such rights. The City also believes it appropriate for DEQ to consider possible adverse impacts on the River's beneficial uses protected by the City's water rights, and to ensure that the proposed withdrawals not cause or contribute to downstream violations of water quality standards.

As stated previously, the City believes the proposed permit should: 1) not increase the previously permitted water withdrawal from the James River on either a daily or instantaneous basis above the 5.7 mgd contained in the current permit; 2) require stringent water conservation measures as exist for the Henrico WTP VWP permit, preferably developed through proactive discussions with other James River interests; and 3) provide the applicant's analysis of the impacts upon water quality standards (at a minimum dissolved oxygen and algae) of the proposed water withdrawals. The City urges DEQ to reopen the public record and allow additional public comment in connection with these concerns. DEQ-facilitated discussions among the interested parties might prove beneficial.

The City of Richmond appreciates the opportunity to review and provide comment on the proposed VWP permit action for the James River Water Authority. Should you have any questions concerning our comments, please feel free to contact me.

Sincerely,

Robert C. Steidel
Director

John J. Buturla, Deputy Chief Administrative Officer
Patrick Bradley, Water Quality Manager
Rosemary Green, Deputy Director II
David Kearney, Assistance City Attorney

9030 Stony Point Parkway, Suite 220, Richmond, VA 23235

Whitman, Requardt & Associates, LLP
Engineers · Architects · Environmental Planners Est. 1915