



LWVFA Tackles First Part in January . . .

## League Studies Fracking in Virginia

This month's and next month's unit meetings will be devoted to establishing a consensus on "Fracking in Virginia." This important environmental issue may not affect you directly, but you have a stake in the consequences throughout our Commonwealth and the nation.

Don't know anything about fracking? Here is your opportunity to learn. Read the EF pages in this issue and come to any of our unit meetings to discuss the issue. Learn how others feel and why they feel that way. This month will cover the first part of an excellent study put together and illustrated by a statewide committee chaired by Carol Lindstrom with Rona Ackerman, editor, and members Carolyn Caywood, Sue Delos, and Meghan Dorsett.

### Calendar

#### January 2017

- 2 *Fairfax VOTER* deadline
- 6 Electoral College votes are counted
- 6 LWNCA Board meeting
- 7 **LWVFA Briefing and At-Large meeting, 10 a.m., Packard Center**
- 7 **Voter Service and volunteers meeting, 12:30 p.m., Packard Center**
- 9-12 **LWVFA unit meetings**
- 11 General Assembly convenes
- 18 LWV-VA Women's Legislative Roundtable
- 20 Presidential Inauguration
- 23 Voter registration deadline for Fairfax City special election for Mayor
- 25 LWV-VA Women's Legislative Roundtable
- 31 LWV-VA Board meeting, Richmond

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## Presidents' Message



Happy New Year!!

We hope you had a wonderful and restful holiday. We are thrilled to start the new year with more than 50 new members. With the election behind us and the start of a new administration, we are fired up to work on issues of great importance!

Small orientation sessions for new members will be held throughout this month. More information and invitations to new members will be forthcoming.

On January 7 from 12:30-2 p.m. in our League conference room at the Packard Center, members can learn more about our volunteer opportunities with voter registration and candidate forums. Our Voter Service chair, Sidney Johnson, will lead the discussion about our plans for 2017. This is a great way to get involved!

Many of us attended the League of Women Voters of Virginia Women's Legislative Round Table Pre-Session in Richmond on December 7. We went to the Capitol to learn from many advocacy groups about their agendas for the upcoming legislative session. We share a lot of common ground with them. This year promises to be a busy year. The Virginia General Assembly will start convening on January 11.

For the months of January and February, we are focusing on the environment, specifically on fracking. This month, we are delving into Part I of this comprehensive study. Next month, we will take on Part II with consensus.

Our amazing nominating committee called all of our members to ask them about their interests, skills, passions, and desires to fill board and off-board positions. We are incredibly grateful to them for making hundreds of calls. Please consider being on the board or filling an off-board position this year. It is a great

learning experience, and we need you. Please contact nominating committee chair, Rona Ackerman, at [ackermanrona2@gmail.com](mailto:ackermanrona2@gmail.com) to learn how to get more involved!

We are also grateful to our unit chairs who called our new members to get to know them and ask them what they want to learn and work on for the League. With all of these calls to both new and existing members, we feel confident in our ability to take action and meet the needs of our community.

Onward,

*Peggy and Wendy*

**Domestic Violence Hotline**  
**(703) 360-7273**

### Correction:

Discussion question 4 on page EF-I of the December 2014 **Fairfax Voter** incorrectly stated that "All irregular high school schedules (occasional or weekly late arrivals or earlier dismissals) were eliminated with the calendar change this year."

### LWVFA Fairfax VOTER 2016 - 2017

This newsletter, partially funded by the League of Women Voters of Fairfax Area Education Fund, is published 10 times each year from September to June by:

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Subscriptions to the *Fairfax VOTER* are available to non-Fairfax League members for \$15 per annum. Send your check to the above address and request a subscription.

Please e-mail address corrections to the office  
or call 703-658-9150

## Voter Service Preparing for the Elections in 2017

By Sidney Johnson, Voter Service Coordinator

There will be a Voter Service meeting at the Packard Center on Saturday, January 14, from 12:30 to 2 for members interested in volunteering. The meeting is scheduled after the Briefing so that people who work during the week can attend. There will be light refreshments before the meeting.

Please contact Sidney at [sidneyjohnson3@verizon.net](mailto:sidneyjohnson3@verizon.net) or 703-476-0581 if you can come to the meeting or if you would like to help, but cannot attend this meeting. We are preparing for the following elections:

### February 14, 2017

Vote 411 entry for the Special Election for Mayor in Fairfax City, February 7

Voter Registration for this election, deadline January 23, 2017

### Key Needs

- A member to learn Vote 411 and to help Sheila Iskra with the many entries
- Members to organize Candidate Forums
- A member or members to learn how to administer Sign Up Genius for Voter Registration and Candidate Forums, so that Beth Tudan will have time for other tasks
- A partner in layout and graphic design for Ronna Pazdral, who now produces “What’s on the Ballot” and our informational cards and posters.

We had an extraordinary year of participation in voter registration and *Get Out the Vote* activities in 2016. Our questions for candidates, posted on Vote 411 and in the *Fairfax Times*, were taken as a model by a student at William and Mary. We continued our new practice of holding Campaign Forums at the Fairfax Public Access TV station. We had generous help from our partners and members of the public.

We need to retain our partners and keep up the level of enthusiasm for the campaigns of 2017. They will not have the high intensity of last year’s, but voter education and high voter turnout are vital for the future of Virginia.

## School Year Calendar 2017-2018

August 28, 2017	School Begins
September 4	Labor Day – Student Holiday
September 22	Student Holiday
October 9	Columbus Day Holiday -
November 3	First Grading Period Ends*+ Students Released 2 Hours Early
November 6-7	Student Holidays
November 22	Students Released 2 Hours Early
November 23-24	Thanksgiving Break
December 18-January 1, 2018	Winter Break
January 15	Martin Luther King, Jr.’s Birthday- Student Holiday
January 25	Second Grading Period Ends*+ Students Released Two Hours Early
January 26, 29	Student Holiday
February 19	George Washington’s Birthday- President’s Day Holiday
March 26-30	Spring Break
April 2	Student Holiday
April 13	Third Grading Period Ends*+ Students Released Two Hours Early
April 16	Student Holiday
May 28	Memorial Day Holiday
June 7	Graduation on or after this date
June 15	Last Day of school (scheduled)**

### Makeup Day Schedule

<u>Days Missed</u>	<u>Makeup Day</u>
Up to 13 equivalent days missed (or 78 hrs)	No makeup required
14 <sup>th</sup> missed day	No makeup required
15 <sup>th</sup> missed day	April 16
16 <sup>th</sup> missed day	No makeup required

### Legend

- \* Schools are open
- + Report cards are provided to parents at the end of each grading period and at the end of the school year.
- \*\* Early release on the last official day of school

# LWV-VA Fracking Study & Consensus: First Part

Introduction by Sherry Zachry, LWVFA Program Director

In June 2015, the delegates at the LWV of Virginia (LWV-VA) Convention approved a statewide “**Study of Impacts of Fracking in Virginia**” for the LWV-VA 2015-17 biennium. Reasons to undertake this study, in the hope of reaching consensus and positions, were stated in the *LWV-VA 2015 Convention Workbook*:

*The current LWV-VA natural resource positions do not address recent developments in Virginia of hydraulic fracturing (“fracking”) and energy pipelines. Fracking affects health as well as natural resources. Fracking and pipeline effects go beyond the current LWV-VA positions. The effects should be included in Virginia positions and in the background/history.*

*The scope of the study may include: Impacts of water withdrawal on ground water and surface water supplies; impacts of inadequate treatment of wastewater from fracking on drinking water; health, safety and ecological effects of natural gas pipeline and/or rail transport of shale oil through Virginia.*

As you will soon discover, there are many articles presenting voluminous information about hydraulic fracturing. The LWV-VA Fracking study committee has looked at most of them. Briefly, fracking is a method to release natural gas and oil trapped inside bedrock that could not be economically retrieved with traditional methods; it is a fiercely debated political and environmental issue—perfect for a League study!

The study committee researched, gathered information both pro and con on the issue, and has presented a lengthy report on the subject, along with consensus questions for member feedback. The process of consensus will be reviewed in February, when LWVFA will hold fracking consensus meetings. The group also developed discussion questions to guide us in our understanding of the information presented and help us tackle the consensus questions. As LWV-VA Program Director Frances Schutz suggested: “It is a massive topic. I strongly recommend, if possible, that you devote two meetings to work on this - the first would be mostly informational and informal discussion; the second would be the consensus discussion and recording.” She also commended committee members on the amount of hard work they put into this effort and their dedication in sharing their knowledge and making it available to all.

So, the Fairfax Board, upon my recommendation, decided to split the material and present Part I (first eight pages) of the Fracking Study in this January *VOTER* along with the discussion questions; Part II with the consensus questions will be in February’s *Fairfax VOTER*. However, in order to answer the discussion questions, you will need access to the entire 20+-page article and some other resources.

Some of these resources will be available in print and electronic form at the Briefing and At-Large meeting on January 7. However, the complete article and all additional resources are available now on the LWV-VANatural Resources website created for this project at: <http://www.lwv-va-natres.org/>. There you can find everything you want to know (and more!) about fracking and associated research used in producing the study, as well as other state Leagues’ positions on fracking. Because states can have differing topography and rock formations that affect the extraction process and associated environmental concerns, state Leagues have addressed the topic individually.

Also, there is an LWV-VA Facebook Group for League members, where the latest information (worldwide) is posted by study committee members. One must be a Facebook user to participate in the group and since it is a “private” group, one must be invited to become a member. If you want to know more, contact Sherry Zachry at [programs@lwv-fairfax.org](mailto:programs@lwv-fairfax.org). **BE SURE TO SAVE THIS JANUARY VOTER FOR THE FEBRUARY MEETING.** Part I of the LWV-VA Fracking Study follows.

## Fracking in Virginia

Rona Ackerman, Editor

Carolyn Caywood, Sue Delos, Meghan Dorsett, Carol Lindstrom

### Part I: What is Fracking?

Hydraulic fracturing (a.k.a. fracking or fracing) is a method to release natural gas and oil trapped inside bedrock that cannot be economically retrieved with traditional methods. Fracking is a fiercely debated political and environmental issue. Advocates believe it is a safe and economical source of clean energy that provides jobs, assures energy independence, and boosts the economy. Critics claim it pollutes the air and drinking water, affects health, promotes seismic activity, contributes to the greenhouse gases, and will delay the development of renewable energy sources.

#### What is Natural Gas?

Natural gas is a mixture consisting primarily of methane (87-97%), ethane, propane, butane, and other gases. The exact composition varies by source. When processed, “dry gas” (gas) contains almost 100% methane; it is used for home heating and power generation. Ethane, propane, butane, etc., are separated from natural gas and sold as individual compounds. These are called LNG (liquefied natural gases), NLG (natural gas liquids), or “wet gases.”

#### Why Frack? Conventional vs. Unconventional Resources

Oil or natural gas located in rock with connected pore spaces is called conventional. When wells are drilled for conventional resources, oil or natural gas will flow or can be pumped to the surface (Figure 1<sup>1</sup>). Unconventional refers to resources in low permeability rock like shale (shale gas), or sandstone and limestone (**tight** gas or oil), with poorly connected pores that make it difficult for oil and natural gas to move through the rock to the well (Figure 2<sup>2</sup>). Advances in fracking technology now enable oil and natural gas producers to economically tap into unconventional resources that were previously impossible to obtain.

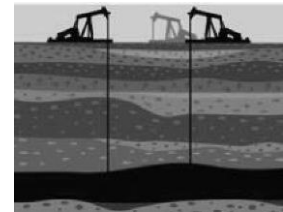


Figure 1- Conventional Resources

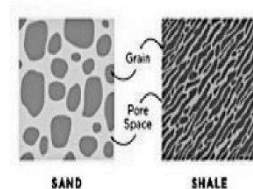


Figure 2- Sand has 1 billion times more pore space than shale

#### Fracking History

Fracking is not new. It was first done during the Civil War by putting torpedoes down wells. The idea of non-explosive fracking took off in the 1930s and in 1949 Halliburton patented a “Hydrafrac” process. But it was not until 2000 that Mitchell Energy developed a method to produce commercial volumes of shale gas. Modern fracking relies on two technologies, horizontal drilling and hydraulic fracturing. Horizontal drilling enables a well to make a 90° turn; it also enables one vertical well to reach resources that it otherwise would take 32 wells to tap (Figure 3<sup>3</sup>).

#### Fracking Vocabulary

- **Fracking fluids:** fluid injected into the well at high pressure, typically composed of 90% water, 9.5% proppants, and 0.5% chemicals.
- **Proppants:** granular particles like sand used to keep the cracks open.
- **Flowback:** fracking fluid that returns to the earth's surface along with extracted resources.
- **Produced water:** salty water/brine that has been under the earth for millions of years and comes to the surface; contains substances trapped in the rock, including naturally occurring radioactive material (NORM), such radium.
- **Wastewater:** produced water + flowback.

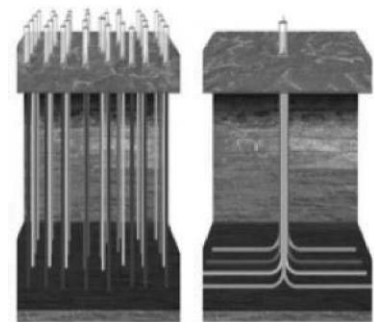


Figure 3- Traditional Vertical Well Spacing: 32 Padsites Needed for 32 Wells vs. Idealized Horizontal Spacing: 1 Padsite Yields up to 32 Wells

**The Fracking Process**

**1. Drilling:** After a well pad has been prepared, a well is drilled vertically to a depth of 1–2 miles. Once the vertical well reaches the layer of rock where the natural gas exists, the well is turned 90° and drilled horizontally along that rock layer. Horizontal drilling can extend more than a mile. At various stages during the drilling process, the well is encased in steel and cement to prevent leaking into groundwater (Figures 4<sup>13</sup> and 5<sup>4</sup>).

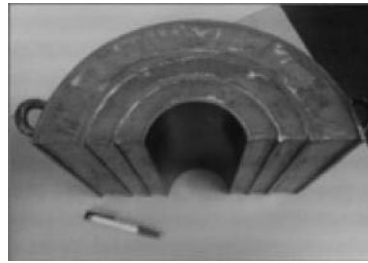


Figure 4- Cross section of a well casing

**2. Fracking:** When drilling is complete, a perforation gun is lowered into the horizontal well section and shoots holes through the casing and cement. Water delivered to the well site is mixed with proppant and chemicals to make the fracking fluid that is injected into the well at extremely high pressure, fracturing the rock. When the pressure is released, some of the fracking fluid (now called flowback), produced water, and released gas flow up the well. The proppant remains behind, holding the fractures open. At the surface, gas production units (GPUs) separate out the gas. Wastewater is stored in open pits at the site, and can be disposed of in injection wells, treatment plants, or recycled (with or without treatment) for use in future fracking operations<sup>5,6,7</sup> (Figure 6<sup>8</sup>). Chesapeake Energy has two brief animations that explain the process: Chesapeake Energy Horizontal Drilling Method (<https://www.youtube.com/watch?v=vvRCYLnVWG8>) and Chesapeake Energy Hydraulic Fracturing Method (<https://www.youtube.com/watch?v=qjP-K1Va11k>).

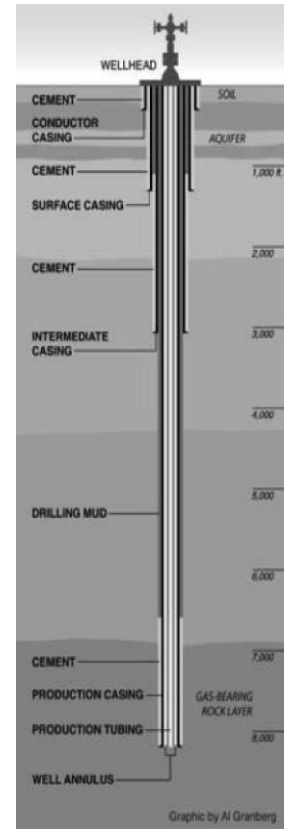
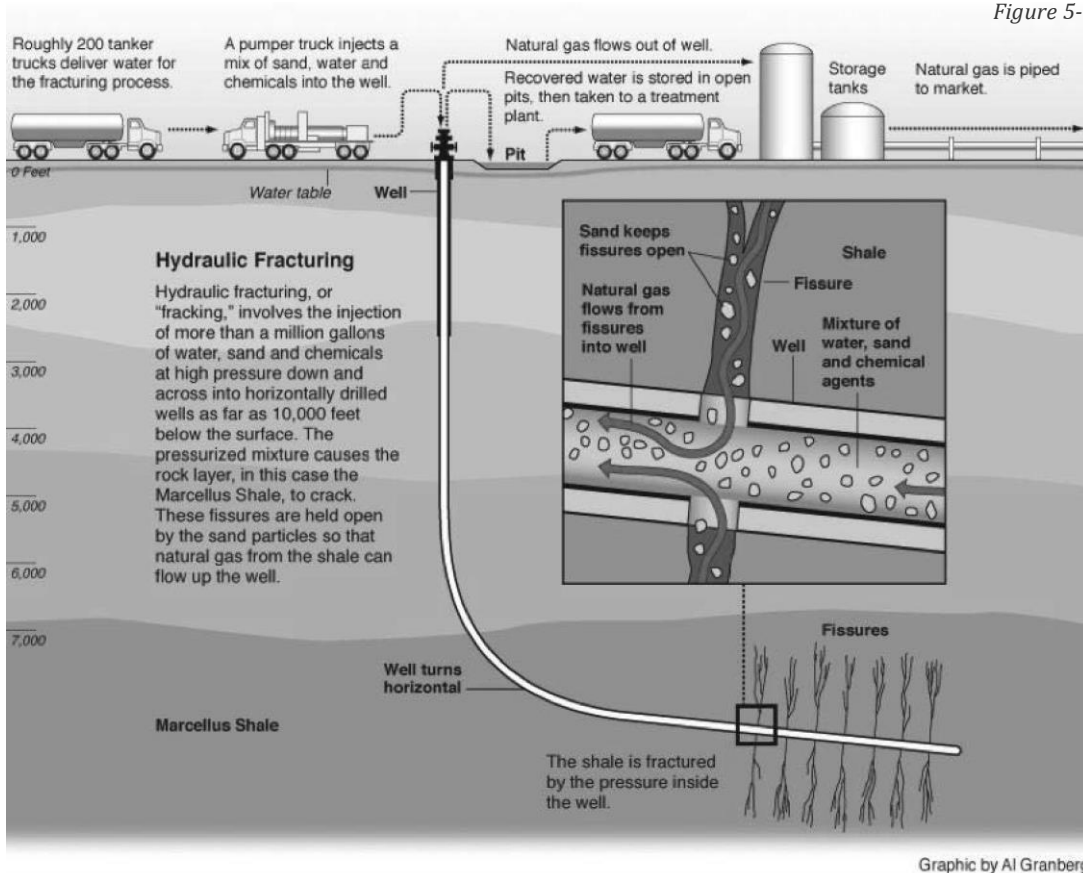


Figure 5- Anatomy of a Gas Well



Graphic by AI Granberg

3. **Post-Fracking:** A gathering pipeline brings the gas from the production well to large transmission pipelines. Compressor stations are located every 40-100 miles along the pipelines to compress the gas to a specified pressure, allowing it to continue traveling along the pipeline.

Wells are estimated to last 20–40 years. When a well is no longer in use, it is plugged. This is followed by reclamation (restoration) of the site.

**How Much Shale Gas Is There?**

Shale plays, which are located within **basins**, contain significant accumulations of natural gas. (Figure 7<sup>9</sup>) Shale gas and tight oil plays make up half of US dry gas production. By 2018, the US will become a net exporter for the first time since the 1950s. By 2040, shale gas and tight oil plays are expected to be 69% of production, and net exports will be 18% of production<sup>10</sup> (Figure 8<sup>10</sup>).

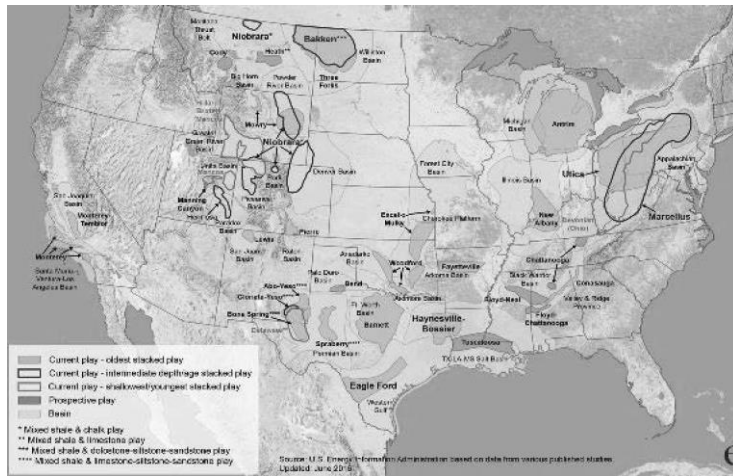


Figure 7- Shale Plays in the Lower 48 States

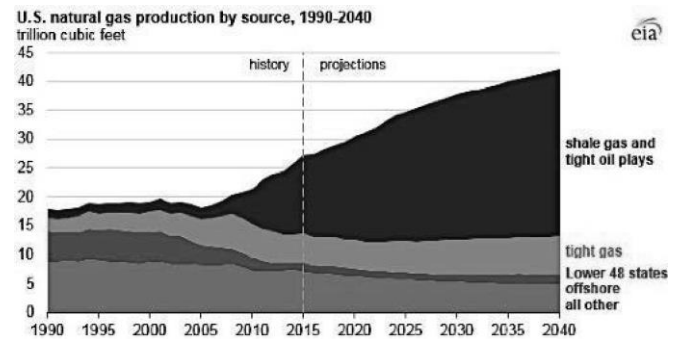


Figure 8- U.S. Energy Information Administration, Annual Energy Outlook 2016 **Note:** All other includes natural gas production from coalbed methane, Alaska, and all Lower 48 onshore sources not specified above.

**Part II: What Gas Resources Are In Virginia?**

Figure 9<sup>11</sup> shows the three areas where natural gas may be found in Virginia: the Marcellus Shale formation; the southwest Virginia coalbed methane and non-coal gas fields; and the Tidewater Mesozoic basins.

**Marcellus Shale**

The Marcellus Shale (Figure 9 inset) is the largest shale play in the US and in July 2016 accounted for 38% of US shale gas production.<sup>12</sup> It covers the western edge of the commonwealth, but a recent study by the US Geological Survey (USGS) indicates that the Marcellus in Virginia is thermally overmature, meaning that the shale was most likely heated to too high a temperature in the past to preserve economic quantities of gas or oil.<sup>13</sup> In 2014, the US Forest Service limited the amount of land available for oil and gas leases in the George Washington National Forest to 177,000 acres, down from 995,000 acres.<sup>14</sup>

**Southwest Virginia**

There are 8,062 producing wells in Virginia,<sup>15</sup> all located in the Southwest counties of Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, and Wise. Approximately 2,100 gas wells have been fracked in shale, sandstone and limestone since the 1950s, and about 6,000 coalbed methane wells, which are unconventional, have been fracked using a “foam frack” of nitrogen, water, and chemicals. Nitrogen is used because water may cause the soil to swell and hinder or block the flow of gas. As little as 35,000 gallons of water may be required to fracture a coalbed methane well; in comparison, 6,000,000 gallons may be used to frack a well in the Marcellus. Development of southwest Virginia’s natural gas resources continues, with new wells being drilled and hydraulically fractured every year.<sup>13</sup>

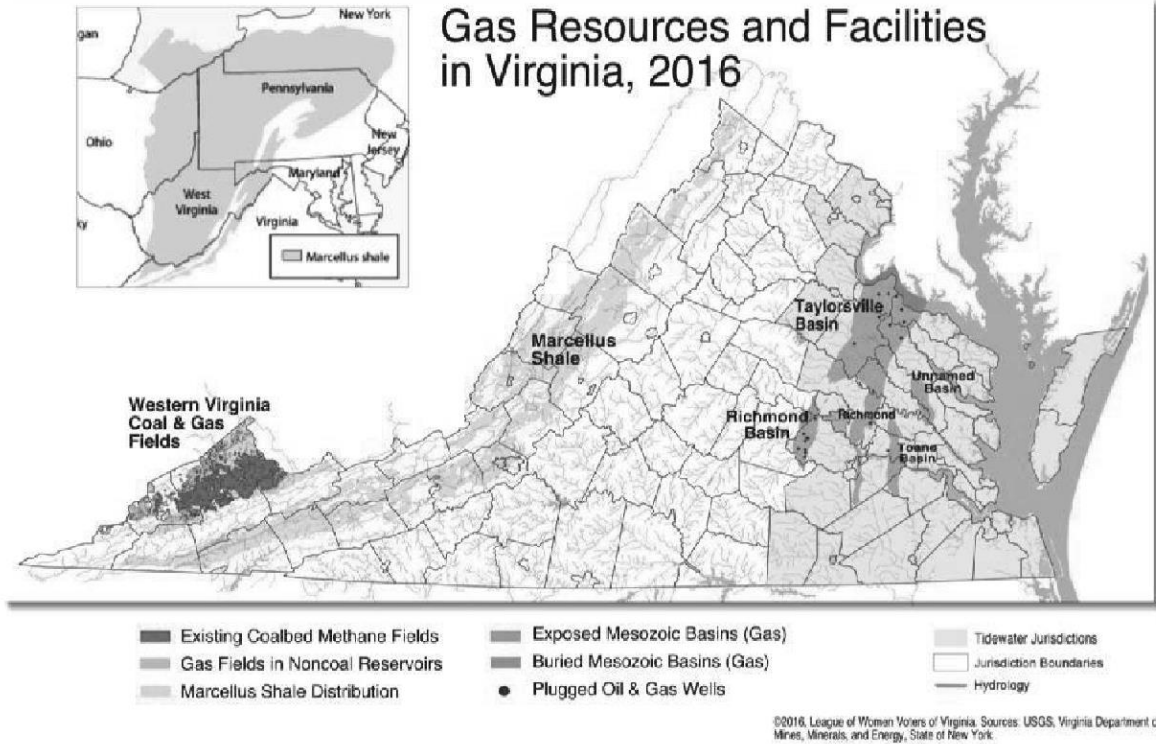


Figure 9- Gas Resources in Virginia

**Tidewater Virginia Mesozoic Basins**

The Chesapeake Bay Preservation Act § 62.1-44.15:68, defines **Tidewater Virginia** as the darker area shown in Figure 9. Within that area, there are four explored Mesozoic Basins: Taylorville, Richmond, Toano, and an unnamed basin.

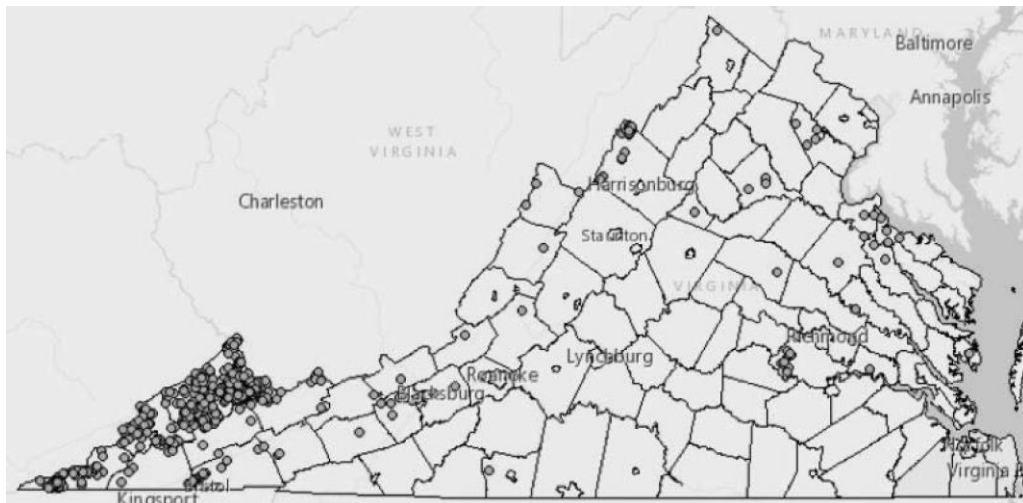


Figure 10- Plugged Wells in Virginia



**Taylorsville and Richmond Basins**

The Taylorsville Basin runs approximately 108 miles from Richmond to Annapolis, MD. Figure 9 only shows the Virginia portion. The Richmond Basin is located in Chesterfield, Henrico, Powhatan, Goochland, and Amelia counties (the latter three not in Tidewater Virginia). All wells drilled in these two basins from 1917-1992 were abandoned since they did not indicate viable flows of gas.<sup>13</sup> Figure 10<sup>16</sup> shows the known plugged wells in Virginia.

In 2011, a USGS Assessment<sup>17</sup> estimated that the Taylorsville and Richmond basins contained:

Basin	Natural Gas (Trillion cubic feet)	Liquid Natural Gas (ethane, butane, etc.)
Taylorsville	1 Tcf	37 million barrels
Richmond	0.2 Tcf	11 million barrels

In comparison, US Energy Information Administration (USEIA) estimates the Marcellus has 410 Tcf of gas.<sup>18</sup> The advances in fracking technology and USGS’s assessment have revived interest in the area.

Shore Exploration & Production Corp. opened a field office in Caroline County and paid over \$1.26 million to secure more than 84,000 acres of land in leases (Figure 11<sup>19</sup>). The approximate acreage per county is:

- Caroline (40,000 acres)
- Essex (13,000 acres)
- King and Queen (6,000 acres)
- King George (10,000 acres)
- Westmoreland (14,000 acres).

Landowners are only getting \$15 an acre, but if a well becomes productive, they could receive \$400,000 a year in royalties.<sup>20</sup> The leases are for 7 years; many were signed in 2011.

Shore Exploration officials have stated that they will sell the leases to a larger company. That company will apply for permits and determine the drilling methods to be used.<sup>21</sup>

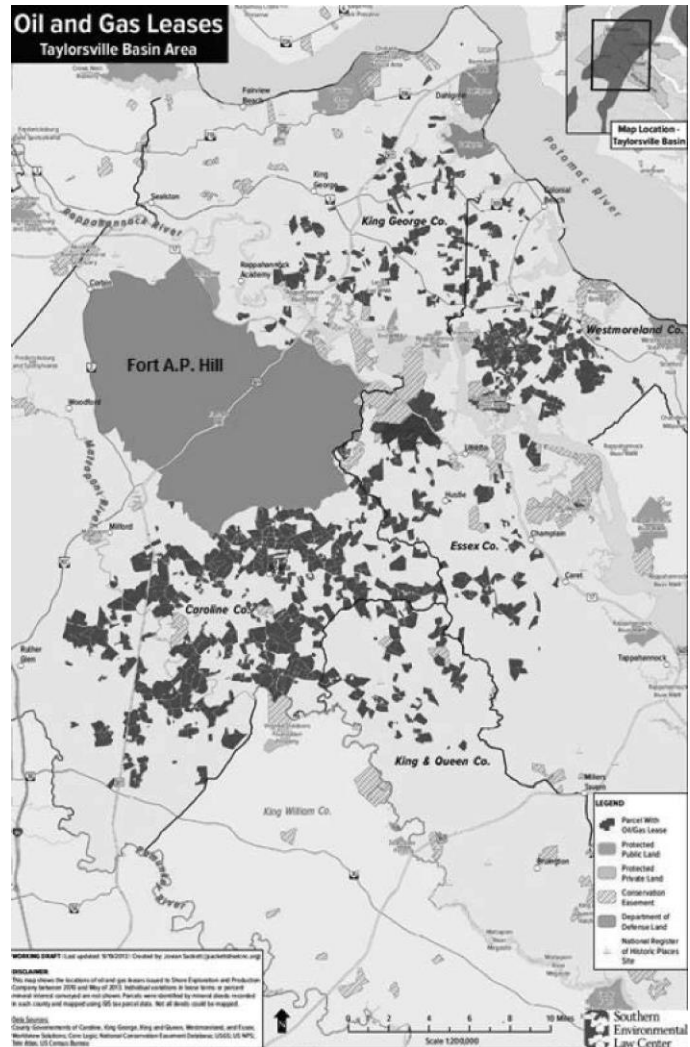


Figure 11- Taylorsville Basin Oil and Gas Leases (in red) as of 9/19/2013

## Part III: What Laws and Regulations Govern Fracking?

### 1. Federal

Fracking is largely exempt from most federal environmental legislation, leaving the job of regulating to the states.

<i>Fracking Exemptions to Federal Policies<sup>22</sup></i>		
<b>Act</b>	<b>Purpose</b>	<b>Fracking Exemption</b>
<u>Clean Air Act of 1963</u>	Control air pollution at the federal level.	Treats each individual well as a source of pollutants and does not require well operators to consider the aggregate impact of many wells in a specific area.
<u>National Environmental Policy Act of 1969</u>	Requires federal agencies to conduct environmental assessments of federal actions.	Energy Policy Act of 2005 excludes oil and gas drilling from NEPA.
<u>Clean Water Act of 1972</u>	Ensure that surface waters meet minimum pollution standards.	Fracking fluids are exempt from classification as pollutants even though more common pollutants such as storm run-off are included.
<u>Safe Water Drinking Act of 1974</u>	Protect the quality of the country's groundwater and drinking water supply.	Amended in 2005 to exclude injection wells.
<u>Resource Conservation and Recovery Act of 1976</u>	To regulate waste for the protection of human health and the environment.	Waste from oil fields was exempted in 1982.
<u>The Energy Policy Act of 2005</u>	Regulates many aspects of federal energy policy.	Only regulates fracking when diesel fuels are used in the fracking fluids.

### *Recent Changes to Federal Fracking-Related Regulations*

**March 2015:** The first major federal regulations on hydraulic fracturing were put in place by the Department of the Interior's Bureau of Land Management "to ensure that wells are properly constructed to protect water supplies, to make certain that the fluids that flow back to the surface as a result of hydraulic fracturing operations are managed in an environmentally responsible way, and to provide public disclosure of the chemicals used in hydraulic fracturing fluids."<sup>23</sup>

**June 2016:** A federal judge struck down the regulations, ruling that, in accordance with the 2005 Energy Policy Act, the Bureau of Land Management doesn't have the authority to establish rules over fracking.<sup>24</sup>

**May 2016:** The Environmental Protection Agency (EPA) issued three rules to curb fracking emissions.<sup>25</sup>  
**August 2016:** 15 states sue to block those standards.<sup>26</sup>

**June 2016:** The EPA banned unconventional oil and gas extraction wastewater from municipal sewage plants, citing the inability of these plants to handle toxic and radioactive pollutants.<sup>27</sup>

### 2. The States

- Massachusetts and Vermont (states without shale resources), and New York have banned fracking.<sup>28</sup>
- Maryland has a moratorium in place until October 2017. On September 26, 2016 Maryland unveiled the country's "most stringent" fracking regulations; environmentalists and fracking opponents in the state legislature say they will try to prohibit fracking altogether, while the moratorium is still in place.<sup>29</sup>
- North Carolina, Oklahoma, and Texas have passed restrictions on local communities' ability to limit fracking.<sup>28</sup>
- The Delaware Basin River Commission (Delaware, New Jersey, New York, Pennsylvania) has had a de facto moratorium on gas drilling there since 2010, but in May 2016 a complaint was filed in federal district court.<sup>30</sup>

### 3. Virginia

*In Virginia, all oil and gas operators must comply with:*<sup>31</sup>

- The Virginia Gas and Oil Act of 1990
- Virginia Gas and Oil Regulation
- Virginia Gas and Oil Board Regulations
- State Water Control Law
- Virginia Pollution Discharge Elimination System Regulations
- Additional requirements for the Tidewater Region (see Figure 9 for boundaries)

A Southern Environmental Law Center attorney said a 2013 survey found that Virginia had, and will continue to have, the least stringent regulations of states with shale gas production, at least until its rules are updated.<sup>32</sup>

*Who has regulatory authority over natural gas and oil wells in Virginia?*

- **Virginia Department of Mines Minerals and Energy (DMME)** is the regulatory authority for statewide gas and oil permitting and operations. DMME’s mission is to enhance the development and conservation of mineral resources in a safe and environmentally sound manner to support a more productive economy.
- **Division of Gas and Oil**, a division of DMME, is responsible for regulating the effects of gas and oil operations both on and below the surface, issuing permits, client assistance programs, inspection of well sites and gathering pipelines, reclamation of abandoned well sites, protection of correlative rights [receiving an equitable share of a resource pool such as water or gas], and promotion of resource conservation practices.
- **Virginia Gas and Oil Board**, the Division’s governing body is composed of a Director, one representative from the gas or oil industry; one from the coal industry; and four who cannot represent those industries.
- **State Corporation Commission** has jurisdiction over interstate pipelines and gas storage.
- **Virginia Department of Environmental Quality (DEQ)** administers state and federal laws and regulations for air quality, water quality, water supply and land protection.

<i>Recent Changes to Virginia’s Fracking-Related Regulations</i>	
<b>2013</b>	DMME initiated a regulatory action to review its existing Gas and Oil Regulation.
<b>Feb 2014</b>	The General Assembly killed: SB48, “Eastern Virginia Groundwater Management Area; prohibition on oil and gas drilling” which allowed for drilling for oil and gas only if DEQ standards were met.
<b>Aug 2014</b>	DMME and DEQ signed a Memorandum of Agreement <sup>33</sup> outlining special requirements for wells drilled in the Tidewater region.
<b>Oct 2015</b>	New Gas and Oil Regulations were published. In summary, DMME “proposes to (i) amend permit application requirements to include disclosure of all ingredients anticipated to be used in hydraulic fracturing operations, certification that the proposed operation complies with local land use ordinances, inclusion of a groundwater sampling and monitoring plan, and submission of an emergency response plan; (ii) require a pre-application meeting jointly conducted by the DMME and the Department of Environmental Quality before an operator drills for gas or oil in Tidewater Virginia; (iii) require well operators to use FracFocus, the national hydraulic fracturing chemical registry website, to disclose the chemicals used in hydraulic fracturing operations; (iv) establish a groundwater sampling, analysis, and monitoring program before and after well construction; (v) add language related to the use of centralizers in the water protection string of the casing; (vi) strengthen casing and pressure testing requirements for well casings used in conventional and coalbed methane gas wells; and (vii) provide protection for trade secrets from public dissemination while allowing this information to be made available to first responders and local officials in the event of an emergency.” <sup>34</sup>

<b>2016</b>	DMME asked STRONGER (State Review of Oil and Natural Gas Environmental Regulations) for a Follow-Up Review of Virginia regulations. STRONGER also held public hearings. STRONGER anticipates publishing the review in December 2016. (An Initial Review was done in 2004. STRONGER is a 501(c)3 nonprofit whose Board is comprised of equal representation from the oil and gas industry, state oil and gas environmental regulatory agencies, and the environmental public advocacy community.)
<b>Aug 2016</b>	The new Gas and Oil Regulations were submitted for final executive branch approval; there is no timeline, but approval is expected this year.
<b>Sept 2016</b>	Gas industry pushes for delay in Virginia's regulations so the General Assembly can pass a Freedom of Information Act exemption for fracking chemicals. <sup>35</sup> HB1389 continued from 2016 Legislative Session.

### *Recent Developments on Local Regulatory Authority*

<b>Jan 2013</b>	Virginia Attorney General Ken Cuccinelli issued an opinion that stated "a local governing body cannot ban altogether the exploration for, and the drilling of, oil and natural gas within the locality's boundaries." <sup>36</sup>
<b>May 2015</b>	Virginia Attorney General Mark Herring issued an opinion that stated "Localities may use their zoning authority to prohibit "unconventional gas and oil drilling," commonly known as fracking." <sup>37</sup>
<b>Aug 2016</b>	The King George Board of Supervisors voted to amend their zoning ordinance and Comprehensive Plan, prohibiting drilling within 750 feet from resource protected areas, such as rivers and creeks, as well as roads, buildings and schools, making only 9 percent of the county potentially eligible for drilling. <sup>38</sup>

The remainder of the LWV-VA Fracking Study, "Part IV: The Pros and Cons of Fracking?" and "Part V. Concluding Thoughts" will be published in the February Fairfax VOTER along with the Consensus Questions. To read the entire Study, go to: [http://www.lwv-va-natres.org/wp-content/uploads/2016/10/Fracking\\_In\\_Virginia\\_10%2011%202016.pdf](http://www.lwv-va-natres.org/wp-content/uploads/2016/10/Fracking_In_Virginia_10%2011%202016.pdf) on the LWVFA website ([www.lwv-fairfax.org](http://www.lwv-fairfax.org)) or <http://www.lwv-va-natres.org/>. Appendices I & II and References for the entire report are also available on the website and will be provided at the January 7, 2017 Briefing and At-Large Meeting, as well as at the February 4 meeting.

### ***KEEP THIS JANUARY VOTER FOR FEBRUARY'S CONCLUSION AND CONSENSUS MEETINGS!***

Remember, additional information, including the entire study and more resources, are available at: <http://www.lwv-va-natres.org/>

## **A Request From Our Historian**

Whenever you have a good photo or some other memorabilia to share with your League friends, please just send or drop it off at the League office. Label it "League history" or "Bernice" or put it in my board folder.

We could really use items from 2000 through 2016. (Earlier is OK, too, although, as most of you know, our history books prior to that time are well covered.) By the way, I turned in another album/history book recently. It should be at the office if you'd like to look through it.

Thank you for your help!  
Bernice Colvard, LWVFA Historian

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## Questions for Discussion: Fracking Study

These Discussion Questions are provided to help guide you through the material prior to discussing the Fracking Study Consensus Questions in February. There are no right or wrong answers, but you will need to consider the entire report to fully understand the meaning of the questions. The questions will be covered at the January 7, 2017 Briefing and At-Large Meeting and additional resources keyed to the questions will be provided.

1. Are DMME's proposed regulations (reference page 7) stringent enough? Too stringent? What changes would you recommend?
2. What has priority—the public's right to know the chemicals being used in fracking, or the protection of trade secrets? Does your opinion change if the chemicals used would be disclosed to first responders in the event of an emergency?
3. How long should a well be monitored after it has been plugged and the site reclaimed? Who should have responsibility for this? Virginia? Operator? Landowner? Locality?
4. Is the amount of financial assurance currently required by the Code of Virginia sufficient (reference page 15)? If not, how should it be changed? Should blanket bonding be allowed??
5. Should Virginia limit fracking to those technologies that use a reduced volume of water such as nitrogen foam frack (reference page 10)? Can you foresee any issues associated with these technologies?
6. The EPA's Underground Injection Control program oversees the construction, operation, permitting, and closure of injection wells in Virginia. If Virginia takes responsibility, Class II wells would not need to meet EPA requirements; the standard would be an "effective program to prevent underground injection which endangers drinking water sources." Discuss the pros and cons of Virginia jurisdiction: state vs. federal control, more or less stringent standards than EPA, Virginia's ability to administer the program, Virginia's willingness to take on possible additional costs, etc. (reference page 11)
7. How should seismic zones be considered when siting wells, mines, pipelines, etc. (see page 11) ?
8. The only health risks definitively associated with fracking are worker-related (reference page 17). What other health risks have been linked to fracking and are they credible?
9. The 2010 anti-fracking film Gasland (which was not wholly accurate) brought concerns related to fracking into the public consciousness. Fossil fuel (oil, gas, coal) production using conventional techniques raises many of the same concerns, but does not have the same negative image. What makes fracking is so much more controversial?
10. Does national energy independence have a higher priority than concerns about fracking (reference page 3)?
11. Shale gas is cleaner than other fossil fuels—does that make it better (reference page 12)?

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### We Want to Know More About You

LWVFA wants to re-institute its "Members' Corner" in upcoming issues. Please send a paragraph or two about yourself - with a picture if you want - to [gpdouvelis@aol.com](mailto:gpdouvelis@aol.com)

### League Lobby Day: Mark Your Calendar

Our annual trip to Richmond to lobby for League positions is scheduled for **Wednesday, February 1st** at the Capitol in Richmond. Leaguers from throughout the state will attend the WLRT meeting and then meet with their legislators. Look for details in the February issue of the *Fairfax VOTER*.

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[www.lwv-fairfax.org](http://www.lwv-fairfax.org)

# Unit Discussion Meeting Locations

## Topic: Fracking Consensus: Part 1

Members and visitors are encouraged to attend any meeting convenient for them, including the “At Large Meeting” and briefing on Saturdays when a briefing is listed. As of December 1, 2016, the locations were correct; please use phone numbers to verify sites and advise of your intent to attend. Some meetings at restaurants may need reservations.

### Saturday, January 7

#### **10 a.m. At-Large Unit and Briefing**

League Conference Room  
Packard Center  
(inside Annandale Community Park)  
4026 Hummer Road  
Annandale, VA 22003  
Contact: Sherry 703-730-8118

### Monday, January 9

#### **1:30 p.m. Greenspring (GSP)**

Hunters Crossing Classroom  
Spring Village Drive  
Springfield, VA 22150  
Contact: Edith (703) 644-3970 or  
Gloria (703) 852-5113

### Wednesday, January 11

#### **9:30 a.m. McLean Day (McL)**

StarNut Café  
1445 Laughlin Ave.  
McLean, VA 22101  
Contact: Adarsh (703) 795-7281  
or Anjali (703) 509-5518

#### **9:45 a.m. Mt. Vernon Day (MVD)**

Mt. Vernon District Government Center  
2511 Parkers Lane  
Alexandria, VA 22306  
Contact: Gail (703) 360-6561 or  
Diane (703) 704-5325

#### **10 a.m. Fairfax Station (FXS)**

8739 Cuttermill Place  
Springfield, VA  
Contact: Lois, 703-690-0908

#### **7 p.m. Reston Evening (RE)**

Reston Regional Library (interior)  
11925 Bowman Towne Drive  
Reston, VA 20190-3311  
Contact: Kelly, 202-263-1311

### Thursday, January 12

#### **9 a.m. Reston Day (RD)**

11908 Paradise Lane  
Oak Hill, VA  
Contact: Charleen, 703-620-3593

#### **9:30 a.m. Springfield (SPF)**

Packard Center  
4026 Hummer Road  
Annandale, VA 22003  
Contact: Marge, 703-451-0589

#### **10 a.m. Centreville-Chantilly (CCD)**

Sully District Government Center  
4900 Stonecroft Blvd.  
Chantilly, VA 20151  
Contact: Leslie, 571-213-6384

#### **1 p.m. Fairfax/Vienna (FX-V)**

Oakton Regional Library  
Oakton Conference Room  
10304 Lynnhaven Pl.  
Oakton, VA 22124  
Contact: Liz, 703-281-3380

#### **7:45 p.m. Mt. Vernon Evening (MVE)**

Paul Spring Retirement Community  
Mt. Vernon Room  
7116 Fort Hunt Road  
Alexandria, VA 22307  
Contact: Jane, 703-960-6820

# February Meetings:

## Fracking Consensus: Part 2







The League of Women Voters of the Fairfax Area (LWVFA)  
 4026-B Hummer Road, Annandale, VA 22003-2403  
 703-658-9150. Web address: [www.lwv-fairfax.org](http://www.lwv-fairfax.org)

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**The LWVFA Fairfax VOTER ©  
 January, 2017  
 Peggy Knight, Co-President  
 Wendy Fox-Grage, Co-  
 President Ron Page, Editor  
 Liz Brooke, Content Editor**

The League of Women Voters is a nonpartisan political organization that encourages the public to play an informed and active role in government. At the local, state, regional and national levels, the League works to influence public policy through education and advocacy. Any person at least 16 years old, male or female, may become a member.

The League of Women Voters never supports or opposes candidates for office, or political parties, and any use of the League of Women Voters name in campaign advertising or literature has not been authorized by the League.

**LWVFA MEMBERSHIP FORM**

**Membership Dues: Individual \$65** \_\_\_\_\_ **Household \$90** (2 persons, 1 Voter) \_\_\_\_\_ **Student \$32.50** \_\_\_\_\_  
**Dues year is July 1 – June 30** (A subsidy fund is available; check here \_\_\_\_\_ and include whatever amount you can afford.)  
**Membership Status:** New \_\_\_\_\_ **Renewing** \_\_\_\_\_ **Reinstatement** \_\_\_\_\_ **Donation** \_\_\_\_\_  
 (Dues are not tax deductible. Tax-deductible donations must be written on a separate check or PayPal Payment to “LWVFA Ed Fund.”)

*(Please print clearly)*

**Name** \_\_\_\_\_ **Unit (if renewing)** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_ **State** \_\_\_\_\_ **Zip + 4** \_\_\_\_\_

**Phone (H)** \_\_\_\_\_ **(M)** \_\_\_\_\_ **E-Mail** \_\_\_\_\_

**Please make checks payable to “LWVFA” and mail to: LWVFA, 4026-B Hummer Road, Annandale VA 22003-2403.**  
**OR Join Online at: www.LWV-Fairfax.org/join.html**

**I am interested in becoming involved in** *(please indicate by circling the appropriate bullet(s)):*

- > **Providing organizational support** (graphics design, website development/maintenance, fundraising/ grant writing)
- > **Voter Services** (e.g., voter registration drives, candidate forums, developing Voters’ Guides)
- > **Researching/writing about issues in which LWVFA has an interest** (e.g., environment, firearms safety, mental health, schools, domestic violence, criminal justice; or, chairing an LWVFA study committee on voter turnout or human trafficking).
- > **Representing the League in governmental fora** (e.g. serving as LWVFA representative on Fairfax County citizens’ committees and agencies, such as affordable housing, Fairfax County Public Schools).

> **Other** \_\_\_\_\_