



Economic Development and Infrastructure

October 16, 2013



Potential Fluvanna Budget Pressures

- Water Solutions (JRWA, DOC, Groundwater, others)
- School Funding / CTE
- VRS and VLDP
- Affordable Care Act
- FUSD
- Continuation of EMS Contract Services
- Chesapeake Area Watershed and TMDL
- Increasing law enforcement requirements
- Unfunded deferred maintenance
- Property values and reassessment?

County
Finances

Our current County debt has reduced our flexibility



Economic Development Goals

- **Working to change the current tax base** *(Excludes Utilities)*
 - **Current: 93% residential and 7% commercial/business**
 - Optimal: 70% residential and 30% commercial/business
- **Boost economic development opportunities by adding necessary water and sewer infrastructure**
 - Add water and sewer infrastructure to Zion Crossroads Community Planning Area
 - Support Fork Union Sanitary District (FUSD) with additional water sources
 - Expand water/sewer infrastructure into other county growth areas, when feasible and resources available



Water Planning History

- **Numerous studies, committees, and proposals over the last several decades**
- **Options have been studied and re-studied**
- **The only recent, substantive actions to date:**
 - Creation of the James River Water Authority with Louisa County in 2009
 - Elevated Storage Tanks for FUSD
 - Palmyra Sewer Treatment Plant
 - Fluvanna/Louisa Agreement to advance JRWA Project

Citizen's Water Committee

Thirteen (13) alternatives reviewed in 2010

Reduced to 3 options

[Link - HISTORICAL WATER REVIEWS](#)



Where are we now...?



Water Source Review

- **Multiple surface water sources**
 - James, Rivanna, Hardware, and Mechunk
 - JRWA (3,000,000 GPD permit – shared with Louisa)
 - DOC (75,000 GPD available plus 100,000 GPD sewer)
 - Aqua Virginia (500,000 GPD available)
- **Potential groundwater sources?**
 - Investigating known ground water sources
 - Performing hydrogeological analysis for other possible ground water sources
 - Good quality, high yield wells are less expensive to develop, treat, and operate than surface water systems



Water Sources

500,000 GPD

Aqua

75,000 GPD

DOC Line

Possible Louisa County Connection

Airline Railroad

Unknown GPD

ECTI Raw Water

Ground Water?

250,000 GPD

Thomasville Water

250,000 GPD

Existing Unused Intake

JRWA Intake

FUSD

- 2009 Planning Areas**
- Community Planning Areas
 - Rural Preservation
 - Rural Residential
 - Town Boundaries

3,000,000 GPD

- Aqua Virginia
- Department of Corrections
- Historic Airline Railroad
- Existing ECTI Raw Water Line
- Fork Union Sanitary District (FUSD)



Louisa Water Usage at Zion Crossroads

Year	Average GPD
2001	0
2002	23,840
2003	25,620
2004	49,480
2005	52,960
2006	59,180
2007	98,160
2008	108,100
2009	113,200
2010	133,400
2011	110,950
2012	126,700
2013	137,500

Business or Business Type	Year Opened
Bank	Existing
BP Service Station	Existing
Burger King	Existing
Exxon Service Station	Existing
McDonald's Restaurant	Existing
Shell Service Station	Existing
WalMart Distribution Center	Existing
Church	Existing
UVa Dialysis Office	Existing
Spring Creek (Housing & Golf Course)	2002
Best Western	2007
iHop Restaurant	2008
Lowe's	2009
UVa Credit Union	2009
WalMart	2010
Dental Clinic	2010/11
Martha Jefferson Medical Office	2010/11
Vet Clinic	2010/11
Arby's Restaurant	2012
Sheetz Service Station	2012
UVa Medical Office	2012
Advance Auto	2013
Car Wash	2013



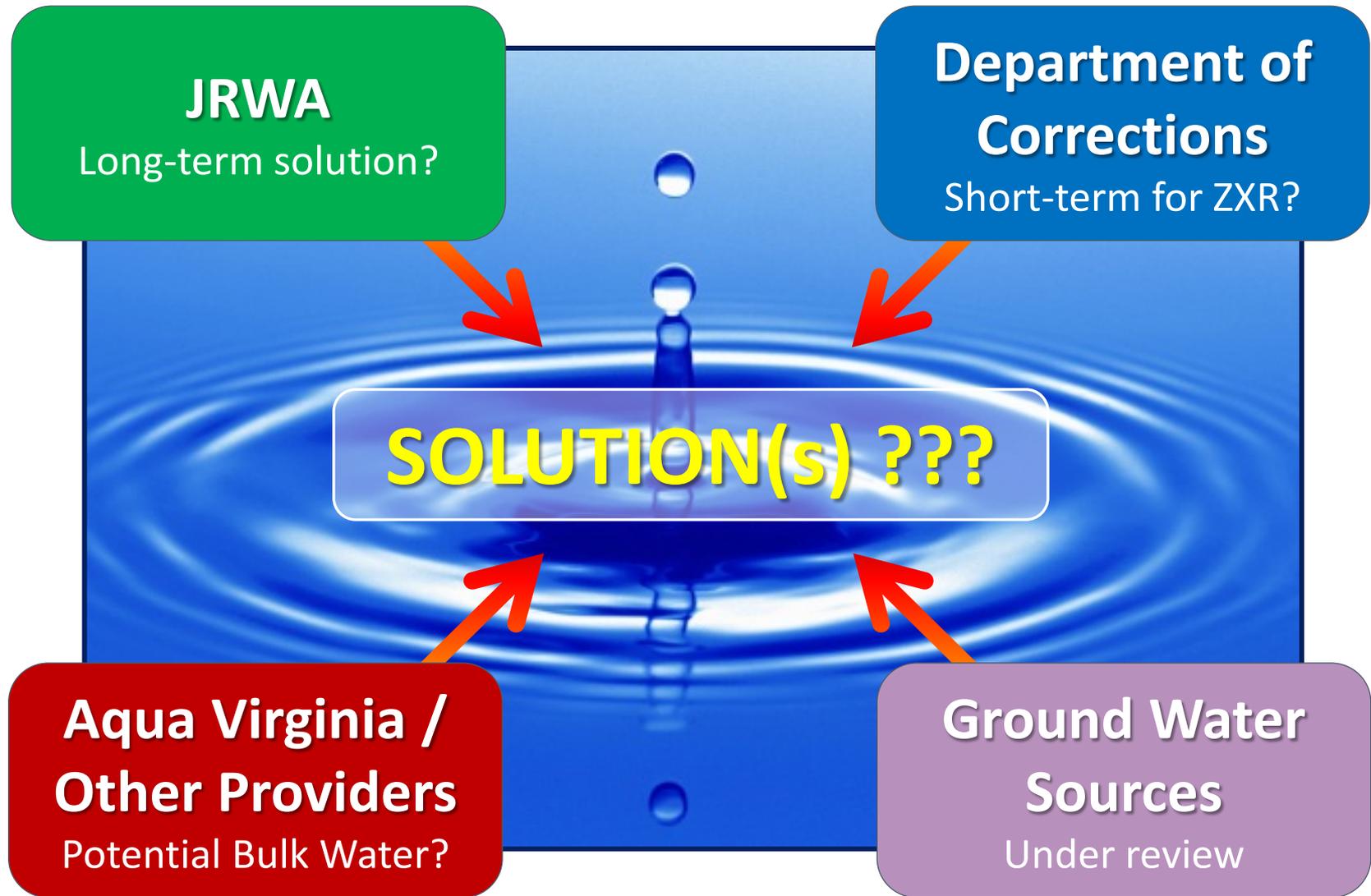
Available GPD for Various Water Options

Water Source	Gallons Per Day
James River Water Authority	3,000,000 (Shared)
Aqua Virginia Capacity	500,000
Department of Corrections	75,000+
“Thomasville” Wells	100,000-250,000?
Other Groundwater Sources	???
Existing FUSD Intake (James)	250,000?
ECTI Raw Water	Full GPD Unknown

Sewer Source	Gallons Per Day
Department of Corrections	100,000
Private Sewer Capacity	???



Current Water Options Under Review





James River Water Authority

JRWA

DOC

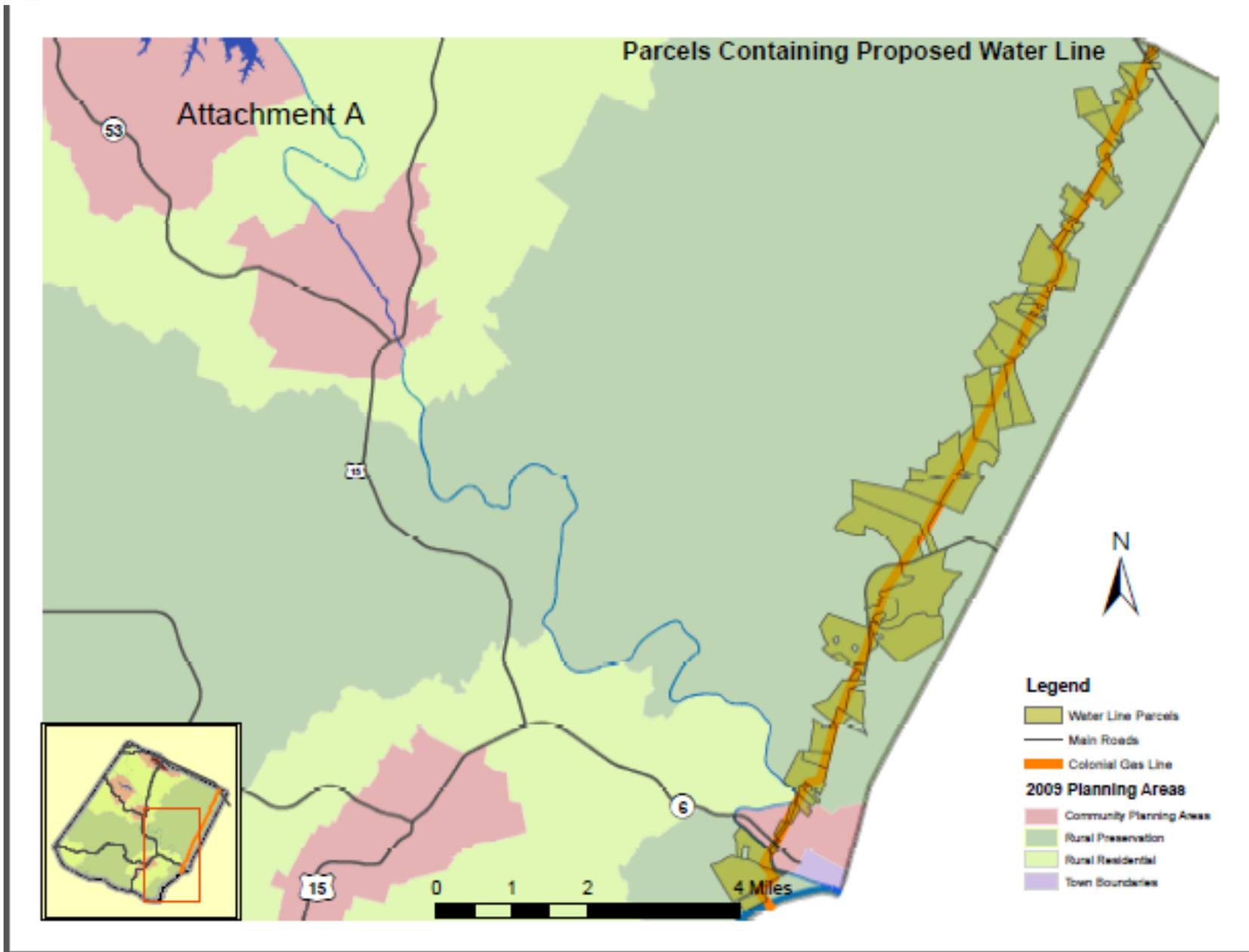
Aqua Virginia

Ground Water

- **“Big Straw” water source**
 - Total of 3,000,000 GPD for Fluvanna/Louisa
- **Potential County-wide service area in coming years**
- **Louisa ready to move forward**
- **~\$3.5M JRWA cost**
- **Fluvanna Costs**
 - Annual - ~\$160K to 295K
 - 20 Year - ~\$2.6 to 3.0M

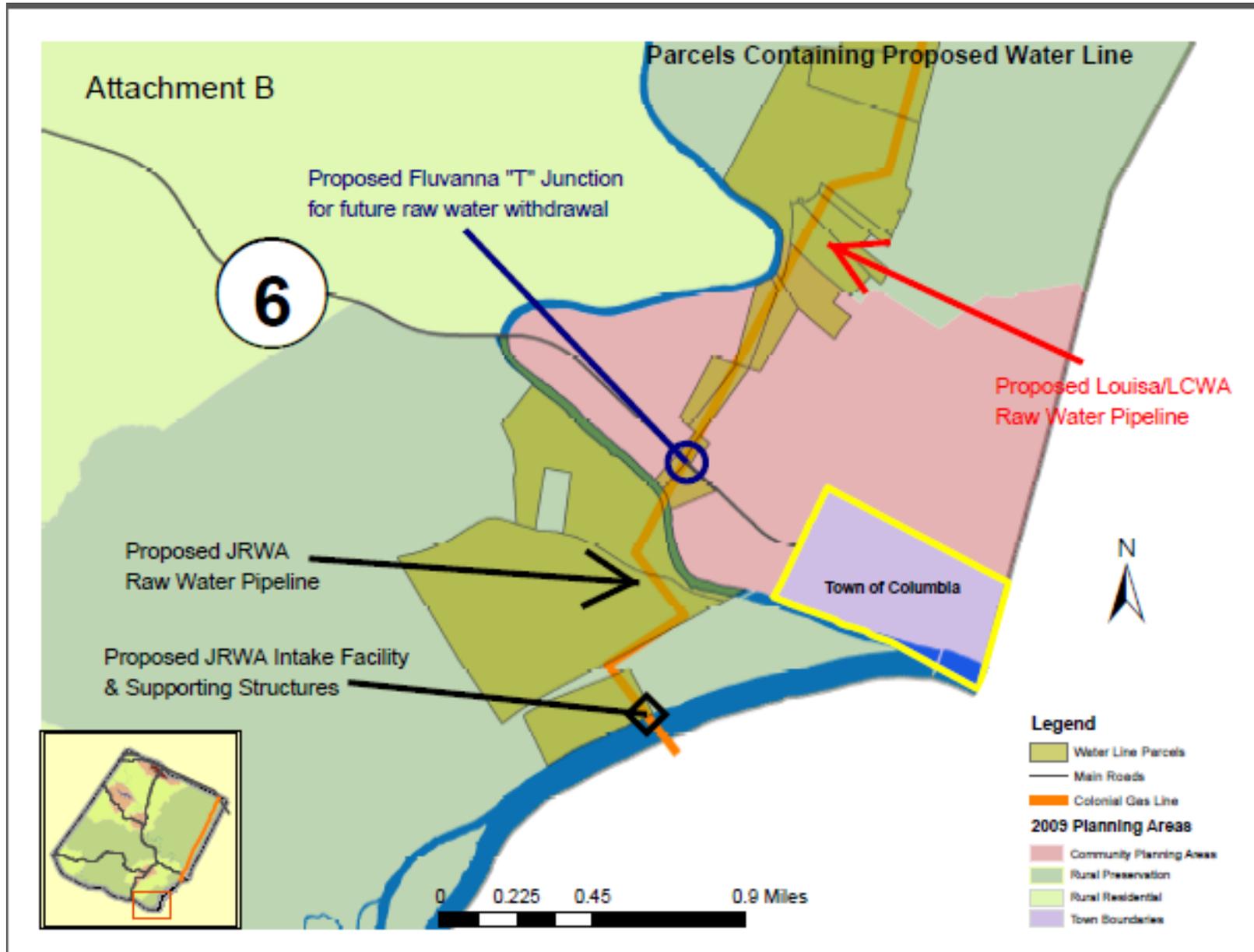


JRWA Option





JRWA Option (cont.)





JRWA Initial Costs (July 2013 Estimate)

Estimate of Total Project Costs for 3.0 MGD Raw Water Uptake near Columbia and Associated Water Line to a point North of Route 6 in Fluvanna County

Description/Source	Original Estimate	Original FY Estimate	Current FY	Avg. Inflation	Adjusted Cost Estimate (2) (Current FY \$)
3 MGD Raw Water Intake Facility (1)	\$ 1,150,000	2003	2014	3.50%	\$ 1,678,965
8,500 LF Raw Water Line	\$ 1,126,240	2003			\$ 1,644,276
Estimated Cost of Pipeline Easements					???
Estimated Cost of Permit Modification (to move Raw Water Uptake from vicinity of Brems Bluff to vicinity of Columbia)					\$ 25,000
					Estimated JRWA Costs
					\$ 3,348,241

NOTES:

- (1) The cost estimate for the 3.0 mgd raw water uptake structure is taken from the 2003 Water Study performed by Anderson & Associates, adjusted for inflation.
- (2) The cost estimate for the raw water line was computed in 2003 dollars using the methodology from the 2003 Anderson & Associates study, then adjusted for inflation (see Work Sheet titled "Raw Water Line" for details of this computed estimate).



Current JRWA Proposal

PROS

- The “Big Straw” option
- Need to exercise permit to avoid risk of loss
- Helps ensure Fluvanna can access JRWA water on our timeline
- Low initial capital cost
- Enhances long-term relationship with Louisa

CONS

- Permit will need to move from Bremono to Columbia area
- Cost of intake facility and +/-18” pipeline
- Process and costs for obtaining easements for uptake facility and pipeline
- Substantial additional costs for running and treating the water, when needed



Department of Corrections

JRWA

DOC

Aqua Virginia

Ground Water

- **To begin serving Zion Crossroads Community Planning Area**
- **Excess capacity under existing withdrawal permit**
 - Water – 75,000 GPD
 - Sewer – 100,000 GPD (25K GPD Reserve)
- **~\$4.65M for County build-out (incl. 3-year operating costs)**
 - FY14 CIP - \$575,000, FY15 CIP - \$3,100,000, FY16 CIP - \$975,000
 - 20 yr Financing - ~\$7.5M
- **Water Cost - \$1.50 per thousand gallons**
- **Sewer Cost - \$1.50 per thousand gallons**



Current DOC Proposals

PROS

- With existing DOC infrastructure, service delivery to Zion Crossroads can occur on a quick timeline.
- DOC has other County partnerships across the Commonwealth
- Extremely low cost of water and sewer per 1,000 gal (Expenses charged by DOC are at cost)
- Short distribution line
- Meets the County's initial water needs; could be augmented with other water sources
- County owns the system
- Operating costs built-in to the system cost estimate
- Additional DOC Water Treatment Plant Capacity available for possible expansion (if additional water source available)

CONS

- Limited amount of water; may only meet needs for 5-8 years depending upon growth
- Cost for additional water source(s) if needed
- Estimated annual costs of ~\$270K to 480K for 20 year financing. At current budget levels, the Real Property tax rate would have to be raised by \$0.01-0.02 to meet the payment requirements.
- Limited to 100K GPD of sewer capacity (add'l 25K may be available upon request)



Aqua Virginia / Other Providers

JRWA

DOC

Aqua Virginia

Ground Water

- **Potential bulk water provider**
- **Can provides up to 500,000 GPD of treated water**
- **Water Cost - \$X.XX per thousand gallons**
- **Potential for discussion of FUSD operations**



Aqua Virginia and Other Possibilities

PROS

- Helps meet the County's longer term water needs for Zion Crossroads
- Fluvanna sets water/sewer rates and manages "our" system
- No adverse rate impacts expected for Lake Monticello Aqua Virginia customers

CONS

- May not need 500K GPD in 20 years, even at high growth rates.
- May add growth pressure to area between LM and Correctional Facility
- Limited to 100K GPD of sewer capacity, unless other sources identified



Ground Water

JRWA

DOC

Aqua Virginia

Ground Water

- **FY14 CIP funding for first phase
Hydrogeologic studies in growth areas**
- **“Thomasville” wells under review**
 - Potential 100K-250K GPD
- **Additional existing FUSD well under review**
- **Costs unknown, but generally lower than surface water options**



Ground Water

PROS

- Shorter timeframe access to water
- Generally lower capital investment cost
- Generally lower need for water treatment

CONS

- Sources and water quality still unknown
- Water quantities historically limited in the Piedmont Region
- Costs unknown



Financing Costs for Water Projects

Term		Amount Financed			
		\$1,750,000	\$5,000,000	\$10,000,000	\$15,000,000
1	15-Jul-15	\$156,301	\$446,575	\$893,151	\$1,339,726
2	14-Jul-16	170,625	487,500	975,000	1,462,500
3	14-Jul-17	166,250	475,000	950,000	1,425,000
4	15-Jul-18	162,079	463,082	926,164	1,389,247
5	15-Jul-19	157,500	450,000	900,000	1,350,000
6	14-Jul-20	153,125	437,500	875,000	1,312,500
7	14-Jul-21	148,750	425,000	850,000	1,275,000
8	15-Jul-22	144,531	412,945	825,890	1,238,836
9	15-Jul-23	140,000	400,000	800,000	1,200,000
10	14-Jul-24	135,625	387,500	775,000	1,162,500
11	14-Jul-25	131,250	375,000	750,000	1,125,000
12	15-Jul-26	126,983	362,808	725,616	1,088,425
13	15-Jul-27	122,500	350,000	700,000	1,050,000
14	14-Jul-28	118,125	337,500	675,000	1,012,500
15	14-Jul-29	113,750	325,000	650,000	975,000
16	15-Jul-30	109,435	312,671	625,342	938,014
17	15-Jul-31	105,000	300,000	600,000	900,000
18	14-Jul-32	100,625	287,500	575,000	862,500
19	14-Jul-33	96,250	275,000	550,000	825,000
20	15-Jul-34	91,887	262,534	525,068	787,603
TOTAL PAYMENTS		\$2,650,591	\$7,573,116	\$15,146,233	\$22,719,349



Cost of Water Options

JRWA

Project Costs

Annual - ~\$91K to 170K

20 Year - ~\$2.6 to 3.0M

Department of Corrections

Project Costs

Annual - ~\$270K to 480K

20 Year - ~\$7.5M



Project Costs

Annual -

20 Year -

Aqua Virginia

Ground Water Sources

Project Costs

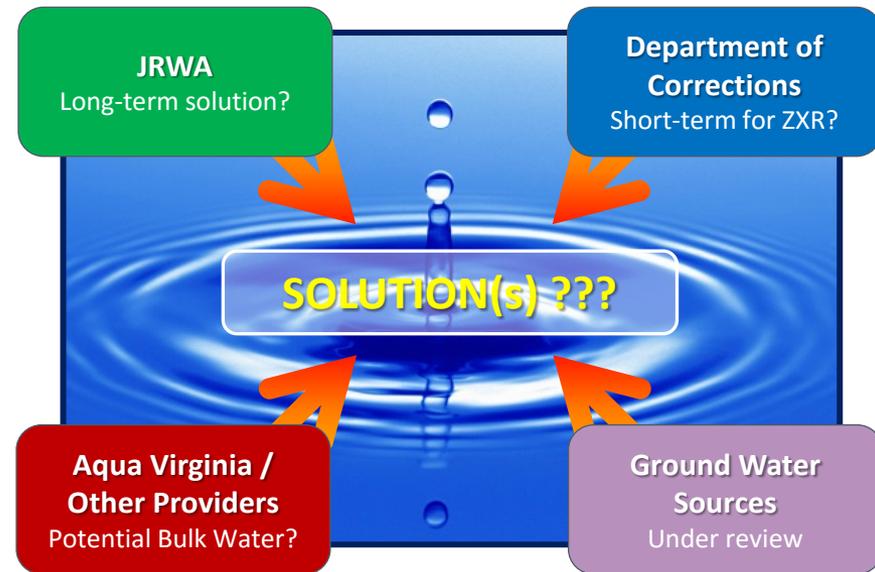
Annual - Unknown

20 Year - Unknown



Where do we go...?

- **Proceed with a combination plan?**
 - DOC for short-term
 - Groundwater for short-term and intermediate
 - JRWA for long term needs
- **Affordable now**
- **Scalable over time**
- **Board Considerations**
 - Possible budget pressures
 - Immediate investment costs
 - Long-term payback
 - Water sources
 - Control of the system



- **Develop Master Water and Sewer Plan**



Questions?