

AGENDA
FLUVANNA COUNTY BOARD OF SUPERVISORS
Regular Meeting
Circuit Courtroom
Fluvanna Courts Building
May 4th 2011
2:00 p.m.

2-REPORTS

Jay Scudder, County Administrator

3-PUBLIC COMMENTS #1 (5 minutes each)

4-CONSENT AGENDA

TAB A Minutes of April 6th, 2011 – Mary Weaver, Clerk to the Board of Supervisors

TAB B Minutes of April 20th, 2011 – Mary Weaver, Clerk to the Board of Supervisors

5-ACCOUNTS PAYABLE

TAB C Renee Hoover, Finance Director

6-PUBLIC HEARING

None

7-PRESENTATIONS (normally not to exceed 10-minute limitation)

TAB D RCC Radio Study Presentation – Jeff Pegram, Associate Director for RCC Consultants

TAB E Redistricting Presentation – Darren Coffey, Director of Planning

8-ACTION MATTERS

TAB F Proclamation/Ruritan Week, May 15-21, 2011– Jay Scudder, County Administrator

9-OLD BUSINESS

TAB G ZTA 11:01 – Sidewalks & Setbacks [A request to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation). Amending this ordinance will help improve the connectivity within commercial properties and ensure pedestrian access to and from adjacent residential areas, schools, commercial areas or open spaces. Updating the sidewalk requirements will further bring the subdivision ordinance into conformity with the goals of the comprehensive plan for increasing alternative transportation opportunities in Fluvanna County.] – Matt Weaver, Planner

10-NEW BUSINESS

11-PUBLIC COMMENT #2 (5 minutes each)

12-CLOSED MEETING

None Scheduled

13-ADJOURN

For the Hearing-Impaired – there is a listening device available at the Board of Supervisors Room upon request.. TTY access number is 711 to make arrangements.

For persons with Disabilities – if you have special needs, please call the County Administrator's Office at 591-1910 and relay your request.

Pledge of Allegiance

I pledge allegiance to the flag
of the United States of America
and to the Republic for which it stands,
one nation, under God, indivisible,
with liberty and justice for all.

ORDER

1. It shall be the duty of the Chairman to maintain order and decorum at meetings. The Chairman shall speak to points of order in preference to all other members.
2. In maintaining decorum and propriety of conduct, the Chairman shall not be challenged and no debate shall be allowed until after the Chairman declares that order has been restored. In the event the Board wishes to debate the matter of the disorder or the bringing of order; the regular business may be suspended by vote of the Board to discuss the matter.
3. No member or citizen shall be allowed to use abusive language, excessive noise, or in any way incite persons to use such tactics. The Chairman and/or the County Administrator shall be the judge of such breaches, however, the Board may vote to overrule both.
4. When a person engages in such breaches, the Chairman shall order the person's removal from the building, or may order the person to stand silent, or may, if necessary, order the person removed from the County property.

For the Hearing-Impaired – there is a listening device available at the Board of Supervisors Room upon request.. TTY access number is 711 to make arrangements.

For persons with Disabilities – if you have special needs, please call the County Administrator's Office at 591-1910 and relay your request.

MOTION: I move the regular meeting minutes of the Fluvanna County Board of Supervisors for Wednesday, April 6th, 2011 be adopted.

AGENDA BOARD OF SUPERVISORS DATE: MAY 4th, 2011

SUBJECT: Adoption of the Fluvanna County Board of Supervisors regular meeting minutes.

RECOMMENDATION: Approval

TIMING: Routine

FISCAL IMPLICATIONS: None

POLICY IMPLICATIONS: None

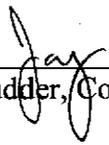
DISCUSSION: None

LEGISLATIVE HISTORY: None

Staff: Mary L. Weaver, Clerk to the Board of Supervisors

Copy:

County Administrator's Use Only
Comments:



Jay Scudder, County Administrator

**FLUVANNA COUNTY BOARD OF SUPERVISORS
REGULAR MEETING MINUTES
Circuit Courtroom
Fluvanna Courts Building
April 6th, 2011
2:00 p.m.**

MEMBERS PRESENT: John Y. Gooch, Chairman
Shaun V. Kenney, Vice-Chairman
Joe Chesser
Donald W. Weaver
Mozell H. Booker
Chris S. Fairchild – *arrived at 7:00pm*

ALSO PRESENT: Jay Scudder, County Administrator
Fred Payne, County Attorney
Renee Hoover, Finance Director
Darren K. Coffey, Planning Director
John Robins, Director of Public Works
Mary L. Weaver, Clerk, Board of Supervisors

CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE

Chairman Gooch called the meeting of April 6th, 2011, to order at 2:00 p.m., in the Circuit Courtroom of the New Courts Building in Palmyra, Virginia; and the Pledge of Allegiance was recited, after which, Chairman Gooch called for a moment of silence.

REPORTS

Mr. Jay Scudder, County Administrator, reported on the following topics:

- *Dooms/Bremo Transmission Line* – current right-of-way is 150ft., currently 100ft is cleared. Dominion will be clearing the additional 50ft. Owners can timber their portion of the right-of-way, if they desire. Mr. Payne commented regarding to this request, that in absence of an exemption, the Board has a role in reviewing this project.
- *County Health Rankings* – Virginia is ranked in the top 20 for health outcomes and ranks 13th for health factors.
- *Pet Shelter Grant* – awarded grant for \$7,500 to equip the Emergency Pet Sheltering Trailer.
- *Virginia Energy Purchasing Governmental Association* – new contract rates will save members approximately \$16 million on an annual basis.

PUBLIC COMMENTS #1

Chairman Gooch opened the floor for the first round of public comments.

The following citizens addressed the Board:

- Phyllis Montellese, Fork Union District – addressed the Board in reference to bringing in a winery to the Farmers Market at Pleasant Grove.

Board directed staff to look into this request and bring it back before the Board at the next meeting.

- Bob Peake, Cunningham District – addressed the Board in reference to the budget and promoting Economic Development.

With no one else wishing to speak, Chairman Gooch closed the first round of public comments.

CONSENT AGENDA

Mr. Weaver noted he was not present at the March 9th, 2011, work session meeting. The following items were approved under the consent agenda:

MOTION:

Mr. Weaver moved to approve the consent agenda, which consisted of:

- Minutes of February 23rd, 2011.
- Minutes of March 9th, 2011.
- Minutes of March 16th, 2011.
- Execution of Agreement with the VA Dept of Health for FY 11 Appropriations.
- FY11 Library supplement for Federal Reimbursement Funding.
- Approval of Payment to the James River Water Authority for Legal Services.
- Ag/Forestal District Renewal/AFD 01-002 Adams Creek.

Mr. Kenney seconded. The motion carried with a vote of 5-0. AYES: Gooch, Weaver, Booker, Kenney, and Chesser. NAYS: None. ABSENT: Fairchild.

ACCOUNTS PAYABLE

Renee Hoover, Finance Director, addressed the Board regarding the accounts payable.

MOTION:

Mr. Weaver moved that the Accounts Payable from February 23, 2011, through March 25th, 2011, and payroll for the month of February, 2011, in the amount of \$1,968,241.55, be ratified. Mr. Kenney seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Booker, Kenney, and Chesser. NAYS: None. ABSENT: Fairchild.

Fund 100	General Fund	\$ 1,149,459.76
Fund 120	Recreation	325.00
Fund 202	Federal Grants	5,712.34
Fund 302	Capital	216,038.20
Fund 401	Debt Service	45,871.65
Fund 502	Utility (Sewer)	7,166.45
Fund 505	Fork Union Sanitary District	21,701.15
	<u>Payroll</u>	<u>521,967.00</u>
	Total	\$ 1,968,241.55

PUBLIC HEARING

None

PRESENTATIONS:

None

ACTION MATTERS

Proclamation/April 2011 Celebrating Children’s Month

Ms. Nicole Shipp, Ms. Shannon Wilson, Mr. Jamie Vest, Ms. Kelly Bowen, and Ms. Karen Hebert addressed the Board with a short presentation of what Child Protective Services offers the residents in Fluvanna County and requested proclaiming April Celebrating Children’s Month, in recognition of Child Abuse Prevention Month and the work done in Fluvanna County.

MOTION:

Ms. Booker moved to approve the proclamation [attached hereto] proclaiming the month of April 2011, as Celebrating Children Month in Fluvanna County, in observation of Child Abuse Prevention Month. Mr. Chesser seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Chesser, Booker and Kenney. NAYS: None. ABSENT: Fairchild.

Resolution/National Crime Victims' Rights Week

Ms. Sherri Stader, Director, Victim/Witness Assistance Program, addressed the Board regarding bringing awareness to victim's rights.

MOTION:

Mr. Kenney moved to approve the resolution entitled "National Crime Victims' Rights Week, proclaiming the week of April 10-16, 2011, as Crime Victims' rights Week, and reaffirm the County's commitment to respect and enforce victims' rights and address their needs during Crime Victims' Rights Week and through the year. Mr. Chesser seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Chesser, Booker and Kenney. NAYS: None. ABSENT: Fairchild.

Proclamation National Telecommunicator's Week, April 10-16, 2011

Lieutenant Aaron Hurd, Sheriff's Department, addressed the Board, honoring the men and women whose diligence and professionalism keep our county and citizens safe.

MOTION:

Mr. Chesser moved to approve the proclamation proclaiming the week of April 10-16, 2011, as "National Telecommunicator's Week", and honor the men and women whose diligence and professionalism keep our county and citizens safe. Mr. Kenney seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Chesser, Booker and Kenney. NAYS: None. ABSENT: Fairchild.

Audit Services Contract

Ms. Renee Hoover addressed the Board with an Audit Services Contract from Robinson Farmer Cox Associates.

MOTION:

Mr. Kenney moved to approve the contract with Robinson Farmer Cox Associates for audit services, and authorizes the County Administrator to execute contract pending review by County Attorney. Ms. Booker seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Chesser, Booker and Kenney. NAYS: None. ABSENT: Fairchild.

Fork Union Firehouse Schematic Design

Mr. John Robins, Director of Public Works, and Mr. Donald Booth, Project Manager for DJG, presented the board with the schematic design of the Fork Union Firehouse for review and approval.

MOTION:

Ms. Booker moved to approve the schematic design drawings (with the discussed modifications) for the Fork Union Firehouse, and authorize the Architect, DJG, Inc, of Williamsburg, Virginia to proceed with the Design Development Phase of the Project, that is budgeted for \$76,217. Mr. Chesser seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Chesser, Booker and Kenney. NAYS: None. ABSENT: Fairchild.

Appointment/Economic Development Commission (EDC)

MOTION:

Ms. Chesser moved to appoint Ms. Shelley Murphy to the Economic Development Commission, Rivanna position, with a term to begin immediately and to terminate on December 31st, 2013. Mr. Weaver seconded. The motion carried, with a vote of 5-0. AYES: Gooch, Weaver, Chesser, Booker and Kenney. NAYS: None. ABSENT: Fairchild.

OLD BUSINESS

Legal Matters

Mr. Weaver questioned when the Board would receive updated information on legal matters in which the Board is involved. Mr. Payne stated that he was prepared to update them today. Chairman said they could do a closed meeting today.

Sign Ordinance

Mr. Chesser addressed concerns with the current sign ordinance. Mr. Coffey addressed the concerns.

Town of Columbia Task Force

Mr. Kenney asked what the current status is and when was the first meeting of the Town of Columbia Task Force. Mr. Scudder replied that the first meeting was months ago, and Ms. Pat Groot was working on a grant through DHCD with the TJPDC. Mr. Kenney would like to see the Task Force meetings on a more regular basis.

NEW BUSINESS

Ms. Booker mentioned problems with the heating in Social Services Department.

PUBLIC COMMENTS #2

Chairman Gooch opened the floor for the second round of public comments.

The following citizens addressed the Board:

- Claudia Thomas, Columbia District – addressed the Board in reference to the Fork Union Firehouse.

With no one else wishing to speak, Chairman Gooch closed the second segment of public comments.

CLOSED MEETING

MOTION TO ENTER INTO A CLOSED MEETING:

At 3:45 p.m., Mr. Weaver moved the Fluvanna County Board of Supervisors enter into a closed meeting, pursuant to the provisions of Section 2.2-3711 of the Code of Virginia, 1950, as amended, for the purpose of discussing legal matters. Mr. Kenney seconded. The motion carried by a vote of 5-0. AYES: Chesser, Gooch, Kenney, Booker and Weaver. NAYS: None. ABSENT: Fairchild

MOTION TO EXIT A CLOSED MEETING & RECONVENE IN OPEN SESSION:

At 4:08 p.m., Mr. Weaver moved the closed meeting be adjourned and the Fluvanna County Board of Supervisors convene again in open session. Mr. Kenney seconded. The motion carried by a vote of 5-0. AYES: Chesser, Gooch, Kenney, Booker and Weaver. NAYS: None. ABSENT: Fairchild

MOTION:

At 4:09 p.m., the following resolution was adopted by the Fluvanna County Board of Supervisors, following a closed meeting held Wednesday, April 6th 2011 on motion of Mr. Weaver, seconded by Mr. Kenney and carried by the following vote: AYES: Chesser, Gooch, Kenney, Booker and Weaver. NAYS: None. ABSENT: Fairchild

“**BE IT RESOLVED** to the best of my knowledge (i) only public business matters lawfully exempted from open meeting requirements under Section 2.2-3711-A of the Code of Virginia, 1950, as amended, and (ii) only such public business matters as were identified in the motion by which the closed meeting was convened were heard, discussed or considered in the meeting.”

RECESS

The Board recessed at 4:10 p.m., to reconvene at 7:00 p.m., for the FY12 Budget Public Hearing.

RECONVENE

The Board reconvened at 7:00 p.m.

PRESENTATION

Proposed FY 2012 – 2016 Capital Improvement Plan

Ms. Crystal Besecker, Budget Analyst, provided a PowerPoint presentation on the FY 2012 – 2016 Capital Improvement Plan.

PUBLIC HEARING

FY 2012 – 2016 Capital Improvements Plan

Chairman Gooch opened the public hearing.

The following citizens addressed the Board:

- Sam Patterson, Palmyra District – addressed the Board in opposition to the CIP.
- Elizabeth Franklin, Columbia District – addressed the Board regarding maintaining the fund balance.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

PRESENTATION

Proposed FY 2012 Real Estate Tax Rate Increase

Ms. Crystal Besecker, Budget Analyst, provided a PowerPoint presentation on the FY 2012 Real Estate Tax Rate. Information was provided on the collection rate and what the proposed increase in the Real Property Tax Rate from \$.54 to \$.57 per \$100 of assessed value would entail.

PUBLIC HEARING

Proposed FY 2012 Real Estate Tax Rate Increase

Chairman Gooch opened the public hearing.

The following citizens addressed the Board:

- Mr. Brian Thomas, Columbia District – opposed the tax rate increase.
- Mr. Sam Richardson, Rivanna District – opposed the tax rate increase.
- Mr. Sam Patterson, Palmyra District – opposed the tax rate increase.
- Ms. Linda Fletcher, Cunningham District – supports the tax rate increase for the children’s future.
- Mr. Jacques Ruch, Rivanna District – supports the tax rate increase.

- Mr. Jerome Patchen, Palmyra District, representing Fluvanna Taxpayers Association – wanted to clarify that the FTA was in support of the \$.54 budget that Mr. Weaver proposed.
- Ms. Norma Hutner, Rivanna District – opposed the tax rate increase.
- Mr. Minor Eager, Palmyra District – spoke in reference to delinquent taxes and opposed the tax rate increase.
- Ms. Lori Hoffman, Rivanna District – spoke in reference to what the new school will offer the County.
- Ms. Susan Morris, Cunningham District – spoke in reference to the new school, saying “think outside the box”.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

PRESENTATION

Proposed FY 2012 Personal Property Tax Rate Increase

Ms. Crystal Besecker, Budget Analyst, provided a PowerPoint presentation on the FY 2012 Personal Property Tax Rate. Information was provided on what the proposed increase in the personal property tax rate from \$ 3.85 to \$ 4.15 per \$100 of assessed value would entail.

PUBLIC HEARING

Proposed FY 2012 Personal Property Tax Rate Increase

Chairman Gooch opened the public hearing.

- Mr. Sam Richardson, Rivanna District – spoke in opposition to the tax rate increase.
- Mr. Dennis Holder, Kents Store – spoke in opposition to the tax rate increase.
- Mr. Bob Ullenbruch, Palmyra District – spoke in opposition to the tax rate increase.
- Mr. Sam Patterson, Palmyra District – spoke in opposition to the tax rate increase.
- Ms. Claudia Thomas, Columbia District – spoke in opposition to the tax rate increase.
- Mr. Thomas Payne, Palmyra District – spoke in reference to comparing Fluvanna to Louisa, and the difference between Flex Plan A vs. Flex Plan B, for the new high school.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

PRESENTATION

Proposed FY 2012 Personal Property Administrative Fee Increase

Ms. Crystal Besecker, Budget Analyst, provided a PowerPoint presentation on the FY 2012 Personal Property Administrative Fee Increase. Information was provided on what the proposed increase in the Personal Property Administrative Fee, from \$ 6.00 to \$ 18.00 for motorcycles and from \$20.00 to \$33.00 for all other motor vehicles would entail.

PUBLIC HEARING

Proposed FY 2012 Personal Property Administrative Fee Increase

Chairman Gooch opened the public hearing.

The following citizens addressed the Board:

- Mr. Sam Richardson, Columbia District – spoke in opposition to the fee increase.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

PRESENTATION

Proposed FY 2012 County Budget

Ms. Crystal Besecker, Budget Analyst, provided a PowerPoint presentation on the proposed FY 2012 County Budget. Ms. Besecker provided information on the advertised operating expenses; significant increases and decreases; total schools funding; local funding for schools; the enterprise funds; the advertised operating revenues; and local revenue sources.

PUBLIC HEARING

Proposed FY 2012 County Budget

Chairman Gooch opened the public hearing.

The following citizens addressed the Board:

- Mr. Jerome Patchen, Palmyra District, representing Fluvanna Taxpayers Association – supports \$.45 tax rate, and would like to see a resolution adopted to put all future capital improvements to referendum.
- Mr. Sam Edwards, Cunningham District – opposed to a tax increase.
- Mr. Fred Harris, Fork Union District – opposed to a tax increase.
- Ms. Perrie Johnson, Fork Union District – supports full funding of schools.
- Ms. Norma Hunter, Rivanna District – opposed to a tax increase.
- Ms. Lori Hoffman, Rivanna District – supports \$.57 tax rate, to fully fund schools.
- Linda Fletcher, Cunningham District – supports full funding of schools.
- Mr. Tom Payne, Palmyra District – spoke in reference to missed opportunities, supports full funding of schools.
- Mr. Sam Richardson, Columbia District – spoke in reference to his use of democracy.
- Ms. Janice O'Malley, Fork Union District – opposed to a tax increase.
- Mr. Emerson Farley, Fork Union District – spoke in reference to privatizing education
- Mr. Brian Phillips, Rivanna District – supports full funding of schools.
- Ms. Tammy Grigg, Fork Union District – supports full funding of schools.
- Mr. Adrian Miller, Rivanna District – opposed to a tax increase.
- Ms. Berth Armstrong, Fork Union District – spoke in reference to paying taxes and the need for Economic Development.
- Mr. Bob Ullenbruch, Palmyra District – spoke in reference to coming together with one idea.
- Ms. Shirley Roundtree, Fork Union District – spoke in reference to the need for Economic Development.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

COMMENTS AND DISCUSSION

Mr. Fred Payne, County Attorney, reviewed with the board the procedure for discussing the budget.

RECESS

At 9:49 p.m., the Board recessed.

RECONVENE

At 10:00 p.m., the Board reconvened.

ADJOURN

MOTION:

At 10:03 p.m., Mr. Kenney moved to adjourn the meeting of Wednesday, April 6th, 2011. Mr. Weaver seconded. The motion carried, with a vote of 6-0. AYES: Chesser, Gooch, Kenney, Booker, Weaver and Fairchild. NAYS: None. ABSENT: None

John Y. Gooch, Chairman

DRAFT

BOARD OF SUPERVISORS
COUNTY OF FLUVANNA
RESOLUTION

At a regular meeting of the Board of Supervisors of the County of Fluvanna held in the Fluvanna County Courts Building at 2:00 p.m. on the 6th day of April 2011, at which the following members were present, the following resolution was adopted by a majority of all members of the Board of Supervisors, the vote being recorded in the minutes of the meeting, as shown below:

<u>PRESENT</u>	<u>VOTE</u>
<i>John Gooch, Chairman</i>	<i>YEA</i>
<i>Shaun Kenney, Vice-Chairman</i>	<i>YEA</i>
<i>Mozell Booker</i>	<i>YEA</i>
<i>Donald Weaver</i>	<i>YEA</i>
<i>Joe Chesser</i>	<i>YEA</i>
<i>Chris Fairchild</i>	<i>ABSENT</i>

On the motion of Mr. Weaver, seconded by Mr. Kenney, which carried by a vote of 5-0, the following resolution was adopted:

**A RESOLUTION TO AUTHORIZE RENEWAL OF THE ADAMS CREEK
AGRICULTURAL/FORESTAL DISTRICT FOR AN ADDITIONAL TEN-YEAR PERIOD TO
EXPIRE MAY 16, 2021**

WHEREAS, the Fluvanna County Board of Supervisors approved the creation of the Adams Creek Agricultural/Forestal District on May 16, 2001, for a ten year period; and

WHEREAS, the district is set to expire on May 16, 2011; and

WHEREAS, in accordance with Section 15.2-4311 of the State Code of Virginia, the Fluvanna County Planning & Community Development Department contacted the current property owners of parcels identified in the Adams Creek Agricultural/Forestal District, and advised them that the approved district would expire on May 16, 2011, and inquired whether the owners desired that the property remain in or be removed from the district.

NOW, THEREFORE BE IT RESOLVED, on this 6th day of April 2011, that the Fluvanna County Board of Supervisors hereby renews the Adams Creek Agricultural/Forestal District for an additional ten-year period, to expire on May 16, 2021

Mary Weaver, Clerk
Board of Supervisors
Fluvanna County, Virginia

**RESOLUTION
PROCLAMATION**

By virtue of the authority vested in us, we hereby proclaim the month of April as **CELEBRATING CHILDREN MONTH** in **FLUVANNA COUNTY**, in observation of **CHILD ABUSE PREVENTION MONTH**.

WHEREAS, every child in our great county is a precious gift, full of promises and potential; and

WHEREAS, child abuse and neglect is a serious problem in Virginia and across the nation; and

WHEREAS, the prevention of child abuse is crucial to the preservation of the health and well-being of Fluvanna's families and can be accomplished by providing support and information to families, as well as through increased community awareness; and

WHEREAS, all children learn from role models at home, at church, at school, and in their communities and all children benefit from the love and leadership displayed by caring and responsible adults; and

WHEREAS, children are our most precious resource, and we are committed to keeping the children of our community safe and happy

NOW, THEREFORE WE, THE FLUVANNA COUNTY BOARD OF SUPERVISORS, do hereby recognize **APRIL 2011** as **CELEBRATING CHILDREN MONTH** in observation of **CHILD ABUSE PREVENTION MONTH** in **FLUVANNA COUNTY**, and we call this observance to the attention of all our citizens.

Signed and sealed this 6th day of April, 2011

John Y. Gooch
Chair, County of Fluvanna Board of Supervisors

National Crime Victims' Rights Week

At a regular monthly meeting of the Fluvanna County Board of Supervisors held on Wednesday, April 6, 2011, in Palmyra, Virginia, the following resolution was adopted on a motion by Mr. Kenney, seconded by Mr. Chesser and voted in the affirmative:

WHEREAS, over 20 million Americans are victims of crime each year, suffering emotional, physical, psychological and financial toll as they have lost loved ones, life savings, physical and mental health, and often their sense of security that has the potential to irrevocably change the course of their lives forever; and

WHEREAS, more than 30 years of progress for crime victims stands on the shoulders of dedicated advocates and brave victims who overcame shame, isolation, and indifference to gain a voice, rights, and respect; and

WHEREAS, while victim assistance programs across the country are reaching more victims, public understanding of victims' rights remains minimal, and our nation's victim services system remains fragmented, underfunded, and uncoordinated; and

WHEREAS, history teaches us that, by working together, we can help victims of crime reshape their destinies and ensure that they receive the support they need, the respect they deserve, and the rights they have earned; and

WHEREAS, National Crime Victims' Rights Week, April 10-16, 2011, provides an opportunity for us to reshape the future for victims by honoring the past and reflecting on hard-won victories, and to recommit to working together to insist on better treatment for victims to help them overcome the harm caused by crime; and

WHEREAS, the **Fluvanna Victim/Witness Assistance Program** is joining forces with victim service programs, criminal justice officials, and concerned citizens throughout Fluvanna County and the Commonwealth of Virginia to raise awareness of victims' rights and observe National Crime Victims' Rights Week; and

NOW, THEREFORE, BE IT RESOLVED that the Fluvanna County Board of Supervisors does hereby proclaim the week of April 10-16, 2011 as Crime Victims' Rights Week and reaffirm our commitment to respect and enforce victims' rights and address their needs during National Crime Victims' Rights Week and throughout the year;

BE IT FURTHER RESOLVED that the Board expresses its appreciation for those victims and crime survivors who have turned personal tragedy into a motivating force to improve our response to victims of crime and build a more just community.

John Y. Gooch, Chairman
Fluvanna County Board of Supervisors

April 6, 2011



COUNTY OF FLUVANNA

"Responsive & Responsible Government"

P.O. Box 540
Palmyra, VA 22963
(434) 591-1910
FAX (434) 591-1911
www.co.fluvanna.va.us

BOARD OF SUPERVISORS

John Y. Gooch, Chairman
Palmyra District

Sharon V. Krasny, Vice-Chair
Culpeper District

Dorald W. Weaver
Greensboro District

Marcell H. Becker
Fort Linn District

Joseph C. Chesser
Fluvanna District

Chris Franklin
Spotsylvania District

STAFF

Jay Spudis
County Administrator
jsudis@co.fluvanna.va.us

Mary L. Weaver
Clerk to the Board
mweaver@co.fluvanna.va.us

Proclaiming

National Public Safety Telecommunicators Week

April 10 – 16, 2011

By the Board of Supervisors, Fluvanna County Virginia

WHEREAS, emergencies can occur at anytime requiring sheriff, police, fire or emergency medical services; and

WHEREAS, when an emergency occurs the prompt response of law enforcement, firefighters and emergency medical technicians is critical to the protection of life and preservation of property; and

WHEREAS, the safety of our deputy sheriffs, police officers, firefighters, and emergency medical technicians is dependent upon the quality and accuracy of information obtained from citizens who telephone the Fluvanna County Sheriff's Office Emergency Communications Center; and

WHEREAS, public safety dispatchers are the first and most critical contact our citizens have with emergency services; and

WHEREAS, public safety dispatchers are the single vital link for our law enforcement, fire and EMS personnel by monitoring their activities by radio, providing them information and ensuring their safety; and

WHEREAS, our public safety dispatcher personnel daily serve the public in countless ways,

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of the County of Fluvanna hereby proclaims the week of April 10-16, 2011, as "National Telecommunicator's Week" and joins in honoring the men and women whose diligence and professionalism keep our county and citizens safe.

Signed this 6th day of April, 2011

John Y. Gooch, Chairman
Fluvanna County Board of Supervisors

MOTION: I move the regular meeting minutes of the Fluvanna County Board of Supervisors for Wednesday, April 20th, 2011 be adopted.

AGENDA BOARD OF SUPERVISORS DATE: MAY 4th, 2011

SUBJECT: Adoption of the Fluvanna County Board of Supervisors regular meeting minutes.

RECOMMENDATION: Approval

TIMING: Routine

FISCAL IMPLICATIONS: None

POLICY IMPLICATIONS: None

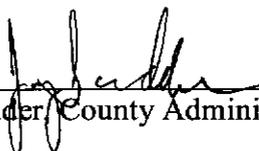
DISCUSSION: None

LEGISLATIVE HISTORY: None

Staff: Mary L. Weaver, Clerk to the Board of Supervisors

Copy:

County Administrator's Use Only
Comments:



Jay Scudder, County Administrator

FLUVANNA COUNTY BOARD OF SUPERVISORS
REGULAR MEETING MINUTES
Circuit Courtroom
Fluvanna Courts Building
April 20th, 2011
2:00 p.m.

MEMBERS PRESENT: John Y. Gooch, Chairman
Shaun V. Kenney, Vice-Chairman
Joe Chesser
Donald W. Weaver
Mozell H. Booker
Chris S. Fairchild

ALSO PRESENT: Jay Scudder, County Administrator
Fred Payne, County Attorney
Renee Hoover, Finance Director
Crystal Besecker, Budget Analyst
Steven Tugwell, Planner
Matt Weaver, Planner
Mary L. Weaver, Clerk, Board of Supervisors

CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE

Chairman Gooch called the meeting of April 20th, 2011, to order at 7:00 p.m., in the Circuit Courtroom of the New Courts Building in Palmyra, Virginia; and the Pledge of Allegiance was recited, after which, Chairman Gooch called for a moment of silence.

REPORTS

Mr. Jay Scudder, County Administrator, had nothing to report.

PUBLIC COMMENTS #1

Chairman Gooch opened the floor for the first round of public comments.

The following citizens addressed the Board:

- Perry Johnson, Fork Union District, President of Fluvanna Education Association – spoke in support of the advertised tax rate and full funding for education.
- Sam Patterson, Palmyra District – cited the “Governments Purpose” by Thomas Jefferson.
- Minor Eager, Palmyra District – spoke in reference to a comparison of the FY03 – FY12 Budget.
- Adrian Miller, Rivanna District – opposed a tax rate increase.
- Theresa Scruggs, Cunningham District – supports a tax rate increase and full funding of schools.
- Susan Morris, Cunningham District – addressed the Board regarding unity and finding a friendly solution.
- Jerry Patchen, Palmyra District – opposed a tax rate increase.
- John Womer, Rivanna District – opposed a tax rate increase.
- Elizabeth Franklin, Columbia District – addressed the Board regarding the Capital Improvements Plan.
- Claudia Thomas, Columbia District – opposed a tax rate increase.
- Mary Wahlen – Kents Store – opposed a tax rate increase.
- Tom Payne, Palmyra District – addressed the Board regarding the budget and asked the Board to vote for what’s best for Fluvanna County.

- Brian Thomas, Columbia District – addressed the Board regarding the counties’ tax rates.
 - Sue Morris, Palmyra District – opposed a tax rate increase.
 - Elizabeth Barnett, Rivanna District – supports a tax rate increase and full funding of schools.
- With no one else wishing to speak, Chairman Gooch closed the first round of public comments.

CONSENT AGENDA

The following items were pulled from the consent agenda and deferred to the May 5, 2011, meeting for corrections:

- Minutes of April 6, 2011.

The following items were approved under the consent agenda:

MOTION:

Mr. Kenney moved to approve the consent agenda, which consisted of:

- Robinson farmer Cox Associates PLLC Invoice
- FY2011 Four for Life Supplemental Appropriation
- Insurance Reimbursement for Sheriff’s Department.

Mr. Weaver seconded. The motion carried with a vote of 6-0. AYES: Gooch, Weaver, Booker, Kenney, Fairchild, and Chesser. NAYS: None. ABSENT: None.

ACCOUNTS PAYABLE

None

PUBLIC HEARING

VDOT Secondary Six-Year Plan for Fiscal Years 2011/12 through 2016/17 and the Secondary System Construction Budget for Fiscal Year 2011/12:

Mr. Greg Banks, VDOT Secondary Programming Coordinator, & Karen Kirby, VDOT Program/Investment Management Director, addressed the board regarding this item.

Chairman Gooch opened the public hearing.

With no one wishing to speak, Chairman Gooch closed the public hearing.

After some discussion, the following motion was made:

MOTION:

Mr. Weaver moved to adopt the resolution [attached hereto] entitled “VDOT Secondary Six-Year Plan (2011-12 through 20-16/17 and the VDOT Construction Priority List 2011/12) as presented. Mr. Fairchild seconded. The motion carried with a vote of 6-0. AYES: Gooch, Weaver, Booker, Kenney, Fairchild, and Chesser. NAYS: None. ABSENT: None.

SUP 11:01/Verizon Wireless

This is a request for a special use permit to allow for a 125 foot wireless communications tower, with respect to 114.71 acres of Tax Map 30, Section A, Parcel 104. The property is zoned A-1; located in the Columbia Election District and is within the Rural Residential Planning Area.

Mr. Steve Tugwell, Planner, addressed the Board regarding this item.

Ms. Lori Schweller, Verizon representative, addressed the Board on behalf of the applicant.

Chairman Gooch opened the public hearing.

- Clay Hysell, Palmyra District – addressed the Board in support of the tower.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

After some discussion the following motion was made:

MOTION:

Mr. Weaver moved to approve SUP 11:01, a special use permit request to allow for a 125 foot monopole telecommunications tower pursuant to Fluvanna County Code

Section 22-4-2.2(1) with respect to 114.71 acres of Tax Map 30, Section A, Parcel 104, subject to the conditions listed below:

1. The tower, including antennae will not be higher than 125 ft. and will not be lit;
2. The applicant secures all necessary permits required, and submits structural design and certification by a Virginia Registered Professional Engineer that the proposed facility, as built, will comply with EIA/TIA 222-G for the wind zone for Fluvanna County; Virginia;
3. Prior to issuance of building permits the applicant shall submit satisfactory SHPO and NEPA documentation;
4. The applicant shall secure the necessary permits required by Fluvanna County and VDOT;
5. The facility when completed shall be accessible only to authorized personnel;
6. The tower shall be a monopole, and shall be engineered to collapse within the leased area;
7. The facility shall install the necessary landscaping buffer;
8. The applicant shall install an emergency generator to ensure continuity of telecommunications operations in the event of a disaster or major power outage; and provisions for such generators shall include additional special treatments; for diesel, a fuel retaining area for propane, ignition separation requirements; and that generator testing shall occur only between 9 AM and 4 PM Monday through Friday; and the same shall be noted on the site development plan;
9. If the structures should no longer be needed, the applicant shall remove them, and restore the grounds to the prior condition;
10. The support structure is to be sufficient to support antennas of a like design for at least three (3) additional wireless service providers, or a total of four (4) wireless service providers;
11. The tower shall be in the same location as shown in the application;
12. Violation of any condition of this permit shall be grounds for revocation of this permit, and;
13. The Board of Supervisors, or their representative, has the right to inspect the property for compliance with these conditions at any time.

Mr. Kenney seconded. The motion carried with a vote of 6-0. AYES: Gooch, Weaver, Booker, Kenney, Fairchild, and Chesser. NAYS: None. ABSENT: None.

SUP 11:02/Otis Collier

This is a request for a special use permit to allow for a small home industry with respect to 1.76 acres of Tax Map 12, Section 4, Parcel B1. Applicant is proposing to conduct a small business to include automobile refurbishment, small engine repair, and furniture repair. The property is zoned A-1; located in the Columbia District and is in the Rural Residential Planning Area.

Mr. Matt Weaver, Planner, addressed the Board regarding this item.

Chairman Gooch opened the public hearing.

- Dr. Steven Fletcher, Columbia District – addressed the Board in opposition.
- Kathleen Fletcher, Columbia District – addressed the Board in opposition.
- Gena Steadman, Louisa, speaking on behalf of her mother – addressed the Board in opposition.
- Hazel Staton, Columbia District – addressed the Board in opposition.
- Lavetta Thomasson – Columbia District – addressed the Board in opposition.

With no one else wishing to speak, Chairman Gooch closed the public hearing.

Mr. Otis Collier, applicant, addressed the Board.

After some discussion the following motion was made:

MOTION:

Mr. Fairchild moved to defer SUP 11:02, a special use permit request to the May 18, 2011 Board meeting to allow investigation of conditions to protect from environmental degradation. Mr. Chesser seconded. The motion carried with a vote of 6-0. AYES: Gooch, Weaver, Booker, Kenney, Fairchild, and Chesser. NAYS: None. ABSENT: None.

ZTA 11:01/Sidewalks & Setbacks

A request to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation). Amending this ordinance will help improve the connectivity within commercial properties and ensure pedestrian access to and from adjacent residential areas, schools, commercial areas or open spaces. Updating the sidewalk requirements will further bring the subdivision ordinance into conformity with the goals of the comprehensive plan for increasing alternative transportation opportunities in Fluvanna County.

Mr. Matt Weaver, Planner, addressed the Board regarding this item.

Chairman Gooch opened the public hearing.

With no one wishing to speak, Chairman Gooch closed the public hearing.

After some discussion the following motion was made:

MOTION:

Ms. Booker moved to approve ZTA 11-01, to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation). Mr. Weaver seconded. The motion failed with a vote of 3-3. AYES: Weaver, Booker, and Fairchild. NAYS: Gooch, Kenney, and Chesser. ABSENT: None.

Discussion continued.

MOTION:

Mr. Chesser moved to defer ZTA 11-01, amendment to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation) to the May 4, 2011 Board meeting. Mr. Fairchild seconded. The motion carried with a vote of 5-1. AYES: Weaver, Chesser, Gooch, Kenney and Fairchild. NAYS: Booker. ABSENT: None.

MOTION:

Additionally, Chesser moved to defer ZTA 11-01, amendment to amend portions of the Fluvanna County Zoning Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation, and to allow for a setback variation for commercial areas (Sec. 22-9-5 Setback regulations; 22-9-10 Sidewalks; Sec. 22-10-7 Setback regulations; Sec. 22-10-13 Sidewalks; Sec. 22-11-11 Sidewalks; Sec. 22-12-11 Sidewalks; Sec. 22-23-6 Site plan content; Sec. 22-23-7 Additional Improvements and Standards for Major Site Plans). to the May 4, 2011 Board meeting. Mr. Fairchild seconded. The motion carried with a vote of 5-1. AYES: Weaver, Chesser, Gooch, Kenney and Fairchild. NAYS: Booker. ABSENT: None.

PRESENTATIONS:

None

ACTION MATTERS

Resolution/Fair Housing Month April 2011

Ms. Selena Cozart, Fair Housing Program Manager, with Piedmont Housing Alliance, addressed the Board regarding fair housing in the community.

MOTION:

Mr. Weaver moved to approve the resolution proclaiming the month of April 2011 as Fair Housing Month in Fluvanna County in support of equal housing opportunity.

Mr. Kenney seconded. The motion carried, with a vote of 6-0. AYES: Gooch, Weaver, Chesser, Booker, Fairchild and Kenney. NAYS: None. ABSENT: None.

Resolution/Capital Improvements Plan [adoption of]

Ms. Crystal Besecker, Budget Analyst, presented this request to the Board.

After some discussion the following motion was made:

MOTION:

Mr. Chesser moved the resolution entitled "Adoption of FY 2012-2016 Capital Improvements Plan" be adopted. Ms. Booker seconded. The motion carried with a vote of 6-0. AYES: Weaver, Booker, Fairchild, Gooch, Kenney, and Chesser.

NAYS: None. ABSENT: None.

Resolution/FY12 Budget Adoption, Set Tax Rates and Appropriate Funds

Ms. Crystal Besecker, Budget Analyst, presented this request to the Board and reviewed the advertised budget. Mr. Fairchild rescinded the items he removed from the budget at the March 16, 2011 meeting when the advertisement rate was set.

After some discussion the following motion was made:

MOTION:

Mr. Fairchild moved to set the Personal Property Tax Rate at \$4.15 per \$100.00, the Real Estate Tax Rate at \$0.55 ½ per \$100, and carryover FY11 School Funding to the schools for FY12. Mr. Weaver seconded. The motion failed with a vote of 2-4. AYES: Weaver and Fairchild. NAYS: None. ABSENT: Booker, Gooch, Kenney, and Chesser.

Upon further discussion, the following motion was offered:

MOTION:

Mr. Kenney moved the resolution entitled "A Resolution to Adopt the FY-12 Operations Budget Set the Tax Rates and Appropriate Funds" be adopted, contingent upon approved Commonwealth funding. Should funding from the Commonwealth not meet the estimated budget amount in a particular area, spending authorization in that area will be reduced. Approve resolution to set the tax rates with a revised real property tax rate of \$0.57 per \$100.00, a personal property tax rate of \$4.15 per \$100 and adopt the FY12 operations budget of \$67,912,967 with \$125,000 appropriated to Workforce Developing, \$125,000 to Microfinancing and an additional \$250,000 for the schools. Ms. Booker seconded. The motion carried with a vote of 4-2. AYES: Booker, Gooch, Kenney, and Chesser. NAYS: Weaver and Fairchild ABSENT: None.

Mr. Kenney clarified that the remaining FY11 School Funds were to carry over to the schools for FY12.

Personal Property Administrative (License) Fee Ordinance Amendment

Ordinance to amend Section 15-2-3 of the County Code, to Increase the Amount of the Annual License Fee for Motorcycles from \$6 to \$18, and for Other Motor Vehicles from \$20 to \$33.

MOTION:

Mr. Kenney moved to adopt the amendment to the ordinance entitled “An Ordinance to Amend Section 15-2-3 of the County Code, to Increase the Amount of the Annual License Fee for Motorcycles from \$6 to \$18, and for Other Motor Vehicles from \$20 to \$33. Ms. Booker seconded. The motion carried with a vote of 4-2. AYES: Booker, Gooch, Kenney, and Chesser. NAYS: Weaver and Fairchild ABSENT: None.

OLD BUSINESS

Town of Columbia Task Force

Mr. Kenney asked staff to formalize a Town of Columbia Task Force.

EXTEND MEETING

MOTION:

Ms. Booker moved to extend the Board of Supervisors meeting to 11:30. Mr. Fairchild seconded. The motion carried with a vote of 6-0. AYES: Chesser, Gooch, Kenney, Booker, Fairchild and Weaver. NAYS: None. ABSENT: None

NEW BUSINESS

Ms. Booker reminded the Board of the Fork Union Community Day on May 14, 2011, from 10am – 2pm at the Fork Union Village.

Mr. Fairchild commended the schools and said he was glad that they received relief because they deserve it.

Mr. Kenney thanked the schools for their help and assistance.

Mrs. Booker hopes this is the beginning of a new relationship with the schools.

PUBLIC COMMENTS #2

Chairman Gooch opened the floor for the second round of public comments.

The following citizens addressed the Board:

- Bill Hughes, Palmyra District – addressed the Board in reference to the categories of funding for the schools.
- Dennis Holder, Kents Store – addressed the Board regarding open government.
- With no one else wishing to speak, Chairman Gooch closed the second segment of public comments.

ADJOURN

MOTION:

At 11:07 p.m., Mr. Weaver moved to adjourn the meeting of Wednesday, April 20th, 2011. Mr. Fairchild seconded. The motion carried, with a vote of 6-0. AYES: Chesser, Gooch, Kenney, Booker, Weaver and Fairchild. NAYS: None. ABSENT: None

John Y. Gooch, Chairman



**BOARD OF SUPERVISORS
County of Fluvanna
Palmyra, Virginia**

RESOLUTION

At a regular monthly meeting of the Fluvanna County Board of Supervisors held at 7:00 p.m. on Wednesday, April 20th 2011 in Palmyra, Virginia, the following action was taken:

<u>Present</u>	<u>Vote</u>
John Y. Gooch, Chairman	YEA
Shaun V. Kenney, Vice Chairman	YEA
Mozell H. Booker	YEA
Joe Chesser	YEA
Chris S. Fairchild	YEA
Donald W. Weaver	YEA

On a motion by Mr. Weaver seconded by Mr. Fairchild and carried by a vote of 6-0 the following resolution was adopted.

**RESOLUTION
VDOT Secondary Six-Year Plan (2011/12 through 2016/17)
and
VDOT Construction Priority List (2011/12)**

WHEREAS, Sections 33.1-23 and 33.1-23.4 of the 1950 Code of Virginia as amended, provides the opportunity for each county to work with the Virginia Department of Transportation in developing a Secondary Six-Year Road Plan; and

WHEREAS, this Board had previously agreed to assist in the preparation of this Plan, in accordance with the Virginia Department of Transportation policies and procedures, and participated in a public hearing on the proposed Plan (2011/12 through 2016/17) as well as the Construction Priority List (2011/12) on April 20th 2011 after duly advertised so that all citizens of the County had the opportunity to participate in said hearing and to make comments and recommendations concerning the proposed Plan and Priority List; and

WHEREAS, Karen P. Kilby, District Programming Director, Virginia Department of Transportation, appeared before the Board and recommended approval of the Six-Year Plan for Secondary Roads (2011/12 through 2016/17) AND Construction Priority List (2011/12) for Fluvanna County.

NOW, THEREFORE, BE IT RESOLVED that since said Plan appears to be in the best interest of the Secondary Road System in Fluvanna County and of the citizens residing on the Secondary System, said Secondary Six-Year Plan (2011/12 through 2016/17) and Construction Priority List (2011/12) are hereby approved as presented at the public hearing.

Adopted this 20th day of April 2011
by the Fluvanna County Board of Supervisors

ATTEST:

Jay Scudder, County Administrator

Fair Housing Month 2011 Resolution

WHEREAS, April is Fair Housing Month and marks the 43rd anniversary of the passage of the federal Fair Housing Act (Title VIII of the Civil Rights Act of 1968, as amended by the Fair Housing Amendments Act of 1988);

WHEREAS, the Fair Housing Act provides that no person shall be subjected to discrimination because of race, color, national origin, religion, sex, disability, or familial status in the rental, sale, financing or advertising of housing (and the Virginia Fair Housing Law also prohibits housing discrimination based on elderliness);

WHEREAS, the Fair Housing Act supports equal housing opportunity throughout the United States;

WHEREAS, Fair Housing creates healthy communities, and housing discrimination harms us all;

WHEREAS, the Fluvanna County Board of Supervisors supports equal housing opportunity and seeks to affirmatively further fair housing not only during Fair Housing Month in April, but throughout the year;

Signed and sealed this 20th day of April, 2011.

John Y. Gooch
Chairman, Fluvanna County Board of Supervisors

RESOLUTION
Fluvanna County Board of Supervisors
April 20, 2011

Adoption of FY 2012 – FY 2016 Capital Improvements Plan

At a regular monthly meeting of the Fluvanna County Board of Supervisors held on Wednesday, April 20, 2011, in Palmyra, Virginia, the following action was taken:

Present	Vote
John Gooch, Chairman	Yea
Shawn Kenney, Vice-Chairman	Yea
Mozell Booker	Yea
Joe Chesser	Yea
Chris Fairchild	Yea
Donald W. Weaver	Yea

On a motion by Mr. Chesser, seconded by Ms. Booker, and voted in the affirmative, the following resolution was adopted:

WHEREAS, it is the responsibility of the Fluvanna County Board of Supervisors to approve the County's Capital Improvements Program; and,

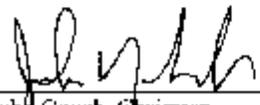
WHEREAS, the Capital Improvements Plan recommends the initiation and completion of numerous capital projects based upon staff recommendations and citizen input; and,

WHEREAS, the Board of Supervisors held a public hearing on the proposed Capital Improvements Plan on April 6, 2011; and,

WHEREAS, the Board of Supervisors has approved the FY2012 Capital Improvements Budget as part of the overall Fluvanna County Budget;

NOW THEREFORE, BE IT RESOLVED by the Board of Supervisors that the FY 2012-2016 Capital Improvements Plan hereby be approved.

A True Copy Teste:



John Gooch, Chairman
Board of Supervisors

**RESOLUTION
A RESOLUTION TO ADOPT THE FY12 OPERATIONS BUDGET,
SET THE TAX RATES AND APPROPRIATE FUNDS**

WHEREAS, it is the responsibility of the Fluvanna County Board of Supervisors to approve and control the County's fiscal plan for FY12; and,

WHEREAS, the Board of Supervisors has received numerous staff reports; received comments from residents at a July advertised public hearing on April 6, 2011; and has reviewed each request for funding;

NOW, THEREFORE, BE IT RESOLVED by the Fluvanna County Board of Supervisors this 20th day of April 2011, that the Fluvanna County budget totaling \$67,912,967 is adopted and the tax rates for FY12 or July 1st 2011- June 30th 2012 set as given below:

2011 COUNTY TAX RATES

Real Estate	\$0.57 /\$100 of assessed value
Public Service Corps.	\$0.57 /\$100 of assessed value
Mobile Homes	\$0.57 /\$100 of assessed value
Personal Property	\$4.15/\$100 of assessed value
Machinery & Tools	\$2.00/\$100 of assessed value

BE IT FURTHER RESOLVED that the Board of Supervisors does hereby budget and appropriate to the COUNTY OPERATING BUDGET the following revenues and expenditures; this appropriation includes \$1,080,000 in the Debt Service Reserve category for future debt service on the new high school; this appropriation is also conditioned on the understanding that, with regard to the operating budget for the School system, revenues received from the Commonwealth will be expended prior to local dollars;

GOVERNMENTAL REVENUES

Local (not including contributions to the CIP)	\$
State	24,962,429
Federal	3,308,962
Use of High School Debt Reserve Savings	1,600,000
TOTAL	\$

GOVERNMENTAL EXPENDITURES

General Government Administration	\$ 2,363,508
Judicial Administration	958,398
Public Safety	4,722,558
Public Works	1,567,765
Health and Welfare	4,730,830
Education	34,858,083
Parks and Recreation	652,942
Community Development	637,096
Non-Departmental	1,282,239
Debt Service	6,252,820
Debt Service Reserve	<u>1,080,000</u>
TOTAL	\$ 59,606,240

BE IT FURTHER RESOLVED that for budgeting and accounting purposes the adopted budget revenues and expenditures for the capital improvements fund are set as follows:

Capital Fund Revenues	
Local Use of General Fund Balance	\$4,598,000
Local Other	285,000
Federal and State	530,000
Proceeds from Indebtedness	<u>475,000</u>
TOTAL	\$5,888,000

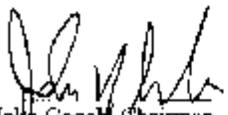
Capital Fund Expenditure	
911 Radio System	3,500,000
Roundabout at RL 15 & RL 53	1,100,000
Fire Truck	475,000
Ambulance Re-chassis	100,000
Sheriff's Vehicles	220,000
Administration HVAC	375,000
Administration Vehicles (3)	38,000
School Bus	<u>80,000</u>
TOTAL	\$5,888,000

FINALLY BE IT RESOLVED that for budgeting and accounting purposes the adopted budget revenues and expenditures for the enterprise funds are set as follows:

	Expenditure	Revenue
School Food Service	\$1,734,994	\$1,734,994
Fork Union Sanitary District	427,109	427,109
Utility*	256,624	<u>38,400</u>
TOTAL	\$2,418,727	\$2,200,503

*Utility fund revenues are supplemented by transfers from the General Fund.

Adopted this 20th day of April 2011 by the
Hovanna County Board of Supervisors


 John Gooch, Chairman

AN ORDINANCE TO AMEND SECTION 15-2-3 OF THE COUNTY CODE TO INCREASE THE AMOUNT OF THE ANNUAL LICENSE FEE FOR MOTORCYCLES FROM \$6 TO \$18 AND FOR OTHER MOTOR VEHICLES FROM \$20 TO \$33

BE IT ORDAINED BY THE FLUVANNA BOARD OF SUPERVISORS that the County Code be, and it is hereby, amended, in Chapter 15, Section 15-2-3 as follows:

Sec. 15-2-3. Amount of fee; when fee due and payable; collection; exemptions.

The license fee on every motorcycle shall be ~~six~~ *eighteen* dollars per year, and on every other type of motor vehicle shall be ~~twenty~~ *thirty-three* dollars per year, payable to the treasurer of this county. Such license fee shall be due and payable on June 5 in each year. If any license fee owed pursuant to this article is not paid on or before its due date, then the treasurer may add the cost of any fee incurred by the county pursuant to Virginia Code Sec. 46.2-752(J) to the license fee due and owing to the county. The treasurer shall, after the due date of any license fee required by this section, collect such license fee in accordance with the provisions of Virginia Code Sec. 58.1-3919 and any other applicable law. Additionally, the treasurer shall have the authority to take action as authorized by Virginia Code Sec. 46.2-752(I). The foregoing notwithstanding, the license fee provided for by this chapter shall not be assessed on vehicles owned by active members of volunteer rescue squads and active members of volunteer fire companies located in the county (at one vehicle per such member); and for the following who served at least ten years in the county: former members of volunteer rescue squads and former members of volunteer fire companies located in the county (at one vehicle per such former member).



COUNTY OF FLUVANNA

"Responsive & Responsible Government"

Renee Hoover
Director of Finance
rhoover@co.fluvanna.va.us

P.O. Box 540 Palmyra, VA 22963 • (434) 591-1910 • FAX (434) 591-1911 • www.co.fluvanna.va.us

Memorandum

TO: Board of Supervisors
FROM: Renee Hoover, Director of Finance
DATE: April 26, 2011
RE: Accounts Payable Report

Accounts Payable

Attached is a listing of accounts payable paid between March 28 through April 26, 2011. The amount below includes payroll paid for March 2011. Staff recommends that the Board of Supervisors ratify these expenditures.

<u>Fund #</u>	<u>Fund Name</u>	<u>Amount</u>
100	General	\$ 417,908.74
120	Recreation	2,907.04
302	Capital	757,521.58
502	Utility (Sewer)	16,209.78
505	Fork Union Sanitary District	8,527.50
Total accounts payable		\$ 1,203,074.64
Payroll		<u>521,980.55</u>
Total expenditures		<u>\$ 1,725,055.19</u>

Motion:

I move the Accounts Payable from March 28 through April 26, 2011 and Payroll for the month of March 2011 in the amount of \$ 1,725,055.19 be ratified.

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10011000		BOARD OF SUPERVISORS							
100-01-0000-110-00-000-000-0000-403600-		ADVERTISING							
701159 FLUVANNA REVIEW	1	2		2011 10	INV P	1,318.00	MM040811	410155 ADS	
ACCOUNT TOTAL						1,318.00			
100-01-0000-110-00-000-000-0000-405510-		MILEAGE ALLOWANCES							
701153 DONALD WEAVER	98	103		2011 10	INV P	78.54	MM040811	410142 MILEAGE REIMBURSMNT	
702245 JOSEPH C CHESSER	379	395		2011 10	INV P	181.52	mm0422	410255 REIMBURSMNT	
ACCOUNT TOTAL						260.06			
100-01-0000-110-00-000-000-0000-405530-		SUBSISTENCE & LODGING							
700819 E.W. THOMAS	125	130		2011 10	INV P	95.19	MM040811	410144 SUPPLIES	
ACCOUNT TOTAL						95.19			
100-01-0000-110-00-000-000-0000-405810-		DUES OR ASSOCIATION MEMBERSHIP							
701320 VEPGA	355	371		2011 10	INV P	162.00	MM0422	410352 ASSESSMENT	
ACCOUNT TOTAL						162.00			
ORG 10011000 TOTAL						1,835.25			

YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP	S	CHECK RUN	CHECK	DESCRIPTION	

10012000	COUNTY ADMINISTRATOR										
100-01-0000-120-01-000-000-0000-405210-	POSTAL SERVICES										
700967 FEDEX	353	369			2011 10	INV	P	16.10	MM0422	410303 SHIPPING	
700967 FEDEX	354	370			2011 10	INV	P	23.64	MM0422	410303 SHIPPING	

								39.74			
								ACCOUNT TOTAL		39.74	
100-01-0000-120-01-000-000-0000-405230-	TELECOMMUNICATIONS										
700863 VA INFORMATION	178	185			2011 10	INV	P	64.00	MM040811	410209 MONTHLY SERVICE	
702909 VERIZON 721970783-00 129		135			2011 10	INV	P	56.41	MM040811	410211 MONTHLY SERVICE	
								ACCOUNT TOTAL		120.41	
100-01-0000-120-01-000-000-0000-405410-	LEASE/RENT EQUIPMENT										
701962 OCE'	100	105			2011 10	INV	P	111.38	MM040811	410178 LEASE EQUIPMENT	
701962 OCE'	384	400			2011 10	INV	P	111.38	mm0422	410261 MAINTENANCE W/SUPPL	
701962 OCE'	385	401			2011 10	INV	P	87.16	mm0422	410261 SUPPLIES	

								309.92			
								ACCOUNT TOTAL		309.92	
100-01-0000-120-01-000-000-0000-405530-	SUBSISTENCE & LODGING										
700329 BANK OF AMERICA	207	215			2011 10	INV	P	11.79	MM0422	410278 MONTHLY STATEMENT	
700880 SHENANDOAH VALLEY WA 343		359			2011 10	INV	P	76.40	MM0422	410338 WATER	
								ACCOUNT TOTAL		88.19	
100-01-0000-120-01-000-000-0000-406001-	OFFICE SUPPLIES										
702212 FLORIDA MICRO LLC	252	262			2011 10	INV	P	423.16	MM0422	410304 SUPPLIES	
702781 FAYES OFFICE SUPPLY	386	402			2011 10	INV	P	127.28	mm0422	410247 SUPPLIES	
702781 FAYES OFFICE SUPPLY	84	87			2011 10	INV	P	45.02	MM040811	410148 SUPPLIES	
702781 FAYES OFFICE SUPPLY	99	104			2011 10	INV	P	96.86	MM040811	410148 OFFICE SUPPLIES	

								269.16			
								ACCOUNT TOTAL		692.32	
100-01-0000-120-01-000-000-0000-406012-	BOOKS/PUBLICATIONS										
701147 THE DAILY PROGRESS	124	129			2011 10	INV	P	192.40	MM040811	410201 SUBSCRIPTION	
								ACCOUNT TOTAL		192.40	
								ORG 10012000 TOTAL		1,442.98	

YEAR/PERIOD: 2011/10 TO 2011/10

ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10012500								COUNTY ATTORNEY
100-01-0000-125-01-000-000-0000-403100-								PROFESSIONAL SERVICES
700893 PAYNE & HODOUS	365	381		2011 10	INV P	10,403.42	MM0422	410327 PROFESSIONAL SERVIC
					ACCOUNT TOTAL	10,403.42		
					ORG 10012500 TOTAL	10,403.42		

Additional services received total \$5,403.42:

- Kents Store Fire Company Station Expansion
- General Claims
- Property Rights in County Seal
- Acquisition of Surplus Right of Way (Route 15 Project)
- 2011 Redistricting
- Property Exchange with Lake Monticello Owners' Association
- Telecommunications
- County Code - Adopted Amendments

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YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP	S	CHECK RUN	CHECK	DESCRIPTION
	10013000									COMMISSIONER OF THE REVENUE
	100-01-0000-130-01-000-000-0000-403100-									PROFESSIONAL SERVICES
	700002 STONEWALL TECHNOLOGI	242	252		2011 10	INV	P	300.00	MM0422	410341 VAMANET
								300.00		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-405210-									POSTAL SERVICES
	724713 RESERVE ACCOUNT	244	254		2011 10	INV	P	100.00	MM0422	410335 POSTAGE METER
								100.00		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-405230-									TELECOMMUNICATIONS
	700863 VA INFORMATION	178	185		2011 10	INV	P	47.47	MM040811	410209 MONTHLY SERVICE
	701496 U.S. CELLULAR	241	251		2011 10	INV	P	81.46	MM0422	410347 MTH SVC CELL
								128.93		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-405530-									SUBSISTENCE & LODGING
	700192 ANDREW M. SHERIDAN,	247	257		2011 10	INV	P	24.00	MM0422	410273 REIMBURSMENT
								24.00		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-405540-									CONVENTION AND EDUCATION
	702512 COMMISSIONERS OF THE	239	249		2011 10	INV	P	25.00	MM0422	410290 HORSE CLASS TOTAL F
								25.00		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-405810-									DUES OR ASSOCIATION MEMBERSHIP
	701708 V.A.A.O.	245	255		2011 10	INV	P	40.00	MM0422	410350 MEMBERSHIP DUES
								40.00		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-406001-									OFFICE SUPPLIES
	702781 FAYES OFFICE SUPPLY	240	250		2011 10	INV	P	38.73	MM0422	410302 OFFICE SUPPLIES
	702781 FAYES OFFICE SUPPLY	246	256		2011 10	INV	P	80.96	MM0422	410302 OFFICE SUPPLIES
								119.69		----- ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-406008-									VEHICLE FUEL
	701269 PETROLEUM TRADERS CO	410	427		2011 10	INV	P	76.57	MM0422	410329 FUEL BILL
								76.57		ACCOUNT TOTAL
	100-01-0000-130-01-000-000-0000-406014-									OTHER OPERATING SUPPLIES
	700880 SHENANDOAH VALLEY WA	243	253		2011 10	INV	P	56.62	MM0422	410338 WATER
								56.62		ACCOUNT TOTAL
								870.81		ORG 10013000 TOTAL

YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10014000								
		TREASURER						
100-01-0000-140-01-000-000-0000-403320-700880	SHENANDOAH VALLEY WA 345	361		2011 10	INV P	29.75	MM0422	410338 WATER
702147	MECHUMS RIVER SECURI 253	263		2011 10	INV P	60.00	MM0422	410321 MONITORING FEE APRI
						89.75		ACCOUNT TOTAL
100-01-0000-140-01-000-000-0000-405230-700863	VA INFORMATION 178	185		2011 10	INV P	44.05	MM040811	410209 MONTHLY SERVICE
702909	VERIZON 721970783-00 129	135		2011 10	INV P	51.63	MM040811	410211 MONTHLY SERVICE
						95.68		ACCOUNT TOTAL
						185.43		ORG 10014000 TOTAL

YEAR/PERIOD: 2011/10 TO 2011/10

ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION

10015000								INFORMATION TECHNOLOGY
100-01-0000-150-01-000-000-0000-403100-								PROFESSIONAL SERVICES
703036 SAVE YOUR DATA LLC	306	320		2011 10	INV P	1,402.50	MM0422	410337 IT SERVICES
								ACCOUNT TOTAL
						1,402.50		
100-01-0000-150-01-000-000-0000-403131-								PROFESSIONAL SERVICES
700941 IBM CORPORATION	305	319		2011 10	INV P	137.37	MM0422	410312 MAINTENANCE
								ACCOUNT TOTAL
						137.37		
100-01-0000-150-01-000-000-0000-405230-								TELECOMMUNICATIONS
701108 ER COMMUNICATIONS LL 307		321		2011 10	INV P	225.00	MM0422	410300 MOVE PHONE LINES
702535 CONTERRA ULTRA BROAD 221		230		2011 10	INV P	1,000.00	MM0422	410292 ETHERNET WIRELESS
702535 CONTERRA ULTRA BROAD 222		231		2011 10	INV P	1,000.00	MM0422	410292 ETHERNET BASED WIRE

						2,000.00		
702909 VERIZON 721970783-00 129		135		2011 10	INV P	269.39	MM040811	410211 MONTHLY SERVICE
								ACCOUNT TOTAL
						2,494.39		
100-01-0000-150-01-000-000-0000-408107-								EDP EQUIPMENT
702212 FLORIDA MICRO LLC	312	326		2011 10	INV P	575.50	MM0422	410304 SUPPLIES
								ACCOUNT TOTAL
						575.50		
								ORG 10015000 TOTAL
						4,609.76		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10016000									
		FINANCE							
100-01-0000-160-01-000-000-0000-405230-700863	VA INFORMATION	178		2011 10	INV P	60.41	MM040811	410209	MONTHLY SERVICE
		185							
						60.41			ACCOUNT TOTAL
100-01-0000-160-01-000-000-0000-405410-702582	VIRGINIA BUSINESS SY 201		209	2011 10	INV P	356.47	MM040811	410213	EQUIPMENT
						356.47			ACCOUNT TOTAL
100-01-0000-160-01-000-000-0000-405540-701863	CRYSTAL BESECKER	301	315	2011 10	INV P	10.00	MM0422	410295	REGISTRATION
						10.00			ACCOUNT TOTAL
100-01-0000-160-01-000-000-0000-406001-702781	FAYES OFFICE SUPPLY	302	316	2011 10	INV P	387.14	MM0422	410302	SUPPLIES
702941	EAGLE FLIGHT BUSINES	348	364	2011 10	INV P	168.50	MM0422	410298	SUPPLIES
						555.64			ACCOUNT TOTAL
						982.52			ORG 10016000 TOTAL

YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
	10017000								REGISTRAR/ELECTORAL BOARD
	100-01-0000-170-01-000-000-0000-405210-								POSTAL SERVICES
	700329 BANK OF AMERICA	210	218		2011 10	INV P	3.31	MM0422	410278 MONTHLY STATEMEN T
							3.31		ACCOUNT TOTAL
	100-01-0000-170-01-000-000-0000-405230-								TELECOMMUNICATIONS
	700863 VA INFORMATION	178	185		2011 10	INV P	35.93	MM040811	410209 MONTHLY SERVICE
	702909 VERIZON 721970783-00 129		135		2011 10	INV P	51.38	MM040811	410211 MONTHLY SERVICE
							87.31		ACCOUNT TOTAL
	100-01-0000-170-01-000-000-0000-406014-								OTHER OPERATING SUPPLIES
	700880 SHENANDOAH VALLEY WA 341		357		2011 10	INV P	26.87	MM0422	410338 WATER
							26.87		ACCOUNT TOTAL
	100-01-0000-170-01-000-000-0000-406021-								ADP SUPPLIES
	700301 AUTOMATED OFFICE SYS 342		358		2011 10	INV P	155.00	MM0422	410277 EQUIPMENT
							155.00		ACCOUNT TOTAL
	100-01-0000-170-01-000-000-0000-408101-								MACHINERY AND EQUIPMENT
	701076 ROBERT D LEIPOLD	340	356		2011 10	INV P	876.34	MM0422	410336 REIMBURSMENT
							876.34		ACCOUNT TOTAL
							1,148.83		ORG 10017000 TOTAL

Robert Leipold was reimbursed for:

- USB
- Extension cords
- Erasels and Lint Free Clothes
- Mousepads and labels
- Storage Boxes
- Binders, Dividers, Pens

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| COUNTY OF FLUVANNA
| INVOICE LIST BY GL ACCOUNT

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YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10021000	GENERAL DISTRICT COURT								
100-02-0000-210-01-000-000-0000-403320-	MAINTENANCE CONTRACTS								
703079 VIRGINIA WATERS INC	43	44			2011 10	INV P	12.00	MM040811	410214 WATER
ACCOUNT TOTAL							12.00		
100-02-0000-210-01-000-000-0000-405230-	TELECOMMUNICATIONS								
700863 VA INFORMATION	178	185			2011 10	INV P	40.87	MM040811	410209 MONTHLY SERVICE
701056 CENTURYLINK	30987136	12			2011 10	INV P	212.52	MM040811	410123 MTH SVC PHONE
ACCOUNT TOTAL							253.39		
100-02-0000-210-01-000-000-0000-406001-	OFFICE SUPPLIES								
702604 STAPLES BUSINESS	10	10			2011 10	INV P	58.78	MM040811	410194 OFFICE SUPPLIES
702604 STAPLES BUSINESS	45	47			2011 10	INV P	23.98	MM040811	410194 SUPPLIES
							82.76		
ACCOUNT TOTAL							82.76		
ORG 10021000 TOTAL							348.15		

YEAR/PERIOD: 2011/10 TO 2011/10

ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10022000								COURT SERVICE UNIT
100-02-0000-220-01-000-000-0000-405210-724715	POST MASTER	251	261	2011 10	INV P	117.00	MM0422	410331 POST OFFICE BOX 307
						117.00		ACCOUNT TOTAL
100-02-0000-220-01-000-000-0000-405230-700863	VA INFORMATION	178	185	2011 10	INV P	41.87	MM040811	410209 MONTHLY SERVICE
						41.87		ACCOUNT TOTAL
						158.87		ORG 10022000 TOTAL

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10023000									
100-02-0000-230-01-000-000-0000-405210-									
700814 PITNEY BOWES	294	307		2011 10	INV P	215.66	MM0422	410330 SUPPLIES	
						215.66		ACCOUNT TOTAL	
100-02-0000-230-01-000-000-0000-405230-									
700863 VA INFORMATION	178	185		2011 10	INV P	59.23	MM040811	410209 MONTHLY SERVICE	
						59.23		ACCOUNT TOTAL	
100-02-0000-230-01-000-000-0000-405410-									
700637 CHARLOTTESVILLE OFFI 28		29		2011 10	INV P	950.00	MM040811	410126 MAINTENANCE AGREEME	
						950.00		ACCOUNT TOTAL	
100-02-0000-230-01-000-000-0000-406001-									
700637 CHARLOTTESVILLE OFFI 295		308		2011 10	INV P	75.00	MM0422	410288 SUPPLIES	
700835 QUILL	296	309		2011 10	INV P	364.09	MM0422	410333 SUPPLIES	
700835 QUILL	297	310		2011 10	INV P	62.34	MM0422	410333 SUPPLIES	
700835 QUILL	298	311		2011 10	INV P	5.38	MM0422	410333 SUPPLIES	
						431.81			
700880 SHENANDOAH VALLEY WA 299		312		2011 10	INV P	70.60	MM0422	410338 WATER	
						577.41		ACCOUNT TOTAL	
						1,802.30		ORG 10023000 TOTAL	

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COUNTY OF FLUVANNA
INVOICE LIST BY GL ACCOUNT

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YEAR/PERIOD: 2011/10 TO 2011/10

ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10023500								
100-02-0000-235-01-000-000-0000-405230-700863	VA INFORMATION	178		2011 10	INV P			
		185				31.81	MM040811	410209 MONTHLY SERVICE
					ACCOUNT TOTAL	31.81		
					ORG 10023500 TOTAL	31.81		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10031000			SHERIFF						
100-03-0000-310-01-000-000-0000-402600-700973	VA EMPLOYMENT COMMIS 402	419		2011 10	INV P	1,296.59	mm0422	410270 UNEMPLOYMENT	
					ACCOUNT TOTAL	1,296.59			
100-03-0000-310-01-000-000-0000-403310-700185	ANDERSON TIRE COMPAN 204	212		2011 10	INV P	185.96	MM040811	410113 TIRES	
700524	CAMBELL EQUIPMENT 11	11		2011 10	INV P	29.00	MM040811	410119 MOUNT & BALANCE	
700729	COLONIAL AUTO CENTER 118	123		2011 10	INV P	1,489.65	MM040811	410133 VEHICLE MAINTENANCE	
700984	PALMYRA AUTOMOTIVE I 238	248		2011 10	INV P	27.00	MM0422	410326 OIL CHANGE	
700986	GARY SHULL'S AUTO RE 313	327		2011 10	INV P	46.00	MM0422	410308 INSPECTION	
700986	GARY SHULL'S AUTO RE 315	329		2011 10	INV P	16.00	MM0422	410308 INSPECTION	
						62.00			
701140	SCOTT'S PAINT & BODY 8	8		2011 10	INV P	1,938.98	MM040811	410188 VEHICLE REPAIRS	
701535	WEST RIVER AUTO 113	117		2011 10	INV P	16.12	MM040811	410215 OIL CHANGE	
701535	WEST RIVER AUTO 114	118		2011 10	INV P	16.12	MM040811	410215 OIL CHANGE	
701535	WEST RIVER AUTO 115	119		2011 10	INV P	15.70	MM040811	410215 OIL CHANGE	
701535	WEST RIVER AUTO 226	235		2011 10	INV P	94.33	MM0422	410355 MAINTENANCE	
701535	WEST RIVER AUTO 227	236		2011 10	INV P	31.70	MM0422	410355 TIR ROTATION	
						173.97			
701834	JONES AUTOMOTIVE CTR 382	398		2011 10	INV P	42.75	mm0422	410254 VEHICLE MAINT.	
702293	MARTY'S RACE CARS 116	120		2011 10	INV P	47.20	MM040811	410172 VEHICLE MAINTENANCE	
702293	MARTY'S RACE CARS 320	336		2011 10	INV P	32.00	MM0422	410320 REPLACE BRAKES	
						79.20			
					ACCOUNT TOTAL	4,028.51			
100-03-0000-310-01-000-000-0000-403320-701962	OCE'	228		2011 10	INV P	16.34	MM0422	410324 MAINTENANCE	
724710	INTERACT 224	233		2011 10	INV P	3,232.80	MM0422	410313 MOBILE LICENSES	
					ACCOUNT TOTAL	3,249.14			
100-03-0000-310-01-000-000-0000-405210-724702	UNITED PARCEL SERVIC 111	115		2011 10	INV P	54.51	MM040811	410206 SHIPPING	
					ACCOUNT TOTAL	54.51			

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	

100-03-0000-310-01-000-000-0000-405230-					TELECOMMUNICATIONS				
700863 VA INFORMATION	178	185		2011 10	INV P	514.54	MM040811	410209 MONTHLY SERVICE	
702917 AT&T 286-3642	223	232		2011 10	INV P	123.02	MM0422	410276 MTH SVC PHONE	
724786 PURCHASE POWER	121	126		2011 10	INV P	39.98	MM040811	410180 SUPPLIES	
					ACCOUNT TOTAL	677.54			
100-03-0000-310-01-000-000-0000-405410-					LEASE/RENT EQUIPMENT				
700880 SHENANDOAH VALLEY WA 360		376		2011 10	INV P	11.00	MM0422	410338 WATER	
					ACCOUNT TOTAL	11.00			
100-03-0000-310-01-000-000-0000-405530-					SUBSISTENCE & LODGING				
724706 THE BLUE CAFE	122	127		2011 10	INV P	32.30	MM040811	410200 MEALS	
					ACCOUNT TOTAL	32.30			
100-03-0000-310-01-000-000-0000-406001-					OFFICE SUPPLIES				
700320 BAILEY PRINTING, INC 7		7		2011 10	INV P	156.00	MM040811	410114 BUSINESS CARDS	
701126 STAPLES CREDIT PLAN	319	333		2011 10	INV P	52.78	MM0422	410340 SUPPLIES	
702103 FLUVANNA DO IT BEST 4	4	4		2011 10	INV P	127.25	MM040811	410153 OFFICE SUPPLIES	
702522 PERSONNEL CONCEPTS	316	330		2011 10	INV P	15.90	MM0422	410328 LABOR LAWS	
702604 STAPLES BUSINESS	119	124		2011 10	INV P	36.60	MM040811	410194 OFFICE SUPPLIES	
					ACCOUNT TOTAL	388.53			
100-03-0000-310-01-000-000-0000-406008-					VEHICLE FUEL				
700329 BANK OF AMERICA	208	216		2011 10	INV P	52.21	MM0422	410278 MONTHLY STATEMETN	
701269 PETROLEUM TRADERS CO 410		427		2011 10	INV P	7,636.32	MM0422	410329 FUEL BILL	
702914 VIRGINIA OIL FLEET P 321		337		2011 10	INV P	284.07	MM0422	410354 FUEL	
					ACCOUNT TOTAL	7,972.60			
100-03-0000-310-01-000-000-0000-406009-					VEHICLE/POWER EQUIP SUPPLIES				
700991 SOUTHERN POLICE EQUI 303		317		2011 10	INV P	71.00	MM0422	410339 SUPPLIES	
700992 GALLS	110	114		2011 10	INV P	30.97	MM040811	410159 UNIFORMS	
702729 NAPA AUTO PARTS	120	125		2011 10	INV P	50.09	MM040811	410176 SUPPLIES	
702729 NAPA AUTO PARTS	381	397		2011 10	INV P	119.23	mm0422	410259 OFFICE SUPPLIES	
702729 NAPA AUTO PARTS	96	100		2011 10	INV P	217.23	MM040811	410176 SUPPLIES	
					-----	386.55			

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
703144 SOUTHEAST ENERGY	383	399		2011 10	INV P	128.22 mm0422		410268 VEHICLE SUPPLIES	
ACCOUNT TOTAL						616.74			
100-03-0000-310-01-000-000-0000-406011-				UNIFORM/WEARING APPAREL					
700329 BANK OF AMERICA	211	219		2011 10	INV P	134.98 MM0422		410278 MONTHLY STATEMENT	
700990 DONNA'S NEEDLEWORK	322	338		2011 10	INV P	24.50 MM0422		410297 UNIFORM	
700990 DONNA'S NEEDLEWORK	357	373		2011 10	INV P	30.00 MM0422		410297 UNIFORMS	
700990 DONNA'S NEEDLEWORK	380	396		2011 10	INV P	7.00 mm0422		410246 ALTERATIONS	

						61.50			
700992 GALLS	205	213		2011 10	INV P	33.90 MM040811		410159 SUPPLIES	
700992 GALLS	9	9		2011 10	INV P	94.99 MM040811		410159 UNIFORM	

						128.89			
724711 DAVID R WELLS	225	234		2011 10	INV P	69.99 MM0422		410296 REIMBURSMENT	
724781 SQUAD-FITTTTERS	5	5		2011 10	INV P	59.50 MM040811		410192 HOLSTER	
ACCOUNT TOTAL						454.86			
100-03-0000-310-01-000-000-0000-406014-				OTHER OPERATING SUPPLIES					
700358 BATTERIESPLUS-196	102	102		2011 10	INV P	83.79 MM040811		410115 BATTERIES	
700358 BATTERIESPLUS-196	300	313		2011 10	INV P	16.19 MM0422		410280 BATTERIES	

						99.98			
702480 COAST TO COAST SOLUT	123	128		2011 10	INV P	105.87 MM040811		410132 SUPPLIES	
ACCOUNT TOTAL						205.85			
100-03-0000-310-01-000-000-0000-408102-				FURNITURE & FIXTURES					
700329 BANK OF AMERICA	212	220		2011 10	INV P	115.50 MM0422		410278 MONTHLY STATMENT	
ACCOUNT TOTAL						115.50			
ORG 10031000 TOTAL						19,103.67			

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10032000		E911							
100-03-0000-320-01-000-000-0000-403162-700831	MSAG DATA CONSULTANT 230	239		2011 10	INV P	302.25	MM0422	410322 E-911 ADDRESS	
					ACCOUNT TOTAL	302.25			
100-03-0000-320-01-000-000-0000-405230-700863	VA INFORMATION 178	185		2011 10	INV P	31.13	MM040811	410209 MONTHLY SERVICE	
701014	CENTURYLINK 31021409 358	374		2011 10	INV P	960.80	MM0422	410287 MTH SVC PHONE	
					ACCOUNT TOTAL	991.93			
100-03-0000-320-01-000-000-0000-405530-724708	CHRIS HENDERSON 202	210		2011 10	INV P	7.63	MM040811	410128 REIMBURSMENT	
724709	SEAN BRENNAN 203	211		2011 10	INV P	104.92	MM040811	410189 REIMBURSMENT	
724785	STEVEN MORRIS 92	96		2011 10	INV P	85.10	MM040811	410195 MEALS	
					ACCOUNT TOTAL	197.65			
100-03-0000-320-01-000-000-0000-406001-702212	FLORIDA MICRO LLC 233	242		2011 10	INV P	864.00	MM0422	410304 SUPPLIES	
					ACCOUNT TOTAL	864.00			
100-03-0000-320-01-000-000-0000-406014-724712	LIFESAVERS INC 232	241		2011 10	INV P	117.00	MM0422	410319 ADMIN FEE	
					ACCOUNT TOTAL	117.00			
100-03-0000-320-01-000-000-0000-406021-700329	BANK OF AMERICA 216	224		2011 10	INV P	454.07	MM0422	410278 MONTHLY STATEMENT	
					ACCOUNT TOTAL	454.07			
					ORG 10032000 TOTAL	2,926.90			

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10032500								FIRE AND RESCUE SQUAD	
100-03-0000-325-01-000-000-0000-405625-								FIRE & RESCUE ASSN OPERATIONAL	
700940 FLUVANNA COUNTY VOLU 103		107		2011 10	INV P	26,080.00	MM040811	410152 QUARTERLY ALLOCATIO	
701068 LAKE MONTICELLO	104	108		2011 10	INV P	21,691.25	MM040811	410167 QUARTERLY ALLOCATIO	
701184 FLUVANNA COUNTY RESC 105		109		2011 10	INV P	14,494.00	MM040811	410151 QUARTERLY ALLOCATIO	
						ACCOUNT TOTAL		62,265.25	
100-03-0000-325-01-000-000-0000-405627-STFRE								STATE FIRE FUNDS	
700940 FLUVANNA COUNTY VOLU 106		110		2011 10	INV P	51,092.00	MM040811	410152 ANNUAL STATE FIRE F	
						ACCOUNT TOTAL		51,092.00	
						ORG 10032500 TOTAL		113,357.25	

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10034000								BUILDING INSPECTIONS	
100-03-0000-340-01-000-000-0000-405230-700863	VA INFORMATION	178		2011 10	INV P	32.95	MM040811	410209 MONTHLY SERVICE	
702909	VERIZON	129		2011 10	INV P	139.94	MM040811	410211 MONTHLY SERVICE	
						ACCOUNT TOTAL		172.89	
100-03-0000-340-01-000-000-0000-405999-700874	TREASURER OF VIRGINI	101		2011 10	INV P	567.85	MM040811	410205 1ST QTR PERMIT FEES	
						ACCOUNT TOTAL		567.85	
100-03-0000-340-01-000-000-0000-406008-701269	PETROLEUM TRADERS CO	410		2011 10	INV P	350.83	MM0422	410329 FUEL BILL	
						ACCOUNT TOTAL		350.83	
						ORG 10034000 TOTAL		1,091.57	

Payment to Treasurer of VA covered the 1st quarter 2% Levy of Permit Fees.

04/25/2011 14:22
rhoover

COUNTY OF FLUVANNA
INVOICE LIST BY GL ACCOUNT

PG 21
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YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
	10035000					ANIMAL CONTROL			
	100-03-0000-350-01-000-000-0000-403300-700865	FLUVANNA SPCA	82	85	2011 10	CONTRACT SERVICES INV P	17,800.00	MM040811	410156 CONTRACT SERVICES
						ACCOUNT TOTAL	17,800.00		
	100-03-0000-350-01-000-000-0000-406001-702781	FAYES OFFICE SUPPLY	387	403	2011 10	OFFICE SUPPLIES INV P	34.49	mm0422	410247 OFFICE SUPPLIES
						ACCOUNT TOTAL	34.49		
	100-03-0000-350-01-000-000-0000-406008-701269	PETROLEUM TRADERS CO	410	427	2011 10	VEHICLE FUEL INV P	620.07	MM0422	410329 FUEL BILL
						ACCOUNT TOTAL	620.07		
	100-03-0000-350-01-000-000-0000-406014-700329	BANK OF AMERICA	215	223	2011 10	OTHER OPERATING SUPPLIES INV P	-107.38	MM0422	410278 MONTHLY STATEMENT
						ACCOUNT TOTAL	-107.38		
						ORG 10035000 TOTAL	18,347.18		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	

10041500								FACILITIES	
100-04-0000-415-01-000-000-0000-403300-								CONTRACT SERVICES	
700329 BANK OF AMERICA	215	223		2011 10	INV P	111.00	MM0422	410278 MONTHLY STATEMENT	
								ACCOUNT TOTAL	111.00
100-04-0000-415-01-000-000-0000-403310-								BLDGS EQUIP VEHICLE REP&MAINT	
700244 ARBORISTRY ASSOCIATE	236	246		2011 10	INV P	285.00	MM0422	410275 PLANT CARE	
700524 CABELL EQUIPMENT	73	75		2011 10	INV P	487.47	MM040811	410119 VEHICLE TIRES	
700688 CII SERVICE	95	99		2011 10	INV P	405.84	MM040811	410129 HEATER REPAIR	
700688 CII SERVICE	97	101		2011 10	INV P	193.47	MM040811	410129 HEATER REPAIR	

						599.31			
700972 CAMPBELL EQUIPMENT I	94	98		2011 10	INV P	15.00	MM040811	410120 TRACTOR REPAIR	
701253 LEWIS L PERSINGER	69	71		2011 10	INV P	400.00	MM040811	410169 REPLACE LIGHT	
701827 ON-SITE EQUIP REPAIR	331	347		2011 10	INV P	1,161.60	MM0422	410325 SUPPLIES	
702383 CROSSROADS AUTO REPA	71	73		2011 10	INV P	125.06	MM040811	410138 VEHICLE REPAIR	
702383 CROSSROADS AUTO REPA	72	74		2011 10	INV P	477.80	MM040811	410138 VEHICLE REPAIR	

						602.86			
								ACCOUNT TOTAL	3,551.24
100-04-0000-415-01-000-000-0000-403700-								LAUNDRY AND DRY CLEANING	
702051 CINTAS	290	303		2011 10	INV P	109.60	MM0422	410289 UNIFORMS	
702051 CINTAS	330	346		2011 10	INV P	109.60	MM0422	410289 UNIFORMS	
702051 CINTAS	67	69		2011 10	INV P	109.60	MM040811	410130 UNIFORM	
702051 CINTAS	93	97		2011 10	INV P	109.60	MM040811	410130 UNIFORMS	

						438.40			
								ACCOUNT TOTAL	438.40
100-04-0000-415-01-000-000-0000-405230-								TELECOMMUNICATIONS	
700863 VA INFORMATION	178	185		2011 10	INV P	37.22	MM040811	410209 MONTHLY SERVICE	
702909 VERIZON 721970783-00	129	135		2011 10	INV P	138.50	MM040811	410211 MONTHLY SERVICE	
								ACCOUNT TOTAL	175.72
100-04-0000-415-01-000-000-0000-406001-								OFFICE SUPPLIES	
702781 FAYES OFFICE SUPPLY	387	403		2011 10	INV P	13.48	mm0422	410247 OFFICE SUPPLIES	
								ACCOUNT TOTAL	13.48

YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION

	100-04-0000-415-01-000-000-0000-406003-					AGRICULTURAL SUPPLIES			
	701358 LANDSCAPE SUPPLY INC 329		345		2011 10	INV P	850.97	MM0422	410318 FIELD CONDITIONER
	701358 LANDSCAPE SUPPLY INC 378		394		2011 10	INV P	893.50	mm0422	410256 SUPPLIES
	701358 LANDSCAPE SUPPLY INC 66		68		2011 10	INV P	1,065.80	MM040811	410168 SUPPLIES

							2,810.27		
	703140 COMMUNITY INTERFACE 117		121		2011 10	INV P	600.00	MM040811	410136 AGRICULTURAL SUPPLI
						ACCOUNT TOTAL	3,410.27		
	100-04-0000-415-01-000-000-0000-406004-					GENERAL MATERIALS AND SUPPLIES			
	700013 LOWE'S 79		82		2011 10	INV P	24.92	MM040811	410171 SUPPLIES
	700329 BANK OF AMERICA 213		221		2011 10	INV P	39.99	MM0422	410278 MONTHLY STATEMENT
	700819 E.W. THOMAS 2		3		2011 10	INV P	17.27	MM040811	410144 SUPPLIES
	702383 CROSSROADS AUTO REPA 327		343		2011 10	INV P	10.69	MM0422	410294 SUPPLIES
	702803 BLUE RIDGE PAINT & 91		95		2011 10	INV P	33.96	MM040811	410116 SUPPLIES
	703053 CAPITAL TRISTATE 234		243		2011 10	INV P	36.72	MM0422	410284 SUPPLIES
	703053 CAPITAL TRISTATE 235		245		2011 10	INV P	34.20	MM0422	410284 SUPPLIES

							70.92		
						ACCOUNT TOTAL	197.75		
	100-04-0000-415-01-000-000-0000-406005-					JANITORIAL SUPPLIES			
	702261 COMMONWEALTH DISTRIB 288		301		2011 10	INV P	450.00	MM0422	410291 VACCUM
	702261 COMMONWEALTH DISTRIB 289		302		2011 10	INV P	144.00	MM0422	410291 SUPPLIES
	702261 COMMONWEALTH DISTRIB 328		344		2011 10	INV P	1,622.91	MM0422	410291 SUPPLIES

							2,216.91		
						ACCOUNT TOTAL	2,216.91		
	100-04-0000-415-01-000-000-0000-406008-					VEHICLE FUEL			
	701269 PETROLEUM TRADERS CO 410		427		2011 10	INV P	1,591.84	MM0422	410329 FUEL BILL
						ACCOUNT TOTAL	1,591.84		
	100-04-0000-415-01-000-000-0000-406009-					VEHICLE/POWER EQUIP SUPPLIES			
	700819 E.W. THOMAS 2		3		2011 10	INV P	8.30	MM040811	410144 SUPPLIES
	700881 TRACTOR HILL EQUIP L 287		300		2011 10	INV P	33.58	MM0422	410345 SUPPLIES
	701834 JONES AUTOMOTIVE CTR 326		342		2011 10	INV P	334.15	MM0422	410317 SUPPLIES
						ACCOUNT TOTAL	376.03		
						ORG 10041500 TOTAL	12,082.64		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	

10042000	GENERAL SERVICES								
100-04-0000-420-01-000-000-0000-403320-	MAINTENANCE CONTRACTS								
700404	ALLIED WASTE SERVICE 286	299		2011 10	INV P	649.77	MM0422	410271 TRASH DISPOSAL	
700405	ALLIED WASTE SERVICE 285	298		2011 10	INV P	222.37	MM0422	410272 TRASH DISPOSAL	
700688	CII SERVICE 377	393		2011 10	INV P	2,437.00	mm0422	410243 PREVENTIVE MAINTENA	
700876	THYSSENKRUPP ELEVATO 275	288		2011 10	INV P	1,161.12	MM0422	410343 ELEVATOR MAINTENANC	
701100	INTRASTATE PEST 411	428		2011 10	INV P	45.00	MM0422	410314 PEST CONTROL	
701100	INTRASTATE PEST 412	429		2011 10	INV P	32.00	MM0422	410314 PEST CONTROL	
701100	INTRASTATE PEST 413	430		2011 10	INV P	28.00	MM0422	410314 PEST CONTROL	
701100	INTRASTATE PEST 414	431		2011 10	INV P	58.00	MM0422	410314 PEST CONTROL	
701100	INTRASTATE PEST 415	432		2011 10	INV P	127.00	MM0422	410314 PEST CONTROL	

						290.00			
701270	GENERATOR SERVICE CO 281	294		2011 10	INV P	786.66	MM0422	410309 INSPECTION	
701270	GENERATOR SERVICE CO 282	295		2011 10	INV P	350.64	MM0422	410309 INSPECTION	
701270	GENERATOR SERVICE CO 283	296		2011 10	INV P	311.95	MM0422	410309 INSPECTION	
701270	GENERATOR SERVICE CO 284	297		2011 10	INV P	313.45	MM0422	410309 INSPECTON	

						1,762.70			
ACCOUNT TOTAL						6,522.96			

100-04-0000-420-01-000-000-0000-405110-	ELECTRICAL SERVICES								
700587	CENTRAL VA ELECTRIC 266	279		2011 10	INV P	1,742.70	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 267	280		2011 10	INV P	1,839.40	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 268	281		2011 10	INV P	1.34	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 269	282		2011 10	INV P	41.81	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 270	283		2011 10	INV P	22.81	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 271	284		2011 10	INV P	27.54	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 272	285		2011 10	INV P	19.43	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 273	286		2011 10	INV P	18.32	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 274	287		2011 10	INV P	412.71	MM0422	410286 MTH SVC ELECTRIC	
700587	CENTRAL VA ELECTRIC 65	67		2011 10	INV P	21.69	MM040811	410121 MONTHLY SERVICE	
700587	CENTRAL VA ELECTRIC 78	81		2011 10	INV P	82.25	MM040811	410121 MTH SVC ELECTRIC	

						4,230.00			
700817	DOMINION VIRGINIA PO 130	136		2011 10	INV P	2,729.70	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 131	138		2011 10	INV P	165.61	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 132	139		2011 10	INV P	1,191.37	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 133	140		2011 10	INV P	1,221.02	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 134	141		2011 10	INV P	113.04	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 135	142		2011 10	INV P	61.56	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 137	144		2011 10	INV P	1,507.30	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 138	145		2011 10	INV P	283.88	MM040811	410141 MTH SVC ELECTRIC	
700817	DOMINION VIRGINIA PO 139	146		2011 10	INV P	339.32	MM040811	410141 MTH SVC ELECTRIC	

YEAR/PERIOD: 2011/10 TO 2011/10										
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION		
700817	DOMINION VIRGINIA PO 140	147		2011 10	INV P	266.02	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 141	148		2011 10	INV P	127.63	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 142	149		2011 10	INV P	928.26	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 151	158		2011 10	INV P	6.44	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 152	159		2011 10	INV P	263.28	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 153	160		2011 10	INV P	54.72	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 154	161		2011 10	INV P	179.39	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 155	162		2011 10	INV P	101.87	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 156	163		2011 10	INV P	89.53	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 157	164		2011 10	INV P	21.97	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 158	165		2011 10	INV P	103.35	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 159	166		2011 10	INV P	15.80	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 160	167		2011 10	INV P	9.11	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 161	168		2011 10	INV P	130.87	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 162	169		2011 10	INV P	5.50	MM040811	410141 MTH SVC ELECTRIC		
700817	DOMINION VIRGINIA PO 163	170		2011 10	INV P	146.65	MM040811	410141 MTH SVC ELECTRIC		
						10,063.19				
ACCOUNT TOTAL						14,293.19				
100-04-0000-420-01-000-000-0000-405120-				HEATING SERVICES						
700857	AQUA VA	258	270	2011 10	INV P	60.48	MM0422	410274 WATER		
700883	TIGER FUEL COMPANY	264	277	2011 10	INV P	1,379.61	MM0422	410344 FUEL		
700883	TIGER FUEL COMPANY	265	278	2011 10	INV P	1,604.56	MM0422	410344 HEATING FUEL		
700883	TIGER FUEL COMPANY	374	390	2011 10	INV P	3,324.03	mm0422	410269 HEATING OIL		
700883	TIGER FUEL COMPANY	375	391	2011 10	INV P	153.92	mm0422	410269 HEATING OIL		
700883	TIGER FUEL COMPANY	376	392	2011 10	INV P	1,257.65	mm0422	410269 HEATING OIL		
700883	TIGER FUEL COMPANY	61	63	2011 10	INV P	1,324.43	MM040811	410203 HEATING OIL		
700883	TIGER FUEL COMPANY	62	64	2011 10	INV P	477.11	MM040811	410203 HEATING OIL		
700883	TIGER FUEL COMPANY	63	66	2011 10	INV P	1,175.95	MM040811	410203 HEATING OIL		
700883	TIGER FUEL COMPANY	74	76	2011 10	INV P	975.60	MM040811	410203 HEATING OIL		
						11,672.86				
ACCOUNT TOTAL						11,733.34				
100-04-0000-420-01-000-000-0000-405130-				WATER SERVICES						
700587	CENTRAL VA ELECTRIC	261	274	2011 10	INV P	133.44	MM0422	410286 WATER		
700587	CENTRAL VA ELECTRIC	262	275	2011 10	INV P	26.94	MM0422	410286 WATER		
700587	CENTRAL VA ELECTRIC	263	276	2011 10	INV P	153.66	MM0422	410286 WATER		
						314.04				
700857	AQUA VA	259	271	2011 10	INV P	23.70	MM0422	410274 WATER		
700857	AQUA VA	260	272	2011 10	INV P	24.78	MM0422	410274 WATER		
						48.48				
700880	SHENANDOAH VALLEY WA	325	341	2011 10	INV P	22.90	MM0422	410338 WATER		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
701077 FORK UNION	57	59		2011 10	INV P	17.76	MM040811	410157 WATER SERVICE	
701077 FORK UNION	58	60		2011 10	INV P	22.20	MM040811	410157 WATER SERVICE	
701077 FORK UNION	59	61		2011 10	INV P	146.52	MM040811	410157 WATER SERVICE	
701077 FORK UNION	60	62		2011 10	INV P	17.76	MM040811	410157 WATER SERVICE	
						204.24			
					ACCOUNT TOTAL	589.66			
100-04-0000-420-01-000-000-0000-405140-700817					STREET LIGHTS				
DOMINION VIRGINIA PO 164		171		2011 10	INV P	116.63	MM040811	410141 MTH SVC ELECTRIC	
					ACCOUNT TOTAL	116.63			
100-04-0000-420-01-000-000-0000-405230-700878					TELECOMMUNICATIONS				
CENTURYLINK 589-8525 56		58		2011 10	INV P	50.00	MM040811	410125 MONTHLY SERVICE	
					ACCOUNT TOTAL	50.00			
100-04-0000-420-01-000-000-0000-405410-700459					LEASE/RENT EQUIPMENT				
BOSLEY CROWTHER	324	340		2011 10	INV P	2,000.00	MM0422	410283 LEASE	
					ACCOUNT TOTAL	2,000.00			
					ORG 10042000 TOTAL	35,305.78			

YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
	10042500								PUBLIC WORKS
	100-04-0000-425-01-000-000-0000-403310-701535 WEST RIVER AUTO	75	77		2011 10	INV P	40.22	MM040811	410215 VEHICLE MAINT.
							40.22		ACCOUNT TOTAL
	100-04-0000-425-01-000-000-0000-405230-702909 VERIZON 721970783-00 129		135		2011 10	INV P	106.56	MM040811	410211 MONTHLY SERVICE
							106.56		ACCOUNT TOTAL
	100-04-0000-425-01-000-000-0000-406001-700329 BANK OF AMERICA	215	223		2011 10	INV P	200.32	MM0422	410278 MONTHLY STATEMENT
	701661 SAM'S CLUB	54	57		2011 10	INV P	35.00	MM040811	410186 SUPPLIES
	702781 FAYES OFFICE SUPPLY	387	403		2011 10	INV P	34.49	mm0422	410247 OFFICE SUPPLIES
							269.81		ACCOUNT TOTAL
	100-04-0000-425-01-000-000-0000-406004-700329 BANK OF AMERICA	215	223		2011 10	INV P	165.00	MM0422	410278 MONTHLY STATEMENT
	702103 FLUVANNA DO IT BEST	371	387		2011 10	INV P	39.98	mm0422	410249 KS FIRE STATION EZ
							204.98		ACCOUNT TOTAL
	100-04-0000-425-01-000-000-0000-406008-701269 PETROLEUM TRADERS CO 410		427		2011 10	INV P	156.21	MM0422	410329 FUEL BILL
							156.21		ACCOUNT TOTAL
							777.78		ORG 10042500 TOTAL

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10043000								LANDFILL	
100-04-0000-430-01-000-000-0000-403310-								BLDGS EQUIP VEHICLE REP&MAINT	
700548 CAROLINA SOFTWARE	293	306		2011 10	INV P	250.00	MM0422	410285 SUPPORT & MAINTENAN	
701088 UNITED RENTALS, INC	109	113		2011 10	INV P	1,460.76	MM040811	410207 EQUIPMENT RENTALS	
701088 UNITED RENTALS, INC	220	229		2011 10	INV P	1,460.76	MM0422	410348 EQUIPMENT RENTAL	
701088 UNITED RENTALS, INC	48	50		2011 10	INV P	1,570.36	MM040811	410207 EQUIPMENT RENTAL	
						4,491.88			
702394 BFI	339	355		2011 10	INV P	2,924.44	MM0422	410282 TRASH REMOVAL	
						ACCOUNT TOTAL		7,666.32	
100-04-0000-430-01-000-000-0000-405230-								TELECOMMUNICATIONS	
700863 VA INFORMATION	178	185		2011 10	INV P	2.70	MM040811	410209 MONTHLY SERVICE	
700895 VERIZON BUSINES #900	165	172		2011 10	INV P	9.53	MM040811	410212 MONTHLY SERVICE	
702909 VERIZON 721970783-00	129	135		2011 10	INV P	31.21	MM040811	410211 MONTHLY SERVICE	
						ACCOUNT TOTAL		43.44	
100-04-0000-430-01-000-000-0000-405410-								LEASE/RENT EQUIPMENT	
700830 MO-JOHNS INC	47	49		2011 10	INV P	60.00	MM040811	410174 PORTABLE TOILET	
						ACCOUNT TOTAL		60.00	
100-04-0000-430-01-000-000-0000-405711-								PURCHASE OF SERVICES	
700880 SHENANDOAH VALLEY WA	336	352		2011 10	INV P	3.00	MM0422	410338 WATER	
						ACCOUNT TOTAL		3.00	
						ORG 10043000 TOTAL		7,772.76	

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YEAR/PERIOD: 2011/10 TO 2011/10

ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10051000		HEALTH						
100-05-0000-510-01-000-000-0000-405230-700863	VA INFORMATION	178		2011 10	INV P	42.40	MM040811	410209 MONTHLY SERVICE
					ACCOUNT TOTAL	42.40		
					ORG 10051000 TOTAL	42.40		

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YEAR/PERIOD: 2011/10 TO 2011/10							
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK DESCRIPTION
10052000		CSA					
100-05-0000-520-01-000-000-0000-402600-700973	VA EMPLOYMENT COMMIS 402	419		2011 10	INV P	976.97 mm0422	410270 UNEMPLOYMENT
					ACCOUNT TOTAL	976.97	
					ORG 10052000 TOTAL	976.97	

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
700951 ELK HILL	438	455		2011 10	INV P	840.00	CSA0422	410222	
700951 ELK HILL	439	456		2011 10	INV P	735.00	CSA0422	410222	
700951 ELK HILL	440	457		2011 10	INV P	560.00	CSA0422	410222	
700951 ELK HILL	441	458		2011 10	INV P	725.00	CSA0422	410222	
700951 ELK HILL	442	459		2011 10	INV P	52.50	CSA0422	410222	
700951 ELK HILL	443	460		2011 10	INV P	1,732.50	CSA0422	410222	
700951 ELK HILL	444	461		2011 10	INV P	700.00	CSA0422	410222	
700951 ELK HILL	445	462		2011 10	INV P	750.00	CSA0422	410222	
700951 ELK HILL	446	463		2011 10	INV P	90.00	CSA0422	410222	

						8,905.00			
701156 FLUVANNA DEPARTMENT	428	445		2011 10	INV P	136.32	CSA0422	410224	
701244 REGION TEN	476	493		2011 10	INV P	180.00	CSA0422	410235	
701244 REGION TEN	477	494		2011 10	INV P	340.00	CSA0422	410235	
701244 REGION TEN	478	495		2011 10	INV P	128.00	CSA0422	410235	
701244 REGION TEN	479	496		2011 10	INV P	85.00	CSA0422	410235	

						733.00			
701337 SYLVAN LEARNING CENT	483	500		2011 10	INV P	336.00	CSA0422	410239	
701381 INTERCEPT YOUTH SERV	467	484		2011 10	INV P	4,895.00	CSA0422	410227	
701977 SUZANNE WOLSTENHOLME	196	204		2011 10	INV P	666.00	MM040811	410197	MAINTENANCE
701977 SUZANNE WOLSTENHOLME	482	499		2011 10	INV P	150.00	CSA0422	410238	
701977 SUZANNE WOLSTENHOLME	487	504		2011 10	INV P	666.00	CSA0422	410238	

						1,482.00			
702720 A J ANDERSON DR	429	446		2011 10	INV P	900.00	CSA0422	410216	
702734 REBECCA MAYO PITTS	473	490		2011 10	INV P	80.00	CSA0422	410234	
702734 REBECCA MAYO PITTS	474	491		2011 10	INV P	400.00	CSA0422	410234	
702734 REBECCA MAYO PITTS	475	492		2011 10	INV P	400.00	CSA0422	410234	

						880.00			
702736 MARK SERGI DR	470	487		2011 10	INV P	1,600.00	CSA0422	410230	
702976 FLUVANNA FAMILY MEDI	419	436		2011 10	INV P	88.00	CSA0422	410225	
702981 RACHEL LEWIS LCSW	468	485		2011 10	INV P	450.00	CSA0422	410233	
702981 RACHEL LEWIS LCSW	469	486		2011 10	INV P	450.00	CSA0422	410233	

						900.00			
703000 STUMP EDUCATIONAL CO	481	498		2011 10	INV P	2,660.00	CSA0422	410237	
703027 HILLTOP DAY CARE CEN	466	483		2011 10	INV P	875.00	CSA0422	410226	

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ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
703028 GLORIA HUBERT	197	205		2011 10	INV P	1,165.00	MM040811	410160 MAINTENANCE	
703137 NOVELL BROWN	430	447		2011 10	INV P	180.00	CSA0422	410231	
703137 NOVELL BROWN	431	448		2011 10	INV P	180.00	CSA0422	410231	
703137 NOVELL BROWN	432	449		2011 10	INV P	500.00	CSA0422	410231	

						860.00			
703146 RIVER ROAD RENTALS	480	497		2011 10	INV P	250.00	CSA0422	410236	
703148 DALE WOOD	420	437		2011 10	INV P	250.00	CSA0422	410220	
						ACCOUNT TOTAL			49,696.32
100-05-0000-525-01-000-000-0000-405715-						POS MANDATED FFOP			
700951 ELK HILL	199	207		2011 10	INV P	137.50	MM040811	410146 SUPERVISED VISITATI	
						ACCOUNT TOTAL			137.50
100-05-0000-525-01-000-000-0000-405716-						TFC LIC. RES CONG CARE			
700028 CRAIG VILLALON LCSW	488	505		2011 10	INV P	540.00	CSA0422	410219	
700758 COMMUNITY ATTENTION	200	208		2011 10	INV P	3,337.92	MM040811	410135 ADMN, SUPERVISION, R	
700869 PEOPLE PLACES, INC	490	507		2011 10	INV P	47.00	CSA0422	410232	
700869 PEOPLE PLACES, INC	491	508		2011 10	INV P	3,866.80	CSA0422	410232	
700869 PEOPLE PLACES, INC	492	509		2011 10	INV P	5,262.30	CSA0422	410232	
700869 PEOPLE PLACES, INC	493	510		2011 10	INV P	4,935.80	CSA0422	410232	
700869 PEOPLE PLACES, INC	494	511		2011 10	INV P	4,622.30	CSA0422	410232	
700869 PEOPLE PLACES, INC	495	512		2011 10	INV P	510.00	CSA0422	410232	
700869 PEOPLE PLACES, INC	496	513		2011 10	INV P	4,186.80	CSA0422	410232	
700869 PEOPLE PLACES, INC	497	514		2011 10	INV P	3,796.15	CSA0422	410232	

						27,227.15			
700951 ELK HILL	489	506		2011 10	INV P	850.00	CSA0422	410222	
703047 KITTY SIMS	498	515		2011 10	INV P	101.97	CSA0422	410228	
						ACCOUNT TOTAL			32,057.04
100-05-0000-525-01-000-000-0000-405718-						COMM SVCS			
700661 CHILD CONNECTION DEV	186	193		2011 10	INV P	324.00	MM040811	410127 CHILD CARE	
700661 CHILD CONNECTION DEV	187	194		2011 10	INV P	680.00	MM040811	410127 CHILD CARE	

						1,004.00			
700864 FAMILY PRESERVATION	193	200		2011 10	INV P	1,005.00	MM040811	410147 COUNSELING	
700951 ELK HILL	171	178		2011 10	INV P	630.00	MM040811	410146 COUNSELING	
700951 ELK HILL	172	179		2011 10	INV P	805.00	MM040811	410146 COUNSELING	
700951 ELK HILL	173	180		2011 10	INV P	600.00	MM040811	410146 MENTORING	

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
700951 ELK HILL	179	186		2011 10	INV P	665.00	MM040811	410146	COUNSELING
700951 ELK HILL	180	187		2011 10	INV P	455.00	MM040811	410146	COUNSELING
						3,155.00			
700952 FLUVANNA CO SCHOOL S	188	195		2011 10	INV P	77.00	MM040811	410149	BEFOR E & AFTER SCH
701849 PRESBYTERIAN HOMES	174	181		2011 10	INV P	664.00	MM040811	410179	MENTAL HEALTH SUPPO
701916 REGION TEN CSB	175	182		2011 10	INV P	170.00	MM040811	410182	COUNSELING
701977 SUZANNE WOLSTENHOLME	177	184		2011 10	INV P	125.00	MM040811	410197	TUTORING
702485 REGINA CHRISTMAS	191	198		2011 10	INV P	500.00	MM040811	410181	CHILD CARE
702485 REGINA CHRISTMAS	192	199		2011 10	INV P	340.00	MM040811	410181	CHILD CARE
						840.00			
702918 COURTNEY LONG	190	197		2011 10	INV P	240.00	MM040811	410137	TUTORING
702960 BROWN YOUTH CONSULTA	181	188		2011 10	INV P	540.00	MM040811	410117	MENTOR
702960 BROWN YOUTH CONSULTA	182	189		2011 10	INV P	1,575.00	MM040811	410117	MENTORING
702960 BROWN YOUTH CONSULTA	183	190		2011 10	INV P	900.00	MM040811	410117	MENTORING
702960 BROWN YOUTH CONSULTA	184	191		2011 10	INV P	1,350.00	MM040811	410117	MENTORING
702960 BROWN YOUTH CONSULTA	185	192		2011 10	INV P	1,575.00	MM040811	410117	MENTORING
						5,940.00			
702971 A. JAMES ANDERSON PH	169	177		2011 10	INV P	900.00	MM040811	410112	PHYSC EVAL
702976 FLUVANNA FAMILY MEDI	189	196		2011 10	INV P	88.00	MM040811	410154	MEDICAL EXAM
703142 TIM SCHNELLER	176	183		2011 10	INV P	106.93	MM040811	410204	UNIFORM EQUIPMENT
ACCOUNT TOTAL						14,314.93			
100-05-0000-525-01-000-000-0000-405719- COMM SVCS. TRANSITION									
700951 ELK HILL	416	433		2011 10	INV P	2,970.00	CSA0422	410222	
700955 LAFAYETTE SCHOOL INC	417	434		2011 10	INV P	5,589.00	CSA0422	410229	
ACCOUNT TOTAL						8,559.00			
100-05-0000-525-01-000-000-0000-405721- RES. CONG. CARE									
701096 GRAFTON SCHOOL, INC	198	206		2011 10	INV P	4,175.00	MM040811	410161	EDUCATION
701381 INTERCEPT YOUTH SERV	485	502		2011 10	INV P	3,317.31	CSA0422	410227	
ACCOUNT TOTAL						7,492.31			
100-05-0000-525-01-000-000-0000-405725- POS MAND FC LIC RES CONG CARE									
700757 COMMUNITY ATTENTION	194	201		2011 10	INV P	270.00	MM040811	410134	ROOM/BOARD/RESIDENT

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YEAR/PERIOD: 2011/10 TO 2011/10

ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
700951 ELK HILL	195	203		2011 10	INV P	7,075.44	MM040811	410146 RESIDENTIAL SERVICE
					ACCOUNT TOTAL	7,345.44		
100-05-0000-525-01-000-000-0000-405728- 700662 CHILDHELP USA	484	501		2011 10	POS MAND SPEC FC 4E INV P	3,190.00	CSA0422	410218
					ACCOUNT TOTAL	3,190.00		
					ORG 10052500 TOTAL	128,679.44		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP	S	CHECK RUN	CHECK	DESCRIPTION

10071000	PARKS & RECREATION								
100-07-0000-710-01-000-000-0000-403100-	PROFESSIONAL SERVICES								
700948 HEATHER ANTONACCI	396	413		2011 10	INV	P	63.00	mm0422	410251 HORSEBACK LESSON
701111 DEVI PETERSON	395	412		2011 10	INV	P	373.20	mm0422	410245 YOGA CLASS
701274 NICOLE HACKENBERG	68	70		2011 10	INV	P	1,149.00	MM040811	410177 VOLLEYBALL
701405 HEALTH NUTZ	401	418		2011 10	INV	P	175.00	mm0422	410250 WATER AEROBICS CLAS
701405 HEALTH NUTZ	64	65		2011 10	INV	P	210.00	MM040811	410165 WATER AEROBICS

							385.00		
701798 CLARA CARTER	18	18		2011 10	INV	P	500.00	MM040811	410131 SPRING BREAK CAMP
701798 CLARA CARTER	398	415		2011 10	INV	P	200.00	mm0422	410244 LAX DRIVER

							700.00		
702882 JEAN LYNN COOPER	394	411		2011 10	INV	P	245.00	mm0422	410253 COMPUTER CLASS
703088 NATALYA BROWN	397	414		2011 10	INV	P	325.50	mm0422	410260 ZUMBA CLASS
724782 LINDA HUGHES-SMITH	13	13		2011 10	INV	P	518.70	MM040811	410170 518.70
724783 DELORES PALMER	14	14		2011 10	INV	P	518.70	MM040811	410139 SPRING BREAK CAMP
							ACCOUNT TOTAL		
							4,278.10		
100-07-0000-710-01-000-000-0000-403300-	CONTRACT SERVICES								
700587 CENTRAL VA ELECTRIC	389	406		2011 10	INV	P	19.43	mm0422	410241 MONTHLY SERVICE
700587 CENTRAL VA ELECTRIC	390	407		2011 10	INV	P	19.43	mm0422	410241 MONTHLY SERVICE

							38.86		
700830 MO-JOHNS INC	23	23		2011 10	INV	P	29.29	MM040811	410174 PODRT-A-JOHN
700830 MO-JOHNS INC	24	24		2011 10	INV	P	17.50	MM040811	410174 PORT-A-JOHN
700830 MO-JOHNS INC	26	26		2011 10	INV	P	17.00	MM040811	410174 PORT-A-JOHN

							63.79		
700880 SHENANDOAH VALLEY WA	392	409		2011 10	INV	P	39.75	mm0422	410267 WATER
701978 RSC EQUIPMENT	15	15		2011 10	INV	P	120.70	MM040811	410185 LIGHT TOWER
							ACCOUNT TOTAL		
							263.10		
100-07-0000-710-01-000-000-0000-403310-	BLDGS EQUIP VEHICLE REP&MAINT								
700102 ALL STAR AUTO PARTS	391	408		2011 10	INV	P	259.40	mm0422	410240 VEHICLE PARTS
702762 BANK OF AMERICA	368	384		2011 10	INV	P	85.96	MM0422	410279 MONTHLY STATEMENT

YEAR/PERIOD: 2011/10 TO 2011/10		ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
ACCOUNT TOTAL								345.36		
100-07-0000-710-01-000-000-0000-403500-		701772 C2 INKED INCORPORATE	16	16		2011 10	INV P	39.00	MM040811	410118 COLOR COPIES
ACCOUNT TOTAL								39.00		
100-07-0000-710-01-000-000-0000-405100-		703064 GREEN ADVENTURE PROJ	30	31		2011 10	INV P	550.00	MM040811	410162 ENVIRONMENTAL LEADE
ACCOUNT TOTAL								550.00		
100-07-0000-710-01-000-000-0000-405230-		700863 VA INFORMATION	178	185		2011 10	INV P	16.20	MM040811	410209 MONTHLY SERVICE
		700895 VERIZON BUSINES #900	165	172		2011 10	INV P	38.46	MM040811	410212 MONTHLY SERVICE
		702909 VERIZON 721970783-00	129	135		2011 10	INV P	90.70	MM040811	410211 MONTHLY SERVICE
ACCOUNT TOTAL								145.36		
100-07-0000-710-01-000-000-0000-405305-		701817 SAM'S	393	410		2011 10	INV P	142.78	mm0422	410264 SUPPLIES
		702762 BANK OF AMERICA	368	384		2011 10	INV P	273.33	MM0422	410279 MONTHLY STATEMENT
ACCOUNT TOTAL								416.11		
100-07-0000-710-01-000-000-0000-405810-		724721 SAMS CLUB	408	425		2011 10	INV P	35.00	mm0422	410265 MEMBERSHIP DUES
ACCOUNT TOTAL								35.00		
100-07-0000-710-01-000-000-0000-405830-		724718 Melissa Leonardi	405	422		2011 10	INV P	70.00	mm0422	410257 SPRING BREAK CAMP R
		724719 SARA WARDEN	406	423		2011 10	INV P	121.60	mm0422	410266 SPRING BREAK CAMP R
ACCOUNT TOTAL								191.60		
100-07-0000-710-01-000-000-0000-406001-		702781 FAYES OFFICE SUPPLY	27	27		2011 10	INV P	65.47	MM040811	410148 OFFICE SUPPLIES
		702781 FAYES OFFICE SUPPLY	55	56		2011 10	INV P	189.99	MM040811	410148 OFFICE SUPPLIES

								255.46		
ACCOUNT TOTAL								255.46		
100-07-0000-710-01-000-000-0000-406004-		702449 RIVANNA GEAR & APPAR	17	17		2011 10	INV P	159.10	MM040811	410183 SUPPLIES
		702449 RIVANNA GEAR & APPAR	19	19		2011 10	INV P	40.00	MM040811	410183 TEE SHIRTS
		702449 RIVANNA GEAR & APPAR	25	25		2011 10	INV P	420.00	MM040811	410183 TEAM SHIRTS & SHORT

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
702449 RIVANNA GEAR & APPAR	399	416		2011 10	INV P	300.00	mm0422	410263 UNIFORMS	
702449 RIVANNA GEAR & APPAR	76	78		2011 10	INV P	246.00	MM040811	410183 SUPPLIES	
						1,165.10			
702580 TEK SUPPLY	29	30		2011 10	INV P	787.43	MM040811	410198 TENT CANOPY	
724720 PIONEER MANUFACTURIN	407	424		2011 10	INV P	952.00	mm0422	410262 SUPPLIES	
ACCOUNT TOTAL						2,904.53			
100-07-0000-710-01-000-000-0000-406008-701269	PETROLEUM TRADERS CO 410	427		VEHICLE FUEL					
				2011 10	INV P	513.57	MM0422	410329 FUEL BILL	
ACCOUNT TOTAL						513.57			
ORG 10071000 TOTAL						9,937.19			

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ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10073000								LIBRARY
100-07-0000-730-01-000-000-0000-406001-700637	CHARLOTTESVILLE OFFI	373						OFFICE SUPPLIES
		389		2011 10	INV P	34.00	mm0422	410242 OFFICE SUPPLIES
701357	STAPLES	39	40	2011 10	INV P	140.45	MM040811	410193 OFFICE SUPPLIES
701443	DEMCO	38	39	2011 10	INV P	67.76	MM040811	410140 SUPPLIES
701455	SHOWCASES	37	38	2011 10	INV P	5.92	MM040811	410191 SUPPLIES
702770	HAWK LABELING SYSTEM	36	37	2011 10	INV P	144.05	MM040811	410164 SUPPLIES
								ACCOUNT TOTAL
						392.18		
								ORG 10073000 TOTAL
						392.18		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	

10073510									LIBRARY STATE AID
100-07-0000-735-10-000-000-0000-405230-LIBAD									TELECOMMUNICATIONS
700862 VA INFORMATION	31	32		2011 10	INV P	8.36	MM040811	410208	MONTHLY SERVICE
									ACCOUNT TOTAL
						8.36			
100-07-0000-735-10-000-000-0000-406012-LIBAD									BOOKS/PUBLICATIONS
701036 MICROMARKETING LLC	32	33		2011 10	INV P	36.39	MM040811	410173	DVD
701036 MICROMARKETING LLC	35	36		2011 10	INV P	98.98	MM040811	410173	CDS
701036 MICROMARKETING LLC	372	388		2011 10	INV P	19.95	mm0422	410258	BOOKS

						155.32			
									ACCOUNT TOTAL
						155.32			
									ORG 10073510 TOTAL
						163.68			

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP	S	CHECK RUN	CHECK	DESCRIPTION
10081000									COUNTY PLANNER
100-08-0000-810-01-000-000-0000-403100-700831	MSAG DATA CONSULTANT 364	380		2011 10	INV	P	510.00	MM0422	410322 ONLINE GIS
							510.00		ACCOUNT TOTAL
100-08-0000-810-01-000-000-0000-403600-702785	THE DAILY PROGRESS 42	43		2011 10	INV	P	436.00	MM040811	410202 ADVERTISING
							436.00		ACCOUNT TOTAL
100-08-0000-810-01-000-000-0000-405230-700863	VA INFORMATION 178	185		2011 10	INV	P	50.10	MM040811	410209 MONTHLY SERVICE
702909	VERIZON 721970783-00 129	135		2011 10	INV	P	104.01	MM040811	410211 MONTHLY SERVICE
							154.11		ACCOUNT TOTAL
100-08-0000-810-01-000-000-0000-406001-702781	FAYES OFFICE SUPPLY 126	132		2011 10	INV	P	50.31	MM040811	410148 SUPPLIES
							50.31		ACCOUNT TOTAL
100-08-0000-810-01-000-000-0000-406008-701269	PETROLEUM TRADERS CO 410	427		2011 10	INV	P	91.97	MM0422	410329 FUEL BILL
							91.97		ACCOUNT TOTAL
							1,242.39		ORG 10081000 TOTAL

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YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10081500								
								PLANNING COMMISSION
100-08-0000-815-01-000-000-0000-403600-								ADVERTISING
701159 FLUVANNA REVIEW	363	379		2011 10	INV P	323.00	MM0422	410307 ADS
								ACCOUNT TOTAL
						323.00		
100-08-0000-815-01-000-000-0000-405510-								MILEAGE ALLOWANCES
724707 STEVEN NICHOLS	127	133		2011 10	INV P	104.00	MM040811	410196 MILEAGE
								ACCOUNT TOTAL
						104.00		
								ORG 10081500 TOTAL
						427.00		

YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10083000								ECONOMIC DEVELOPMENT
100-08-0000-830-01-000-000-0000-403300-								CONTRACT SERVICES
701898 FLUVANNA COUNTY	349	365		2011 10	INV P	1,325.00	MM0422	410306 ALLOCATION
								ACCOUNT TOTAL
						1,325.00		
100-08-0000-830-01-000-000-0000-403600-								ADVERTISING
702785 THE DAILY PROGRESS	41	42		2011 10	INV P	482.00	MM040811	410202 ADVERTISING
								ACCOUNT TOTAL
						482.00		
								ORG 10083000 TOTAL
						1,807.00		

YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10084000								VA COOPERATIVE EXTENSION
100-08-0000-840-01-000-000-0000-405230-								TELECOMMUNICATIONS
700863 VA INFORMATION	178	185		2011 10	INV P	41.77	MM040811	410209 MONTHLY SERVICE
								ACCOUNT TOTAL
						41.77		
100-08-0000-840-01-000-000-0000-405540-								CONVENTION AND EDUCATION
700835 QUILL	254	264		2011 10	INV P	381.91	MM0422	410333 OFFICE SUPPLIES
702799 PROG SPECIALTY INS C	256	268		2011 10	INV P	582.00	MM0422	410332 INSURANCE
724716 FAYE ANDERSON	403	420		2011 10	INV P	40.00	MM0422	410301 POST OFFICE BOX
724717 JOHN THOMPSON	404	421		2011 10	INV P	31.50	MM0422	410316 SUPPLIES
								ACCOUNT TOTAL
						1,035.41		
								ORG 10084000 TOTAL
						1,077.18		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
10086000									
100-09-0000-860-01-000-000-0000-405870-								MISCELLANEOUS NON DEPARTMENTAL	
700329 BANK OF AMERICA	217	225		2011 10	INV P	411.52	MM0422	410278 MONTHLY STATEMENT	
701220 ROBINSON FARMER & CO 83		86		2011 10	INV P	15,000.00	MM040811	410184 5 YR FINANCIAL FORC	
702844 JAMES RIVER WATER	344	360		2011 10	INV P	309.00	MM0422	410315 LEGAL FEES	
702909 VERIZON 721970783-00	129	135		2011 10	INV P	4,472.01	MM040811	410211 MONTHLY SERVICE	
								ACCOUNT TOTAL	20,192.53
								ORG 10086000 TOTAL	20,192.53

YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
10087000								TRANSFER TO OTHER FUNDS
100-09-0000-870-01-000-000-0000-409110-								TRANS TO DRUG FORFEITURE
701736 FLUVANNA COUNTY	112	116		2011 10	INV P	540.00	MM040811	410150 ASSET FORFEITURE
					ACCOUNT TOTAL	540.00		
					ORG 10087000 TOTAL	540.00		
=====								
FUND 100	GENERAL FUND			TOTAL:		417,908.74		
=====								

YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION

12000000	COMMUNITY PROGRAMS								
120-06-0000-720-08-000-000-0000-403160-	INSTRUCTIONAL SERVICES								
724722 IT'S A BREEZE	409	426			2011 10	INV P	734.74	mm0422	410252 SUPPLIES
						ACCOUNT TOTAL	734.74		
120-06-0000-720-08-000-000-0000-406013-	RECREATIONAL SUPPLIES								
700925 FLUVANNA CO PUBLIC S 388	404				2011 10	INV P	200.00	mm0422	410248 RAB STUDENT REP.
						ACCOUNT TOTAL	200.00		
120-06-0000-720-08-000-000-0000-406013-HTTRL	RECREATIONAL SUPPLIES								
700830 MO-JOHNS INC	49	51			2011 10	INV P	80.00	MM040811	410174 PORT-A-JOHN
						ACCOUNT TOTAL	80.00		
120-06-0000-720-08-000-000-0000-408101-	MACHINERY AND EQUIPMENT								
702449 RIVANNA GEAR & APPAR 400	417				2011 10	INV P	1,892.30	mm0422	410263 UNIFORMS
						ACCOUNT TOTAL	1,892.30		
						ORG 12000000 TOTAL	2,907.04		
=====									
	FUND 120	COMMUNITY PROGRAMS				TOTAL:	2,907.04		
=====									

YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
30232500								
								FIRE & RESCUE CAP PROJ
302-03-0000-325-00-000-000-0000-403100-KSFRE								PROFESSIONAL SERVICES
700329 BANK OF AMERICA	215	223		2011 10	INV P	66.88	MM0422	410278 MONTHLY STATEMENT
						66.88		ACCOUNT TOTAL
						66.88		ORG 30232500 TOTAL

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	
30260000	SCHOOL CONSTRUCTION PROJECT								
302-06-0000-000-00-000-000-0000-403300-NEWHS	CONTRACT SERVICES								
702279 THE AV COMPANY	107	111		2011 10	INV P	184,000.00	MM040811	410199 MULTIMEDIA PROJECTO	
702347 MORNING MIST IRRIGAT	108	112		2011 10	INV P	6,400.00	MM040811	410175 INSTALLATION	
ACCOUNT TOTAL						190,400.00			
302-06-0000-000-00-000-000-0000-403400-NEWHS	ARCHITECT & ENGINEERING								
700360 BCWH INC	248	258		2011 10	INV P	9,875.00	MM0422	410281 PROFESSIONAL SERVIC	
700360 BCWH INC	249	259		2011 10	INV P	17,082.23	MM0422	410281 PROFESSIONAL SERICE	
						26,957.23			
724714 SYCOM	250	260		2011 10	INV P	526,757.00	MM0422	410342 PROFESSIONAL SERVIC	
ACCOUNT TOTAL						553,714.23			
302-06-0000-000-00-000-000-0000-403410-NEWHS	CLERK OF THE WORKS								
702958 FLUVANNA CO PUBLIC S 370		386		2011 10	INV P	7,281.81	MM0422	410305 CLERK OF THE WORKS	
ACCOUNT TOTAL						7,281.81			
ORG 30260000 TOTAL						751,396.04			

YEAR/PERIOD: 2011/10 TO 2011/10								
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
30283000								ECONOMIC DEV CAP PROJ
302-08-0000-830-00-000-000-0000-403300-ECDEV								CONTRACT SERVICES
703098 RCC CONSULTANTS INC	231	240		2011 10	INV P	925.00	MM0422	410334 COMPARATIVE ANALYSI
						925.00		ACCOUNT TOTAL
						925.00		ORG 30283000 TOTAL
=====								
FUND 302 CAPITAL IMPROVEMENT						TOTAL:		757,521.58
=====								

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	

50200000								UTILITY OPERATIONAL EXPENSES	
502-04-0000-000-00-000-0000-403300-								CONTRACT SERVICES	
702371 O.A.S.I.S.	323	339		2011 10	INV P	775.00	MM0422	410323 SUPERVISION	
702395 ENVIROCOMPLIANCE LAB	332	348		2011 10	INV P	55.00	MM0422	410299 WATER TEST	
702395 ENVIROCOMPLIANCE LAB	334	350		2011 10	INV P	130.00	MM0422	410299 WATER TESTING	
702395 ENVIROCOMPLIANCE LAB	335	351		2011 10	INV P	55.00	MM0422	410299 WATER TESTING	

						240.00			
702926 HANDLEY EXCAVATING,	350	366		2011 10	INV P	869.67	MM0422	410311 RETAINAGE	
702926 HANDLEY EXCAVATING,	351	367		2011 10	INV P	4,608.71	MM0422	410311 RETAINAGE	
702926 HANDLEY EXCAVATING,	352	368		2011 10	INV P	8,831.92	MM0422	410311 RETAINAGE	

						14,310.30			
						ACCOUNT TOTAL		15,325.30	

502-04-0000-000-00-000-0000-403310-								BLDGS EQUIP VEHICLE REP&MAINT	
702395 ENVIROCOMPLIANCE LAB	333	349		2011 10	INV P	55.00	MM0422	410299 WATER	
						ACCOUNT TOTAL		55.00	

502-04-0000-000-00-000-0000-403700-								LAUNDRY AND DRY CLEANING	
702051 CINTAS	338	354		2011 10	INV P	9.15	MM0422	410289 UNIFORMS	
702051 CINTAS	53	55		2011 10	INV P	9.15	MM040811	410130 UNIFORMS	
702051 CINTAS	85	88		2011 10	INV P	9.15	MM040811	410130 UNIFORMS	

						27.45			
						ACCOUNT TOTAL		27.45	

502-04-0000-000-00-000-0000-405110-								ELECTRICAL SERVICES	
700817 DOMINION VIRGINIA PO	143	150		2011 10	INV P	664.72	MM040811	410141 MTH SVC ELECTRIC	
700817 DOMINION VIRGINIA PO	150	157		2011 10	INV P	56.22	MM040811	410141 MTH SVC ELECTRIC	

						720.94			
						ACCOUNT TOTAL		720.94	

502-04-0000-000-00-000-0000-405230-								TELECOMMUNICATIONS	
702322 CENTURYLINK 31008974	51	53		2011 10	INV P	38.22	MM040811	410124 MONTHLY SERVICE	
702417 CENTURYLINK 30943329	50	52		2011 10	INV P	42.87	MM040811	410122 MONTHLY SERVICE	
						ACCOUNT TOTAL		81.09	

						ORG 50200000 TOTAL		16,209.78	
=====									
FUND 502 SEWER						TOTAL:		16,209.78	

YEAR/PERIOD: 2011/10 TO 2011/10	ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION
50500000 FUSD OPERATIONAL EXPENSES									
505-04-0000-000-00-000-0000-403700- LAUNDRY AND DRY CLEANING									
	702051 CINTAS	292	305		2011 10	INV P	40.20	MM0422	410289 UNIFORMS
	702051 CINTAS	338	354		2011 10	INV P	31.05	MM0422	410289 UNIFORMS
	702051 CINTAS	53	55		2011 10	INV P	31.05	MM040811	410130 UNIFORMS
	702051 CINTAS	85	88		2011 10	INV P	31.05	MM040811	410130 UNIFORMS

							133.35		
ACCOUNT TOTAL							133.35		
505-04-0000-000-00-000-0000-405110- ELECTRICAL SERVICES									
	700817 DOMINION VIRGINIA PO 144		151		2011 10	INV P	1,594.37	MM040811	410141 MTH SVC ELECTRIC
	700817 DOMINION VIRGINIA PO 145		152		2011 10	INV P	934.11	MM040811	410141 MTH SVC ELECTRIC
	700817 DOMINION VIRGINIA PO 146		153		2011 10	INV P	176.93	MM040811	410141 MTH SVC ELECTRIC
	700817 DOMINION VIRGINIA PO 147		154		2011 10	INV P	100.98	MM040811	410141 MTH SVC ELECTRIC
	700817 DOMINION VIRGINIA PO 148		155		2011 10	INV P	103.16	MM040811	410141 MTH SVC ELECTRIC
	700817 DOMINION VIRGINIA PO 149		156		2011 10	INV P	136.78	MM040811	410141 MTH SVC ELECTRIC

							3,046.33		
ACCOUNT TOTAL							3,046.33		
505-04-0000-000-00-000-0000-405230- TELECOMMUNICATIONS									
	700329 BANK OF AMERICA	215	223		2011 10	INV P	35.85	MM0422	410278 MONTHLY STATEMENT
	700863 VA INFORMATION	178	185		2011 10	INV P	2.70	MM040811	410209 MONTHLY SERVICE
	702909 VERIZON 721970783-00	129	135		2011 10	INV P	96.81	MM040811	410211 MONTHLY SERVICE
ACCOUNT TOTAL							135.36		
505-04-0000-000-00-000-0000-405410- LEASE/RENT EQUIPMENT									
	700891 E.W. OWEN	44	45		2011 10	INV P	150.00	MM040811	410143 WELL RENT
ACCOUNT TOTAL							150.00		
505-04-0000-000-00-000-0000-405711- PURCHASE OF SERVICES									
	700329 BANK OF AMERICA	218	226		2011 10	INV P	231.00	MM0422	410278 MONTHLY STATEMENT
	700830 MO-JOHNS INC	46	48		2011 10	INV P	60.00	MM040811	410174 PORTABLE TOILET
	702203 SCHNEIDER LABRATORIE	80	83		2011 10	INV P	28.00	MM040811	410187 TESTING
ACCOUNT TOTAL							319.00		
505-04-0000-000-00-000-0000-405810- DUES OR ASSOCIATION MEMBERSHIP									
	700329 BANK OF AMERICA	218	226		2011 10	INV P	385.00	MM0422	410278 MONTHLY STATEMENT
ACCOUNT TOTAL							385.00		

YEAR/PERIOD: 2011/10 TO 2011/10									
ACCOUNT/VENDOR	DOCUMENT	VOUCHER	PO	YEAR/PR	TYP S	CHECK RUN	CHECK	DESCRIPTION	

505-04-0000-000-00-000-000-0000-406001-701188	HACH COMPANY	337	353	2011 10	INV P	28.94	MM0422	410310 SUPPLIES	
702941	EAGLE FLIGHT BUSINES	81	84	2011 10	INV P	263.35	MM040811	410145 SUPPLIES	
ACCOUNT TOTAL						292.29			
505-04-0000-000-00-000-000-0000-406003-701189	UNIVAR USA INC	237	247	2011 10	INV P	3,147.85	MM0422	410349 CHEMICLES	
ACCOUNT TOTAL						3,147.85			
505-04-0000-000-00-000-000-0000-406008-701269	PETROLEUM TRADERS CO 410		427	2011 10	INV P	778.12	MM0422	410329 FUEL BILL	
ACCOUNT TOTAL						778.12			
505-04-0000-000-00-000-000-0000-406009-701188	HACH COMPANY	87	91	2011 10	INV P	140.20	MM040811	410163 SUPPLIES	
ACCOUNT TOTAL						140.20			
ORG 50500000 TOTAL						8,527.50			
=====									
FUND 505 FORK UNION SANITARY DISTRICT TOTAL:						8,527.50			
=====									

KNOWLEDGE & EXPERIENCE
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Current VHF Coverage (Palmyra Location – Talk Out)

1

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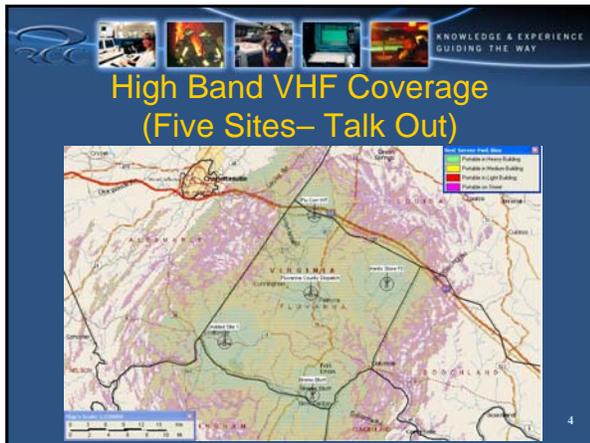
Current VHF Coverage (Palmyra Location – Talk In)

2

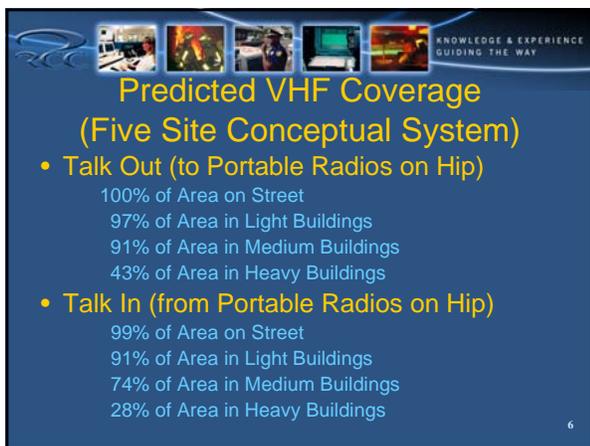
KNOWLEDGE & EXPERIENCE
GUIDING THE WAY

Current VHF Coverage (Public Safety Sites – Talk In)

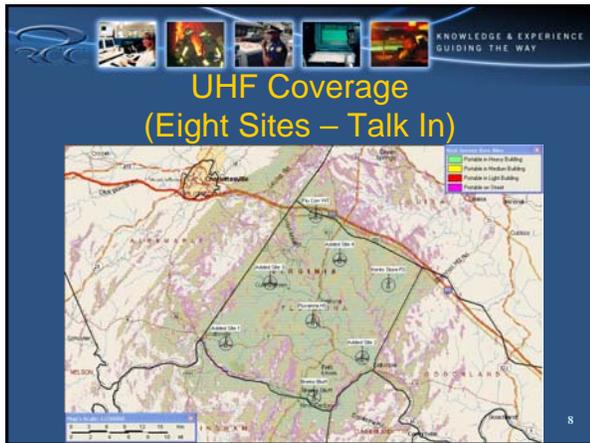
3















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Recommendations

- **Costs (Rough Order of Magnitude)**
 - Sites (Each Site)
 - Development 300K-350K
 - Support Equipment (MW/Network) 150K-175K
 - Equipment (Radio/Network) 40-50K/chan
 - Trunked “Master” Equipment 1.25M
 - “Subscriber” Equipment
 - Control Stations (Agency Locations) 5000-6000
 - Mobile Radios (Vehicle Mounted) 2500-4500
 - Portable Radios (Handheld) 2000-3000
 - Pagers 400- 450

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VHF Cost Summary

- **Five Sites** **\$3.31M**
 - Site Development
 - Five Digital/One Analog HB Channels Each Site
 - Microwave (Six Links/Networking)
- **Trunked Controller/Simulcast** **\$1.42M**
 - (At Master Site and Prime Site Only)
- **“Subscriber” Equipment** **\$1.34M**
 - 15 Control Stations
 - 75 Mobile Radios
 - 200 Portable Radios
 - 150 Pagers
- Total** **\$6.07M**

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UHF Cost Summary

- **Eight Sites** **\$5.22M**
 - Site Development
 - Five Digital/One Analog UHF Channels Each Site
 - Microwave (Nine Links/Networking)
- **Trunked Controller/Simulcast** **\$1.42M**
 - (At Master Site and Prime Site Only)
- **“Subscriber” Equipment** **\$1.34M**
 - 15 Control Stations
 - 75 Mobile Radios
 - 200 Portable Radios
 - 150 Pagers
- Total** **\$7.98M**

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**Comparative Analysis
of
Public Safety Radio Communications
Options**

FINAL REPORT

Presented To:

Fluvanna County

By:



RCC Consultants, Inc.

4900 Cox Road, Suite 235
Glen Allen, Virginia 23060
(804) 353-0300

February 9, 2011

Notice:

This document contains information regarding access to public safety and critical infrastructure telecommunications systems. As such, it may contain and reveal details regarding the location, use, capabilities, limitations, and vulnerabilities of these systems.

Disclosure and dissemination of this information should be limited to those parties engaged in operating, maintaining, or improving the subject systems.

No information regarding the locations, system configurations, frequency usage, subscriber units, access methods, operational plans, drawings, diagrams, or documentation related to their use should be disclosed. All such information should be considered as exempt from the Freedom of Information Act under §2.2 3705.2 of the Code of Virginia, regardless of its availability in part or in whole from any other sources.

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1.0 Executive Summary

1.1 Background

Radio communications technology is rapidly changing. Industry standards are constantly, but slowly evolving and progressing. Market driven and commercially focused Federal regulations present challenges and risks to local government entities faced with supporting public safety and governmental information systems. There is an increased expectation for interoperable communications systems. This regulatory environment requires a review and action, but also creates an opportunity for Fluvanna County to address issues of performance, freshen the technology and to improve operations.

Fluvanna County has identified the need to upgrade and replace the present public safety communications system and improve coverage for public safety users, especially those equipped with portable radios. There is also a question of the best approach for Fluvanna County to take during this significant upgrade. In particular, whether the new public safety radio communications system should utilize high band VHF frequencies as the current system does, or frequencies in the UHF band as is used by the County School Board.

The prospective beneficiaries of this activity are the public safety responders within the County. These include both government and volunteer agencies that provide services to the residents of Fluvanna and adjoining localities.

1.2 Scope of Work

The scope of work for this project was outlined and organized into the seven tasks listed below.

- Task 1 – Conduct Project Kickoff Meeting
- Task 2 – Collect Data
- Task 3 – Perform Site Surveys
- Task 4 – Prepare Preliminary Analysis
- Task 5 – Prepare Analysis of Current Coverage
- Task 6 – Prepare Analysis of Coverage Improvement
- Task 7 – Final Report

The final report includes recommendations and background information on a conceptual system design to support public safety agencies; an evaluation of current coverage and expected

Project Background and Overview

improvements, including coverage plots; a description of the current system; and estimates of cost for recommended improvements. After an initial review by the County staff and any necessary revisions, RCC will provide a summary presentation of its findings to the County Board of Supervisors.

Current FCC data was gathered for Fluvanna County Licenses, as well as for other licensees with facilities within the County for the purposes of evaluating usage as well as identifying potential resources and existing sites.

Information was also gathered by RCC regarding planned or existing antenna support structures throughout Fluvanna County.

Utilizing existing or likely antenna site data, our engineers have performed propagation analyses in the VHF and UHF frequency bands based on typical coverage requirements.

1.3 Relevant Factors for Consideration

As Fluvanna contemplates improvements to its radio communications systems, there are a number of factors that need to be considered.

- Frequency Band(s) of operation
- Trunked or Conventional Operation
- Digital or Analog Modulation
- Simulcast or Multi-cast Architecture
- Site Development and “Transport” Systems
- System Reliability and Resiliency

1.4 Findings

The radio communications systems currently used by public safety agencies are predominantly high band VHF (150-174 MHz). All primary public safety (Sheriff’s Department and fire/rescue operations) dispatch takes place in that band. The School Board operates two UHF (450-470 MHz) channels for vehicle location/tracking and voice communications. Service is also provided to the Public Works department from the School Board’s voice channel system. Adjacent localities operate a number of systems of varying configurations and frequency bands, but the majority of operations are at VHF.

Charlottesville, Albemarle County and the University of Virginia operate a regional Motorola 800 MHz trunked radio system that is reported to provide significant overlapping

Project Background and Overview

coverage to Fluvanna County. There has been some interest in the past to leverage that existing system investment and minimize costs to Fluvanna County, but the age of that trunked system equipment is now such that it can no longer be expanded to additional sites.

The service area and coverage requirements for the Sheriff's Department and Fire/Rescue agencies are countywide. The reliability of the system must be such that it supports mission critical communications in the preservation of life and property in very challenging and stressful situations. The expectations are greater than for non-public safety agencies, and communications can not be delayed until a more opportune time, or when situated in a more favorable location. The proliferation of low power portable radios results in even greater coverage demands and uncertainties for all users because of their mobility, lower output power and the inefficiencies of smaller antennas at lower elevations. The stated requirement by County representatives is to have 95% reliability (confidence) of (two-way) handheld portable radio coverage across 90-95% of Fluvanna County while operating from within buildings and wearing the portable on the hip. The in-building requirement used for comparison was light buildings.

There are four high band VHF countywide channels licensed and available for use, with two designated for primary public safety dispatch.

- Sheriff's Office 1 (Primary Dispatch)
- Sheriff's Office 2
- Fire/Rescue 2 (Primary Dispatch)
- Fire/Rescue 1

There are a number of other high band VHF frequencies licensed to the County that are apparently intended to provide access to other existing systems, so they are not expected to be usable.

The radio systems implemented to support public safety agencies do not provide adequate coverage over the entire service area, especially for users with handheld portable radios. There are many locations in the county that have inadequate or no coverage. From studies performed previously by others, there are also said to be mobile coverage problems in a small number of areas. Most coverage problems are experienced across the southern end and northwest corners of the County.

Project Background and Overview

Frequency Bands

Of the frequency bands available, the most likely to be beneficial for the development of a completely new system (with a large number of additional channels) are UHF (450-470 MHz), 700 (764-806) MHz, or 800 (806-861) MHz. While high band VHF offers some advantages, it contains limited frequencies, lacks organizational structure within the “band plan” and suffers from limitations brought on by the larger physical dimensions of antennas. Even with these limitations, high Band VHF enjoys good overall propagation characteristics for users who are attempting to cover large, more rural areas with the minimum number of sites. When compared with low band VHF (such as the Sheriff used in previous systems, and still uses for the SIRS channel), high band VHF has smaller antennas and is much less susceptible to electrical noise. Within the expected timeframe for implementation, frequencies are expected to be more generally available in the 700 and 800 MHz bands. These higher bands also lend themselves better to “in-building solutions” where that support for coverage enhancement is required. However, they generally experience greater losses from foliage, or in rural areas over large areas. No consideration was required or given to the bands above 450 MHz in this report.

No information was provided or gathered concerning expected growth in population or demand for public safety services. The current equipment inventory and communications traffic volume do not suggest the need for new channels or greater system capacity, but there are times when the system becomes congested. The primary problems appear to be related to adequate coverage and interoperability. However, there is a desire for additional channel capacity to allow for anticipated growth over the expected life of a replacement system.

Other Factors

In addition to the consideration of frequency bands, there are decisions over whether to implement a system using digital technology, and whether to operate in a trunked environment. Current digital technologies for land mobile radio systems provide more consistent performance, over the coverage area. They also allow for the support of low speed mobile data systems and voice encryption. However, they can be proprietary and also have limitations in their ability to faithfully reproduce voices in the presence of background noise at emergency scenes (sirens, saws, beeping alarms, etc.).

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Trunked technologies allow the sharing of a small number of channels amongst much larger groups of users, with each group seemingly having their own “virtual channel.” This does not equate to “privacy” or secure communications, but does minimize the nuisance to users of listening to constant unrelated and distracting radio traffic. It also reduces waiting for busy systems, accommodates large numbers of users, and allows greater administration and control of system use. Again, there are several technologies available, and many are considered proprietary. Even with standards-based systems, it is possible to limit equipment availability because of features or capabilities that are beyond the standard.

Recommendations

Due to the problems identified above, the improved services and increased cost associated with current technologies, the economies expected to be afforded by consolidation, and the impact that an aging radio system has on both public safety personnel and the response they provide to the general public, RCC has recommended both short term and long range actions for the subject radio systems. These recommendations are summarized below and listed in ranked order (most desirable or critical first). The final decision needs to be evaluated based on channel availability, vendor capabilities, features and functionality, and cost.

1. RCC recommends that Fluvanna County immediately begin work to pursue narrowband compliance on existing radio systems. The deadline for conversion to narrowband of systems operating between 150 and 512 MHz is January 1, 2013. It is likely that any significant changes to the system (additional sites, replacement, modification, or addition of towers; additional channel capacity; or change in technology or frequency band) could require more than one year to implement. In order to ensure continued operation on the existing systems past the deadline (should any delays be encountered), it will be necessary for them to be compliant with the FCC requirements. Even if the County were to decide to implement a system for public safety at UHF (450 MHz) or some other band, continued operation and capabilities at high band VHF will likely be desirable in order to work effectively with neighboring localities.
2. RCC recommends that Fluvanna County pursue the acquisition and/or development of key sites that are expected to be part of the long term solution. While the current site facilities may be sufficient for the current requirements, they are not capable of supporting an

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expanded system, much less systems operating in parallel during interim periods. The current sites serving public safety support five or fewer channels, and three sites are configured for receive only operation. Any long-term solution should include microwave connectivity; and would have greater demands for floor space, tower space, supply power, and equipment cooling, and have additional consolidated antenna systems.

3. RCC recommends that Fluvanna County start the process of developing a comprehensive, strategic plan to implement a communications network to serve future needs. There are likely insufficient high band VHF channels that would be suitable to provide any significant expansion of the current system, and their coordination will be more time consuming and uncertain. Moving public safety users to a higher band, such as UHF (450-470 MHz) would improve coordination and licensing, and also facilitate the use of special in-building distributed antenna systems (if desired), but would also require additional sites to provide comparable coverage. UHF frequencies are paired, and considered easier to coordinate, but they are not expected to be plentiful. A new UHF system would require an entirely new channel set. Whereas a fifth channel for a high band VHF system would require the identification and coordination of two frequencies for one channel, five new channels would need to be identified, coordinated and licensed for a UHF system.
4. As an alternative, Fluvanna County could pursue an arrangement with an adjacent locality to enter a partnership to develop or expand a trunked system infrastructure. The trunked controlling infrastructure is complex and of such a nature that it must be implemented in a redundant configuration in order to ensure availability and uninterrupted service. Therefore, it has a significant incremental entry cost. This is difficult to justify when serving a relatively small number of users. It would be desirable if Fluvanna County could form a partnership to share the cost of the trunked system “central controlling” equipment. It would be more likely to approach such a system (if desired) by partnering with one or more adjacent localities, and developing a multi-jurisdictional or regional system. Such a system should offer standards-based trunking service to all member agencies for public safety and public service systems. If this were done, implementation could still be in any band, but the benefits would be greatest if all partners approached the new or expanded system by implementing in the same band as other partners, as there would be some benefit from coverage overlap and mobility for users traveling into the adjacent locality. For such

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an alternative, the total cost and long term commitments with both the locality and vendor should be fully investigated and developed. Agreements should be pursued for a long term commitment, and should address recurring (operation and maintenance) costs.

1.5 Expected Costs and Implementation Plan

1.5.1 Expected Cost

The cost estimates provided below are based on actual vendor proposal or contract costs for similar systems, but as each implementation is different and requirements or conditions vary, they should be used for budgetary purposes only. The estimates include typical discount levels from list pricing. Actual pricing may vary from the cost estimate, and will depend on the amount of competition perceived by prospective vendors. The range of expected costs depends on the frequency band of implementation and varies from just over \$6M to almost \$8M for a fully compliant, standards-based five-channel digital trunked radio system, including some encryption and mobile data services for a limited number of users. Included is a separate analog channel to support alert paging operations.

One scenario would involve Fluvanna County partnering with an adjacent county to share the trunked “master site”, but developing its own transport and infrastructure to provide coverage across its service area. This would avoid or share the installation and most administration efforts for central controlling infrastructure equipment. The “master site” equipment alone represents an estimated incremental “entry level” cost of well over \$1M. If Fluvanna County implemented a system in the same band as the partner, then there could be some coverage overlap and benefit to both parties as users might have access to and coverage from adjacent sites.

As mentioned earlier, even when installing equipment at an existing location, development of a new site is likely to be required in order to allow an orderly implementation, testing, and transition.

If remaining in the high band VHF spectrum, improvements in coverage necessary to provide coverage to the level required by public safety users will necessitate the expansion from the present single transmit site with three additional remote receive locations (four sites) to a system with five transmit/receive locations.

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If migrating to a system in the UHF spectrum, it is expected that a total of eight sites would be needed to achieve coverage comparable to that provided by five sites at high band VHF.

The costs for trunking technology and digital operation are basically “band-neutral.” These capabilities are implemented in software, and cost the same whether implemented in a high band VHF or UHF radio. The radios themselves are also very similar in cost between the bands. The maintenance cost for radios in these different bands is also similar. The greatest difference in cost is driven by the number of sites required to achieve the coverage goals.

1.5.2 Implementation Plan

Implementation of a completely new radio system of the scope and magnitude envisioned by Fluvanna County will typically require at least two years. Once Fluvanna County has chosen the alternative that best meets its users’ needs and available budget, attention should be turned to regulatory issues. Specifically, that would include acquiring land and obtaining approvals and permits for any new or expanded antenna site, as well as submitting FAA notices and FCC license applications. As these steps proceed, detailed specifications will need to be developed and approved by Fluvanna County. Following approval of the specifications, a procurement document must be prepared and released to prospective vendors. During these times, there may be modifications to the selected sites, frequencies, and equipment.

The procurement process, from development of the specifications to an award of a purchase contract will require at least six months for a system of the complexity expected. Almost half of this time will involve reviewing and understanding the manufacturers’ offers and negotiating a purchase contract. For the alternatives related to partnering with an adjacent locality in a shared trunked system, the process may take longer as there are other parties, factors, relationships, and approval processes.

Site Acquisition and development can be expected to take a year to complete if no significant problems are encountered. This includes the time to perform preliminary environmental assessments and site plans, allow time for public review and comment, and submit and receive regulatory approvals.

Implementation and testing of the radio system will require 9-12 months, depending

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primarily on final design, subscriber installation, and product delivery issues. Some of these activities can be carried out concurrently with site acquisition and development, but there are risks associated with moving forward with manufacturing and assembly of systems prior to the completion of site acquisition and regulatory approvals.

The physical facilities and infrastructure should be completely built out to support the number of channels expected to be needed over the expected life of the system. An assumption of 300 to 400 users is made based on FCC license information, and by the FCC practice, each channel is expected to support between 70 and 100 active users.

2.0 Project Background and Overview

2.1 Project Overview

Radio communications technology has made great advances in the past 20 years. Many of these changes are due to increased regulatory requirements which seek to maximize the efficiency of spectrum use. Spectrum is being viewed by the Federal Communications Commission (FCC) not only as a limited resource, but one with ever-increasing commercial value. Users have been demanding the development of industry standards, but the process is very slow and cumbersome. In the mean time, the manufacturers who are working to develop the technology to meet these requirements continue to build and sell proprietary systems to those users who cannot wait.

Like most local governments, Fluvanna County has been waiting for the marketplace to improve, competition to increase, and prices to drop. There is always concern that a significant investment will be made, and the great relief and further advancements will come shortly thereafter.

With this background, Fluvanna County needs to meet upcoming Federal mandates for spectrum efficiency. At the same time, coverage performance issues that are presently being experienced by users need to be addressed. The coverage problems experienced could be exacerbated by the efforts to meet regulatory requirements. Variations in the technologies employed can also impact the continued ability for Fluvanna County public safety users to communicate with their peers and mutual aid partners in adjoining localities.

Fluvanna County has recognized the need to evaluate options for frequency bands, regulatory requirements, and advancements in technology as part of their plan to improve existing public safety two-way voice and data communications systems. There are opportunities to address capacity, coverage, compatibility, and interoperability. Because of the significant investment of a new system, it is also necessary to look well into the future. This report provides guidance in short and long range plans for communications systems upgrades.

2.2 Scope of Work

This project follows the issuance of a consultant service agreement between Fluvanna

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County and RCC Consultants, Inc. The purpose of this report is to review the current Public safety system, evaluate its performance, make a comparative analysis of high band VHF and UHF systems, and develop a conceptual design and recommendation for a system that can serve public safety users in Fluvanna County.

2.3 Project Methodology

RCC met with County representatives to establish the nature, structure and aims of their communications processes and requirements. A variety of data were collected from available sources for use in the analysis of the existing communications systems.

A basic radio propagation analysis for the existing system was performed using RCC's ComSite Design® software. The propagation study was based on the parameters of the currently licensed and operating systems. The results reflect that mobile (vehicle mounted) radio coverage is adequate for most of the county with a single primary transmit/receive site.

Several years ago, three additional receive sites were implemented as a stop-gap measure to improve inbound portable (handheld) radio coverage, but there are still many locations within the service area where portable radio usage is not reliable, if even possible. In-building portable coverage is even more limited. This is supported by the propagation analysis.

RCC developed a list of existing or potential antenna structures for consideration during coverage review. These locations include the existing sites used for the School Board and public safety communications systems, potential sites from previous studies, and potential locations from review of FCC records or those observed during site visits.

A general comparison of UHF and high Band VHF characteristics was prepared in terms of performance, organization, availability, suitability, and expected coverage performance. Each frequency band has attributes which impact its overall desirability for use. Some attributes are purely physical, while others are based on the regulatory framework, organization, and availability of spectrum. Coupled with those factors is frequency usage by other neighboring localities. A further review was performed to ascertain the number of sites that would be needed in each band in order to provide comparable coverage to the level required, and the development of cost estimates for each conceptual design.

2.4 Project Deliverables

Deliverables associated with this project include:

1. A description of the existing public safety system operating at high band VHF, including an analysis of expected coverage.
2. A comparative analysis of conceptual designs in the VHF and UHF frequency band to meet the coverage requirements of public safety representatives.
3. A written Report of the findings of the Comparative Analysis, and conceptual design.
4. An oral presentation to Fluvanna County of the findings.

3.0 Current Systems Environment

Nationwide, public safety professionals rely upon radio communication systems to support mission critical operations. Expected growth and increasing demand for public safety and public services are placing increasing pressure on the current two-way voice communication systems that support them. There are also regulatory mandates for narrowband operation that will require the replacement of some existing equipment within the next 18 to 24 months. This section provides a description of the existing system infrastructure for stakeholders served by the systems reviewed in this study.

Fluvanna County has a total enclosed area (land and water) of approximately 290 square miles, and is bounded on the South by the James River. The area is characterized as rolling terrain within the Piedmont Region. As such, there are many variations in the topography, but no features such as a mountain within the county that provide a significant vantage point to the surrounding areas. Major transportation arteries are US Route 15, US Route 250, and State Route 6. The county seat is Palmyra, and the county also encompasses the communities or areas of Bremono Bluff, Columbia, Cunningham, Fork Union, Lake Monticello, and Scottsville.

3.1 Review of Radio Communication Systems

Today, Fluvanna County public safety responders operate on a conventional high band VHF, two-way voice radio system with four repeated channels for primary operations. Two channels are designated and intended for the Sheriff's Department. The remaining two channels are designated and intended for Fire/Rescue operations. One channel for each group is intended for use as a primary dispatch channel. A second channel for each acts as an alternate channel for backup operations as well as coordination over a wider geographic area. Usage of these secondary channels (Fire Rescue 1 and Sheriff's 2) is reported to be minimal.

Repeated channels use a mobile relay, which is a type of base station radio that operates by receiving signals from mobile users on one frequency, and transmitting them out to all other users at a higher power on another associated frequency. The mobile relay is typically situated in a geographically advantageous location, so that it can receive signals over a wide area, and extend coverage for all users on the channel. Two distant mobile users may be unable to talk directly to each other because of the distance and/or intervening obstructions between them, but

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if each is within range of the mobile relay, they can communicate with each other through the mobile relay, which “repeats” signals between the users.

The Sheriff’s Department has additionally maintained and continues to use a low band VHF system with two simplex frequencies. Simplex operation means that users transmit and receive on a single frequency. Communications between the fixed radio for the communications center and field users is similar to that for the repeated signal, but communications between two field users is direct between the units and not retransmitted by a mobile relay. Therefore, coverage performance between field units is highly dependent on their locations, and limited if they are not in close proximity to each other.

One of the low band frequencies (39.28 MHz) was the previous dispatch channel. The other frequency (39.54 MHz) is the Statewide Intergovernmental Radio System (SIRS) used for communications between law enforcement agencies in different localities or levels of government. The SIRS frequency is used routinely to communicate with State Police, as well as other agencies. The Communications Center also operates a base station on the old Sheriff’s dispatch and SIRS frequencies. The SIRS channel allows the communications center to communicate with other, similarly equipped communications centers. The old dispatch channel is not routinely used, but could serve as a backup in the event of a failure in the primary system.

The public safety systems depend on a single transmitter site located between the School Board Annex and Fire Station buildings in Palmyra, which is collocated with a cellular site. The main transmitting and receiving equipment is located in a partitioned space of an aggregate shelter. The high band VHF equipment is contained within two equipment racks. The low band VHF station and an old backup high Band VHF station are in stacked cabinets located next to the chain link partition. There is little room for expansion within the existing site. The Motorola system equipment was installed and is maintained by Clear Communications. Until recently, the antennas were mounted on a lattice tower. The antennas were recently relocated to a nearby replacement monopole, and the tower was dismantled.

A receiver comparator for each channel is collocated with its repeater at the primary transmit site. Each comparator connects to three additional receivers placed in outlying areas of the County to improve the reception of portable and mobile radios. The comparator “votes” the receiver with the best reception and repeats it back out over the transmitter, which operates on a

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different frequency. The comparator also presents the “voted” audio to the communications center so that they always receive the best possible signal. There are four telephone circuits which connect the Palmyra site equipment back to the Communications Center console.

The three diversity receiver sites are at the Water Tank in Scottsville, at the Dominion Virginia Power microwave relay site near Bremo Bluff, and at the Fire Station at Kents Store. Each of these locations has a single, shared antenna, four receivers, and four telephone circuits back to the main transmitting site in Palmyra. The receivers are connected to individual low capacity uninterruptible power supplies.

The Scottsville site has a small wooden shelter adjacent to the water tank, which encloses a 7.5 KW emergency generator, and two equipment racks. There are no environmental controls and there is no room for expansion or growth. The antenna is mounted at the top of the water tank, which is approximately 85 feet above ground level. It is mounted to the same mast and situated behind a 960 MHz directional antenna.

There was no equipment room at Kents Store, and the receiver cabinet was located in a storage loft in the garage bay. The equipment is reported to have been subsequently relocated to the new fire station. There is a 120’ Sabre monopole at this location, adjacent to the old fire station building (opposite from the new building). The monopole was manufactured in 2005, and has a single antenna at the top.

The Bremo Bluff Site belongs to Dominion Virginia Power. The County equipment occupies space in a shelter abandoned by Dominion during a previous microwave system upgrade. The tower is approximately 330 feet in height, and more than 30 years old. The tower currently supports six microwave antennas and three UHF antennas for Dominion Virginia Power, and one high band VHF receive antenna for the County (at approximately 290 feet above ground to its tip). In addition to the County’s equipment cabinet, there are two racks installed in the old shelter, but apparently no other radio equipment. The old shelter appears to be powered from the main (new) shelter, which is protected by an emergency generator. It was not certain whether the emergency generator also protects circuits in the old shelter. County representatives report that Virginia Power would require a new agreement for any modification or expansion at the site.

The School Board operates UHF two-way systems for voice and data with two repeated

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channels. One channel supports automatic vehicle location (AVL), and is referred to as the “GPS channel.” The other channel supports other School Board activities as well as Fluvanna County Public Works users.

The School Board system depends on a single transmitter site located at the Abrams Building at Fluvanna High School. The voice channel has diversity receivers located at the Cunningham Elementary and Columbia Elementary Schools, with the comparator collocated with the repeater at the High School location. The “GPS” channel is not a voted system, and is used to support an automatic vehicle location system. The mobile and portable radios are reported to be Kenwood equipment. The mobile relay equipment is manufactured by Tait. All equipment was installed and is maintained by Professional Communications.

3.1.1 Current Frequency Usage

RCC reviewed FCC license database information for Fluvanna County for public safety radio services. Additional searches were made by licensee name and then by FCC Registration Number (FRN).

That review resulted in the retrieval of unofficial “file” copies of four licenses for land mobile radio operations. Six licenses were also identified for the schools microwave system. Table 3-1 below lists the call signs. Information from these licenses was used as the basis to develop coverage maps for the current system.

Also reflected in the table under each licensee are notations of “narrowband readiness.” Frequencies between 150 and 512 MHz are subject to narrowbanding mandates, mentioned elsewhere. The notations simply indicate whether the licenses currently contain narrowband emissions (ready), and whether the license contains only narrowband emissions (implying that the system is already narrowbanded, because no wideband emissions are authorized). A license that is not narrowband ready and narrowband only would require some action for the license and/or licensed equipment in order to become narrowband compliant.

There is an additional frequency pair (155.955 MHz/153.845 MHz) licensed under license KZI337 that appeared to have been intended for a fifth repeated public safety channel, but the frequencies coincide with those of a fire/rescue tactical channel in Louisa County, so they

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are not expected to be usable. A number of other mobile only frequencies are also authorized under that license.

Additionally, Lake Monticello Volunteer Rescue Squad holds a license WPIB652, which includes two simplex frequencies (155.220 MHz and 155.295 MHz) that were said to be lightly used. It was suggested that these might be made available to Fluvanna County for use in a new system if needed.

Licensee	Call Signs	NB Ready	NB Only	Covers
Fluvanna County	KYX255	Yes	No	Sheriff's System 2 repeated high band VHF channels 1 simplex low band Channel VHF SIRS Channel (low band VHF)
Fluvanna County	KZI337	No	N/A	Fire/Rescue System 2 repeated high band VHF channels 1 repeated high band VHF channel (Louisa) Other mobile frequencies
Fluvanna County	KW7227	No	N/A	Mobile Only EMS Statewide Rescue HEAR MED
Fluvanna County Schools	WQEL721	Yes	Yes	Schools System 2 repeated UHF channels at FHS same channels at Columbia Elementary School* same channels at Cunningham Elementary School*
Lake Monticello VFD&RS	WPBI652	No	N/A	Tactical Channels 2 simplex high band VHF channels
Conterra Ultra Broadband	WQEZ804 WQEJ228 WQEJ229 WQEJ230 WQEJ232 WQEJ235	N/A (Microwave)		Microwave Links Between Fluvanna High School and other School locations

Table 3-1 FCC License Summary

3.1.2 Age of Existing System Equipment

The majority of equipment in Fluvanna County's public safety communications system was manufactured by Motorola. The serial number of Motorola equipment (where present) can be used to determine the date of equipment manufacture down to a two week period. A physical inventory of subscriber (mobile, portable, pager) equipment was not performed, but available information was reviewed and discussed with County representatives to arrive at the basis for

replacement quantities.

It is obvious that equipment has been updated and upgraded at routine intervals and the fixed equipment appears to be well maintained. However, some radio equipment has been retained beyond its expected life. Table 3-2 shows the normal life expectancy by equipment type and class.

Many factors affect these expectations: how well the equipment is cared for and maintained; the amount of direct user interaction/contact; protective accessories or installation practices; policies and procedures regarding equipment issuance and accountability; normal expected damage and wear; the cost and operational impact of installation efforts; and exposure to harsh environments (lightning vulnerability; exposure to chemicals, moisture or corrosive substances, vibration, etc.)

Equipment	Approximate Life Expectancy	
	Years	Average (months)
Remote Control/Transport	10 -15	150
Base Station	7 - 10	102
Mobile	5 – 7	72
Portable	3 – 5	48

Table 3-2 Summary of Equipment Age

Public safety communications sites were visited, and the equipment was inventoried. That equipment is approximately eight years old. Although it would meet the regulatory requirements for narrowbanding (with reprogramming) and appears to be in good shape, the overall age of the fixed equipment indicates that it is nearing the end of its normal expected life—cycle and is due for replacement. Similarly, the majority of user “subscriber” equipment has exceeded its expected life.

Aside from the regulatory requirements for narrowbanding, the age of fixed equipment is a factor in the development of a replacement system. It is common to see fixed equipment used well beyond its normal expected lifetime. Another driving force for the replacement of communications equipment in recent years is the rapid advancement of technology. Equipment becomes obsolete not because of its condition or age, but because its manufacture has been discontinued, the technology has advanced, and often the parts are no longer available in their previous physical packages and form factors.

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Depending on system design, it is also sometimes not acceptable to mix older and newer equipment for a given channel when addressing coverage issues. Simulcast operation (described elsewhere and expected for any “talk out” coverage improvement solution) requires very close matching in performance between transmitter equipment operating on the same frequency, but located at different sites. It would not be acceptable to mix equipment types for the same channel between sites, even if from the same manufacturer.

An aging communications infrastructure increases the risk that a maintenance problem could result in an extended outage. However, replacing equipment without the expectation that its cost will be fully amortized should also be avoided.

3.1.3 Subscriber Units

Subscriber units consist of the mobile, portable, pager and control station radios used to access the communications systems. The age of these radios varies between just a few months old to as much as 15 or more years old. Most of the current subscriber base is expected to be supported by local repair facilities, even if considered obsolete or out of production by the manufacturer. Some of the subscriber equipment, even if serviceable, will require replacement in order to comply with impending narrowband requirements. Generally, any radio manufactured prior to 1997 will require replacement if operating in a band subject to narrowbanding.

Any conversion to digital modulation or addition of trunking features would require replacement of all but the newest of existing units, and those may still require costly firmware upgrades. Any change in frequency band would require a replacement (or addition) of equipment. The replacement of subscribers would represent a significant portion of the cost of any system.

There is a desire to minimize the budgetary and operational impacts of subscriber replacement required with any new, consolidated, or upgraded infrastructure. While existing systems may allow the private purchase and use by individuals in volunteer agencies, any new or advanced technology is likely to require the wholesale replacement of personally owned equipment. The replacement equipment may be beyond the means of these individual users, and Fluvanna County may be unwilling or unable to provide replacement equipment on a “unit for unit” basis for all current inventory. If not carefully considered and fully addressed, this could

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result in resistance to the change or loss in capabilities for users. As the licensee of the communications systems, Fluvanna County is ultimately responsible for such decisions, as well as operational control over their use. The impact of these factors upon users should not be discounted.

Based on a review of the current FCC license information, and partial inventory information, there are estimated to be less than 300 mobile units in use by public safety agencies across all bands. When multiple frequencies appear on a license, or when operations are covered by more than one license, it is not always possible to determine the exact usage and inventory. Different frequencies in the same radio could be covered by separate licenses, each of which reflects the same number of units (resulting in duplication). Conversely, the license could reflect the same number of units for two frequencies that are in different bands (which typically requires two different radios). Sometimes, different user groups (and radios) are represented by separate frequencies, listed as the same “station” on a license. A listing which shows 100 units operating on two frequencies could represent 200 single channel radios, or 100 two-channel radios.

Looking at partial inventory information, it is estimated that there are approximately 275 public safety radios. Since some of these units are assigned to individuals or installed in special purpose vehicles, it is expected that there are much fewer “active units” on the system at any given time.

3.2 System Maintenance

Currently, most public safety system equipment is manufactured by Motorola, and assumed to be maintained by Clear Communications. Clear Communications enjoys a very good reputation for customer service and has a very capable staff. Because of the expected complexity and cost of any advanced system, ongoing maintenance and support services might be bundled with and controlled/coordinated by the equipment manufacturer. It is extremely important to address expectations for customer service, response times, and support requirements as part of any procurement effort. Fluvanna County representatives have stated an expected emergency response time of one hour to major system failures.

3.3 Departmental Operating Environment and Concerns

This section provides an overview of how the current communications systems are used.

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Information in this section was obtained from interviews, information and reports provided to RCC, a review of FCC license information, and site visits.

3.3.1 Fire Departments and Rescue Squads

Fire departments and rescue squads in the County are dispatched on the Fire-Rescue 2 Channel which operates at high band VHF. While its name suggests this might be a secondary or added channel, this was the original dispatch channel. An additional channel (Fire-Rescue 1) was licensed several years ago amidst concerns that the primary dispatch channel is adjacent to (7.5 KHz below) the nationally designated VCALL channel. As of January 1, 2005¹, continued wideband operations on the channel are secondary to operation on the VCALL channel. This means that interference can not be caused to VCALL channel operations, and no protection is provided from VCALL operations which might interfere with Fluvanna County. There is a misconception that this channel might be “taken away.” While its use on a wideband basis is now secondary, narrowband operation does not carry that limitation, and all operation would have to be converted to narrowband by January 1, 2013.

County representatives report that a transition to the new Fire-Rescue 1 channel was not completed because this channel has not been programmed into all radios (and pagers). Until the channel is universally available, its use for dispatch isn't possible. Clear Communications indicated that according to their records, Fire-Rescue 1 should be universally available in portable and mobile radio equipment.

¹ 47CFR90.20(d)(81) states in part after January 1, 2005, all stations operating with an authorized bandwidth greater than 11.25 kHz will be secondary to adjacent channel interoperability operations.

The following agencies are dispatched from Fire-Rescue 2:

- Palmyra Volunteer Fire Department
- Palmyra Volunteer Rescue Squad
- Lake Monticello Volunteer Fire Department
- Lake Monticello Volunteer Rescue Squad
- Lake Monticello Water Rescue Team
- Fork Union Fire Department
- Fork Union Rescue Squad
- Kents Store Fire Department
- Kents Store Rescue Squad

Although vehicles are equipped with radios, there is considerable use of and dependence on portable radios by members when on incident scenes and away from their vehicles. A previous report of coverage tests² indicates that coverage on the VHF system is poor in the southern and northern extremes of the County, especially for “talk out” to portable equipment.

The fire agencies listed are reported to respond to between 2,000-2,400 calls annually. The Rescue Squads are reported to respond to just over 2,400 emergency calls in recent years. Lake Monticello Volunteer Rescue Squad provides emergency responses countywide between 6:00 a.m. and 6:00 p.m.

3.3.2 Law Enforcement Operations

The Fluvanna County Sheriff’s Office also operates primarily on high band VHF, with two operational channels. There is additionally a low band base station at the Palmyra location that operates on the old Sheriff’s and SIRS channels. The low band base station is approximately 21 years old. The Sheriff’s high band channels are similar in age and configuration to the Fire-Rescue Channels.

² Fluvanna County Public Safety Radio System Performance Study, Howlett and Associates, 2005.

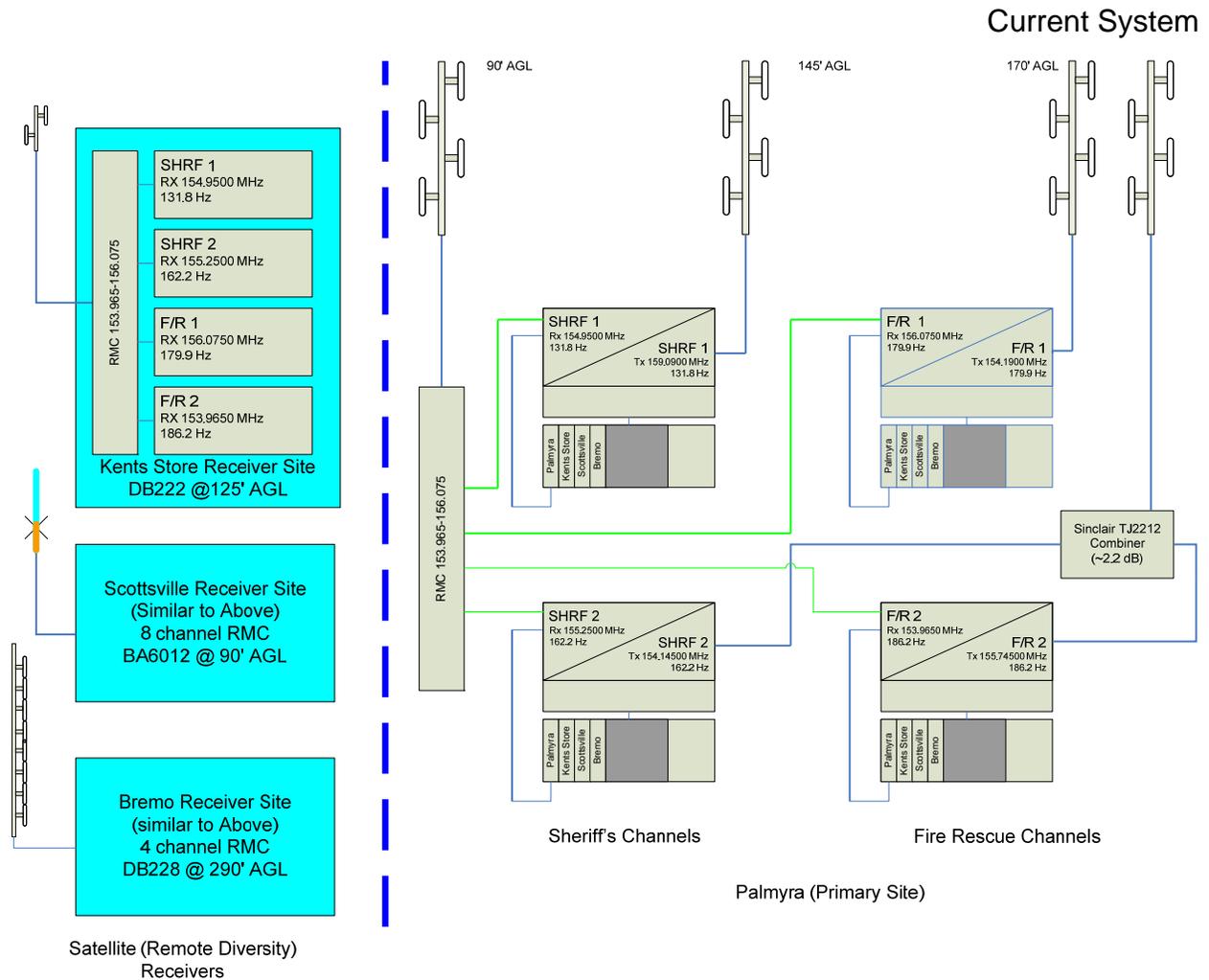


Figure 1 Public Safety System

Figure 1 above is from a review of the current systems used by public safety agencies for dispatch and coordination. The Base Stations and Receivers are the Quantar series and the comparators are SpectraTac, manufactured by Motorola. According to serial numbers, the equipment is almost eight years old.

The system depends on leased telephone lines, which are expensive, and historically unreliable. Each of the four primary operating channels requires a separate telephone circuit from each of the three remote receiver locations and the dispatch center back to the main transmitter site (16 circuits, but represented by 20 circuit numbers). There are also two circuits for the low band/SIRS station. The cost of these telephone circuits amounts to over \$42,000 per year. For individual channels and circuits from various locations, radio frequency links are often the most

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economical and appropriate. For a multiple channel system using a similar approach, this quickly becomes unrealistic. Aside from the expected unavailability of a sufficient number of frequencies, the sheer number of transmitters and receivers active at any given time significantly increases the probability of internal “self-interference” if receivers are collocated. As the number of sites or channels served increases, it quickly becomes more appropriate and economical to employ microwave links or other similar means to provide the connectivity and transport.

Overall, portable coverage for both law enforcement and fire/rescue users is considered to be inadequate in the northern and southern ends of the County. Portable coverage from hip level from inside of buildings is desirable by all users, but even on-street coverage from portables held at head level is impossible in some outlying areas.

3.3.3 Communications Center

During the process of gathering information, RCC visited the Fluvanna County Communications Center. The center is located at the Sheriff’s Office and serves as the Public Safety answering point (PSAP) for emergency calls, and dispatch center for all public safety agencies within the County.

The existing system has a Motorola Centracom Gold Elite communications console with four operator positions. One position is designated as supervisory.

The existing center is well equipped but does not have significant space for any expansion or operation of parallel systems during a transition period. Some reconfiguration might provide additional space, but if a tower was erected on site, it is common practice to locate the radio equipment in a shelter at the base of the tower (and minimizing the chance for entry of lightning into the dispatch center).

3.4 Mobile Data Systems

There are currently no mobile data services provided by the public safety systems, but there is a desire to have basic mobile data services provided by any replacement system. The fire/rescue agencies have stated the need for a data channel (capability) to support the use of mobile data terminals.

3.5 Current Frequency Availability and Usage

All primary public safety communications systems currently operate in the high band VHF (150-174 MHz) range. While this band provides some very good performance characteristics for coverage over wide areas and with dense foliage, it does have some disadvantages. The primary drawback is that because the band dates back to the 1950's, with very few exceptions its allocations and historical use result in a lack of organization and structure.

Frequency assignments were initially made individually without concern for duplex channels (separate transmit and receive frequencies) which is needed to support repeater operation. While some frequencies were designated as "mobile only" they are often close to other frequencies that could be assigned to either mobile radios or much more powerful base stations. These stronger local "base" signals (often located at the same site) overpower and obscure the weak distant mobile signals. Because earlier implementations were typically for a small number of channels or individual stations, intermodulation interference (from a mixing combination of simultaneous strong local signals) was also of little or no concern.

As communications systems became more complex, sophisticated, and commonplace, these issues have caused difficulty in the successful assignment and effective use of the high band VHF spectrum.

In later allocations (220, 450, 700, 800 and 900 MHz), there is typically a structure that supports consistent frequency "pairing." At 450 MHz, all "base" frequencies are 5 MHz below "mobile" frequencies. At 800 MHz, the spacing is such that all base frequencies are 45 MHz above mobile frequencies. In the new 700 MHz band, the fixed frequencies are 30 MHz below their associated mobile frequency. At 900 MHz, the spacing is 39 MHz and at 220 MHz, the

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spacing is 1 MHz. The reason for the different spacing in different bands has to do with the overall amount of spectrum that was used to create the new allocations.

As can be seen in the graphic in Figure 2 below, there is no consistent spacing between transmit and receive frequencies for Fluvanna County’s current public safety system. “Base transmit” frequencies (red) are interspersed between “base receive” frequencies (blue), and fall within the filter “window” (yellow) that is intended to protect the receive antenna system from interference. Only the Sheriff 1 channel falls outside of the window (allowing the filters to protect the receivers from the strong local signal). The remainder of the channels transmit and receive within the same general portion of the band. Although the graphic shows nice, neat lines, in reality, the transmit signals are not perfect, and tend to have “transmitter noise” that extends for a few MegaHertz (MHz) to either side of the “carrier.” The noise is greatly attenuated, but because of the extreme difference in signal levels between local transmitters and weak distant signals, self interference is a distinct possibility. Ideally, all “red lines” would be well outside of the yellow area in the graphic. However, since the band is mostly unstructured, this situation is not uncommon. It might be possible to select alternate transmit channels to minimize the problem, but frequency availability is limited, and the cost/impact of changing frequencies across multiple licensees is rarely a feasible undertaking. Vertical separation between transmit and receive antennas helps to isolate the signals and lessen the impact, but it is still possible to cause “self-interference.”

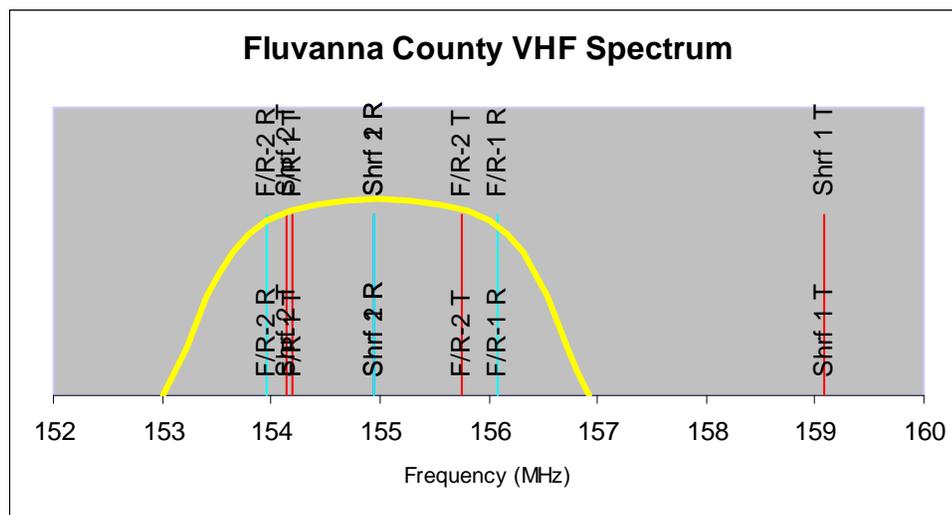


Figure 2

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From the perspective of field users, there is similar concern. When field units in close proximity to one another transmit, noise is also created around the desired signal because transmitters are not perfect. While the noise of nearby field units is greatly suppressed, it is still very large in comparison with relatively weaker signals from distant mobile or base station radios. Just as there is potential for fixed base station transmitters to interfere with and “desensitize” nearby (in location and frequency) receivers, there is a great potential that when multiple responders and agencies are close together on a scene and operating on different channels where transmit-receive spacing is poor, transmissions from one user can interfere with the reception of users on scene using the same, or another nearby channel.

In the FCC rules, high band VHF channels are designated as “mobile only”, meaning that operation of base stations on those channels is prohibited, and “base/mobile,” which means that the frequency can be used for base stations or mobile radios. “Simplex” systems operate on base/mobile frequencies. Repeaters (which are base stations) transmit on base/mobile frequencies as well, but repeaters ideally would use mobile only frequencies for their receivers. This reduces the potential interference for distant base stations overpowering and interfering with the transmissions from desired mobile transmissions. The Sheriff 2 channel repeater “input” frequency is designated as base/mobile, but through frequency coordination efforts has no fixed operations within 70 miles of the County Center.

4.0 Technological and Regulatory Considerations

4.1 Frequency Bands

Radio frequency waves are the medium over which wireless communications take place. Intelligence can be impressed on radio waves and “carried” over the air by varying their frequency or amplitude. This process is known as modulation. The transmitted signal is demodulated (converted back to its original form) at the receiving end in order to recover the information sent.

Radio waves are distinguished by their frequency. An alternate characterization of radio waves can be made by their wavelength, which is inversely related to frequency. The lower the frequency, the longer the wavelength and the greater ability of the radio signal to travel through space. Signals with shorter wavelengths don’t travel as well over long distances, and tend to be absorbed and attenuated to a greater extent by foliage. But shorter wavelength signals are more effective in passing through small apertures, and require a smaller surface area to efficiently reflect and fill in. Shorter wavelength signals also result in physically smaller dimensions for basic antenna elements. A standard “quarter wave” vehicle rooftop antenna for VHF (155 MHz) would be 18” tall. A comparable UHF (460 MHz) antenna would be 6” tall.

The basic measurement unit for Radio waves is the Hertz, which is the number of times a radio wave repeats or “alternates” during one second. Because extremely high frequencies are normally encountered, they are usually expressed in terms of KiloHertz (KHz – thousands of Hertz), MegaHertz (MHz – millions of Hertz), and GigaHertz (GHz – billions of Hertz). Wavelength is a measure of the distance that would “contain” one wave if it could be seen.

The Private Land-Mobile Radio Services (PLMRS) incorporate a number of different frequency bands for use by both Public Safety and Local Government users. All bands are shown for reference and comparison, but bands not under consideration are shaded in blue. In general, these frequency allocations are designated as follows:

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Band	Frequency Range (MHz)
Low Band VHF	30 – 50
High Band VHF	150 – 174
220 MHz	220 – 222
UHF Band	450 – 512
700 MHz	764-776/794-806
800 MHz	806-816/851-861
900 MHz	896-901/935-941

Each frequency band has characteristics which provide benefits to different types of use or environments. These characteristics are summarized in Table 4-1. Where numeric ratings are shown, they reflect an overall ranking among the bands listed, with lower numbers indicating a more favorable attribute, characteristic, or capability.

Characteristic	Radio Frequency Band (in MHz)						
	30-50	150-174	220	450-512	700	800	900
Range (Distance)	1	2	3	4	5	5	5
Paired Frequency Band Plan	No	No	Yes	Yes	Yes	Yes	Yes
T → R Spacing (MHz)	varies	Varies	1	5	30	45	39
Susceptible to Skip Interference	7	6	5	4	3	2	1
Susceptible to Manmade Noise	4	3	2	1	1	1	1
Range beyond Horizon	1	2	3	4	4	4	4
Equipment Availability	Poor	Good	Poor	Good	Good	Very Good	Good
Building Penetration	Very Poor	Poor	Poor	Good	Very Good	Very Good	Very Good
“Shadow” losses	Low	Moderate	Moderate	High	High	High	High
“Fill In” (reflections/multipath)	Low	Moderate	Moderate	Good	Very Good	Very Good	Very Good
Handheld Radio Antenna Length	Too Long	Good	Good	Good	Very Good	Very Good	Very Good
Narrow band only/Efficiency	No	12.5e	Yes	12.5e	6.25e	No	12.5
Antenna “Gain”	Little	Moderate	Moderate	High	Very High	Very High	Very High
Foliage Loss	Very Little	Some	Some	Moderate	High	High	Very High
Adequate Frequencies Available	No	No	No	No	Yes	Yes	No

Table 4-1 - Summary of Frequency Band Characteristics

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4.2 Traditional Coverage Enhancement Techniques

This section describes and compares some of the techniques traditionally used to enhance coverage over wider service areas. Those techniques include receiver voting, transmitter steering, multi-cast, and simulcast architectures.

4.2.1 Receiver Voting

Coverage is a primary concern for all users. While it does depend on the frequency band selected, there are methods available to provide wide area coverage or overcome coverage limitations. These limitations are primarily due to lower power transmitters, relatively poor antenna systems and elevations, and locations and environment of the “mobile” users. This is especially true for handheld battery powered portable radio equipment. In order to improve “inbound” communications, systems routinely employ diversity reception and comparator systems. These are sometimes referred to as “satellite receiver” systems, which can lead to confusion. The term satellite, when used in this context, refers to equipment operated a distance away from primary equipment sites. Receivers are strategically placed throughout the service area, and connected back to a central comparator or “voter.” The comparator compares the quality of the signal from any receiver that is able to pick up the transmission and selects or “votes” for the one with the best quality. That best signal is routed to communications centers, and also can be used for retransmission to other users in mobile relay systems. Placement is such that the receivers are in much closer proximity to users, and also may not be obstructed by terrain or other objects between the user and the distant primary site.

4.2.2 Transmitter Steering

In order to improve outbound communications coverage to mobile users, three methods are routinely used. The first, and most simple is to “steer” transmissions to one or more transmitter sites that are strategically placed, but all operating on the same radio frequency. A transmitter in the south portion of the service area may not provide sufficient coverage to the northern area and vice versa. For those few instances where communications are more critical to an event in the northern area, dispatchers may switch to and activate a different transmitter on the same channel. It will not be possible to use the north and south transmitters at the exact same time, and neither provides adequate coverage to all areas, but through selection and use on a case

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by case basis, coverage can be improved. Of all alternatives, this is normally the least costly, but also the least capable. It also is more difficult to operate and the most subject to misuse or operator error. If multiple transmitters are keyed at the same time, there will likely be self-interference and distortion, even if transmitting the same information. Multiple tone operation can make the system more user-friendly and capable (where different, distinct tones are used to activate each station preventing simultaneous operation), but proper performance still depends on user knowledge and selection.

4.2.3 Multi-Cast

Similar to transmitter steering is a method called “multi-cast.” This solution allows for the transmission (broadcast) of the same information over multiple frequencies or channels at the same time, without self-interference. As in the scenario above, there may be a north and south transmitter, but they can now both operate at the same time (and provide coverage to the wider area at all times) because they transmit on different frequencies that do not interfere with each other. Multi-cast can be used in a conventional or trunked setting, but the method might require some intervention or selection. One advantage of multi-cast is that it provides coverage over the wider area without the requirement for expensive frequency and timing references or highly stable interconnecting network. The disadvantage of multi-cast is that it is not as “spectrally efficient” because it requires one frequency or frequency pair for each operational channel at each required site. Multi-cast is not expected to be a viable alternative for the system, because each site would require its own unique set of channels, and most communications are common across the service area for a given user.

Depending on use, the multi-cast system can be used to segregate traffic so that transmissions are only made in areas where necessary, allowing some increase in traffic capacity with wide area systems. Multi-cast is often employed in wide area, low traffic sites.

4.2.4 Simulcast

More spectrally efficient is the simulcast configuration. This solution simultaneously broadcasts the same information over the same frequency (channel) from all sites in the system (or “cell”). In areas where a receiver can only “hear” one site, there is no difference in the reception. In areas where more than one site could provide adequate coverage, but the signal

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from one more proximate site is much stronger than the rest, there is little or no interference and the strongest signal “captures” the receiver.

In areas of significant coverage overlap (where the signal from two or more sites can be received, and there is little or no difference in their strength), the transmitters must be capable of performing to very tight tolerances in operating frequency, frequency deviation, output power, and absolute phase delay of the information to be transmitted. Selection of sites and antenna systems is often a trade off to control the locations where this overlap occurs. There are often minimum and maximum desirable distances between simulcast sites to minimize overlap and the possible differences in delay to receivers between adjacent sites.

To properly implement simulcast, the first step is to adjust output power and antenna patterns of individual sites to place those overlap areas such that they occur in locations of relatively lower importance or activity, or completely outside of the primary service area. The second step is to minimize the amount of distortion in those overlap areas by tightly controlling the arrival and amplitude of information to be transmitted. The transmitted signals must be of the exact same carrier frequency, they must deviate from that carrier frequency to the same extent, and they must be delayed relative to each other such that they arrive at the overlap area at exactly the same moment.

The higher performance and stability requirements result in additional equipment, and transmitters with better performance and higher stability. That equipment is more expensive to manufacture, install, set up and maintain. However, the use of simulcast technologies greatly reduces the number of frequencies needed for a system. A five site, five channel simulcast system requires five channels, of which four would be usable in a trunked system (described later). In a multi-cast system, 25 channels would be needed, of which 20 would be available for use in the same type of trunked system.

Where communications systems cover several regions, there can be several simulcast “cells” with each operating on its own set of channels. In the scenario where Fluvanna County might operate simulcast sites off of another existing trunked system, the County’s system would appear to that system as a single site. Each simulcast system has at least one cell, and each cell will typically have a “prime site” which handles the control of transmitters and distribution of signals. Each prime site will have one or more other “sub-sites” in the cell which operate on the

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same channels but are subservient to and depend on connection with the prime site. If connection to the prime site is lost, the sub-site channels can not operate independently.

For the County System, a combination of simulcast transmission for outbound transmissions and diversity reception for inbound transmissions are recommended to achieve coverage over the primary service area.

4.3 Digital Operation

There is significant movement towards the adoption of digital technology for wireless communications systems. This section is intended to provide a basic understanding of the differences between the familiar analog systems and newer digital radio technologies.

Analog, frequency modulated (FM) systems were the norm for public safety agencies for more than 50 years, but many are now migrating toward digital operation. Digital technologies can provide some improvement in performance -- especially as users move to narrower bandwidth channels -- but they are not without limitations. Early digital systems were proprietary, and many technologies remain so. The methods and processes in use for the conversion of voice communications to digital signals can also suffer in environments of high background noise as regularly encountered by public safety responders.

Project 25 (P-25) was initiated by APCO in the late 1980's to establish standards for digital public safety land mobile radios. In doing so, the goal was to obtain the best performance and overcome the incompatibilities found in digital systems then being developed and offered by equipment manufacturers. Improvements are being made in "vocoder" performance, and the P-25 standard is maturing, but such standards are ever evolving to keep up with technical advances and regulatory changes. An example is the change needed to provide greater spectral efficiency and meet the next expected step in narrowband compliance.

Many grant programs at the State and Federal level require that any funded equipment "be capable of P-25 operation." Radios may be capable of such operations but not equipped. The mere inclusion of P-25 capabilities and standards does not automatically address other aspects that can still prevent or limit interoperability, such as differing frequency bands. There also are limitations in equipment availability. While most subscriber radios are capable of digital or analog operation, it is common for recent fixed infrastructure offerings to operate only in an

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analog or digital mode -- not both.

Tone and voice pagers commonly used by fire departments, rescue squads, and other emergency service agencies are “analog only” devices. They also are not available in some frequency bands, or for use on a trunked system. The desire of users to monitor ongoing dispatch communications as they respond requires the use of an analog channel, or two channels (one trunked and/or digital for the dispatch communications, and one analog which carries the same information to allow monitoring by analog pagers). For these reasons, it is recommended that emergency service dispatch communications be analog, or that they be permanently “patched” to an analog channel to support paging operations.

One fallacy of digital modulation is that the audio quality is superior to comparable analog systems. While the audio quality is good, it can be distinguished by a distinct, crisp mechanical tone when compared to analog signals. Digital audio clarity does not necessarily provide better fidelity, but it does provide for more consistent quality and static free reception throughout the entire coverage area.

In a digital system, the signals are encoded in such a way that minor errors in the received signal can be detected, and usually corrected. The audio quality remains clear as the receiver moves away from the transmitter, and users do not hear the “white noise” or static and popping normally associated with analog transmissions as the signal quality slowly diminishes. Those pops, static bursts, and noise are present in the signal received, but the digital receiver has fewer “decisions” to make regarding the possible states (received signals are expected to be at one of two or four values), and the receive circuitry is able to detect and correct the occasional errors, leaving mostly static-free reception. Only when the RF signal strength diminishes enough for errors to become excessive does the audio quality begin to deteriorate. The point where communications fail is when the received signal has an error rate of between two and five percent or more. When the radio unit is at this point, the complete loss of reception is more abrupt and often unanticipated when compared to an analog system.

There are also additional “processing” delays for the conversion to and from digital operation (voice coding, or “vocoding”) and error detection and correction. When errors occur within the capability of the radio to correct them, the signal can remain clear, but is further

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delayed by the error correction process. These delays are often imperceptible unless users are in close proximity to one another.

Because some users are annoyed by the surprise loss of reception, their systems can be configured so that (rather than have the receiver “mute” and stop receiving) the errors which can’t be corrected are still passed through the receiver system, resulting in “robotic” sounds, echoes, repeated syllables, tones and other “artifacts” when the receiver reaches the limit of its ability to correct all errors. These are similar to their analog noise counterparts.

Because the voice has been digitized, small quantities of digital signaling can be regularly added and embedded into the signal before transmission. That additional signalling can be extracted after reception and used to provide continuous updates on unit identification, emergency status, user group membership, selective signaling, available services, and adjacent transmitter sites.

The embedded signaling services mentioned above are different than traditional mobile data services. Once the system is inherently digital, it can support data services in a native mode over the same channels used for digitized voice. To the radio, both data and voice are digital signals, so they can be handled similarly. As described later, this lends itself to the sharing of base stations between voice and data users.

In a digital voice system, digitization of the voice message makes it incomprehensible to users listening on analog radios or scanners. The communications are not highly secure, but simply sound like data passing between two computers (a whining, growling, or rumbling sound) unless decoded with compatible equipment. The transmitted signals can be further encrypted if necessary using an encryption algorithm and secret “keys.” The channels and thus the system can use separate keys for each user group as well. Unlike an analog system, encryption of a digital system caused no additional degradation of the voice quality or range.

There are also disadvantages to digital operation, which must be considered. In an analog system there are no real differences or incompatibilities between systems using similar methods of modulation beyond their bandwidth of operation. However, because there are many possible methods to digitally code voice signals, there are many potential incompatibilities between digital systems. There are voluntary industry standards for digital systems, but not all equipment adheres to them. Even for the manufacturers that do provide “standards-based” products, they

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often offer variations on the standard and incompatible proprietary technologies as well.

As a result, absent special efforts and coordination, there is no guarantee or reasonable expectation that digital radios procured by adjacent jurisdictions will be able to communicate with each other directly when in these digital modes. Fortunately, the public safety market demands that all digital subscriber radios be capable of backward compatibility. This means that they will always be able to operate in the standard FM analog mode.

Another disadvantage of digital operation is cost. Digital equipment carries a significant cost increase as compared to analog equipment, typically about 30%.

It is a common misconception that the narrowband requirements also require conversion to digital operation, but they do not. For any continued operation on high band VHF or new operation at UHF, analog operations are more open and inexpensive, and can fully comply with the narrowband requirements but could require system changes (additional sites) to overcome performance losses.

4.4 Trunked Radio Systems

There are two modes of operation that are commonly found in use by public safety land mobile radio systems: conventional; and trunking. In conventional (non-trunked) radio systems, each radio channel is really a separate, independent radio system (set of dedicated base stations or repeaters operating on a single channel at a time, and their associated antenna systems).

All of the County's public safety radio systems in use today are conventional land mobile radio systems. There is a primary dispatch channel for law enforcement, and another for shared use by fire and rescue agencies. When a channel is being used by others, persons desiring to transmit must wait for the transmission to be over and the channel to become idle, or they must choose and select an alternate channel (if available) and "negotiate" its use with others. This negotiation between field units is difficult, since other users are likely still listening to the busy channel and may have no idea that another user desires to talk to them. The communications center typically has the ability to listen to other channels simultaneously, but it would still be easy for a transmission to be missed, if telecommunicators were concentrating on the traffic on other channels.

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The very nature of conventional communications has for many years hindered the efficient use of frequencies and has limited interoperability among public safety users. Advanced technologies can offset the rapidly diminishing availability of frequencies and the need for better interoperability among public safety agencies by more efficient and flexible utilization of the underlying resources. Trunking technology is the logical approach to increased capacity, greater efficiencies, better interaction between users, and advanced features. The negative aspects normally associated with “shared channel operation” are reduced or eliminated, but users can communicate directly with other responding partners when desired and authorized. The characteristics of trunked communications are described in the following paragraphs.

In the context of this report, trunking is the sharing of a relatively small number of common radio channels (trunks) amongst a large population of disparate user groups such that the spectrum is efficiently utilized, coordination is automated, and advanced features are provided.

Telephone companies have been using trunking techniques virtually since their inception. It would be impractical and cost-prohibitive to attempt to install and use a dedicated telephone line between each possible pair of users or for each group. When a telephone caller initiates a call, they are automatically assigned a non-dedicated pathway (trunk) to the desired party for the duration of that call. Once the user hangs up, that same trunk is released and becomes available to other users. It is highly unlikely that all users want to call at exactly the same time, so a small number of trunks can be shared with little or no inconvenience or waiting. Since the trunks are shared, it is also unnecessary to add more trunks for relatively small increases in users or traffic volume. The sharing of channels or trunks is managed efficiently and automatically by the switching equipment located in the Telephone Company’s Central Office. Additional trunks are added only as needed to maintain a reasonable “grade of service.”

Since the late 1970’s, trunking techniques have been successfully applied to land mobile radio dispatch communications systems. A trunked radio system consists of a common pool of radio channels that are automatically assigned to field personnel by a computer. Normally, all users of the trunked radio system have access to all frequencies in the common pool. No channels are assigned exclusively to any user or agency. The trunked system incorporates intelligent radios with microprocessors that communicate with a central controller, which

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automatically selects and assigns an available channel and notifies all similar users. As long as there is one available channel in the pool, communications can take place. Channel assignments are transparent to the field users, who cannot tell that they do not have their own channel. These “virtual channels” are commonly referred to as “Talk Groups.” Since the probability that all user groups would want to communicate at the exact same instant is low, great efficiencies can be achieved.

For most trunked radio system technologies, one channel is set aside for coordination and control. All radios not actively participating in a call switch to and “listen” on this “control channel” for commands and assignment from the central controlling computer. Requests for channels are also made to the controlling computer over this channel. Individual exchanges are very brief, but the typical control channel continuously transmits status information so that units may positively locate and “home” on their own system, and join any communications already in progress. The loss of this channel for voice communications is more than offset by the improved access and capability provided on the remaining channels, especially in larger systems.

Additionally, because inbound transmissions on the control channel are very brief, emergency alerts or notifications from users can always be processed, even when all voice channels are in use. Channel requests can also be made, with users placed in a priority based queue (waiting list), in the event that no channels are immediately available. Users can receive positive acknowledgement that their requests were received over this same control channel. If requests are not acknowledged, the radio can automatically “retry.” This is very important for emergency calls. Even if all channels were busy, the emergency situation (and user identification) will be made known. In the unlikely event that the first attempt to send the emergency fails because the control channel was busy, or the emergency call was not received because of poor signal or other interference, the radio initiating the emergency does not receive a positive acknowledgement, and tries again (until it does succeed).

If properly designed and implemented, a trunked radio system can solve many of the two-way radio communications problems that are likely to be experienced by public safety users. Improvements can be expected in the following areas:

- **Reduced Channel Congestion**

One of the main advantages of a trunked radio system is its ability to support more radios

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per channel and provide faster system access time than conventional systems equipped with a similar number of channels. Trunked system technology allows for the incremental growth and expansion of the system, as the users' needs increase. A single site trunked radio system can handle in excess of 20 radio channels and can support thousands of users. A trunked radio system can generally provide fewer instances and shorter durations of waiting time because field personnel have access to a large pool of radio channels rather than only one or two dedicated or shared channels typically found in a conventional system.

Trunked technologies allow the establishment of "virtual channels" called talk groups, which organize users so that they do not routinely hear other unrelated or incompatible use. But when needed, users can move to common talk groups that have been established primarily to improve interoperability during mutual responses. While there are limits to the number of talk groups available, they far exceed the number of channels that could otherwise be used.

All agencies served by the trunked radio system would have access to the larger number of channels in the common pool. Under normal day-to-day operations, where radio channels are available for assignment, a trunked radio system will process requests for channels on a first-in, first-out basis. This means that channels will be assigned to field users in the order that the channels are requested. Channels are assigned typically in less than one-half of a second.

The addition of a new user group does not necessarily require the addition of channels (frequencies), since talk groups are virtual channels. The trunked system is configured for additional talk groups, and the associated subscriber radios are programmed similarly to provide talk group access. No new radio channels are required, and users are not subjected to (or aware of) each others' presence or activities on the system.

- **Priority Access**

In the event that the system is extremely busy, it is possible for all channels to be assigned and in use at any given moment in time, and for none to be immediately available. Any additional request for channels will be made on the control channel and added to a waiting list (queue) until the next available channel can be assigned. The concept of user priority only applies to users who may find themselves waiting in a queue for a channel assignment. The trunked radio systems developed by the major suppliers all provide multiple levels of user priority. In practice, most systems are implemented using only three levels of priority

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(non-public safety user, public safety user, and emergency call).

Generally, public safety agencies are assigned a higher priority level than public service agencies. Under conditions when all repeater channels are in use, higher priority calls are placed in the queue ahead of lower priority calls and are served first. If two new calls of equal priority are received when the system is busy, they will be handled on a first-in, first-out basis. If a call is from a recent user -- someone who has already been involved in a conversation within the past several seconds -- it will receive a higher priority level than a new call of the same priority, even if it is received slightly afterward. The recent user priority improves the continuity of ongoing communications when the system is at or near maximum capacity.

Some trunked systems can be configured so that priority calls can “pre-empt” ongoing calls of lesser priority, but this is not popular or advisable. Without the “ruthless pre-emption” capability, channels will not be reassigned to the priority user until the end of the ongoing transmission. This is considered acceptable because most transmissions last only a few seconds, and the longest delay should not last more than the average transmission time. Even though there is an ongoing transmission on each system channel, any channel released will immediately be assigned to the highest priority request.

The handling of queued calls reinforces the importance of properly designing the system to handle the number of users and the busy hour call volumes. A trunked radio system is usually equipped with enough radio channels to minimize and, to the greatest extent possible, eliminate the occurrence of system “busies”. In a properly designed system every user will effectively enjoy the same level of access and priority. The typical design goal is for there to be a chance of about one in one hundred or less, that a user would not find at least one channel available for immediate assignment at any time during the busiest hour of the day.

- **Interoperability**

A properly designed and implemented trunked radio system can vastly improve the technological hurdles to interoperability. It allows for the establishment of special talk groups that can be used for mutual responses, while not requiring additional dedicated radio frequencies. It is emphasized here that trunked systems do not result in interoperability – they simply support and facilitate it for users who are properly equipped.

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- **Management and Administration**

Since a trunked radio system is a computer controlled network, the assignment of voice traffic by the system can be stored and analyzed to determine the current communications loading on the system. Since each radio on the system is assigned a unique ID, the system can log airtime used by each user, by agency, or by jurisdiction, if desired. This capability allows the system to produce management reports that show how busy the system has been, is now, and is likely to be in the future. Furthermore, it can show how much of the system's capacity each agency is actually using. This capability can be utilized to allocate costs back to various agencies in a cost sharing arrangement, if desired.

A trunked system automatically recognizes each individual radio, so management functions can extend to that level. Radios can be granted access to the system or certain features, capabilities, coverage areas, talk groups, or even certain radio channels. The trunked system can provide to other properly equipped users, the name or unit number of the radio user currently transmitting. This unit ID feature allows others to know who is transmitting, even if they are unable to speak. Unit ID also helps eliminate inappropriate use of the radio system since there is little question about the source of transmissions.

Trunked system administration also allows for enhanced control of users. Lost radios can be effectively disabled so that they do not receive and can not interfere with critical communications. Radios can be restricted from accessing certain talk groups, features, or coverage areas. Similarly, if the need arises, groups that are normally separate and independent can be "dynamically regrouped" so that they are pulled together and can communicate during special situations or responses, even if they're unable to do so on a daily basis.

- **Emergency Alerts and Calls**

Trunked radios can also incorporate an "emergency button" that sends an emergency alert to the communications center and other units, when depressed. The emergency message is sent by a radio (over the control channel) until it is acknowledged by the system, ensuring that the message was properly received. Although it does not inherently identify the location of the individual user, it does identify them by unit ID and assures that they get assigned the next available channel. There is also an optional ("hot-mic") capability so that a radio transmits for up to 30 seconds and opens its microphone to provide a silent alarm when it is placed in the

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emergency mode. Even if the system is busy and no voice channel is immediately available, the emergency alert (which takes place on the control channel) can still be processed.

In 1978, the Association of Public Safety Communications Officials (APCO) recognized that trunking technology was on the horizon and set out to develop a list of standard functional requirements for public safety trunked radio systems. This became known as the APCO 16 Guidelines for trunked radio systems, and is still commonly used as the baseline for communications capabilities of trunked radio systems. The following list summarizes these guidelines:

- Rapid channel access (500ms or less)
- Interference free channels and simple operation
- Efficient system design, no channel blockage
- Common radio infrastructure with capacity to support multiple departments/agencies
- Interoperability between departments/agencies
- Dynamic regrouping of units to special talk groups
- Central network control and system redundancy
- Emergency access with five priority levels for system access
- Unit ID on all transmissions
- Private and secure radio calls
- Telephone Interconnect
- Voice encryption

Similar to the issue with digital communications (discussed earlier), there are many versions, protocols, and variations in trunking technologies. Some are considered proprietary. Others are considered open or inexpensive and available from multiple sources, but they are not capable of providing “public safety grade” service. That is, they inherently lack some capability that ensures proper operation under all circumstances for users in life-safety situations. For instance, they may result in missed calls, lack of priority access, and no ability to queue waiting callers when the system is completely busy. The system may have no ability to handle emergency calls, authenticate users, or control system access. The systems may also lack an adequate approach to ensure that critical users are served during partial or total system failures. Finally, some system approaches are susceptible to overload, or have inadequate capabilities to serve large numbers of subscribers, groups, or traffic volume.

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While there are multiple vendors that offer trunked systems, the adherence to public safety standards, features, reliability, and service and the use of advanced technologies limit the availability of practical sources for equipment. Even in the case where vendors claim open systems and compatibility with industry standards, it is not uncommon to find subsets or supersets of capability. For instance, a vendor may provide basic compatibility with an industry standard, but may not provide all capabilities available in, and desired from the standard (optional features of the standard). Alternatively, the same vendor may provide certain features or capabilities that are desirable to users, but outside of the scope of the standard, and may be implemented in a non standard, incompatible, or proprietary manner.

Whether or not the concerns above are fully addressed, many of the trunked system technologies currently available result in incompatibilities with equipment not only from other manufacturers, but also from alternative offerings from the same manufacturer. For such a large investment, this requires considerable effort to ensure that the long term relationship between equipment vendor(s) and users is mutually beneficial, that equipment sources are not artificially limited or prices inflated, and that maintenance service is available to ensure continued operation of this critical support system.

Failure to address these factors in advance may result in a foreshortened life cycle, escalating costs, poor relationships with vendors, external influences to what should be internal decisions, and loss of control, destiny and autonomy for users. The capabilities of a properly designed and implemented trunked system are certainly beneficial to public safety users, but such decisions should not be made lightly.

Trunking should be the long term technology goal for Fluvanna County because of its ability to permit all users to share a common system, obtain a higher degree of spectrum efficiency, and provide advanced user features and interoperability when desired, but separate communications for normal operations.

4.5 Mobile Data Systems

Mobile data systems are becoming more commonplace and may be integrated into and act as part of land mobile voice radio systems, especially where the voice channels are digital. Alternatively, they may be standalone and dedicated to data services. Integrated systems avoid

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some of the costs for infrastructure equipment and spectrum resources, but they typically provide basic, relatively low-speed service of 9600 bits per second or less. Private systems with higher capacity tend to be dedicated to the purpose. The development of reliable, high speed data systems is not cost effective except where licensees have a very large user base, and the need for these services. While commercial wireless services may not necessarily be built to public safety expectations or provide priority access for public safety users, they can provide more universal service at higher data rates and economical costs without significant investment in infrastructure.

Since voice systems require a relatively low data speed, the higher speed versions of private mobile data are not typically integrated into voice systems (they are dedicated to data only). More often than not, the high speed systems use an adaptive scheme where they might provide relatively high speed mobile data (maximum 96 kbps), but only for the best of circumstances and conditions. Performance in general is typically much less. Data rates and performance may be very good while sitting in the parking lot at the beginning of a shift, but rates may scale back and provide reliable service at much slower rates when users travel beyond the immediate vicinity of fixed infrastructure.

The benefit of integrating data services with voice is that (assuming that the coverage requirement is met) infrastructure equipment is not "dedicated" to either system or purpose. The improvement in grade of service (quick access/minimal delays) provided by one or two additional channels can be significant. There are benefits in the cost savings from shared use, an expected improvement in access for voice users, and the provision of basic mobile data capability.

These basic integrated mobile data systems should not be expected to provide, and are not suitable to serve low latency, high speed access, as would be required for streaming video, web access, or even graphic data or images. They are suited to uses such as short messaging, automatic vehicle location, operator or vehicle license queries, and silent dispatch services.

"Integration" of data services at the network (infrastructure) level should not be confused with and should not obscure the need for dedicated equipment at the "subscriber end." It can become very problematic from the end users' perspective when subscriber equipment attempts to serve a dual role. Data (which can be delayed) is typically given a lower priority than voice

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(which shouldn't be delayed). Data services can also be pre-empted "mid stream", and held for later retransmission.

If the users' same subscriber radio tries to serve both purposes, then data can suffer significant delays. Timeouts can occur causing unreliable operation and poor throughput. As an example, the infrastructure could have six channels idle, but a "user" radio could be receiving a lengthy dispatch message with directions, that lasts for 20-30 seconds. The data is delayed. Also, if the user wants to send data, it will be held up until that same "voice traffic" ceases (just as the user would be expected to wait for others to finish their transmission before trying to talk). Separate subscriber radios can offset and avoid some of those delays and improve operation.

Fluvanna County representatives have expressed a requirement for mobile data capabilities (integrated services or a dedicated data channel) for fire/rescue services.

4.6 Microwave Transport System

A major obstacle in any system comprised of more than one transmitting or receiving location is the transport ("backhaul") of communications signals from those locations to a central site. For systems of one or two channels and a similar number of sites, this is a relatively simple requirement having multiple possible inexpensive solutions. As systems become more complex by incorporating more frequencies or more sites, the transport issue becomes more problematic. In those cases, it requires more comprehensive planning and a different approach where economies of scale can be employed.

With the current environment, all public safety transmitters are placed at the same (single) location, and receivers for each of the primary channels are situated at three outlying site locations. Since systems are not in a "simulcast" configuration there is no requirement for signal distribution or close control of response characteristics and timing. When additional channels and locations are added, there will be a greater need for transport or "backhaul" services. Individual leased telephone lines in the quantity anticipated are too expensive. They are also typically unreliable, if even available at all locations. Specifications for leased telephone lines allow for both short and long term variations in performance of frequency response and delay. These variations are commonplace with leased lines and do not affect simple voice

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communications, but can make the circuits undesirable, if not completely unsuitable for simulcast operation.

The upgraded system should be served by a microwave system, which would be a more economical and practical approach for connecting the stations and sites together. It may be possible to provide other services over the same system, if designed and implemented with those required capacities and points of presence fully defined. Examples would be backup trunks, data links for CAD systems, metropolitan area networking, telephone extensions and “ring down” circuits.

It might be possible to utilize some of the existing microwave radio capacity of the County Schools system. But in order for that to occur, the equipment must meet the performance standards required for simulcast operation. That current system is Internet Protocol based and primarily supports data communications, where slight variations in delay go unnoticed. It would also be necessary for the communications equipment to be collocated, or for the current microwave radio locations to be “reachable” by intermediate links from the desired radio communications locations. Finally, it would be necessary for the successful vendor of the radio equipment to commit to using that existing microwave equipment as part of the system. The vendor may be unfamiliar with the existing equipment, or unwilling for system performance to be dependent on system elements that are beyond their control.

Current technologies allow a mixture of time domain multiplex (TDM) circuit switched technology with packet based IP networks. In a traditional TDM architecture, it would be typical to dedicate at least two DS-1 circuits to each of the remote sites, along with other connectivity to central or prime site equipment as required.

If the new system consists of eight remote locations, then the transport would probably be sized for DS-3 capacity, which would provide two DS-1 circuits per site along with about twelve additional circuits for other services and connections. For an IP based network, the equivalent capacity would be approximately 50 Mbps. As the microwave transport would be critical to the proper operation of the entire system, it should be designed for an annual two-way reliability of 99.9995% for each link. If a ring configuration is not possible, any spurs or “open” loops should

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be equipped for monitored hot-standby operation³. If IP, rather than TDM methods are used, then jitter and latency through the system must also be well controlled in order to support simulcast operations.

Greater capacities may be desired if other services or functions are identified. With the wider bandwidths required for the greater capacities comes increased performance requirements. These performance requirements can lead to some combination of larger antennas, shorter microwave “hops”, different operating bands, and even additional intermediate sites.

4.7 System Redundancy and Reliability

As users become more reliant and dependent on the proper operation of a single system or service, then the reliability should also increase. If a single channel system at one site fails, there is often an alternate channel or site that can continue to support operations, even if in a limited fashion. When systems become more consolidated and serve a much larger number of users, it is necessary to recognize their increased importance and consider the vulnerability of the system to failures of individual system elements.

The failure of a single power source that was once a minor disturbance for a single user can now disable an entire system and interrupt all communications for multiple agencies. Reliance on centralized equipment or consolidated transport mechanisms requires that they be designed as “hardened” systems, with redundant capabilities, alternate locations, and with commensurate review to ensure that systems maintain operation or “gracefully fail.”

Because of the complexity and redundancy in these systems and the greater reliance on them, it is also critical to have monitoring and control systems in place. By design, a single failure may be overcome and a system outage avoided, but if the failure is not reported and repaired, the entire system is vulnerable to the next failure, which could be at a different location or a different part of the system.

³ Monitored Hot Standby is a method where each end of the link is equipped with two transmitters and two receivers, coupled by combining, monitoring, and switching circuitry. A failure of any primary (main) equipment will result in the system switching to the “hot standby” which is already powered, operating, and ready.

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5.0 Design Alternatives and Recommendations

5.1 Operational Requirements

How quickly and effectively public safety agencies respond to citizen's needs is dependent, to a large degree, on the underlying communications systems, which support their operations. Increasing demand for public safety services, growing requirements for multi-agency responses and increasingly specialized services establish the need for enhanced public safety radio capabilities.

Communications System Requirements

Reliability – The mission critical nature of law enforcement, fire service, emergency medical services, and critical infrastructure facilities require reliable two-way voice communications, which are engineered and maintained to ensure uninterrupted service. These communications systems provide the lifelines to back-up assistance during emergencies. Efficient operation, high availability, and timely restoration of critical services are key design criteria.

Interoperability – Complexity, size and frequency of emergency events are raising the requirements for coordinated multi-agency responses. The ability of responding agencies to communicate with each other is critical to the successful completion of the response. Interoperability is, therefore, fundamental to a coordinated efficient response to complex emergency situations.

Improved Coverage – Although the primary service area is well-defined and understood, the challenge to provide ubiquitous portable radio coverage is significant. A number of coverage problem areas or “dead spots” were reported by users and have been identified in this report. Any new or improved communications system should address these concerns and strive to provide improved and more consistent radio coverage throughout the service area to support public safety and operational support efforts.

Increased Traffic Capacity- There were anecdotal reports suggesting that current channel capacity was insufficient at times (during the dispatch of multiple fire or EMS calls), but the alternate channels that are available are not used. However, it is anticipated that if trunked operations are implemented as required by County representatives, additional capacity (beyond

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the four channels currently implemented) would be needed. Part of that capacity is needed to account for the dedicated control channel that would be needed. It would also be necessary to isolate the communications center from routine tactical communications of multiple departments that are not directly related to their mission. Depending on the transition plan, it could be possible to sequence the migration to a new system within the same band such that operations are minimally impacted, and safety is not compromised. Increased channel capacity without the application of trunked technology will increase the complexity of operation and could increase the possibility of “missed” communications.

In-Building Coverage – The mission critical nature of public safety responses requires more personal levels of communication. Much of the work of the departments occurs within buildings and in other places not accessible by vehicle. Users have stated the need to be able to communicate using portable radios at hip level from inside of buildings with 90-95% confidence over 90-95% of the area of Fluvanna County. Additional sites will be necessary to support portable radio operation from those locations.

Improved Redundancy in Communication Systems – The existing communication system has very limited back-up capabilities as normally provided for public safety operations. Alternate channels or systems are available, but all primary channels depend on the same site for operation. A catastrophic failure at that location would severely limit each agency’s ability to communicate. Any new communications system design should provide an appropriate level of redundancy to ensure continued effective communication links for all users, even during partial system failures.

Monitoring and Control Systems – In order for the redundancy to be effective, monitoring and control systems also need to be implemented. If a redundant system element fails while not in service, the failure could go unnoticed and not realized until a failure of the primary system and loss of service. Likewise, if a primary system fails and the redundant system becomes active, users may not notice the switch (the system still works, as designed). System status must constantly be monitored, and any failure reported immediately so that it can be corrected and the system reliability and availability maintained.

Operational Separation – Public Safety organizations have multiple channels available, but their

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use is currently very limited. Non-public safety departments generally have a more limited channel selection and less critical coverage requirements. As the demands for service and coverage have increased, so have the need for segregation of communications for unrelated responses. Justification for the addition radio communication channels based on subscriber inventory is unlikely, but partitioning of the existing user groups could work to improve efficiency and effectiveness of communications. User representatives have stated the requirement to establish countywide tactical channels which can be monitored by dispatch if desired, and are recorded at all times. This wide area system level implementation will impact availability of channels that are traditionally used direct from unit to unit on scene, and can be reused multiple times across the county without interference.

5.2 Comparison of Coverage Performance

Agencies served by the County public safety systems have previously considered the potential impact of higher frequency bands on coverage performance, and the number of sites needed. This section describes a comparison of systems at high band VHF (150-174 MHz), and UHF (450-470 MHz). As discussed in other sections, different bands provide varying performance. Higher frequency bands afford more efficient antenna systems and improved penetration of open buildings. Higher frequency bands also are less susceptible to noise, but they suffer greater attenuation through space and from foliage loss. Lower frequencies travel better beyond the horizon, but because of their longer wavelength, lower frequencies don't reflect off of smaller surfaces as effectively or pass through smaller openings as readily, making them less preferable in areas of dense construction or inside of buildings.

In order to compare performance, a basic conceptual system design and site constellation was developed at high band VHF, which aimed to improve coverage performance for portable radio users. Once that site selection was created to achieve the desired coverage, UHF coverage was determined using the same sites and antenna heights, with comparable radio parameters, and antenna system performance that is achievable at UHF. Where "holes" occurred with the UHF coverage from existing sites, their location was adjusted or new sites were added to achieve comparable coverage.

Coverage predictions were developed using Comsite Design® software. Initially, the sites in use by the public safety and School Board systems were considered for use, and then

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overlap and coverage holes were reviewed. Five sites were selected to provide high band VHF coverage across Fluvanna County. According to previous and current analyses, and previous tests, the greatest problem areas are in the southwest, southeast, and northwest corners of the County. Problems in the Southern end of the County are along the James River, where ground elevations drop dramatically.

Of the current sites available, the Fluvanna High School and Kents Store Fire Department locations were initially selected. Both of these current locations would require some site development, regardless of the solution chosen. After a review of coverage, the “prime” site was moved from Fluvanna High School to the 911 Center location with little reduction in coverage. Locating the site here would provide direct access and connection of the console to the central radio equipment without the need for or dependence on a link.

A site is also needed in the Southeastern area of the County, which previous reports show as one of the areas of greatest concern and challenge. County representatives report that Virginia Power has discouraged any expansion beyond the current use of the Bremono Bluff site. Previous activities by others pursued a new site in the vicinity of the County pumping station on Bremono Road near Holman Creek Road. There was said to be significant local opposition to the development of that site, and the effort was abandoned. Coverage for the comparison was considered using the existing Bremono Bluff site (as a transmit/receive site). A potential transmit/receive site was also reviewed at or near the current Weber City Water Tank. For the purposes of this conceptual system, continued use of the Bremono Bluff site was assumed, although it is likely that a new location will need to be identified.

Another site is also needed in the Southwest area of the County. The current Scottsville Water Tank location provides limited coverage outside of the immediate area. Even when converted from a receive-only site to a full transmit/receive site, it does not provide coverage just a few miles to the east. Because of the lack of open space and vertical separation at the top of the water tank, it also does not lend itself to use as a transmit/receive site. The Cunningham School location would provide good coverage over a large portion of Southwest Fluvanna County, but it would not extend into Scottsville. A potential site was placed at State Route 6, approximately 0.25 miles west of its intersection with Route 611. There is no existing site or property known in this area, but it has a higher ground elevation and is situated in the general problem area.

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A site is also needed in northwest Fluvanna County. A potential site was selected at the Fluvanna Correctional Facility. There is a water tank at this location, whose location was used for the analysis. Also discovered and considered in the area was a tower owned by Crown Castle, just north of Interstate 64, and outside of the County. However, there was no real advantage shown by the Crown Castle site and it provided less coverage within the County toward Lake Monticello.

For the comparison of performance between bands, similar levels of transmitter power and antenna height were used. Receive sensitivity for representative base station equipment was used, giving an advantage of 3 dB to the high band receiver (-119 dBm vs -116 dBm for UHF). The assumed antenna gains at the fixed sites were based on popular models in each band of comparable physical size (20-22 feet in length), which gives a 4 dB advantage to UHF (10 dBd for a PD455 vs 6 dBd for a DB224). Finally, a comparison was made between UHF and high band VHF portable antennas. Because of their longer wavelength, only helical (coiled spring) antennas are practical for portable radios at high band VHF. For a similarly sized UHF portable antenna, it can be a “whip” style. When the performance of these antennas is compared while worn at hip level (swivel belt clip), there is a 17.6 dB “body loss” for the UHF configuration compared to 11.1 dB for the UHF radio⁴. This was allowed for in the establishment of a margin for the basic receive level (18 dB above mobile radio performance), and then the UHF portable radio was given an additional “advantage” of 7 dB in the “subscriber antenna.”

Once initial sites were selected, a coverage area analysis was performed to determine the percentage of Fluvanna County covered for “talk-in” and “talk-out” from inside of light buildings. The target coverage was between 90% and 95% of the County. The “talk-in” coverage should be the limiting case, but both were analyzed.

For simplicity in presentation and comparison, a talk-in and talk-out map was created for each of the frequency bands to be compared. Maps are included in Appendix A. Four color-coded contours were represented in maps. Those levels are summarized in Table 5-1 below.

⁴ Comsite Design User Manual, Appendix 4

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Portable, on-street coverage represents the basic service level (signal level of -95 dBm), which reflects approximately 18 dB of additional loss compared to the signal normally expected for a mobile radio. This area is color-coded violet on the maps.

The next level of coverage is that of portable radios inside of light buildings (-89 dBm). This represents an additional margin of 6 dB, which reflects a required signal four times more powerful than that required for “on-street” coverage. This should be representative of residential buildings with light construction and windows. This area is color-coded red on the maps.

The next level of coverage is inside of medium buildings (-85 dBm). This represents an additional margin of 10 dB, which reflects a required signal that is ten times more powerful than that required for “on-street” coverage. This would be representative of larger buildings of heavier construction. This area is color coded yellow on the maps.

The final level is coverage inside of “heavy” buildings (-75 dBm). This represents an additional margin of 20 dB, which reflects a required signal that is 100 times more powerful than that required for “on-street” coverage. This would be representative of very large buildings with steel reinforced concrete or steel construction and few, if any openings, such as windows. This area is color coded green on the maps.

As a comparison, adequate coverage for portable radios inside of heavier buildings requires a signal almost 6,300 times more powerful than that needed for mobile service in the same general location and 100 times more powerful than that needed for the same portable located on the street. For each of the increased levels of service and coverage, it should be understood that the less stringent requirements are already met. The area color-coded green will be able to support communications using a portable radio while on the street, as well as inside of light, medium or heavy buildings.

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Color	Service Description	Signal Level	Margin over “on-street” portable coverage
	In Heavy Buildings	-75 dBm	20 dB (100x power)
	In Medium Buildings	-85 dBm	10 dB (10x power)
	In Light Buildings	-89 dBm	6 dB (4x power)
	On Street	-95 dBm	N/A

Table 5-1 Summary of Signal Levels

The geographic boundaries of Fluvanna County were used for coverage analysis. A summary of the percentage of land area covered for each type of service and band is included in the table below. It should be pointed out that even if an entry reflected 100%, that does not represent a certainty of communications, but a 95% probability of coverage throughout the area.

It should also be noted that although similar levels of building attenuation are considered in the comparison, the losses encountered for a building with apertures (windows, skylights, open doorways, etc.) will be different and generally less at higher frequencies.

Some further comparisons were made to review coverage from alternate locations. While any of these could provide service, they all provide coverage and benefits in different areas. Any could be part of a final detailed design, but it is unlikely that more than one would be selected. The Sheriff’s Office location was finally chosen as an alternative to the Fluvanna High School location for the high Band VHF design, because coverage goals could be achieved using that “collocated” site. There is no tower there now, and even if not used for a land mobile radio location, some type of antenna support structure would still be needed for microwave system.

The locations of the five sites used in the conceptual design and coverage maps were as indicated in Table 5-2. The table also includes the ground level above mean sea level and assumed structure height.

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Site Name	Location	Latitude	Longitude	GAMSL (ft)	Structure Height (ft)
Fluvanna County Dispatch	Central County	37-51-53 N	078-16-35 W	335	180
Bremo Bluff	SE County	37-42-34 N	078-16-24 W	385	330
Kents Store	NE County	37-52-44 N	078-07-48 W	410	120
Site #4 Fluvanna Correctional	NW County	37-58-58 N	078-16-05 W	440	140
Site #5 (Replacement)	SW County	37-47-26 N	078-26-27 W	522	180

Table 5-2 VHF Site Constellation

In order to achieve comparable coverage at UHF, three additional sites were needed. Similar to the Southwest County site, these do not represent existing sites or identified property. The conceptual sites were located such that they filled in coverage holes. It was not possible to use the County Dispatch site with the UHF band, because use of that location instead of Fluvanna High School reduced “talk-in” coverage below 90%, even with a 250 foot tower. The sites included in the analysis are identified in Table 5-2.

Site Name	Location	Latitude	Longitude	GAMSL (ft)	Structure Height (ft)
Fluvanna High School	Central County	37-49-25 N	078-16-29 W	450	180
Bremo Bluff	SE County	37-42-34 N	078-16-24 W	385	330
Kents Store	NE County	37-52-44 N	078-07-48 W	410	120
Site #4 Fluvanna Correctional	NW County	37-58-58 N	078-16-05 W	440	140
Site #5 (Replacement)	SW County	37-47-26 N	078-26-27 W	522	180
Site #6 (New UHF E)	Columbia	37-46-09 N	078-10-50 W	286	180
Site #7 (New UHF W)	Cunningham	37-52-55 N	078-21-24 W	391	180
Site #8 (New UHF N)	North Fluvanna	37-55-02 N	078-13-23.W	434	180

Table 5-3 UHF Site Constellation

For each band, multiple iterations were also reviewed and analyzed to provide a tabular representation of the coverage contribution for each site in the least stringent case for portable in-building coverage (inside of a light building). This included the expected coverage contribution for each site (individual site, acting alone), as well as the unique coverage contribution (percentage of reduction in overall coverage if the site in question were removed). Those results are contained in Table 5-4 below. They help to determine not only how much area the individual site contributes toward that level of coverage, but also how much the coverage would likely change (reduce) if the site were not included or failed.

For example, in the UHF system, a decision not to implement the Columbia area site would reduce “talk in” coverage from 90% to 87% of the county area, and “talk out” coverage from 95% to 93% (reflecting the unique contribution of this site toward the overall coverage

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performance of 3% and 2% toward talk in and talk out respectively). It can be seen that as the number of sites increases, the individual “unique” contribution of each diminishes.

Site Name	VHF				UHF			
	Area Covered (%)		Unique Contribution (%)		Area Covered (%)		Unique Contribution (%)	
Talk in/Talk Out →	In	Out	In	Out	In	Out	In	Out
(All Sites →)	91%	97%			90%	95%		
Fluvanna Co Dispatch (150T 190R)	36%	49%	17%	9%	24%	33%		
Fluvanna Co HS (150T 190R)	43%	60%			34%	44%	5%	4%
Bremo Bluff (200T 290R)	25%	31%	15%	10%	20%	23%	6%	5%
Kents Store FD (110T 140R)	21%	27%	14%	11%	19%	21%	6%	4%
Site #4 Fluvanna Corr WT (100T 120R)	14%	18%	7%	4%	13%	17%	2%	1%
Site #5 (SW Fluvanna) (150T 190R)	22%	31%	14%	11%	18%	23%	10%	10%
Site #6 (Columbia) (150T 190R)					15%	19%	3%	2%
Site #7 (Cunningham) (150T 190R)					25%	30%	4%	2%
Site #8 (N Fluvanna) (150T 190R)					33%	39%	4%	2%

Table 5-4 Coverage Contribution By Site

Below are summary listings of the overall coverage achieved with different variations in site usage that were reviewed during the analysis.

VHF Coverage with 5 Sites

“Prime Site”	Talk Out	Talk In
Fluvanna County Dispatch	97%	91%
Fluvanna County High School	99%	96%

UHF Coverage with 5 sites

“Prime Site”	Talk Out	Talk In
Fluvanna County Dispatch	84%	74%
Fluvanna County High School	87%	77%

UHF Coverage with 8 sites

“Prime Site”	Talk Out	Talk In
Fluvanna County Dispatch (180)	93%	87%
Fluvanna County Dispatch (250)	93%	88%
Fluvanna County High School	95%	90%

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It can be concluded that in order to obtain reliable communications throughout the County to the level required in the environment as stated, at least five sites are anticipated, regardless of the band selected. In order to provide comparable coverage at UHF, eight sites are recommended.

6.0 Spectrum Availability

A primary consideration in the selection of a frequency band for a new or expanded radio system is the availability of spectrum to create the number of channels needed. Fluvanna County has expressed the desire to implement additional channels to provide additional capacity and room for growth. A system of five channels is envisioned to support public safety use. Because digital trunked operation was required, an additional conventional analog channel is also needed for alert paging.

6.1 UHF (450-470 MHz)

As a rule of thumb, and absent other extenuating circumstances, frequency coordinators attempt to avoid reusing frequencies within 70 miles of current licensee locations. Frequencies can be coordinated with closer spacing, but additional analysis and consideration are necessary, and applicants are often required to obtain letters of concurrence from the incumbent licensee(s) within 70 miles of any proposed new station location. For a new five channel UHF digital system, a new set of channels would have to be identified, coordinated, and licensed. Depending on the final design, another channel needs to be identified for the alert paging channel. The advantage of UHF is that channels are paired with a common spacing and usage, so that frequency coordination is greatly simplified.

6.2 Availability and Reuse of Existing High Band VHF Frequencies

There are four existing high band VHF channel pairs that could be used in a replacement system, requiring only one additional channel for the trunked system and one for the paging channel. During review of existing public safety frequencies and usage, it was determined that the transmit and receive grouping could be improved upon. That would be especially important if the channels are used for joint operations (multiple channels used at a single incident). It would be desirable to reconfigure the existing channels and replace existing base station frequencies with ones outside of the range of the base station receive frequencies. However, it is expected that such an implementation would require more time to qualify or clear frequencies, and migrate or transition their use to a new system. Additional planning would be required to allow acceptance testing and to ensure a smooth transition to the new system.

6.3 Requirements for Trunking at High Band VHF and UHF

While current FCC rules allow trunking operation in the bands below 470 MHz (UHF and high band VHF), there are no rules which dictate individual channel loading or assignment limitations for public safety systems utilizing less than 11 channels. As a general rule of thumb, the FCC considers a channel to be fully utilized if it serves 70 units for conventional systems, or 100 users for trunked systems. A conventional system supporting 300 users would justify four channels. A trunked system supporting that same number of users would justify three channels. While additional channels could be implemented, they would not be considered fully utilized, and exclusive use would not be granted.

Exclusive use can be established within a geographic area if it can be demonstrated that the channels are not already in use by others, or that interference will not be caused for any existing use, and if a sufficient number of mobile users is to be served by the number of channels being sought.

Whether new UHF or existing high band VHF frequencies were used for a new system, it would be necessary to review their use by others and modify the current licenses if it is desired to convert them to a trunked system. This is necessary even for channels currently licensed, as their usage would have to be reviewed, coordinated, and approved in either a simulcast or trunked environment. Additionally, if exclusivity can not be established for a channel, there are requirements for the system to monitor co-channel traffic prior to each assignment. The monitoring requirement can be avoided if there are no other users in the area, exclusivity can be established, or if the applicant contacts other co-channel licensees and obtains their concurrence for the new trunked use.

FCC license modifications would be required for the addition of any transmit locations, additional frequencies, digital emissions, or trunked operation. The application process for these modifications would require frequency coordination. Although it is expected to be an easier task to coordinate existing frequencies for use at additional sites within the same area of operations, some limitations may result from using sites with higher elevations. For instance, it was mentioned that a site on Carter's Mountain in neighboring Albemarle County might provide very good coverage over a large portion of Fluvanna County. While that is possible, the potential for causing interference to others, or receiving interference from them would also be greater from

Spectrum Availability

such a site. Sites with a greater “height above average terrain” may suffer greater limitations on the allowable power in the coordination and licensing process.

FCC rules lay out the requirement for establishing or converting to trunked system operation below 512 MHz in §47CFR90.187. That section addresses notification of co-channel licensees, as well as channel loading and abandonment of trunked operations.

Generally, there are no specific loading criteria for public safety trunked systems utilizing 10 channels or less, but systems licensed for more than 10 channels must demonstrate by submission of a loading study that the additional channels above 10 will support at least 50 users per channel within a five year period.

7.0 Conceptual System Design

7.1 Fluvanna County Requirements

County representatives provided a list of requirements, features, and capabilities for the new public safety radio system. They are:

- 90-95% reliability for portable coverage from hip level inside of buildings in 90-95% of Fluvanna County
- Simulcast Infrastructure
- Trunked operation with talk groups for dispatch, TAC channels, and special events, with all communications recorded.
- Emergency button capability with GPS locator.
- Ability to remotely disable field units
- Ability to remotely monitor radio transmissions
- Encryption capability for the Sheriff's Office
- Vendor Response time for emergency repairs of less than one hour
- Microwave radio system to avoid dependence on leased telephone lines, improve reliability, and support simulcast operation
- Ability to program interoperability channels into mobile and portable radios
- Mobile data terminal capabilities for Fire departments and rescue squads
- Dual control head radios (front/rear control) for fire and rescue vehicle
- Headset operation
- Waterproof speakers and microphones for fire units
- Paging System with "all call" capability
- County Support Staff for daily oversight and management of the system

Some of these items translate into specific equipment or options, while others do not. The high level cost estimates provide an average equipment cost, and do not reflect detail, such as optional waterproof speakers and headset operation, or GPS capability, which may not be universal. Additionally, there are no costs reflected in the estimates for support staff costs or maintenance contract fees.

7.2 Alternatives Considered and Design Recommendation

In evaluating the alternatives for Fluvanna County, RCC considered two primary options and two secondary options to address the needs of supported users and meet the goals and objectives described earlier. The primary options were:

- Enhance and build out operations for a simulcast conventional system operating at high band VHF
- Build a replacement simulcast conventional system operating at UHF

The secondary issues and alternatives are not directly related to the band of operation. Those alternatives are the transition to a trunked system environment, and to operate a digital system. They are affected only by costs related to inventory -- the additional number of sites or base stations. The cost difference between a digital base station and an analog base station are not affected by its band of operation. The cost of purchasing and implementing the trunked capability is driven by the number of units being served and the “robustness” of the architecture. It is not affected by whether the radios being equipped with the capability operate at high band VHF or UHF. There are factors regarding the availability of channels in each band, but they both operate under similar regulatory frameworks, and the issues are not “hardware” related between the two bands.

1. Enhance/Build Out a Simulcast Conventional System operating at High Band VHF

The first alternative would be to improve and expand coverage for the current system (additional transmit sites), and to convert existing channels or implement additional ones in a simulcast architecture to support users, while maintaining operation in a conventional environment. This would require frequency coordination for any added sites or frequencies, or conversion in the use of existing facilities, and would be subject to current regulatory limitations. In other words, a channel which is presently licensed and in use from a single site location must be coordinated for use at additional or alternate locations. Problems could be encountered and it may be difficult or impossible to coordinate at other additional sites. In that case where coordination is not possible from any one site, an alternate channel or frequency pair may need to be selected and coordinated for all sites.

Additionally, a single channel pair would need to be identified, coordinated, and licensed

Conceptual Design

in order to provide five available channels (the existing four, plus one more). During that process, other substitutions or exchanges for existing channels could be performed, but that is not mandatory, but a potential opportunity if more favorable channels are found.

This coordination effort could also be the first step in establishing a coverage contour and usage prior to coordination and conversion to trunked services in the future. The project would include the replacement of some “subscriber” equipment, but would allow an easier transition to the new system.

2. Build a new Simulcast Conventional System operating at UHF

The second alternative would be to coordinate frequencies for public safety use in the new band, develop additional sites, and to procure and implement simulcast infrastructure and subscriber equipment sufficient to meet the coverage requirements and serve active users. If this approach is pursued, five frequency pairs would need to be identified and coordinated at eight sites. This approach would lend itself to a more segregated and isolated development of the system, where new installations and testing do not interfere with or interrupt daily ongoing public safety operations. It would require the installation of new equipment in vehicles, and the likely continuance and possible replacement of other high band VHF radio equipment for communications with neighboring jurisdictions. That replacement cost is not included or counted against this alternative, but it is a factor that needs to be considered in final planning.

A. Convert primary channels to digital operation.

This alternative would be in addition to the selection of either of the primary alternatives. It reflects the conversion of the existing (or implementation of new) channels to operate in a digital mode. Digital operation is not required to comply with the narrowbanding mandate, but conversion to digital operation will result in compliance. The digital capability, if implemented, should be Project 25 compliant to improve equipment availability and sourcing for public safety users.

Digital radio infrastructure equipment differs from analog. The base stations are the same basic unit, but have different capabilities and interconnection. The networking, interconnection, and voting comparator equipment differs between analog and digital approaches. Conversion at a later date from analog to digital operation would require a significant reconfiguration of the

underlying network.

Digital capability in subscriber radios requires that they be of relatively recent vintage, and is typically a “firmware” option (purchased for and loaded into each user radio that requires the capability). There is currently no difference in the basic radios, and conversion at a later date simply requires the purchase and loading of the capability into the radio (if still available).

Conversion of fire/rescue dispatch communications to digital operation will require the implementation of an additional analog channel to support dispatch alert paging operations. As mentioned elsewhere, there are no voice pagers that operate on digital channels. It is assumed that the additional analog channel would be implemented in the same frequency band as the primary system (and could be combined within the same antenna system), but other alternatives exist depending on frequency availability and user desires.

Finally, conventional analog channels should be implemented as necessary to support on-scene tactical communications and interoperability. As mentioned elsewhere in the report, operational requirements occasionally require responders to “go off of the network” in order to communicate. In certain scenarios or environments, analog operation is more desirable and less vulnerable to some types of background noise or interference. Analog capability on designated channels also improves the commonality with other occasional responders who may be at the same scene, but don’t have digital capability. This “additional analog” capability requirement is especially true for fire departments, and is included as an operational scenario.

B. Transition to a trunked system wholly owned and operated by the County

Like the digital alternative above, the decision regarding trunked operation would be in addition to and independent of the selection of frequency bands. It reflects the conversion of the system from a conventional system (similar to the existing system) to one with advanced capabilities as described elsewhere in this report. The advantages of this alternative are that it would allow advanced features and greater efficiency in usage for all users of the system. Inherent in this option is that the resulting trunked system will also be digital (there are no current offerings of standards-based public safety analog trunked capability and future development is also unlikely).

Regardless of the band selected, this would require fixed network “infrastructure” and

Conceptual Design

controlling equipment, as well as the “firmware” capability (additional feature software) for all portable, mobile, and control station “subscriber” equipment. The requirement to maintain and administer the system also would increase operational costs and staff workload.

The trunked capability would result in significant additional “entry level” costs for the controlling infrastructure, and those costs would be shared over a relatively small number of users (300). The additional cost of over \$1,000 per unit for the subscriber firmware would effectively be increased by the additional costs of greater than \$1M in infrastructure, distributed over that same number of users.

The trunked system capability should be Project 25 compliant to improve equipment availability and sourcing for public safety users. Additionally, the system should be designed to allow the future addition of users (both public safety and public service). Finally, as with the digital discussion above, conventional analog channels should be implemented as necessary to support on-scene tactical communications, interoperability, and dispatch page alerting operations.

The conceptual design for a system to meet the user requirements is a five channel digital (P-25) trunked system and separate analog page alerting channel, regardless of the band selected. A UHF system comes at a premium cost for the additional sites, but as shown in the summary tables of Appendix A, the coverage in heavy buildings would be better, the criticality from the loss of any one individual site (through a failure) would be less. It would also be advisable to retain the high band VHF capability for communications with neighboring localities, even if UHF were selected as the band of operation for a new system.

8.0 Cost Estimates

8.1 Introduction

This section contains cost estimates to a “rough order of magnitude.” For this level of information and detail, the actual cost is normally expected to vary between 50% and 200% of the estimate. As other factors become better defined, this estimate would be revised and become more certain. The estimates are based on a system with five 5 digital trunked channels, and one (additional) analog conventional paging channel. The estimates reflect a five site high band VHF system, and an eight site UHF system to provide similar coverage. It is assumed that the system will connect with and use the existing communications center (console) equipment.

8.2 Assumptions

A set of assumptions has been developed to quantify the estimates for the described system. The cost of a communication system is broken into four components: the fixed system infrastructure; the subscriber units to be deployed on the system; the costs to make the system digital capable (infrastructure and subscribers); and the costs to make the system a trunked architecture (again, for infrastructure and subscribers). The cost estimates here consider the development of new sites, even if at a location currently occupied by an existing system.

Site development consists of:

- Site Preparation (clearing, grading, fencing, gravel)
- Construction of new antenna support structures
- New Shelters
- Utility Services and Fuel Supplies
- Generators
- Site Grounding

The costs do not reflect the expected acquisition for new site locations (purchase or lease), if situated on property that is not currently owned by the County or covered by collocation agreements. Some of these costs may be avoided depending on final site selection, but it should not be assumed that existing locations and facilities have the additional capacity or space (tower space, floor space, electrical service, etc.) to support two separate systems during the development, testing, and transition periods.

Cost Estimates

Existing towers are unlikely to be able to provide the “open space” with vertical separation between transmit and receive systems to support the additional antennas for a new system, which must be installed alongside the existing, operational system. Additional microwave antennas also represent a significant load. They do not typically share the same space as any existing or new land mobile radio antennas, as they are likely to affect the antenna patterns and coverage. For these reasons, a new tower is included in the conceptual design for each of the sites.

There is also insufficient floor space in existing equipment buildings to house both existing and new equipment during interim periods. Power and cooling systems are not sized in order to accommodate these changes. Changes and improvements in installation practices and building codes will also impact the usefulness of existing sites.

8.3 Radio Fixed Network Equipment

Fixed network equipment cost depends largely on how many channels are required to support the users of the system, the number of sites needed to provide the coverage and reliability required, and whether the system will operate in a trunked environment, or with digital capability. It also depends on the transport/backhaul systems, and the redundancy required for all key elements. It is assumed that a for a high band VHF system, five sites will need to be implemented, each equipped with five channels in a simulcast configuration. For a UHF system, eight sites and a similar number of channels would be needed to provide a comparable level of coverage.

8.4 Communications Center Equipment

Estimates for the system are based on using and connecting to the existing Motorola Centracom Gold Elite system previously purchased and currently in service. The cost assumes no replacement of existing console electronics except as required to implement a limited number of new or expanded channels or talk groups. When configured to use a combination of new base station interfaces and network access to other similar modules already in place in other systems, this is felt to be sufficient. The use and reuse of this architecture may result in some loss of capability or limitation in features, so any specifications or procurement documents should

clearly state any intention to use the existing equipment, and requirement for new systems to interface with it. Final plans could result in the replacement of this equipment.

8.5 Subscriber Equipment

The subscriber equipment consists of:

- Control Stations (Desktop Radios)
- Mobile (vehicle mounted) Radios
- Portable (Handheld) Radios and Accessories
- Alert Paging Receivers

Subscriber equipment generally accounts for significant portion of the total system costs. The chief variables are the number and types of subscriber equipment purchased. Three levels of subscriber equipment are typically available. Often, the upper two tiers of radio are based on the same architecture and quality, and differ only in user features. The lower tier radio will have relaxed specifications, a different architecture that doesn't lend itself to expansion, and limited feature sets.

High tier radios typically include a display screen and dial keypad, and also support advanced optional features such as encryption and multiple mode operation. The display and keypad support functions such as telephone interconnect and private call, as well as expanded channel selection.

Medium tier radios normally include all of the features and capabilities, and performance specifications of the high tier radio but do not have a keypad or full display. Medium tier radios may also lack some capabilities such as highly secure encryption or multiple-key encryption capabilities.

Low tier radios permit basic features and channel selection, but do not include a display or keypad, and may not be capable of supporting large channel configurations or advanced features. They may also possess a lower performance specification, and may not be capable of operating with special features (mobile vehicle adapters, or external accessories such as external antennas, extended microphones or security kits).

High tier radios are generally issued to command staff and supervisory level personnel who have a need for these features and functions, and system level authorization to use them.

Cost Estimates

High tier radios also offer the greatest flexibility for expansion or multiple system operation.

Medium tier radios are often issued to larger groups of public safety personnel, while low tier radios are issued to administrative or support agencies that do not generally require the high functionality, or where the cost-benefit ratio and sheer inventory do not allow their purchase.

8.6 Cost Breakdown

High band VHF Fixed Infrastructure Equipment

Qty	Description	Unit	Extended
5	Site Development (tower, shelter, power, security)	\$300,000	\$1,500,000
30	Base Stations (25 digital, 5 analog)		\$412,500
6	Networking, Frequency Reference, and control		\$410,000
15	Antenna Systems (one Rx and two Tx assumed-Installed)	\$11,190	\$167,850
6	Microwave Transport/Interconnectivity Equipment		\$820,000
1	Simulcast Prime Equipment (30 stations at five sites)		\$168,000
1	Trunked Master Site Equipment		<u>\$1,250,000</u>
			\$4,728,350

UHF Fixed Infrastructure Equipment

8	Site Development (tower, shelter, power, security)	\$300,000	\$2,400,000
48	Base Stations (40 digital, 8 analog)		\$660,000
8	Networking, Frequency Reference, and control		\$650,000
24	Antenna Systems (one Rx and two Tx assumed-Installed)	\$12,090	\$290,160
9	Microwave Transport/Interconnectivity Equipment		\$1,223,500
1	Simulcast Prime Equipment (48 stations at eight sites)		\$168,000
1	Trunked Master Site Equipment		<u>\$1,250,000</u>
			\$6,641,660

Subscriber Equipment (Band Independent)

Qty	Description	Unit	Extended
15	Control Stations	\$5,000	\$75,000
12	Dual Control Mobile Radios	\$4,000	\$48,000
63	Mobile Radios (mid-tier)	\$2,500	\$157,500
200	Portable Radios (mixed low-mid-high tier)		\$390,000
290	Digital Capability for subscribers	\$450	130,500
290	Trunking Capability for subscribers	\$1,500	\$435,000
60	Encryption for subscribers	\$500	\$30,000
50	Mobile Data Capability for subscribers	\$150	\$7,500
150	Pagers	\$450	<u>\$67,500</u>
			\$1,341,000

8.7 Cost Summary

The expected cost of all items above is approximately \$6.07M for a five-site, five-channel digital high band VHF (150-174 MHz) trunked system and analog paging channel along with 290 total portable and mobile radios and 150 pagers.

For a similar system implemented at UHF (450-470 MHz), the cost would be approximately \$7.98M. This reflects an eight-site, five-channel digital UHF trunked system and analog paging channel, also at UHF. The number and expected cost of subscriber radios is expected to be similar, regardless of frequency band.

For the system costs above, it is also not determined or distinguished whether all subscriber radios would be owned, issued, and maintained by the County, or whether agencies would be responsible for their purchase and operational costs.

8.8 Typical Additional Vendor Charges

Additional vendor charges, typically added to the total cost of the system, are included, but blended with equipment and not separated. Some of these costs are for shipping, factory tests, field-testing, vendor system engineering, vendor project management and training. These costs are based on the size and complexity of the proposed system. The estimates provided are typical, and are based on similar projects. Actual costs associated with these items may vary, depending on the competition expected by potential vendors, and whether economies of scale are extended to the County for work performed.

8.9 Spares

The estimates provided do not include spares for subscribers or infrastructure equipment. Vendor proposals usually recommend some level of sparing to prevent the possibility of lengthy downtime in the event of a system failure. The final amount and type of spares should be negotiated and based on the type of maintenance contract, response time for technicians, criticality uniqueness of the specific equipment, and local availability of spare parts.

8.10 Contingency and Internal Project Management

RCC recommends that the County identify and reserve budget funding in the project for

Cost Estimates

contingency purposes and internal efforts. Costs for licensing and coordination would often come from such funds. There are normally unforeseen circumstances that may require design revision, site modifications, or other changes to the proposed system. In order to be able to respond to these change requests, some amount of contingency funding is recommended. Typically RCC recommends approximately 7% of the proposed equipment cost. This amount is not included in the cost estimates.

An estimate is also not provided for project management, whether by internal staff of the use of an independent, outside consultant to oversee the implementation process. If the County plans to use an outside consultant during the implementation phase, this figure is best defined at the point that the procurement contract is nearing completion. Depending on the level of effort required and size of the system, these costs can be expected to vary from 5% to 15% of the contract cost.

8.11 System Maintenance Costs Beyond Warranty Period

After the initial one-year warranty period, costs can be expected for maintenance and support of both hardware and software. Typically, vendors are required to provide in their initial proposal, a long-term commitment to provide service and support, including costs and escalation caps for a period of at least five years, preferably longer.

Because trunked radio systems are heavily dependent upon custom software in the subscribers as well as the radio system infrastructure, the County can also expect to have offered, a software maintenance program, which provides the software (but not installation services) for each new upgrade of the firmware, operating system and software, including “bug fixes.” Again, the costs of these services vary depending on system size. There are minimum incremental entry costs, but additional savings or discounts for larger systems often can be negotiated.

The County can expect to see second year hardware maintenance costs (year one after system warranty) for fixed equipment of approximately 10% of the cost of the equipment being maintained, and an annual escalation of about 4% throughout the support period, assuming continuous coverage and total support.

Extended warranty for subscribers with depot service is very attractive, but often does not include the local service aspect (local problem determination or correction of installation related

Cost Estimates

problems). Rates can vary, but are in the range of \$4 per unit per month for a two year extended warranty.

9.0 Next Steps

The development, implementation, operation, maintenance, and administration of a communication system is a major undertaking, regardless of the number of channels or type of architecture. For this reason RCC recommends that the County consider a cooperative partnership with other nearby local government agencies that might be undertaking a similar project, but only pursue that if it is fully defined and mutually beneficial over the expected life of the system. Given the difference in service areas the primary savings of this approach will be those for the master site equipment. However, there may be intangible benefits of improved interoperability and some coverage overlap, depending on final plans.

Once a decision is made on the preferred alternative, work should be initiated to develop a project charter to accomplish the work. A charter should include detailed descriptions of the rationale for selection of alternative(s), project objectives, and expected outcomes or deliverables, a preliminary statement of work, a preliminary schedule including duration and constraints, an implementation plan with anticipated resource requirements, and an approved budget.

Once a charter is approved, the preliminary scope statement should be developed and verified with stakeholders. The preliminary scope statement documents the deliverables, sets project boundaries, acceptable methods of work and its delivery or acceptance. High level scope control is also defined at this point so that the approved project and expected outcomes remain in focus.

With the project charter and preliminary scope statement in hand, detailed planning work should begin. This planning will define the detailed steps and resources required to accomplish the work, resulting in a detailed schedule and budget. Also included are planning for project risk and quality standards.

Work should also begin immediately to clearly define the desirable or mandatory attributes of the County's subscriber base, the level of contribution or participation expected by agencies served, and commitment so that the arrangement for procurement, maintenance and operations, is acceptable to all parties.

Work should begin to define the tasks necessary to identify locations and develop new

Next Steps

facilities and establish connectivity. If the implementation of infrastructure includes some other partner, lines of responsibility and communications should be developed. It is assumed that with any shared infrastructure development or expansion, the primary infrastructure owner would take the lead as systems administrators.

Phase One – Analysis and Preliminary Design

Once the County has determined a preferred direction, approved a charter and preliminary project scope and detailed plans, an analysis of needs and preliminary design should begin. Discussions with stakeholders and partners should turn attention to developing detailed descriptions of the users to be served, as well as their environmental, functional and performance requirements. Also developed at a conceptual level would be system diagrams, user inventory lists, statements of work, available resources and preferences.

Phase Two– Detailed Design and Procurement

Phase two takes the results of phase one, and refines the requirements into a procurement document which includes specifications, procedures, and evaluation criteria. After publication, prospective vendors are invited to review the document, visit existing or potential sites, and to ask for and receive clarification or correction where necessary. Upon receipt and preliminary evaluation of bids or proposals, a short list of vendors is developed, and follow up questions or requests for clarification are issued. Vendors are further interviewed and their responses evaluated prior to final selection, negotiation, and contract. Depending on the vendor responses and design consensus some preliminary work may proceed in the areas of permitting, site acquisition, frequency coordination, preparation of FAA notices and submission of FCC license applications.

Phase Three – Implementation

As previously stated, the actual implementation plan is highly dependent on the system alternative chosen. Regardless of design, the following plan will form a basis to be expanded on as the system is further defined.

Next Steps

A. Infrastructure

- Development of new sites or rehabilitation of existing
- Acquisition of additional frequency resources
- Equipment Testing, Delivery, Installation, and Optimization

B. Subscriber Units

- Template Design and Sample Testing/Programming
- Replacement Units
- Equipment Upgrades
- Equipment retuning, reconfiguration, or replacement

C. Logistics and Migration

- Interim or parallel equipment planning
- System commissioning
- System activation and cutover (phased)
- Construction notices
- Channel migration (from current or interim system to final)
- User migration
- Transition to warranty and maintenance service

Next Steps

The following time line represents a high level view of the typical amount of time required to complete the detailed system design and procurement phase and to implement the new radio system. Depending on implementation and project management decisions, some activities toward the end of the project may overlap significantly. Some preliminary work may also have been completed, shortening the procurement time as well.

Design and Procurement Package Development	20 weeks
Vendor Proposal Receipt and Initial Review	8 weeks
Proposal Clarification and Vendor Negotiations	6 weeks
Contract Execution	4 weeks
Site Acquisition, Permitting and development, and FCC licensing	26-52 weeks
System Implementation	52 or more weeks

Appendix A - Propagation Maps

This appendix contains three sets of maps. Each set contains two maps and assumes portable radio coverage within light buildings with the radio located at hip level. A talk in map reflects portable radio transmissions to other users. The talk out map reflects portable radio reception.

The first set of maps is for the current high band public safety communications system.

The second set of maps is for the conceptual five site high band VHF system that would improve portable talk in and talk out coverage to at least 90% of the County.

The third set of maps is for an eight-site UHF system that would provide comparable portable coverage.

All maps were developed with a 95% confidence level

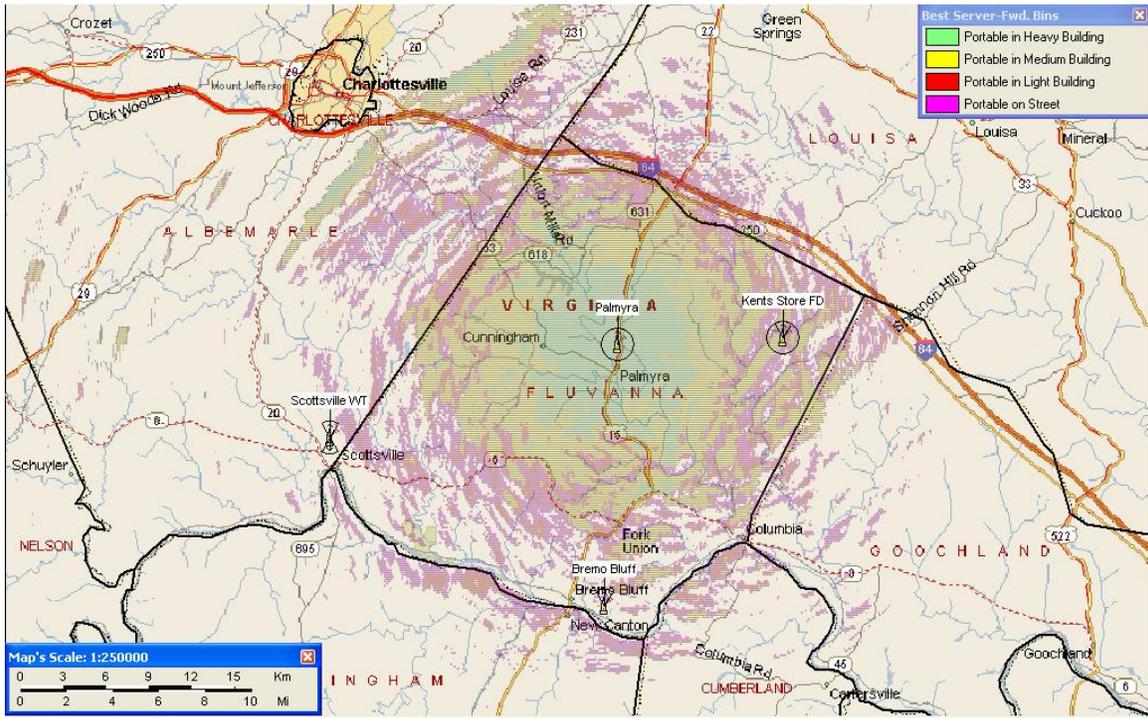
Four Coverage levels are depicted on each map

Green	Portable Coverage in Heavy Buildings (-20 dB)	-75 dBm
Yellow	Portable Coverage in Medium Buildings (-10 dB)	-85 dBm
Red	Portable Coverage in Light Buildings (-6 dB)	-89 dBm
Violet	Portable Coverage on Street	-95 dBm

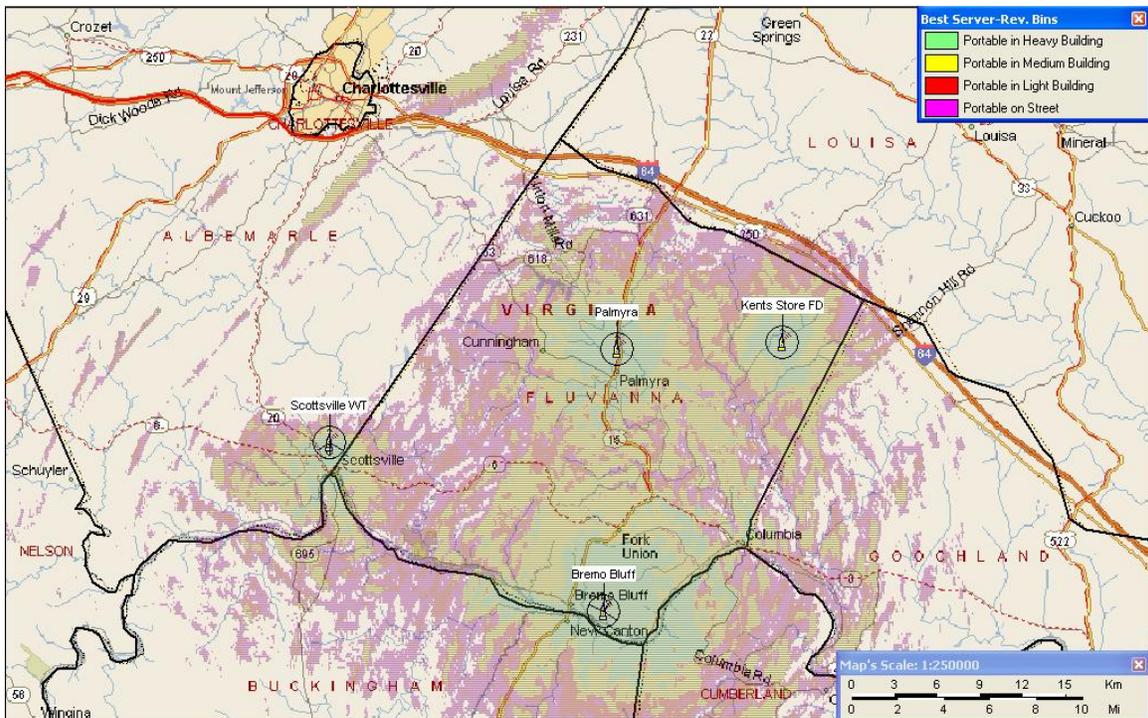
Current (High Band VHF) Public Safety System Maps

Sites	Palmyra	(Transmit/Receive)
	Bremo Bluff	(Receive Only)
	Scottsville Water Tank	(Receive Only)
	Kents Store Fire Department	(Receive Only)

Percentage Of Fluvanna County Land Area Covered		
Scenario/Location	Talk Out	Talk In
Portable on Street	80%	87%
Portable in Light Building	64%	66%
Portable in Medium Building	51%	49%
Portable in Heavy Building	19%	15%



MAP 1 – Current High Band VHF Talk Out Coverage to Portable Radios



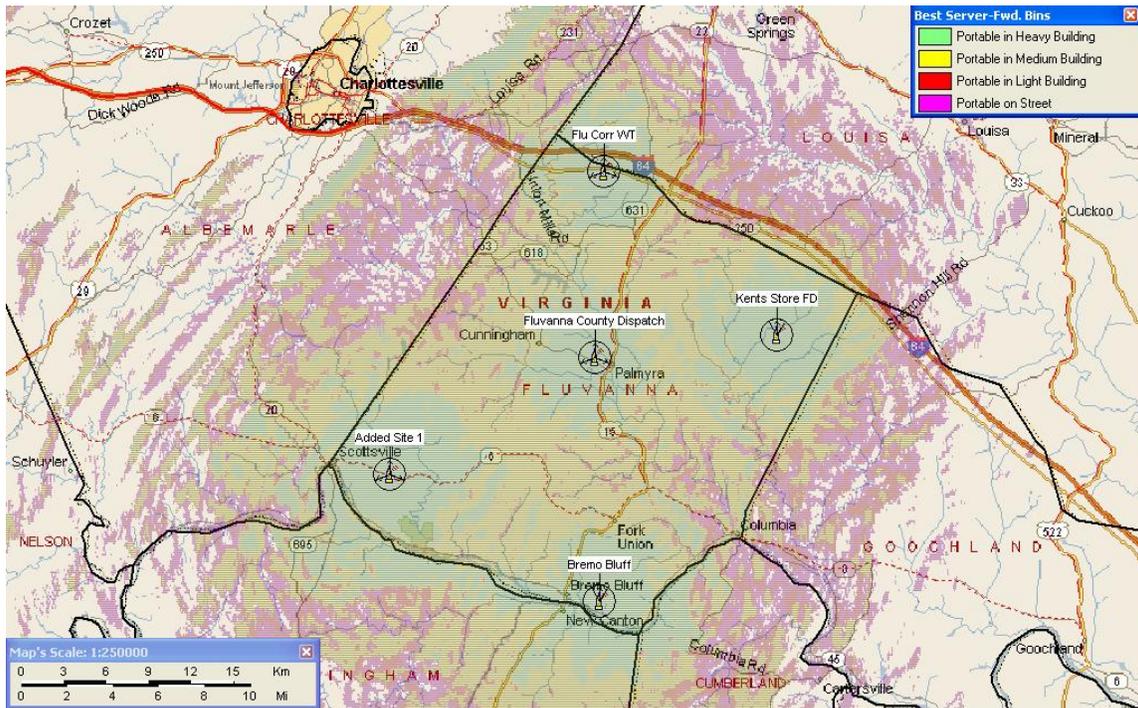
MAP 2 Current High Band VHF Talk In Coverage from Portable Radios

Conceptual Five Site High Band VHF Public Safety System Maps

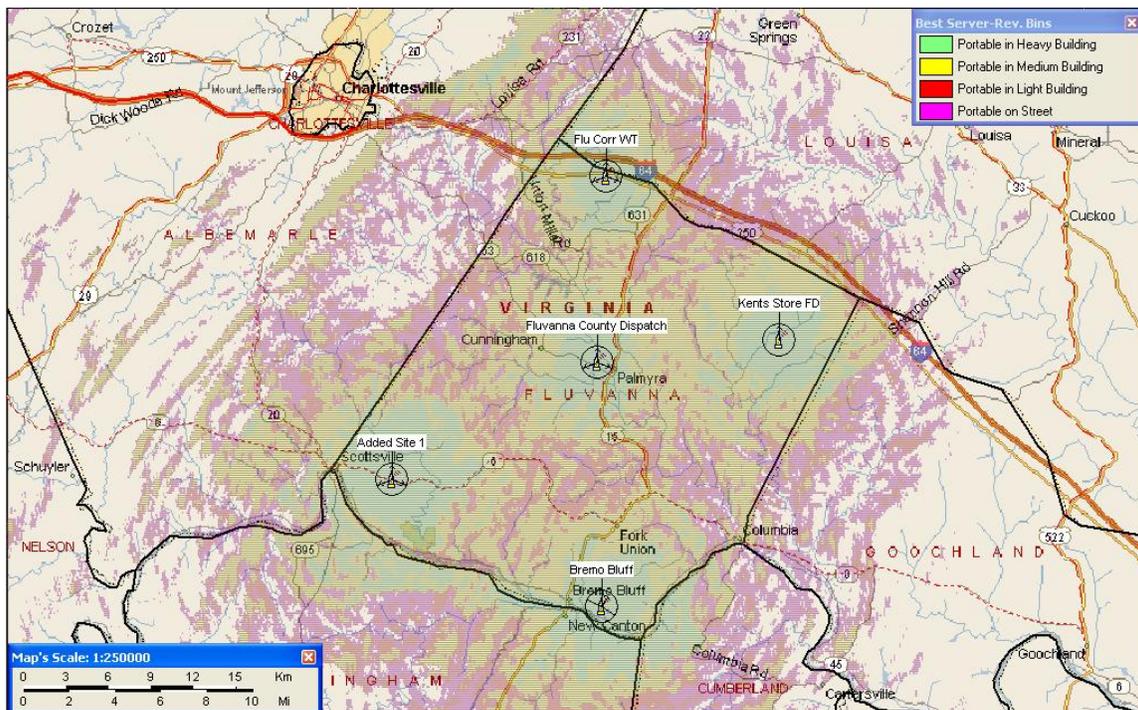
Sites (all transmit/receive)

- Fluvanna County Sheriff’s Office
- Bremo Bluff
- Kents Store Fire Department
- Site #4 Fluvanna Correctional
- Site #5 (Southwest Fluvanna Area – Replacement Site)

Percentage Of Fluvanna County Land Area Covered		
Scenario/Location	Talk Out	Talk In
Portable on Street	100%	99%
Portable in Light Building	97%	91%
Portable in Medium Building	91%	74%
Portable in Heavy Building	43%	28%



MAP 3 – Conceptual Five Site High Band VHF Talk Out Coverage to Portable Radios



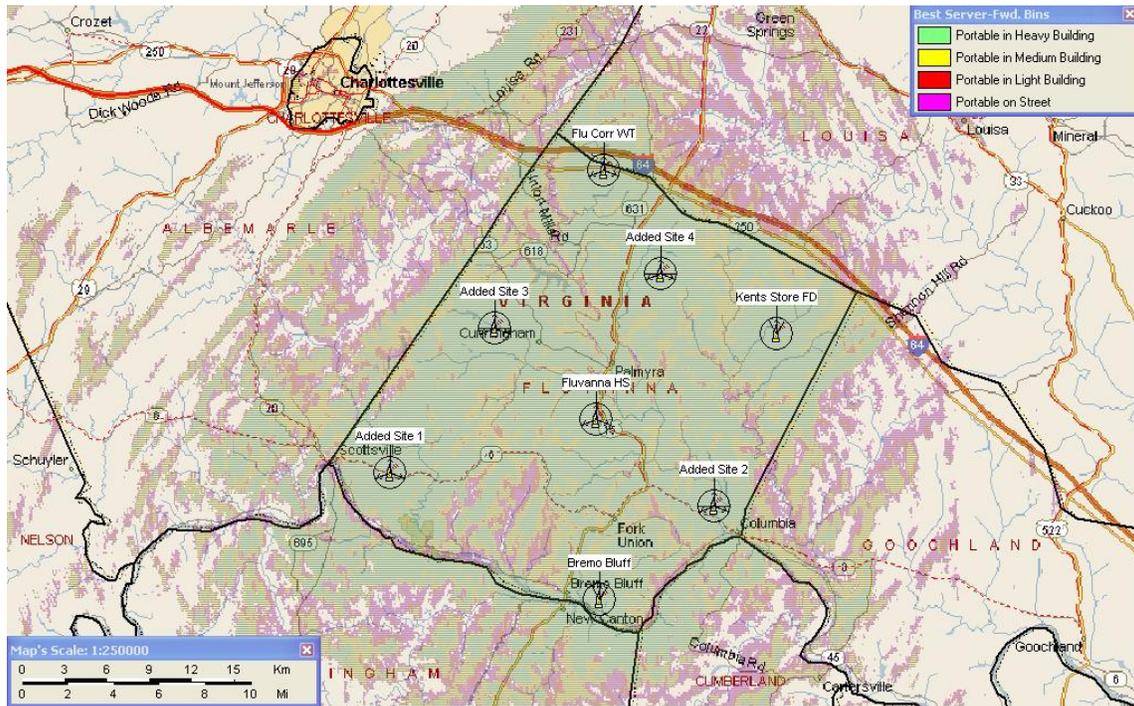
MAP 4 – Conceptual Five Site High Band VHF Talk In Coverage to Portable Radios

Conceptual Eight Site UHF Public Safety System Maps

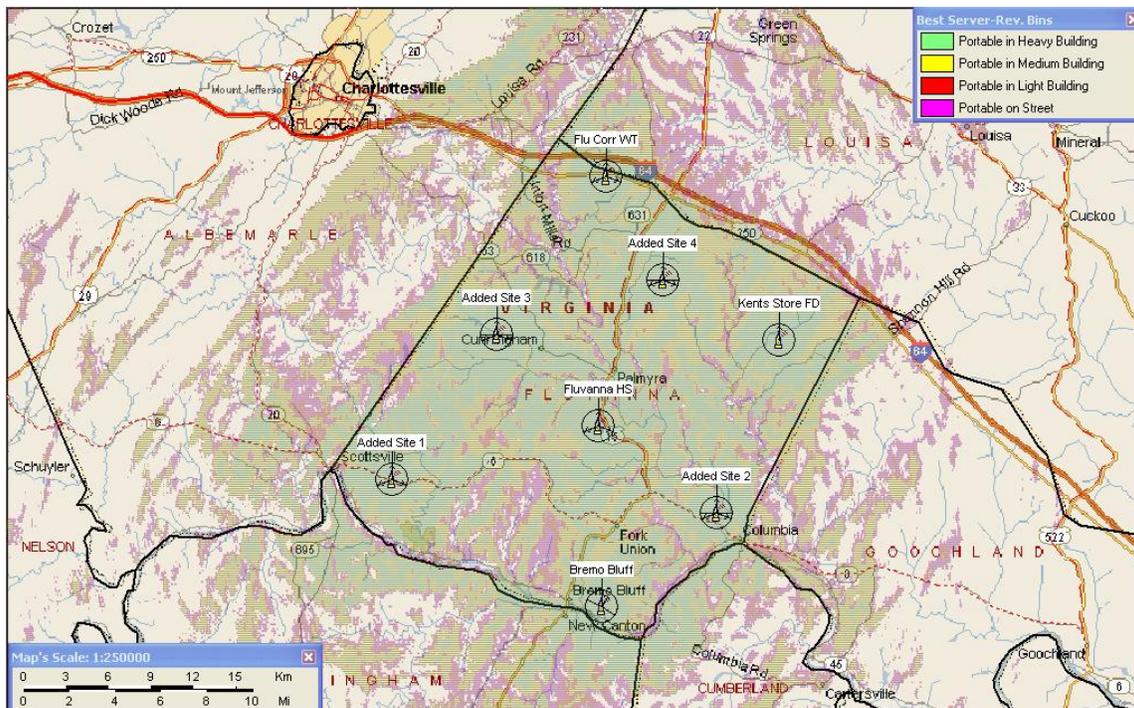
Sites (all transmit/receive)

- Fluvanna High School (Abrams)
- Bremo Bluff
- Kents Store Fire Department
- Site #4 Fluvanna Correctional
- Site #5 (Southwest Fluvanna Area – Replacement Site)
- Site #6 (Columbia)
- Site #7 (Cunningham)
- Site #8 (Northern Fluvanna)

Percentage Of Fluvanna County Land Area Covered		
Scenario/Location	Talk Out	Talk In
Portable on Street	99%	97%
Portable in Light Building	95%	90%
Portable in Medium Building	90%	82%
Portable in Heavy Building	66%	53%



MAP 5 – Conceptual Eight Site UHF Talk Out Coverage to Portable Radios



MAP 6 – Conceptual Eight Site UHF Talk In Coverage to Portable Radios

Appendix B - Glossary and List of Acronyms

APCO	Association of Public Safety Communications Officials, International
FCC	Federal Communications Commission: The Federal regulatory agency responsible for the orderly assignment and proper utilization of radio spectrum and other telecommunications related issues.
FNE	Fixed Network Equipment: Equipment associated with the radio frequency system infrastructure. (e.g. base stations, antenna systems, transport systems, etc. but excluding subscriber equipment and control stations).
Mobile Relay	A base station in the mobile service authorized to retransmit automatically on a mobile service frequency communications which originate on the transmitting frequency of the mobile station (FCC Definition 47CFR90.7).
Multi-Cast	A method of simultaneously transmitting the same information from geographically dispersed locations on different frequencies in order to provide wide area coverage without causing self-interference.
P-25	APCO Project 25 Standard for public safety digital communications systems.
Simulcast	A method of simultaneously transmitting the same information from geographically dispersed locations on the same frequency in order to provide wide area coverage. Compared to multi-cast, it is more spectrally efficient and simple for users, but more costly to implement and maintain,
SIRS	Statewide Intergovernmental Radio System – A low band interoperability channel operating on 39.54 MHz, designated in Virginia and used primarily for communications between law enforcement agencies.
Subscriber	Any “end user” radio, such as pager, portable, mobile, or control station equipment.
Talk Group	In trunked radio operation, a virtual channel. A talk group is a radio user selection available to a group of similar users. Users who have selected the same talk group can communicate with each other, but are not restricted or assigned to a specific radio channel.
UHF	Ultra High Frequency: Generally the frequency band between 300 and 3,000 MHz, but in this report, referring to equipment in the 450-470 MHz range
VHF	Very High Frequency: Generally the frequency band between 30 and 300 MHz. In land mobile radio, there are further distinctions of low band VHF (30-50 MHz) and high band VHF (150-174 MHz).

Appendix C – Sample RF Coverage Design Requirements

All coverage requirements described in this section for voice service shall be based on a round trip (transmit and receive) delivered audio quality (DAQ) rating as defined in TIA/EIA/TSB88-A-4.4.1. Minimum acceptable quality ratings shall be DAQ 3.0 for analog voice and DAQ 3.4 for digital voice. Acceptable quality for digital data service requires a round trip bit error rate of two percent (BER 2%) or less. All coverage predictions shall reflect a minimum of 95% reliability throughout the defined service area, and shall state the level or degree of achievement as a percentage of the entire service area covered. The goal is to provide acceptable quality at the stated reliability to at least 95% of the defined primary service area to every class of user.

The primary service area includes the area within Fluvanna County, Virginia, and Scottsville, Virginia, including all adjoining or enclosed waterways, and extending for three miles in any direction beyond the exterior boundary of these localities.

Coverage predictions shall use terrain data with 30-meter horizontal resolution or better, and a minimum of 100-meter land use classification overlay for performance modeling. Coverage performance prediction shall be calculated and illustrated via maps and tables to reflect level of performance using portable radios, mobile radios, and personal paging receivers. The system development must include a methodical measurement and verification process to ensure and demonstrate compliance.

Performance parameters for fixed network equipment shall be based on those which are achievable with current production equipment, and can be licensed within the technical limitations of Federal Communications Commission Rules and Regulations.

Mobile radio configuration and operational environment shall assume the use of an operational transmit power of 25 Watts and a quarter-wavelength fender mounted antenna (approximately 48" above ground level to tip) while traveling at speeds of up to 80 MPH.

Portable radio configuration and operational environment shall assume the use of an operational transmit power of not more than five Watts and use in a hip-worn configuration with an extended speaker-microphone without an extended antenna (on-hip operation for both receive and transmit conditions).

In addition to normal design parameters, the system design and coverage maps will provide and depict additional margins of 6 dB and 10 dB in excess loss to accommodate operation of portable radios inside of light and medium buildings throughout the primary coverage area defined above. The margin shall be in addition to diffraction and shadowing losses of operating portable radios in land use classification environments and terrain database overlays.

The design must provide for coverage in critical areas with an additional 10 dB of excess loss for portable coverage in critical areas or heavily constructed buildings. Critical coverage areas are as defined by polygons where necessary to represent large areas of high call volume, dense construction or extensive in-building coverage requirements. Additionally, a listing of individual critical structure locations is provided, where they are not situated within a larger critical coverage area (note: this results in a total of 20 dB of excess loss for portables in-building beyond that expected for portables "on-street").

Coverage maps and tables must be provided that depict county-wide coverage with a scale of 1:250,000. Coverage maps and tables of underlying parameters and assumptions must be provided that depict countywide coverage for portable on-street operations configured as defined above (0 dB margin) and portable in-building coverage in light buildings or critical coverage areas, as defined above (10 dB and 20 dB margins).

The system and fleet radios must allow for direct portable and/or mobile unit-to-unit communications without the need for a support infrastructure ("talk-around") with a minimum range of one mile over unobstructed terrain.

Vehicular repeaters may not be used in the design of the system to meet coverage requirements, but the system design must accommodate their use to achieve portable coverage in areas where losses exceed the expectations as stated in this section, or where other operational requirements exist.

Appendix D – Site Information Listing

Fluvanna County

Current or Potential Site Locations Reviewed

Lat	Lon	Address	Use	Licensee	Info Source	Location	GAMSL	GAAT	Struct	AAGL
37:59:04.5 N	078:16:09.0 W		None (COV)		WPEU881	Fluvanna Correctional	449	7		
37:59:03.0 N	078:13:32.0 W				Search Ring	Crown (Castle) Gordonsville ASR 1055136	515	78		197
37:58:58.5 N	078:16:05.6 W				GM	Fluvanna Correctional Water Tank		-3		
37:54:11.0 N	078:06:29.0 W	Kent's Store			From earlier report	Kent's Store (not used)				
37:52:44.0 N	078:07:48.0 W	51 Kent's Store Way	Satellite Rx		Kent's Store Rx Site	Fire House	410	36		125
37:52:29.0 N	078:15:43.0 W	1 mi N of Palmyra	FCSO		KYX255	FC Tx Site	362	-31		150
37:52:26.7 N	078:15:42.3 W	14455 James Madison Hwy.	Schools	Conterra	WQEL228	School Board Annex	360	-33		140
37:52:25.5 N	078:15:42.0 W	Palmyra School	F/R		KZ1337	School Board	361			171
37:52:04.0 N	078:22:55.0 W	Tenaska			From earlier report	Tenaska (not used)	394	-30		
37:51:53.0 N	078:16:35.1 W	160 Commerce Blvd	Sheriff's Office		GM	Fluvanna County Dispatch	335	-54		
37:51:50.0 N	078:17:42.9 W	County Center	N/A			FLUVANNA COUNTY GEOCENTER				
37:49:52.4 N	078:11:12.0 W	563 Wilmington Rd.	Schools	Conterra	WQEL230	Columbia ES (MMW)	389	28		110
37:49:52.4 N	078:11:12.0 W	563 Wilmington Rd.	Schools	Fluvanna County Public Schools	WQEL721	Columbia ES (UHF)	417			120
37:49:25.8 N	078:16:29.2 W	3395 Central Plains Rd.	Schools	Fluvanna County Public Schools	WQEL721	Fluvanna HS (UHF)	456			160
37:49:23.0 N	078:16:29.2 W	3717 Central Plains Rd.	Schools	Conterra	WQEZ804	Fluvanna HS (MMW)	430	75		140
37:48:55.7 N	078:16:40.8 W	3440 Central Plains Rd.	Schools	Conterra	WQEL235	Central ES (MMW)	428	53		30
37:48:49.9 N	078:29:27.6 W	1000 Holly Road	Satellite Rx		WQEL229	Scottsville Water Tank (Rx)	472	19		85
37:48:49.9 N	078:14:37.5 W	9172 James Madison Hwy.	Schools	Conterra	WQEL229	Fluvanna MS (MMW)	328	-39		100
37:48:46.0 N	078:17:16.0 W	Little Mountain Hill	Prelim Site Recommended		VZW (Altell) KNKA500	*Palmyra II* (Loc 7)	488	133		
37:48:21.0 N	078:29:36.0 W	Scottsville	Prelim Site Recommended		From earlier report	Scottsville An Tower (99330)	393	-64		133
37:48:12.5 N	078:20:10.0 W	Rte 6 and 642	None		Site Visits/GM	Fire Tower	531	144		
37:48:03.3 N	078:21:03.8 W	479 Cunningham Rd.	Schools	Conterra	WQEL232	Cunningham ES (MMW)	528	136		110
37:48:03.3 N	078:21:03.8 W	479 Cunningham Rd.	Schools	Fluvanna County Public Schools	WQEL721	Cunningham ES (UHF)	417			135
37:46:08.9 N	078:17:19.6 W	14353 West River Road	None		Site Visits/GM/FluCo	Fork Union Water Tank	450	89		147
37:45:03.2 N	078:17:11.2 W	2894 James Madison Highway	Cell (In process)		Site Visits/GM/FluCo	Weber City Water Tank	482	132		114
37:43:31.0 N	078:17:47.4 W	Bremo Road at Holman Crk Rd	None		Site Visits/GM	Pumping Station	464	102		
37:42:34.0 N	078:16:24.0 W	2138 Bremo Road	Satellite Rx		Domination Virginia Power	Bremo Bluff	385	35		327



Existing Public Safety Site Location
Information from Earlier Reports
Address Information Possibly in Conflict
Geographic Information Apparently in Conflict

GAMSL Ground Above Mean Sea Level (ft)
GAAT Ground Above Average Terrain (ft)
Struct Structure Height (ft)
AAGL Antenna Above Ground Level (ft)



COUNTY OF FLUVANNA

"Responsive & Responsible Government"

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Palmyra, VA 22963
(434) 591-1910
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www.co.fluvanna.va.us

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Jay Scudder
County Administrator
jscudder@co.fluvanna.va.us

Mary L. Weaver
Clerk to the Board
mweaver@co.fluvanna.va.us

Memo

To: Fluvanna County Board of Supervisors
From: Darren K. Coffey, Planning Director
Date: May 4, 2011
Re: Redistricting Presentation

Due to the Redistricting Open House on April 28th, the presentation for the May 4th Board of Supervisors meeting will be emailed to the supervisors the week of May 2nd as early as possible prior to the Board meeting. This will allow staff to organize comments from the Open House, and present those comments to the Board along with the most up-to-date maps.

The Redistricting Committee is meeting on April 29th to discuss the input received at the Open House and may have further recommendations as a result of that input, or other information as pertinent to the project.

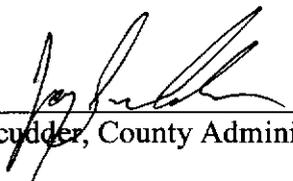
I would encourage all Board members to visit the Planning Office to review any or all of the maps that have been considered by the committee.

If there are any questions or concerns regarding this process, please contact me at your convenience.

MOTION: I move to approve the resolution proclaiming the week of May 15 - 21, 2011, as Ruritan Week.

For County Administrator's Use Only

Comments:



Jay Scudder, County Administrator

Ruritan Week Proclamation Resolution
Ruritan Week May 15 – 21, 2011

WHEREAS, the Fluvanna Ruritan Club has served the Fluvanna County community since its founding in 1938; and

WHEREAS, the Three Chopt Ruritan Club has served the Fluvanna County community since its founding in 1958; and

WHEREAS, Ruritan national had its beginning on May 21, 1928, by community leaders in Holland, Virginia; and

WHEREAS, during the past 83 years, Ruritan has grown to an organization of more than 33,000 members and more than 1,200 clubs across the nation, and

WHEREAS, Ruritan under its motto Fellowship, Goodwill and Community Service has made substantial contributions to the well-being of the citizens of this community and the nation;

NOW, THEREFORE, BE IT RESOLVED, that the Board of Supervisors of Fluvanna County does hereby proclaim the week of May 15 through May 21, 2011 as Ruritan Week.

Dated this 4th day of May, 2011

John Y. Gooch
Chairman, Board of Supervisors



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Rivanna District

STAFF

Jay Scudder
County Administrator
jscudder@co.fluvanna.va.us

Mary L. Weaver
Clerk to the Board
mweaver@co.fluvanna.va.us

Memo

To: Fluvanna County Board of Supervisors
From: Darren K. Coffey, Planning Director
Date: May 4, 2011
Re: ZTA 11:01 – Sidewalks & Setbacks Ordinance

I will be present at the May 4th meeting to answer any questions the Board may have regarding this proposed zoning text amendment. My understanding is that the primary area of concern centered on the proposed requirement of sidewalks in industrial zoned districts.

Currently we require sidewalks on both sides of the street in all residentially zoned districts. Historically, we have "encouraged" sidewalks in commercial areas to no effect. The intent of this proposed text amendment is to improve the quality of future development in Fluvanna County so that pedestrian amenities are more accessible throughout the county.

The variation process in the proposed ordinance is an intended safety valve to give the Planning Commission the authority to waive the sidewalk requirement on both sides of the road, or in lieu of a trail system, if that is appropriate. Any appeal to the Planning Commission action would come to the Board of Supervisors.

This proposed amendment is not retroactive on any preliminary or final site plan or subdivision plat. Additionally, a variation could be granted by the Planning Commission (or the Board if appealed) to completely waive the requirement, although presumably that would only be done in extenuating circumstances as it would otherwise set a precedent that would undermine the ordinance as proposed.

Please feel free to discuss this issue with me prior to the May 4th meeting if further information is desired.



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STAFF REPORT

To: Fluvanna County Board of Supervisors
Case Number: ZTA 11:01

From: Matt Weaver
Date: April 20, 2011

General Information: This request is to be heard by the Board of Supervisors on Wednesday, April 20, 2011 at 7:00 pm in the Circuit Courtroom in the Courts Building.

Applicant/Representative: Fluvanna County

Requested Action: A request to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation).

A request to amend portions of the Fluvanna County Zoning Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 22-9-10 Sidewalks; Sec. 22-10-13 Sidewalks; Sec. 22-11-11 Sidewalks; Sec. 22-12-11 Sidewalks; Sec. 22-23-6 Site plan content; Sec. 22-23-7 Additional Improvements and Standards for Major Site Plans).

A request to amend portions of the Fluvanna County Zoning Ordinance to establish a setback variation for commercial areas (Sec. 22-9-5 Setback regulations; Sec. 22-10-7 Setback regulations; Sec. 22-23-6 Site plan content).

Location: Commercial and Industrial zoned properties

Zoning History: None

Technical Review Committee:

This item was distributed to the Technical Review Committee on March 2, 2011. The Virginia Department of Transportation representative stated that if sidewalks were built to VDOT specifications then he agreed with the zoning text change. VDOT also supported sidewalks in subdivisions (See Attachment B for correspondence).

Comprehensive Plan:

SIDEWALKS

Land Use

With current retail development around Lake Monticello and future regional mixed-use development in Zion Crossroads, sidewalks will provide an integral function in providing connectivity. The Community Elements section of the Land Use chapter features the Northwest Fluvanna/ Southwest Louisa Multimodal Corridor Study which “identifies a preferred development scenario for Fluvanna County that focuses growth within and around existing centers using a model of walkable mixed-use centers.” The Pattern of Development section of the Land Use chapter states “Zoning applications for residential, commercial, or industrial development should be well planned and integrated with the future vision of that area. Critical items include buffers and screening..., connectivity and walkability, adequate infrastructure ... and result in fiscally responsible and value-added development for the community.” Sidewalks would not be ideal in rural areas of the county however, providing pedestrian access around storefronts and within commercial districts would increase connectivity, walkability and promote the goals of the Land Use chapter.

Community Design

A strategy for implementation from the Community Design chapter, reads, “Review and amend the codes. Since many existing codes and regulations get in the way of creating walkable mixed-use neighborhoods, attracting investment often requires reworking the codes to make it easier to achieve the desired goals.” Amending the ordinances to require sidewalks in commercial and industrial areas fulfills this strategy.

Transportation

“Locally, alternative transportation systems include greenway trails, bicycle lanes, and sidewalks. The expansion of these networks is accomplished primarily through the development process and is recognized as a benefit to the community as a result of well-planned and -coordinated projects.” These statements are a part of the transportation vision of Fluvanna County. Creating alternative transportation options helps to fulfill the County vision of sustainability while also promoting increased recreation, economic development and connectivity opportunities.

Below is an implementation strategy for the transportation section of the Comprehensive Plan.

Goal 3: To improve pedestrian and bicycle access to roads and provide off-road trails and walkways.

Implementation Strategies

1. Require the development of alternative transportation infrastructure such as sidewalks and trails in new major subdivisions, and sidewalks in commercial areas. Multiuse trails do not necessarily need to parallel existing roadways, but should link neighborhoods and commercial centers, particularly within the planning areas.

SETBACKS

Land Use

The Regional Centers section of the Land Use chapter states “setbacks should be minimized, with no setback along primary streets, particularly those with retail uses.” Similarly, the Neighborhood Mixed-Use section states “setbacks should be minimized, with no setback along areas serving as Main Street.” For both development patterns, as well as, storefronts in Neighborhood Residential and Village scaled developments, minimizing the setbacks along commercial streets allows for a more appealing pedestrian environment and allows for increased connectivity.

Community Design

“Fluvanna County’s vision is to be the most livable and sustainable community in the United States.” This statement comes from the Community Design chapter and is followed by ways to accomplish this vision such as, “In order to create a more functional and appealing pedestrian environment, parking should be less dominant from the street. This means parking should be relegated to the back or sides of buildings, or within structures.” Relegating parking helps to define a space for pedestrians and increases the aesthetic appearance of the commercial area.

“The streetscape – a combination of building facades, sidewalks, benches, lighting, trees, and other characteristics – influences the character of the surrounding urban environment to a great extent. Well-designed streetscapes focus on creating pedestrian-friendly environments and are essential to community preservation.” Creating an appealing atmosphere for people to travel, as well as congregate, can help promote community pride and add to the quality of life for residents and visitors. These pedestrian-friendly environments are created when the parking is relegated to the rear or side of buildings, and setbacks are reduced along street frontage.

Analysis:

The Applicant is proposing to amend the Fluvanna County subdivision ordinance (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation) and the zoning ordinance (Sec. 22-9-5 Setback regulations; Sec. 22-9-10 Sidewalks; Sec. 22-10-7 Setback regulations; Sec. 22-10-13 Sidewalks; Sec. 22-11-11 Sidewalks; Sec. 22-12-11 Sidewalks; Sec. 22-23-6 Site plan content; Sec. 22-23-7 Additional Improvements and Standards for Major Site Plans) to further align these ordinances with the vision, goals, and objectives of the Comprehensive Plan.

Below is a brief overview of the proposed changes. Please see Attachment D & E for the detailed proposed ordinance changes.

SIDEWALKS

This proposed subdivision and zoning ordinance change would require new commercial or industrial development to build sidewalks that comply with VDOT specifications along road frontage. The current Fluvanna County subdivision ordinance does not require sidewalks in commercial or industrial zoned areas. The lack of pedestrian walkways discourages persons from walking to and within commercial shopping centers, and exacerbates the County’s dependence on the automobile. Amending the sidewalk ordinance will help improve the connectivity within

commercial properties and ensure pedestrian access to and from adjacent residential areas, schools, commercial areas or open spaces.

Additionally, this proposal provides a process for applicants to apply for a variation to the sidewalk regulations that may be granted by the Planning Commission (Sec. 19-8-8.1 Sidewalk Variation). For example, creating a trail network or greenway providing sufficient pedestrian circulation would be acceptable in lieu of a sidewalk on an industrial property.

Sidewalks are currently required for all major subdivisions within the R-1, R-2, R-3, R-4 and R-10 zoning districts (Sec. 19-8-8). Requiring sidewalks to be built in commercial and industrial properties will increase pedestrian accessibility and walkability throughout the county. This provides alternative transportation opportunities and can reduce dependency on the automobile.

SETBACKS

This ZTA proposal also provides a setback variation (Sec. 22-9-5 Setback regulations & Sec. 22-10-7 Setback regulations) allowing buildings to be built closer to the road and relegating parking to the rear, or side, of the building. Locating buildings closer to roads can increase the overall aesthetic value of a commercial development while providing safer pedestrian and bicycle accommodations. Relegating parking can help create an appealing atmosphere for walking or gathering, thus increasing foot traffic by store fronts.

Variations for setback regulations may be granted by the Planning Commission for projects in a designated growth area that meet new urban/neo-traditional planning principles, and further the objectives and goals set forth in the comprehensive plan. Appeals received within thirty (30) days will be forwarded to the Board of Supervisors for a final determination.

This dual topic was first brought to the Planning Commission during the October work session (See Attachment C for detailed public notice announcements). After staff development, the Commission discussed the topic again at the January work session.

Planning Commission:

The Planning Commission held a public meeting on March 23, 2011 to consider ZTA 11:01, the proposed amendments to the Fluvanna County subdivision ordinance and zoning ordinance with respect to sidewalks, sidewalk waivers, and setback waivers. The commissioners **approved** the ZTA by a vote of **6-0** with little discussion and zero public comment.

Conclusion:

When considering this application, the Board of Supervisors should consider how the proposed amendments would change commercial developments within the County; allowing them to connect to adjacent land uses, increase the aesthetics of the development, and increase foot traffic throughout the area. The Board should take into effect the vision the comprehensive plan outlines for commercial developments and the potential impacts that requiring sidewalks and allowing setback variations may have on businesses, traffic patterns, and the quality of life for citizens of Fluvanna County.

Suggested Motion:

Motion 1: I move that the Board of Supervisors approve/deny the attached ordinance to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation).

Motion 2: Additionally, I move that the Board of Supervisors approve/deny the attached ordinance to amend portions of the Fluvanna County Zoning Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation, and to allow for a setback variation for commercial areas (Sec. 22-9-5 Setback regulations; 22-9-10 Sidewalks; Sec. 22-10-7 Setback regulations; Sec. 22-10-13 Sidewalks; Sec. 22-11-11 Sidewalks; Sec. 22-12-11 Sidewalks; Sec. 22-23-6 Site plan content; Sec. 22-23-7 Additional Improvements and Standards for Major Site Plans).

Attachments:

- A – Application
- B – VDOT Technical Review Letter
- C – Public Notice Announcements
- D – Ordinance Changes for Sidewalks
- E – Ordinance Changes for Setbacks
- F – Draft Changes to Subdivision & Zoning Ordinance

Copy:

Applicant/Representative: Fluvanna County



COMMONWEALTH OF VIRGINIA
COUNTY OF FLUVANNA
Application for
Zoning Text Amendment

Owner of Record: _____
 E911 Address: _____
 Phone: _____ Fax: _____
 Email: _____

Applicant of Record: Fluvanna County
 E911 Address: **132 Main Street, Palmyra, VA 22963**
 Phone: **434-591-1910** Fax: **434-591-1911**
 Email: **mjweaver@co.fluvanna.va.us**

Representative: Same as Applicant
 E911 Address: _____
 Phone: _____ Fax: _____
 Email: _____

Note: If applicant is anyone other than the owner of record, written authorization by the owner designating the applicant as the authorized agent for all matters concerning the request shall be filed with this application.

Proposed amendment to the Zoning Ordinance: (attach additional sheets as necessary)
 If the amendment proposes to replace existing text, please provide a full copy of the existing text for the affected section.

Location of Parcel: _____ Section: Portions of Sec. 19-8 & Article 22

Proposed Text: See attached Ordinance

By signing this application, the undersigned owner/applicant authorizes entry onto the property by County Employees, the Planning Commission, the Board of Supervisors, and the Board of Zoning Appeals during the normal discharge of their duties in regard to this request.

Date: 1/28/2011 Signature of Owner/Applicant: *Arthur Weaver*

Subscribed and sworn to before me this 28th day of January, 2011 Register # 347136

My commission expires: 31 January 2012 Notary Public: *Maury J Weaver*

Date Received: <u>1-28-11</u>	PH Sign Deposit Received: <u>N/A</u>	Application #: <u>ZTA 11 : 01</u>
\$550 fee paid: <u>N/A</u>		
Advertisement Dates: <u>Feb 10 + 17, 2011</u>	Advertisement Dates: <u>March 3 + 10, 2011</u>	
APO Notification:	APO Notification:	
Date of Hearing: <u>Feb 23, 2011</u>	Date of Hearing: <u>March 16, 2011</u>	
Decision:	Decision:	

Matthew J. Weaver

From: Goodale, James E. [James.Goodale@VDOT.virginia.gov]
Sent: Thursday, March 03, 2011 7:15 AM
To: Matthew J. Weaver
Subject: RE:

Matt,

I agree on having the zoning law changed for sidewalks. If the sidewalks are built to VDOT's specs there would be no arguments. It is spelled out in the spec and regs (black and white). I agree on having sidewalks in subdivisions. Have a great day.

*James E. Goodale
Highway Permits & Subdivision
Zions Crossroads South
P.O. Box 1017
Froy, VA. 22974
(434) 589- 2358*

From: Matthew J. Weaver [mailto:mjweaver@co.fluvanna.va.us]
Sent: Wednesday, March 02, 2011 2:37 PM
To: mkbrent7@gmail.com; Goodale, James E.; Rice, Gary (VDH); Andy Wills; Roger Black; Samuel Babbitt; Barry Bibb
Cc: Steven Tugwell; Darren Coffey
Subject:

Dear TRC Member,

There will be no TRC meeting this month. However, please review the attached proposed Zoning Text Amendment. These modifications affect the Subdivision and Zoning ordinance to require sidewalks in new commercial and industrial zoned developments. Please review and return any comments to me by Monday, March 7, 2011.

Thanks so much for you input and have a great day!

Matt Weaver
Planner
Fluvanna County
132 Main Street
P.O. Box 540
Palmyra, VA 22963
434-591-1910
mjweaver@co.fluvanna.va.us

**Public Notice
Fluvanna County
Planning Commission
Work Session**

The Fluvanna County Planning Commission will hold a work session on Wednesday, October 13th, 2010 to discuss the requirements of sidewalks in the B-1, B-C, I-1, and I-2 zoning districts, to discuss a waiver process for setbacks in the B-1 and B-C zoning districts to allow for neo-traditional development, and to discuss the FY12-16 Capital Improvement Plan Review. The work session is scheduled for 7:00 p.m. in the Former Board of Supervisors Room in the County Administration Building in Palmyra, Virginia. The public is invited to attend.

**Authorized by
Fluvanna County
Planning Commission**

TO: The Central Virginian/Fluvanna Review
Advertise on the following dates: **7 Oct, 2010**
Authorized by: Fluvanna County Planning Department
Bill to: Fluvanna County Planning Department
PO Box 540, Palmyra, VA, 22963
Mary Weaver
Senior Program Planning Assistant
Fluvanna County, Virginia 22963
Email mweaver@co.fluvanna.va.us
(434) 591-1910 ext. 1061 FAX (434)591-1911

**Public Notice
Fluvanna County
Planning Commission
Work Session**

The Fluvanna County Planning Commission will hold a work session on Wednesday, January 12, 2011 to discuss the Long Range Project Schedule for 2011, initiating a Zoning Text Amendment for requiring sidewalks and allowing for setback waivers in commercial zones, and lastly, a recap of the Rural Zoning Task Force findings. The work session is scheduled for 7:00 p.m. in the Former Board of Supervisors Room in the County Administration Building in Palmyra, Virginia. The public is invited to attend.

**Authorized by
Fluvanna County
Planning Commission**

TO: The Central Virginian/Fluvanna Review
Advertise on the following dates: 6 Jan, 2011
Authorized by: Fluvanna County Planning Department
Bill to: Fluvanna County Planning Department
PO Box 540, Palmyra, VA, 22963

Matt Weaver
Planner
Fluvanna County, Virginia 22963
Email mjweaver@co.fluvanna.va.us
(434) 591-1910 FAX (434)591-1911



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January 19, 2011

PRESS RELEASE

For Immediate Release
Contact: Matt Weaver 591-1910

**Fluvanna County Planning Commission
Considers Amendments to the Sidewalk Requirements of
the Zoning & Subdivision Ordinances**

Why amend the sidewalk requirements? The current Fluvanna County subdivision ordinance does not require sidewalks in commercial or industrial zoned areas. The lack of pedestrian walkways discourages persons from walking to and within commercial shopping centers and exacerbates the County's dependence on the automobile. Amending the sidewalk ordinance will help improve the connectivity within commercial properties and ensure pedestrian access to and from adjacent residential areas, schools, commercial areas or open spaces. Updating the sidewalk requirements would further bring the subdivision ordinance into conformity with the goals of the comprehensive plan for increasing alternative transportation opportunities in Fluvanna County.

What is the process for amending the sidewalk requirements? The Planning Commission is considering the proposed amendments to the subdivision ordinance with respect to sidewalks. At the October 13, 2010 Planning Commission work session, staff gave a brief overview of the proposed amendments, detailing reasoning behind the proposed amendments. The Planning Commission and staff discussed in detail sidewalk requirements for commercial districts and the role sidewalks will have on existing and future commercial development. Discussion continued during the January 12th work session.

What is the next step? At the January 26th Planning Commission meeting, the Commission will consider a resolution to formally initiate a zoning text amendment to make the proposed amendments to the subdivision ordinance with respect to the sidewalk requirements. The Commission may also further discuss the proposed amendments briefly at this meeting. Once the zoning text amendment process is formally initiated, it is anticipated that a public hearing will be scheduled by the Planning Commission for the March 23rd meeting at which any concerned citizen is invited to attend and speak on this proposed amendment. The Board of Supervisors may conduct their public hearing at the April 20th meeting.

If you have any questions or comments regarding these proposed amendments, please do not hesitate to contact Matt Weaver with the Fluvanna County Planning Department at 434-591-1910 or mjweaver@co.fluvanna.va.us.

PUBLIC HEARING

The Fluvanna County Planning Commission will conduct a public hearing pursuant to Virginia Code Sections 15.2-2204 on **Wednesday, March 23rd, 2011 at 7:00 p.m.**, in the Circuit Court Room at the Fluvanna Courts Building in Palmyra, Virginia to consider the following items:

SUP 11:01 – Verizon Wireless – *A request for a special use permit to allow for a 125 foot wireless communications tower with respect to 114.71 acres of Tax Map 30, Section A, Parcel 104. The property is zoned A-1 and is located 0.6 miles east of James Madison Highway (Route 15) at the intersection of Georges Mill Road (Route 663) and Courthouse Road (Route 601). The property is located in the Columbia Election District and is within the Rural Residential Planning Area.*

SUP 11:02 – Otis and Pam Collier – *A request for a special use permit to operate a small home industry with respect to 1.76 acres of Tax Map 12, Section 4, Parcel B1. The applicant is proposing to operate a small business to include automobile refurbishment, small engine repair, and furniture repair. The property is currently zoned A-1 and is located on Hollands Road (Route 630), approximately 0.65 miles east of Bybees Church Road (Route 613). The property is located in the Columbia Election District and is within the Rural Residential Planning Area.*

ZTA 11:01 – Sidewalks & Setbacks – *A request to amend portions of the Fluvanna County Subdivision Ordinance to require sidewalks in commercial and industrial areas but allow for a sidewalk variation (Sec. 19-8-8 Sidewalks; Sec. 19-8-8.1 Sidewalk Variation). Amending this ordinance will help improve the connectivity within commercial properties and ensure pedestrian access to and from adjacent residential areas, schools, commercial areas or open spaces. Updating the sidewalk requirements will further bring the subdivision ordinance into conformity with the goals of the comprehensive plan for increasing alternative transportation opportunities in Fluvanna County.*

A request to amend portions of the Fluvanna County Zoning Ordinance to require sidewalks in commercial and industrial areas and allow for a sidewalk variation (Sec. 22-9-10 Sidewalks; Sec. 22-10-13 Sidewalks; Sec. 22-11-11 Sidewalks; Sec. 22-12-11 Sidewalks; Sec. 22-23-6 Site plan content; Sec. 22-23-7 Additional Improvements and Standards for Major Site Plans). Amending this ordinance will help improve the connectivity within commercial properties, ensure pedestrian access to and from adjacent residential areas, schools, commercial areas or open spaces. Updating the sidewalk language would further bring the zoning ordinance into conformity with the goals of the comprehensive plan for increasing alternative transportation opportunities in Fluvanna County.

A request to amend portions of the Fluvanna County Zoning Ordinance to establish a setback variation for commercial areas (Sec. 22-9-5 Setback regulations; Sec. 22-10-7 Setback regulations; Sec. 22-23-6 Site plan content). Amending this ordinance will allow buildings to be located along the road with a reduced setback. The community design section of the Fluvanna County comprehensive plan states, “In order to create a more functional and appealing pedestrian environment, parking should be less dominant from the street. This means parking should be relegated to the back or sides of buildings, or within structures. In addition, this approach makes for more attractive development.”

Copies of the complete text of the above ordinances and associated plans are available for public review at the Office of the Fluvanna County Administrator during normal business hours. The public is invited to attend these hearings at which persons affected may appear and present their views. Questions or comments may be directed to Planning & Community Development Department, at (434) 591-1910.

TO: The Fluvanna Review

Advertise on the following dates: 10 & 17 March 2011

Authorized by: Fluvanna County Planning Department

Bill to: Fluvanna County Planning Department
PO Box 540, Palmyra, VA, 22963
Pam Philipp
Senior Program Support Assistant
Fluvanna County, Virginia 22963
Email pphilipp@co.fluvanna.va.us
(434) 591-1910 ext. 1055 FAX (434)591-1911

**AN ORDINANCE TO AMEND AND REENACT PORTIONS OF CHAPTER 19 OF
THE FLUVANNA COUNTY CODE WITH RESPECT TO REQUIRE SIDEWALKS AND
ALLOW FOR VARIATION IN COMMERCIAL AND INDUSTRIAL AREAS INCLUDING
SECTIONS 19-8-8 & 19-8-8.1.**

BE IT ORDAINED BY THE FLUVANNA COUNTY BOARD OF SUPERVISORS, pursuant to Virginia Code Sections 15.2-2285, that the Fluvanna County Code be, and it is hereby, amended as follows:

Sec. 19-8-8. Sidewalks

For all major subdivisions within all zoning districts, sidewalks shall be provided along both sides of all proposed public roads and private roads with a sidewalk compliant with current VDOT standards.

Sidewalks shall also provide connections to active or passive open space, schools, or to adjacent commercial and residential developments.

Sec. 19-8-8.1. Sidewalk Variation

A variation to the sidewalk regulations may be granted by the Planning Commission for projects where:

- a) The Virginia Department of Transportation prohibits the construction of sidewalks;
- b) The physical conditions on the lot or adjoining lots, including but not limited to, existing structure and parking areas, existing utility easements, environmental features, or the size and shape of the lot, make it impossible or unfeasible to provide the required sidewalks;
- c) The application of the before mentioned requirements would not further the goals of the Comprehensive Plan or otherwise serve the greater public's health, safety, and welfare.

The applicant shall file a written request with the Department of Planning and Community Development stating why application of a sidewalk variation is necessary and how the before mentioned circumstances may apply to the property.

The Planning Commission shall act on the variation request in conjunction with the county's action on the site plan, subdivision plat or special use permit or, if no such action is required, within sixty (60) days of the date the application was submitted and determined to be complete. The Planning Commission may grant the variation if it determines that one or more applicable circumstances exist. In granting a variation, the Planning Commission may impose conditions deemed necessary to protect the public health, safety, or welfare.

The denial of a variation, or the approval of a variation with conditions objectionable to the applicant, may be appealed to the Board of Supervisors. In considering a variation on appeal, the Board of Supervisors may grant or deny the variation based upon its determination of whether one or more applicable circumstances exist, amend any condition imposed by the Planning Commission, or impose any conditions deemed necessary to protect the public health, safety, or welfare.

AN ORDINANCE TO AMEND AND REENACT PORTIONS OF CHAPTER 22 OF THE FLUVANNA COUNTY CODE WITH RESPECT TO REQUIRE SIDEWALKS AND ALLOW FOR VARIATION IN COMMERCIAL AND INDUSTRIAL AREAS AND TO ALLOW FOR SETBACK VARIATION IN COMMERCIAL AREAS INCLUDING SECTIONS 22-9-5, 22-9-10, 22-10-7 , 22-10-13, 22-11-11, 22-12-11, 22-23-6, 22-23-7.

BE IT ORDAINED BY THE FLUVANNA COUNTY BOARD OF SUPERVISORS, pursuant to Virginia Code Sections 15.2-2285, that the Fluvanna County Code be, and it is hereby, amended as follows:

Article 9. Business, General, District B-1

Sec. 22-9-5. Setback regulations.

- (a) Buildings shall be located not less than fifty (50) feet from any public right-of-way. This shall be known as the "setback line." All parking lots shall be located not less than twenty-five (25) feet from any public right-of-way.
- (b) A variation to the setback regulations may be granted by the Planning Commission for projects in a designated growth area that meet new urban/neo-traditional planning principles, and further the objectives and goals set forth in the comprehensive plan. Appeals must be received in writing within 30 days of the variation decision, and will then be forwarded to the Board of Supervisors for a final determination.

Sec. 22-9-10. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Article 10. Business, Convenience, District B-C

Sec. 22-10-7. Setback regulations.

- (a) Buildings shall be located not less than fifty (50) feet from any public right-of-way. This shall be known as the "setback line." All parking lots shall be located not less than twenty-five (25) feet from any public right-of-way.
- (b) A variation to the setback regulations may be granted by the Planning Commission for projects in a designated growth area that meet new urban/neo-traditional planning principles, and further the objectives and goals set forth in the comprehensive plan. Appeals must be received in writing within 30 days of the variation decision, and will then be forwarded to the Board of Supervisors for a final determination.

Sec. 22-10-13. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Article 11. Industrial, Limited, District I-1

Sec. 22-11-11. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Exceptions approved by the Planning Commission for locating sidewalks along road frontage may be acceptable with the placement of a trail network or greenway on the property providing sufficient pedestrian circulation.

Article 12. Industrial, General, District I-2

Sec. 22-12-11. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Exceptions approved by the Planning Commission for locating sidewalks along road frontage may be acceptable with the placement of a trail network or greenway on the property providing sufficient pedestrian circulation.

Article 23. Site Development Plans

Sec. 22-23-6. Site plan content.

Z. To the greatest extent possible, parking areas shall not be located between the adjacent public right-of-way and the principal structure on the site unless topographic features or vegetation provide effective screening.

1. In the B-1 and B-C zoning districts, a variation to the setback regulations may be granted by the Planning Commission for projects in a community planning area that meet new urban/neo-traditional planning principles, and further the objectives and goals set forth in the comprehensive plan.

Primary considerations for such requests include:

- location of proposed development
- size, scale, character, orientation of proposed development
- adequacy of ROW for future transportation system (evaluate with input from VDOT)
- appropriateness of the proposed setback with surrounding development (proposed and/or existing)
- compatibility with the goals and objectives of the comprehensive plan (applicant should enumerate as many as possible)
- compatibility with new urban/neo-traditional principles (applicant should enumerate as many as possible)

BB. In the B-1, B-C, I-1, and I-2 zoning districts, sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

A variation to the sidewalk regulations may be granted by the Planning Commission for projects where:

- a) The Virginia Department of Transportation prohibits the construction of sidewalks;
- b) The physical conditions on the lot or adjoining lots, including but not limited to, existing structure and parking areas, existing utility easements, environmental features, or the size and shape of the lot, make it impossible or unfeasible to provide the required sidewalks;
- c) The application of the before mentioned requirements would not further the goals of the Comprehensive Plan or otherwise serve the greater public's health, safety, and welfare.

The applicant shall file a written request with the Department of Planning and Community Development stating why application of a sidewalk variation is necessary and how the before mentioned circumstances may apply to the property.

The Planning Commission shall act on the variation request in conjunction with the county's action on the site plan, subdivision plat or special use permit or, if no such action is required, within sixty (60) days of the date the application was submitted and determined to be complete. The Planning Commission may grant the variation if he determines that one or more applicable circumstances exist. In granting a variation, the Planning Commission may impose conditions deemed necessary to protect the public health, safety, or welfare.

The denial of a variation, or the approval of a variation with conditions objectionable to the applicant, may be appealed to the Board of Supervisors. In considering a variation on appeal, the Board of Supervisors may grant or deny the variation based upon its determination of whether one or more applicable circumstances exist, amend any condition imposed by the Planning Commission, or impose any conditions deemed necessary to protect the public health, safety, or welfare.

Sec. 22-23-7. Additional Improvements and Standards for Major Site Plans.

D. Safe and convenient pedestrian and bicycle access to, from, and within the site shall be provided.

1. In the B-1, B-C, I-1, and I-2 zoning districts, sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private. A variation to the sidewalk regulation may be granted per Section 22-23-6(BB).

AN ORDINANCE TO AMEND AND REENACT PORTIONS OF CHAPTER 19 AND CHAPTER 22 OF THE FLUVANNA COUNTY CODE WITH RESPECT TO REQUIRE SIDEWALKS AND ALLOW FOR VARIATION IN COMMERCIAL AND INDUSTRIAL AREAS INCLUDING SECTIONS 19-8-8, 19-8-8.1, 22-9-10, 22-10-13, 22-11-11, 22-12-11, 22-23-6, 22-23-7.

BE IT ORDAINED BY THE FLUVANNA COUNTY BOARD OF SUPERVISORS, pursuant to Virginia Code Sections 15.2-2285, that the Fluvanna County Code be, and it is hereby, amended as follows:

Sec. 19-8-8. Sidewalks

For all major subdivisions within ~~the R-1, R-2, R-3, R-4, & R-10, B-1, BC, PUD, I-1 and I-2~~ all zoning districts, sidewalks shall be provided along both sides of all proposed public roads *and private roads with a sidewalk pavement or asphalt width compliant with current VDOT standards* ~~with a sidewalk pavement or asphalt width of not less than four (4) feet in width.~~

Sidewalks shall also provide connections to active or passive open space, schools, or to adjacent commercial and residential developments.

Sec. 19-8-8.1. Sidewalk Variation

A variation to the sidewalk regulations may be granted by the Planning Commission for projects where:

- a) The Virginia Department of Transportation prohibits the construction of sidewalks;*
- b) The physical conditions on the lot or adjoining lots, including but not limited to, existing structure and parking areas, existing utility easements, environmental features, or the size and shape of the lot, make it impossible or unfeasible to provide the required sidewalks;*
- c) The application of the before mentioned requirements would not further the goals of the Comprehensive Plan or otherwise serve the greater public's health, safety, and welfare.*

The applicant shall file a written request with the Department of Planning and Community Development stating why application of a sidewalk variation is necessary and how the before mentioned circumstances may apply to the property.

The Planning Commission shall act on the variation request in conjunction with the county's action on the site plan, subdivision plat or special use permit or, if no such action is required, within sixty (60) days of the date the application was submitted and determined to be complete. The Planning Commission may grant the variation if it determines that one or more applicable circumstances exist. In granting a variation, the Planning Commission may impose conditions deemed necessary to protect the public health, safety, or welfare.

The denial of a variation, or the approval of a variation with conditions objectionable to the applicant, may be appealed to the Board of Supervisors. In considering a variation on appeal, the Board of Supervisors may grant or deny the variation based upon its determination of whether one or more applicable circumstances exist, amend any condition imposed by the Planning Commission, or impose any conditions deemed necessary to protect the public health, safety, or welfare.

Article 9. Business, General, District B-1

Sec. 22-9-3. Requirements for permitted uses.

All buildings, structures and uses in the B-1 District shall be subject to the provisions of Article 23.

Sec. 22-9-4. Area regulations.

None, except for permitted uses utilizing individual sewerage disposal system. The required area for any such use shall be approved by the administrator who may consult with the health official.

Sec. 22-9-5. Setback regulations.

Buildings shall be located not less than fifty (50) feet from any street right-of-way. This shall be known as the "setback line." All parking lots shall be located not less than twenty-five (25) feet from any street right-of-way.

Sec. 22-9-6. Yard regulations.

The minimum yard requirements for permitted uses adjoining or adjacent to a residential or agricultural district shall be fifty (50) feet. All parking lots and accessory uses shall be located not less than twenty-five (25) feet from any residential or agricultural district.

Sec. 22-9-7. Height regulations.

Buildings may be erected up to forty-five (45) feet in height from grade, except that:

- (a) A public or semi-public building such as a school, place of worship, library, hotel and general hospital may be erected to a height of sixty (60) feet from grade provided that required front, side and rear yard each shall be increased one (1) foot for each foot in height over forty-five (45) feet.
- (b) Spires, belfries, cupolas, monuments, water towers, chimneys, flues, flagpoles, television antennae and radio aerials sixty (60) foot limit. Parapet walls may be up to four (4) feet above the height of the building on which the walls rest.

Sec. 22-9-8. Off street parking.

Off-street parking shall conform with Article 26 of this chapter.

Sec. 22-9-9. Sign regulations.

Sign regulations shall conform to Article 15 of this chapter.

Sec. 22-9-10. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Article 10. Business, Convenience, District B-C

Sec. 22-10-5. Requirements for permitted uses.

All buildings, structures and uses in the BC District shall be subject to the provisions of Article 23.

Sec. 22-10-6. Area regulations.

None, except for permitted uses utilizing individual sewerage disposal system. The required area for any such use shall be approved by the administrator who may consult with the health official.

Sec. 22-10-7. Setback regulations.

- a) Buildings shall be located not less than fifty (50) feet from any street right-of-way. This shall be known as the "setback line." All parking lots shall be located not less than twenty-five (25) feet from any street right-of-way.
- b) Setbacks from any street right of way for buildings and offstreet parking lots may be reduced to five feet with the issuance of a special use permit.

Sec. 22-10-8. Yard regulations.

The minimum yard requirements for permitted uses adjoining or adjacent to a residential or agricultural district shall be fifty (50) feet. All parking lots and accessory uses shall be located not less than twenty-five (25) feet from any residential or agricultural district.

Sec. 22-10-9. Height regulations.

Buildings may be erected up to thirty-five (35) feet in height from grade, except that:

- (a) Any building otherwise permitted may be erected to a height of forty-five (45) feet from grade and a public or semi-public building such as a school, place of worship, or library may be erected to a height of sixty (60) feet from grade; provided, in any such case, that required setback and side and rear yards each shall be increased one (1) foot for each foot in height over thirty-five (35) feet.
- (b) Spires, belfries, cupolas, monuments, water towers, chimneys, flues, flagpoles, television antennas, and radio aerials are exempt. Parapet walls may be up to four (4) feet above the height of the building on which the walls rest.

Sec. 22-10-10. Off street parking.

Off-street parking shall conform with Article 26 of this chapter.

Sec. 22-10-11. Sign regulations.

Sign regulations shall conform to Article 15 of this chapter.

Sec. 22-10-12. Special provisions for accessory uses and structures.

Uses and structures which are customarily accessory and clearly incidental shall be permitted, provided establishment of the same shall not be permitted until construction has commenced on the principal building or the principal use has been established.

Sec. 22-10-13. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Article 11. Industrial, Limited, District I-1

Sec. 22-11-3. Requirements for permitted uses.

- (a) Before a zoning permit shall be issued or construction commenced on any permitted use in this district, or a permit issued for a new use, the applicant for the proposed use shall comply with the provisions of Article 23 of this chapter.
- (b) Screening from adjacent business, residential and agricultural district shall be required.
- (c) Landscaping may be required within any established or required front setback area. The plans and execution must take into consideration traffic hazards.

Sec. 22-11-4. Area regulations.

None, except for permitted uses utilizing individual sewerage disposal system. The required area for any such use shall be approved by the administrator who may consult with the health official.

Sec. 22-11-5. Setback regulations.

Buildings and accessory uses shall be located not less than one hundred (100) feet from any street right-of-way and all parking lots shall be located not less than fifty (50) feet from any street right-of-way except that:

- (a) Buildings and accessory uses may be located less than one hundred (100) feet, but not less than fifty (50) feet, from a street right-of-way, provided that said street:
 - (i) is an access road within a subdivision for business or industrial uses and serves properties that contain industrial zoning district classifications only;
 - (ii) is a cul-de-sac or an interior road; and
- (b) All parking lots shall be located not less than twenty-five (25) feet from any street right-of-way.

This shall be known as the "building setback line." (Ord. 12-19-07)

Sec. 22-11-6. Yard regulations.

When permitted uses adjoin agricultural, residential, or business districts the minimum yard requirements shall be fifty (50) feet. All parking lots shall be located not less than twenty-five (25) feet from any residential or agricultural district.

Sec. 22-11-7. Height regulations.

Buildings may be erected up to forty-five (45) feet in height from grade, except that:

- (a) A public or semi-public building may be erected to a height of sixty (60) feet from grade provided that required front, side and rear yard each shall be increased one (1) foot for each foot in height over forty-five (45) feet.

(b) Spires, belfries, cupolas, monuments, water towers, chimneys, flues, flagpoles, television antennae and radio aerials sixty (60) foot limit. Parapet walls may be up to four (4) feet above the height of the building on which the walls rest.

Sec. 22-11-8. Coverage regulations.

Impervious surface may cover up to eighty percent (80)% of the area of the lot.

Sec. 22-11-9. Off-street parking.

Off-street parking shall conform with Article 26 of this chapter.

Sec. 22-11-10. Sign regulations.

Sign regulations shall conform with Article 15 of this chapter.

Sec. 22-11-11. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Exceptions approved by the Planning Commission for locating sidewalks along road frontage may be acceptable with the placement of a trail network or greenway on the property providing sufficient pedestrian circulation.

Article 12. Industrial, General, District I-2

Sec. 22-12-3. Requirements for permitted uses.

- (a) Before a zoning permit shall be issued or construction commenced on any permitted use in this district, or a permit issued for a new use, the applicant for the proposed use shall comply with the provisions of Article 23 of this chapter.
- (b) Screening from adjacent business, residential and agricultural district shall be required.
- (c) Landscaping may be required within any established or required front setback area. The plans and execution must take into consideration traffic hazards.

Sec. 22-12-4. Area regulations.

For permitted uses utilizing individual sewage disposal systems, the required area for any such use shall be approved by the health official. The administrator may require a greater area if considered necessary.

Sec. 22-12-5. Setback regulations.

Buildings shall be located not less than two hundred (200) feet from any street right-of-way. This shall be known as the "setback line."

Sec. 22-12-6. Yard regulations.

When permitted uses adjoin agricultural, residential, or business districts the minimum yard requirements shall be fifty (50) feet.

Sec. 22-12-7. Height regulations.

Buildings may be erected up to forty-five (45) feet in height from grade, except that:

- (a) A public or semi-public building such as a school, place of worship, library, hotel and general hospital may be erected to a height of sixty (60) feet from grade provided that required front, side and rear yard each shall be increased one (1) foot for each foot in height over forty-five (45) feet.
- (b) Spires, belfries, cupolas, monuments, water towers, chimneys, flues, flagpoles, television antennae, and radio aerials are exempt. Parapet walls may be up to four (4) feet above the height of the building on which the walls rest.

Sec. 22-12-8. Coverage regulations.

Buildings or groups of buildings with their accessory buildings may cover up to sixty percent (60%) of the area of the lot. Additional coverage may be permitted by the governing body.

Sec. 22-12-9. Off -street parking.

Off-street parking shall conform with Article 17 of this chapter.

Sec. 22-12-10. Sign regulations.

Sign regulations shall conform with Article 15 of this chapter.

Sec. 22-12-11. Sidewalks.

Sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.

Exceptions approved by the Planning Commission for locating sidewalks along road frontage may be acceptable with the placement of a trail network or greenway on the property providing sufficient pedestrian circulation.

Article 23. Site Development Plans

Sec. 22-23-6. Site plan content.

The site plan, or any portion thereof, involving engineering, urban planning, landscape architecture, architecture, or land surveying, shall be prepared by a qualified person. Final site plans submitted for approval shall be certified by an architect, landscape architect, engineer, or land surveyor licensed or certified to practice by the Commonwealth of Virginia within the limits of his respective license or certification. The minor or major site plan shall include:

- A. The proposed title of the project and the name of the engineer, architect, landscape architect, surveyor, and developer, as applicable.
- B. A signature panel for the Director of Planning to indicate approval.
- C. North arrow, scale graphic, and date.
- D. A vicinity map.
- E. Existing zoning and zoning district boundaries on the property in the development and on immediately surrounding properties. All special zoning requirements attached directly to the site as a result of the issuance of any Special Use Permit, variance, or rezoning. Proposed changes in zoning, if any.
- F. The boundaries of the property in the development, including bearings and distances.
- G. All existing property lines, existing streets or rights-of-way opened or unopened; buildings, watercourses, and lakes; and other existing physical features in or adjoining the project. The physical features, such as watercourses, waterways and lakes on the adjoining properties need only be shown in approximate scale and proportion.
- H. Features of particular historic, cultural, scientific, or scenic significance as identified in the Comprehensive Plan, by the Director of Planning, or by any County department or state agency having site plan review responsibilities, or by the Virginia Department of Historic Resources the Virginia Department of Conservation and Recreation, or the Virginia Outdoors Foundation including, but not limited to, historic features, archaeological features, and graveyards.
- I. Building setback lines; the location of all proposed buildings and structures, accessory and main; number of stories and height; proposed general uses for each building; and the number, size, and type of dwelling units where applicable. Preliminary plans and elevations for main and accessory buildings.
- J. Type, location, height, and materials of all existing and proposed fences and walls.
- K. Site coverage, showing percentage of site in buildings, parking, and open space.
- L. Existing and proposed topography and contour lines of the development site with a contour interval of two (2) feet or less for major site plans, five (5) feet or less for minor site plans, supplemented where necessary by spot elevations.
- M. The location and size of sanitary and storm sewers, gas lines, water mains, culverts, and other underground structures; all overhead utilities and supporting poles in or affecting the development area, including existing and proposed facilities; and easements for these facilities.
- N. The location, dimension, and character of construction of proposed streets, alleys, and driveways; and the location, type and dimensions of means of ingress and egress to the site. When proposed streets intersect with or adjoin existing streets, both edges of existing pavement surface or curb and

gutter must be indicated for a minimum of one hundred fifty (150) feet or the length of connection, whichever is the greater distance.

- O. The location of all existing and proposed off-street parking and parking bays, loading spaces, and pedestrian walkways, indicating types of surfacing, dimensions of stalls, width of aisles and a specific schedule showing the number of parking spaces. See Article 22-26 Off-street Parking and Loading Requirements of this Ordinance.
- P. The location on the site of all living trees with a diameter of twelve (12) inches or greater at DBH (diameter at breast height) proposed to be removed. The site plan shall show heavily wooded areas to be preserved, trees to be retained, removed, and planted, and designated by symbols coincident with the areas of the trees. See Article 22-24 Landscaping and Tree Protection of this Ordinance.
- Q. The location, height, and character of all outdoor lighting systems. See Article 22-25 Outdoor Light Control of this Ordinance.
- R. The location, character, height, means of lighting, and orientation of proposed signs. See Article 22-15 Signs of this Ordinance.
- S. All paving, including, without limitation, gravel or other pervious surfaces, shall be of a design and quality to support the traffic which can reasonably be expected to be generated by the proposed use, as required by Article 22-26 Off-Street Parking and Loading.
- T. Limit of one-hundred-year floodplain, as defined in Section 22-23-14(a)(5).
- U. Location of any wetlands in compliance with applicable federal, state, and local definition of wetlands.
- V. The location and dimensions of proposed recreation or open space, and required amenities and improvements, including details of disposition, in accordance with any open space or recreation plan adopted by the County.
- W. Any necessary notes required by the Director of Planning to explain the purpose of specific items on the plan.
- X. Cul-de-sacs may not be construed or employed as a parking area. Suitable easements for future public water and sewer facilities necessary to serve the property shall be indicated on the plan.
- Y. All new electrical, telephone, cable television, fiber optic, and other utility lines on the site shall be installed underground.
- Z. To the greatest extent possible, parking areas shall not be located between the adjacent public right-of-way and the principal structure on the site unless topographic features or vegetation provide effective screening.
- AA. Site planning shall consider the future development of adjacent parcels as recommended by the Fluvanna County Comprehensive Plan or other approved local plan and as may be indicated by any filed site plan, whether approved or under review. The site plan shall provide for safe and convenient vehicular and pedestrian circulation between sites to be occupied by complementary uses.
- BB. *In the B-1, B-C, I-1, and I-2 zoning districts, sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private.*

A variation to the sidewalk regulations may be granted by the Planning Commission for projects where:

- a) The Virginia Department of Transportation prohibits the construction of sidewalks;*

- b) *The physical conditions on the lot or adjoining lots, including but not limited to, existing structure and parking areas, existing utility easements, environmental features, or the size and shape of the lot, make it impossible or unfeasible to provide the required sidewalks;*
- c) *The application of the before mentioned requirements would not further the goals of the Comprehensive Plan or otherwise serve the greater public's health, safety, and welfare.*

The applicant shall file a written request with the Department of Planning and Community Development stating why application of a sidewalk variation is necessary and how the before mentioned circumstances may apply to the property.

The Planning Commission shall act on the variation request in conjunction with the county's action on the site plan, subdivision plat or special use permit or, if no such action is required, within sixty (60) days of the date the application was submitted and determined to be complete. The Planning Commission may grant the variation if he determines that one or more applicable circumstances exist. In granting a variation, the Planning Commission may impose conditions deemed necessary to protect the public health, safety, or welfare.

The denial of a variation, or the approval of a variation with conditions objectionable to the applicant, may be appealed to the Board of Supervisors. In considering a variation on appeal, the Board of Supervisors may grant or deny the variation based upon its determination of whether one or more applicable circumstances exist, amend any condition imposed by the Planning Commission, or impose any conditions deemed necessary to protect the public health, safety, or welfare.

Sec. 22-23-7. Additional Improvements and Standards for Major Site Plans.

The following improvements and minimum standards, as applicable, shall be required and provided for in a major site plan:

- A. All streets and highway construction standards and geometric design standards shall be in accordance with those specified by Fluvanna County and the Virginia Department of Transportation.
- B. The pavement of vehicular travel lanes, driveways, or alleys designed to permit vehicular travel on the site and to and from adjacent property and parking areas.
- C. All parking and other vehicular areas shall be so designed as to provide safe and convenient access by all vehicles which can reasonably be anticipated to use the site, including delivery and service vehicles as well as customer and employee vehicles.
- D. Safe and convenient pedestrian and bicycle access to, from, and within the site shall be provided.
 1. *In the B-1, B-C, I-1, and I-2 zoning districts, sidewalks that comply with the most recent VDOT specifications shall be required on both sides of all roadways, public and private. A variation to the sidewalk regulation may be granted per Section 22-23-6(BB).*
- E. Widening or extension of the nearest abutting developed street shall be provided as required by Fluvanna County and the Virginia Department of Transportation. Where the proposed development does not abut a developed public street, a plan of access shall be submitted for approval in conjunction with the site plan.
- F. Traffic control devices, signs, and pavement markings shall be required. Electric traffic control devices shall be provided by the developer where the anticipated traffic volumes from the proposed development exceed the thresholds established by the Virginia Department of Transportation.
- G. All drainage structures and facilities shall be adequate to provide efficient and complete drainage of surface waters from the site into adequate channels. They shall comply with the standards and applicable provisions of the Virginia Erosion and Sedimentation Control Handbook, Drainage Manual of the Virginia Department of Transportation, and the regulations of the Virginia Department of Environmental Quality.
- H. All public water supply and sewerage systems shall comply with the provisions hereof, with all applicable approvals of Fluvanna County and the Virginia Department of Health.
- I. Provisions for the adequate disposition of surface water in accordance with design criteria and construction standards of the Fluvanna County, indicating location, sizes, types and grades of ditches, catch basins, and pipes; and connection to existing drainage systems.
- J. Provisions and schedule for approval of adequate control of erosion and sedimentation, in accordance with the Fluvanna County Erosion and Sedimentation Control program.