

AGENDA
BOARD OF SUPERVISORS
REGULAR MEETING
JANUARY 26, 2021

1. 6:30 p.m. – [Work Session with Ms. Lydeana Martin and Ms. Jennifer Wilsie, Community Development Block Grant. Floyd County Housing Rehabilitation Project.](#)
2. 7:00 p.m. – Meeting called to order, Board Room, County Administration Building.
3. Opening Prayer.
4. Pledge of Allegiance.
5. [Approval of disbursements.](#)
6. 7:00 p.m. – Public Comment Period.*
7. 7:15 p.m. – [Ms. Amy Ingram, Registrar, and Mr. Mike Maslaney, Electoral Board.](#)
8. 7:30 p.m. – [Representative from Federal Engineering to discuss radio system.](#)
9. Constitutional Officers' Report.
10. County Administrator's Report.
 - a. [Contract with Robinson, Farmer, Cox Associates for audit services for a three-year term.](#)
 - b. [Contract with Atlantic Emergency Solutions for an Enforcer 750 Gallon Pumper for a purchase price of \\$598,829.00.](#)
 - c. Request permission to go ahead with lighting update at Maintenance Shop prior to re-roof of facility.
 - d. Discussion of seeking financing for equipment and other capital items.
 - e. Discussion of vaccine center one day a week in Floyd County.
11. Old/New Business.
12. Board Member Time.
13. Adjournment.

*All persons desiring to be heard shall be accorded an opportunity to present written comments or oral testimony within such reasonable time limits as determined by the Board of Supervisors. Due to the public health threat posed by the COVID-19 coronavirus pandemic, current guidance by the Governor of Virginia and the Virginia Department of Health on social distancing and public gatherings; proper social distancing and protective measures will be observed at all times. Citizens who desire to provide public comment in person are asked to sit in designated spots as directed by staff until the citizen is invited to address the Board. The meeting will be streamed live via Internet. Any Floyd County citizen wishing to speak by phone may call County Administration at 540/745-9300 by 4:00 p.m. on January 25, 2021 and provide their telephone number and express their desire to provide comment by phone. Citizens who desire to provide public comment by phone will be called during the meeting. Any Floyd citizen can also provide written comments prior to the meeting and those comments will be provided to the Board of Supervisors, and entered into the official minutes of the meeting and summarized by the Chair or designee at the meeting for the benefit of the public. For detailed information, the public is directed to call the County Administration office.



6580 Valley Center Drive | Suite 124 | Radford, VA 24141 | 540-639-9313

N R V R C . O R G

MEMORANDUM

To: Floyd County Board of Supervisors

From: Jennifer Wilsie, Senior Planner

Date: January 21, 2021

Re: Contract Items for the Floyd County Scatter Site Housing Rehab Project

Floyd County was awarded \$1,080,000 in Community Development Block Grant (CDBG) funds from the Virginia Department of Housing and Community Development (DHCD). These funds will assist a minimum of 15 low-to-moderate income households with housing repairs. In order for the County to execute its grant contract with DHCD and begin assisting residents with their housing needs, it must complete a series of pre-contract activities and documents. The attached pre-contract items are documents that require approval by the Board of Supervisors.

Many of these documents (items #1-6) are based on boiler-plate templates required by DHCD and customized to reflect the County. Documents 7, 8, and 9 are living documents that detail how the County will administer the housing rehab program, list the members of its governing boards, articulate the parameters of how the funds will be used, and identify eligible activities to be funded by any Program Income. These documents have been created and reviewed by the project's Management Team.

1. Section 3 Business and Employment Plan
2. Non-discrimination policy
3. Section 504 Self Evaluation Site Accessibility Checklist
4. Section 504 Grievance Procedure
5. Anti-displacement Plan
6. Fair Housing Certification
7. Floyd Housing Rehab Program Design
8. Floyd Housing Rehab Management Plan and Timeline
9. Floyd Housing Rehab Program Income Plan

Strengthening the Region through Collaboration

Counties

Floyd | Giles
Montgomery | Pulaski

City

Radford

Towns

Blacksburg | Christiansburg
Floyd | Narrows | Pearisburg
Pulaski | Rich Creek

Higher Education

Virginia Tech
Radford University
New River Community College

SECTION 3
BUSINESS AND EMPLOYMENT PLAN

1. The County of Floyd designates as its Section 3 Business and Employment Project Area the County of Floyd.
2. Floyd County, its contractors, and designated third parties shall in utilizing Community Development Block Grant (CDBG) funds utilize businesses and lower income residents of the County in carrying out all activities, to the greatest extent feasible.
3. In awarding contracts for non-construction, materials, and supplies Floyd County, its contractors, and designated third parties shall take the following steps to utilize businesses which are located in or owned in substantial part by persons residing in the County:
 - Floyd County shall identify through various and appropriate sources including:
 - The Roanoke Times
 - Local Newspaper of General Circulation
 - _____
 - _____

the business concerns within the County which are likely to provide construction contracts, non-construction contracts, materials, and services which will be utilized in the activities funded through the CDBG.

 - (c) The identified contractors and suppliers shall be included on bid lists used to obtain bids, quotes or proposals for work or procurement contracts which utilize CDBG funds.
 - (d) To the greatest extent feasible the identified business and any other project area business concerns shall be utilized in activities which are funded with CDBG funds.

4. Floyd County and its contractors and subcontractors shall take the following steps to encourage the hiring of lower income persons residing in the County:

(a) Floyd County in consultation with its contractors (including design professionals) shall ascertain the types and number of positions for both trainees and employees which are likely to be used to conduct CDBG activities.

(b) Floyd County shall advertise through the following sources:

The Roanoke Times
Project Area Newspaper of General Circulation

the availability of such positions with the information on how to apply.

(c) Floyd County, its contractors, and subcontractors shall be required to maintain a record of inquiries and applications by project area residents who respond to advertisements and shall maintain a record of the status of such inquiries and applications.

(d) To the greatest extent feasible, Floyd County, its contractors, and subcontractors shall hire lower income project area residents in filling training and employment positions necessary for implementing activities funded by the Community Development Block Grant (CDBG).

Duly adopted at the regular meeting of Floyd County on _____, 2021.

Cynthia Ryan, Chief Executive Officer
Signature of Authorized Official

NON-DISCRIMINATION POLICY

The *County of Floyd* or any employee thereof will not discriminate in employment, housing or accommodations because of race, color, religion, national origin, sex or gender, age, familial status, source of income, veteran status, disability, sexual orientation, or gender identity. Administrative and personnel officials will take affirmative action to ensure that this policy shall include, but not be limited, to the following: employment, upgrading, demotion or transfer; rates of pay or other forms of compensation; and selection for training.

Duly adopted at the regular meeting of the Floyd County Board of Supervisors on _____, 2021.

Cynthia Ryan, Chief Executive Officer
Signature of Authorized Official

SELF-EVALUATION SITE ACCESSIBILITY CHECKLIST

This checklist is intended to be used as a relatively quick and easy guide to determine a building's physical accessibility. Detailed specifications for each area can be found in the Uniform Federal Accessibility Standards (UFAS).

Comments should be made on all "No" answers, and should include alterations that can or will be made, any insurmountable obstacles to accessibility, or other relevant circumstance or considerations.

Name of Site: Floyd County Administration Building

<u>PARKING</u>	<u>YES</u>	<u>NO</u>
Does the facility have designated parking spaces for disabled individuals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are spaces of adequate width (13 ft.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the spaces marked with the universal access symbol?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are they near the building's entrance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments: _____

<u>BUILDING ENTRANCE</u>	<u>YES</u>	<u>NO</u>
Is the main entryway wheelchair-accessible? (Level entry or properly sloped ramp; 32" wide, non-revolving door)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If not, is there a reasonable alternative entry?	<input type="checkbox"/> <u>n/A</u>	<input type="checkbox"/>
Is the entry relatively free of obstacles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments: _____

MEETING ROOMS

YES

NO

Can all rooms to be used for meetings or meals be reached without using steps or escalators?

If elevator use is required, are the elevators accessible? (36" wide door, 54" deep x 68" wide car, wheelchair accessible controls, tactile buttons, auditory floor indicators)

N/A

If room changes are required between sessions, are pathways accessible? (36" wide hallways, free of obstacles)

Are doorways wide enough to accommodate a wheelchair? (32" wide)

Comments: _____

FACILITIES

YES

NO

Are restrooms wheelchair-accessible? (Adequate floor space for wheelchair; grab bars, paper products, lavatories at proper height; extended faucet handles)

Are paths to the restrooms accessible?

Are drinking fountains wheelchair accessible?

Can telephones be used from a wheelchair?

Comments: Nobody uses water fountain because of concern for quality of water. We provide bottled water for everybody.

PREPARER:

Cynthia Ryan
Preparer's Signature

3/19/2020
Date

Cynthia Ryan
Preparer's Name (printed)

Asst. County Administrator
Title (printed)

Section 504 Grievance Procedure

Floyd County has adopted an internal grievance procedure providing for prompt and equitable resolution of complaints alleging any action prohibited by the Department of Housing and Urban Development's (HUD) (24 CFR 8.53(b) implementing Section 504 of the Rehabilitation Act of 1973, as amended (29 USC 794). Section 504 states, in part, that "no otherwise qualified handicapped individual . . . shall solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. . . ."

Complaints should be addressed to: Cynthia Ryan, Acting County Administrator, Floyd County Administration, PO Box 218, Floyd, Virginia, 540 745-9300, who has been designated to coordinate Section 504 compliance efforts.

1. A complaint should be filed in writing or verbally contain the name and address of the person filing it, and briefly describe the alleged violation of the regulations.
2. A complaint should be filed within seven (7) after the complainant becomes aware of the alleged violation. (Processing of allegations of discrimination occurring before this grievance procedure was in place will be considered on a case-by-case basis.)
3. An investigation, as may be appropriate, shall follow a filing of a complaint. The investigation will be conducted by Cindy Ryan. These rules contemplate informal but thorough investigations, affording all interested persons and their representatives, if any, an opportunity to submit evidence relevant to a complaint. Under 24 CFR 8.53(b), Floyd County need not process complaints from applicants for employment or from applicants for admission to housing.
4. A written determination as to the validity of the complaint and description of resolution, if any, shall be issued by Cindy Ryan and a copy forwarded to the complainant no later than fourteen (14) after its filing.
5. The Section 504 coordinator shall maintain the files and records of Floyd County relating to the complaints filed.
6. The complainant can request a reconsideration of the case in instances where he or she is dissatisfied with the resolution. The request for reconsideration should be made within seven (7) days to Cindy Ryan.
7. The right of a person to a prompt and equitable resolution of the complaint filed hereunder shall not be impaired by the person's pursuit of other remedies such as the filing of a Section 504 complaint with the Department of Housing and Urban Development. Utilization of this grievance procedure is not a prerequisite to the pursuit of other remedies.
8. These rules shall be construed to protect the substantive rights of interested persons, to meet appropriate due process standards and to assure that Floyd County complies with Section 504 and the HUD regulations.

Duly adopted at the regular meeting of the Board of Supervisors on _____, 2021.

Signature of Authorized Official

Residential Anti-Displacement and Relocation Assistance Plan Certification

Floyd County will replace all occupied and vacant occupiable low/moderate-income dwelling units demolished or converted to a use other than as low/moderate income dwelling unit as a direct result of activities assisted with funds provided under the *Housing and Community Development Act of 1974*, as amended. All replacement housing will be provided within three (3) years of the commencement of the demolition or rehabilitation relating to conversion.

Before obligating or expending funds that will directly result in such demolition or conversion, Floyd County will make public and advise the state that it is undertaking such an activity and will submit to the state, in writing, information that identifies:

1. A description of the proposed assisted activity;
2. The general location on a map and approximate number of dwelling units by size (number of bedrooms) that will be demolished or converted to a use other than as low/moderate-income dwelling units as a direct result of the assisted activity;
3. A time schedule for the commencement and completion of the demolition or conversion;
4. The general location on a map and approximate number of dwelling units by size (number of bedrooms) that will be provided as replacement dwelling units;
5. The source of funding and a time schedule for the provision of replacement dwelling units;
6. The basis for concluding that each replacement dwelling unit will remain a low/moderate-income dwelling unit for at least 10 years from the date of initial occupancy; and
7. Information demonstrating that any proposed replacement of dwelling units with smaller dwelling units is consistent with the housing needs of low- and moderate- income households in the jurisdiction.

Floyd County will provide relocation assistance to each low/moderate –income household displaced by the demolition of housing or by the direct result of assisted activities. Such assistance shall be that provided under Section 104 (d) of the *Housing and Community Development Act of 1974*, as amended, or the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended.

Floyd County's FY project includes the following activities:

- Housing rehabilitation
- Demolition of homes slated for substantial reconstruction
- Substantial reconstruction

The activities as planned will not cause any displacement from or conversion of occupiable structures. As planned, the project calls for the use of existing right-of-way or easements to be purchased or the acquisition of tracts of land that do not contain housing. Floyd will work with the grant management staff, engineers, project area residents, and the Department of Housing and Community Development to ensure that any changes in project activities do not cause any displacement from or conversion of occupiable structures.

In all cases, an occupiable structure will be defined as a dwelling that meets local building codes or a dwelling that can be rehabilitated to meet code for \$25,000 or less.

Cynthia Ryan, Acting County Administrator

Date

Fair Housing Certification

Compliance with Title VIII of the Civil Rights Act of 1968

WHEREAS, Floyd County has been offered and intends to accept federal funds authorized under the Housing and Community Development Act of 1974, as amended, and

WHEREAS, recipients of funding under the Act are required to take action to affirmatively further fair housing;

THEREFORE, Floyd County agrees to take at least one action to affirmatively further fair housing each grant year, during the life of its project funded with Community Development Block Grant funds. The action taken will be selected from a list provided by the Virginia Department of Housing and Community Development.

Cynthia Ryan, Chief Executive Officer
Signature of Authorized Official

Date

Floyd County Housing Rehabilitation Project

PROGRAM DESIGN

1. Purpose and Objective

The purpose of the Floyd County Housing Rehabilitation project is to serve the housing needs of low-to-moderate income households in Floyd County by bringing the homes up to Housing Quality Standards (HQS) through rehabilitation or substantial reconstruction of owner-occupied or investor owned homes. Floyd County believes that all of its citizens deserve the opportunity for safe, affordable, and sanitary housing and access to fresh, potable water.

2. Project Area Boundaries

The Floyd Housing Rehabilitation project is a scatter-site housing rehabilitation program for owners and renters in Floyd. The project area consists of income-eligible households with documented housing need in the County of Floyd.

3. Benefit Requirements

- 100% of single-family structures and multi-family units that are rehabilitated with CDBG funds must be inhabited by LMI households verified to meet HUD's income limits for the project area;
- When CDBG funds are for site development for single family subdivisions, 51% of the housing units in that development must be occupied by LMI households, as identified in the CDBG Agreement, within two (2) years of administrative closeout;
- When CDBG funds are used to bring multi-family housing units up to DHCD HQS, said units must be occupied by 100% LMI households;
- In instances when CDBG funds are used to improve building-wide components e.g.; roof and HVAC improvements 51% or more of the units in said building must be occupied by LMI households as identified in the CDBG Agreement;
- Unless prior approval is obtained from DHCD, 100% of all beneficiaries must have been project residents at the time of the grant application's submission;
- Moderate-income households may not benefit to the exclusion of low-income households. Low-income households are defined as those whose cumulative income by household size is below 50% of Floyd's median household income;
- The program may not act to deny reasonable benefit to low-income minority, elderly or female-headed households through its guidelines and loan structuring;
- The program may not set aside funds or specific goals that adversely affects the benefit of low-income, minority, elderly or female-headed households;
- Rent charged to the current and subsequent LMI tenants may not be raised for ten (10) years unless the costs to the owner have increased and these costs are directly attributable to the

rehabilitation work i.e., monthly payments on a rehabilitation loan, increased insurance costs, or increased property taxes;

- Regardless of income, all LMI households receiving housing rehabilitation assistance must make a minimum \$25 per month loan payment. If the Grantee has identified potential project participants who cannot afford to pay the minimum \$25 Ability to Pay (ATP) required by the Virginia CDBG program, the Grantee must submit a letter requesting a waiver of the \$25 minimum payment to DHCD for approval. The request must include a printout of a completed HUD Income Form for those participants; and
- Regardless of direct costs incurred by the landlord, rent must be affordable and not exceed the fair market rent limits for Floyd County as established annually by HUD at <https://www.hudexchange.info/programs/home/home-rent-limits/>.

4. Staffing and Oversight

A. Management Team

The Management Team is responsible for monitoring the progress of the project and ensuring the program is completed on time, within budget, and serves the required housing beneficiaries. The Management Team will meet monthly during the 24 month contract period and will compare the initial timeline with reality, identifying corrective measures that may be needed to get the project back on track for completion within the determined time frame.

Management Team duties include:

- Ensuring that the Board of Supervisors get regular updates on the progress of the project;
- Ensuring that the project stays within budget by reviewing costs and expenditures;
- Ensuring that the Project Management Plan is kept up to date with any project changes;
- Ensuring that all problems and/or concerns (including informal complaints) are identified and resolved in a timely and diplomatic manner.

B. Housing Rehabilitation Oversight Board

The Housing Rehabilitation Board responsibilities include:

- Develop and adopt a set of bylaws;
- Review and approve all rehabilitation activities that require formal action;
- Review and approve housing rehabilitation applicants based upon the established prioritization criteria and the recommendation of the Rehab Specialist;
- Approve pre-qualified contractors;
- Approve bids and award construction contracts;
- Resolve complaints or disputes which may develop according to the written Complaints and Appeals procedure;
- Ensure benefits are being provided in accordance with the Program Design; and
- Review and adhere to a DHCD approved Program Income Plan.

The Oversight Board's membership roster and by-laws are attached to the Program Design.

Last updated January 2021

C. Housing Rehab Grant Administrator

Floyd County has contracted with the New River Valley Regional Commission to handle grant administration tasks for the project. The Grant Administrator's responsibilities include:

- Screen potential applicants and assist with application intake
- Conduct income certification in compliance with HUD's Part 5 definition of income
- Conduct an initial and final DHCD HQS inspection, independently of the Rehab Specialist, filling out an HQS inspection form and placing it in the client file
- Oversee the work of the Rehabilitation Specialist
- Review and approve all pay requests and change orders
- Receive all complaints and investigate and make recommendations to solve them
- Oversee the application process and the rehabilitation loan packaging process
- Work with the County to ensure all Deeds of Trust and Promissory Notes are properly recorded
- Track all budgetary expenditures (grant funds and leverage funds) in accordance with DHCD's financial management guidelines
- General record keeping for all records, documentation, and correspondence associated with the grant-related activities of the project

D. Rehab Specialist/Risk Assessor

Floyd County has contracted with Southeast Rural Community Assistance Project (SERCAP) to act as Rehabilitation Specialist for the project. The Rehab Specialist's responsibilities include:

- Conduct detailed Housing Quality Standard (HQS) inspections of eligible properties as determined by the County to document building and sanitary code violations and other substandard or deficient conditions
- Document conditions via written report and photographs or videotape as appropriate
- Develop cost estimates based upon eligible work specifications
- Conduct or arrange lower door testing, lead-based paint testing, asbestos testing, and other risk assessments as necessary
- Prepare bid documents and bid each home for the slated scope of work
- Coordinate with both the homeowner and the Grant Administrator
- Assist with pre-qualifying interested and eligible contractors
- Conduct pre-bid meetings
- Inspect contractors' work for quality
- Review and approve pay requests prior to submittal to County
- Comply with all state and Federal laws and regulations
- Conduct Home Maintenance Education Class for each beneficiary household

E. Loan Officer

Floyd County will contract out the activity of Loan Officer on this project to a third-party provider. The Loan Officer's responsibilities include:

- Collect, record, and forgive payments monthly

- Maintain records of loan balances and final payment due dates
- Issue annual statements to beneficiaries
- Make good faith effort to collect delinquent loans

The Loan Officer is under no liability for loss of funds due to lack of repayment or default by program beneficiaries.

F. Neighborhood Stakeholders

The Floyd Initiative for Safe Housing (FISH) is a local, grass-roots organization that formed in 2017 to address critical home repairs for Floyd County residents. This group of engaged volunteers has been active in the project, assisting with Planning Grant activities to identify and assist interested households with applications for housing repair. FISH will continue to participate in the implementation of the CDBG Housing Rehab Program as their relationships with applicants and strong ties to the community make them an invaluable partner.

5. Applicant Eligibility

A. Eligibility Criteria

Applicant eligibility for receiving housing rehabilitation assistance under this program requires that the applicant meet all four of the following basic criteria:

- 1) The applicant must be open and willing to receive assistance. This includes providing all necessary documentation and paperwork and allowing the Grant Administrator, Rehab Specialist, and the Contractor access to the home within reasonable working hours with reasonable notice.
- 2) The property must be located in Floyd County. The property must be residential, be in need of repairs necessary to meet Housing Quality Standards, be occupied at the time of rehabilitation or the owner must have pre-qualified a low to moderate income family to occupy the dwelling when rehabilitation is complete.
- 3) The applicant must (1) own the property to be rehabilitated, (2) be purchasing the property to be rehabilitated, (3) have Life Rights/Life Tenancy/Life Estate to the property to be rehabilitated, or (4) own a rental unit in need of repairs necessary to meet Housing Quality Standards and where the renter's household aggregate income falls below the low to moderate income guidelines as defined by HUD. In addition, the owner of the property must certify that rent will not exceed the initial rent being charged at the time of rehab or Fair Market Value (as determined by HUD) for a period of ten (10) years or the duration of a loan whichever is greater. The owner also must agree to rent to low and moderate income persons for a period of ten years or the duration of a loan from completion of rehabilitation. The owner shall be required to provide 25% of the estimated rehab total.
- 4) To receive rehabilitation assistance, the household's aggregate income, less uncovered medical expenses and allowable deductions for children and elderly households is less than the current HUD low and moderate income limits as illustrated below, or in the case of vacant dwellings assured to be occupied by low and moderate income persons upon rehabilitation completion.

Annual income limits, as shown below, provide the basis for determining low and moderate income status. Maximum income levels are adjusted annually by the Department of Housing and Urban Development and will automatically become the guidelines during program implementation.

Number of Persons in Household	Maximum Income (2020)
1	\$34,550
2	\$39,450
3	\$44,400
4	\$49,300
5	\$53,250

B. Liens, Debt, and Clear Title

Applicants cannot be denied housing rehabilitation assistance based solely on tax delinquency or other lien on their property. However, the County will conduct a title search of each rehab property to determine if any liens/judgments of a foreclosable nature exist.

C. Application & Selection Process

1. Applications will be solicited from any income eligible resident in Floyd County with documented housing needs. Applications will be accepted on a rolling basis to the Floyd County Administration office.
2. An application will be considered complete if all questions are answered in full and the applicant has signed and dated it.
3. This program is designed to rehabilitate or substantially reconstruct a minimum of 15 existing dwelling structures within the County. As funds available are limited, it is imperative that rehabilitation be scheduled and budgeted to achieve the goal.
4. Consideration will be given to eligible applicants on the basis of a priority evaluation formula. Approved applications will be grouped into rounds of construction bidding, with a minimum of one home and a maximum of four homes each round. Unapproved but eligible applicants from each round will be carried over to the next round for consideration until all units are approved for rehabilitation or all funds are expended.
5. Priority shall be determined on the basis of household size, household income characteristics, elderly status, handicap status, and female head-of-household status.
6. These priority considerations are scored by weighted criteria, listed in Section 5D.
7. Notwithstanding these priority considerations, the Housing Oversight Board reserves the right to approve any eligible applicant for rehabilitation in the interest of expeditiously achieving the overall program objective within the approved budget and time schedule or to eliminate unusual threats to health and safety of neighborhood residents.

D. Applicant Scoring Criteria

The County will implement the following scoring criteria when processing applications:

Household factors:

- Senior citizens in household (65 and older) (1 point)
- Disabled resident in household (1 point)
- Children under 18 in household (1 point)
- Female-headed household (1 point)

Matching factors:

- Weatherization waiting list or good candidate for it (1 point)
- USDA RD 504 applicant or good candidate for it (1 point)
- Possible lead paint (pre-1978 dwelling) AND kids < 6 or pregnant person (1 point)
- Indoor plumbing or water or sewer needs possibly eligible for IPR funds (1 point)
- FISH applicant or good candidate for it (1 point)
- Candidate for Renovation Alliance accessibility work (1 point)
- Located in Citizens broadband expansion area (1 point)
- Candidate for SERCAP Emergency Grant (grant/loan) (1 point)
- Other: _____ (1 point per source)

House condition:

- House likely needs replacement (5 points)
- Roof compromised and beyond FISH's resources (1 point)
- Foundational issues, beyond mobile home skirting need (1 point)
- Heating issues (1 point)
- Health and Safety problems, such as exposed electrical (1 point)

6. Eligible Properties

The following structures are eligible for housing rehabilitation: single-family homes, including conventionally constructed houses, modular housing, mobile homes, and duplex houses, subject to the applicant's eligibility. Properties may be owner-occupied or investor-owned.

Non-residential structures are not eligible to receive housing rehabilitation assistance. Examples of non-residential structures include detached garages, detached storage buildings, other outbuildings, and structures used to house business activities. Garages or carports attached directly to dwelling structures may receive rehabilitation treatment, which is applied to bring the main dwelling structure up to Housing Quality Standards.

No vacant unit shall be rehabilitated with CDBG funding unless the house has a history of being consistently occupied over the last five years and was rented for at least six months of the preceding year, the unit was purchased by an LMI household, or the unit is owned by a locality, housing authority, or non-profit and will be sold to or lease-purchased by an LMI household.

A structure "suitable for rehab" i.e. it can be brought into conformance with the Housing

Last updated January 2021

Rehabilitation standards within allowable expenditures. In particular situations where a housing structure is deemed "not suitable for rehabilitation", i.e. it cannot be brought into conformance with the standards within allowable expenditures, or, it is structurally unsound to rehabilitate, substantial reconstruction is allowed in compliance with DHCD policies and procedures in the Grant Management Manual.

To be deemed "not suitable for rehabilitation", the housing unit must be in such state of disrepair that rehabilitation measures would not be feasible as determined by the Rehabilitation Specialist and Grant Administrator. In addition, the estimated cost of Rehabilitation is more than the estimated cost for constructing a new home. All DHCD requirements must be met prior to proceeding with a Substantial Reconstruction.

7. Rehabilitation Standards

All properties receiving CDBG assistance must be rehabilitated to DHCD Housing Quality Standards. Cosmetic improvements are not eligible for CDBG funding.

A. Housing Condition Assessment

The Housing Rehab Specialist and the Grant Administrator will meet with the program participants during the initial work write-up to discuss the program. The Grant Administrator and Rehabilitation Specialist will perform an HQS inspection before a work write-up is completed and again after the work is complete. After the work write-up is completed, the Housing Rehabilitation Specialist and the Grant Administrator will meet with the homeowner or renter to discuss the work to be undertaken and the bidding and construction process. This Assessment shall provide the basis for rehabilitation work to be performed and related costs. Only activities addressed in the Housing Condition Assessment will be undertaken by this Program, unless otherwise specifically approved by the Housing Rehabilitation Board. Grantees may use up to \$25,000.00 to rehabilitate houses, not including mobile homes, to DHCD HQS.

For rehabilitation projects, two construction contracts are required. The first is for the base construction costs and the second is for any eligible exceptions. Exceptions allow the Grantee to commit up to \$25,000, beyond the base construction cost, to the completion of the project. These additional costs above the \$25,000 limit shall be documented and approved by DHCD. The following activities are considered exceptions:

- Construction of a bathroom
- Installation of a well and/or septic system. CDBG funds may not be used to install "pump and haul" systems. Payment will be made for only one (1) well, regardless of the number of wells drilled
- Provision of water and/or sewer connections
- Provision of ramps and other accessibility features
- Provision of one or more additional bedrooms to relieve an overcrowded situation in which more than two (2) bedrooms are necessary or other changes to a unit's footprint
- Actual lab costs for evaluation of lead dust tests

8. Temporary Relocation

Temporary relocations of residents may be required during the period of rehabilitation work. Temporary relocation as part of rehabilitation due to an assumption of the presence of lead-based paint (LBP) and use of interim controls is mandatory except in the following circumstances:

- All household members are 62 years or older
- All interior work will be completed in an eight- hour period
- All interior work will be completed in five (5) consecutive days and the bedroom(s), bathroom, and kitchen can be isolated from the rehabilitation work
- Only exterior work will be done

Before any beneficiary is temporarily relocated, a written agreement shall be signed between the beneficiary and the County. This agreement must outline the period of time the beneficiary will be relocated, what expenses will be paid by the County, the cost limits for each type of expense, who is responsible for identifying where the beneficiary's possessions will be stored during the relocation, and who is responsible for placing the possessions in said storage, being mindful of security of stored items.

9. Financial Assistance Available

Housing rehabilitation assistance for eligible households will be provided with the following funding terms:

- Loans on CDBG funds will be made at 0% interest over a ten year period.
- All loans will be secured with the following: a three-party agreement, Promissory Note, and Deed of Trust.
- All loans will be considered forgivable loans that are forgiven at a rate of 1/120th per month.
- In the event of a sale of the property to a non-low-to-moderate income person(s) before the term of the loan has ended, the outstanding amount of the loan must be repaid.

A. Ability-to-Pay Calculation

Ability-to-pay calculations will be performed on all investor-owned units using the following calculation:

- Gross Household Income – dependents – elderly – other deductibles = Adjusted Gross Income
- Adjusted Gross Income / 12 = Monthly Income
- Income Available for Housing – (home insurance + real estate tax + HUD's utilities allowance chart) = the maximum rent allowable.

Dependents - \$480 will be deducted for each dependent under the age of 18.

Elderly - \$400 will be deducted for any elderly family (62+)

Other deductibles – medical expenses in excess of 3% of gross income and rent

Utilities – Utility allowances for gas, electric, water, sewer, heat, and garbage (as applicable) will be deducted.

The County will institute a minimum repayment of \$25.00 per month, regardless of Ability to Pay.

Last updated January 2021

10. Contracting Procedures

A. Selecting & Qualifying Contractors

1. This program will pre-qualify contractors eligible to participate in rehabilitation work through the development of a bidders' list. Housing contractors will be notified of the County's housing project, the total dollar amount and estimated number of all rehabilitation contracts to be let, minimum qualifications, and the process by which contractors will be included on the bidders' list. Notification will be through newspaper advertisements, Floyd County's Building Inspector's recommendation, and direct solicitation of area contractors. The Grant Administrator will prepare and maintain the bidders list by verifying the information provided on the pre-qualification forms received. Once a contractor qualifies for the bidders list, he or she will remain on the list for the duration of the County's housing project, unless his or her situation changes with regard to meeting pre-qualification requirements (nonperformance, etc.). All contractors shall be required to carry and prove insurance coverage for comprehensive liability relating to their performance of work prior to beginning work. Workman's Compensation Insurance shall be required of all general contractors as prescribed by the Industrial Commission of Virginia. Pre-qualification of contractors can occur at any time during the construction process.
2. To the greatest extent possible, the Housing Oversight Board encourages that work be performed by local contractors and workers.
3. The Housing Oversight Board also encourages participation by female and minority owned businesses including contractors, subcontractors, and suppliers. To accomplish this objective and to also ensure timely and workmanlike progress, the Housing Oversight Board shall pre-qualify all general contractors and maintain listings of subcontractors and suppliers who wish to participate in this project.
4. Pre-qualification of general contractors shall require as a minimum standard, possession of a Class C or equivalent General Contractor's License and satisfactory demonstration of performance capabilities sufficient to undertake the work. Each contractor, subcontractor and workers must have successfully completed a HUD approved training (Lead Safe Work Practices Training) course **and** the EPA required *Renovation, Repair and Painting* (RRP) training relative to the rehabilitation of housing constructed prior to 1978. This course should be offered at least annually by various localities. The Grant Administrator must obtain verification of attendance by all workers and place it in the Pre-qualified Bidders file.
5. All general contractors shall be approved by the Housing Oversight Board upon recommendation of the Program Administrator.
6. Contractors will be removed from the bid list for the following reasons:
 - a. Failure to start and/or finish jobs on time as set forth in the contract and established at the pre-construction conference.
 - b. Doing poor quality work as determined by the Housing Rehabilitation Specialist.
 - c. Neglecting to take care of warranty work promptly and in a satisfactory manner.
 - d. At the request of the contractor.

B. Bidding & Construction Process

1. The rehabilitation of dwellings shall be accomplished by bidding and constructing in small groups ranging in size from one to four dwellings.

2. The number of groups to be bid will be based on factors such as contractor availability and degree of rehabilitation required for each house.
3. The maximum number of contracts to be awarded at any one time to any one contractor in a single bid grouping shall be three contracts. All contractors must successfully complete one unit before multi-unit contracts will be awarded unless the contractor has prior experience with the CDBG housing rehabilitation program.
4. If the low qualified bid exceeds the cost estimate for rehabilitation work, the Housing Oversight Board may negotiate with the bidder to reduce the contract amount as required.
5. A contractor has a right to withdraw his/her bid anytime up to the time of the bid opening. A bid withdrawal form, sent to the contractor along with the invitation to bid, must be returned to the Rehab Specialist to have the bid withdrawn.

C. Contracts & Agreements

1. The Housing Oversight Board intends to minimize community disruption and maximize the utilization of local businesses and labor during the implementation of this program.
2. Rehabilitation contracts should be implemented in the shortest time practically possible. Generally, single unit contracts will not exceed a term of 60 days for housing rehabilitation and 90 days for substantial reconstruction, without proof of mitigating circumstances.
3. In awarding contracts, the Housing Oversight Board upon recommendation of the Grant Administrator shall be satisfied that the contractor's performance capacity is adequate to complete all required work within the specified period of time. Multiple contracts may be awarded for individual phases to accomplish this goal and to encourage participation by smaller local contractors.
4. Failure to comply with the time requirements could result in a penalty of \$ 100.00 per day liquidated damages until the job is satisfactorily completed. Upon the recommendation of the Housing Rehabilitation Specialist, the Grant Administrator may extend the contract deadline due to weather conditions or the availability of materials. Any extension must be received in writing to relieve the contractor of the deadline liability. The \$100.00 per day penalty will be enforced at the discretion of the County with guidance from the Rehab Specialist.

D. Payment Policy

1. It is the responsibility of the contractor to request partial payments as determined by the schedule established in the contract. The request should be accompanied by a detailed listing of the costs involved on forms supplied by the Rehab Specialist. Inspections to verify the amounts of partial payments will be made by the Rehab Specialist.
2. Partial payments shall be made for work performance, with all partial payments not to exceed ninety percent (95%) of the total contract worth until after owner acceptance and final inspection. These funds will be paid out when the job is satisfactorily closed out.
3. No partial payment will be made for job start up, materials stored, or work unfinished or not inspected.
4. When the contractor has completed the rehabilitation and cleanup work, he shall contact the Housing Rehab Specialist to schedule a punch list inspection. This inspection will be

attended by the Rehab Specialist, the Grant Administrator, the contractor, and the owner. The contractor will be informed of any incomplete or unsatisfactory work at this time.

E. Final Completion & Acceptance

1. When all work is satisfactorily completed and all items on the punch list have been performed, a final inspection will be scheduled which will be attended by the Housing Rehabilitation Specialist, the Grant Administrator, the contractor, the Building Inspector and the owner. Any additional work to satisfactorily complete the work write-up is expected to be completed by the contractor in a prompt manner.
2. At this time, the contractor will give the owner all the warranties for the products and work performed. The owner shall be required to sign off for the rehabilitation work at this time.
3. After the completed job has received the approval of the Rehab Specialist, the final payment will be processed. At this time, the contractor shall submit copies of all warranties to the Housing Rehabilitation Specialist. Normally, these would be submitted for termite control, roofing, siding, hot water heaters, furnaces, and similar items. Processing for job close-out will not commence until copies of all applicable warranties are given to the Housing Rehabilitation Specialist.

11. Loan Servicing

A. Deed of Trust

Unless directed otherwise by DHCD, a 10-year Deed of Trust will be recorded on the rehabilitated property and secures the beneficiary's commitment to adhere to the loan, resale, and residency requirements to the title of the house and property. The Deed of Trust will also reference a Promissory Note.

Payment on the Deed of Trust will be determined by the Ability to Pay calculation. A minimum repayment of \$25.00 is required, regardless of Ability to Pay unless an Ability to Pay waiver has been submitted and approved by DHCD.

B. Loan Servicing

The County will contract with a third party to collect and manage monthly payments, maintain records of loan balances, and final payment due dates. The third party will make a good faith effort to collect delinquent loans. An annual confirmation of primary residence and a loan payment history summary will be provided to each housing beneficiary.

The County will be under no liability for loss of funds due to lack of repayment or default by program beneficiaries.

C. Loan Terms

Rent charged to the current and subsequent LMI tenants may not be raised for 10 years unless the costs to the owner have increased and these costs are directly attributable to the rehab work, i.e., monthly

payments on a rehab loan, increased insurance costs, or increased property taxes. Owners of rehabilitated rental units shall maintain the rental amount which must be at or below the Floyd County FMR (as determined by HUD) Rental amounts exceeding the original rental rate and/or FMR shall be grounds for requiring repayment of the undischarged principal and interest of the loan. Rental limits shall be established at the time of loan approval.

12. Home Maintenance Education Program

Floyd County will include as part of the Rehabilitation Services a Home Maintenance and Education Program that will consist of three elements:

- A systems maintenance element to familiarize the participants with maintenance of the electrical, plumbing and heating systems.
- A home maintenance and repair element to instruct participants on general cleaning and home repair.
- A Household Finance and Budgeting element.

The Rehab Specialist will conduct these training sessions.

13. Conflict of Interest

All applicants, contractors, and sub-contractors, agents, and representatives of the County, including members of the Housing Rehabilitation Oversight Board, shall be bound by and adhere to Chapter 22 of the Virginia State Code regarding Conflict of Interest, Section 2.1 348 through Section 2.1 352 and by Code Section 13.1 39.1.

More specifically, no member of the Floyd County Board of Supervisors at the time of signing the CDBG contract between the Commonwealth of Virginia and Floyd County nor any member of the Housing Rehabilitation Board shall be eligible for any financial assistance or other direct benefits arising out of the implementation of the Floyd County Scatter-site Housing Rehabilitation Project.

14. Complaints and Appeals

Informal complaints regarding construction work should be handled on-site through consultation with the Rehabilitation Specialist and Grant Administrator. If the complaint cannot be resolved in this manner or is considered a formal complaint, it shall be reported immediately and in writing to the Grant Administrator.

The Grant Administrator, upon receiving notification of a dispute, shall take appropriate action to resolve that dispute with assistance and action, if appropriate, by the Housing Oversight Board. Response shall be provided within fifteen (15) days of receipt of the formal complaint.

Any unsuccessful applicant shall be notified that he/she has the right to appeal the decision regarding eligibility for the program. Such an appeal should be made in writing to the Grant Administrator who

will forward the appeal to the Housing Oversight Board for their consideration. Response to an appeal shall be made in writing within fifteen (15) days of receipt.

The Housing Oversight Board shall document all complaints and appeals and related deliberations and report its ruling in writing to the complainant or appellant, County, Grant Administrator, and the Floyd County Board of Supervisors.

Initially, the Grant Administrator and Rehabilitation Specialist will try to resolve any complaints by the homeowner the contractor, or anyone else. If these individuals are unsuccessful, all unresolved issues will be handled and resolved by the Housing Oversight Board. Any and all issues can be appealed if so desired. Anyone that wishes to appeal any issue(s) must do so in the presence of the Floyd County Housing Oversight Board. Those appealing will have a chance to speak their minds (in a respectful manner) present their issue in front of the Board members. The Board members will then (not necessarily on the day of the appeal) discuss and try to resolve any and all issues. The Board of Supervisors would overtake any unresolved issue from the Housing Oversight Board. If none of the aforesaid parties have successfully resolved all issues, then Virginia Department of Housing and Community Development, as a last resort, would make the final determinations and decisions on any and all activities using Community Development Block (CDBG) Grant funding.

15. Program Design Adoption and Amendments

This Program Design shall be adopted by the Floyd County Board of Supervisors and any amendments to the Program Design may be made by action of the Board of Supervisors.

CERTIFICATION OF ADOPTION OR AMENDMENT

The Program Design for the Floyd County Housing Rehabilitation Project was adopted by the Floyd County Board of Supervisors at a regularly held meeting:

Adopted, this _____ day of _____, 2021.

Attest

Chair, Board of Supervisors

FLOYD HOUSING REHABILITATION OVERSIGHT BOARD ROSTER

Floyd County Administrator
Jeff Belshan
Susan Ilove
Joe Italiano
Lydeana Martin (non-voting)
Kenny Rodgers (non-voting)
Karla Turman
Jeff Wade
Jennifer Wilsie (non-voting)
Lauren Yoder

FLOYD HOUSING REHABILITATION OVERSIGHT BOARD BY-LAWS

ARTICLE I - NAME

1-1. This Board of Floyd County shall be named the Housing Rehabilitation Oversight Board and shall be referred to herein as the "Board."

ARTICLE II - PURPOSE

2-1. The purpose of the Board is to provide fair, equitable application of the Floyd County Housing Rehabilitation Project to beneficiaries. Specifically, the Board shall:

- A. Approve rehab beneficiaries.
- B. Select construction contractors.
- C. Approve bid awards.
- D. Approve work write-ups.
- E. Approve cost estimates
- D. Resolve complaints.

ARTICLE III - MEMBERSHIP

3-1. The Board shall consist of at least one (1) elected official, the Certifying Officer, and one (1) neighborhood resident who will not benefit from the program. Non-voting members, at a minimum, shall include the Grant Administrator and the Rehabilitation Specialist.

3-2. Absence from three consecutive meetings without prior notification to the Chairperson and without sufficient cause shall constitute a resignation of the member. After missing two consecutive meetings without prior notification to the Chairperson and without sufficient cause, a member will be notified in writing that his/her absence at one more board meeting shall constitute his/her resignation from the Board. The vacancy thus created shall be filled by Board consensus.

3-3. Any member of the Board may be removed for inefficiency, neglect of duty, or malfeasance in office.

ARTICLE IV - SELECTION OF OFFICERS

4-1. Officers of the Board shall consist of a Chairperson and Vice Chairperson. The Secretary shall be the Grant Administrator.

4-2. The term of office shall be for the duration of the Floyd County Housing Rehabilitation Project.

ARTICLE V - DUTIES OF OFFICERS

5-1. The Chairperson shall preside at all meetings, be informed immediately of any official communication and report same at the next regular Board meeting, certify all official documents involving the authority of the Board, and carry out other duties as assigned by the Board.

5-2. The Vice-Chairperson shall act in the absence or inability of the Chairperson to act, with the full powers of the Chairperson.

5-3. The Secretary shall record attendance at all meetings, record and distribute the minutes of the meetings, notify members of all meetings, maintain a file of all official Board reports and records, and attend to the correspondence necessary for the execution of the duties and functions of the Board.

ARTICLE VI - MEETINGS

6-1. Regular meetings of the Board shall be held as called by the Chairperson on a monthly basis. The Chairperson as needed shall call special meetings.

6-2. The Board may permit any and all members to participate in any meeting by, or conduct the meeting through, the use of any means of communication by which all members participating may simultaneously hear each other during the meeting, including but not limited to telephone, teleconference, or internet-facilitated software. A Board member participating in the meeting by any such means is deemed to be present in person at the meeting.

ARTICLE VII - VOTING

7-1. The presence of fifty percent (50%) of the voting members shall constitute quorum.

7-2. No action of the Board shall be valid unless authorized by the simple majority vote of those present and voting.

7-3. A member of the Board must abstain from voting if he/she is related to a person who is being considered as a beneficiary for the Housing Rehabilitation Project.

7-4. A member of the Board may appoint in writing a proxy with voting authority in the event of his/her absence.

7-5. Any action required or permitted to be taken at a Board meeting may be taken without a meeting if all of the Board members provide a written response through electronic means including but not limited to facsimile and email. Action taken in this manner shall be effective when the last member submits his/her written response, unless the response specifies a different effective date. Action taken in this manner has the effect of a meeting vote and may be described as such in any document.

ARTICLE VIII - ORDER OF BUSINESS

8-1. The order of business for a regular meeting shall be:

- A. Call to order by Chairperson
- B. Approval of minutes
- C. Grant Administrator's report
- D. Unfinished business
- E. New Business
- F. Adjournment

8-2. Parliamentary procedure in Board meetings shall be governed by Robert's Rules of Order.

8-3. The Board shall keep a set of minutes of each meeting, and these minutes shall become a public record. The Secretary shall sign all minutes.

ARTICLE IX - AMENDMENTS

9-1. These By-laws may be amended by a majority vote of the Board.

ARTICLE X - ADOPTION OF BY-LAWS

10-1. These by-laws shall be adopted by a majority vote of the members of this Board.

Adopted:

Signature: _____
Chair

_____ Date

FLOYD COUNTY SCATTER-SITE HOUSING REHABILITATION PROJECT

Project Management Plan
Floyd County, Virginia
January 2021

Applicant: Floyd County

Local Government Contact:

Cindy Ryan
Acting County Administrator
120 West Oxford Street
Floyd, VA 24091

ROLE OF MANAGEMENT PLAN

This Management Plan will serve as a comprehensive guide to the Floyd County Scatter-Site Housing Rehabilitation Management Team on topics concerning roles and responsibilities, management and oversight, finances, establishing and meeting project goals, and the mitigation of issues should they arise.

OVERVIEW OF PROJECT

Floyd County is administering a Community Development Block Grant (CDBG) under the Department of Housing and Community Development (DHCD) for housing rehabilitation. The project is a scatter-site project with homes spread out across Floyd County.

The Project proposes rehabilitating eight owner-occupied homes, one rental property, and substantially reconstructing six owner-occupied homes for a total of 15 households. All 15 households earn at or below 80% of the area median income for Floyd County. Qualifying households may also receive weatherization assistance through Community Housing Partners, SERCAP emergency grants or well and/or septic loans, and the USDA's Section 504 Home Repair program grants.

PROJECT ACTIVITIES & COST

The Floyd County Scatter-Site Housing Rehabilitation Project has received \$1,080,000 of CDBG funds. Total project costs are approximately \$1,287,900.

The following activities will be accomplished during the project:

- The rehabilitation of nine owner-occupied homes, including one mobile home.
- The substantial reconstruction of six owner-occupied homes.
- For eligible homes:
 - o Weatherization assistance
 - o SERCAP Facilities Development grant
 - o USDA Section 504 Home Repair program grant
 - o FISH housing assistance
 - o Renovation Alliance accessibility improvements
 - o Planted trees via Sustain Floyd

METHOD OF IMPLEMENTATION

The Floyd County Scatter-Site Housing Rehabilitation project will be overseen by Acting County Administrator, Cindy Ryan, or her designee, Community and Economic Development Director,

Lydeana Martin. The County will work directly with the Grant Administrator, the New River Valley Regional Commission, in order to manage project progress, administrative activities, and finances. See **Finance** section for further financial oversight details.

The Grant Administrator will keep complete project files and will make duplicate copies for the County's records.

The County will remain informed on every aspect of the project through monthly Management Team meetings and with phone calls, e-mails, or in-person meetings as necessary. Any problems that arise will be mitigated between the County and the Grant Administrator and with the help of the Rehab Specialist, FISH volunteers, and other community Sparkplugs.

ROLES & RESPONSIBILITIES

The following people will be participating directly in the Floyd County Scatter-Site Housing Rehabilitation project:

Cindy Ryan (*Certifying Officer*) – Ms. Ryan is Floyd's Acting County Administrator and will serve as the Certifying Officer responsible for signing all documents of compliance for DHCD reporting and monitoring requirements.

Lydeana Martin (*Project Manager*) – Ms. Martin, Community and Economic Development Director for Floyd County, will serve as the Project Manager for the project. She will oversee overall project progress and will be the primary point of contact in any matter involving the County.

Jennifer Wilsie (*Grant Administrator*) – The County has contracted with the New River Valley Regional Commission for the administration of the Planning Grant. Ms. Wilsie will serve as the primary point of contact between the County, the Management Team, and DHCD.

Tabitha Hodge (*Operations Manager*) – Ms. Hodge of Floyd County will coordinate all financial matters in the project. Further explanation of the invoice process is given in the **Finance** section below.

Mark Bolt (*Floyd County Building Official*) – Mr. Bolt is Floyd County's Building Official and will be inspecting each of the house rehabs and substantial reconstructions to ensure they are in compliance with the County's Building Code.

Kenny Rodgers (*Rehab Specialist*) – Mr. Rodgers is a Rural Housing Specialist I with SERCAP, Inc., and will serve as the Rehab Specialist for the project. He will oversee walkthroughs for each property and prepare write-ups to be put out to bid for construction.

Steve Durbin (*County Attorney*) – Mr. Durbin is responsible for reviewing all legal documents including contracts and deeds of trust related to the Floyd County Housing Rehabilitation project and will conduct all Housing Rehabilitation closings.

Susan Icove (FISH volunteer and community sparkplug) – Ms. Icove will be assisting the project with coordination of housing applicants, marketing the program, coordinating FISH volunteers, and referrals of FISH applicants to the Housing Rehab Program.

The following are members of the project’s **Management Team**:

Jeff Belshan – Citizen

Mark Bolt – County Building Official

Kayla Cox – Town of Floyd

Linda DeVito Kuchenbuch – Floyd County Board of Supervisors

Jim Drader – Executive Director of Habitat for Humanity New River Valley

Tabitha Hodge – Operations Manager

Susan Icove – Floyd Initiative for Safe Housing (FISH)

Lydeana Martin – Community and Economic Development Director

Cindy Ryan – Acting County Administrator

Kenny Rodgers – Rehab Specialist

Jason Sams – DHCD Community Development Specialist

Karla Turman – Floyd County Planner

Jennifer Wilsie – New River Valley Regional Commission

HOUSING OVERSIGHT BOARD

Floyd County has appointed citizens and County officials to serve on the Floyd County Housing Oversight Board (Board). The Board monitors progress of the Housing Rehabilitation Program. It will provide oversight to the Project Manager and Grant Administrator as related to ranking and approving rehabilitation applicants and approving/awarding construction bids. The specific functions of the Board are outlined in its by-laws. The Board’s objective is to provide for fair, objective, and equitable application of program funds to the identified beneficiaries. Certain members of the Board also serve on the Project Management Team and will interact with the remaining team members providing regular updates on project progress, problems, and overall coordination of the housing assistance effort.

County Administrator

Jeff Belshan – Floyd County citizen

Susan Icove – Floyd Initiative for Safe Housing (FISH)

Joe Italiano – Hammertime Construction

Lydeana Martin – Community and Economic Development Director (non-voting)

Kenny Rodgers – Rehab Specialist (non-voting)

Karla Turman – Floyd County Planner
Jeff Wade - Contractor
Jennifer Wilsie – New River Valley Regional Commission (non-voting)
Lauren Yoder – Board of Supervisors

PROJECT COMMUNICATION

Project status and updates will be conveyed regularly by the Grant Administrator to the Project Manager through meetings, emails, and phone calls.

The Grant Administrator will prepare monthly progress reports along with the minutes of Management Team meetings and submit them to DHCD through CAMS.

The Project Manager will provide project updates, as needed, to the County Board of Supervisors at its monthly meetings.

POTENTIAL PROBLEMS

As may occur in complex projects of this kind, the County will work closely with the Management Team, the Grant Administrator, and DHCD to mitigate any unexpected challenges that may arise during the administration housing rehabilitation grant project.

1. Because of the scattered nature of the homes expected to participate in the project and the large, rural nature of Floyd County could require extra coordination for the Program Administrator, Rehab Specialist, and contractors to manage. This could potentially mean more travel time between construction sites, and work crews only able to work on one construction site at a time. Floyd County's Building Official has reached out to local contractors to gauge interest in light of these difficulties, and it was met with interest. The County is hopeful the work will draw several interested contractors.
2. Most homes in Floyd County rely on private wells or springs and septic tanks. Public water and sewer are only available within and near the Town of Floyd. Several of the homes identified as needing rehabilitation also have issues with their water or septic systems. The County is endeavoring to work with TAP, the IRP provider for the county, and SERCAP to resolve these issues.

FINANCES

Tabitha Hodge, Operations Manager with Floyd County, will handle all finances for the project. Financial documentation will be housed at both the New River Valley Regional Commission and Floyd County. Floyd County will work jointly in order to receive, process, and file all invoice and drawdown documentation.

The following finance system will be implemented:

1. Invoices will be sent to Floyd County for initial review.

2. Floyd County will send all invoices to the Grant Administrator for documentation, joint review, and coordinated approval.
3. Upon approval, the Operations Manager will remit payment. A copy of the cancelled check will be sent back to the NRVRC for documentation.
4. Periodically (no more than monthly and no less than quarterly) Floyd County will submit drawdown requests via CAMS. The Grant Administrator will prepare each remittance request in CAMS, with final review and submittal by the Project Manager or other eligible staff member.
5. The Grant Administrator will maintain all drawdown submittals and their corresponding documentation.
6. Floyd County will send all EDI transmittal documentation to the Grant Administrator upon receiving it.

The Project Manager, in coordination with the County's Finance Director, will review all invoices submitted to the County by the Grant Administrator or Rehab Specialist in accordance with each consultant's respective Task Order.

The Grant Administrator will coordinate with the Project Manager and the County's Finance Director to compile all necessary documentation for administrative remittance requests in accordance with the approved Pay for Performance budget.

COMPLAINT & APPEALS PROCEDURE

1. Informal resolution is attempted by the Grant Administrator. If informal resolution is not possible, the complaint must be put in writing and forwarded to the Project Manager (County staff representative).
2. The Project Manager is required to investigate the complaint and respond to it, in writing, in a timely manner. The response must include an explanation of the reason(s) for the decision reached, information on how the decision can be appealed, and how many days from receipt of notice the complainant has to appeal the decision.
3. Appeals of the Project Manager's decision should be addressed, in writing, to the Certifying Official.
4. Appeals of the Chief Administrative Official's decision should be addressed, in writing, to the local governing body.
5. All written appeals *must* be addressed within 15 days of receipt and resolved within 30 days of the appeal and retained for review. All appeals are to be responded to in writing. The response must include an explanation of the reason(s) for the decision reached, information on the next step in the appeals process and how many days from receipt of notice the complainant has to appeal any decision.
6. Final appeals may be addressed, in writing, to DHCD. The appeal should include a copy of all correspondence that has taken place to this point. The appeal should identify the problem and the desired solution. DHCD will review the complaint and respond, in writing, in a timely manner. All involved parties will be copied.

MANAGEMENT PLAN AMENDMENTS

As the Floyd County Scatter-Site Housing Rehabilitation Management Plan is a working document, it will be revisited regularly and revised as needed. The document was created with the participation of the entire Management Team and the input of DHCD. Any revisions to this Plan will be approved by the Management Team and DHCD and will be signed by Cindy Ryan, the project’s Certifying Officer, or her designee, in order to be made official.

ACKNOWLEDGEMENTS & SIGNATURES

_____ Mark Bolt, Floyd Building Official	_____ Date
_____ Jeff Belshan, Citizen	_____ Date
_____ Kayla Cox, Town of Floyd	_____ Date
_____ Linda DeVito Kuchenbuch, Board of Supervisors Floyd County	_____ Date
_____ Jim Drader, Habitat for Humanity	_____ Date
_____ Susan Icove, Community Sparkplug Floyd Initiative for Safe Housing	_____ Date

Lydeana Martin, Project Manager
Floyd County

Date

Karla Turman, Floyd County

Date

Tabitha Hodge, Operations Manager
Floyd County

Date

Kenny Rodgers, Rehabilitation Specialist
SERCAP

Date

Cindy Ryan, Certifying Officer
Floyd County

Date

Jason Sams, Community Development Specialist
DHCD

Date

Jennifer Wilsie, Grant Administrator
NRV Regional Commission

Date

Floyd County Scatter-site Housing Rehabilitation Project: PROJECT TIMELINE

PROJECT ACTIVITIES	Lydena Martin, Program Manager/County Liaison	Jennifer White, Grant Administrator	Tasha Hodge, Financial Technician	Kenny Rodgers, Rehab Specialist	Mark Holt, Floyd County Building Official	Cindy Ryan, Acting County Building Official	Suee Durbin, County Administrator	Susan Love, Neighborhood Spangberg	Local Contractors	Jim Dader, Habitat for Humanity	Linda Devito, Floyd Board of Supervisors	Karla Turman, County Planner	Kayla Cox, Town of Floyd	Jeff Rehan, Citizen	Target Completion Date
A. ADMINISTRATION															
Execute CIG Contract	S	S													January 2021
Appropriate CDBG Funds	S	S	R												January 2021
Install Project Sign	R	S		S											January 2021
Maintain Management Plan	S	R	S				S								Ongoing
Coordinate Management Team Meetings	R	S	S								S				Monthly
Maintain Meeting Minutes	S	R													Monthly
Project Reporting (Monthly/Annual)	S	R	S	S											Ongoing
Attend CDBG Workshops/Meetings	S	R													Annual
Financial Recordkeeping / CDBG & non-CDBG	S	S	R								S				Ongoing
Monitoring Budget / Budget Revisions	S	R	S								S				Ongoing
Drawdowns	S	R	S	S	S						S				Monthly
Home Maintenance Education Program	S	S	R										S		As needed
Equal Opportunity Compliance	S	R									S				Ongoing
Fair Housing Activity	S	R									S				Annual
Project Reviews with VDHCD / County Staff	S	R	S	S	S						S				Semi-Annual
Dispute Resolution	R	S	S	S	S						S	S	S		Ongoing
Project Close-Out / Audit	S	R	S	S	S						S	S	S		January 2023
B. DEMOLITION (for Substantial Recon.)															
Prepare Demolition Bid Specs	S	S		R	S										June 2021 - Ongoing
Procure Demolition Contractor	R	S	S	S	S										May 2021 - Ongoing
Execute Demolition Contract	S	R	S	S	S										May 2021 - Ongoing
Complete Demolition Work / Grading / Reseeding	S	S	S	S	S					R					June 2021 - Ongoing
C. REHABILITATION / SUBSTANTIAL RECONSTRUCTION (Multiple Rounds)															
Solicit/Confirm Eligibility of Applicants	S	R	S	S	S										Feb 2021 - Ongoing
Solicit/Pre-qualify Contractors	R	S	S	S	S										Feb 2021 - Ongoing
Property Inspections/Lead Testing	S	S		R	S										March 2021 - Ongoing
Prepare Work Write-Up, Cost Estimate, & Specifications	S	S		R											March 2021 - Ongoing
Prepare Bid Documents	S	S		R											May 2021 - Ongoing
Pre-Bid Conference / Walkthrough	S	S		R	S				S						June 2021 - Ongoing

PROJECT ACTIVITIES		Kyana Martin, Program Manager/County Liaison	Jennifer White, Grant Administrator	Tabitha Hodge, Financial Technician	Kenny Rodgers, Rehab Specialist	Mark Bolt, Floyd County Building Official	Teri Morris, County Administrator	Steve Durbin, County Attorney	Susan Love, Neighborhood Spangling	Local Contractors	Jim Deader, Habitat for Humanity Supervisors	Linda DeVito, Floyd Board of Supervisors	Karla Turman, County Planner	Jeff Belshan, Citizen	Target Completion Date
Receipt of Bids / Approval	S	S	R	R	R	R	R	R	R						June 2021 - Ongoing
Construction Contract and Loan Closing	S	R	S	S	S	S	S	S	S						July 2021 - Ongoing
Temporary Relocation Activities	S	R	S	S	S	S	S	S	S						As needed
Notice to Proceed	S	S	R	R	R	R	R	R	R						July 2021 - Ongoing
Inspection, Progress Payments	S	S	S	S	S	R	R	R	S						July 2021 - Ongoing
Change Orders	S	S	R	R	R	R	R	R	S						As needed
Construction Completed	S	S	R	R	R	S	R	R	S						Oct 2021 - Feb 2023
Final Inspection/Punchlist	S	S	S	S	S	R	R	R	S						Oct 2021 - Feb 2023
Certification of Completion/Certification of Occupancy	S	S	S	S	S	R	R	R	S						Oct 2021 - Feb 2023
Secure Contractor Warranties/Lien Waivers	S	S	R	R	R	R	R	R	S						Oct 2021 - Feb 2023
Final Payment	S	S	R	R	R	R	R	R	S						Oct 2021 - Feb 2023

Virginia Community Development Block Grant Program Income Plan

Grantee: Floyd County Date: _____

Project Name: Floyd County Housing Rehabilitation Project

Contract#: 20-20-16

OBJECTIVE: The expenditure of active and inactive program income generated from the CDBG Floyd County Housing Rehabilitation Project in a manner that will directly benefit low- to moderate-income residents of Floyd County.

1. ACTIVITIES: Program income funds, both active and inactive, shall be spent on activities that improve housing conditions for LMI households through rehabilitation work performed on eligible households.

Active program Income:

- a. Definition: Active income is income received as a result of program activities prior to administrative closeout of the CDBG Agreement. If the total exceeds \$35,000 in any of the successive 12-month period of the CDBG Agreement, the funds shall be used to reduce drawdowns for eligible project expenses.
- b. If the amount does not reach \$35,000, it will be accumulated and used for eligible project costs in excess of the Project Budget with the permission of DHCD. Active income on-hand at the end of the project will be used to reduce drawdowns or returned to DHCD.
- c. Active income will be used for the same CDBG activities as approved in the CDBG Agreement.

Inactive Program Income:

- a. Definition: Inactive program income is all revenue received in a 12-month reporting period (July 1 – June 30) of \geq \$35,000 from an administratively closed project funded with CDBG monies. All inactive program income received in the 12-month reporting period will be held in reserve until after the reporting period has ended and that fiscal year's report has been submitted to and approved by DHCD. At the time the report is submitted, a specific work plan and budget may be submitted, outlining the proposed use of inactive program income. A timeline to expend all funds within twelve (12) months must be included. Inactive program income must be retained until the proposed use is authorized by DHCD.
- b. Funds received after the end of the contract year will be used for the following activities, all of which will include bringing failing properties up to DHCD HQS:

- 1) Housing rehabilitation or substantial housing reconstruction;
- 2) Demolition of dilapidated structures;
- 3) Clearance of junk and debris;
- 4) Rehabilitation of a long-term vacant property to be resold to a low-to-moderate income household as well as associated legal costs;
- 5) Eligible households whose existing well and/or septic system are substandard or failing. Associated costs may include, but are not limited to any necessary surveys, engineering designs, and rehab specialist work. Replacement wells will be drilled, tested and approved. Old wells will be abandoned as directed by VDH. Drainfields will be repaired or expanded, as needed. "Pump and haul" systems will not be funded;
- 6) Associated installation of wheelchair ramps and other accessibility features;
- 7) Purchase of a vacant parcel to construct a new home for income eligible household;
- 8) To subsidize any valid "change order" when the needed change order exceeds the DHCD cost limits;
- 9) Downpayment assistance for first-time homebuyers for down payment assistance (up to 50% match), reasonable closing costs normally associated with the purchase of a home (including paying discount points to the lender), principal write-down assistance and mortgage insurance. Payments will only be made directly to the financial institution supplying the mortgage;
- 10) Additional temporary relocation costs;
- 11) Connection fees and construction costs to connect individual households to future public water and sewer;
- 12) Leverage for future CDBG housing grants the County may apply for.
- 13) Up to 10% of annual inactive program income may be used for actual administrative costs, including loan servicing services.

Program income used for direct assistance is only for applicants whose household incomes are at or below 80% of the County's median income. Any revisions to said activities must be approved by DHCD.

Miscellaneous Revenue:

- a. Definition: Miscellaneous revenue is all revenue received in a 12-month reporting period (July 1 – June 30) of less than \$35,000 from an administratively closed project funded with CDBG monies. No amount of miscellaneous revenue received in the reporting period may be expended until after the period has ended and that fiscal year's report has been submitted to and approved DHCD. Grantees must retain the funds until it is authorized by DHCD to expend the proceeds locally. Miscellaneous revenue shall be used for any activities listed in Inactive Program Income, section b.

- b) Miscellaneous revenue may be used for actual administrative costs. *At the time the program income is expended*, 10 percent of the expended program income may be allocated for administrative purposes;

2. TIME FRAME:

The County will make rehabilitation loans to owner-occupants and landlords of tenant-occupied units. The loans will be made with a 0% interest, 10-year term. Program Income will be generated as households make monthly payments as determined by their Ability To Pay calculation or if any of these properties transfer ownership within the 10-year loan term.

3. PROJECT AREA:

All activities funded with program income generated from the CDBG Floyd County Housing Rehabilitation Project will take place within the County of Floyd until there is no more need.

4. FUNDS TO BE AVAILABLE:

- a. Total Projected Program Income for Next 10 Years: \$23,913.83 (annually)
- b. # of Years Until Payback Complete for Each Loan: 10 years
- c. Any funds returned to the County triggered by transfer of title to a non-LMI household

5. DECISION MAKING:

The *Floyd County Board of Supervisors* will decide on the use of program income, based upon the Program Design guidelines. The Board will receive regular financial reports showing all income earned and expended. The Board will approve and track all applications and contracts and ensure proper documentation of the usage of funds. Requests will be submitted to and reviewed by the Board at its monthly meetings. Majority vote will be required to approve the use of the funds. **A list of the current Board members is attached.**

6. ADMINISTRATION:

The *Floyd County Board of Supervisors* will be responsible for receiving direct loan payments. The funds will be deposited in interest-bearing escrow account and identified as revenue or expenditure. Funds will be accounted for separately on *Floyd County's* balance sheet. Any lump sum receipt of inactive program income of \$35,000 or more during a state fiscal year (July 1 – June 30) will be reported to DHCD at the time it is received and transmitted to DHCD within 60 days.

Records will be kept on a twelve-month contract year basis. Records will show the amounts due and received monthly by client's name, separated by active/inactive and

by contract number, and the income expended annually. Copies of source documentation will be placed in the appropriate client file.

The *Floyd County Board of Supervisors* will implement the activities in accordance with the Project Management Plan, the Program Design and the Grant Management Manual. The VA Procurement Act will be followed. The Board will ensure compliance.

I certify that this is the plan of this locality for use of income derived from the Community Development Block Grant Program after the current contract expires. I further certify that the governing body Board fully intends to carry out this plan, to oversee its implementation and assures that no other use of these funds will be allowed. I certify that this locality will budget program income funds in a separate, distinct account and will maintain records documenting the use of those under the *Home Investment Partnerships Act*, as amended and Title I of the *Housing and Community Development Act of 1974*, as amended. I understand that the Virginia Department of Housing and Community Development may review the receipt and expenditure of program income funds.

Cynthia Ryan, Acting Floyd County Administrator

Date

AP375H FLOYD COUNTY BEFORE CHECKS
 1/22/2021 LISTING OF INVOICES FOR 1/26/2021 -- 1/26/2021 PAGE 1
 FUND # - 001

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
011010	***BOARD OF SUPERVISORS***				
5530	TRAVEL (MEALS AND LODGING				
	31730	NATIONAL BANK	KUCHENBUC DEC20	FUEL	27.00
				ACCOUNT TOTAL	27.00 *
5899	MISCELLANEOUS				
	42888	SKYLINE NATIONAL BANK	PAYROLL DEC20	DECEMBER PAYROLL	32.20
				ACCOUNT TOTAL	32.20 *
				MAJOR TOTAL	59.20 **
012010	***COUNTY ADMINISTRATOR***				
3320	SERVICE CONTRACT				
	43096	U.S. BANK EQUIPMENT FINANC	433339405	C500-0603029-000	62.13
				ACCOUNT TOTAL	62.13 *
5210	POSTAGE				
	23550	PURCHASE POWER	01052021	8000-9000-0327-1875	317.98
				ACCOUNT TOTAL	317.98 *
5810	DUES				
	31730	NATIONAL BANK	MORRIS/1 DEC20	ACROBAT PRO	16.99
				ACCOUNT TOTAL	16.99 *
6001	OFFICE SUPPLIES				
	10	VIRGINIA OFFICE SUPPLY	41593	TONER CARTRIDGE	44.99
	16730	TAYLOR OFFICE SUPPLY, INC	121869	OFFICE SUPPLIES	41.80
	28120	DELUXE	02048091700	AP CHECKS	1,066.07
	31730	NATIONAL BANK	MORRIS/3 DEC20	CHECK ENVELOPES	318.65
	43177	AMAZON CAPITAL SERVICES	19FM-Q6VK-DRM9	1099 NEC FORMS	56.10
				ACCOUNT TOTAL	1,527.61 *
6014	COMPUTER SUPPLIES/TECHNIC				
	40730	KISER COMPUTER CONSULTING,	10044867	WEB SITE HOSTING	293.00
				ACCOUNT TOTAL	293.00 *
				MAJOR TOTAL	2,217.71 **
012080	***AUDITOR***				
3100	PROFESSIONAL SERVICES/AUD				
	1710	ROBINSON, FARMER, COX	72851	2020 AUDIT FEE	55,100.00
				ACCOUNT TOTAL	55,100.00 *
				MAJOR TOTAL	55,100.00 **
012090	***COMM OF THE REVENUE***				
3100	DRUG TESTING FEES				
	42894	SAFETY & COMPLIANCE SERVIC	441282	PROF SERVICES	153.51
				ACCOUNT TOTAL	153.51 *
3320	MAINTENANCE, SERVICE AND				
	31730	NATIONAL BANK	BAKER DEC20	CANON COPIER CHARGE	55.02
	36270	COMMONWEALTH OF VA	T437178	MONTHLY RECURRING	72.63
	42795	ETHOS TECHNOLOGIES	INV384503	4333-01	6.32
				ACCOUNT TOTAL	133.97 *

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
3600		ADVERTISING			
	31730	NATIONAL BANK	TURNER/1 DEC20	SUBSCRIPTION	40.00
	31730	NATIONAL BANK	TURNER/2 DEC20	ADVERTISING	100.00
				ACCOUNT TOTAL	140.00 *
5810		DUES			
	28360	TREASURER OF VIRGINIA	0121 BAKER	NOTARY RENEWAL	45.00
				ACCOUNT TOTAL	45.00 *
6001		OFFICE SUPPLIES			
	31730	NATIONAL BANK	TURNER/3 DEC20	OFFICE SUPPLIES	280.59
	31730	NATIONAL BANK	TURNER/3 DEC20	OFFICE SUPPLIES	15.27
				ACCOUNT TOTAL	295.86 *
8102		CAPITAL OUTLAY:NADA VALUE			
	31730	NATIONAL BANK	MORRIS/2 DEC20	ONLINE VALUATIONS	719.60
				ACCOUNT TOTAL	719.60 *
8108		CAPITAL OUTLAY:ONE PC			
	42744	RICOH USA, INC	5061115949	CONTRACT 3771154	891.39
				ACCOUNT TOTAL	891.39 *
				MAJOR TOTAL	2,379.33 **
012130	***TREASURER***				
3600		ADVERTISING			
	34630	TRI-CITIES/SOUTHWEST VIRGI	2160966 NOV20	ADVERTISING	67.02
				ACCOUNT TOTAL	67.02 *
5240		DATA PROCESSING SERVICES			
	36270	COMMONWEALTH OF VA	T437178	MONTHLY RECURRING	72.63
				ACCOUNT TOTAL	72.63 *
6001		OFFICE SUPPLIES			
	16730	TAYLOR OFFICE SUPPLY, INC	121646	BINDER CLIPS	2.27
				ACCOUNT TOTAL	2.27 *
				MAJOR TOTAL	141.92 **
013010	***ELECTORAL BOARD AND OFFICERS***				
5530		TRAVEL/EDUCATION/MEALS/LO			
	38380	VIRGINIA ELECTORAL BOARD A	2021 DUES	MEMBERSHIP DUES 2021	180.00
				ACCOUNT TOTAL	180.00 *
				MAJOR TOTAL	180.00 **
013020	***REGISTRAR***				
3100		DRUG TESTING FEES			
	42894	SAFETY & COMPLIANCE SERVIC	441282	PROF SERVICES	56.81
				ACCOUNT TOTAL	56.81 *
6001		OFFICE SUPPLIES			
	10	VIRGINIA OFFICE SUPPLY	41668	OFFICE CHAIRS (2)	550.40
	28960	WOODY GRAPHICS, INC.	32072	VOTER CARDS	135.60
	38920	VIRGINIA BUSINESS SYSTEMS	28403928	003-1180919-000	49.74
				ACCOUNT TOTAL	735.74 *
				MAJOR TOTAL	792.55 **

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
021060	***CLERK OF CIRCUIT COURT***				
5210	POSTAGE				
	42919	RESERVE ACCOUNT	0121 51519684	ACCOUNT 51519684	500.00
				ACCOUNT TOTAL	500.00 *
6001	OFFICE SUPPLIES				
	10	VIRGINIA OFFICE SUPPLY	41351	TONER CARTRIDGE	120.71
	7040	RITE PRINT SHOPPE & SUPPLI	0063428	BOND PAPER	39.00
				ACCOUNT TOTAL	159.71 *
				MAJOR TOTAL	659.71 **
022010	***COMMONWEALTH'S ATTORNEY***				
6001	OFFICE SUPPLIES				
	10	VIRGINIA OFFICE SUPPLY	41232	INK PAD REFILLS	11.90
	10	VIRGINIA OFFICE SUPPLY	41350	OFFICE SUPPLIES	110.62
	10	VIRGINIA OFFICE SUPPLY	41541	ADHESIVE NOTES	1.87
	10	VIRGINIA OFFICE SUPPLY	41646	OFFICE SUPPLIES	97.13
	10	VIRGINIA OFFICE SUPPLY	41689	COPY PAPER	35.89
	31730	NATIONAL BANK	COCKRAM DEC20	PRINTS	9.86
				ACCOUNT TOTAL	267.27 *
				MAJOR TOTAL	267.27 **
031020	***SHERIFF***				
3310	REPAIRS & MAINTENANCE/AUT				
	42832	FLOYD AUTO PARTS	476085	WIPER BLADES	21.51
	43006	D&D AUTO REPAIR, LLC	3707	OIL CHANGE	25.99
	43006	D&D AUTO REPAIR, LLC	3753	INSPECTION	20.00
				ACCOUNT TOTAL	67.50 *
3320	MAINTENANCE & SERVICE CON				
	260	TREASURER OF MONTGOMERY CO	1	RANGE FEES	250.00
	35570	U.S. BANK EQUIPMENT FINANC	432509404	500-0548187-000	136.82
	42744	RICOH USA, INC	34394611	200-3163022-100	43.54
	42744	RICOH USA, INC	9028705086	200-3161981/2-100	84.45
				ACCOUNT TOTAL	514.81 *
5210	POSTAGE				
	31730	NATIONAL BANK	HOLLANDSW DEC20	POSTAGE	9.20
				ACCOUNT TOTAL	9.20 *
5520	TRAVEL (FARES)				
	31730	NATIONAL BANK	SHIVE DEC20	TRANSPORT FOOD	7.93
				ACCOUNT TOTAL	7.93 *
5540	TRAVEL (CONVENTION & EDUC				
	31730	NATIONAL BANK	BROWN/2 DEC20	ONLINE CLASS	149.00
				ACCOUNT TOTAL	149.00 *
5810	DUES				
	25430	VIRGINIA SHERIFFS'	300000446	VSA DUES	1,410.00
				ACCOUNT TOTAL	1,410.00 *
5842	DOMESTIC VIOLENCE GRANT				
	31730	NATIONAL BANK	AKERS DEC20	DOM VIOLENCE GRANT	81.57

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
	31730	NATIONAL BANK	AKERS DEC20	DOM VIOLENCE GRANT	20.94
	31730	NATIONAL BANK	AKERS DEC20	DOM VIOLENCE GRANT	31.24
	31730	NATIONAL BANK	AKERS DEC20	DOM VIOLENCE GRANT	48.59
	31730	NATIONAL BANK	AKERS DEC20	DOM VIOLENCE GRANT	31.58
	31730	NATIONAL BANK	AKERS DEC20	DOM VIOLENCE GRANT	155.10
				ACCOUNT TOTAL	369.02 *
5848		SCHOOL ENTRY TEAM			
	31730	NATIONAL BANK	HARRISB/1 DEC20	BOOTS	23.15
	31730	NATIONAL BANK	HARRISB/2 DEC20	TACTICAL HOLSTER	463.00
	43177	AMAZON CAPITAL SERVICES	11C6-3QYK-6V3Y	GLOVES	25.99
				ACCOUNT TOTAL	512.14 *
6008		GAS, OIL, ETC.			
	11850	CLARK GAS & OIL	DEC20-1	FUEL	3,497.19
	31730	NATIONAL BANK	BUCKNER DEC20	FUEL	30.00
	31730	NATIONAL BANK	CLEMONS DEC20	FUEL	23.95
				ACCOUNT TOTAL	3,551.14 *
6011		POLICE SUPPLIES			
	31730	NATIONAL BANK	HARRISC/1 DEC20	CARGO PANTS	117.20
	42733	FIRE RESCUE & TACTICAL	4071	TACLITE PANTS	74.98
	42733	FIRE RESCUE & TACTICAL	4094	POLO/EMBROIDERY	39.49
	42733	FIRE RESCUE & TACTICAL	4285	MOCK T-NECKS,MISC	1,279.99
	42832	FLOYD AUTO PARTS	476887	WASHER SOLVENT	2.44
				ACCOUNT TOTAL	1,514.10 *
				MAJOR TOTAL	8,104.84 **
033010		***CORRECTIONS & DETENTIONS***			
6001		OFFICE SUPPLIES			
	10	VIRGINIA OFFICE SUPPLY	41451	SCISSORS	7.13
	16730	TAYLOR OFFICE SUPPLY, INC	121743	DESK CALENDARS (8)	48.80
	31730	NATIONAL BANK	CRAIG DEC20	ADDRESS STAMP	12.99
				ACCOUNT TOTAL	68.92 *
6011		POLICE UNIFORMS			
	31730	NATIONAL BANK	BOHNKE DEC20	UNIFORM ALLOWANCE	85.87
	31730	NATIONAL BANK	BROWN/1 DEC20	UNIFORM ALLOWANCE	100.00
				ACCOUNT TOTAL	185.87 *
6022		EMPLOYEE PHYSICALS			
	27730	CARILION MEDICAL GROUP	700002072010421	PROF SERVICES	127.00
				ACCOUNT TOTAL	127.00 *
				MAJOR TOTAL	381.79 **
034010		***BUILDING INSPECTIONS***			
3100		DRUG TESTING FEES			
	42894	SAFETY & COMPLIANCE SERVIC	441282	PROF SERVICES	56.81
				ACCOUNT TOTAL	56.81 *
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	48.98
				ACCOUNT TOTAL	48.98 *

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
5810		DUES			
	31730	NATIONAL BANK	MORRIS/1 DEC20	ACROBAT PRO	16.99
				ACCOUNT TOTAL	16.99 *
6001		OFFICE SUPPLIES			
	10	VIRGINIA OFFICE SUPPLY	41460	LAMINATING POUCHES	31.53
	43096	U.S. BANK EQUIPMENT FINANC	433339405	C500-0603029-000	62.14
				ACCOUNT TOTAL	93.67 *
				MAJOR TOTAL	216.45 **
035010		***ANIMAL CONTROL***			
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	99.03
				ACCOUNT TOTAL	99.03 *
				MAJOR TOTAL	99.03 **
035030		***MEDICAL EXAMINER***			
3110		PROFESSIONAL HEALTH SERVI			
	37080	TREASURER OF VIRGINIA	01052021	PROF SERVICES	20.00
				ACCOUNT TOTAL	20.00 *
				MAJOR TOTAL	20.00 **
035050		***EMERGENCY SERV/HAZARDOUS MAT***			
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	27.11
				ACCOUNT TOTAL	27.11 *
5895		CORONAVIRUS EMERGENCY			
	17100	FINN & FENWICK CLEANING SE	1381	COVID CLEANING	3,325.00
	31730	NATIONAL BANK	HODGE DEC20	PREMIERE PRO	31.49
	31730	NATIONAL BANK	MARTIN/1 DEC20	ZOOM/REMOTE MEETING	31.48
	31730	NATIONAL BANK	MORRIS/5 DEC20	CREDIT	106.09-
				ACCOUNT TOTAL	3,281.88 *
6001		OFFICE SUPPLIES/COMPUTER			
	31730	NATIONAL BANK	MORRIS/1 DEC20	ACROBAT PRO	16.99
				ACCOUNT TOTAL	16.99 *
				MAJOR TOTAL	3,325.98 **
043020		***GENERAL PROPERTIES***			
1100		COMPENSATION OF CUSTODIAN			
	17100	FINN & FENWICK CLEANING SE	1396	ANNUAL CARPET CLEAN	2,300.00
				ACCOUNT TOTAL	2,300.00 *
3310		REPAIRS			
	4590	FIRE SAFETY PRODUCTS INC.	0000239722	REBUILD KIT, MISC	892.20
	15060	CMC SUPPLY, INC.	S3314182.001	VALVE, KITS	84.03
	42939	TINBENDERS INC.	3025	LIBRARY UNIT REPAIR	797.80
				ACCOUNT TOTAL	1,774.03 *

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
3320		MAINTENANCE & SERVICE CON			
	290	CINTAS	4072806988	UNIFORMS	6.23
	290	CINTAS	4073469988	UNIFORMS	6.23
				ACCOUNT TOTAL	12.46 *
5110		ELECTRICAL SERVICE			
	420	APPALACHIAN POWER	787734260 DEC20	FLOYD HWY N	41.82
				ACCOUNT TOTAL	41.82 *
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	21.77
				ACCOUNT TOTAL	21.77 *
6005		JANITORIAL SUPPLIES			
	90	DIAMOND PAPER CO., INC.	275401-1	PAPER PRODUCTS	242.14
				ACCOUNT TOTAL	242.14 *
8134		FLOYD COUNTY SCHOOLS BOIL			
	31330	THOMPSON & LITTON, INC	97560	PROJECT 14408	3,922.00
				ACCOUNT TOTAL	3,922.00 *
8136		CAPITAL OUTLAY: SCHOOLS C			
	30360	SCHNABEL ENGINEERING, LLC	2030079	CCDC PROJECT	3,367.95
				ACCOUNT TOTAL	3,367.95 *
9100		DEBT SERVICE:2019B SKYLIN			
	37780	U.S. BANK	5920421	0111665NS	950.00
	43014	BB&T GOVERNMENTAL FINANCE	01122021 0004	994600200000004	54,126.99
				ACCOUNT TOTAL	55,076.99 *
9130		DEBT SERVICE: 2016 REFINA			
	42888	SKYLINE NATIONAL BANK	806942905 1/21	LOAN 806942905	43,540.00
	42888	SKYLINE NATIONAL BANK	806942908 1/21	LOAN 806942908	101,425.50
	43014	BB&T GOVERNMENTAL FINANCE	01122021 0005	994600200000005	75,953.15
				ACCOUNT TOTAL	220,918.65 *
9160		DEBT SERVICE: BB&T SCHL I			
	43014	BB&T GOVERNMENTAL FINANCE	01122021 0003	994600200000003	95,327.13
				ACCOUNT TOTAL	95,327.13 *
9170		DEBT SERVICE: SKYLINE EDA			
	42888	SKYLINE NATIONAL BANK	7300828 1/21	LOAN 7300828	3,084.97
				ACCOUNT TOTAL	3,084.97 *
				MAJOR TOTAL	386,089.91 **
052010		***MENTAL HEALTH***			
5620		PAYMENT TO MENTAL HEALTH			
	910	NEW RIVER VALLEY	FY21 3RD QTR	3RD QTR ALLOCATION	9,430.75
				ACCOUNT TOTAL	9,430.75 *
				MAJOR TOTAL	9,430.75 **
071020		***FLOYD COUNTY RECREATION***			
3000		CONTRACTUAL SERVICES			
	31730	NATIONAL BANK	AGEE/2 DEC20	MONTHLY CONTRACT	43.00
				ACCOUNT TOTAL	43.00 *
3320		MAINTENANCE CONTRACTS			
	43096	U.S. BANK EQUIPMENT FINANC	433339405	C500-0603029-000	62.14
				ACCOUNT TOTAL	62.14 *

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
5110		ELECTRICAL SERVICE			
	420	APPALACHIAN POWER	436454838 DEC20	REC PARK	21.35
				ACCOUNT TOTAL	21.35 *
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	33.01
				ACCOUNT TOTAL	33.01 *
6001		OFFICE SUPPLIES			
	31730	NATIONAL BANK	AGEE/1 DEC20	FIELD MAINTENANCE	34.42
	31730	NATIONAL BANK	AGEE/3 DEC20	POSTAGE	55.00
	37090	ELECTRONIC SYSTEMS, INC	IN1730841	CN17576-01	66.55
				ACCOUNT TOTAL	155.97 *
				MAJOR TOTAL	315.47 **
081200	***COMMUNITY DEVELOPMENT***				
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	33.01
				ACCOUNT TOTAL	33.01 *
5540		TRAVEL			
	31730	NATIONAL BANK	TURMAN DEC20	ENROLLMENT FEE	25.00
				ACCOUNT TOTAL	25.00 *
5810		DUES AND SUBSCRIPTIONS			
	31730	NATIONAL BANK	MARTIN/2 DEC20	SUBSCRIPTION SERVICE	9.99
	31730	NATIONAL BANK	MORRIS/1 DEC20	ACROBAT PRO	16.99
				ACCOUNT TOTAL	26.98 *
6001		OFFICE SUPPLIES			
	43096	U.S. BANK EQUIPMENT FINANC	433339405	C500-0603029-000	62.13
				ACCOUNT TOTAL	62.13 *
				MAJOR TOTAL	147.12 **
081500	***ECONOMIC DEVELOPMENT AUTHORITY**				
6096		COMMERCE PARK-PHASE 2-PRE			
	42868	HURT & PROFFITT, INC.	63626	PROJECT 20200117	2,901.70
				ACCOUNT TOTAL	2,901.70 *
				MAJOR TOTAL	2,901.70 **
082050	***MISCELLANEOUS PROGRAMS***				
6063		CHILDREN'S ADVOCACY CTR O			
	42839	NRV CARES	FY21 3RD QTR	3RD QTR ALLOCATION	37.50
				ACCOUNT TOTAL	37.50 *
6069		COUNTY/TOWN TOURISM AUTHO			
	42370	FLOYD COUNTY TOURISM DEVEL	FY21 3RD QTR	3RD QTR ALLOCATION	7,500.00
				ACCOUNT TOTAL	7,500.00 *
6074		CHILDREN'S TRUST			
	42820	CHILDREN'S TRUST ROANOKE V	FY21 3RD QTR	3RD QTR ALLOCATION	1,250.00
				ACCOUNT TOTAL	1,250.00 *
6083		FAIRVIEW NURSING HOME			
	910	NEW RIVER VALLEY	FY21 3RD QTR FH	3RD QTR ALLOCATION	625.00
				ACCOUNT TOTAL	625.00 *

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
6086		DRUG COURT COSTS			
	42949	LINEBERRY ENTERPRISES LLC	FEB21 RENT	FEBRUARY RENT	400.00
	43021	OMNI PROPERTIES 2 LLC	FEB21 RENT	FEBRUARY RENT/AKERS	900.00
				ACCOUNT TOTAL	1,300.00 *
6088		PLENTY!			
	42380	PLENTY	FY21 3RD QTR	3RD QTR ALLOCATION	375.00
				ACCOUNT TOTAL	375.00 *
6096		NEW RIVER/MT ROGERS WORKF			
	43166	NEW RIVER/MT ROGERS	2021011-BS	3RD QTR ALLOCATION	394.00
				ACCOUNT TOTAL	394.00 *
				MAJOR TOTAL	11,481.50 **
403230	***EMERGENCY MEDICAL SERVICES***				
3100		DRUG TESTING FEES			
	42894	SAFETY & COMPLIANCE SERVIC	441282	PROF SERVICES	227.24
				ACCOUNT TOTAL	227.24 *
5230		TELEPHONE			
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	81.35
				ACCOUNT TOTAL	81.35 *
5540		TRAINING			
	31730	NATIONAL BANK	MORRIS/4 DEC20	REVENUE CYCLE GUIDES	120.00
				ACCOUNT TOTAL	120.00 *
6001		OFFICE SUPPLIES			
	43294	JANET EDWARDS	01132021	REIMBURSEMENT	10.00
				ACCOUNT TOTAL	10.00 *
6004		MEDICAL AND LABORATORY SU			
	31730	NATIONAL BANK	DEMERS/2 DEC20	MEDICAL SUPPLIES	5.79
	31730	NATIONAL BANK	DEMERS/2 DEC20	MEDICAL SUPPLIES	217.70
	31730	NATIONAL BANK	DEMERS/2 DEC20	MEDICAL SUPPLIES	87.98
	31730	NATIONAL BANK	DEMERS/2 DEC20	MEDICAL SUPPLIES	23.97
	42833	BOUND TREE MEDICAL, LLC	83896676	MEDICAL SUPPLIES	283.75
	42833	BOUND TREE MEDICAL, LLC	83896677	MEDICAL SUPPLIES	53.00
	42833	BOUND TREE MEDICAL, LLC	83908528	MEDICAL SUPPLIES	418.25
				ACCOUNT TOTAL	1,090.44 *
6008		GASOLINE			
	11850	CLARK GAS & OIL	DEC20-2	REG/DIESEL FUEL	1,106.72
				ACCOUNT TOTAL	1,106.72 *
6014		OTHER OPERATING SUPPLIES			
	31730	NATIONAL BANK	BELCHER DEC20	TOOLS/MISC	312.97
	31730	NATIONAL BANK	BELCHER DEC20	TOOLS/MISC	182.98
	31730	NATIONAL BANK	DEMERS/1 DEC20	CLEANING SUPPLIES	15.74
	42733	FIRE RESCUE & TACTICAL	4320	TACLITE EMS PANTS	55.74
	42837	ARC3 GASES	07682306	OXYGEN USP MEDICAL	72.77
				ACCOUNT TOTAL	640.20 *
				MAJOR TOTAL	3,275.95 **
				FUND TOTAL	487,588.18

AP375H
1/22/2021
FUND # - 001

FLOYD COUNTY
LISTING OF INVOICES FOR 1/26/2021 -- 1/26/2021

BEFORE CHECKS
PAGE 9

MAJOR#	VENDOR	VENDOR			
ACCT#	NUMBER	NAME	INV#	DESCRIPTION	AMOUNT

AP375H
1/22/2021
FUND # - 010

FLOYD COUNTY
LISTING OF INVOICES FOR 1/26/2021 -- 1/26/2021

BEFORE CHECKS
PAGE 10

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
032030	**FIRE AND RESCUE FUND**				
3202	FIRE DEPARTMENT OPER. AND				
	420	APPALACHIAN POWER	574040803 DEC20	LOCUST GROVE FIRE	214.50
				ACCOUNT TOTAL	214.50 *
3206	STATE FIRE FUND PROGRAM				
	2310	FLOYD COUNTY VOLUNTEER	01192021	REIMBURSEMENT	2,683.04
				ACCOUNT TOTAL	2,683.04 *
				MAJOR TOTAL	2,897.54 **
				FUND TOTAL	2,897.54

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
042030	**SOLID WASTE**				
2800	DRUG TESTING				
	42894	SAFETY & COMPLIANCE SERVIC	441282	PROF SERVICES	113.63
	42894	SAFETY & COMPLIANCE SERVIC	441287	PROGRAM FEE	325.00
				ACCOUNT TOTAL	438.63 *
3140	LANDFILL MONITORING				
	340	DRAPER-ADEN ASSOCIATES	2020120467	PROJECT 5963-04	505.00
	340	DRAPER-ADEN ASSOCIATES	2020120488	PROJECT 5963-37	5,058.71
				ACCOUNT TOTAL	5,563.71 *
3310	REPAIRS AND MAINTENANCE				
	370	VIA'S TRUCK & TRACTOR REPA	0024129	MACK REPAIRS	862.32
	370	VIA'S TRUCK & TRACTOR REPA	0024167	MACK REPAIRS	3,612.46
	370	VIA'S TRUCK & TRACTOR REPA	0024236	MACK REPAIRS	617.50
	830	CARTER MACHINERY COMPANY,	2788962	SWITCH	30.01
	830	CARTER MACHINERY COMPANY,	2791369	358-7085 FAN	283.06
	22460	SPENCER'S BODY SHOP	JOB NUMBER 326	VEHICLE REPAIRS	2,366.39
	31730	NATIONAL BANK	THOMPSON DEC20	PARTS/EQUIPMENT	119.85
	31730	NATIONAL BANK	THOMPSON DEC20	PARTS/EQUIPMENT	218.42
				ACCOUNT TOTAL	8,110.01 *
5230	TELEPHONE				
	28501	VERIZON WIRELESS	9870615578	WIRELESS BILLING	21.77
				ACCOUNT TOTAL	21.77 *
6008	GAS, OIL, ETC.				
	32130	HUTCHENS PETROLEUM	106669	ANTIFREEZE	254.59
				ACCOUNT TOTAL	254.59 *
6014	OTHER OPERATIONAL SUPPLIE				
	290	CINTAS	4072806988	UNIFORMS	123.32
	290	CINTAS	4073469988	UNIFORMS	137.62
	42991	WINZER	6783028	BULK CHEMICALS	500.99
	42991	WINZER	6788167	RACHET GEAR SPANN	262.50
				ACCOUNT TOTAL	1,024.43 *
6023	CONTRACT SERVICES/HAULING				
	36970	THOMPSON TRUCKING, INC	90709	TRASH HAULING	14,975.00
				ACCOUNT TOTAL	14,975.00 *
				MAJOR TOTAL	30,388.14 **
042040	**RECYCLING**				
3310	REPAIRS & MAINTENANCE				
	42685	BOND GARAGE DOORS	5797	REPAIRS	284.00
				ACCOUNT TOTAL	284.00 *
3400	TIRE DISPOSAL TRANSPORTAT				
	43038	FRONTLINE LOGISTICS INC	FCTS-1	OUTBOUND TIRES	3,147.30
				ACCOUNT TOTAL	3,147.30 *
6023	HAULING REFRIGERATORS/SCR				
	17430	FRANKLIN CONTAINER SRVICE	12162020	RECYCLE HAULING	218.00
				ACCOUNT TOTAL	218.00 *
				MAJOR TOTAL	3,649.30 **
				FUND TOTAL	34,037.44

AP375H
1/22/2021
FUND # - 050

FLOYD COUNTY
LISTING OF INVOICES FOR 1/26/2021 -- 1/26/2021

BEFORE CHECKS
PAGE 12

MAJOR#	VENDOR	VENDOR			
ACCT#	NUMBER	NAME	INV#	DESCRIPTION	AMOUNT

AP375H
1/22/2021
FUND # - 140

FLOYD COUNTY
LISTING OF INVOICES FOR 1/26/2021 -- 1/26/2021

BEFORE CHECKS
PAGE 13

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
031400	**E911**				
8112		ROAD SIGN MAINTENANCE			
	36110	JZ SIGNS	3694	E911 ROAD SIGNS	219.23
				ACCOUNT TOTAL	219.23 *
8116		WIRELESS DATA BASE COSTS			
	43096	U.S. BANK EQUIPMENT FINANC	433339405	C500-0603029-000	62.13
				ACCOUNT TOTAL	62.13 *
8129		CAPITAL OUTLAY: EVAL OF C			
	43128	FEDERAL ENGINEERING, INC.	2020-4-7745	COMM PLAN/RECOMMEND	14,739.00
				ACCOUNT TOTAL	14,739.00 *
				MAJOR TOTAL	15,020.36 **
				FUND TOTAL	15,020.36

AP375H
1/22/2021
FUND # - 250

FLOYD COUNTY
LISTING OF INVOICES FOR 1/26/2021 -- 1/26/2021

BEFORE CHECKS
PAGE 14

MAJOR#	VENDOR	VENDOR	INV#	DESCRIPTION	AMOUNT
ACCT#	NUMBER	NAME			
022010					
8001	COMMONWEALTH ATTORNEY DRU				
	28501	VERIZON WIRELESS	9868190779	WIRELESS	268.65
	31730	NATIONAL BANK	BRANSCO/1 DEC20	MONITORS	231.64
	31730	NATIONAL BANK	BRANSCO/1 DEC20	MONITORS	115.82
	31730	NATIONAL BANK	BRANSCO/2 DEC20	LENOVO	226.40
	31730	NATIONAL BANK	BRANSCO/2 DEC20	LENOVO	314.85
	31730	NATIONAL BANK	BRANSCO/2 DEC20	LENOVO	1,095.11
				ACCOUNT TOTAL	2,252.47 *
				MAJOR TOTAL	2,252.47 **
				FUND TOTAL	2,252.47
				TOTAL DUE	541,795.99

Approved at meeting of _____ on _____.

Signed _____
Title _____ Date _____

Title _____ Date _____

Title _____ Date _____

EB: Election Officers and Clerks - \$6981 (Balance \$2,636) Request \$4,345

Position (Election Day)	June 2021 Primary
Chief Election Officer	\$130
Asst. Chief Election Officer	\$125
Lead Pollbook Officer	\$125
Pollbook Officer	\$120
Ballot Officer	\$120
Marking Booth Officer	\$120
Machine Officer	\$120
ADA / Curbside Officer	\$120
ADA / Curbside Officer	\$120
ADA / Curbside Officer	n/a
Drop Box Officer	\$120
Drop Box Officer	n/a
Alternate trained	\$20
Mileage to pick up and return materials (chief, pollbook officer, drop box officer)	\$48
Clerk of Court Fee	\$30
Staffing costs per precinct	\$1318
Five precincts	\$6590
Position (Central Absentee)	June 2021 Primary
Chief Election Officer	\$130
Asst. Chief Election Officer	\$125
Election Officer	\$120
Election Officer	n/a
Mileage to pick-up materials (Chief)	\$16
Staffing cost absentee Precinct	\$391

EB: Election Custodians - \$2,500 (Balance 1,570) Request \$930

Position	June 2021 Primary
Equipment Custodians	\$700
Equipment Custodians	\$700
Equipment Handling and Setup	\$500
Equipment Handling and Setup	\$500
Mileage (custodians)	\$100
Staffing Cost	\$2,500

EB: Election Ballot Programming and Printing – \$3,708 (Balance **-\$975) Request **\$4683****

Item	June 2021 Primary 5,789 ballots (50% turnout)
Letter size ballots .34 cents each	\$1,968
Set-up fee (1 to 5 races)	\$1,500
Set-up fee (6 to 10 races)	n/a
Shipping \$40 per 1,000	\$240
TOTALS	\$3,708

EB: Postage – \$750 (Balance \$193) Request **\$557**

	June 2021 Primary
600 absentee ballots at \$1.25 ea.	\$750

EB: Polling Place Supplies / Equipment Rental - \$500 (Balance **-\$964) Request **\$1464****

U-haul Rental to deliver supplies and curbside tents to polling places. \$500 per election.

To conduct a June 2021 Primary the Electoral Board will need an additional \$11,979 in FY 2021



December 8, 2020

Amy Ingram, General Registrar
Floyd County
100 East Main Street, Room 302
Floyd, VA 24091

Dear Amy Ingram:

After thorough assessment of the electronic pollbook certification requirements and procedures issued in 2020, VR Systems will not be pursuing certification of the EViD electronic pollbook in the Commonwealth of Virginia.

This has been an extremely difficult decision. Conducting a safe and secure election is not an easy task, and we are proud to have supported our partners in the Commonwealth of Virginia for the past six years.

Over the past several months we have reviewed in detail the specific requirements to obtain certification through the Virginia Division of Elections. Pursuing certification under these new requirements would necessitate significant technical changes to the foundation of the EViD software, and the additional recurring fees to maintain certification are substantial. It has been determined that the pursuit of certification in Virginia would result in an increase in licensing fees that would make continued use of EViD cost-prohibitive for our customers.

With focus beginning to shift beyond the 2020 general election, we wanted to make a timely decision to allow your team as much time as possible to prepare for the transition to a different pollbook solution. The Virginia Department of Elections has agreed to maintain certification of the current EViD software through July 2021, and both VR Systems and BEC remain committed to supporting your elections office into the new year and through the transition period.

As always, you can contact the VR Systems EViD team at support@vrsystems.com or 850.668.2838, or you may reach BEC at 919.662.1119 or contactus@becplasticcard.com with questions.

Respectfully,

A handwritten signature in blue ink that reads 'Mindy J Perkins'.

Mindy Perkins
President and CEO
VR Systems, Inc.

A handwritten signature in black ink that reads 'Dale Smith'.

Dale Smith
President
BEC Plastic Card Solutions, Inc.



Quote Number 00008245
 Account Name Floyd County, VA
 Total Hart Price \$18,925.00

Item	Description	Unit Price	Quantity	Total Price
Poll Pad Software	Poll Pad software	\$600.00	12	\$7,200.00
ePulse Live Connectivity	Software for networking Poll Pads	\$5,000.00	1	\$5,000.00
Custom Carrying Case for Poll Pad and Printer	Case for Poll Pad and printer transport and storage	\$125.00	12	\$1,500.00
Poll Pad Stand		\$50.00	12	\$600.00
Poll Pad Stylus		\$2.50	24	\$60.00
Star Micronics TSP654II Direct Thermal Printer	Thermal printer for Poll Pad	\$350.00	12	\$4,200.00
Star Micronics Receipt Paper (50 Rolls)	Thermal printer paper for Poll Pad	\$125.00	1	\$125.00
Poll Pad Set-up and Delivery (Per Unit)	Poll Pad kitting, shipping, and handling	\$20.00	12	\$240.00

Total Hart Price \$18,925.00

Additional Products (Not Provided or Invoiced by Hart)

Item	Description	Unit Price	Quantity	Total Price
Apple iPad (32 GB)	Tablet for Poll Pad software; must be purchased from third party (recommended vendor is KNOWiNK)	\$310.00	12	\$3,720.00

Estimated Additional Product Price \$3,720.00

Estimated 1-Year Price \$22,645.00

Estimated Annual Recurring Fees (Beginning Year 2)

Item	Description	Unit Price	Quantity	Total Price
License and Support - Poll Pad	Annual Poll Pad license and support fee	\$125.00	12	\$1,500.00
License and Support - ePulse Live Connectivity	Annual ePulse Live Connectivity license and support fee	\$1,000.00	1	\$1,000.00

Total Annual Poll Pad Fees \$2,500.00

Bill To 100 E Main St., Room 302
 Floyd, VA 24091

Ship To 100 E Main St., Room 302
 Floyd, VA 24091

Customer Contact

Contact Name Amy Ingram Email aingram@floydcova.org
 Phone (540) 745-9350

General Information

Expiration Date 2/4/2021 Instructions Please fax with signature to (512) 252-6923 or scan and email to tcervantes@hartic.com to order.
 Payment Terms Net 30



Quote Number 00008245
 Account Name Floyd County, VA
 Total Hart Price \$18,925.00

Terms and Conditions

Webinar training online for Poll Pad is provided at no additional charge.
 Subsequent Poll Pad License and Support will be billed annually. Hart reserves the right to change annual License and Support fees with the invoice serving as notice.
 Pricing subject to inventory availability at time of quote execution and acceptance.
 Taxes will be calculated in conjunction with the Customer based on the final approved price list.

Hart Approval

Prepared By Tony Cervantes Title Inside Sales Representative
 Signature 

Customer Approval

Name: _____ Title: _____
 Customer Approval: _____ Date: _____



Floyd County, Virginia

Public Safety Communications Plan and Recommendations Report

FINAL

January 18, 2021

Prepared by:



"Unleashing the Power of Technology"

Federal
Engineering®

Federal Engineering, Inc.
10560 Arrowhead Dr, Suite 100
Fairfax, VA 22030
703-359-8200

Executive Summary

Floyd County, Virginia (County), currently operates a 16-year-old UHF narrowband conventional simulcast public safety radio system consisting of two simulcast remote radio transmitter sites, and one remote single channel repeater. The County is concerned about the age and maintainability of the current system, including ongoing availability of parts and spares, and the coverage needs of the users exceeds the current system capabilities. The mountainous topography of the County adds to the complexity of the meeting maturing coverage requirements.

The County desires a replacement system which addresses the additional coverage needs of current users and provides interoperability during emergencies with the public safety agencies in surrounding counties. It must also provide ease of use and operation of the system for users with new features and benefits not available in the current system.

Using a competitive procurement process, the County obtained the services of Federal Engineering, Inc. (*FE*) to analyze their existing public safety communications systems, develop recommendations to upgrade or replace the system, or components of the system, and to meet the needs of their stakeholders.

The County's scope of work defined a three-phase process to:

1. Evaluate the current system, determine the key stakeholders' requirements for a replacement system, and develop a conceptual design for the replacement system
2. Develop a Request for Proposal (RFP) and provide evaluation support
3. Support the implementation of the selected system

FE's methodology to complete Phase 1 of this effort comprised the following tasks:

Task 1 – Conduct a project initiation and project goals review with the County and current radio system partners

Task 2 – Perform an existing system evaluation

Task 3 – Complete a coverage analysis and conceptual design to be utilized in the evaluation between analog and Project 25 (P25)

Task 4 – Deliver a public safety communications plan and summary presentation



The following information expands upon each of these tasks.

Task 1 – Project Initiation and Project Goals Review

FE conducted a project kickoff on June 26, 2020 with Floyd County radio system users and their current radio system service provider, Professional Communications Systems, LLC. The purpose of the meeting was to develop a common understanding of the project goals and objectives, define steps to move forward, and to establish communication channels for both parties.

Task 2 – Existing System Evaluation

COVID-19 restrictions prevented face-face user interviews with the County and radio system partners. Therefore, **FE** distributed a survey questionnaire to engage the user community and gather their feedback on the current system and their desires for improvements in the new system. The questionnaire focused on users from the Sheriff's office, fire department, emergency and rescue department, and dispatch and E911 department.

FE visited radio sites at Wills Ridge and Copper Hill to determine the condition of the equipment and towers, however the dispatch facility was not accessible. In addition, **FE** reviewed existing system documentation provided by Professional Communications Systems, LLC.

The previously delivered *Floyd County Executive Summary of System Issues* summarized the output from these three sources.

Table 1 summarizes the analyzed feedback from key users of the system. Using a scale from 1 to 10 with 1 being the least satisfied and 10 being the most satisfied, the respondents provided the following ratings.



Table 1 – User Feedback

Key User and System Requirements		FE Findings and Analyses
Sheriff's Office		
1	System Coverage/Audio Clarity	Respondents indicated a satisfaction rating of 5.75 for portable coverage and mobile coverage a 6.5 with the existing system. Using the same scale, the system received a satisfaction ration of 6.25 for audio clarity.
2	System Capacity	Respondents indicated a satisfaction rating of 8.75 for the existing system's capacity (channel available when needed).
3	System Features	A GPS/AVL feature allowing for the dispatch operator to identify the location of users is the leading desired future feature identified by 75% of the respondents. Other features listed included an emergency button or man down feature, and the ability for dispatch to patch other agencies onto County channels.
Fire		
1	System Coverage/Audio Clarity	Respondents indicated a satisfaction rating of 6.0 for portable coverage and 8.0 for mobile coverage with the existing system. Using the same scale, the system received a satisfaction rating of 3.0 for audio clarity.
2	System Capacity	Respondents indicated a satisfaction rating of 10 for the existing system's capacity.
3	System Features	Fire did not provide a response when asked to provide a list of features that are not available today, but they would find useful in a new system.
EMS and Rescue		
1	System Coverage/Audio Clarity	Respondents indicated a satisfaction rating of 7.0 for portable coverage, and 6.0 for mobile coverage with the existing system. Using the same scale, the system received a satisfaction ration of 6.5 for audio clarity.
2	System Capacity	Respondents indicated a satisfaction rating of 8.0 for the existing system's capacity (channel available when needed).
3	System Features	EMS/Rescue listed better emergency activation tracking capabilities as a desired useful feature that is not available today.



Key User and System Requirements		FE Findings and Analyses
Dispatch and E911		
1	System Coverage/Audio Clarity	Respondents provided a satisfaction rating a 5.0 for portable coverage and 7.0 for mobile coverage with the existing system. Using the same scale, users rated the system a 5 for audio clarity.
2	System Features	Users expressed a desire that their future system support a GPS/AVL solution allowing for the radio user's location to be known during the activation of an emergency alarm. Another desired feature in a new system is expandable capacity.

The feedback received from these key users form the basis of the requirements for the replacement system.

Task 3 – Coverage Analysis and Conceptual Design

FE conducted an interactive coverage workshop with County stakeholders to:

1. Evaluate the existing Floyd County UHF analog simulcast system radio coverage
2. Identify areas where users require additional radio coverage
3. Model conceptual coverage of analog and Project 25 (P25) simulcast systems

The existing site at Copper Hill remains unchanged and is part of the conceptual design. However, the County intends to relocate the Wills Ridge site equipment to a new site owned by Appalachian Power (AEP). The coverage analysis results show that by using the additional antenna height available on the AEP tower (approximately 60' higher than Wills Ridge), users should experience coverage improvements in the areas surrounding Wills Ridge.

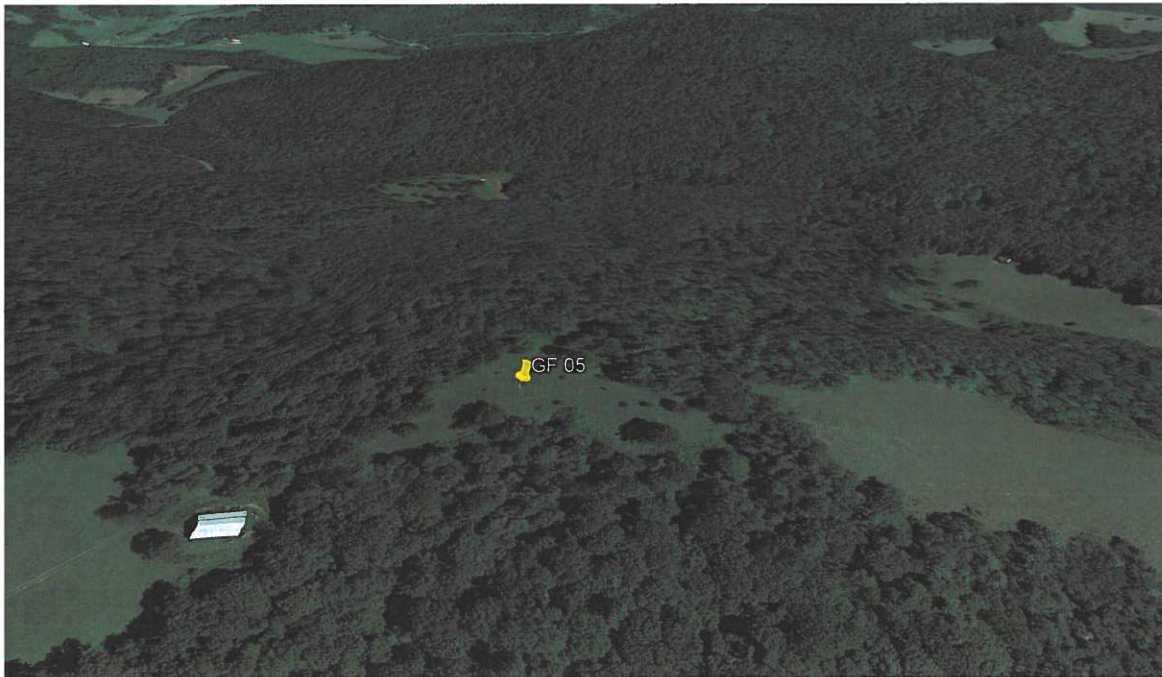
Coverage in the southwestern portion of the County appears to be poor. *FE* evaluated several existing towers and found geographic coordinates and tower heights for several potential candidate sites using publicly available information such as the FCC's Antenna Structure Registration (ASR) database, as well as sites provided by the County during the coverage workshop.

While several of the evaluated candidate sites provided some coverage improvement, based on publicly available information, it appears no single existing structure can fill most of the coverage gaps in the southwest. Therefore, the County's best option may be to



construct a new site (referred to as a “greenfield” site) just off Buffalo Mountain Road SW (see Figure 1a below), that would provide adequate coverage throughout the current poor coverage areas. This report includes predicted coverage that this location could provide for both an analog system enhancement or a P25 replacement system.

Figure 1a – Location of Proposed SW Greenfield Site



The County also identified poor coverage in the north east corner of the County. To date, neither the County nor **FE** has identified any existing structures that could be used in that

area. **FE** identified a location for a new tower, another greenfield site as shown in Figure 1b, which provides the best coverage improvement in that area.

Figure 1b – Location of Proposed NE Greenfield Site



The costs for both greenfield sites have been included in Table 3 as an option.

Task 4 – Public Safety Communications Plan and Recommendations

Based on the existing system evaluation, feedback from the user questionnaires, the interactive coverage workshop to assess the coverage shortfalls of the current system and the user expectations for a new system, **FE** conducted analyses of the following two public safety radio system alternatives:

Alternative 1 – Analog Enhancement: Enhancing the existing 2-site simulcast UHF analog system with an additional greenfield site to improve system coverage

Alternative 2 – P25 Upgrade: Upgrading to a 3-site simulcast UHF P25 digital system, including a greenfield site to improve system coverage

Both alternatives provide a two-site, four-channel simulcast system for voice communications with a greenfield expansion to a three-site, four-channel simulcast

system. A fifth channel could be implemented to interface with the new COMLINC 2.0 state funded interoperability system.

An optional fourth site, located in the north east corner of the County, is included for either alternative. This option can be implemented following deployment of the new system, dependent on County approval and the availability of funding.

Both alternatives also assume replacement of existing dispatch consoles, reuse of backhaul system, new Network Management System (NMS), use of the Appalachian Power (AEP) tower site, reuse of Copper Hill tower site and the implementation of a third RF site on Buffalo Mountain.

Table 2 below details the anticipated coverage percentages for Alternative 1, Analog Enhancement and Alternative 2, P25 Upgrade. Also included is the fourth site option for both alternatives.

Table 2 – Alternative Coverage Percentages

Geographic Coverage % of Floyd County (DAQ 3.4 or better)							
Solution	Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)	Estimated Cost
Existing System - Two Sites	88	86	70	45	40	17	N/A
Alt 1 - Analog - Three Sites	94	93	78	52	47	22	\$2.4M
Alt 1 - Analog - Four Sites	95	94	80	54	48	23	\$3.2M
Alt 2 - P25 - Three Sites	99	98	91	68	62	38	\$3.1M
Alt 2 - P25 - Four Sites	99	99	92	70	64	40	\$3.9M



Table 3 below detail the differences and similarities between Alternative 1, Analog Enhancement and Alternative 2, P25 Upgrade.

Table 3 – Comparison of Alternatives

Alternatives Comparison		
<i>Item</i>	<i>Alternative 1 – Analog Enhancement</i>	<i>Alternative 2 – P25 Upgrade</i>
Coverage	Maintains existing coverage with slight improvement due to new equipment	Improved coverage provided in digital vs. analog
Costs	Lower due to analog use	Higher due to P25 digital operation
Subscriber devices	Replace with analog devices	Replace with P25 devices
Competitive procurement	Yes, analog systems available from multiple manufacturers	Yes, P25 systems available from multiple manufacturers
Interoperability	Same interoperability as exists today	P25 system would require interoperability partners to have P25 subscribers.
Enhances interoperability	Same interoperability as exists today	Purchase of multiband P25 subscribers would allow for operation on Roanoke's system and other P25 systems in the same band
Enhanced features	No	Yes, enhanced features such as encryption, over the air rekey and GPS/AVL available
Capacity	Same capacity as today	Same capacity as today
Upgradeable	Possible to P25 if new infrastructure is capable, dependent on vendor selection	Yes, to P25 trunking
Design	Three-site conventional	Three-site conventional

As shown in table 4, the estimated capital cost for Alternative 2 is \$705,500 higher than the estimated capital cost for Alternative 1. Alternative 2 also requires a complete refresh of subscriber units.



Table 4 – Comparison of Alternative Costs

Alternatives Cost Estimate Comparison		
<i>Item</i>	<i>Alternative 1</i>	<i>Alternative 2</i>
Radio System	\$870,000	\$1,125,000
Dispatch System	\$200,000	\$322,500
Network Management System	\$75,000	\$75,000
Site Civils / Improvements	\$190,000	\$250,000
Subscriber Equipment	\$558,000	\$826,000
Greenfield Tower Site (Site3)**	\$535,000	\$535,000
Total	\$2,428,000	\$3,133,500
OPTION: Greenfield Tower Site (Site 4) **		
Site Equipment and Services	\$535,000	\$535,000
RF Equipment and Services	\$240,000	\$240,000
Total	\$3,203,000	\$3,908,500

**** This estimate does not include land acquisition costs.**

FE's budgetary estimates are intentionally conservative, and do not include any projected vendor discounts.

Conclusion

The two alternatives detail potential paths for upgrading the existing analog system to a new analog system or replacing the current system with a P25 solution. These two alternatives are closely related with the major differences being cost, and analog vs. digital operation. A P25 solution does provide slightly better coverage over an analog solution utilizing the same site configuration.

It is *FE's* opinion that the County should consider a P25 upgrade to include a third site to improve coverage within the County. A P25 system would provide slightly increased coverage over an analog solution at roughly the same cost. Upgrading to trunked operation would increase system call handling efficiency, effectively increasing system capacity without the need for additional spectrum. It would also allow for the implementation of additional features such as encryption and a GPS/AVL solution identified by the users. Funding and grant options are more readily available for public safety P25 standards-based systems.

However, the costs associated with the P25 conventional upgrade may prevent the County from such a decision. The County could consider the alternative of refreshing the analog system and adding a third site to enhance coverage to meet the stakeholder's expectations.



A fourth site to further improve coverage, a greenfield site in the north east corner of the County, is an option that can be selected and added to either alternative, if funding is available.

Next Steps

Following the acceptance of this document and the County's notice to proceed with Phase 2 of the project, **FE** will develop a set of functional specifications based on the County-approved conceptual design.

These specifications will describe the County's selected alternative radio system's functional and performance requirements in sufficient detail for a competitive procurement process. On receipt of the proposals, **FE** will provide evaluation support leading up to vendor selection.



Table of Contents

Executive Summary	2
1. Introduction	14
2. User Needs and System Issues Review	15
3. Coverage Analysis	17
3.1 Radio Coverage	17
3.1.1 Radio Coverage Prediction Software	17
3.1.2 Technical System Information	17
3.1.3 Coverage Analysis Parameters	17
3.1.4 Radio Coverage Workshop	19
3.1.5 Radio Coverage Maps	19
3.1.6 Assessment of Results	23
3.1.7 Potential Improvements	23
3.2 P25 Upgrade	32
3.3 Additional Considerations	37
3.3.1 Receive-Only Sites	38
3.3.2 Vehicular Repeaters	38
3.3.3 FCC Licensing Concerns	39
3.4 Phased Approach	40
4. Radio System Alternative Analysis	41
4.1 Alternative 1 – UHF Analog Simulcast with Coverage Enhancement	41
4.1.1 Radio System Architecture	41
4.1.2 Radio System Features	42
4.1.3 Simulcast and Voting Equipment	43
4.1.4 Radio Site Equipment	43
4.1.5 Antenna Systems	44
4.1.6 Backhaul Network	44
4.1.7 Network Management System (NMS)	45
4.1.8 Dispatch Console System Equipment	45



4.1.9	Fire Station Alerting	46
4.1.10	Interoperability	46
4.1.11	Subscriber Devices	46
4.1.12	Site Information (Civil Work)	47
4.1.13	Budgetary Cost Estimate	47
4.2	Alternative 2 – Project 25 Upgrade with Coverage Enhancement	53
4.2.1	Radio System Architecture	53
4.2.2	Radio System Features	54
4.2.3	Simulcast and Voting Equipment	56
4.2.4	Radio Site Equipment	56
4.2.5	Antenna Systems	56
4.2.6	Backhaul Network	56
4.2.7	Network Management System	56
4.2.8	Dispatch Equipment	56
4.2.9	Fire Station Alerting	56
4.2.10	Interoperability	57
4.2.11	Subscriber Devices	57
4.2.12	Site Information (Civil Work)	57
4.2.13	Budgetary Cost Estimate	57
4.3	Alternatives Analysis Comparison	62
5.	Recommendations and Next Steps	66



1. Introduction

Floyd County, Virginia (County), using a competitive procurement process, obtained the services of Federal Engineering, Inc. (**FE**) to analyze their existing Public Safety communications systems and develop recommendations to upgrade or replace the system, or components of the system to meet the needs of their stakeholders. **FE's** methodology for this project included the following tasks:

Task 1 – Project Initiation and Project Goals Review, to reaffirm a common understanding of the project goals and objectives

Task 2 – Existing System Evaluation, including a *Floyd County Executive Summary of System Issues*

Task 3 – Coverage Analysis and Conceptual Design, which includes an interactive coverage workshop with County stakeholders to model the conceptual design and coverage of an analog simulcast system versus a Project 25 (P25) digital simulcast system

Task 4 – Public Safety Communications Plan and Presentation, including this *Public Safety Communications Plan and Recommendations Report*.

This *Public Safety Communications Plan and Recommendations Report* documents the output and findings of Tasks 1 to 3, provides a side-by-side comparison of the two alternatives identified in Task 3, includes a budgetary estimate for each alternative, as well as our analysis of the two alternatives.



2. User Needs and System Issues Review

The previously delivered *Executive Summary of System Issues* report detailed the current system issues as well as user needs for improved public safety communications within Floyd County. This section will summarize the key findings associated with system issues and user needs as determined in that report.

These findings will serve as the baseline for the design of the replacement system alternatives in later sections of this report.

- Coverage

Users identified the single most important system deficiency that needs addressing with a system expansion or upgrade is coverage. Improving coverage typically requires the addition of one or more radio sites to the system.

- Capacity

Being a conventional system, the existing system provides a single channel or talk path per frequency pair. Each of the following user groups, Sheriff's Office, Fire, Emergency Medical Services and Public Works utilizes a single channel. User responses varied on the need of additional channels. Some users indicated a need for additional channels whereas other users indicated the existing channel count was sufficient for their operations. Adding new channels to the existing analog system is possible by obtaining additional licensed frequency pairs.

- System Redundancy and Support

The existing system has components where single failures could disrupt communications drastically, thereby reducing communication capabilities. The main item of concern is the existing microwave network. Additionally, there were other system components not currently supported by the manufacturer. This could lead to increased repair times when component level repairs are necessary. Expanding the existing analog system would not increase system redundancy nor would it resolve the lack of support for some system components. Implementing a new analog or P25 system would mitigate these issues. A new analog or P25 systems would require the implementation of a new microwave backhaul network to mitigate the issues of redundancy associated with the current backhaul network. A new backhaul network can comprise microwave and/or fiber connectivity.



- System Features

The single most important feature reported by the user groups was Automatic Vehicle Location (AVL) service utilizing the Global Positioning System (GPS). Either during emergency activations or on demand, users found it an important feature to understand the location of users. Another feature identified was encryption. Neither of these features would be available through a simple refresh of the existing analog system. Analog systems do not support AVL and encryption natively and would require digital operation. Both features would be available options if a new P25 system is the preferred solution.



3. Coverage Analysis

3.1 Radio Coverage

FE evaluated the radio coverage of the existing Floyd County UHF analog simulcast system. We used the results, along with input from the County stakeholders, to identify areas that need additional coverage.

3.1.1 Radio Coverage Prediction Software

FE produced the radio coverage maps in this section using **FEPerformancePro™** and high-resolution elevation and land use/cover data from the United States Geological Survey (USGS). **FEPerformancePro™** uses ATDI's ICS Telecom network planning software used extensively by the Federal Government and validated via field tests. **FE** has calibrated this modeling tool and our methodology based on many years of experience and industry-accepted guidelines to deliver the most accurate view of radio coverage possible.

3.1.2 Technical System Information

FE performed the radio coverage analysis using technical information from the following sources:

- Communication with County personnel pertaining to radio sites, subscriber units, licensed frequencies, and operational areas
- Site visits to each of the two simulcast RF sites (Wills Ridge and Copper Hill) as well as the dispatch center at the Sheriff's Office
- FCC call signs, containing information such as licensed frequencies, antenna mounting heights, transmitter power levels, and Effective Radiated Power (ERP) from the antennas.

3.1.3 Coverage Analysis Parameters

FE used the parameters in Table 5 to model the coverage for the existing County radio system.



Table 5 – Coverage Study Parameters

Parameter	Description
System Type	Conventional Analog
Frequency Band	UHF
Channel Bandwidth	12.5 kHz (narrowband)
Reliability	95%
Audio Quality	Delivered Audio Quality (DAQ) – 3.4
Talk Paths	Mobile radio talk-out ¹ Mobile radio talk-in ² Portable radio talk-out, on-street Portable radio talk-in, on-street Portable radio talk-out, in light/residential buildings Portable radio talk-in, in light/residential buildings

The coverage displayed on each map indicates the areas predicted to have audio quality greater than or equal to Delivered Audio Quality (DAQ) 3.4. DAQ is a measure of audio quality over a transmission medium, with different levels as shown in Table 6 below. DAQ 3.4 is the level most commonly used for public safety radio systems.

Table 6 – Delivered Audio Quality Definitions

DAQ Level	Definition
1.0	Unusable. Speech present but not understandable
2.0	Speech understandable with considerable effort. Requires frequent repetition due to noise or distortion
3.0	Speech understandable with slight effort. Requires occasional repetition due to noise or distortion
3.4	Speech understandable without repetition. Some noise or distortion present. DAQ 3.4 is the minimum Channel Performance Criterion (CPC) used for public safety agencies.
4.0	Speech easily understandable. Little noise or distortion
5.0	Perfect. No distortion or noise discernible

¹ Repeater to mobile and portable radio.

² Mobile and portable radio to repeater.



Reliability is a measure of confidence in the signals in areas shown as covered on the maps and is based on recommendations from the Telecommunications Industry Association (TIA) TSB-88³ suite of documents. In the case of public safety radio systems, TSB-88 recommends 95% reliability, which means that users should be able to receive audio at DAQ 3.4 or better in any area that is deemed “covered” at least 95% of the time.

FE used the mobile and portable radio parameters in Table 7 to model radio coverage.

Table 7 – Mobile and Portable Radio Parameters

Parameter	Mobile	Portable
Transmit Power (watts)	40	5
Receive Sensitivity (dBm)	-119	-119
Antenna Location	Vehicle Roof	Hip
Antenna Height	5' above ground	3' above ground
Antenna Gain (dB)	0	0
Body Loss (dB)	N/A	17.6

3.1.4 Radio Coverage Workshop

Following the analysis of existing system coverage, FE conducted a radio coverage workshop with County stakeholders to:

- Review FE’s analysis of existing system
- Identify areas where coverage is insufficient
- Evaluate potential new sites to supplement coverage
- Identify a final set of sites that would best meet the County’s coverage needs

The existing coverage analysis is summarized below.

3.1.5 Radio Coverage Maps

The coverage maps in this section show mobile, on-street portable and in-building portable radio talk-out and talk-in coverage. As the maps will show, mobile radio talk-out and talk-in coverage are about the same because the power output of a UHF mobile radio (40 Watts) is typically about the same as repeaters in the system (50 watts). However, portable radio talk-in coverage is less than talk-out due to the lower output power of a portable radio (typically 4 watts) as compared to the repeaters. Also shown on the maps,

³ TIA TSB-88 Wireless Communications Systems - *Performance in Noise and Interference-Limited Situations*



mobile radio coverage exceeds on-street portable radio coverage due to higher radio output power and the use of a higher gain antenna, and on-street portable radio coverage exceeds in-building portable coverage due to the additional signal loss incurred when inside buildings.

The coverage maps use the following colors to model coverage:

- Green - areas where users should be able to communicate using their portable radios when inside light-density and/or residential buildings. For these coverage prediction studies, *FE* used 12 dB to represent signal loss inside these types of buildings
- Yellow - areas where users should be able to communicate using their portable radios on the street (on-street portable coverage should also exist in all green areas)
- Purple - areas where users should be able to communicate using their mobile radios (mobile coverage should also exist in all green and yellow areas)

Note: The radio coverage portrayed by the maps in this section may vary from actual system coverage. Computer modeling cannot account for all variables, such as individual radio performance, electrical noise, and radio RF interference. General loss factors are inclusive for trees and buildings, but actual signal loss varies based on the type, height and density of the trees and buildings.

In producing the maps, FE assumed that the existing radios perform according to manufacturer specifications. Radio and/or antenna system degradation would negatively affect performance causing actual coverage to be less than that indicated by the maps.

Figures 2 and 3 show the predicted talk-out and talk-in coverage of the existing UHF analog simulcast system.

Note: FE produced the existing system coverage maps to identify general areas with insufficient coverage. Our intent is not to depict exact coverage of the existing repeaters/channels but to choose potential sites for the conceptual design that have a high probability of meeting the County's coverage needs. The ultimate responsibility for providing the required coverage rests with the implementation contractor.



Floyd County, VA - Existing UHF Coverage - Two-Site Simulcast System
UHF Narrowband Analog Coverage >= DAQ 3.4; Talk-Out (site to radio); 95% Reliability

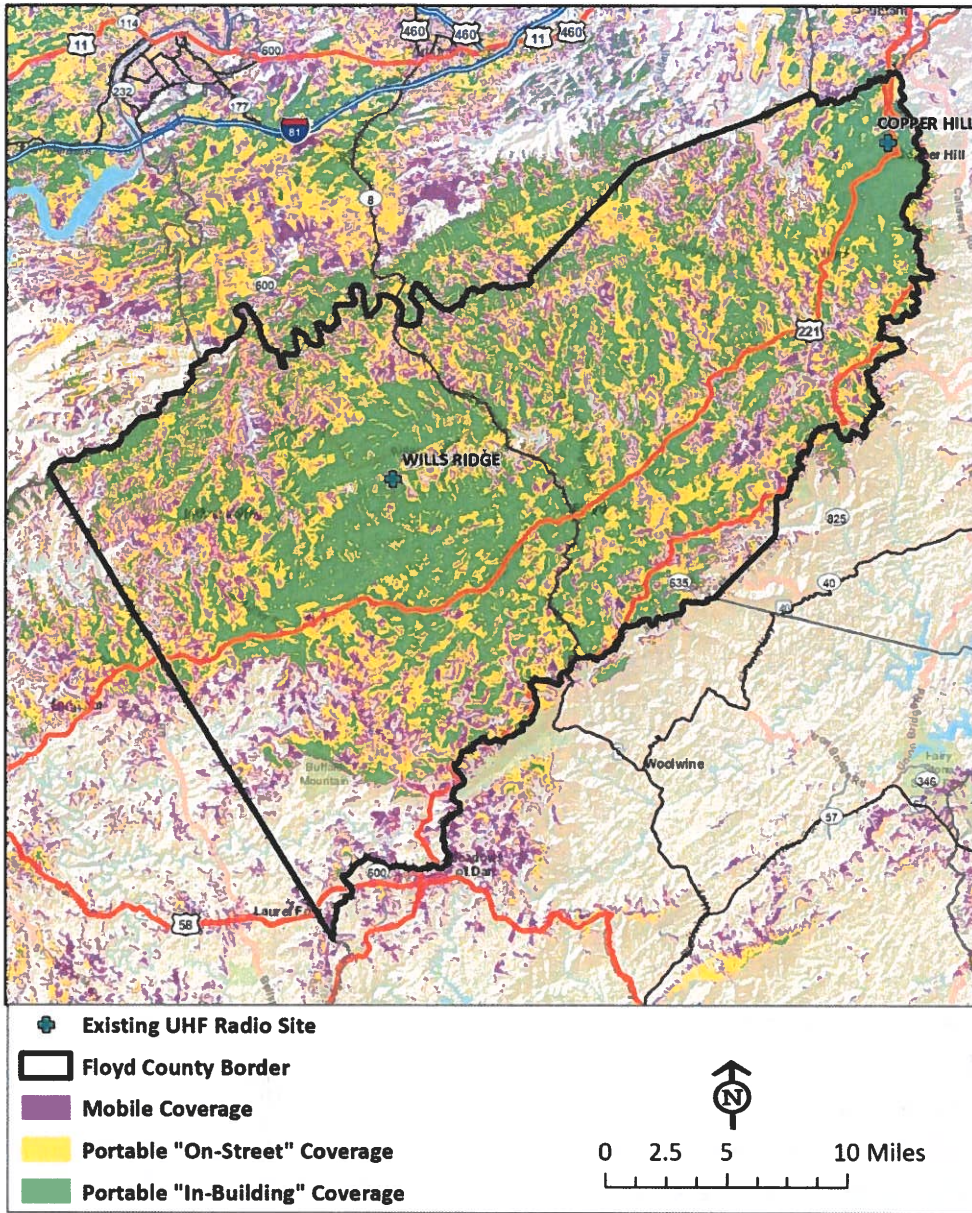


Figure 2 – Existing UHF Analog Simulcast Coverage >= DAQ 3.4; Talk-Out



Floyd County, VA - Existing UHF Coverage - Two-Site Simulcast System
UHF Narrowband Analog Coverage >= DAQ 3.4; Talk-In (radio to site); 95% Reliability

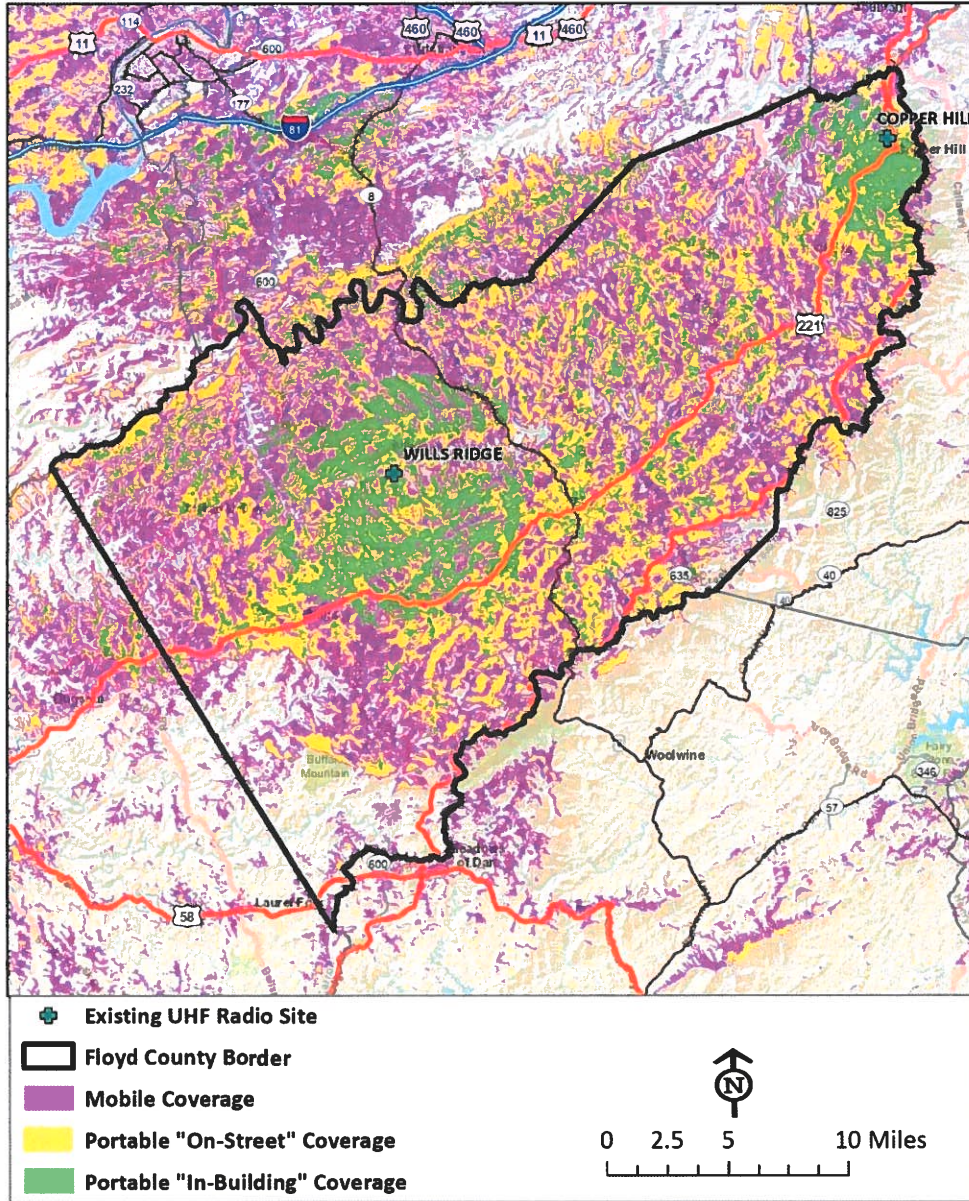


Figure 3 – Existing UHF Analog Simulcast Coverage >= DAQ 3.4; Talk-In

For a statistical reference, Table 7 presents the estimated geographic coverage percentages of the existing radio system over the County.



Table 8 – Existing UHF Analog Radio System – Estimated Coverage Percentages

Geographic Coverage %s of Floyd County (DAQ 3.4 or better)					
Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)
88	86	70	45	40	17

3.1.6 Assessment of Results

Based on a review of the coverage maps and confirmed through communication with the County during the coverage workshop, there are several areas where the existing analog simulcast system provided insufficient coverage. Specifically, the southwestern part of the County is very poorly covered, and there is spotty coverage in other portions of the County, such as the northwest and northeast. The coverage problems, unsurprisingly, are more pronounced when viewing portable coverage as opposed to mobile coverage.

Mobile coverage appears to be adequate through much of the County, other than the southwestern portion of the County and along some roadways in the northeast. Portable coverage, both on-street and in-building, is significantly worse than mobile coverage, especially in the talk-in direction, in many areas of the County.

3.1.7 Potential Improvements

FE identified several ways to improve coverage and overall system performance in communications with the County throughout the course of this project. This section describes how to incorporate these improvements into the two alternatives presented in Section 4 of this report which discusses the conceptual system design.

3.1.7.1 Move Wills Ridge to AEP Tower

During the coverage workshop, the County informed **FE** that they are currently in the process of relocating the equipment at Wills Ridge to a new site owned by Appalachian Power (AEP). This location, where the tower is still under construction, is approximately 440 feet southwest of the current Wills Ridge tower. The County conveyed to **FE** that they are confident AEP will provide them antenna mounting heights at approximately 160' above ground level (AGL).

FE analyzed the potential coverage that the County may realize by relocating the Wills Ridge equipment to the new AEP tower. The analysis showed that the sites are relatively



close in terms of elevation, however the additional antenna height on the AEP tower (approximately 60' higher than Wills Ridge) should result in some improvements in the areas surrounding Wills Ridge.

In addition to any potential coverage gains, the County expressed interest in moving away from the existing Wills Ridge, where there have been challenges with collocating with a commercial wireless carrier.

For reference, the geographic coordinates of the proposed AEP Tower are:

- Latitude: 36.928238
- Longitude: -80.428985

3.1.7.2 Additional Radio Sites

3.1.7.2.1 Southwest Corner of the County

To improve poor coverage in the southwestern portion of the County, where coverage appears to be very poor, **FE** evaluated the use of several existing towers. **FE** located geographic coordinates and tower heights of several of the candidate sites using publicly available information such as the FCC's Antenna Structure Registration (ASR) database, and from communication with the County during the coverage workshop.

While several of the evaluated candidate sites provided coverage improvements to southwestern portions of the County, based on the information available to **FE**, there was no one existing structure that fills most of the coverage gaps in the southwest. In most cases, the coverage gaps require two or more sites provide adequate coverage. As a result, the County may wish to pursue the construction of a new site (referred to as a "greenfield" site) at a location that would provide adequate coverage throughout the current poor coverage areas.

FE evaluated potential locations where a greenfield site could provide the best coverage in the southwest portion of the County. After a review of several high-elevation locations, **FE** found a location where coverage gains would likely be substantial throughout the reported area.

Figure 4 shows an image of the potential greenfield location. It is important to note that **FE** did not perform any additional research regarding the feasibility of building a new site at this location other than for coverage improvements to make up the existing shortfall.



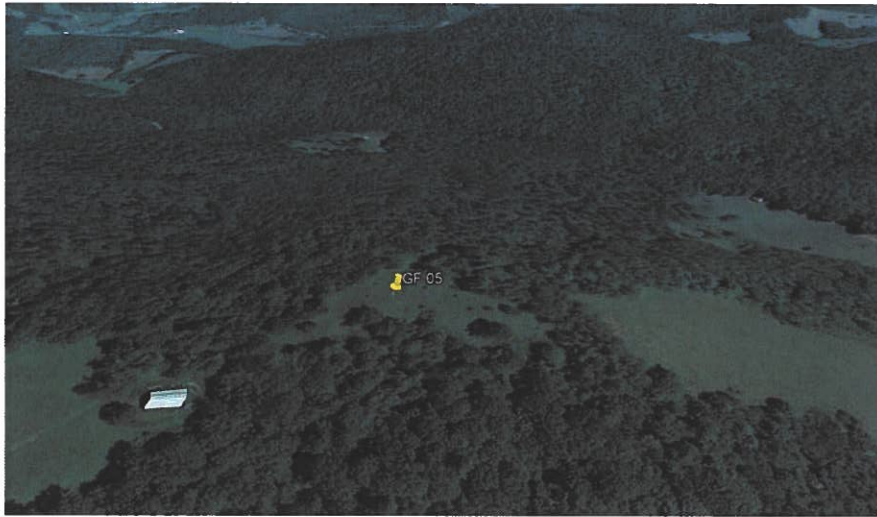


Figure 4 – Potential Greenfield Site in Southwestern Floyd County

Figures 5 and 6 show the talk-out and talk-in coverage, respectively, of a three-site UHF analog simulcast system, with the following sites representative of Alternative 1:

- The new analog equipment is now located at the new AEP Tower
- New analog equipment is located at Copper Hill
- A complete radio installation at the new greenfield site referenced in figure 4

Floyd County, VA - Potential UHF Coverage - Three-Site Simulcast System
UHF Narrowband Analog Coverage >= DAQ 3.4; Talk-Out (site to radio); 95% Reliability

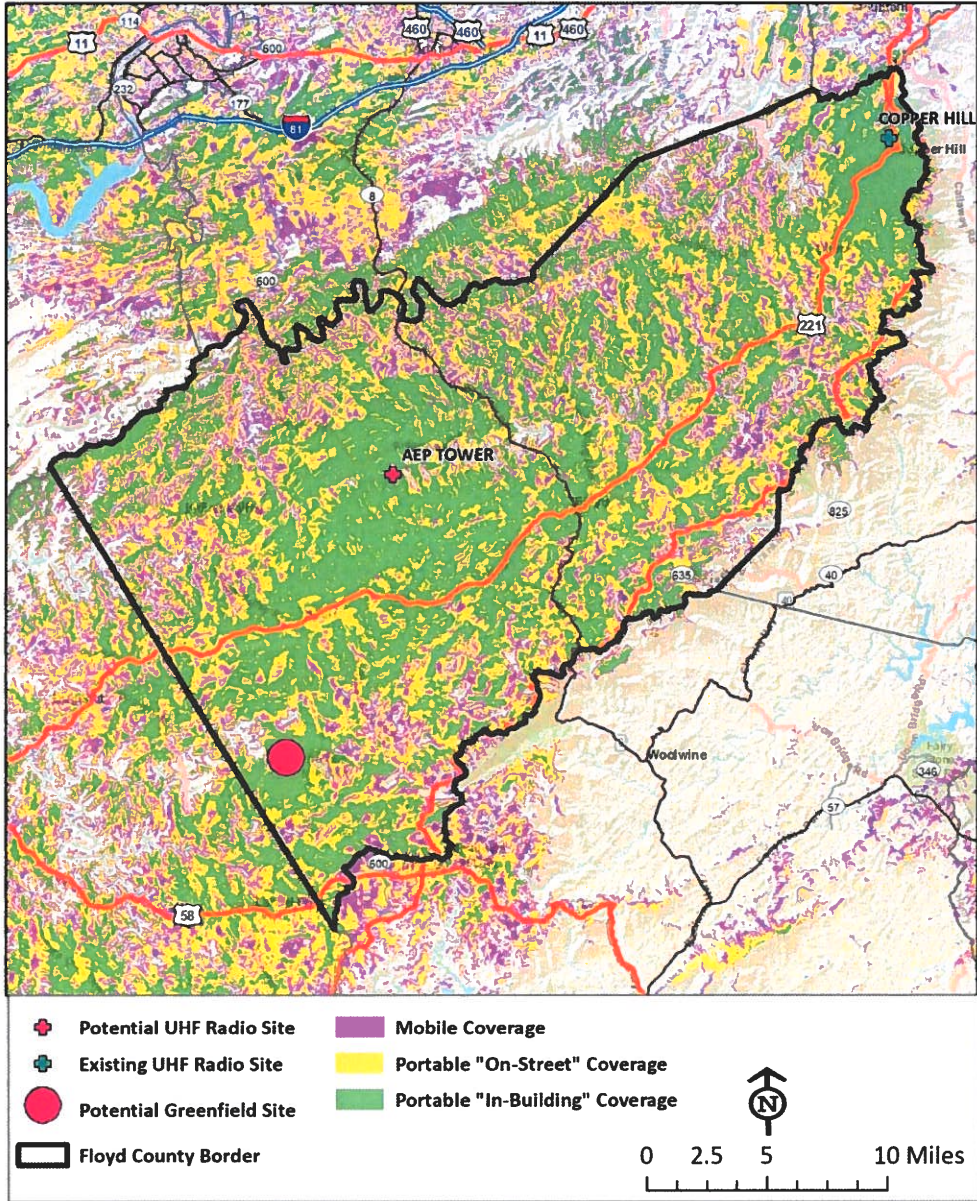


Figure 5 – Potential UHF Analog Simulcast Coverage >= DAQ 3.4; Talk-Out



Floyd County, VA - Potential UHF Coverage - Three-Site Simulcast System
UHF Narrowband Analog Coverage >= DAQ 3.4; Talk-In (radio to site); 95% Reliability

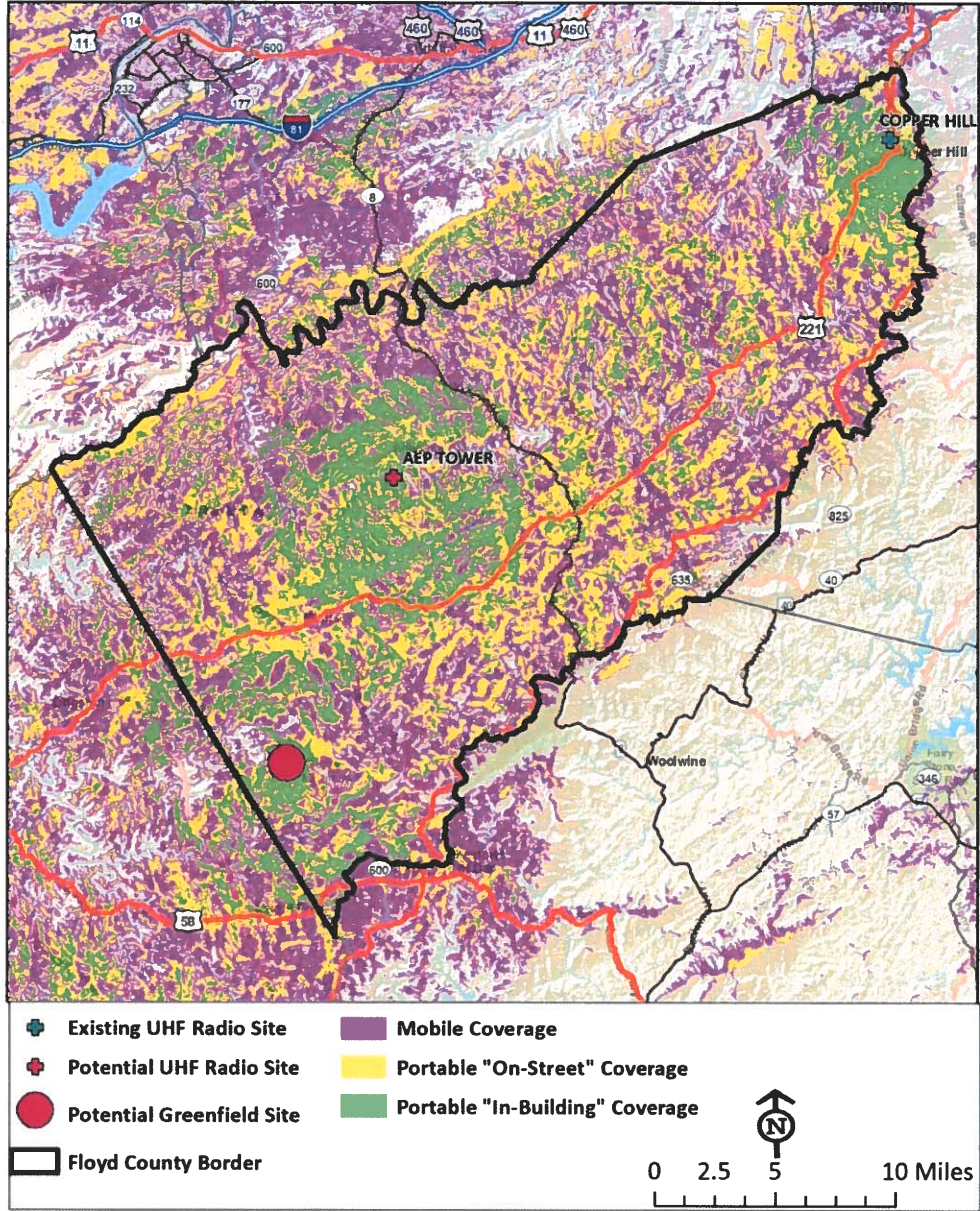


Figure 6 – Potential UHF Analog Simulcast Coverage >= DAQ 3.4; Talk-In



Table 9 – Potential Three-Site UHF Analog Radio System – Estimated Coverage Percentages

Geographic Coverage %s of Floyd County (DAQ 3.4 or better)					
Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)
94	93	78	52	47	22

Section 4.1, *Alternative 1 – Analog Enhancement*, provides a full breakdown of the analog enhancement incorporating these changes.

3.1.7.2.2 Northeast Corner of the County

The northeast corner of the County is another area where poor coverage was reported. **FE** evaluated potential locations where a greenfield site could provide the best coverage and after a review of several high-elevation locations, **FE** found a location where coverage gains would likely be substantial throughout the reported area.

Figure 7 shows an image of the potential greenfield location. It is important to note that **FE** did not perform any additional research regarding the feasibility of building a new site at this location other than for coverage improvements to make up the existing shortfall.





Figure 7 – Potential Greenfield Site in Northeast Floyd County

Figures 5 and 6 show the talk-out and talk-in coverage, respectively, of a three-site UHF analog simulcast system, with the following sites representative of Alternative 1:

- The new analog equipment is now located at the new AEP Tower
- New analog equipment is located at Copper Hill
- A complete radio installation at the new greenfield site referenced in figure 4
- A complete radio installation at the new greenfield site referenced in figure 7

Floyd County, VA - Potential UHF Coverage - Four-Site Simulcast System
UHF Narrowband Analog Coverage \geq DAQ 3.4; Talk-Out (site to radio); 95% Reliability

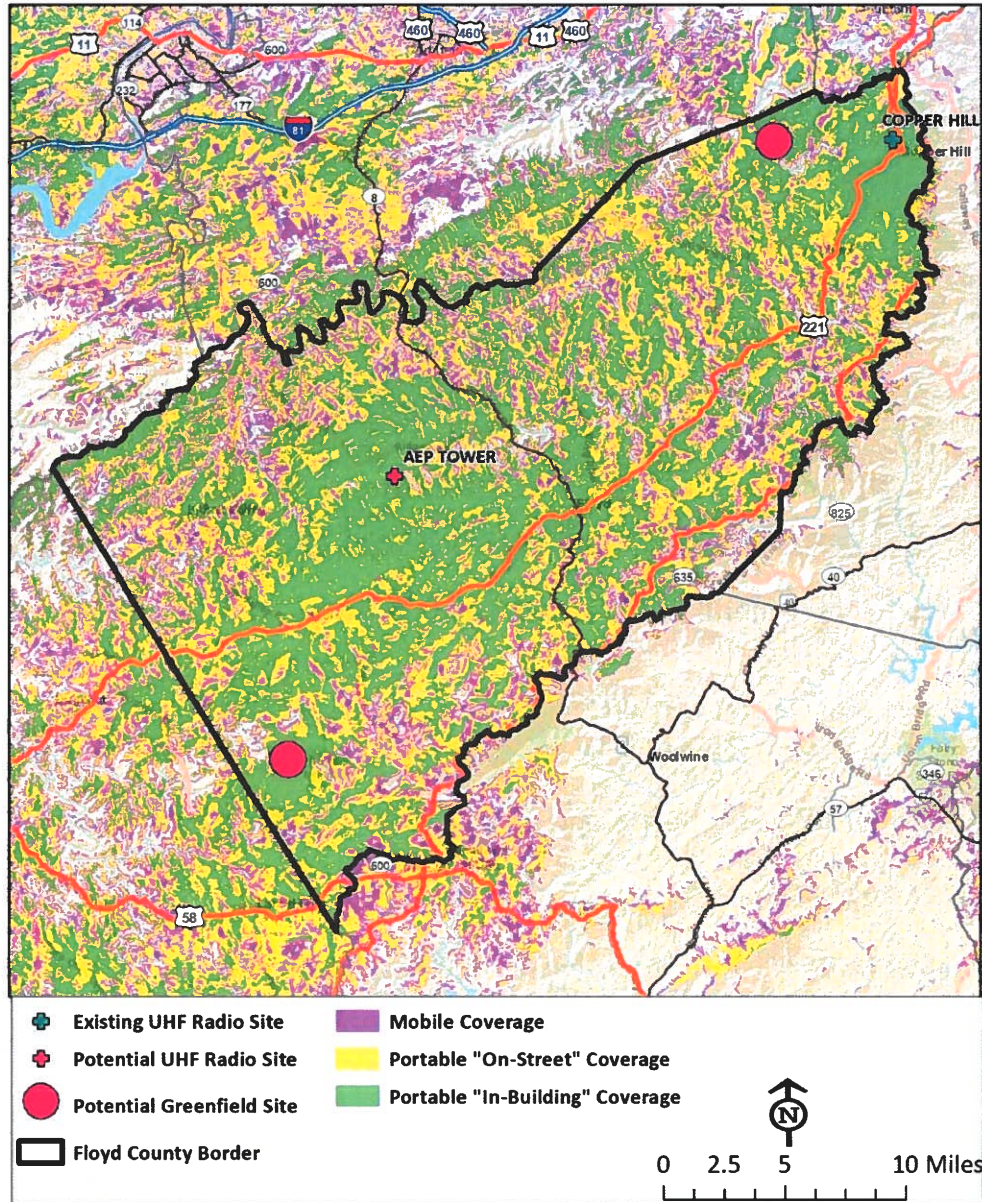


Figure 8 – Potential UHF Analog Simulcast Coverage \geq DAQ 3.4; Talk-Out



Floyd County, VA - Potential UHF Coverage - Four-Site Simulcast System
UHF Narrowband Analog Coverage >= DAQ 3.4; Talk-In (radio to site); 95% Reliability

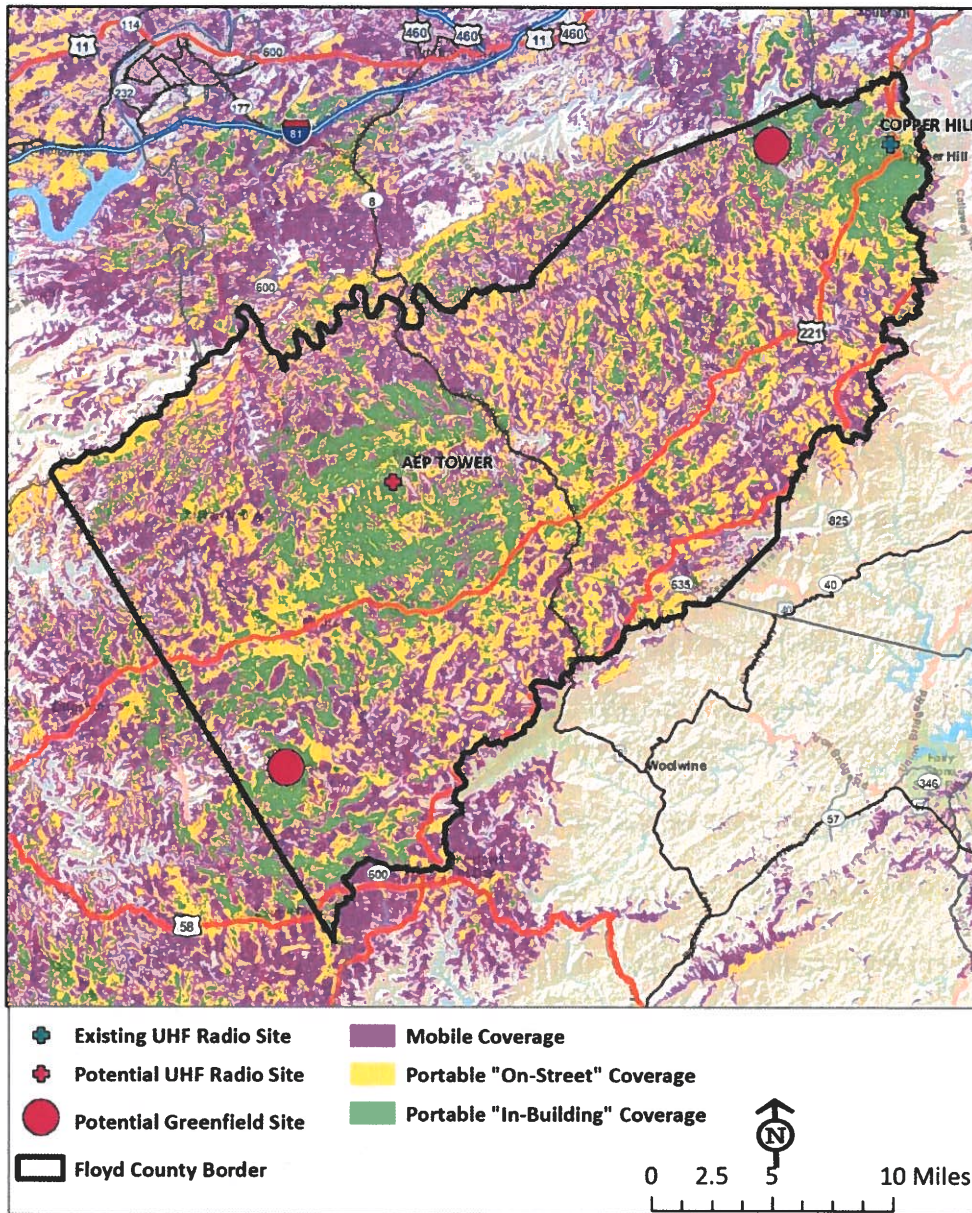


Figure 9 – Potential UHF Analog Simulcast Coverage >= DAQ 3.4; Talk-In



Table 10 – Potential Four-Site UHF Analog Radio System – Estimated Coverage Percentages

Geographic Coverage %s of Floyd County (DAQ 3.4 or better)					
Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)
95	94	80	54	48	23

Section 4.1, Alternative 1 – Analog Enhancement, provides a full breakdown of the analog enhancement incorporating these changes.

3.2 P25 Upgrade

As an alternative to refreshing and expanding the existing analog system, the County may wish to pursue a full system upgrade to a P25 radio system. During the coverage workshop, **FE** demonstrated to the County the types of coverage gains that could materialize by moving from a legacy analog system to a new P25 system.

Figures 8 and 9 show the talk-out and talk-in coverage, respectively, of a three-site UHF P25 simulcast system, with the following sites representative of Alternative 2:

- New P25 equipment is now located at the new AEP Tower
- New P25 equipment is located at Copper Hill
- A completed radio installation at the new greenfield site referenced in figure 4



Floyd County, VA - Potential UHF Coverage - Three-Site Simulcast System
 UHF Digital P25 Coverage \geq DAQ 3.4; Talk-Out (site to radio); 95% Reliability

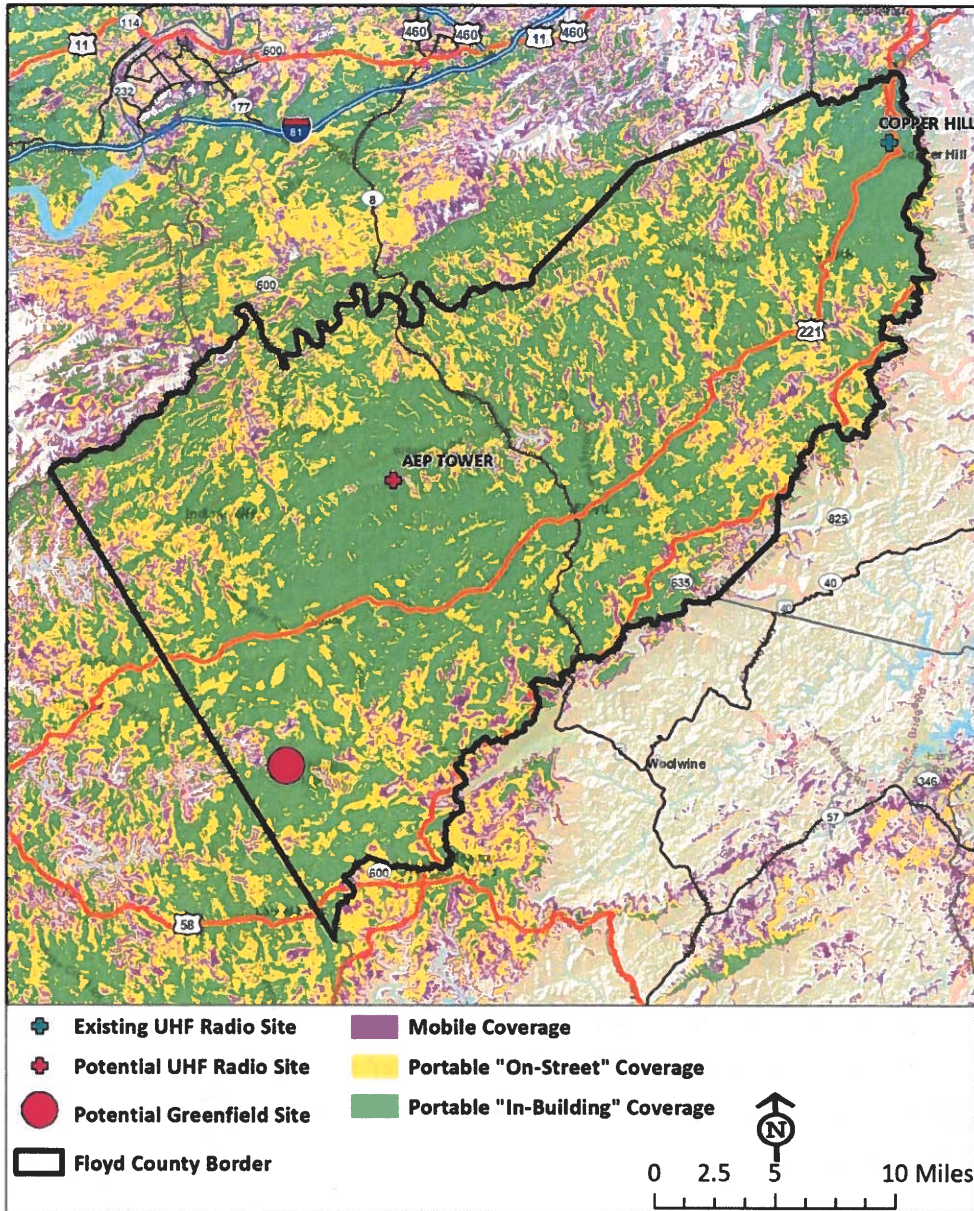


Figure 10a – 3-Site Potential P25 Simulcast Coverage \geq DAQ 3.4; Talk-Out



Floyd County, VA - Potential UHF Coverage - Four-Site Simulcast System
UHF Digital P25 Coverage >= DAQ 3.4; Talk-Out (site to radio); 95% Reliability

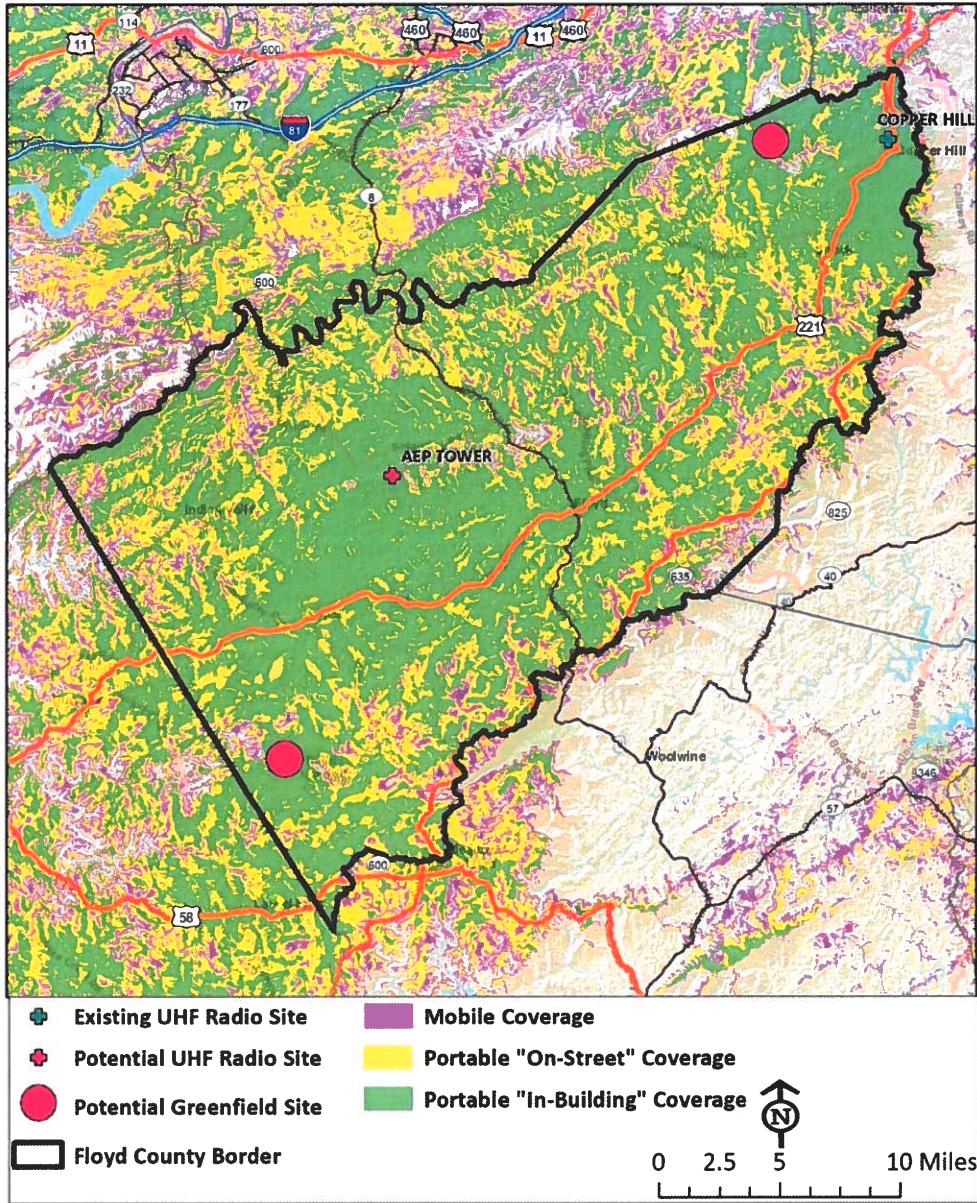


Figure 10b – 4-Site Potential P25 Simulcast Coverage >= DAQ 3.4; Talk-Out



Floyd County, VA - Potential UHF Coverage - Three-Site Simulcast System
UHF Digital P25 Coverage >= DAQ 3.4; Talk-In (radio to site); 95% Reliability

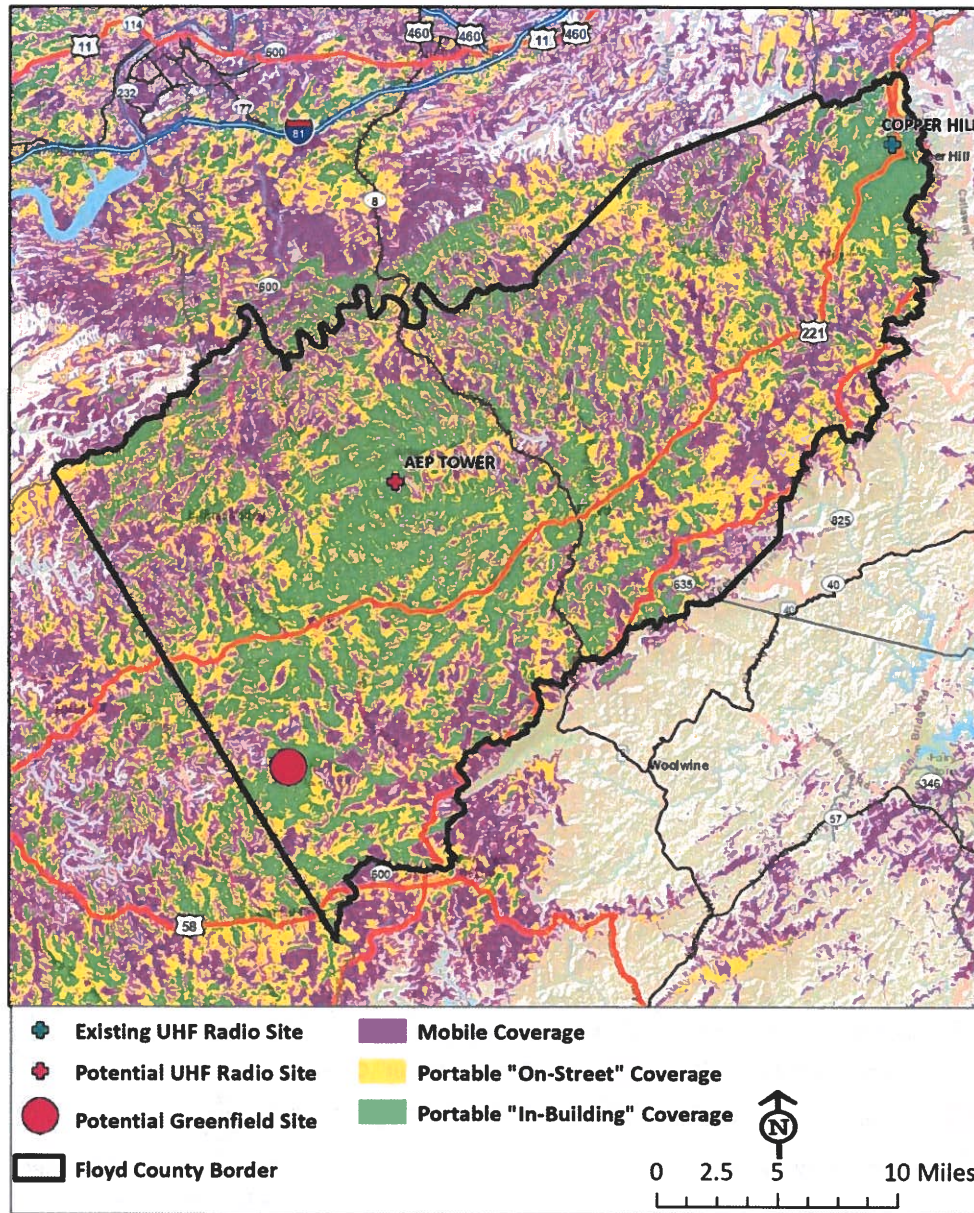


Figure 11a – 3-Site Potential P25 Simulcast Coverage >= DAQ 3.4; Talk-In



Floyd County, VA - Potential UHF Coverage - Four-Site Simulcast System
 UHF Digital P25 Coverage \geq DAQ 3.4; Talk-In (radio to site); 95% Reliability

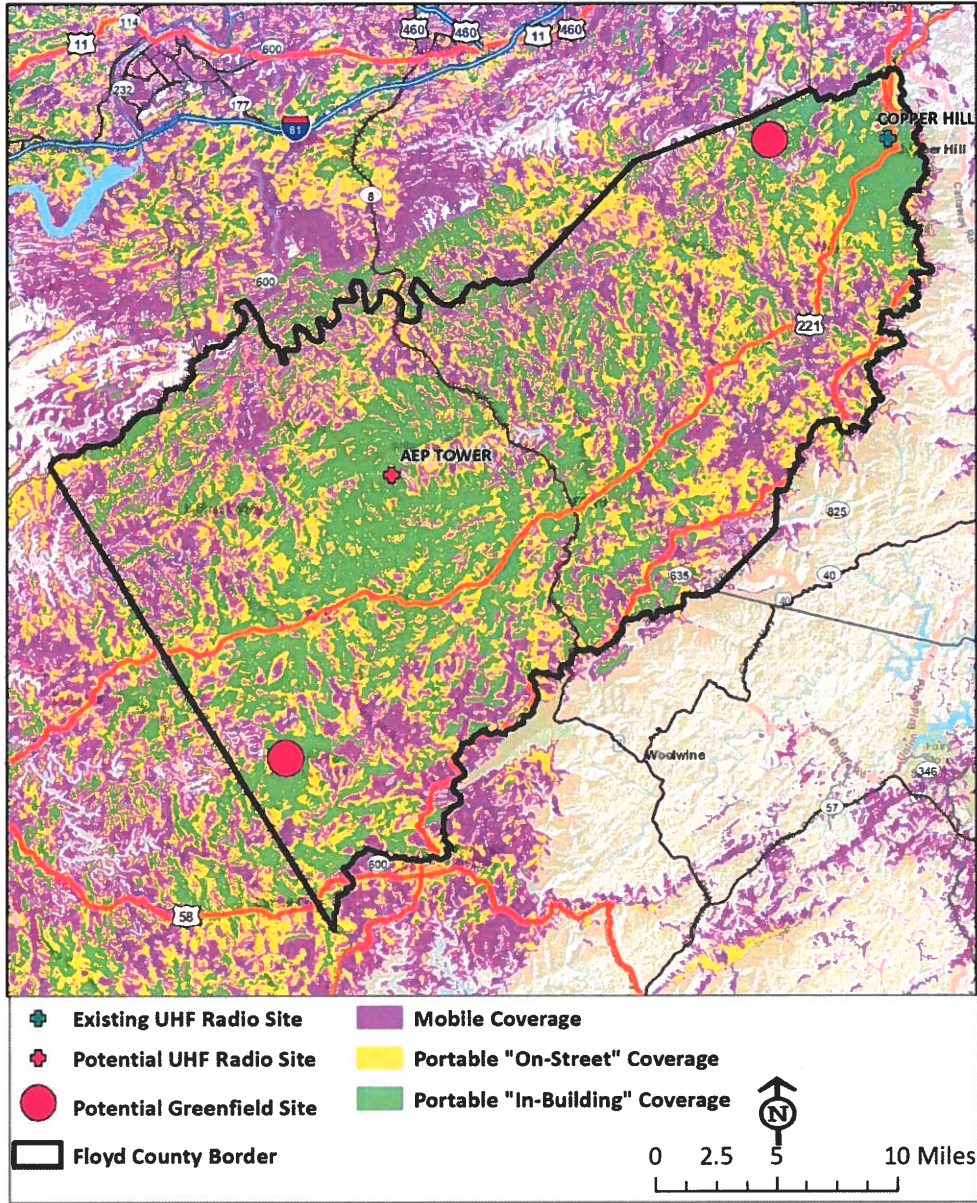


Figure 11b – 4-Site Potential P25 Simulcast Coverage \geq DAQ 3.4; Talk-In



Table 11a – Potential Three-Site UHF P25 Radio System – Estimated Coverage Percentages

Geographic Coverage %s of Floyd County (DAQ 3.4 or better)					
Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)
99	98	91	68	62	38

Table 11b – Potential Four-Site UHF P25 Radio System – Estimated Coverage Percentages

Geographic Coverage %s of Floyd County (DAQ 3.4 or better)					
Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)
99	99	92	70	64	40

As demonstrated in the coverage maps and coverage percentages, migrating from an analog system to a new P25 system will likely increase the amount of area where users should experience audio quality levels of DAQ 3.4 or better. However, it is important to note that many users of existing analog systems tend to operate in areas where the system provides less than DAQ 3.4. In these areas, the level of audio quality may be useable but below “public safety grade.” In these lower-quality areas, the coverage may also decrease when moving to a digital P25 system.

FE recommends that any system-wide changes include guaranteed coverage levels and be tested by the system manufacturer or contractor post-installation, so the County knows the coverage meets their requirements.

Section 4.2, *P25 Upgrade*, provides a full description of Alternative 2.

3.3 Additional Considerations

In addition to the improvements described in Alternatives 1 and 2, there are several other options that County may wish to consider improving system performance.



3.3.1 Receive-Only Sites

In lieu of building additional greenfield sites that have full transmit and receive capability, the County may wish to consider receive-only sites. These sites are less expensive and require less equipment and tower space.

Receive only sites improve the user's ability to talk-in to the system but, do nothing to improve the system's ability to talk-out to the users in the field. From the coverage analysis, the talk-in coverage is more limited than talk-out coverage. Receive only sites help to balance talk-in and talk-out coverage.

A receive only site would contain the same equipment as a transmit and receive site with the exception being the transmitters and associated combining equipment required for the transmit antenna system. This site would also not require an FCC license to build the site. The expected cost savings to implement a receive only site is approximately \$55,000 per site.

These figures are the savings associated with removing the transmitter and associated antennas. Additionally, any tower sites requiring a lease for antennas would be slightly less expensive due to the removal of the transmit antenna from the tower. The tower would still require the use of a receive antenna.

3.3.2 Vehicular Repeaters

While having direct portable coverage from radio sites throughout the entire County is the ideal solution, it may not prove economically feasible or practical to build sufficient infrastructure (i.e. radio sites) to achieve the desired level of coverage. As an alternative, the County can consider deploying vehicular repeaters (VR).

A VR effectively transforms and augments a user's in-car mobile radio into a vehicular based on-demand repeater, allowing users with portable radios in range of that vehicle to transmit and receive communications from the system in areas where direct portable coverage alone may not be sufficient. There are operational challenges with VRs, and additional VR only frequencies will also be needed and require FCC licenses. Many agencies around the country use a VR to overcome portable radio deficiencies in areas where it is impractical to build additional tower sites. New digital VR equipment deployed may function slightly better than analog VR equipment, as the digital VR equipment can communicate with one another to ensure portable units are only connected to a single VR at an incident. Newer VR units have been made more reliable and protect against unit lockups over the legacy models.



3.3.3 FCC Licensing Concerns

Adding a new greenfield site to the system will require modifications to the existing license for the location. At this time, it is unknown if the FCC will restrict transmit power at this new location.

With the FCC licensing concerns associated with Copper Hill and the licensing requirements of the new greenfield site, the County should consider restructuring the frequencies to a mixture of existing and new frequencies. The existing frequencies are relatively close and would require relatively expensive filtering and combining equipment to utilize a single transmit antenna at each RF site. Common combining equipment typically requires a minimum of 150 kHz separation between transmit frequencies. The existing licensed transmit frequencies, FCC callsign WQBZ256, are shown below (in MHz):

- **453.1625**
- 453.1875
- **453.5375**
- 453.5625
- 453.6625
- **453.7625**

Leveraging the frequencies in bold would provide three frequencies separated by a minimum of 150 KHz. This would require an additional fourth frequency be obtained for the anticipated four channel upgrades.

3.3.4 Virginia COMLINC

The Commonwealth of Virginia has funded an interoperability partnership known as COMLINC. COMLINC is currently upgrading the Commonwealth's Radio Inter-Operability System (RIOS) The RIOS system is provided by SyTech Corporation and allows for radio resources from participating localities to be "patched" together creating a path for communications between the localities. Floyd County could use one of the four system channels as the County resource to be patched or implement a separate fifth channel dedicated as the COMLINC channel for interoperability purposes.



3.4 Phased Approach

Implementing all the changes described throughout this report may prove financially challenging to do at the same time. It may be preferable for the County to pursue a phased approach to making these system improvements. **FE** can assist the County with this discussion if needed.

- Phase 1 would be comprised of the following:
Deploy three RF sites:
 - Copper Hill
 - AEP
 - New greenfield site in SW portion of County
- Deploy the new dispatch console system
- Deploy new subscriber devices to the user agencies

Once phase 1 is complete, the new three site system would be operational providing increased coverage to the user community. As additional funds are available, the County could implement additional RF site(s) to improve system coverage within buildings and in remote areas requiring improved coverage. For example, adding another site in Phase 2, as shown below.

- Build or, lease tower space
- Install RF equipment
- Integrate new RF site into voting/simulcast subsystems

Additional RF sites could then be implemented in additional phases mirroring Phase 2 for each RF site.

There is only a single example of many options available for a phased approach to implement a new radio system.

The remainder of this page is intentionally left blank



4. Radio System Alternative Analysis

Based on the existing system evaluation, results from the user questionnaires, and understanding of the County's goals, **FE** conducted analyses on the following two alternatives:

Alternative 1 – Analog Enhancement: Enhancing the existing 2-site UHF analog simulcast system with an additional greenfield site to improve system coverage.

Alternative 2 – P25 Upgrade: Upgrading to a 2-site simulcast UHF P25 digital system with an additional greenfield site to improve system coverage.

Both alternatives leverage the following radio communications sites:

- Copper Hill (existing)
- AEP tower (replacing Wills Ridge)
- New greenfield tower site

Both alternatives retain the use of the Copper Hill tower site, use the new AEP tower location as a replacement of the current Wills Ridge tower site and includes the implementation of a new tower site. The major difference between the two alternatives is the implementation of analog technology versus digital technology.

A fourth site, located in the north east corner of the County, is included as an option for either alternative, dependent on County approval and the availability of funding.

4.1 Alternative 1 – UHF Analog Simulcast with Coverage Enhancement

4.1.1 Radio System Architecture

Alternative 1 is a refresh of the existing system equipment with the implementation of a new tower site to increase coverage. This enhancement will replace the UHF analog simulcast system components with newer, currently supported models using on the following design criteria:

1. Leverage the existing Copper Hill site to the greatest extent possible, which may include at a minimum, reusing the existing equipment shelter, tower structure, HVACs, and backup power generator
2. Leverage the existing AEP tower



3. Implementing new equipment shelters with dual HVACs and backup power generators at the AEP tower site
4. Leverage currently licensed UHF frequencies (assumes the County obtains a license for existing UHF channels at Copper Hill and new RF Site)
5. New RF Site (greenfield) containing the following:
 - a. New 160' self-supporting tower
 - b. New equipment shelters with dual HVAC and backup power generators
 - c. New microwave linking equipment
6. New microwave linking equipment
7. Leverage leased connectivity between sites where available (Option)
8. Replace existing UHF radio system with new analog infrastructure
 - a. New simulcast and voting equipment
 - b. New UHF analog repeaters
 - c. Provide for tone and voice paging capabilities on the Fire/EMS Dispatch Channel
 - d. New UHF antennas, transmission lines, and radio frequency (RF) antenna systems (duplexers, combiners, and multicouplers)
9. New IP-based console system to replace the existing console system
 - a. Two new dispatch consoles at the Dispatch Center
 - b. Two new backup control stations; one per console position
 - c. New logging recorder system for recording radio and telephone traffic
10. New network management system to provide remote monitoring and diagnosis
11. Replace of existing UHF subscriber radio equipment (portables, mobiles, control stations, and pagers)

4.1.2 Radio System Features

No new features are included in this analog alternative.



4.1.3 Simulcast and Voting Equipment

The conceptual design includes new simulcast and voting equipment to maintain, monitor and control a multi-site simulcast configuration. The simulcast and voting equipment would include the following components in the new simulcast cell:

- Simulcast controller
- GPS receivers with high stability oscillators
- Voting equipment
- Networking equipment

The simulcast equipment maintains frequency, phase, and amplitude stability of the radio equipment to minimize audio distortion in areas where the transmit signals from multiple simulcast sites overlap.

Receiver voting systems support analog operation in a single cell simulcast configuration by selecting the most intelligible audio from one or more radio sites and routing the selected audio to the simulcast control equipment, dispatch consoles, and radio sites. The system routes dispatcher audio from the dispatch consoles to the simulcast control equipment for broadcast and allows dispatch audio to have priority over portable and mobile radio traffic. The system also directs radio traffic originating from portables and mobiles to the simulcast control equipment for broadcast on all simulcast sites. The conceptual design assumes that the AEP site will house the simulcast control and voting equipment.

4.1.4 Radio Site Equipment

The conceptual design replaces the existing Kenwood base stations with new currently supported base station equipment. All equipment would have IP standards-compliant interfaces for easy integration with other systems and components. All equipment would be suitable for fixed site installations, including such features as:

- Shielded and suitable for use in a heavily congested radio environment
- Rack mountable utilizing standard 19" racks or enclosed cabinets
- Capable of a 100% duty cycle
- DC Power Operation

The new system will require 12 new base stations to transmit and receive the four channels from the Copper Hill, AEP tower and new RF site locations.



4.1.5 Antenna Systems

The conceptual design replaces the existing antenna systems with all new antenna systems. The conceptual design does not dictate the specific antenna gain, pattern and/or down tilt. The system vendor will select these parameters on a per-site basis to meet the specified coverage requirements. At a minimum, the new antenna systems would include the following components:

- Master receive antenna
- Master transmit antenna
- Transmitter combiner – the system would use a transmit combiner to allow all transmitters to share the same antenna and to provide out-of-band filtering, isolation, and protection between transmitters
- Receiver multicoupler – the system would use a receiver multicoupler to allow all receivers to use the same antenna and to provide out-of-band filtering, isolation and protection between site receivers and transmitters
- Lightning surge suppressors
- Transmission lines and connectors

The antenna system design uses antennas and related hardware with the mechanical strength to survive the wind, ice, and earthquake requirements for urban and suburban areas as specified in the TIA-222 standard, *Structural Standard for Antenna Supporting Structures and Antennas*. The antenna system proposed by vendors should achieve an optimal balance between meeting the radio coverage requirements and operating an efficient and economical system.

4.1.6 Backhaul Network

Alternative 1 will require connectivity between the three RF sites and the dispatch center. A new microwave backhaul network configured in a ring configuration to provide a more resilient network, will provide this connectivity.

One alternative to the microwave backhaul network would be the use of the Citizens Telephone Cooperative's fiber optic network. The new radio system should only require typical bandwidths available from optical fiber service providers. Actual bandwidth requirements will depend upon the system requirements of the system being deployed and will vary from vendor to vendor. Due to the unknown availability and reliability of the local fiber optic network, Table 13 contains the budgetary costs of a new microwave backhaul network.



4.1.7 Network Management System (NMS)

The Alternative 1 conceptual design includes a new NMS to accomplish the following functions:

- Remotely monitor radio system and site performance and alarms (e.g., equipment failures, elevated temperatures, and intrusion)
- Troubleshoot system outages
- Page or send emails to report system alarms or outages to staff required to respond

The NMS software interface identifies the current operating status of the equipment and sites and would flag 'out of tolerance' conditions via an audio/visual indication. The indication would return to a normal indication after correction of the out of tolerance condition. Following are some of the events and functions that the NMS would monitor and manage:

- Transmitter low power output
- Antenna system high Voltage Standing Wave Ratio (VSWR)
- Transmitter power amplifier (PA) failure
- Base station power supply failure
- Router/switch failure
- Backhaul subsystem failure

The NMS would archive system data and would maintain a history of alarm events in a searchable database for a minimum of 180 days. Storage of alarm events enables root cause analysis on infrequent recurring events.

4.1.8 Dispatch Console System Equipment

The conceptual design includes replacement of the dispatch consoles. The new dispatch consoles will be IP-based consoles capable of supporting IP connectivity to the new system's RF sites. This IP connectivity will allow for the use of commercial off the shelf components removing the need for specialized proprietary equipment and increasing the ability to manage and monitor system status. The replacement consoles will retain operating features and control of the nine resources available today.



The dispatch console system will include two new backup control stations. Each console position will have a backup control station for use in the event of a console or link failure. These control stations would be capable of dispatching on the channels currently available on the dispatch console.

The conceptual design includes replacement of the existing logging recorder system. A new logging recorder system would capture all radio traffic, 9-1-1 calls and administrative telephone traffic. The logging recorder would include redundant power supplies and redundant hard drives for a fault-tolerant recording solution. Multiple search parameters such as time and date, user ID#, talkgroup ID and more would be available at personnel computers located on the network and containing the appropriate software license and login credentials. A single time source provides synchronization of all replacement system equipment, facilitating simulcast operations as well as synchronized logging recording.

4.1.9 Fire Station Alerting

Alternative 1 does not impact fire station alerting. The new analog system would have the same fire station alerting capabilities as the legacy system.

4.1.10 Interoperability

Alternative 1 does not impact interoperability. The new analog system would contain the same level of interoperability as the legacy system.

4.1.11 Subscriber Devices

Floyd County reported the total subscriber quantities as the following:

- Portable Radios – 77
- Mobile Radios – 180
- Control Stations – 11
- Pagers – 150

The present condition of the subscriber units could not be determined from the available information. A complete refresh of the subscriber units would allow for the optimal performance of the new system and align the subscriber devices' warranty with that of the new system.



4.1.12 Site Information (Civil Work)

4.1.12.1 Copper Hill RF Site

The Copper Hill site contains a 296' tower owned and operated by the American Tower Company. The County pays no rent for use of the tower. The County owns the communications shelter, and it contains additional space for expansion. Other than unknown remediation efforts that may result from a tower structural analysis, the amount of civil work anticipated at this site to prepare it for the new equipment should be typical. The anticipated civil work would include performing a structural analysis of the tower, performing tower and grounding remediation efforts as required, installing new antennas, and removing existing antennas.

4.1.12.2 AEP Tower Site

The AEP Tower site is currently under development and relatively close to the Will Ridge tower site. The County has reported that AEP would allow use of the tower and ground space at no cost. As there is no existing communications shelter, the County will have to procure and install a new communications shelter with backup power generator to house the new equipment and provide backup power.

4.1.12.3 Greenfield Site

The term "greenfield" describes a raw piece of land requiring complete development from the ground up into a tower site. The County will need to acquire the land and obtain the necessary authorizations and permits to develop the raw land into a tower site. The site will require a new site access road, utilities, 160 self-supporting tower, communications shelter with HVAC, backup power generator, and security fencing as a minimum.

4.1.13 Budgetary Cost Estimate

FE prepared high-level budgetary cost estimates for the two alternatives using an in-house cost analysis tool for the Floyd County radio system, network management system, mutual aid systems, microwave network, dispatch consoles, subscriber units, site support equipment, and implementation services. The cost estimates are based on:

- Data collected from previous projects
- Our knowledge of Floyd County and publicly available industry information
- Information collected specifically for this Public Safety Communications Plan and Recommendations Report



- **FE's** experience designing comparable radio systems

Actual system costs are highly dependent upon final system design choices as well as conditions in the land mobile and microwave radio markets during the system procurement phase.

FE's budgetary estimates are intentionally conservative. Typically, vendor proposal pricing is unlikely to exceed **FE's** estimate, based on a comparable design as outlined in our assumptions. Our cost estimates are based upon recent non-discounted pricing. Frequently, system vendors provide discounts for large system and subscriber unit purchases, however dynamics in the competitive systems market make it impractical to forecast the specific discounts vendors may offer at the time of proposal submission.

4.1.13.1 Conceptual Design Cost Estimate Assumptions

Table 12 outlines the cost-related assumptions for the Alternative 1 conceptual design.

Table 12 – Alternative 1 Cost Estimate Assumptions

Category	Alternative 1
Frequency band	UHF
Channels	Use existing 4 UHF frequency pairs Fire/EMS, Sheriff, M/A, PW
Technology	Analog channels Simulcast Conventional
Coverage Goals	Improve within County Three RF Sites
System Infrastructure	Simulcast/voting
Sites	Reuse Copper Hill New AEP Tower location New RF Site (Greenfield)
Simulcast and Voting Equipment	New
Backhaul	New Microwave
Consoles	2 new
Logging recorder	Replace existing
Subscribers	Replace existing

4.1.13.2 Radio System Cost Estimate

Table 13 provides a summary of the estimated costs for the radio system equipment.



Table 13 – Alternative 1 Radio System Cost Estimate

Alternative 1 Radio System Cost Estimate			
<i>Simulcast Control Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
System Control (redundant)	1	\$75,000	\$75,000
Simulcast and Voting Equipment	4	\$15,000	\$60,000
Networking Equipment	1	\$15,000	\$15,000
Subtotal			\$150,000
<i>Remote Site Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
UHF 4-CH TX/RX Simulcast Equipment	3	\$65,000	\$195,000
UHF TX/RX Antenna System	3	\$50,000	\$150,000
DC Power System	3	\$20,000	\$60,000
Site Networking Equipment	3	\$15,000	\$45,000
Subtotal			\$450,000
Equipment Subtotal			\$600,000

4.1.13.3 Dispatch Console System Cost Estimate

Table 14 shows the estimated costs for the dispatch console system equipment.

Table 14 – Alternative 1 Dispatch Console System Equipment Cost Estimate

Alternative 1 Dispatch Console System Cost Estimate			
<i>Dispatch Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Dispatch Console Position	2	\$30,000	\$60,000
Backup RF Control Station	2	\$15,000	\$30,000
Control Station Antenna System	2	\$5,000	\$10,000
Networking Equipment	1	\$15,000	\$15,000
Equipment Subtotal			\$115,000

4.1.13.4 Backhaul System Cost Estimate

The budgetary costs for Alternative 1 includes the implementation of a new microwave backhaul network. As previously mentioned, using the Citizens Telephone Cooperative’s fiber optic network would eliminate the microwave backhaul network costs. Table 15 outlines the costs associated with the microwave backhaul network.



Table 15 – Alternative 1 Backhaul System Equipment Cost Estimate

Alternative 1 Backhaul System Cost Estimate			
<i>Backhaul Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Microwave Radio (Pair)	4	\$30,000	\$120,000
Microwave Dish (Pair)	4	\$4,500	\$18,000
Waveguide and Accessories	4	\$5,000	\$20,000
DC Power Plant System	4	\$7,000	\$28,000
Equipment Rack and Accessories	4	\$5,000	\$20,000
Dehydrator System	4	\$3,500	\$14,000
Equipment Subtotal			\$220,000

4.1.13.5 Network Management System Cost Estimate

Table 16 outlines the estimated costs for the NMS.

Table 16 – Alternative 1 NMS Cost Estimate

Alternative 1 Network Management System Cost Estimate			
<i>NMS Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
NMS Server	1	\$25,000	\$25,000
NMS Terminal (remote monitoring and troubleshooting, workstation-based)	1	\$5,000	\$5,000
Small RTU for Monitoring Remote Site Alarms	4	\$5,000	\$20,000
Equipment Subtotal			\$50,000

4.1.13.6 Site Improvement Cost Estimate

The Copper Hill site would require little to no site improvements to refresh the existing equipment and install the new antenna network. The AEP tower site would require the installation of a new prefabricated communications shelter, backup power generator and associated groundwork. Table 17 summarizes the estimated costs for site improvements and services at Copper Hill and the new AEP tower site.



Table 17 – Alternative 1 Site Improvements Cost Estimate

Alternative 1 Site Improvements Cost Estimate			
<i>Site Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Prefabricated Shelter	1	\$150,000	\$150,000
Generator/Transfer switch/fuel tank	1	\$25,000	\$25,000
Subtotal			\$175,000
<i>Implementation Services</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Shelter delivery & Installation	1	\$50,000	\$50,000
Site prep (existing AEP Site)	1	\$20,000	\$20,000
Tower Structural Analysis (Copper Hill)	1	\$5,000	\$5,000
Subtotal			\$75,000
Site Improvements Costs Total			\$250,000

4.1.13.7 Greenfield Tower Site

Table 18 identifies the costs associated with the implementation of the new tower site. Note, *FE* did not include land acquisition costs in the greenfield tower costs. The costs associated with land acquisition can vary substantially and be difficult to measure accurately. Additionally, the costs associated with site prep and tower installation assume site prep and tower installation does not require any additional work related with the removal of rock. A geotechnical exploration of the greenfield site would determine the amount and type of rock encountered and determine the added costs associated with its removal.

Table 18 – Greenfield Tower Site Estimate **

Alternative 1 Greenfield Tower Cost Estimate			
<i>Site Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
160' Self-Supporting Tower	1	\$40,000	\$40,000
Prefabricated Shelter	1	\$150,000	\$150,000
Generator/Transfer switch/fuel tank	1	\$25,000	\$25,000
Subtotal			\$215,000
<i>Implementation Services</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Tower delivery & Installation	1	\$100,000	\$100,000
Shelter delivery & Installation	1	\$50,000	\$50,000
Generator delivery & installation	1	\$15,000	\$15,000
Geo-technical survey & report	1	\$15,000	\$15,000
Site prep & PM Services	1	\$140,000	\$140,000
Subtotal			\$320,000
Greenfield Tower Site Estimated Total			\$535,000



4.1.13.8 Subscriber Radio Equipment Cost Estimate

The existing subscriber devices will need newer public safety grade devices. Refreshing subscribers would reset lifecycles of the subscribers to match that of the new system ensuring. This refresh will also sustain the system performance on the older subscriber devices.

Table 19 provides a breakdown of the estimated subscriber radio equipment costs.

Table 19 – Alternative 1 Subscriber Radio Equipment Cost Estimate

Alternative 2 Subscriber Cost Estimates			
	Quantity	Unit Cost	Extended Cost
Mobile Radios	77	\$2,000	\$154,000
Portable Radios	180	\$1,500	\$270,000
Control Stations	11	\$4,000	\$44,000
Pagers	150	\$600	\$90,000
Total			\$558,000

4.1.13.9 Alternative 1 Cost Estimate Summary

Table 20 summarizes the estimated total costs for the Alternative 1 Analog Enhancement.

Table 20 – Alternative 1 Total System Cost Estimate

Alternative 1 Total Cost Estimate			
Item	Equipment	Services	Total
Radio System	\$600,000	\$270,000	\$870,000
Dispatch Console System	\$115,000	\$85,000	\$200,000
Network Management System	\$50,000	\$25,000	\$75,000
Site Civils / Improvements	\$135,000	\$55,000	\$190,000
Greenfield Tower Site	\$215,000	\$320,000	\$535,000
Subscriber Equipment	\$558,000	\$0	\$558,000
Total	\$1,723,000	\$755,000	\$2,428,000



4.2 Alternative 2 – Project 25 Upgrade with Coverage Enhancement

4.2.1 Radio System Architecture

Alternative 2 replaces the existing 2-site UHF analog conventional system with a 3-site UHF Project 25 simulcast system. This P25 equipment will replace the existing 2-site, UHF analog simulcast system using the following design criteria:

1. Leverage the existing Copper Hill site to the greatest extent possible, which may include at a minimum, reusing the existing equipment shelter, tower structures, HVACs, and backup power generator
2. Leverage the existing AEP tower
3. Implementing new equipment shelters with dual HVACs and backup power generators at the AEP tower site.
4. Leverage currently licensed UHF frequencies (assumes the County obtains a license for existing UHF channels at Copper Hill and new RF site)
5. New RF Site (greenfield) containing the following:
 - a. New 160' self-supporting tower
 - b. New equipment shelters with dual HVAC and backup power generators
 - c. New microwave linking equipment
6. New microwave linking equipment
7. Leverage leased connectivity between sites where available (Option)
8. Replace existing UHF radio system with new Project 25 infrastructure
 - a. New simulcast and voting equipment
 - b. New UHF Project 25 repeaters
 - c. New UHF antennas, transmission lines, and radio frequency (RF) antenna systems (duplexers, combiners, and multicouplers)
9. New IP-based console system to replace the existing console system
 - a. Two new dispatch consoles at the Dispatch Center
 - b. Two new backup control stations; one per console position



- c. New logging recorder system for recording Project 25 radio and telephone traffic
10. New network management system to provide remote monitoring and diagnosis
11. Replace of existing UHF subscriber radio equipment (portables, mobiles, control stations, and pagers)

4.2.2 Radio System Features

Compared to legacy radio systems, new standards based P25 systems offer enhanced features and capabilities. *FE* describes the following enhancements gained through the implementation of a new Project 25 digital system. It is important to note that the County did not specify all features as mandatory system requirements; however, these features are available should the County decide to implement them in the future.

Improved Coverage, Reduced Noise

A digital radio system can provide more noise-free communications by leveraging two aspects of digital radio system design. First, manufacturers design the Vocoder (Voice Coder) to encode the sounds related to understandable speech while providing some protection from transmission of non-voice sounds. Second, once the signal is digitized (turned into a string of digital bits), forward error correction (FEC) is applied to the stream to help the receiving radio correct any errors that occur due to weak signal levels or external interference. These two processes result in a received signal quality that is relatively consistent over most of the coverage area. This consistency allows the radio user to listen without the extra effort of separating audio from noise.

Encryption, Encrypted Voice Quality

While many legacy radio systems have had encryption options, prior to P25, there was no standardized encryption system for LMR. P25 brings to the user a thorough set of encryption standards that go beyond the basis of the encryption protocol and include security key distribution and security key management.

Included in this set of specifications is OTAR, which facilitates security key system/subscriber management without the need to touch each radio physically. The digital encryption standard uses the same Vocoder and modulation as P25 non-encrypted voice; therefore, the use of encryption does not reduce either range or voice clarity.



Open Data Interfaces

P25 provides an open and standardized data interface at both the network and subscriber levels of the system. This simplifies development of third-party data applications and prevents the sunken cost of application development from becoming a barrier to the use of new subscriber products. The applications to which this applies vary widely from simple messaging to location and even over the air programming.

Competitive Procurement

P25 standards have created a marketplace where multiple infrastructure manufacturers produce systems compatible with subscriber radios from multiple manufacturers. Most major suppliers of radio systems supply both P25 infrastructure and subscriber products. Additionally, several specialty manufacturers supply standards-based equipment for specialized uses such as aircraft, surveillance, data, and receive-only applications. The infrastructure products available span the full range, from trunked networks, conventional stations, to transportable systems. This range of suppliers fosters a truly competitive procurement process and therefore makes it easy to acquire comparable pricing sources from the multiple public contracts available.

Improved Interoperability

P25 is the predominant standard for public safety in North America. Most U.S. Federal Government and state grants require use of P25-based equipment. The P25 standard supports both conventional and trunked operations, with over 1,300 conventional systems⁴ and over 900 trunked systems⁵ in operation throughout the United States.

Feature Set

The conceptual design includes the following feature set as standard with a P25 radio system:

1. Push-To-Talk Identification (PTT-ID)
2. Group Call

4

www.project25.org/images/stories/ptig/P25_Conventional_Systems_List_Final_March_2017_170411_.pdf

5

http://www.project25.org/images/stories/ptig/P25_Trunking_Systems_List_Final_REV04_May_2017_170522.pdf



3. Call alert/paging function
4. Emergency alarm/alert function
5. Real-time system monitoring and logging

4.2.3 Simulcast and Voting Equipment

The system infrastructure for simulcast and voting in Alternative 2 is the same for Alternative 1. The only difference is that system components for Alternative 2 process digital traffic and have P25 software licenses enabled.

4.2.4 Radio Site Equipment

The radio site equipment for Alternative 2 is the same for Alternative 1. The only difference is that system components have P25 software licenses enabled.

4.2.5 Antenna Systems

Given the same frequency band, same antenna heights, and same number of channels, the antenna systems for Alternative 2 will have the same functionality as Alternative 1.

4.2.6 Backhaul Network

The backhaul system for Alternative 2 is the same as described for Alternative 1. There are no differences with hardware or software for these two alternatives.

4.2.7 Network Management System

The NMS equipment for Alternative 2 is the same as described for Alternative 1. There are no differences with hardware or software for these two alternatives.

4.2.8 Dispatch Equipment

The dispatch equipment for Alternative 1 is the same for Alternative 2. The only difference is that system components have P25 software licenses enabled.

4.2.9 Fire Station Alerting

With the implementation of an all P25 system existing, the analog radios and pagers utilized for fire station alerting will not be compatible with the P25 system and will need to



be replace the units with P25 capable units. Once replaced, fire station alerting operations would retain the current functionality available today.

4.2.10 Interoperability

Interoperability between County departments would remain as all users would be capable of operating on all channels. One negative impact to interoperability would be the requirement for any outside agency to have P25 subscriber units to operate on the County's new Project 25 channels. Interoperability with outside agencies utilizing the outside agency's systems would not change as the new subscriber units would be capable of analog operation.

Given that alternative 2 requires the replacement of all subscriber units not currently P25 capable, the County should consider procuring units capable of operating in multiple frequency bands. New multiband units, capable of VHF/UHF and 7/800 MHz could potentially operate on the County's new UHF P25 radio system plus Roanoke County's P25 7/800 MHz radio system as well as the Virginia Statewide Project 25 VHF radio system (STARS – Statewide Agencies Radio System).

4.2.11 Subscriber Devices

Alternative 2 requires the replacements of all analog subscriber with new Project 25 devices. The quantities for Alternative 2 will match those of Alternative 1 and are:

- Portable Radios – 77
- Mobile Radios – 180
- Control Stations – 11
- Pagers – 150

4.2.12 Site Information (Civil Work)

The site civil work for Alternative 2 will match that of Alternative 1. The project 25 system will include the same sites and site work as required for the analog system. There are no civil work differences between Alternative 1 and Alternative 2.

4.2.13 Budgetary Cost Estimate

FE developed cost assumptions and a budgetary estimate for the Alternative 2 conceptual design using the same methodology as Alternative 1.



4.2.13.1 Conceptual Design Cost Estimate Assumptions

Table 21 outlines the cost-related assumptions for the Alternative 2 P25 upgrade.

Table 21 – Alternative 2 Cost Estimate Assumptions

Category	Alternative 2
Frequency band	UHF
Channels	Use existing 4 UHF frequency pairs
	Fire/EMS, Sheriff, M/A, PW
Technology	Project 25
	Simulcast
	Conventional
Coverage Goals	Improve within County
	Three RF Sites
System Infrastructure	Simulcast/voting
Sites	Reuse Copper Hill
	New AEP Tower location
	New RF site (Greenfield)
Backhaul	Reuse Microwave
	Add Fiber
Consoles	2 new
Logging recorder	Replace existing
Subscribers	Replace existing

4.2.13.2 Radio System Cost Estimate

Table 22 provides a summary of the estimated costs for the radio system equipment and services.



Table 22 – Alternative 2 Radio System Cost Estimate

Alternative 2 Radio System Cost Estimate			
<i>Simulcast Control Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
System Control (redundant)	1	\$120,000	\$120,000
Simulcast and Voting Equipment	4	\$30,000	\$120,000
Networking Equipment	1	\$15,000	\$15,000
Subtotal			\$255,000
<i>Remote Site Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
UHF 4-CH TX/RX Simulcast Equipment	3	\$80,000	\$240,000
UHF TX/RX Antenna System	3	\$50,000	\$150,000
DC Power System	3	\$20,000	\$60,000
Site Networking Equipment	3	\$15,000	\$45,000
Subtotal			\$495,000
Equipment Subtotal			\$750,000

4.2.13.3 Dispatch Console System Cost Estimate

Table 23 shows the estimated costs for the dispatch console system equipment and services.

Table 23 – Alternative 2 Dispatch Console System Cost Estimate

Alternative 2 Dispatch Console System Cost Estimate			
<i>Dispatch Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Voice Logging Recorder	1	\$75,000	\$75,000
Dispatch Console Position	2	\$40,000	\$80,000
Backup RF Control Station	2	\$15,000	\$30,000
Control Station Antenna System	2	\$5,000	\$10,000
Networking Equipment	1	\$20,000	\$20,000
Equipment Subtotal			\$215,000

4.2.13.4 Backhaul System Cost Estimate

Alternative 2 includes the implementation of a new microwave backhaul network. As previously mentioned, using the Citizens Telephone Cooperative’s fiber optic network would eliminate the costs associated with the microwave backhaul network. Table 24 outlines the costs associated with the microwave backhaul network.



Table 24 – Alternative 2 Backhaul System Equipment Cost Estimate

Alternative 2 Backhaul System Cost Estimate			
<i>Backhaul Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Microwave Radio (Pair)	4	\$30,000	\$120,000
Microwave Dish (Pair)	4	\$4,500	\$18,000
Waveguide and Accessories	4	\$5,000	\$20,000
DC Power Plant System	4	\$7,000	\$28,000
Equipment Rack and Accessories	4	\$5,000	\$20,000
Dehydrator System	4	\$3,500	\$14,000
Equipment Subtotal			\$220,000

4.2.13.5 Network Management System Cost Estimate

Table 25 outlines the estimated costs for the NMS and services.

Table 25 – Alternative 2 NMS Cost Estimate

Alternative 2 Network Management System Cost Estimate			
<i>NMS Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
NMS Server	1	\$25,000	\$25,000
NMS Terminal (remote monitoring and troubleshooting, workstation-based)	1	\$5,000	\$5,000
Small RTU for Monitoring Remote Site Alarms	4	\$5,000	\$20,000
Equipment Subtotal			\$50,000

4.2.13.6 Site Improvement Cost Estimate

Table 26 summarizes the estimated costs for site improvements and services.



Table 26 – Alternative 2 Site Improvements Cost Estimate

Alternative 2 Site Improvements Cost Estimate			
<i>Site Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Prefabricated Shelter	1	\$150,000	\$150,000
Generator/Transfer switch/fuel tank	1	\$25,000	\$25,000
Subtotal			\$175,000
<i>Implementation Services</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Shelter delivery & Installation	1	\$50,000	\$50,000
Site prep (existing AEP Site)	1	\$20,000	\$20,000
Tower Structural Analysis (Copper Hill)	1	\$5,000	\$5,000
Subtotal			\$75,000
Site Improvements Costs Total			\$250,000

4.2.13.7 Subscriber Radio Equipment Cost Estimate

Table 27 provides a breakdown of the estimated subscriber radio equipment costs.

Table 27 – Alternative 2 Subscriber Radio Equipment Cost Estimate

Alternative 2 Subscriber Cost Estimates			
	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Mobile Radios	77	\$3,000	\$231,000
Portable Radios	180	\$2,500	\$450,000
Control Stations	11	\$5,000	\$55,000
Pagers	150	\$600	\$90,000
Total			\$826,000

4.2.13.8 Greenfield Tower Site

The costs associated with the greenfield tower site for alternative 2 would be the same as those costs for alternative 1. Table 28 shows the costs associated with the greenfield site.



Table 28 – Greenfield Tower Cost Estimate **

Alternative 1 Greenfield Tower Cost Estimate			
<i>Site Equipment</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
160' Self-Supporting Tower	1	\$40,000	\$40,000
Prefabricated Shelter	1	\$150,000	\$150,000
Generator/Transfer switch/fuel tank	1	\$25,000	\$25,000
Subtotal			\$215,000
<i>Implementation Services</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Extended Cost</i>
Tower delivery & Installation	1	\$100,000	\$100,000
Shelter delivery & Installation	1	\$50,000	\$50,000
Generator delivery & installation	1	\$15,000	\$15,000
Geo-technical survey & report	1	\$15,000	\$15,000
Site prep & PM Services	1	\$140,000	\$140,000
Subtotal			\$320,000
Greenfield Tower Site Estimated Total			\$535,000

**** This estimate does not include land acquisition costs.**

4.2.13.9 Alternative 2 Cost Estimate Summary

Table 29 summarizes the estimated total costs for the Alternative 2 P25 upgrade.

Table 29 – Alternative 2 Total System Cost Estimate

Alternative 2 Total Cost Estimate			
<i>Item</i>	<i>Equipment</i>	<i>Services</i>	<i>Total</i>
Radio System	\$750,000	\$375,000	\$1,125,000
Dispatch Console System	\$215,000	\$107,500	\$322,500
Network Management System	\$50,000	\$25,000	\$75,000
Site Civils / Improvements	\$175,000	\$75,000	\$250,000
Subscriber Equipment	\$826,000	Included	\$826,000
Greenfield Tower Site	\$215,000	\$320,000	\$535,000
Total	\$2,231,000	\$902,500	\$3,133,500

4.3 Alternatives Analysis Comparison

Table 30 provides a side-by-side comparison of the cost estimates for both alternatives.



Table 30 – Alternatives Cost Estimate Comparison

Alternatives Cost Estimate Comparison		
Item	Alternative 1 – Analog Enhancement	Alternative 2 – P25 Upgrade
Radio System	\$870,000	\$1,125,000
Dispatch System	\$200,000	\$322,500
Network Management System	\$75,000	\$75,000
Site Civils / Improvements	\$190,000	\$250,000
Subscriber Equipment	\$558,000	\$826,000
Greenfield Tower Site	\$535,000	\$535,000
Total	\$2,428,000	\$3,133,500

Both alternatives provide a two-site, four-channel simulcast system for voice communications with an expansion to a three-site, four-channel simulcast system. Both alternatives also assume replacement of existing dispatch consoles, new backhaul system, new NMS, use of AEP Tower site, reuse of Copper Hill tower site and the implementation of a third RF site. The major difference is that Alternative 1 is an analog system, and Alternative 2 is a P25 digital system. Both alternatives also include a complete refresh of subscriber units. The capital cost for Alternative 2 is \$705,500 higher than the cost estimate for Alternative 1.



Table 31 below detail the differences and similarities between Alternative 1, Analog Enhancement and Alternative 2, P25 upgrade.

Table 31 – Comparison of Alternatives

<i>Item</i>		
<i>Item</i>	<i>Alternative 1 – Analog Enhancement</i>	<i>Alternative 2 – P25 Upgrade</i>
Estimated Costs w/new site**	\$2,428,000	\$3,133,500
Estimated Costs w/optional greenfield site**	\$3,203,000	\$3,908,500
Coverage	Maintains existing coverage with slight improvement due to new equipment	Improved coverage provided in digital vs. analog
Costs	Lower due to analog use	Higher due to P25 digital operation
Subscriber devices	Replace existing	Replace with P25 devices
Competitive procurement	Yes, analog systems available from manufacturers	Yes, P25 systems available from manufacturers
Interoperability	Same interoperability as exists today	P25 system would require interoperability partners to have P25 subscribers.
Enhances interoperability	Same interoperability as exists today	Purchase of multiband P25 subscribers would allow for operation on Roanoke's system and any other P25 system
Enhanced features	No	Yes, enhanced features such as encryption, over the air rekey and GPS/AVL available
Capacity	Same capacity as today	Same capacity as today
Upgradable	Possibly to P25 if new infrastructure is capable, dependent on vendor selection	Yes, to P25 trunking
Design	Three-site conventional	Three-site conventional

**** This estimate does not include land acquisition costs.**



Table 32 below contains the predicted coverage and estimated costs for the two alternatives, including an additional fourth site, as compared to the existing system.

Table 32 – Coverage Percentages

Geographic Coverage % of Floyd County (DAQ 3.4 or better)							
Solution	Mobile Talk-Out	Mobile Talk-In	Portable Talk-Out (On-Street)	Portable Talk-In (On-Street)	Portable Talk-Out (In Light Bldg)	Portable Talk-In (In Light Bldg)	Estimated Cost
Existing System (Two Sites)	88	86	70	45	40	17	N/A
Analog - Three Sites	94	93	78	52	47	22	\$2.4M
Analog - Four Sites	95	94	80	54	48	23	\$3.2M
P25 - Three Sites	99	98	91	68	62	38	\$3.1M
P25 - Four Sites	99	99	92	70	64	40	\$3.9M



5. Recommendations and Next Steps

The two alternatives detail potential paths for upgrading the existing analog system to a new system or replacing the current system with a P25 solution. These two alternatives are closely related with the major difference beyond the cost, being analog technology vs. digital technology.

It is **FE**'s opinion that the County should consider a P25 upgrade and expanding the existing system with a third site to improve coverage within the County. Adding trunking operation would immediately increase the system capacity without the need for additional spectrum. It would also allow for the implementation of additional features such as encryption and a GPS/AVL solution identified by the users. Funding and grant options are more readily available provided the new system is a public safety P25 standards-based system.

However, the costs associated with the P25 conventional simulcast upgrade may prevent the County from proceeding in this direction. As an alternate, the County could consider refreshing the analog system and adding a third site to enhance coverage to meet the stakeholder's expectations.

FE recommends a competitive procurement process to replace the existing analog system. This process would include the releasing of a request for proposals (RFP) document. The RFP would allow for multiple vendors to provide proposals and pricing for the system expansion. The vendors would provide the detailed design of the system allowing for innovated approaches and placing system performance responsibilities on the vendors. The RFP should provide the vendors with the required functional specifications and include topics such as but not limited to:

- System functional operational requirements
- Leveraging existing resources
- Infrastructure equipment
- Site subsystems (HVAC, shelters, generators, etc.)
- Dispatch equipment
- Spectrum usage
- Required coverage
- System maintenance and support functions

An evaluation team chosen by the County will evaluate and score vendor proposals submitted in response to the RFP. Once the preferred vendor is known, contract negotiations could commence.



Following the County's review and approval of this report, **FE** will prepare a PowerPoint presentation to present to the County Board of Supervisors. The presentation will assist key decision makers in making an informed decision regarding the practicality and timing of moving forward with the County's preferred selection.

The remainder of this page is intentionally left blank



Cindy Ryan

From: Scott Wickham <swickham@rfca.com>
Sent: Tuesday, January 12, 2021 2:55 PM
To: Cindy Ryan
Subject: RE: Request for Pricing
Attachments: Floyd Audit Estimate.pdf

Cindy,
 I appreciate the opportunity to provide pricing for the next 3 years. Please find it attached. I'd also like to make note that this includes the County, School Board, and EDA as it has in the past, even with the EDA increasing in activity.

If you all have any questions please let me know. Thanks and stay well!

Scott Wickham, CPA, CFE
 Member
swickham@rfca.com



This message (including any attachments) contains confidential information intended for a specific individual and purpose, and is protected by law. If you are not the intended recipient, you should delete this message. Any disclosure, copying, or distribution of this message, or the taking of any action based on it, is strictly prohibited.

COUNTY OF FLOYD, VIRGINIA
 AUDIT BUDGET (FEE ESTIMATE)
 YEAR ENDING JUNE 30, 2021

County, School Board, and EDA Audits:

	<u>Hourly Rate</u>	<u>Planning</u>	<u>Fieldwork</u>	<u>Report</u>			<u>Total Hours</u>	<u>Proposed Fee</u>
				<u>Prep/Review</u>	<u>Production</u>	<u>Other</u>		
Partner	200.00	3.00	90.00	32.00	-	12.00	137.00	\$ 27,400
Sr. Staff	150.00	3.00	90.00	32.00	-	6.00	131.00	19,650
Jr. Staff	87.50	-	90.00	-	-	6.00	96.00	8,400
Quality Control	100.00	-	-	-	16.00	-	16.00	1,600
Production	50.00	-	-	-	8.00	-	8.00	400
Subtotal		6.00	270.00	64.00	24.00	24.00	388.00	\$ 57,450

Audit fee 2020 \$55,100.00
 Audit fee 2019 \$51,570.00
 Audit fee 2018 \$51,800.00

Audit Fee 2021 \$ 57,450
 Audit Fee 2022 59,450
 Audit Fee 2023 61,500



930 THIRD STREET, VINTON VA 24179 · 800-442-9700 · WWW.ATLANTICEMERGENCY.COM

FLOYD COUNTY FIRE DEPARTMENT

ENFORCER 750 GALLON
PUMPER PROPOSAL October 10, 2020



540-353-5299 – Cell
540-343-8077 – Fax

Submitted by: **Bobby St.Clair** Regional Account Manager
bstclair@atlanticemergency.com



October 10, 2020

Floyd County Emergency Management
120 West Oxford Street
Floyd, VA 24091

Dear Mr. Sowers,

Atlantic Emergency Solutions the Pierce authorized Sales and Service dealership in Virginia, is pleased to offer Floyd County our proposal on behalf of Pierce Manufacturing for a new 2021 Pierce Enforcer 750Gallon Pumper. We have thoughtfully tailored our proposal around the Department's requirements.

Pierce Manufacturing is North America's leader in the fire/rescue industry. Pierce has been building America's finest since 1917.

Currently we have **six (6) factory trained service centers in Virginia with two (2) located (service and collision) in Roanoke** to handle all the specialized requirements for servicing your emergency apparatus. Mobile service vehicles are also available through our Roanoke Service Centers, along with 24/7 Emergency Service. This will provide Floyd County with the most experienced, fastest responding, and the most cost-effective solution to keep your emergency units in service. No other dealership in the Commonwealth of Virginia has made a greater commitment to service.

Enforcer 750 Gallon Pumper per Proposal Dated 10-10-2020	\$593,079.00
Final Inspection Trip – Three (3) Fire Department Personnel	\$3,750.00
HGAC Fee	<u>\$2,000.00</u>
TOTAL PURCHASE PRICE	\$598,829.00

Above Pricing is based on HGAC Contract FS12-19

Pricing is valid for sixty (60) days.

Please see DTF – Equipment\Services page for additional items included in above pricing.

Delivery time frame is 345 - 375 days after receipt of signed contract and/or purchase order.

As always, we remain at your disposal to answer any questions or provide further information.

Sincerely,

Bobby St. Clair

Bobby St.Clair
Regional Account Manager
Atlantic Emergency Solutions
Phone: 540-353-5299
bstclair@atlanticemergency.com