2738 - Buchanan County Debris Management Plan Virginia Community Flood Preparedness Fund (CFPF) CY 24 Round 5 Capacity Building/Planning Grants

Application Details

Funding Opportunity:	2337-Virginia Community Flood Preparedness Fund - Study Grants - CY24 Round 5
Funding Opportunity Due Date:	Jan 24, 2025 11:59 PM
Program Area:	Virginia Community Flood Preparedness Fund
Status:	Under Review
Stage:	Final Application
Initial Submit Date:	Jan 24, 2025 4:08 PM
Initially Submitted By:	Jeffrey Van Meter
Last Submit Date:	
Last Submitted By:	

Contact Information

Primary Contact Information

Active User*:	Yes
Type:	External User
Name*:	Mr. (Salutation) Jeffrey (First Name) Todd (Middle Name) Van Meter (Last Name)
Title:	Floodplain Administrator
Email*:	todd.vanmeter@buchanancounty-va.gov
Address*:	P. O. Box 950
	Grundy (City) Virginia (State/Province) 24614 (Postal Code/Zip)
Phone*:	(276) 935-6512 Ext. Phone ###-###-####
Fax:	###-###-####
Comments:	

Organization Information

Status*:	Approved
Name*:	Buchanan County
Organization Type*:	Local Government
Tax ID*:	54-6001172

Unique Entity Identifier (UEI)*: DZKKN8J9VJN

Organization Website: https://www.buchanancountyonline.com/

Address*: P. O. Box 950

Grundy (City) Virginia (State/Province) 24614- (Postal Code/Zip)

Phone*: (276) 935-6500 Ext.
###-###-####

Fax: ###-###-####

Benefactor:

Vendor ID:

Comments:

VCFPF Applicant Information

Project Description

Name of Local Government*: Buchanan County

Your locality's CID number can be found at the following link: Community Status Book Report

NFIP/DCR Community Identification Number (CID)*: 510024

If a state or federally recognized Indian tribe,

Name of Tribe:

Authorized Individual*: Robert Craig (First Name) Horn (Last Name)

Mailing Address*: P. O. Box 950
Address Line 1

4447 Slate Creek Road
Address Line 2

Grundy (City) Virginia (State) 24614 (Zip Code)

Telephone Number*: 276-935-6596

Cell Phone Number*: 276-312-2825

Email*: craig.horn@buchanancounty-va.gov

Is the contact person different than the authorized individual?

Contact Person*: Yes

Contact: Jeffrey (First Name) Van Meter (Last Name)

P. O. Box 950
Address Line 1

4447 Slate Creek Road
Address Line 2

Grundy (City) Virginia (State) 24614 (Zip Code)

Telephone Number: 276-935-6512

Cell Phone Number: 276-312-2825

Email Address: todd.vanmeter@buchanancounty-va.gov

Enter a description of the project for which you are applying to this funding opportunity

Project Description*:

Buchanan County is seeking funding to develop a flood preventative debris management plan. This plan originates from the 2023 Buchanan County Flood Resilience Plan and will address the prevention of future debris as well as the identification and removal of existing debris in the county's waterways and floodplains.

Low-income geographic area means any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service. A project of any size within a low-income geographic area will be considered.

Is the proposal in this application intended to benefit a low-income geographic area as defined above?

Benefit a low-income geographic area*: Yes

Information regarding your census block(s) can be found at census.gov

Census Block(s) Where Project will Occur*: Entire County (Census Blocks: 1017-4040)

Is Project Located in an NFIP Participating Community?*: Yes

Is Project Located in a Special Flood Hazard Area?*: Yes

Flood Zone(s) (if applicable): Range (Zone AE, A)

Flood Insurance Rate Map Number(s) (if applicable): Entire County

Eligibility - Round 4

Eligibility

Is the applicant a local government (including counties, cities, towns, municipal corporations, authorities, districts, commissions, or political subdivisions created by the General Assembly or pursuant to the Constitution or laws of the Commonwealth, or any combination of these)?

Local Government*: Yes

Yes - Eligible for consideration
No - Not eligible for consideration

If the applicant is not a town, city, or county, are letters of support from all affected local governments included in this application?

Letters of Support*: N/A

Yes - Eligible for consideration
No - Not eligible for consideration

Has this or any portion of this project been included in any application or program previously funded by the Department?

Previously Funded*: No

Yes - Not eligible for consideration
No - Eligible for consideration

Has the applicant provided evidence of an ability to provide the required matching funds?

Evidence of Match Funds*: Yes

Yes - Eligible for consideration
No - Not eligible for consideration
N/A - Match not required

Scope of Work - Studies - Round 4

Scope of Work

Upload your Scope of Work

Please refer to Part IV, Section B. of the grant manual for guidance on how to create your scope of work

Scope of Work*: CFPF Scope of Work Attachment_Buchanan.docx

Comments:

Scope of Work Narrative

Budget Narrative

Budget Narrative Attachment*: CFPF Budget Narrative_Buchanan.docx

Comments:

Scoring Criteria for Studies - Round 4

Scoring

Revising floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.

Revising Floodplain Ordinances*: No
Select

Creating tools or applications to identify, aggregate, or display information on flood risk or creating a crowd-sourced mapping platform that gathers data points about real-time flooding. This could include a locally or regionally based web-based mapping product that allows local residents to better understand their flood risk.

Mapping Platform*: No
Select

Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA).

Hydrologic and Hydraulic Studies*: No
Select

Studies and Data Collection of Statewide and Regional Significance. Funding of studies of statewide and regional significance and proposals will be considered for the following types of studies:
Updating precipitation data and IDF information (rain intensity, duration, frequency estimates) including such data at a sub-state or regional scale on a periodic basis.

Updating Precipitation Data and IDF Information*: No
Select

Regional relative sea level rise projections for use in determining future impacts.

Projections*: No
Select

Vulnerability analysis either statewide or regionally to state transportation, water supply, water treatment, impounding structures, or other significant and vital infrastructure from flooding.

Vulnerability Analysis*: No
Select

Flash flood studies and modeling in riverine regions of the state.

Flash Flood Studies*: No
Select

Statewide or regional stream gauge monitoring to include expansion of existing gauge networks.

Stream Gauge Monitoring*: No
Select

New or updated delineations of areas of recurrent flooding, stormwater flooding, and storm surge vulnerability in coastal areas that include projections for future conditions based on sea level rise, more intense rainfall events, or other relevant flood risk factors.

Delineations of Areas of Recurrent Flooding*: No
Select

Regional flood studies in riverine communities that may include watershed-scale evaluation, updated estimates of rainfall intensity, or other information.

Regional Flood Studies*: No
Select

Regional Hydrologic and Hydraulic Studies of Floodplains

Regional Hydrologic and Hydraulic Studies of Floodplains*: No
Select

Studies of potential land use strategies that could be implemented by a local government to reduce or mitigate damage from coastal or riverine flooding.

Potential Land Use Strategies*: No
Select

Pluvial Studies

Pluvial Studies*: No

Select

Other proposals that will significantly improve protection from flooding on a statewide or regional basis.

Other Proposals*: Yes

Select

Is the project area socially vulnerable? (based on ADAPT Virginia?s Social Vulnerability Index Score)

Social Vulnerability Scoring:

Very High Social Vulnerability (More than 1.5)
High Social Vulnerability (1.0 to 1.5)
Moderate Social Vulnerability (0.0 to 1.0)
Low Social Vulnerability (-1.0 to 0.0)
Very Low Social Vulnerability (Less than -1.0)

Socially Vulnerable*: Very High Social Vulnerability (More than 1.5)

Is the proposed project part of an effort to join or remedy the community?s probation or suspension from the NFIP?

NFIP*: No

Is the proposed project in a low-income geographic area as defined below?

"Low-income geographic area" means any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service. A project of any size within a low-income geographic area will be considered.

Low-Income Geographic Area*: Yes

Projects eligible for funding may also reduce nutrient and sediment pollution to local waters and the Chesapeake Bay and assist the Commonwealth in achieving local and/or Chesapeake Bay TMDLs.

Does the proposed project include implementation of one or more best management practices with a nitrogen, phosphorus, or sediment reduction efficiency established by the Virginia Department of Environmental Quality or the Chesapeake Bay Program Partnership in support of the Chesapeake Bay TMDL Phase III Watershed Implementation Plan?

Reduction of Nutrient and Sediment Pollution*: No

Comments:

Scope of Work Supporting Information - Studies

Scope of Work Supporting Information

Is the proposed study a new study or updates on a prior study?

New or Updated Study*: New Study

Describe the relationship of the study to the local government's needs for flood prevention and protection, equity, community improvement, identification of nature-based solutions or other priorities contained in this manual

Relationship of Study to Priorities Contained in this Manual*:

The topography of Buchanan County consists of steep slopes with narrow valleys. Developable land is not readily available with many residences and commercial buildings located within a relatively short distance of local rivers, streams and creeks. One consequence of this type of topography and resultant development is that the stream channels, until flow concentrated areas are reached, are often narrow and steep. The majority of homes and businesses are situated so that residents must cross a waterway to access their properties. These crossings often consist of culverts that are improperly sized and unable to convey the increased flows resulting from a flood event. Many bridges are not raised tor designed allow passage of of flood waters.

The combination of high velocity flood waters and under designed culverts and bridges results in a great deal of debris being carried downstream where it often blocks the passage of flood waters and results in damage not only to these structures but other structures and public roads that may not actually be located within a Special Flood Hazard Area.

Access to critical facilities including the county's hospital and other health care facilities is often reduced by the backwater flooding resulting from debris blockages. The time and resources required to repair such damages and restore normal access can require weeks. In the interim, the health and safety of all citizens of the county can be detrimentally impacted by increased travel times or limited access to critical facilities. Increased damages and costs of remediation is also greatly increased by damages that might not occur if not for the debris blockages.

Buchanan County desires to identify those areas in which existing debris needs to be removed and to seek methods to limit the placement of debris that might eventually create a problem during flood events. In addition, a catalog of existing culverts and bridges is to be created to ensure that

when replacement is necessary the permitting process alleviates the potential for future damages by requiring that new culverts or bridges be sized or designed so as not to decrease flow capacity. A county wide debris management plan will identify problem areas for future remediation projects, ensure the removal of existing debris that constitutes a hazard in future flood events and create a coordinated plan to eliminate or decrease the placement or creation of debris within or near stream channels.

Describe the qualifications of the individuals or organizations charged with conducting the study or the elements of any request for proposal that define those qualifications

Qualifications of Individuals Conducting Study*:

Buchanan County intends to seek the assistance of a qualified consulting firm in carrying out the proposed study. Competitive negotiations will favor those firms that demonstrate expertise in conducting similar studies.

Describe the expected use of the study results in the context of the local resilience plan or, in the case of regional plans, how the study improves any regional approach

Expected use of Study Results*:

The study results will be in accordance with the goals of the Buchanan County Flood Resilience Plan by decreasing the potential damages to structures, roads and critical facilities. These decreased damages will support a quicker recovery from flood events, thereby ensuring ready access to public and critical facilities, as well as decreasing the costs of remediation from resultant damages.

If applicable, describe how the study may improve Virginia's flood protection and prevention abilities in a statewide context (type N/A if not applicable)

Statewide Improvements*:

N/A

Provide a list of repetitive and/or severe repetitive loss properties. Do not provide the addresses for the properties, but include an exact number of repetitive and/or severe repetitive loss structures within the project area

Repetitive Loss and/or Severe Repetitive Loss Properties*: Repetitive Loss Property Attachment.docx

Describe the residential and commercial structures impacted by this project, including how they contribute to the community such as historic, economic, or social value. Provide an exact number of these structures in the project area

Residential and/or Commercial Structures*:

The prevalence of steep, narrow streambeds combined with the great number of undersized culverts and bridges throughout the county means that nearly every structure could be positively impacted by the Debris Management Plan.

If there are critical facilities/infrastructure within the project area, describe each facility

Critical Facilities/Infrastructure*:

Buchanan General Hospital
Heritage Hall Nursing Home
Buchanan County Government Center
Appalachian School of Pharmacy
Appalachian School of Law
Big Rock Volunteer Fire Department
Council Volunteer Fire Department
Dismal River Volunteer Rescue Squad
Grundy Volunteer Fire Department
Harman Volunteer Fire Department
Knox Creek Volunteer Fire Department
Oakwood Volunteer Fire Department
Patterson Volunteer Fire Department
Prater Volunteer Rescue Squad
Russell Prater Volunteer Fire Department
Slate Creek Volunteer Rescue Squad
Whitewood Volunteer Fire Department

Budget

Budget Summary

Grant Matching Requirement*: LOW INCOME - Flood Prevention and Protection Studies - Fund 90%/Match 10%

Is a match waiver being requested?

Match Waiver Request Note: Only low-income communities are eligible for a match waiver *:	No
I certify that my project is in a low-income geographic area:	Yes
Total Project Amount (Request + Match)*:	$115,000.00 **This amount should equal the sum of your request and match figures
REQUIRED Match Percentage Amount:	$11,500.00

BUDGET TOTALS

Before submitting your application be sure that you meet the match requirements for your project type.

Match Percentage:	10.00% Verify that your match percentage matches your required match percentage amount above.
Total Requested Fund Amount:	$103,500.00
Total Match Amount:	$11,500.00
TOTAL:	$115,000.00

Personnel

Description	Requested Fund Amount	Match Amount	Match Source
Labor - Salaried and Volunteer	$96,300.00	$10,700.00	Buchanan County
	$96,300.00	**$10,700.00**	

Fringe Benefits

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Travel

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Equipment

Description	Requested Fund Amount	Match Amount	Match Source
Equipment and Office Space	$7,200.00	$800.00	Buchanan County
	$7,200.00	**$800.00**	

Supplies

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Construction

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Contracts

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Pre-Award and Startup Costs

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Other Direct Costs

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Supporting Documentation

Supporting Documentation

Named Attachment	Required	Description	File Name	Type	Size	Upload Date
Detailed map of the project area(s) (Projects/Studies)		FIRM, Grundy and Royal City	BUCHANAN_MAP_1_FEMA_FLOOD_HAZARD.pdf	pdf	3 MB	01/24/2025 02:43 PM
FIRMette of the project area(s) (Projects/Studies)		FIRM, Hurley	BUCHANAN_MAP_2_FEMA_FLOOD_HAZARD.pdf	pdf	2 MB	01/24/2025 02:44 PM
Historic flood damage data and/or images (Projects/Studies)		https://appvoices.org/2024/10/07/flood-recovery-confusion-in-virginia/ https://www.wjhl.com/news/local/gallery-buchanan-county-flood-damage/ https://www.businessinsider.com/virginia-flood-buchanan-county-several-people-unaccounted-for-photos-2022-7 https://wjla.com/news/local/gallery/devastating-floods-hit-southwest-virginia-40-people-missing-in-buchanan-county?photo=3 https://cardinalnews.org/2022/07/13/heavy-flooding-in-buchanan-county-at-least-40-people-are-missing/	Flood Debris Photo.jpg	jpg	185 KB	01/24/2025 04:06 PM
A link to or a copy of the current floodplain ordinance		https://ecode360.com/42952139#42916355	MINUTES Adopting Revised Flood Damage Prevention Ordinance.pdf	pdf	806 KB	01/24/2025 03:21 PM
Maintenance and management plan for project						
A link to or a copy of the current hazard mitigation plan		The updated regional , multi-jurisdiction Regional Hazard Mitigation Plan is currently under review by VDEM and FEMA.	Cumberland-Plateau-HMP-Update.pdf	pdf	15 MB	01/23/2025 03:40 PM
A link to or a copy of the current comprehensive plan		This Comprehensive Plan was updated in 2017	Buchanan County Comprehensive Plan 2017.pdf	pdf	4 MB	01/23/2025 03:14 PM
Social vulnerability index score(s) for the project area		Social Vulnerability Map	BUCHANAN_MAP_SOCIAL_VULNERABILITY.pdf	pdf	760 KB	01/24/2025 11:34 AM

Authorization to request funding from the Fund from governing body or chief executive of the local government	CFPF Round 5 Grant Application Authorization Letter	Grant Application Authorization Letter.pdf	pdf	303 KB	01/24/2025 11:31 AM
Signed pledge agreement from each contributing organization	CFPF Round 6 Application Pledge Agreement	Grant Application Pledge.pdf	pdf	327 KB	01/24/2025 11:30 AM
Maintenance Plan					

Benefit-cost analysis must be submitted with project applications over $2,000,000. in lieu of using the FEMA benefit-cost analysis tool, applicants may submit a narrative to describe in detail the cost benefits and value. The narrative must explicitly indicate the risk reduction benefits of a flood mitigation project and compares those benefits to its cost-effectiveness.

Benefit Cost Analysis					
Other Relevant Attachments					

Letters of Support

Description	File Name	Type	Size	Upload Date
Flood Resilience Plan	2023 Buchanan County Flood Resilience Plan Chapter 7 Flood Risk Reduction Action Plan.pdf	pdf	1 MB	01/24/2025 03:22 PM
Floodplain Development Permit Application	BUCOVA Floodplain Development Permit Application.pdf	pdf	82 KB	01/24/2025 03:25 PM
Ongoing Section 202 Project, Part 1	BUCOVA SECTION 202 PART 1.pdf	pdf	3 MB	01/24/2025 03:26 PM
Ongoing Section 202 Project, Part 2	BUCOVA SECTION 202 PART 2.pdf	pdf	12 MB	01/24/2025 03:27 PM

BUCHANAN COUNTY BOARD OF SUPERVISORS

January 23, 2025

Angela Davis, CFM
Director, Floodplain Management
Department of Conservation and Recreation
600 East Main Street, 24th Floor
Richmond VA 23219

Re: Authorization of Buchanan County CFPF Application

Dear Ms. Davis and Members of the Review Team:

Buchanan County is proud to submit the enclosed grant application to the Virginia Community Flood Preparedness Fund Round 5 program. We firmly believe that the capacity-building and planning that will result from this project, should you choose to support it, will enable the people of Buchanan County to work toward a more resilient community.

Buchanan County and our neighbors in Southwest Virginia have experienced devastating recurrent flooding that has increased in recent years. Flooding is often thought of as a coastal problem, but we are pleased to see that DCR seeks to direct some of this new fund to mountainous and disadvantaged communities such as ours.

Please accept this letter as my authorization of the request for CFPF funding.

Also, please reach out to me, County Attorney Lee Moise, or any of our team with questions. We look forward to working with you.

Sincerely,

Robert C Horn

Robert Craig Horn
County Administrator

Administrative Office, 4447, Suite 310, Slate Creek Road, GRUNDY, VIRGINIA 24614
www.buchanancountyonline.com
Telephone (276) 935-6503
Fax: (276) 935-4479

BUCHANAN COUNTY BOARD OF SUPERVISORS

January 24, 2025

PLEDGE AGREEMENT

This Pledge Agreement (the "Agreement") is made and entered into as of January 24, 2025 by and between Buchanan County VA (Applicant), with its principal place of business at P. O. Box 950, 4447 Slate Creek Road Grundy VA 24614, and The Virginia Community Flood Preparedness Fund Round 5 (Grantmaker), with its principal place of business at Department of Conservation and Recreation, 600 East Main Street, 24th Floor Richmond VA 23219

WHEREAS, Applicant is applying for a grant from Grantmaker to fund a project entitled "Buchanan County Debris Management Plan"; and

WHEREAS, Applicant desires to demonstrate its commitment to the Project by pledging matching funds;

NOW, THEREFORE, the Applicant pledges to provide the following in-kind contributions to the Project totaling $11,500 and constituting the required 10% Grant Matching Requirement as outlined in the attached CFPF Round 5 Capacity/Planning Grant application.

- $800 for utilization of Buchanan County office space and equipment.
- $10,700 labor, volunteer and salaried personnel.

Sincerely,

Robert C Horn

Robert Craig Horn
County Administrator
Buchanan County, Virginia


N
Poetown
Zone AE
Riverside Dr
Levisa Fork
Dave Branch Rd
Zone A
Edgewater Dr
Zone AE
Zone AE
(EL 1047.6)
460
AREA WITH REDUCED FLOOD RISK DUE TO LEVEE
Zone X
Zone AE
Zone AE
Zone AE
Riverside Dr
Riverside Dr
Riverside Dr
Grundy
Zone A
Zone AE
Hoot Owl Rd
Hemi Dr
83
Zone A
Zone AE
Zone AE
Zone AE
Holland St
Royal City
Levisa Fork
Zone AE
Zone AE
Tookland
Legend
Flood Hazard Zones
Zone Type
1% Annual Chance Flood Hazard
Regulatory Floodway
0.2% Annual Chance Flood Hazard
Area with Reduced Risk Due to Levee
MAP 1
BUCHANAN COUNTY, VIRGINIA
CFPF ROUND 5 APPLICATION MATERIALS
FEMA FLOOD HAZARD FIRMS
GRUNDY & ROYAL CITY
DEC 2024
SCALE: NOTED
0 0.05 0.1 0.2 0.3 0.4
Miles

MAP 2

BUCHANAN COUNTY, VIRGINIA
CFPF ROUND 5 APPLICATION MATERIALS

FEMA FLOOD HAZARD FIRMS
HURLEY

DEC 2024 SCALE: NOTED

0 0.03 0.05 0.1
Miles

MINUTES

A regular meeting of the Buchanan County Board of Supervisors was held on the 7th day of August 2023 starting at 6:00 o'clock p.m. in the Board of Supervisors Meeting Room, 3rd floor of the Buchanan County Government Center, 4447 Slate Creek Road, Grundy, Virginia 24614. **This meeting was conducted by electronic communication (Zoom). The media and public were invited to participate.**

PRESENT: Tim Hess, Chairman
G. Roger Rife
Trey Adkins
Craig Stiltner
Jeff Cooper
Drew Keene
J. Carroll Branham

Robert Craig Horn, County Administrator
L. Lee Moise, County Attorney

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The meeting was called to order with Prayer and Pledge of Allegiance.

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IN RE: CONSENT AGENDA

After a general discussion by the board upon motion by Craig Stiltner seconded by Drew Keene and with a roll call vote of seven (7) yeas, Jeff Cooper, Drew Keene, G. Roger Rife, J. Carroll Branham, Trey Adkins, Craig Stiltner, Tim Hess and zero (0) nays, this board did hereby approve the following Consent Agenda:

a. Consider approving minutes for June 5th, 2023;
b. Consider ratifying payroll after review;
c. Consider ratifying the payment of bills by Resolution adopted on January 9th, 2023.
   (Including the Buchanan County Head Start ratified bill list and bill list)
d. Consider approving the following coyote claims in the amount of $50.00 per claim and to issue a check:

- Bryant Compton (One Claim)
- Tim Stiltner (Two Claims)
- Ralph Ratliff (One Claim)

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districts accounts earmarked for a rabies clinic to be held in Buchanan County.

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IN RE: PUBLIC COMMENTS

Gary Wagner, resident stated he was opposed to the road work being done at Big Rock. I've almost wrecked three times. A coal truck wrecked in a lady's yard and did some damage, he stated.

Craig Stiltner, Rocklick District Supervisor stated the work being done is up to the state. I've called J. P. Richardson with Metinvest about the issues.

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IN RE: ALISHA STILTNER, DIRECTOR OF DIVERSION PROGRAM

Alisha Stiltner, wasn't present for the meeting.

After a general discussion by the board upon motion by Craig Stiltner seconded by Trey Adkins with a roll call vote of four (4) yeas, Craig Stiltner, Trey Adkins, J. Carroll Branham, Tim Hess and three (3) nays, G. Roger Rife, Jeff Cooper and Drew Keene, this board did hereby approve to transfer the Diversion Program back under the direction of the Buchanan County Board of Supervisors from the Commonwealth Attorney's Office.

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IN RE: BRADLEY SCARBERRY, RESIDENT - DISCUSS A NOISE ORDINANCE

Bradley Scarberry, resident in the Knox District stated the county needs to adopt a noise ordinance. I live near Paw Paw and my neighbors are playing music with speakers on the porch late into the night.

Trey Adkins, Knox District Supervisor stated if the county could adopt an emergency ordinance regarding this issue?

Craig Stiltner, Rocklick District Supervisor stated they're disturbing the peace, can't the sheriff's department do something?

L. Lee Moise, County Attorney stated Mr. Scarberry could possibly go swear out a warrant for disturbing the peace .

The music being played is dirty and there's children around hearing it, stated Mr. Scarberry. Also, my wife has to get up at 4 a.m. to go to work.

tonight on an emergency basis that is valid for 60 days or until permanently adopted after a public hearing that can be scheduled in September.

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IN RE: JEANNE PRESLEY DISTRICT MANAGER FOR BIG SANDY SOIL AND WATER CONSERVATION DISTRICT – TO REQUEST FUNDING FOR FAMILY AGRICULTURE DAY

Bobby Looney, with Big Sandy Soil and Water Conservation District requested a contribution in the amount of $3,500 to assist with Family Agriculture Day.

After a general discussion by the board upon motion by Trey Adkins seconded by Craig Stiltner with a roll call vote of seven (7) yeas, Jeff Cooper, Drew Keene, G. Roger Rife, J. Carroll Branham, Trey Adkins, Craig Stiltner, Tim Hess and zero (0) nays, this board did hereby approve a contribution in the amount of $3,500.00 to Big Sandy Soil and Water Conservation District to be divided equally among the seven district accounts. This contribution is earmarked for Family Agriculture Day to be held on Saturday, August 26th, 2023 at the Grundy Community Center in the Town of Grundy.

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IN RE: JEFF BUCHANAN AND MEL COUNTS, VIRGINIA DEPARTMENT OF TRANSPORTATION REPRESENTATIVES

Craig Stiltner, Rocklick District Supervisor asked about stripping on State Routes 604 and 609?

Jeff Buchanan with Virginia Department of Transportation (VDOT) stated I'll check to see if they're on the list to be done.

Can a sign be installed informing tractor trailers that Belcher's Fork is not a through traffic road, asked Mr. Stiltner?

I'll check on this and try to get it done soon, stated Mr. Buchanan.

Drew Keene, Prater District Supervisor asked if any movement had been done regarding the intersection at Southern Gap Road and State Route 83?

We have a system to put in place, but we're having to work with AEP too on this project, stated Mr. Buchanan.

Can VDOT check Burnt Chestnut Road in the Garden District and the railroad crossing at the foot of Bill Young Mountain, asked Jeff Cooper, Garden District Supervisor?

IN RE: CONSIDER ADOPTING RESOLUTION REGARDING THE CANCELLATION OF ROUTE 83, CURVE REALIGNMENT AND INTERSECTION IMPROVEMENT (UPC-108751)

After a general discussion by e board upon motion by Jeff Cooper seconded by G. Roger Rife and with a roll call vote of seven (7) yeas, Jeff Cooper, Drew Keene, G. Roger Rife, J. Carroll Branham, Trey Adkins, Craig Stiltner, Tim Hess and zero (0) nays, this board did hereby adopt the following Resolution regarding the cancellation of Route 83, Curve Realignment and intersection improvement (UPC-108751)

RESOLUTION

RE: CANCELLATION OF RTE. 83 CURVE REALIGNMENT AND INTERSECTION IMPROVEMENT—UPC (108751)

WHEREAS, the Board of Supervisors of Buchanan County has decided not to move forward with the VDOT Revenue Sharing Project, namely Rte. 83 Curve Realignment and Intersection Improvement-UPC (108751); and

WHEREAS, at its meeting on December 6, 2022, the Board moved to reclassify/de-obligate the funding for the Bend of Slate Curve Project located on Route 83, Slate Creek Road located in the North Grundy Magisterial District; and

WHEREAS, since the referenced revenue sharing project was part of the Coal and Gas Road Improvement Fund Plan, the Coal and Gas Road Improvement Advisory Committee was required to vote on the issue of amending the Plan to reclassify/de-obligate the funding for said revenue sharing project; and

WHEREAS, on January 31, 2023 the Coal and Gas Road Improvement Advisory Committee met and voted to amend the Coal and Gas Road Improvement Fund Plan to reclassify/de-obligate funds from said revenue sharing project; and

NOW, THEREFORE, BE IT RESOLVED, the Buchanan County Board of Supervisors hereby requests the Virginia Department of Transportation to cancel the revenue sharing project, namely, Rte.83 Curve Realignment and Intersection Improvement –UPC (108751).

ADOPTED this 7th day of August, 2023.

Recorded Vote

Moved By: _____

Seconded By: _____

Yeas: _____

Nays: _____

ATTESTED:

_____
Robert Craig Horn
County Administrator

_____
Tim Hess, Chairman
Buchanan County, Va. Board of Supervisors

Designations (Rt. 613, (Jewell Valley Road); Rt. 621 (Hill Top Road) and Rt. 704 (Tech Road).

The Board of Supervisors of Buchanan County, in regular meeting on the 7th day of August, 2023 adopted the following:

RESOLUTION FOR RURAL RUSTIC ROAD DESIGNATION

WHEREAS, §33.2-332 of the Code of Virginia, permits the hard surfacing of certain unpaved roads deemed to qualify for designation as a Rural Rustic Road; and

WHEREAS, any such road must be located in a low-density development area and have no more than 1,500 vehicles per day; and

WHEREAS, the Board of Supervisors of Buchanan County, Virginia ("Board") desires to consider whether the following routes, should be designated Rural Rustic Roads; and

- Route 613, Jewell Valley Road
  - From 1.80 miles west of Route 616 to 2.80 miles west of Route 616, Length = 1.00 mile.
- Route 621, Hill Top Road
  - From 1.00 mile west of Route 635 to End State Maintenance, Length = 0.70 mile.
- Route 704, Tech Road
  - From Route 616 to End State Maintenance, Length = 0.75 mile.

WHEREAS, the Board is unaware of pending development that will significantly affect the existing traffic on this road; and

WHEREAS, the public has been made aware that these roads are to be paved with minimal improvements; and

WHEREAS, the Board believes that these roads should be designated as Rural Rustic Roads due to their qualifying characteristics; and

WHEREAS, these roads are in the Board's six-year plan for improvements to the secondary system of state highways.

NOW, THEREFORE, BE IT RESOLVED, the Board hereby designates the roads named herein and shown on the attached sketches as Rural Rustic Roads, pursuant to §33.2-332 of the Code of Virginia, and requests that the Local Manager for the Virginia Department of Transportation concur in this designation.

BE IT FURTHER RESOLVED, the Board requests that these roads be hard surfaced and, to the fullest extent prudent, be improved within the existing right-of-way and ditch-lines to preserve as much as possible the adjacent trees, vegetation, side slopes, and rural

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IN RE: CONSIDER SCHEDULING A PUBLIC HEARING FOR MONDAY, SEPTEMBER 11TH, 2023 AT 6:15 P.M. TO HEAR PUBLIC COMMENTS REGARDING AN ADDITIONAL BUDGET APPROPRIATION IN THE AMOUNT OF $1,441,896.52 TO BUCHANAN COUNTY PUBLIC SCHOOLS

After a general discussion by the board upon motion by Craig Stiltner seconded by G. Roger Rife and with a roll call vote of seven (7) yeas, Jeff Cooper, Drew Keene, G. Roger Rife, J. Carroll Branham, Trey Adkins, Craig Stiltner, Tim Hess and zero (0) nays, this board did hereby approve to schedule a public hearing for **Monday, September 11th, 2023 at 6:15 p.m.** to hear public comments regarding an additional budget appropriation in the amount of $1,441,896.52 to Buchanan County Public Schools.

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IN RE: CONSIDER APPROVING ADDENDUM #1 TO THE AGREEMENT BETWEEN BUCHANAN COUNTY AND CINTAS CORPORATION NO. 2 DATED JULY 15TH, 2019, WHICH SAID ADDENDUM WILL PROVIDE A TWO-YEAR RENEWAL OF THE CONTRACT WITH CINTAS FROM NOVEMBER 1, 2023 THROUGH OCTOBER 31, 2025

After a general discussion by the board upon motion by Craig Stiltner seconded by Trey Adkins and with the following roll call vote of seven (7) yeas, Jeff Cooper, Drew Keene, G. Roger Rife, J. Carroll Branham, Trey Adkins, Craig Stiltner, Tim Hess and zero (0) nays, this board did hereby approve the following Addendum #1 to the Agreement between Buchanan County and Cintas Corporation No. 2 dated July 15th, 2019, which said Addendum will provide a two-year renewal of the contract with Cintas from November 1, 2023 through October 31, 2025.

ADDENDUM #1 TO AGREEMENT BETWEEN BUCHANAN COUNTY, VIRGINIA AND CINTAS CORPORATION NO. 2, DATED JULY 15, 2019

Now come the parties, Cintas Corporation No. 2 and Buchanan County, Va., a political subdivision of the Commonwealth of Virginia, “County” and hereby agree to the following renewal of the agreement dated July 15, 2019 providing for uniforms, janitorial supplies, etc. as set forth in the July 15, 2019 contract, including Exhibits “A”, “B” and “C” attached to said contract which said contract is attached and made a part of this Addendum:

1) That the parties agreed to an initial multi-year term contract (April 1, 2019, through

Agreement dated the 28th day of July 2023 is attached and made a part of this Addendum as Exhibit "B". If there is any conflict between the original contract of July 15, 2019 and any of the Exhibits attached, then the provisions of the original contract of July 15, 2019 shall control.

EXECUTED IN DUPLICATE ORIGINALS:
IN WITNESS HEREOF:

CINTAS CORPORATION NO. 2
BY: _____
Scott Hall, Authorized Representative
of Cintas Corporation No. 2

BUCHANAN COUNTY, VIRGINIA

BY: _____
Tim Hess, Chairman
Buchanan County, Va. Board of Supervisors

ATTEST:

_____
Robert Craig Horn, County Administrator

APPROVED TO AS TO FORM ONLY:

_____
Lawrence L. Moise III, County Attorney

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IN RE: PUBLIC HEARING – 6:30 P.M. TO HEAR PUBLIC COMMENTS REGARDING THE PROPOSED ADOPTION OF AN ORDINANCE ENTITLED: "AMENDED ORDINANCE COUNTY CODE SECTION 77-13, REPAIR OR REMOVAL OF DANGEROUS STRUCTURES

Tim Hess, Chairman opened the public hearing for comments.

Trey Adkins, Knox District Supervisor stated residents should take advantage of this program. The county can removal structures free of charge if they fall under this ordinance, he commented.

Guy Dillow, resident in the Knox District stated these structures are a public nuisance.

This is the only way the county can get rid of abandoned structures, stated Craig Stiltner, Rocklick District Supervisor.

L. Lee Moise, County Attorney stated the state statue regarding

abandoned structures and they're not going to, stated Mr. Adkins. These people think they're going to get another 100% for the property from the corp. They're only going to receive the 175% of the value of their property and will not get paid twice, he stated.

G. Roger Rife, South Grundy District Supervisor stated we have a litter ordinance in effect, but nobody very seldom gets prosecuted. Everybody throws their trash out still in the road.

The second Monday of each month, we have litter cases heard in court, stated Mr. Moise.

The board could pass a separate ordinance if abandoned structures deem to be a public nuisance, the building code official has to be involved, commented Mr. Moise.

Mr. Stiltner has cleaned up his district, stated Mr. Rife. Has the trash come back yet; he asked Mr. Stiltner?

Yes, it has, stated Craig Stiltner, Rocklick District Supervisor.

The cameras are helping to catch some of those littering, but some cameras are being stolen, stated Mr. Moise.

Upon motion by Jeff Cooper seconded by Drew Keene and with a roll call vote of seven (7) yeas, Trey Adkins, J. Carroll Branham, Jeff Cooper, G. Roger Rife, Tim Hess, Drew Keene, Craig Stiltner and zero (0) nays, this board did hereby approve to close the public hearing.

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IN RE: **CONSIDER ADOPTING THE PROPOSED ORDINANCE ENTITLED: "AMENDED ORDINANCE COUNTY CODE SECTION 77-13, REPAIR OR REMOVAL OF DANGEROUS STRUCTURES"**

After a general discussion by the board upon motion by Craig Stiltner seconded by J. Carroll Branham and with the following roll call vote of seven (7) yeas, Trey Adkins, J. Carroll Branham, Jeff Cooper, G. Roger Rife, Tim Hess, Drew Keene, Craig Stiltner and zero (0) nays, this board did hereby approve the following Ordinance entitled: "Amended Ordinance County Code Section 77-13, Repair or Removal of Dangerous Structures."

AMENDED ORDINANCE OF THE BUCHANAN COUNTY, VA. CODE

after reasonable notice and a reasonable time to do so, has failed to remove, repair, or secure the building, wall or other structure. For purposes of this section, repair may include maintenance work to the exterior of a building to prevent deterioration of the building or adjacent buildings. For purposes of this section, reasonable notice includes a written notice (i) mailed by certified or registered mail, return receipt requested, sent to the last known address of the property owner and (ii) published once a week for two successive weeks in a newspaper having general circulation in the County. No action shall be taken by the County to remove, repair or secure any building, wall or other structure for at least 30 days following the later of the return of the receipt or newspaper publication, except the County may take action to prevent unauthorized access to the building within seven days of such notice if the structure is deemed to pose a significant threat to public safety and such fact is stated in the notice.

C.

If the Board of Supervisors, through its own agents or employees, removes, repairs, or secures any building, wall or any other structure after complying with the notice provisions of this section, the cost or expenses thereof shall be chargeable to and paid by the owners of such property and may be collected by the County as taxes and levies are collected.

D.

Every charge authorized by this section with which the owner of any such property shall have been assessed and which remains unpaid shall constitute a lien against such property ranking on a parity with liens for unpaid local taxes and enforceable in the same manner as provided in Articles 3 and 4 of Chapter 39 of Title 58.1 of the Code of Virginia. A locality may waive such liens in order to facilitate the sale of the property. Such liens may be waived only as to a purchaser who is unrelated by blood or marriage to the owner and who has no business association with the owner. All such liens shall remain a personal obligation of the owner of the property at the time the liens were imposed.

E.

Notwithstanding the foregoing, with the written consent of the property owner, a locality may, through its agents or employees, demolish or remove a derelict nonresidential building or structure, provided that such building or structure is neither located within nor determined to be a contributing property within a state or local historic district nor individually designated in the Virginia Landmarks Register. The property owner's written consent shall identify whether the property is subject to a first lien evidenced by a recorded deed of trust or mortgage and, if so, shall document the property owner's best reasonable efforts to obtain the consent of the first lienholder or the first lienholder's authorized agent. The costs of such demolition or removal shall constitute a lien against such property. In the event the consent of the first lienholder or the first lienholder's authorized agent is obtained, such lien shall rank on a parity with liens for unpaid local taxes and be enforceable in the same manner as provided in Subsection **D**. In the event

G.
In regard to structures that constitute a menace to the health and safety of the occupants thereof or the public, such structures are deemed a public nuisance as set forth in Va. Code section 15.2-900. Furthermore, if such structures as public nuisances present an imminent and immediate threat to life or property the County may abate, raze or remove such public nuisance and may bring an action against the responsible party to recover the necessary costs incurred for the provision of public emergency services reasonably required to abate any such public nuisance. If the owners of such structures can be identified the County shall seek a right of entry to abate the public nuisance. However, if such owner(s) refuse to provide a right of entry and the Board of Supervisors determines that the threat to the public health and /or public safety is an immediate risk, the Board may order the immediate abatement of the structure constituting the public nuisance.

H.
In the event that the some or all of the owners are unknown, the County may proceed to abate said public nuisance after running a notice in a paper of general circulation in the County for two successive weeks. If in the determination of the Board of Supervisors that the threat to the public health and/or public safety is an immediate risk, the Board may waive the requirement for publication of the notice in the newspaper and the County may take immediate action to abate the structure constituting a public nuisance

This amended section shall take effect immediately upon adoption.

This Amended Ordinance was adopted on this the 7th day of August, 2023 by the Buchanan County, Va., Board of Supervisors.

Recorded Roll Call Vote:
Moved by: Craig Stiltner
Seconded by: J. Carroll Branham
Trey Adkins: yea
Jeff Cooper: yea
Tim Hess: yea
Roger Rife: yea
Carroll Branham: yea
Craig Stiltner: yea
Drew Keene: yea

_____
Tim Hess, Chairman of the
Buchanan County, Va. Board of Supervisors

_____
Robert C. Horn, County Administrator

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IN RE: CONSIDER APPROVING A NOISE ORDINANCE

Craig Stiltner, Rocklick District Supervisor asked if a noise ordinance could be adopted on an emergency basis?

L. Lee Moise, County Attorney stated yes we can do this tonight. I would have to draft the noise ordinance which would be the subject of a public hearing in September for consideration of permanent adoption.

comments regarding the adoption of the following emergency noise ordinance:

BUCHANAN COUNTY NOISE ORDINANCE

CHAPTER 13

- **ARTICLE I. - NOISE**

  This article shall be known as the "Noise Ordinance of the County of Buchanan Virginia."

- **Declaration of policy.**

  It is hereby declared to be the public policy of Buchanan County, Va. to promote an environment for its citizens free from excessive noise that jeopardizes their health or welfare or degrades the quality of life within Buchanan County.

- **Sec. 13-1. - Definitions.**

  The following words and phrases, when used in this article shall have the meaning assigned to them in this section.

  Emergency work shall mean work made necessary to restore property, public or private, to a safe condition following a state of emergency or a local emergency as defined by the Commonwealth of Virginia Emergency Services and Disaster Law of 1973, Chapter 3.2 of Title 44 of the Code of Virginia, 1950, as amended, or its successor, or work required to protect persons or property from immediate exposure to danger, including work performed by the Buchanan County Public Service Authority in regard to emergency inspection, repair of facilities or restoration of services when required for the immediate health, safety or welfare of the community.

  Instrument, machine or device means and refers to any musical instrument, drum, radio, phonograph, compact disc player, cassette tape player, MP3 player, video player, amplifier or any other machine or device for producing, reproducing or amplification of sound.

  Motor vehicle shall mean a self-propelled vehicle including passenger cars, trucks, truck-trailers, semitrailers, campers, racing vehicles, and any motorcycles (including, but not limited to, motor scooters, mini-bikes, all-terrain vehicles and three-wheelers) as defined in section 46.2-100 of the Code of Virginia.

  Noise disturbance means any sound which (a) endangers or injures the safety or health of any person; (b) annoys or disturbs humans and which causes or tends to cause an adverse psychological or physiological effect on humans; or (c) endangers or injures personal or real property.

  Person shall mean any individual, corporation, cooperative, partnership, firm,

Residential dwelling means any building or other structure in which one or more persons resides on a permanent or temporary basis, including, but not limited to, houses, apartments, condominiums, hotels, and motels.

- **Sec. 13-2. - Exceptions from this article.**

  The provisions of this article shall not apply to:

  The emission of sound for the purpose of alerting persons to the existence of an emergency or to the emission of sound in the performance of emergency work;

  Music, bells, chimes or other sounds which are emanating from a church, temple, synagogue or other place of worship;

  Sound generated from school or county sponsored athletic or recreational events, including band performances or practices, athletic contests or practices and other school-sponsored activities on the grounds of public or private schools, colleges, or universities;

  Agricultural activities;

  Gardening, lawn care, tree maintenance or removal, and other landscaping activities, provided such exemption shall terminate between the hours of 10:00 p.m. and 7:00 a.m. the following day;

  Religious or political gatherings to the extent that those activities are protected by the First Amendment to the United States Constitution;

  Sound generated by activities which are an official or approved part of any county or state approved or licensed parade, festival or activity, provided such exemption shall terminate at 10:00 p.m.;

  Sound generated by commercial and industrial uses which are normal, routine, necessary and incidental to said uses; and

  Sound for which a waiver has been granted in accordance with section 13-22 of this article; and,

  Activities for which the regulation of noise has been preempted by federal law.

  Locomotives and other railroad equipment, and aircraft.

  Lawful discharge of firearms.

- **Sec. 13-3. - Specific acts as noise disturbances.**

  The following acts are declared to be noise disturbances in violation of this article unless specifically excepted in section 13-19.

  Engaging in, or operating or causing to be operated any equipment used in the construction, repair, alteration or demolition of buildings, streets, roads, alleys or appurtenances thereto between the hours of 10:00 p.m. and 7:00 a.m. the following day.

Operating or permitting the use or operation of any instrument, machine or any other device for the production of sound, at a volume sufficient to be plainly audible through partitions common to two (2) residences within a building or plainly audible at fifty (50) feet or more from such device or its source.

Using or operating a loudspeaker or other sound amplification devices in a fixed or movable position exterior to any building, or mounted upon any motor vehicle or mounted in the interior of a building with the intent of providing service to an exterior area for the purpose of commercial advertising, giving instruction, information, directions, talks, addresses, lectures, or providing entertainment to any persons or assemblage of persons on any private or public property, between the hours of 10:00 p.m. and 7:00 a.m. the following day.

Using or operating any motor vehicle without factory installed mufflers or their equivalent conforming to sections 46.2-1047 and 46.1-1049 of the Code of Virginia, on any public street or road in the county or on private property within a residential community.

Using a radio receiving set, an audio cassette player, a compact disc player, or other device for the production of sound in a motor vehicle at a volume sufficient to be plainly audible at fifty (50) feet or more from such vehicle.

Failure to deactivate an alarm system plainly audible at fifty (50) feet or more from such alarm within such reasonable time, not to exceed 60 minutes.

The operation of a trash collection vehicle between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to be plainly audible at any residence one hundred (100) or more yards away.

- **Sec. 13-4. - Penalties.**

  A violation of any provisions of this article shall constitute a class 3 misdemeanor. Each separate act on the part of the person violating this article shall be deemed a separate offense, and each day a violation is permitted to continue unabated shall constitute a separate offense. Any person who violates a provision of this article within one (1) year after a previous conviction under this article shall be guilty of a class 2 misdemeanor.

  The person operating or controlling a noise source shall be guilty of any violation caused by that source. If that cannot be determined, any owner, tenant, resident or manager physically present on the property where the violation is occurring is reputably presumed to be operating or controlling the noise source.

  In addition to and not in lieu of the penalties prescribed in this section, the county may apply to the circuit court for an injunction against the continuing violation of any of the provisions of this article and may seek any other remedy or relief authorized by law.

  Citizens of the county believing that a noise disturbance constituting a public nuisance exists may utilize the procedure set forth in section 48-1 et seq., Code of Virginia (1950) as amended, or any other legal civil or criminal remedies that may be available to them.

Compliance with the provisions of this article from which a waiver is sought would produce serious economic hardship without producing substantial benefit to the public.

In determining whether to grant such waiver, the board of supervisors shall consider the time of day the noise will occur, the duration of the noise, whether the noise is intermittent or continuous, its extensiveness, the technical and economic feasibility of bringing the noise into conformance with this article and such other matters as are reasonably related to the impact of the noise on the health, safety and welfare of the community and the degree of hardship which may result from the enforcement of the provisions of this article.

No waiver, or partial waiver, issued pursuant to this article shall be granted for a period to exceed one (1) year, but any such waiver, or partial waiver may be renewed for successive like periods if the board of supervisors shall find such renewal is justified after again applying the standards set forth in this article. No renewal shall be granted except upon written application therefor.

Applications for waivers for noise generated by commercial and industrial entities shall be considered by the board of supervisors based upon the criteria set forth above, and upon the extent to which the noise is necessary and incidental to the commercial and industrial use generating the sound. In considering such waivers, the board may, but shall not be required to, impose a time limit on any waiver granted.

This Amended Ordinance was adopted on an emergency basis this the day of June, 2023 by the Buchanan County, Va., Board of Supervisors.

Recorded Roll Call Vote:
Moved by: Trey Adkins
Seconded by: Craig Stiltner
Trey Adkins: Yea
Jeff Cooper: Yea
Tim Hess: Yea
Roger Rife: Yea
Carroll Branham: Yea
Craig Stiltner: Yea
Drew Keene: Nay

_____
Tim Hess, Chairman of the
Buchanan County, Va. Board of Supervisors

_____
Robert C. Horn, County Administrator

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IN RE: CONSIDER REQUEST #1 FROM BUCHANAN COUNTY PUBLIC SERVICE AUTHORITY IN THE AMOUNT OF $389,289.14 FROM THE COAL HAUL ROAD FY 2023-2024 (VARIOUS INVOICES)

After a general discussion by the board upon motion by J. Carroll Branham seconded by Craig Stiltner and with a roll call vote of seven (7) yeas, Drew Keene, Trey Adkins, J. Carroll Branham, Jeff Cooper, G. Roger Rife, Tim Hess, Craig Stiltner and zero (0) nays, this board did hereby approve request #1 from Buchanan County Public

IN RE: CONSIDER APPROVING LAND USE PERMIT FROM CNX REGARDING A PIPELINE CROSSING UNDER COUNTY ROAD 5065 LOCATED IN THE GARDEN DISTRICT

This issue was tabled, no action was taken.

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IN RE: CONSIDER APPROVING LAND USE PERMIT FROM CNX REGARDING A PIPELINE CROSSING UNDER COUNTY ROAD 5450 LOCATED IN THE GARDEN DISTRICT

After a general discussion by the board upon motion by Craig Stiltner seconded by Trey Adkins and with a roll call vote of seven (7) yeas, Trey Adkins, J. Carroll Branham, Jeff Cooper, G. Roger Rife, Tim Hess, Drew Keene, Craig Stiltner and zero (0) nays, this board did hereby approve the Temporary Land Use Permit Application from Pocahontas Gas LLC for county road number 5450 located in the Garden Magisterial District to place a 16" & 20" pipeline under the county road.

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IN RE: CONSIDER APPROVING TO TRANSFER THE 1984 CHEVROLET STEP VAN PREVIOUSLY USED BY SLATE CREEK FIRE DEPARTMENT TO GRUNDY FIRE DEPARTMENT

After a general discussion by the board upon motion by J. Carroll Branham seconded by Craig Stiltner and with the following roll call vote of seven (7) yeas, Trey Adkins, J. Carroll Branham, Jeff Cooper, G. Roger Rife, Tim Hess, Drew Keene, Craig Stiltner and zero (0) nays, this board did hereby approve to transfer the 1984 Chevrolet Step Van previously used by Slate Creek Fire Department to Grundy Fire Department.

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IN RE: PUBLIC HEARING – 6:45 P.M. – TO HEAR PUBLIC COMMENTS REGARDING THE PROPOSED ADOPTING OF AN AMENDED ORDINANCE ENTITLED: "THIRD AMENDED ORDINANCE FOR FLOOD DAMAGE PREVENTION OF CHAPTER 34 OF THE BUCHANAN COUNTY CODE."

Tim Hess, Chairman opened the public hearing for comments.

L. Lee Moise, County Administrator stated the only change in this proposed ordinance is the effective date for the definitions of "pre-firm structures," post firm structures "and "new construction". The correction date is changed from August 19th

IN RE: CONSIDER ADOPTING AN AMENDED ORDINANCE ENTITLED: "THIRD AMENDED ORDINANCE FOR FLOOD DAMAGE PREVENTION OF CHAPTER 34 OF THE BUCHANAN COUNTY CODE."

After a general discussion by the board upon motion by Jeff Cooper seconded by J. Carroll Branham and with a roll call vote of seven (7) yeas, Trey Adkins, J. Carroll Branham, Jeff Cooper, G. Roger Rife, Tim Hess, Drew Keene, Craig Stiltner and zero (0) nays, this board did hereby adopt the following amended Ordinance entitled: "Third Amended Ordinance for Flood Damage Prevention of Chapter 34 of the Buchanan County Code."

AN ORDINANCE AMENDING AND REPLACING CHAPTER 34 OF THE BUCHANAN COUNTY CODE, SPECIFICALLY THE COUNTY'S FLOOD DAMAGE PREVENTION ORDINANCE, BY ESTABLISHING FLOODPLAIN DISTRICTS, BY REQUIRING THE ISSUANCE OF PERMITS FOR DEVELOPMENT, AND BY PROVIDING FACTORS AND CONDITIONS FOR VARIANCES TO THE TERMS OF THE ORDINANCES.

BE IT ENACTED AND ORDAINED BY THE Buchanan County, Virginia, as follows:

CHAPTER 34

ARTICLE I - GENERAL PROVISIONS

Section 34-1.1 – Statutory Authorization and Purpose **[44 CFR 59.22(a)(2)]**

In accordance with these directed provisions, this ordinance is specifically adopted pursuant to the authority granted to localities by Va. **Code** §10.1-600 et seq. and **Va. Code** section 15.2-2280(1).

The purpose of these provisions is to prevent: the loss of life, health, or property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

A. Regulating uses, activities, and development which, alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies;

B. Restricting or prohibiting certain uses, activities, and development from locating within districts subject to flooding;

C. Requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or floodproofed against flooding and flood damage; and,

D. Protecting individuals from buying land and structures which are unsuited for intended purposes because of flood hazards.

Section 1.2 – Applicability

B. The degree of flood protection sought by the provisions of this ordinance is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study, but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. This ordinance does not imply that districts outside the floodplain district or land uses permitted within such district will be free from flooding or flood damages.

C. This ordinance shall not create liability on the part of Buchanan County or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

Section 1.4 – Records **[44 CFR 59.22(a)(9)(iii)]**

Records of actions associated with administering this ordinance shall be kept on file and maintained by or under the direction of the Floodplain Administrator in perpetuity.

Section 1.5 - Abrogation and Greater Restrictions **[44 CFR 60.1(b)]**

To the extent that the provisions are more restrictive, this ordinance supersedes any ordinance currently in effect in flood-prone districts. To the extent that any other existing law or regulation is more restrictive or does not conflict it shall remain in full force and effect.

These regulations are not intended to repeal or abrogate any existing ordinances including subdivision regulations, zoning ordinances, or building codes. In the event of a conflict between these regulations and any other ordinance, the more restrictive shall govern.

Section 1.6 - Severability

If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance shall be declared invalid for any reason whatever, such decision shall not affect the remaining portions of this ordinance. The remaining portions shall remain in full force and effect; and for this purpose, the provisions of this ordinance are hereby declared to be severable.

Section 1.7 - Penalty for Violations **[44 CFR 60.2(e)]**

Any person who fails to comply with any of the requirements or provisions of this article or directions of the Flood Plain Administrator or any authorized employee of Buchanan County shall be guilty of a Class 3 misdemeanor and subject to the penalties thereof. Every day a violation of this ordinance continues after notice of such violation, shall be considered a separate offense.

The VA USBC addresses building code violations and the associated penalties in Section 104 and Section 115.

In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this article. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit it to continue; and all such persons shall be required to correct or remedy such violations within a reasonable time. Any structure constructed, reconstructed, enlarged, altered or relocated in noncompliance with this article may be declared by Buchanan County to be a public nuisance and abatable as such. Flood insurance may be withheld from structures constructed in violation of this article.[1]

ARTICLE II - DEFINITIONS

B. Base flood - The flood having a one percent chance of being equaled or exceeded in any given year. 1% Annual Chance Floodplain—This is the boundary of the flood that has a 1 percent chance of being equaled or exceeded in any given year. Also known as the 100-year floodplain.

C. 1977/2021/2022 Floodplain elevations—Elevation of the 1977 Flood as established by the flood profiles or the 2021/2022 flood elevations if they exceed the 1977 flood elevations.

D. Base flood elevation - The water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year. The water surface elevation of the base flood in relation to the datum specified on the community's Flood Insurance Rate Map. For the purposes of this ordinance, the base flood is the 1% annual chance flood.

E. Basement - Any area of the building having its floor sub-grade (below ground level) on all sides.

F. Board of Floodplain Appeals - The board appointed to review Building Code appeals in Chapter 25 of the Buchanan County Code shall also review appeals of decisions made by the Flood Plain Coordinator in the interpretation of this ordinance.

G. Development - Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, ***temporary structures***, mining, dredging, filling, grading, paving, excavation, drilling ***or other land-disturbing activities*** or ***permanent or temporary*** storage of equipment or materials.

H. Elevated building - A non-basement building built to have the lowest floor elevated above the ground level by means of solid foundation perimeter walls, pilings, or columns (posts and piers).

I. Encroachment - The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

J. Existing construction - For the purposes of the insurance program, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975 for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures" and "pre-FIRM."

K. Flood or flooding -

1. A general or temporary condition of partial or complete inundation of normally dry land areas from:
   a. The overflow of inland or tidal waters; or,
   b. The unusual and rapid accumulation or runoff of surface waters from any source.
   c. Mudflows which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
2. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force

examination, evaluation and determination of mudflow and/or flood-related erosion hazards.

N. Floodplain or flood-prone area - Any land area susceptible to being inundated by water from any source.

O. Floodproofing - any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

P. Floodway - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot at any point within the community.

Q. Freeboard - A factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed.

R. Functionally dependent use - A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. This term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

S. Highest adjacent grade - the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

T. Historic structure - Any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or,
4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
   a. By an approved state program as determined by the Secretary of the Interior; or,
   b. Directly by the Secretary of the Interior in states without approved programs.

U. Hydrologic and Hydraulic Engineering Analysis - Analyses performed by a licensed professional engineer, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries, and flood profiles.

V. Letters of Map Change (LOMC) - A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

Letter of Map Amendment (LOMA) - An amendment based on technical data showing

flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community's floodplain management regulations.

Conditional Letter of Map Revision (CLOMR) - A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study.

W. Lowest adjacent grade - the lowest natural elevation of the ground surface next to the walls of a structure.

X. Lowest floor - The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Federal Code 44CFR §60.3.

Y. Manufactured home - A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days.

Z. Manufactured home park or subdivision - a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

AA. Mean Sea Level – for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or the North American Vertical Datum (NAVD) of 1988 to which base flood elevations shown on a community's FIRM are referenced.

BB. New construction - For the purposes of determining insurance rates, structures for which the "start of construction" commenced on or after September 16, 1988, and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

CC. Post-FIRM structures - A structure for which construction or substantial improvement occurred on or after September 16, 1988.

DD. Pre-FIRM structures - A structure for which construction or substantial improvement occurred before September 16, 1988.

EE. Recreational vehicle - A vehicle which is:
1. Built on a single chassis;
2. 400 square feet or less when measured at the largest horizontal projection;
3. Designed to be self-propelled or permanently towable by a light duty truck; and,
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

FF. Repetitive Loss Structure - A building covered by a contract for flood insurance that has

claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

HH. Shallow flooding area - A special flood hazard area with base flood depths from one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

II. Special flood hazard area - The land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year as determined in Article 3, Section 3.1 of this ordinance.

JJ. Start of construction - For other than new construction and substantial improvement, under the Coastal Barriers Resource Act (P.L. – 97-348), means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

KK. Structure - for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

LL. Substantial damage - Damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. ***It also means flood-related damages sustained by a structure on two occasions in a 10-year period, in which the cost of the repair, on the average, equals or exceeds 25 percent of the market value of the structure at the time of each such flood event***.

MM. Substantial improvement - Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
2. Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.
3. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic

OO. Watercourse-A Lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

ARTICLE III - ADMINISTRATION

Section 3.1 - Designation of the Floodplain Administrator **[44 CFR 59.22(b)]**

The *Floodplain Administrator* is hereby appointed by the Board of Supervisors or the County Administrator to administer and implement these regulations and is referred to herein as the Floodplain Administrator. The Floodplain Administrator may:

A. Do the work himself or herself. In the absence of a designated Floodplain Administrator, the duties are conducted by the Buchanan County Administrator.

B. Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.

C. Enter into a written agreement or written contract with another community or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the community of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations at 44 C.F.R. Section 59.22.

Section 3.2 - Duties and Responsibilities of the Floodplain Administrator **[44 CFR 60.3]**

The duties and responsibilities of the Floodplain Administrator, or his or her designee, shall include but are not limited to:

A. Review applications for permits to determine whether proposed activities will be located in the Special Flood Hazard Area (SFHA).

B. Interpret floodplain boundaries and provide available base flood elevation and flood hazard information.

C. Review applications to determine whether proposed activities will be reasonably safe from flooding and require new construction and substantial improvements to meet the requirements of these regulations.

D. Review applications to determine whether all necessary permits have been obtained from the Federal, State, or local agencies from which prior or concurrent approval is required; in particular, permits from state agencies for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, drain pipes, structures), any alteration of a watercourse, or any change of the course, current, or cross section of a stream or body of water, including any change to the 100-year frequency floodplain of free-flowing non-tidal waters of the State.

E. Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), and other appropriate agencies (VADEQ, USACE), and have submitted copies of such notifications to FEMA.

F. Approve applications and issue permits to develop in flood hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these

prepared by or for Buchanan County, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations.

J. Maintain and permanently keep records that are necessary for the administration of these regulations, including:

1. Flood Insurance Studies, Flood Insurance Rate Maps (including historic studies and maps and current effective studies and maps), and Letters of Map Change; and

2. Documentation supporting issuance and denial of permits, Elevation Certificates, documentation of the elevation (in relation to the datum on the FIRM) to which structures have been floodproofed, inspection records, other required design certifications, variances, and records of enforcement actions taken to correct violations of these regulations.

K. Enforce the provisions of these regulations, investigate violations, issue notices of violations or stop work orders, and require permit holders to take corrective action.

L. Advise the Board of Floodplain Appeals regarding the intent of these regulations and, for each application for a variance or appeal, prepare a staff report and recommendation.

M. Administer the requirements related to proposed work on existing buildings:

1. Make determinations as to whether buildings and structures that are located in flood hazard areas and that are damaged by any cause have been substantially damaged.

2. Make reasonable efforts to notify owners of substantially damaged structures of the need to obtain a permit to repair, rehabilitate, or reconstruct. Prohibit the non-compliant repair of substantially damaged buildings except for temporary emergency protective measures necessary to secure a property or stabilize a building or structure to prevent additional damage.

N. Undertake, as determined appropriate by the Floodplain Administrator due to the circumstances, other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged structures; coordinating with other Federal, State, and local agencies to assist with substantial damage determinations; providing owners of damaged structures information related to the proper repair of damaged structures in special flood hazard areas; and assisting property owners with documentation necessary to file claims for Increased Cost of Compliance coverage under NFIP flood insurance policies.

O. Notify the Federal Emergency Management Agency when the corporate boundaries of the Buchanan County have been modified and:

1. Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and

2. If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the governing body for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a

area of the Community, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).

Section 3.3 - Use and Interpretation of FIRMs **[44 CFR 60.3]**

The Floodplain Administrator, or his or her designee, shall make interpretations, where needed, as to the exact location of special flood hazard areas, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of FIRMs and data:

A. Where field surveyed topography indicates that adjacent ground elevations:

1. Are below the base flood elevation in riverine SFHAs, even in areas not delineated as a special flood hazard area on a FIRM, the area shall be considered as special flood hazard area and subject to the requirements of these regulations;

2. Are above the base flood elevation and the area is labelled as a SFHA on the FIRM, the area shall be regulated as special flood hazard area unless the applicant obtains a Letter of Map Change that removes the area from the SFHA.

B. In FEMA-identified special flood hazard areas where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified SFHAs, any other flood hazard data available from a Federal, State, or other source shall be reviewed and reasonably used.

C. Base flood elevations and designated floodway boundaries on FIRMs and in FISs shall take precedence over base flood elevations and floodway boundaries by any other sources if such sources show reduced floodway widths and/or lower base flood elevations.

D. Other sources of data shall be reasonably used if such sources show increased base flood elevations and/or larger floodway areas than are shown on FIRMs and in FISs.

E. If a Preliminary Flood Insurance Rate Map and/or a Preliminary Flood Insurance Study has been provided by FEMA:

1. Upon the issuance of a Letter of Final Determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.

2. Prior to the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data and used where no base flood elevations and/or floodway areas are provided on the effective FIRM.

3. Prior to issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary base flood elevations or floodway areas exceed the base flood elevations and/or designated floodway widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

Section 3 4 - Jurisdictional Boundary Changes **[44 CFR 59.22, 65.3]**

The County floodplain ordinance in effect on the date of annexation shall remain in effect and shall be enforced by the municipality for all annexed areas until the municipality adopts and enforces an ordinance which meets the requirements for participation in the National Flood Insurance Program. Municipalities with existing floodplain ordinances shall pass a resolution

optionally the State Coordinating Office in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area.

In order that all Flood Insurance Rate Maps accurately represent the community's boundaries, a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority must be included with the notification.

Section 3.5 - District Boundary Changes

The delineation of any of the Floodplain Districts may be revised by Buchanan County where natural or man-made changes have occurred and/or where more detailed studies have been conducted or undertaken by the U. S. Army Corps of Engineers or other qualified agency, or an individual documents the need for such change. However, prior to any such change, approval must be obtained from the Federal Emergency Management Agency. A completed LOMR is a record of this approval.

Section 3.6 - Interpretation of District Boundaries

Initial interpretations of the boundaries of the Floodplain Districts shall be made by the Flood Plain Administrator or his or her designee. Should a dispute arise concerning the boundaries of any of the Districts, the Flood Plain Administrator, or his designee, shall make the necessary determination. The person questioning or contesting the location of the District boundary shall be given a reasonable opportunity to present his case to the Board of Flood Plain Appeals and to submit his own technical evidence if he so desires.

Section 3.7 – Submitting Model Backed Technical Data **[44 CFR 65.3]**

A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Emergency Management Agency of the changes by submitting technical or scientific data. The community may submit data via a LOMR. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon current data.

Section 3.8 – Letters of Map Revision

When development in the floodplain will cause or causes a change in the base flood elevation, the applicant, including state agencies, must notify FEMA by applying for a Conditional Letter of Map Revision and then a Letter of Map Revision.

Example cases:

- Any development that causes a rise in the base flood elevations within the floodway**.**
- Any development occurring in Zones A1-30 and AE without a designated floodway, which will cause a rise of more than one foot in the base flood elevation.
- Alteration or relocation of a stream (including but not limited to installing culverts, drain pipes and bridges) *44 Code of Federal Regulations §65.3 and §65.6(a)(12)*.

- ARTICLE IV - ESTABLISHMENT OF ZONING DISTRICTS

Section 4.1 - Description of Special Flood Hazard Districts **[44 CFR 59.1, 60.3]**

A. Basis of Districts

The various special flood hazard districts shall include the SFHAs. The basis for the delineation of these districts shall be the FIS and the FIRM for Buchanan County prepared by the Federal Emergency Management Agency, Federal Insurance Administration, dated August 19, 1997[3], and any subsequent revisions or amendments thereto.

The Floodplain Administrator may identify and regulate local flood hazard or ponding areas that are not delineated on the FIRM. These areas may be delineated on a "Local Flood Hazard Map" using best available topographic data and locally derived information such as flood of record, historic high-water marks, or approximate study methodologies.

The boundaries of the SFHA Districts are established as shown on the FIRM which is declared to be a part of this ordinance and which shall be kept on file at the Buchanan County offices.

1. The **Floodway District** is in an **AE Zone** and is delineated, for purposes of this ordinance, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one (1) foot at any point. The areas included in this District are specifically defined in Table (See Exhibit A) of the above-referenced FIS and shown on the accompanying FIRM. In addition to the Flood Insurance Rate Maps all zones, when at a higher elevation, will extend to the 1977/2021/2022 Flood elevations as defined in this ordinance.

   The following provisions shall apply within the Floodway District of an AE zone [44 CFR 60.3(d)]:

   a. Within any floodway area, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator. However, in the cases of the replacement or repair of damaged bridges and/or drain pipes, the standard shall be that such replacement or repair of said bridges and/or drain pipes do not worsen the existing flood levels during the base flood discharge that existed prior to said replacement or repair. Such conclusion that the replacement or repair of bridge and/or drain pipes does not worsen the pre-existing flood levels must be supported by the opinion of a professional engineer. Additionally, any structure such as, but not limited to, drain pipes, box culverts, and bridges etc., shall be greater than or equal to cross sectional area of the drainage channel itself.
      Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the Buchanan County endorsement – for a Conditional Letter of Map Revision (CLOMR), and receives the approval of the Federal Emergency Management

an existing manufactured home (mobile home) park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring, elevation, and encroachment standards are met.

2. The **AE, or AH Zones** on the FIRM accompanying the FIS shall be those areas for which one-percent annual chance flood elevations have been provided and the floodway has **not** been delineated. The following provisions shall apply within an AE or AH zone [44 CFR 60.3(c)] where FEMA has provided base flood elevations[4]:

   Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zones A1-30, AE, or AH on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the Buchanan County.

Development activities in Zones Al-30, AE, or AH on the Buchanan County FIRM which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the Buchanan County's endorsement – for a Conditional Letter of Map Revision, and receives the approval of the Federal Emergency Management Agency.

3. The **A Zone** on the FIRM accompanying the FIS shall be those areas for which no detailed flood profiles or elevations are provided, but the one percent annual chance floodplain boundary has been approximated. For these areas, the following provisions shall apply [44 CFR 60.3(b)]:

   The Approximated Floodplain District shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a one percent annual chance floodplain boundary has been approximated. Such areas are shown as Zone A on the maps accompanying the FIS. For these areas, the base flood elevations and floodway information from Federal, State, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the U. S. Army Corps of Engineers Floodplain Information Reports, U. S. Geological Survey Flood-Prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this base flood elevation. For development proposed in the approximate floodplain the applicant must use technical methods that correctly reflect currently accepted practices, such as point on boundary, high water marks, or detailed methodologies hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.

   The Floodplain Administrator reserves the right to require a hydrologic and hydraulic analysis for any development. When such base flood elevation data is utilized, the lowest floor shall be elevated to or above the base flood ***level plus eighteen (18) inches***[5]**.**

   During the permitting process, the Floodplain Administrator shall obtain:

   a. The elevation of the lowest floor (in relation to mean sea level), including the basement, of all new and substantially improved structures; and,

article, the elevation (in relation to mean sea level) to which the structure has been floodproofed.

Base flood elevation data shall be obtained from other sources or developed using detailed methodologies comparable to those contained in a FIS for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres, whichever is the lesser[6].

4. The **AO Zone** on the FIRM accompanying the FIS shall be those areas of shallow flooding identified as AO on the FIRM. For these areas, the following provisions shall apply [44 CFR 60.3(c)]:

   a. All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM. If no flood depth number is specified, the lowest floor, including basement, shall be elevated no less than two feet above the highest adjacent grade.

   b. All new construction and substantial improvements of non-residential structures shall

      (1) Have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least two feet above the highest adjacent grade; or,

      (2) Together with attendant utility and sanitary facilities be completely floodproofed to the specified flood level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

   c. Adequate drainage paths around structures on slopes shall be provided to guide floodwaters around and away from proposed structures.

5. ***The mapped floodplain includes all of the above regions and also the regions designated as having a 0.2 percent annual chance of flooding on any flood map or flood insurance study. In this area no emergency service, medical service, or governmental records storage shall be allowed except by special exception using the variance process.***[7]

6. ***Landowners with real property located in any part of the floodplain are required to keep said real property free of any vegetative debris or any other type of debris that would create a risk of increasing flood damage by blocking the floodway and thus increase the height of flood waters. Upon the request of the landowner and upon the landowner's execution of a right of entry agreement with the County, the County will assist the landowner with the removal of said debris.***

ARTICLE V - DISTRICT PROVISIONS [44 CFR 59.22, 60.2, 60.3]

Section 5.1 – Permit and Application Requirements

A. Permit Requirement

All uses, activities, and development occurring within any floodplain district, including placement of manufactured homes, shall be undertaken only upon the issuance of a permit. Such development shall be undertaken only in strict compliance with the provisions of this Ordinance and with all other applicable codes and ordinances, as amended, such as the Virginia Uniform State Wide Building Code (VA USBC) and the Buchanan County Subdivision Regulations. Prior to the issuance of any such permit, the Floodplain Administrator shall require all applications to include compliance with all applicable State and Federal laws and shall review all sites to assure they are reasonably safe from flooding. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.

B. Site Plans and Permit Applications

All applications for development within any floodplain district and all permits issued for the floodplain shall incorporate the following information:

1. The elevation of the Base Flood at the site.

2. For structures to be elevated, the elevation of the lowest floor (including basement).

3. For structures to be floodproofed (non-residential only), the elevation to which the structure will be floodproofed.

4. Topographic information showing existing and proposed ground elevations.

Section 5.2 - General Standards

The following provisions shall apply to all permits:

A. New construction and substantial improvements shall be built according to this ordinance and the VA USBC, and anchored to prevent flotation, collapse, or lateral movement of the structure.

B. Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state anchoring requirements for resisting wind forces.

C. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

D. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.

E. Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities, including duct work, shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

In addition to provisions A – H above, in all special flood hazard areas, the additional provisions shall apply:

I. Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the U. S. Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission (a joint permit application is available from any of these organizations). Furthermore, in riverine areas, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), other required agencies, and the Federal Emergency Management Agency; and the Federal Insurance Administrator.

J. The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

Section 5.3 - Elevation and Construction Standards **[44 CFR 60.3]**

In all identified flood hazard areas where base flood elevations have been provided in the FIS or generated by a certified professional the following provisions shall apply:

A. Residential Construction

New construction or substantial improvement of any residential structure (including manufactured homes) in Zones A1-30, AE, AH, and A with detailed base flood elevations shall have the lowest floor, including basement, elevated to or above the base flood level ***plus eighteen(18) inches***[8].

B. Non-Residential Construction

1. New construction or substantial improvement of any commercial, industrial, or non-residential building (or manufactured home) shall have the lowest floor, including basement, elevated to or above the base flood level ***plus eighteen (18) inches***[9].

2. Non-residential buildings located in all A1-30, AE, and AH zones may be floodproofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the BFE *plus two feet*[10] are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be maintained by the Flood Plain Administrator.

C. Space Below the Lowest Floor

In zones A, AE, AH, AO, and A1-A30, fully e[nclosed areas, of new construction or substantially improved structures, which are below the regulatory flood protection elevation] shall:

1. Not [be designed] or used [for] human habitation, but shall be used solely for [parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard

[8] The flood maps anticipate one foot of rise in BFE due to fill in the floodplain, so while building to BFE is

exterior door), or entry to the living area (stairway or elevator).

2. Be constructed entirely of flood resistant materials below the regulatory flood protection elevation;

3. Include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet the following minimum design criteria:

   a. Provide a minimum of two openings on different sides of each enclosed area subject to flooding.

   b. The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding.

   c. If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.

   d. The bottom of all required openings shall be no higher than one (1) foot above the adjacent grade.

   e. Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.

   f. Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.

D. Accessory Structures

1. Accessory structures in the SFHA shall comply with the elevation requirements and other requirements of Article IV–or, if not elevated or dry floodproofed, shall:

   a. Not be used for human habitation;

   b. Be limited to no more than *600 square feet*11 in total floor area;

   c. Be useable only for parking of vehicles or limited storage;

   d. Be constructed with flood damage-resistant materials below the base flood elevation;

   e. Be constructed and placed to offer the minimum resistance to the flow of floodwaters;

   f. Be anchored to prevent flotation;

   g. Have electrical service and mechanical equipment elevated to or above the base flood elevation;

   h. Shall be provided with flood openings which shall meet the following criteria:

      (1) There shall be a minimum of two flood openings on different sides of each enclosed area; if a building has more than one enclosure below the lowest floor, each such enclosure shall have flood openings on exterior walls.

      (2) The total net area of all flood openings shall be at least 1 square inch for

individual certification or an Evaluation Report issued by the ICC Evaluation Service, Inc.

(3) The bottom of each flood opening shall be 1 foot or less above the higher of the interior floor or grade, or the exterior grade, immediately below the opening.

(4) Any louvers, screens or other covers for the flood openings shall allow the automatic flow of floodwaters into and out of the enclosed area.

i. A signed Declaration of Land Restriction (Non-Conversion Agreement) shall be recorded on the property deed.[12]

E. Standards for Manufactured Homes and Recreational Vehicles

~~1.~~ In zones A, AE, AH, and AO, all manufactured homes placed, or substantially improved, on individual lots or parcels, must meet all the requirements for new construction, including the elevation and anchoring requirements in Article III, and Article IV.

2. All recreational vehicles placed on sites must either:

a. Be on the site for fewer than 180 consecutive days, be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices and has no permanently attached additions); or

b. Meet all the requirements for manufactured homes in Article IV.

Section 5.4 - Standards for Subdivision Proposals

A. All subdivision proposals shall be consistent with the need to minimize flood damage;

B. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

C. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards, and

D. Base flood elevation data shall be obtained from other sources or developed using detailed methodologies, hydraulic and hydrologic analysis, comparable to those contained in a Flood Insurance Study for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty[13] lots or five acres, whichever is the lesser.

ARTICLE VI – EXISTING STRUCTURES IN FLOODPLAIN AREAS

Any structure or use of a structure or premises must be brought into conformity with these provisions when it is changed, repaired, or improved[14] unless one of the following exceptions is established before the change is made:

A. The floodplain manager has determined that:

   1. Change is not a substantial repair or substantial improvement AND

   2. No new square footage is being built in the floodplain that is not complaint AND

   3. No new square footage is being built in the floodway AND

   4. The change complies with this ordinance and the VA USBC AND

   5. The change, when added to all the changes made during a rolling 5-year period does not constitute 50% of the structure's value.[15]

B. The changes are required to comply with a citation for a health or safety violation.

C. The structure is a historic structure and the change required would impair the historic nature of the structure.

ARTICLE VII - VARIANCES: FACTORS TO BE CONSIDERED [44 CFR 60.6]

Variances shall be issued only upon (i) a showing of good and sufficient cause, (ii) after the Board of Flood Plain Appeals has determined that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) after the Board of Flood Plain Appeals has determined that the granting of such variance will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

While the granting of variances generally is limited to a lot size less than one-half acre, deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. Variances may be issued by the Board of Flood Plain Appeals for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of this Section.

Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of this Section are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

In considering applications for variances, the Board of Flood Plain Appeals shall consider the following additional factors:

A. The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development, or activity within any Floodway District that will cause any increase in the one percent (1%) chance flood elevation.

B. The danger that materials may be swept on to other lands or downstream to the injury of others.

C. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.

D. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.

E. The importance of the services provided by the proposed facility to the community.

F. The requirements of the facility for a waterfront location.

G. The availability of alternative locations not subject to flooding for the proposed use.

H. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.

I. The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.

J. The safety of access by ordinary and emergency vehicles to the property in time of flood.

N. Such other factors which are relevant to the purposes of this Ordinance.

The Board of Flood Plain Appeals may refer any application and accompanying documentation pertaining to any request for a variance to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for flood protection and other related matters with the costs for such referral to be charged to the applicant.

Variances shall be issued only after the Board of Flood Plain Appeals has determined that the granting of such will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

Variances shall be issued only after the Board of Flood Plain Appeals has determined that the variance will be the minimum required to provide relief.

The Board of Flood Plain Appeals shall notify the applicant for a variance, in writing that the issuance of a variance to construct a structure below the one percent (1%) chance flood elevation (a) increases the risks to life and property and (b) will result in increased premium rates for flood insurance.
A record shall be maintained of the above notification as well as all variance actions, including justification for the issuance of the variances. Any variances that are issued shall be noted in the annual or biennial report submitted to the Federal Insurance Administrator.

Enacted and ordained this 7th day of August, 2023. This ordinance, of Buchanan County, Virginia, shall become effective upon passage.

Recorded Vote:
Motion by: Jeff Cooper
Second by: J. Carroll Branham
Jeff Cooper yea
Tim Hess yea
Drew Keene yea
Roger Rife yea
Carroll Branham yea
Craig Stiltner yea
Trey Adkins yea

_____
Tim Hess, Chairman
Buchanan County, Va. Board of Supervisors

ATTEST:

_____
Robert Craig Horn, County Administrator
Clerk of the Board of Supervisors

——————————— 000 ———————————

IN RE: CONSIDER ADOPTING THE BUCHANAN COUNTY EMERGENCY RESPONSE PLAN AND THE DESIGNATED EMERGENCY RESPONSE AGENCY (DERA)

After a general discussion by the board upon motion by Craig Stiltner seconded by Trey Adkins and with a roll call vote of seven (7) yeas, Craig Stiltner, Trey Adkins, G. Roger Rife, J. Carroll Branham, Drew Keene, Tim Hess, Jeff Cooper and zero (0) nays

Buchanan County

Emergency Response Plan

&

DERA

Updated: August 7th, 2023

Buchanan County Emergency Response Plan

Definitions

"Emergency Services" means those health care services that are rendered by affiliated or nonaffiliated providers after the sudden onset of a medical condition that manifests itself by symptoms of sufficient severity, including severe pain, that the absence of immediate medical attention could reasonably be expected by a prudent layperson who possesses an average knowledge of health and medicine to result in (i)serious jeopardy to the mental or physical Health of the individual, (ii) danger of serious impairment of the individual's bodily organs, or (iv) in the case of a pregnant woman, serious jeopardy to the health of the fetus. Emergency services provided within the plan's service shall include covered health care services from nonaffiliated providers only when a delay in receiving care from a provider affiliated with the health maintenance organization could reasonably be expected to cause the enrollee's condition to worsen if left unattended.

"Basic Life Support" or **"BLS"** means the provision of care by EMS personnel who are certified as First Responder (EMR), or Emergency Medical Technician or equivalent as approved by the Board of Health.

"Advanced Life Support" or ***"ALS"*** means the provision of care by EMS personnel who are certified as an Emergency Medical Technician EMT- Enhanced, EMT-Intermediate, EMT-Paramedic or equivalent as approved by the Board of Health.

"Mutual Aid" is a voluntary reciprocal exchange of resources and services for mutual benefit.

"Automatic Aid" is assistance that is dispatched automatically by a contractual agreement between two fire departments, communities, or fire districts.

"Responding" will be defined as acknowledging the call for the purpose of this plan.

"Fire Apparatus" is defined as vehicles for fighting and extinguishment of fires.

Purpose

This plan is implemented to provide the appropriate and necessary coordination of response to medical emergencies, fires and motor vehicle crash calls in designated Fire and EMS service areas within the County of Buchanan to comply with the Virginia Emergency Medical Service Regulations. This plan will serve as both operation and administrative guidelines.

Origin

service area with the available personnel to achieve the approved responding interval standard.

2. A designated emergency response agency shall conform to the local responding interval, or in the absence of a local standard of the EMS agency shall develop a standard in conjunction with OMD and local government in the best interests of the patient and the community. The EMS agency shall use the response time standard to establish a time frame the EMS agency complies with on a 90% basis within its primary service area (i.e., a time frame in which the EMS agency can arrive at the scene of a medical emergency in 90% or greater of all calls).
    a. If the designated emergency response agency finds it is unable to respond within the established unit mobilization interval standard, the call shall be referred to the closest available mutual aid EMS agency.
    b. If the designated emergency response agency finds it is able to respond to the patient location sooner than the mutual aid EMS agency, the EMS agency shall notify the PSAP of its availability to respond,
    c. If the designated emergency response agency is unable to respond (e.g., lack of operations response vehicle, or available personnel), the EMS agency shall notify the PSAP.
    d. If a designated emergency response agency determines in advance that it will be unable to respond for emergency service for a specified period of time, it shall notify its PSAP.
    e. A designated emergency response agency shall have available for review a copy of the local EMS response plan that shall include the established EMS Responding interval standards.
    f. A designated emergency response agency shall document its compliance with the established EMS response capability, unit mobilization interval, and responding interval standards.
    g. A designated emergency response agency shall document an annual review of exceptions to established EMS response capability and time interval standards. The results of this review shall be provided to the agency's operational medical director and the local governing body.

Primary Service Area

The primary service area is designated by the Buchanan County Emergency Management Coordinator and/or the Buchanan County Emergency Management System and area included in "Exhibit A" of this plan.

Secondary Service Area

The secondary service area is designated by the Buchanan County Emergency Management Coordinator and/or the Buchanan County Emergency Management System and is included in "Exhibit A" of this plan. These agencies may be located within Buchanan County or an adjacent locality that the agency has a written Mutual-Aid agreement with.

Additional Service Area

The Additional service area is any other agency that requests assistance within the Fire/EMS agencies locality or in the adjacent locality that the agency has a written Mutual- Aid agreement

Mutual Aid Agreement

The local governing body may enter into mutual aid agreements with other localities to assist when resources become overwhelmed or are not readily available. Local Fire and EMS agencies may exchange mutual aid agreements with other neighboring agencies to achieve a specific purpose or task. All EMS agencies defined as a Designated Emergency Response Agency (DERA) shall agree to provide assistance to one another within the locality when available and capable as described in 12VAC5-31-630.

Designated Emergency Response Agency Mutual Aid

A. A designated emergency response agency shall provide aide to all other designated emergency response agencies within the locality.

B. A designated emergency response agency shall maintain written mutual aid agreements with adjacent designated emergency response agencies in another locality with which is shares a common border. Mutual aid agreements shall specify the types of assistance to be provided and any conditions or limitations for providing this assistance.

Basic Life Support and Advanced Life Support 12VAC5-31-1240

Basic Life Support Vehicle Transport Requirements:

1. During a basic life support transport, the attendant-in-charge must be certified as an emergency medical technician or an equivalent approved by the Office of EMS.

Advanced life support transport Requirements:

1. A ground ambulance equipped with an ALS equipment package. An ALS equipment package may be transferred to a ground ambulance not otherwise equipped to provide the needed level of ALS patient care from another appropriately equipped EMS vehicle. This transfer must include all items required for the type of ALS equipment package that the attendant-in-charge is authorized to use.
2. The attendant-in-charge must be certified as an advanced life support level provider equivalent approved by the Office of EMS.
3. An attendant must be certified as an emergency medical technician or equivalent approved by the Office of EMS in addition to the attendant-in-charge. The attendant must not serve as the attendant-in-charge. An operator may serve as the attendant if certified as an Emergency Medical Technician or an equivalent approved by the Office of EMS.
4. An ALS provider may provide care in the event that the required EMS personnel do not respond to a call to fully staff the ambulance that has responded to the scene. The extenuating circumstances of the call must be documents in writing. Based on extenuating circumstances and documentation, the EMS agency or the EMS provider may be subject to enforcement action.

Radio Communications

A. An EMS vehicle shall have fixed communications equipment that provides direct two - way voice communications capabilities between the EMS vehicle, other EMS vehicles of the same agency, and either the agency's base of operations (dispatch point) or a governmental public safety answering point (PSAP). This communication capability must

via push-to-talk technology does not apply. If an agency is licensed as a DERA, it is required to have direct and immediate communications via push-to-talk technology for either the agency's base of operations, dispatch point, or PSAP for which the EMS agency vehicle is used for emergency response to the public in the jurisdiction where a memorandum of understanding or memorandum of agreement is in place or is contractually obligated to provide emergency response.

C. An ambulance or an advanced life support equipped, non-transport response vehicle shall have communications equipment that provides two-way voice communications capabilities between the EMS vehicle's attendant-in-charge and the receiving medical facilities to which it regularly transports or a designated central medical control on one or more of the following frequencies.
   - 155.340 MHz (statewide HEAR)
   - 155.400 MHz (tidewater HEAR)
   - 155.280 MHz (Inter-Hospital HEAR)
   - 462.950/467.950 (Med 9 or CALL l)
   - 462.975/467.975 (Med lO or CALL 2)
   - 462.950-462.19375/467.950-468.19375 (UHF MED CHANNELS 1-10)
   - 220MHz, 700MHz, 800MHz, or 900MHz frequency and designated talk group or channel identified as part of an agency, jurisdictional, or regional communications plan for ambulance to hospital communications.

   1. Patient care communications with medial facilities may not be conducted on the same frequencies or talk groups as those used for dispatch and on-scene operations.
   2. Before establishing direct push-to-talk communications with the receiving medical facility or central medical control, EMS vehicles may be required to dial an access code. Radios in ambulances or advanced life support-equipped, non-transport response vehicles must be programmed or equipped with encoding equipment necessary to activate tone-coded squelched radios at medical facilities to which they transport on a regular basis.
   3. Nothing herein prohibits the use of CMRS for primary or secondary communications with medical facilities, provided that the requirements of this section are met.

D. Mutual Aid Interoperability: An EMS vehicle must have communications equipment that provides direct two -way voice communications capabilities between the EMS vehicle and EMS vehicles of other EMS agencies within the jurisdiction and those EMS agencies with which it has mutual aid agreements. Service may be provided by private mobile radio service (PMRS) or by commercial mobile radio service (CMRS) but requires direct and immediate communications via push-to-talk technology. This requirement may be met by interoperability on a common radio frequency or talk group, or by fixed or interactive cross-patching under supervision of an agency dispatch center or governmental PSAP. The means of communications interoperability must be identified in any mutual aid agreements required by these regulations and must comply with the Virginia Interoperability Plan as defined by the Governor's Office of Commonwealth Preparedness.

E. Air ambulance interoperability: A non-transport EMS vehicle or ground ambulance must have communications equipment that provides direct two -way voice communications capabilities C. 1. 2. 3. D. E. 6 between the EMS vehicle and air ambulances designated to serve its primary response area by the State Medevac Plan. An air ambulance must have

transport EMS vehicle ground ambulance not participating in such an agreement must be capable of operating on VHP frequency 155.205MHz (carrier squelch), which is designated as the Statewide EMS Mutual Aid Frequency. An air ambulance must be capable of operating on VHP frequency 155.205MHz (carrier squelch) in addition to any other frequencies adopted for jurisdictional or regional interoperability.

F. FCC licensure: An EMS agency shall maintain appropriate FCC radio licensure for all radio equipment operated by the agency. If the FCC radio license for any radio frequency utilized is held by another person, the EMS agency shall have written documentation on file of their assigned authority to operate on such frequencies.
G. In-vehicle communications. An ambulance shall have a means of voice communications (opening, intercom, or radio) between the patient compartment and operator's compartment.
H. Any Fire/EMS or other designated emergency vehicle capable of answering emergency calls within the county must have radio communication with the Buchanan County E-911 Center in order to operate.
I. The following frequencies are used to communicate with the E-911 Center:

- (Simplex Rescue) RX ; 155.160, TX : 155.160, PL Tone : 192.8
- (Enoch's Repeater) RX: 151.520 TX: 159.705, PL Tone: 114.8
- (Keen Mountain Repeater) RX: 151.925, TX 153.035, PL Tine: 114.8 The following frequency is used for direct radio to radio communication and mutual aid:
- 155.205 Carrier Squelch

Dispatching Standards

A. The Buchanan 911 Central Dispatch will dispatch the designated agencies in accordance with Exhibit A.
B. In addition to standard alert protocols, Buchanan 911 Central Dispatch will alert agencies in accordance with the following:
   1. 1st and 2nd due Fire Departments for Reported Structure Fires.
   2. EMS agency and 1st due Fire Department for Motor Vehicle Accidents.
   3. EMS agency to respond to all structure fires for firefighter safety.
   4. If a known EMS unit with ALS capabilities is dispatched to a report of CPR in progress or not breathing, the closest fire department should also be dispatched to assist the EMS crew. or If a known EMS unit with BLS capabilities is dispatched to a report of CPR in progress or not breathing, the closest ALS unit shall be dispatched and continue en-route until told otherwise by dispatch.
   5. The use of "10-Codes" shall not be utilized for radio traffic by the dispatch center or agency for Fire/EMS incidents.
   6. Primary and Secondary fire departments shall be dispatched simultaneously for reports of all structure fires without either department making the request.
   7. The Primary service area agency shall be dispatched first if available, if not available the secondary agency for the area shall be dispatched unless dispatch has knowledge of a closer unit. If an EMS unit requests ALS assistance, the closest available ALS unit consisting of an EMT Intermediate or EMT -Paramedic shall be dispatched. This may be from a neighboring locality or jurisdiction.
   8. If an "ALS Priority" EMS call for service is received the closest unit with appropriate capabilities will be dispatched. That determination will be made by the Dispatcher on duty, based upon their best judgement, using the information provided by the

Response Standards

A. A full EMS crew consisting of at least one Virginia Certified Emergency Medical Technician and one approved operator will answer and respond within 3 minutes of the first alert. If no response after the first alert, a second alert will be issued. If a crew has not responded within 2 minutes of the second alert, the call will be turned over to the next due or next available agency that can respond.
B. An EMS unit will arrive on scene within 30 minutes from the time the agency is dispatched.
C. In the event of inclement weather or natural disaster, this time standard may not be met due to the safety of the responding crew.

Compliance Review

The EMS Captain of each individual agency will be responsible for ensuring compliance with these standards through a quarterly review of response times. Each agency must comply with this plan at least 90% of the time within the primary service area. The EMS Captain of each individual agency will provide the results of the compliance review quarterly for the Buchanan County Emergency Services Committee and annually to their Operating Medical Director as well as to the local governing body. It will be the responsibility of the Buchanan County Board of Supervisors to ensure the authority over the Buchanan County 911 Office to follow this plan to the best of its abilities. It will be required that all DERA agencies follow this plan. The EMS Response Plan shall be reviewed by members of the Board of Supervisors and if approved, serve as the official EMS Response Plan of Buchanan County, Virginia. This plan was written in compliance with and pursuant to the requirements of Section 610 of the Virginia Emergency Medical Service Regulations (Virginia Administrative Code 12VAC5-31-610).

This Emergency Response Plan has been adopted on the 7th, day of August 2023 by the following role call vote:

Moved By: Craig Stiltner

Seconded By: Trey Adkins

G. Roger Rife: yea

Jeff Cooper: yea

Craig Stiltner: yea

Trey Adkins: yea

Tim Hess: yea

J Carrol Branham: yea

Drew: Keene: yea

_____
Tim Hess, Chairman of the
Buchanan County Board of Supervisors

Attest:

Davenport Life Saving Crew

_____/_____

Council Fire Department

_____/_____

Oakwood Volunteer Rescue Squad

_____/_____

Oakwood Volunteer Fire Department

_____/_____

Russell Prater Volunteer Rescue Squad

_____/_____

Russell Prater Volunteer Fire Department

_____/_____

Whitewood Volunteer Fire Department

_____/_____

Knox Creek Volunteer Rescue Squad

_____/_____

Knox Creek Volunteer Fire Department

_____/_____

Harmon Volunteer Fire Department

_____/_____

Grundy Volunteer Fire Department

_____/_____

Slate Creek Volunteer Fire Department

_____/_____

Big Rock Volunteer Fire Department

_____/_____

Rescue 33 Ambulance Service

_____/_____

Buchanan County DERA

Designated Emergency Response Agency

IN RE: DESIGNATION OF CERTAIN VOLUNTEER RESCUE SQUADS/AMBULANCE SERVICES AS A

12VAC5-31 - 370 and Virginia Code section 15.2-955, namely the following Volunteer Fire Departments, and Volunteer Rescue Squad Services:

Fire Departments:

- Council Volunteer Fire Department
- Oakwood Volunteer Fire Department
- Russell Prater Volunteer Fire Department
- Whitewood Volunteer Fire Department
- Knox Creek Volunteer Fire Department
- Harmon Volunteer Fire Department
- Big Rock Volunteer Fire Department
- Grundy Volunteer Fire Department
- Slate Creek Volunteer Fire Department

Rescue Agencies:

- Davenport Life Saving Crew
- Oakwood Volunteer Rescue Squad
- Russell Prater Volunteer Rescue Squad
- Knox Creek Volunteer Rescue Squad
- Rescue 33 Ambulance Service

NOW THEREFORE, BE IT RESOLVED, Buchanan County Board of Supervisors does hereby designate said Emergency Response Agencies, namely, Council Volunteer Fire Department, Oakwood Volunteer Fire Department, Russell Prater Volunteer Fire Department, Whitewood Volunteer Fire Department, Knox Creek Volunteer Fire Department, Harmon Volunteer Fire Department, Big Rock Volunteer Fire Department. Grundy Volunteer Fire Department, Slate Creek Volunteer Fire Department, Davenport Life Saving Crew, Oakwood Rescue Squad, Russell Prater Volunteer Rescue Squad, and Knox Creek Volunteer Rescue Squad as designated Emergency Response Agencies to operate within Buchanan County, VA. Buchanan County Board of Supervisors also designates Rescue 33 Ambulance service as an Authorized Agency to Provide Care within Buchanan County as needed. Buchanan County Board of Supervisors also conditions said agencies to comply with this resolution, and the Emergency Response Plan, as amended. Chapter 31 of the Virginia Administrative Code and the applicable licensure from the Virginia Office of Emergency Services.

This Amended resolution was adopted on the 7th, day of August 2023 by the following roll call vote:

Moved by: Craig Stiltner

Seconded by: Trey Adkins

G. Roger Rife: yea

Jeff Cooper: yea

Craig Stiltner: yea

Trey Adkins: yea

Tim Hess: yea

——————————— 000 ———————————

IN RE: CONSIDER ADOPTING SOLE SOURCE NOTICE AND RESOLUTION REGARDING THE AWARD OF CONTRACT TO SOUTHERN SOFTWARE, INC. FOR THE RENEWAL OF ANNUAL SOFTWARE SUPPORT FOR MAPPING SOFTWARE (MDS) IN THE AMOUNT OF $4,198.00 FOR THE BUCHANAN COUNTY SHERIFF'S OFFICE

After a general discussion by the board upon motion by Jeff Cooper seconded by Craig Stiltner and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby adopt the following Sole Source Notice and Resolution regarding the award of regarding the award of Contract to Southern Software, Inc. for the renewal of Annual Software Support for Mapping Software (MDS) in the amount of $4,198.00 for the Buchanan County Sheriff's Office.

NOTICE

RE: PENDING AWARD OF CONTRACT TO SOUTHERN SOFTWARE, INC FOR ANNUAL SOFTWARE SUPPORT FOR MAPPING SOFTWARE (MDS); SOUTHERN SOFTWARE INC. HAS BEEN DETERMINED TO BE SOLE SOURCE FOR THE MAPPING SOFTWARE SUPPORT PROVIDED BY SOUTHERN SOFTWARE, INC.

PLEASE TAKE NOTICE:

1) Due to issues of the unavailability of maintenance support services for Southern Software Mapping software, it has been determined that Southern Software, Inc. is the sole source for Annual Software Support for Mapping Software (MDS).

2) The Buchanan County, Va., Board of Supervisors will consider a Resolution to approve and award the contract to Southern Software, Inc. for Annual Software Support for Mapping Software (MDS) in the amount of $4,198.00 for a term of one year beginning August 2023 through July 2024, at its August 7th, 2023 board meeting to be held in the Board of Supervisors meeting room on the 3rd floor of the Buchanan County Government Building, 4447 Slate Creek Road, Grundy, Virginia.

PLEASE CONDUCT YOURSELF ACCORDINGLY.

Issued by directive of the County Administrator this 7th day of August, 2023.

RESOLUTION
RE: SOUTHERN SOFTWARE AS SOLE SOURCE FOR ANNUAL SOFTWARE SUPPORT SERVICES CONTRACT FOR MAPPING SOFTWARE (MDS) PROVIDED BY SOUTHERN SOFTWARE

WHEREAS, prior to the issuance of an invitation to bid, Kenneth Ratliff, the Operations and Maintenance Manager conducted an investigation of potential vendors in regard to the contemplated procurement of Annual Software Support Services (MDS) contract for Mapping Software provided by Southern Software, Inc.; and

WHEREAS, after a thorough investigation, Kenneth Ratliff has concluded that Southern Software, Inc. is the only one source practicably available to provide Annual Software Support Services (MDS) a contract provided by Southern Software, Inc.; and

WHEREAS, it has been determined that due to issues of the unavailability of Annual Software Support Services (MDS) provided by Southern Software, Inc. that Southern Software is the sole source to provide Annual Software Support Services (MDS) for mapping software provided by Southern Software, Inc.; and

WHEREAS, Southern Software, Inc. has provided a quote of Four Thousand One Hundred Ninety-Eight Dollars and No Cents to provide the Annual Software Support Services (MDS) for the Mapping software provided by Southern Software for a term of one year beginning August 2023 through July 2024; and

NOW, THEREFORE BE IT RESOLVED, that the Chairman of the Buchanan County, Va., Board of Supervisors and the County Administrator are hereby authorized to execute a Contract with Southern Software, Inc., as approved in form by the County Attorney, that provides for Annual Software Support Services (MDS) for mapping software, from Southern Software, Inc. for the purchase price of Four Thousand One Hundred Ninety-Eight Dollars and No Cents ($4,198.00). Be It Furthermore Resolved that the County Administrator is directed to post a Notice as required by Virginia Code Section 2.2-4303(E) in the designated public area and on county website stating that the contract was awarded this day to Southern Software, Inc., in that only Southern Software, Inc. has been determined to be the only source practicably available for the purchase of an Annual Software Support Services (MDS) contract for mapping software provided by Southern Software, Inc.

This Resolution was adopted on the 7th day of August, 2023.

Recorded Vote:
Moved by: Jeff Cooper
Seconded by: Craig Stiltner
Yeas: Seven
Nays: Zero

_____
Tim Hess, Chairman of the Buchanan County, Va. Board of Supervisors

ATTEST:

_____
Robert Craig Horn, County Administrator

IN RE: CONSIDER ADOPTING SOLE SOURCE NOTICE AND RESOLUTION REGARDING THE AWARD OF CONTRACT TO SOUTHERN SOFTWARE, INC. FOR THE RENEWAL OF ANNUAL SOFTWARE SUPPORT QUARTER MASTER IN THE AMOUNT OF $858.00 FOR THE BUCHANAN COUNTY SHERIFF'S OFFICE

After a general discussion by the board upon motion by Jeff Cooper seconded by Drew Keene and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby adopt the following Sole Source Notice and Resolution regarding the award of Contract to Southern Software, Inc. for the renewal of Annual Software Support Quarter Master in the amount of $858.00 for the Buchanan County Sheriff's Office.

NOTICE

RE: PENDING AWARD OF CONTRACT TO SOUTHERN SOFTWARE, INC FOR ANNUAL SOFTWARE SUPPORT QUARTERMASTER AND SOUTHERN SOFTWARE INC. HAS BEEN DETERMINED TO BE THE SOLE SOURCE

PLEASE TAKE NOTICE:

1) Due to issues of the unavailability of Annual Software Support QuarterMaster System it has been determined that Southern Software, Inc. is the sole source for the Annual Software Support for Human Resource Management Software (HRMS) QuarterMaster System and annual support fee from 8:30 a.m. to 5:00 p.m. est., Monday through Friday.

2) The Buchanan County, Va., Board of Supervisors will consider a Resolution to approve and award the contract to Southern Software, Inc. for an contract for Annual Software Support Quartermaster System and annual support fee with Southern Software, in the amount of $858.00 for a term of one year beginning December 13th, 2023 through December 12th, 2024 at its August 7th, 2023 board meeting to be held in the Board of Supervisors meeting room on the 3rd floor of the Buchanan County Government Building, 4447 Slate Creek Road, Grundy, Virginia.

   PLEASE CONDUCT YOURSELF ACCORDINGLY.

   Issued by directive of the County Administrator this 7th day of August, 2023.

_____

Robert Craig Horn, County Administrator
Buchanan County, Virginia

Annual Software Support Agreement Quartermaster annual support fee for the Buchanan County Sheriff's Office; and

WHEREAS, after a thorough investigation, Kenneth Ratliff has concluded that Southern Software, Inc. is the only one source practicably available to provide the Annual Software Support Quartermaster annual support fee; and

WHEREAS, Southern Software, Inc. has provided a quote of **Eight Hundred Fifty-Eight Dollars and No Cents** ($858.00) to provide Annual Software Support Quartermaster and annual support fee provided by Southern Software for a term of one year beginning December 13th, 2023 through December 12th, 2024; and

NOW, THEREFORE BE IT RESOLVED, that the Chairman of the Buchanan County, Va., Board of Supervisors and the County Administrator are hereby authorized to execute a Contract with Southern Software, Inc., as approved in form by the County Attorney, that provides Software Support Agreement Quartermaster and annual support fee provided by Southern Software, Inc. for the purchase price of **Eight Hundred Fifty-Eight Dollars and No Cents** ($858.00).

Be It Furthermore Resolved that the County Administrator is directed to post a notice as required by Virginia Code Section 2.2-4303(E) in the designated public area and on county website stating that the contract was awarded this day to Southern Software, Inc., for Software Support Agreement Quartermaster and annual support fee in that only Southern Software, Inc. has been determined to be the only source practicably available for provided by Southern Software, Inc.

This Resolution was adopted on the 7th day of August, 2023.

Recorded Vote:
Moved by: Jeff Cooper
Seconded by: Drew Keene
Yeas: Seven
Nays: Zero

_____
Tim Hess, Chairman of the
Buchanan County, Va. Board of Supervisors

ATTEST:

_____
Robert Craig Horn, County Administrator

———————————— 000 ————————————

IN RE: CONSIDER APPROVING BID AND CONTRACT IN THE TOTAL AMOUNT OF $12,465.00 BETWEEN BUCHANAN COUNTY AND TECHNI-TURF, LLC REGARDING POPLAR GAP ATHLETIC FIELDS

After a general discussion by the board upon motion by Jeff Cooper seconded by Craig Stiltner and with the following roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the following bid and Contract in the total amount

the first part, and **TECHNI-TURF, LLC.**, party of the second part, hereinafter referred to as **"Contractor".**

WITNESSETH:

THAT for and in consideration of the mutual covenants and agreements herein contained, the parties hereto do hereby agree as follows:

I

The Contractor agrees to provide general turf maintenance for the Athletic Fields at the Poplar Gap Park in Grundy, Virginia pursuant scope of services contained within **"THE INVITATION TO BID"** and make a part of this contract by reference thereto, as **Exhibit "A"** in Buchanan County, a copy of which is attached hereto and made a part hereof by reference.

II

The Contractor agrees to perform and complete or cause to be performed or completed all such turf maintenance work in accordance with the techniques and methods of provided for by applicable law, the standards of the turf maintenance industry, and the specifications referenced above. The Contractor further agrees that all equipment and materials used in the installation shall meet all those requirements and specifications in compliance with the laws of the United States and the Commonwealth of Virginia.

III

The Contractor shall, at his own cost and expense, obtain and pay for all licenses, permits, certificates and surveys required for the completion of the work under this Agreement.

IV

The Contractor shall, at his own cost and expense, procure and maintain insurance required under the Virginia Workers' Compensation Act as well as liability insurance covering damages to person and property in the minimum amount of $1,000,000.00 and shall furnish a Certificate of Insurance to the Board.

The Contractor agrees to perform all the work required of him under this Agreement in a good and workmanlike manner under the supervision and direction of Buchanan County or its designated agents or employees. The Contractor will not subcontract any of the work described herein without the prior approval of the Buchanan County Board of Supervisors. The Contractor will guarantee any work which would be performed by the sub-contractors.

BID" Exhibit "A" and pursuant to the annual rate schedule attached hereto and made a part of this contract as **Exhibit "B",** with a not to exceed a total annual amount of **$12,465.00.**

The term of this contract shall be for an initial one-year term contract (July 1, 2023 through June 30, 2024) with the County's option for two one-year renewals (July 1, 2024 through June 30, 2025 and July 1, 2025 through June 30, 2026). The renewals will be subject to the County's right to go out for bid each year upon thirty (30) days' notice to the Contractor.

VII

The Contractor shall not subcontract any work to be done herein without the prior written approval of the Board of Supervisors.

VIII

The Contractor shall indemnify and save harmless Buchanan County and its Board of Supervisors against all losses, or damages on account of injury to persons or property occurring in the performance of this Agreement together with any and all attorneys' fees incurred by Buchanan County on account of any thereof.

IX

In the event that the Contractor fails to complete the work required of him under this Agreement or abandons the said work or in any other way is in default of performance hereunder, the Board and its agents shall have the right to enter upon the premises upon, which the work is being done and take possession thereof and of any material thereon, whether supplied by the Contractor or otherwise, and use such material and complete the said Agreement through workmen or contractors or subcontractors employed by the Contractor and in every way perform the Agreement as is required to be done by the Contractor. In the event that the cost of such work and the furnishing of such material as may be required to be furnished exceeds the amount then remaining due the Contractor under the said Agreement, the Contractor shall pay to the Board the amount of such deficiency. But if such amount remaining in the hands of the Board under this Agreement at the time of the default of the Contractor exceeds the amount required to complete the said Agreement, then upon such completion the Buchanan County Board of supervisors shall pay such surplus to the Contractor.

X

In the performance of the work under this Agreement, the Contractor shall

where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

2. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.

3. Notices, advertisements and solicitations placed in accordance with federal law, rules or regulations shall be deemed sufficient for the purpose of meeting the requirements of this section.

1. B. The Contractor will include the provisions of the foregoing paragraphs a, b, and c in every subcontract or purchase order of over $10,000.00, so that the provisions will be binding upon each subcontractor or vendor.

C. During the performance of this contract, the Contractor will:

1. Provide a drug-free workplace for the Contractor's employees;

2. Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

3. State in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and4. Include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000.00 so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

D. In the event of the Contractor's noncompliance with this section of this Contract, (Section XI), this agreement may be cancelled, terminated or suspended, in whole or part, and the Contractor may be declared ineligible for further Agreements and such other

mentioned, shall be performed or other material furnished unless on written order of the Board certifying that the performance of such extra work has been approved and authorized by it and there has been compliance with Virginia Code section 2.2-4309.

XIV

No extra compensation not specified in this Agreement shall be demanded or received by the Contractor for any changes or alterations in the work performed under this Agreement, or for any extra work unless the foregoing provisions of this Agreement have been complied with strictly and modification of said contract is compliant with Va. Code section 2.2-4309.

XV

No modification of any of the terms of this contract, nor any extension of the length of time allowed for the completion of the work governed by this contract, shall be valid without the advance written approval of the Buchanan County Board of Supervisors and in compliance with Va. Code section 2.2-4309.

The Contractor shall not assign his rights or obligations under this Agreement, nor have more than fifty percent (50%) of the work required by this Agreement performed by sub-contractors and only after approval be the Board of Supervisors.

XVI

Claims by the Contractors shall be made in accordance with Section 11-69 of the 1950 Code of Virginia, as amended, and shall include a sworn written statement of facts substantiating such claims, together with copies of all documents and photographs which tend to substantiate such claims. The Contractor shall be allowed to appear before the Board of Supervisors within thirty (30) days after having filed such claim to present its argument in support of such claim. The Board of Supervisors shall rule on such claim in writing within sixty (60) days of the time set for such hearing.

XVII

The parties agree that in the event the Contractor defaults in its performance of this Agreement or in the event that any money is paid by the Contractor's surety for the completion of this Contract, that the Contractor shall be disqualified from bidding on any future county construction projects for a period of two (2) years.

XIII

The County may cancel this Agreement at any time based upon a decision by the Buchanan County Board of Supervisors that such cancellation is in the best interest of the

Commonwealth of Virginia. The parties agree that the Circuit Court for Buchanan County shall be the proper venue for any litigation hereunder whether or not such alleged breach involves Federal law or jurisdiction.

XX

If any provisions of this Agreement shall be deemed by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall nevertheless remain in full force and effect.

XXI

The Contractor if organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as registered limited partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity.

EXECUTED IN DUPLICATE ORIGINALS.

WITNESS the following signatures and seals:

BUCHANAN COUNTY BOARD OF SUPERVISORS

By: _____
Tim Hess, Chairman

ATTEST:

_____
Robert Craig Horn, County Administrator

CONTRACTOR: Techni-Turf, LLC.

By: _____

APPROVAL

The form of the foregoing Agreement by and between the Buchanan County Board of Supervisors and _____is here by approved.

Witness the following signature and seal:

_____
ATTORNEY FOR THE COUNTY OF BUCHANAN

DATE: _____

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IN RE: CONSIDER APPROVING AN ADDITIONAL BUDGET APPROPRIATION IN THE AMOUNT OF $629,000.00

$629,000.00 earmarked for the ARPA Funding to be received for the Buchanan County Sheriff's Office to fund 33, equipment fund.

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IN RE: CONSIDER ADOPTING THE RESOLUTION REGARDING THE CONTRACT WITH HICOK, BROWN & COMPANY CPAS FOR PRE-AUDITING SERVICES FOR THE YEARS ENDING JUNE 30TH, 2024, JUNE 30TH, 2025 AND JUNE 30TH, 2026

After a general discussion by the board upon motion of Craig Stiltner seconded by G. Roger Rife and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the following Resolution regarding the Contract with Hicok, Brown & Company CPAs for pre-auditing services for the years ending June 30th, 2024, June 30th, 2025 and June 30th, 2026.

RESOLUTION

RE: CONTRACT FOR PRE-AUDITING SERVICES FOR THE YEARS ENDING JUNE 30TH, 2024, JUNE 30TH, 2025 AND JUNE 30TH, 2026

WHEREAS, the Buchanan County, Va., Board of Supervisors authorized to advertise a Public Notice requesting Proposals for Pre-Auditing Service for the years ending June 30th, 2024, June 30th, 2025 and June 30th, 2026; and

WHEREAS, only one proposal was received for the services to pre-audit the financial statements of the County; its component unit School Board; its component unit Public Service Authority; and the School Activity Funds for the fiscal years ending June 30, 2024 through June 30, 2026; and

WHEREAS, the Buchanan County, Va., Board of Supervisors finds that Hicok, Brown & Company, the only offeror, is fully qualified as per Virginia Code Section 2.2-4302.2(A)(4); and accordingly, that a contract should be negotiated and awarded to Hicok, Brown & Company to perform said pre-auditing services; and

NOW, THEREFORE BE IT RESOLVED, by the Buchanan County, Va. Board of Supervisors, that the Chairman of the Buchanan County, Va., Board of Supervisors and the County Administrator are hereby authorized to sign a Contract between Hicok, Brown & Company and Buchanan County, Virginia for pre-auditing services in a form approved by the County Attorney.

This resolution was adopted this the 7th day of August 2023 by the Buchanan County, Va., Board of Supervisors.

Recorded Vote:
Moved by: Craig Stiltner
Seconded by: G. Roger Rife

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Tim Hess, Chairman of the
Buchanan County, Va. Board of Supervisors

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IN RE: CONSIDER ADOPTING THE RESOLUTION REGARDING THE CONTRACT WITH ROBINSON, FARMER, COX ASSOCIATES AUDITING SERVICES FOR THE YEARS ENDING JUNE 30TH, 2024 THROUGH JUNE 30TH, 2026

After a general discussion by the board upon motion by Craig Stiltner seconded by J. Carroll Branham and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby adopt the following Resolution regarding he Contract with Robinson, Farmer, Cox Associates auditing services for the years ending June 30th, 2024 through June 30th, 2026.

RESOLUTION

RE: Contract for Auditing Services for the Years Ending June 30th, 2024, June 30th, 2025 and June 30th, 2026

WHEREAS, the Buchanan County, Va., Board of Supervisors authorized to advertise a Public Notice requesting Proposals for Auditing Service for the years ending June 30th, 2024, June 30th, 2025 and June 30th, 2026; and

WHEREAS, only one proposal was received for the services to audit the financial statements of the County; its component unit School Board; its component unit Public Service Authority; and the School Activity Funds for the fiscal years ending June 30, 2024 through June 30, 2026; and

WHEREAS, the Buchanan County, Va., Board of Supervisors finds that Robinson, Farmer, Cox Associates, the only offeror, is fully qualified as per Virginia Code Section 2.2-4302.2(A)(4); and accordingly, that a contract should be negotiated and awarded to Robinson, Farmer, Cox and Associates to perform said auditing services; and

NOW, THEREFORE BE IT RESOLVED, by the Buchanan County, Va. Board of Supervisors, that the Chairman of the Buchanan County, Va., Board of Supervisors and the County Administrator are hereby authorized to sign a Contract between Robinson, Farmer, Cox Associates and Buchanan County, Virginia for auditing services in a form approved by the County Attorney.

This resolution was adopted this the 7th day of August, 2023 by the Buchanan County, Va., Board of Supervisors.

Recorded Vote:
Moved by: Craig Stiltner
Seconded by: J. Carroll Branham
Yeas: Seven
Nays: Zero

_____
Tim Hess, Chairman of the
Buchanan County, Va. Board of Supervisors

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IN RE: CONSIDER ADOPTING RESOLUTION FOR THE RATIFICATION OF THE ACCEPTANCE OF THE DEED BY AND BETWEEN NICHOLAS SCOTT PRATER AND TRACI MARIE SMITH, HUSBAND AND WIFE TO BUCHANAN COUNTY REGARDING THE ACQUISITION OF PROPERTY AS PART OF THE U.S. ARMY CORPS OF ENGINEERS NON-STRUCTURAL PROJECT

After a general discussion by the board upon motion by Craig Stiltner seconded by Drew Keene and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby adopt the following Resolution for the ratification of the acceptance of the deed by and between Nicholas Scott Prater and Traci Marie Smith, husband and wife to Buchanan County regarding the acquisition of property as part of the U.S. Army Corps of Engineers Non-Structural Project.

RESOLUTION

IN RE: ACCEPTANCE OF DEED BY AND BETWEEN NICHOLAS SCOTT PRATER AND TRACI MARIE SMITH, HUSBAND AND WIFE TO BUCHANAN COUNTY, VIRGINIA

BE IT RESOLVED, by the Buchanan County Board of Supervisors that we approve acceptance of the property described in that Deed recorded in the Buchanan County Circuit Court Clerk's Office, Instrument Number 230000808 between Nicholas Scott Prater and Traci Marie Smith, Husband and Wife and Buchanan County, Virginia. This deed is a General Warranty Deed with the U.S. Army Corps of Engineers. Levisa Fork River Valley, Buchanan County Non-Structural Project Tract NO. 8701.

This Resolution was adopted by the Buchanan County Board of Supervisors on this the 7th day of August, 2023 by a roll call vote of seven for and zero against.

_____
Tim Hess, Chairman of the
Buchanan County Board of Supervisors

ATTEST:

_____
Robert Craig Horn, County Administrator

by J. Carrol Branham and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby authorize the removal and disposal of the abandoned structure as a public nuisance on tax map #2HH236083 on or after August 14, 2023.

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IN RE: CONSIDER APPOINTMENT/REAPPOINTMENT TO THE BUCHANAN COUNTY DEPARTMENT OF SOCIAL SERVICES ADMINISTRATIVE BOARD FOR THE HURRICANE DISTRICT. (CURRENT: LINDA BOYD)

After a general discussion by the board upon motion by Craig Stiltner seconded by Drew Keene and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby appoint Tom Mackey as Hurricane District Representative to the Buchanan County Department of Social Services Administrative Board for a four-year term ending in July 2027.

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IN RE: CONSIDER APPOINTMENTS/REAPPOINTMENTS TO THE APPALACHIAN COLLEGE OF PHARMACY BOARD OF TRUSTEES. (CURRENT: ROBERT C. HORN, G. ROGER RIFE AND EURAL VIERS). (RECOMMENDATION: REBECCA THORNBURY)

After a general discussion by the board upon motion by J. Craig Stiltner seconded by Drew Keene and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby reappoint Robert Craig Horn, G. Roger Rife, Eural Viers and appointed Rebecca Thornbury to the Appalachian College of Pharmacy Board of Trustees for a three-year term ending September 2026.

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IN RE: CONSIDER ACCEPTING THE RESIGNATION FROM KATE MCCLANAHAN ON THE APPALACHIAN JUVENILE COMMISSION

After a general discussion by the board upon motion by Craig Stiltner seconded

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IN RE: CONSIDER AN ADDITIONAL APPROPRIATION TO BUCHANAN COUNTY PUBLIC LIBRARY IN THE AMOUNT OF $9,238.22 TO ACCOUNT NUMBER 73010

After a general discussion by the board upon motion by Craig Stiltner seconded by G. Roger Rife and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve an additional appropriation to Buchanan County Public Library in the amount of $9,238.22 to account number 73010.

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IN RE: CONSIDER APPROVING REQUEST FROM BUCHANAN COUNTY HEAD START FOR THE SUBMISSION OF THE $2,207,141.00 CONTINUATION/REFUNDING GRANT APPLICATION FOR THE BUCHANAN COUNTY HEAD START

After a general discussion by the board upon motion by Trey Adkins seconded by Craig Stiltner and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the request from Buchanan County Head Start for the submission of the $2,207,141.00 continuation/refunding grant application for the Buchanan County Head Start.

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IN RE: CONSIDER APPROVING ADDITIONAL APPROPRIATIONS

After a general discussion by the board upon motion by J. Carroll Branham seconded by G. Roger Rife and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the following additional appropriations:

- Additional appropriation in the amount of $360.00 to Sheriff's Office (salaries) account number 31020-1150;
- Appropriation in the amount of $1,440.00 to Sheriff's Office (salaries) account number 31020-1150;
- Appropriation in the amount of $2,153.27 to Sheriff's Office (vehicle and power equipment) account number 31020-6009;

account number 71060-7010-06;

- Additional appropriation in the amount of $6,404.42 to Athletic Fields Supplies, account number 71040-5604-09;
- Additional appropriation in the amount of $425.00 to Rocklick Park & Rec. account number 71040-5604-06;
- Additional appropriation in the amount of $65.00 to Rocklick Park &Dev. account number 71060-7010-06;
- Additional appropriation in the amount of $3,689.01 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $2,487.95 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $1,640.75 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $4,362.13 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $1,733.93 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $1,904.00 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $2,388.25 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $2,067.35 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $2,959.05 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $2,362.05 to William P. Harris Park (supplies) account number 71040-6022-02;
- Additional appropriation in the amount of $2,517.25 to William P. Harris Park (supplies) account number 71040-6022-02.

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IN RE: CONSIDER APPROVING LOW BIDS FOR MOTOR OIL, SYNTHETIC OIL AND LUBRICANTS; HEATING OIL AND ON-ROAD DIESEL AND OFF-ROAD DIESEL FUEL

After a general discussion by the board upon motion by Carroll Branham seconded Drew Keene and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the following bids:

- Motor Oil, Synthetic Oil and Lubricants
- Heating Oil, On-Road Diesel and Off-Road Diesel Fuel

Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the following bids:

- General office and data processing supplies used by county departments and offices;
- Janitorial supplies used by county departments and offices.

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IN RE: CONSIDER APPROVING THE LIST OF STUDENTS AS RECIPIENTS OF THE BUCHANAN COUNTY BOARD OF SUPERVISORS SCHOLARSHIP AWARD FOR 2023/2024 ACADEMIC YEAR

After a general discussion by the board upon motion of Jeff Cooper seconded by Craig Stiltner and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the following list of students as recipients of the Buchanan County Board of Supervisors Scholarship award for 2023/2024 academic year:

Third Year Students		
Gunner Baker	Vansant, Virginia	$5,833.33
William Justus	Hurley, Virginia	$5,833.33
Madison Keen	Oakwood, Virginia	$5,833.33
Stacey Looney	Vansant, Virginia	$5,833.33
Hope Shortridge	Grundy, Virginia	$5,833.33
Second Year Students		
Jamie Blankenship	Hurley, Virginia	$5,833.33
Hannah Casey	Hurley, Virginia	$5,833.33
Makayla Hutchinson	Big Rock, Virginia	$5,833.33
Siera Newberry	Big Rock, Virginia	$5,833.33
First Year Students		
Micah Blankenship	Hurley, Virginia	$5,833.33
Brady Justice	Hurley, Virginia	$5,833.33
Kaelyn Rife	Vansant, Virginia	$5,833.33

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IN RE: CONSIDER RATIFYING TEMPORARY PART-TIME WEED CUTTERS AND COUNCIL POOL EMPLOYEES

After a general discussion by the board upon motion by G. Roger Rife seconded by Trey Adkins and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0)

Devin Rife – Knox District
Bobby Slone – South Grundy District
Daniel Vance – Knox District
Gary Sargent – Knox District
McKenzie Street – Council Pool
Billy Whitt – Knox District

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IN RE: CONSIDER APPROVING A LETTER TO BE SENT TO THE GOVERNOR OF VIRGINIA REGARDING VERIZON CELL SERVICE

Trey Adkins, Knox District Supervisors requested that a letter be sent to Governor Younkin regarding poor cell phone services in the county. Cell service has decreased in the past five years and this is making it difficult for emergency services to operate in the county. Residents' health in this county is at risk, due to this reason, he stated. Also, many residents have disconnected their landlines and are using their cell phones at home, commented Mr. Adkins.

After a general discussion by the board upon motion by Trey Adkins seconded by Jeff Cooper and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to send a letter to Governor Younkin requesting assistance in expending cell phone signal coverage in Buchanan County.

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IN RE: CLOSED SESSION 2.2-3711 1950 CODE OF VIRGINIA

Upon a motion by Craig Stiltner seconded by Drew Keene and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board agreed to convene in closed session as permitted by Virginia Code Section, 2.2-3711 (A)(1), a personnel matter involving county fire and rescue squads, waterline crew, construction crew, mechanic position, carpenter crew, bridge crew, custodial services and appointments to the Appalachian School of Law Board of Trustees; Virginia Code Section, 2.2-3711 (A)(3); a matter involving acquisition of property for public purposes and Virginia Code Section, 2.2-3711 (A)(8), consultation with legal counsel regarding a lease with Norfolk and Southern Railway; bridges that are a public nuisance and the purchase of prior services through Virginia Retirement System.

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Motion was made by Craig Stiltner to return from closed session seconded by G.

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A motion Craig Stiltner seconded by J. Carroll Branham with Tim Hess, Chairman of the Buchanan County Board of Supervisors announcing during such session the board had also discussed Virginia Code Section, 2.2-3711 (A)(1), a personnel matter involving compensation issued to public works employees.

The board of supervisors ratified the discussion of the additional matters during closed session and then each of the members of the board certified that they did not discuss any other matters other than the foregoing in such session.

The motion was agreed upon by the following roll call vote of seven (7) yeas, Drew Keene, Trey Adkins, Tim Hess, Jeff Cooper, G. Roger Rife, Craig Stiltner, J. Carroll Branham and zero (0) nays.

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IN RE: CONSIDER APPOINTMENTS/REAPPOINTMENTS TO THE APPALACHIAN SCHOOL OF LAW BOARD OF TRUSTEES. (CURRENT: REECE ROBERTSON, DONALD RATLIFF, THE HONORABLE PAT JOHNSON AND JEFF TAYLOR).

After a general discussion by the board upon motion by Craig Stiltner seconded by Trey Adkins and with a roll call vote of seven (7) yeas, Drew Keene, Trey Adkins, Tim Hess, Jeff Cooper, G. Roger Rife, Craig Stiltner, J. Carroll Branham and zero (0) nays, with the exception that Mr. Adkins voted no on the appointment of Reece Robertson, this board did hereby reappoint The Honorable Pat Johnson, Reece Robertson, Donald Ratliff and Jeff Taylor to the Appalachian School of Law Board of Trustees for a three (3) year term effective from July 1st, 2023 through June 30th, 2026.

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IN RE: CONSIDER APPROVAL TO ISSUE PAYMENT FOR LEASE AGREEMENT BETWEEN NORFOLK AND SOUTHERN RAILWAY COMPANY AND BUCHANAN COUNTY, VIRGINIA

After a general discussion by the board upon motion by Craig Stiltner seconded by Drew Keene and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to issue payment in the amount of $1,850.00 to Norfolk and Southern Railway Company for a Lease Agreement that was approved on September 10th, 1979 by the board of supervisors for the use of a vehicular bridge located in the Rocklick

IN RE: CONSIDER HIRING A FULL-TIME GIS COORDINATOR

After a general discussion by the board upon motion by Jeff Cooper seconded Drew Keene and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to hire Carla Brown Hurley as GIS Coordinator for Buchanan County at a salary of $79,000 per year.

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IN RE: CONSIDER APPROVING TO HIRE A CONSTRUCTION CREW AND WATERLINE CREW

After a general discussion by the board upon motion by Craig Stiltner seconded Drew Keene and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to hire the following:

Waterline Construction Crew

Mike Boyd, Supervisor at a salary of $65,000 per year
David Stiltner, Truck Driver at a salary of $50,000 per year
Michael Barton, Laborer at a salary of $40,000 per year
Keaton Honaker, Laborer at a salary of $40,000 per year

Construction Crew

Walter Honaker, Supervisor at a salary of $65,000 per year
Steven Rowe, Tuck Driver at a salary of $50,000 per year
Johnny Hayes, Laborer at a salary of $40,000 per year
Dustin Stiltner, Laborer at a salary of $40,000 per year

——————————— 000 ———————————

IN RE: CONSIDER CUSTODIAL EMPLOYEES

This issue was tabled, no action taken.

——————————— 000 ———————————

IN RE: CONSIDER APPOINTING A COMMITTEE TO LOCATE EQUIPMENT O BE USED BY THE CONSTRUCTION AND WATERLINE CREWS

After a general discussion upon motion by Craig Stiltner seconded J. Carroll Branham and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff

IN RE: CONSIDER REQUESTING THE VIRGINIA DEPARTMENT OF TRANSPORTATION TO REDUCE THE SPEED LIMIT ON STATE ROUTE 645

After a general discussion by the board upon motion by Craig Stiltner seconded by J. Carroll Branham and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to request the Virginia Department of Transportation to reduce the speed limit on State Route 645 for loaded large/coal trucks to 25 mph and unloaded large/coal trucks to 35 mph.

——————————— 000 ———————————

IN RE: CONSIDER APPROVING TO CONSTRUCT A NEW BRIDGE ON TURN DOWN ROAD/BRIDGE LOCATED IN THE HURRICANE MAGISTERIAL DISTRICT

Tim Hess, Chairman asked Marcus Stiltner, Coal Haul Road Engineer what the estimate was a couple years ago to construct a new bridge on Turn Down Road/Bridge?

Marcus Stiltner, Coal Haul Road Engineer stated a couple years ago the estimate was approximately $120,000 to $124,000 for materials.

After a general discussion by the board upon motion by Drew Keene seconded Craig Stiltner and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to construct a new bridge on Turn Down Road/Bridge located in the Hurricane Magisterial District.

——————————— 000 ———————————

IN RE: CONSIDER APPROVING AND ISSUING PAYMENT FOR CONTRIBUTIONS

After a general discussion by the board upon motion by Trey Adkins seconded by J. Carroll Branham and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to issue a check for the following contributions:

Clinch Independent Living Services (Fr: All Senior Citizens and Park and Development) (Knox accounts)	$14,000.00

Buchanan County Tech. and Career Center (Love Sign)	$551.00
Whitewood Senior Citizens	$500.00

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IN RE: CONSIDER APPROVING TO ADVERTISE FOR A BRIDGE CREW LABORER POSITION

After a general discussion by the board upon motion by Trey Adkins seconded by J. Carroll Branham and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to advertise for a laborer position for the bridge crew.

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IN RE: CONSIDER APPOINTMENT TO THE SOUTHWEST VIRGINIA REGIONAL JAIL AUTHORITY BOARD OF DIRECTORS

After a general discussion by the board upon motion of Drew Keene seconded by Jeff Cooper and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby appoint Doug R. Baker to fill the unexpired term of Danny Lowe to the Southwest Virginia Regional Jail Authority Board of Directors.

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IN RE: CONSIDER APPROVING TO ADVERTISE FOR A MECHANIC FOR THE BUCHANAN COUNTY GARAGE

After a general discussion by the board upon motion by Drew Keene seconded by Craig Stiltner and with a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to advertise for a mechanic for the Buchanan County Garage.

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IN RE: CONSIDER ISSUE PAYMENTS TO GLATFELTER INSURANCE GROUP AND J. MARK BOWERY INSURANCE FOR INSURANCE FOR COUNCIL VOLUNTEER FIRE DEPARTMENT AND DAVENPORT LIFESAVING CREW

After a general discussion by the board upon motion by Jeff Cooper seconded

IN RE: CONSIDER APPROVING TO SCHEDULE A PUBLIC HEARING ON MONDAY, SEPTEMBER 11TH, 2023 AT 6:45 P.M. TO HEAR PUBLIC COMMENTS REGARDING A PROPOSED ORDINANCE TO ESTABLISH PAYMENT FOR ONE TIME BONUSES

After a general discussion by the board upon motion by Craig Stiltner seconded Jeff Cooper and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve to schedule a public hearing for Monday, September 11th 2023 at 6:45 p.m. to hear public comments on a proposed adoption of a proposed Ordinance entitled: "**An Ordinance to Establish Payment of One Time Bonuses totaling Four Thousand Five Hundred Thirty-One Dollars and Eighty-Seven Cents ($4,531.87) Bonuses for eleven Buchanan County Public Works Department Employees Whose Salaries are Paid with Local Funds.**

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IN RE: CONSIDER APPROVING THE REMOVAL OF AN ABANDONED DANGEROUS BRIDGE THAT CONSTITUTES A PUBLIC NUISANCE THAT PRESENTS A IMMEDIATE AND IMMINENT THREAT TO LIFE OR PROPERTY

After a general discussion by the board upon motion by J. Carroll Branham seconded Drew Keene and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby approve the removal of an abandoned dangerous bridge that constitutes a public nuisance that present an immediate and imminent threat to life or property.

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IN RE: CONSIDER ADOPTING THE BUCHANAN COUNTY, VIRGINIA EQUAL EMPLOYMENT OPPORTUNITY POLICY STATEMENT

After a general discussion by the board upon motion by J. Carroll Branham seconded Craig Stiltner and a roll call vote of seven (7) yeas, J. Carroll Branham, Craig Stiltner, Jeff Cooper, Tim Hess, Drew Keene, G. Roger Rife, Trey Adkins and zero (0) nays, this board did hereby adopt the enclosed Buchanan County, Virginia Equal Employment Opportunity Policy Statement.

G. Roger Rife, Tim Hess, Jeff Cooper, Drew Keene, Craig Stiltner and zero (0) nays, this board did hereby approve to adjourn the meeting.

_____
Tim Hess, Chairman of the
Buchanan County Board of Supervisors

_____
Robert Craig Horn, County Administrator

Legend

County Boundary

CDC SVI BlockGroup 2020

SVI Class

- Very Low Social Vulnerability
- Low Social Vulnerability
- Moderate Social Vulnerability
- High Social Vulnerability
- Very High Social Vulnerability

N

Tamcliff
Sprattsville
Gilbert Creek
North Spring
Cedar
Isaban
Longpole
Mohawk
Simers
Iaeger
Hurley
Steele
Lick Creek
Big Rock
Raysal
Breaks
Harman
BUCHANAN
Vansant
Oakwood
Haysi
Murphy
Tiny
Davenport
Duty
Council
Richlands
Raven
Birmingham
Claypool Hill
Putnam
Clifton
Repass
Belfast
RUSSELL
Smithfield
Carterton
Elk Garden
Lebanon
Castlewood

MAP

BUCHANAN COUNTY, VIRGINIA
CFPF ROUND 5 APPLICATION MATERIALS

SOCIAL VULNERABILITY INDEX

DEC 2024 SCALE: NOTED

0 0.3 0.6 1.2
Miles

Cumberland Plateau Planning District Commission

Hazard Mitigation Plan Update

prepared by:

CumberlandPlateau
Planning District Commission

First Draft September 12, 2024

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Section 1

Table of Contents

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Section 2

Introduction

Contents of this Section

2.1 Purpose

Hazard mitigation is sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects. A hazard mitigation plan states the aspirations and specific actions a community intends to follow to reduce vulnerability and exposure to future hazard events. A systematic process centered on the participation of citizens, businesses, public officials, and other community stakeholders to formulate these plans.

A multi-jurisdictional hazard mitigation plan is the physical representation of a group of local jurisdictions' commitment to reducing risks from natural hazards. Local officials can refer to the Plan in their day-to-day activities and decisions regarding land use and planning, regulation and ordinance creation and enforcement, granting permits, capital improvement investments, and other community initiatives. Additionally, multi-jurisdictional hazard mitigation plans can serve as the basis for states to prioritize future grant funding as it becomes available.

This Plan meets the requirements for a local hazard mitigation plan under regulations within 44 CFR 201.6, published by the Federal Emergency Management Agency (FEMA) in September 2009.

This Plan update allows jurisdictions within the Cumberland Plateau Planning District Commission Region (CPPDC) to obtain all disaster assistance, including all categories of Public Assistance, Individual Assistance, and Hazard Mitigation grants available through the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93288, as amended. In addition, future enhancements of the State All-Hazard Mitigation Plan will allow the State to obtain more significant funding for hazard mitigation planning and projects (20 percent of Federal Stafford Act disaster expenditures versus 7.5 percent for a standard

state plan). It also keeps the State eligible for the annually funded Building Resilient Infrastructure and Communities (BRIC) Program and the Flood Mitigation Assistance Program.

Without this Plan, all eligible local jurisdictions would be ineligible to receive various disaster recovery programs. Including the Public Assistance Program to repair or replace damaged public facilities and the Fire Management Assistance Program to help the State and communities recover from the costs of major disasters. In contrast, the State and local communities would remain eligible for certain emergency assistance and Human Services programs available through the Stafford Act.

The Cumberland Plateau Regional Hazard Mitigation Plan 2023 Update will continue to be a valuable tool for all community stakeholders by increasing public awareness about local hazards and risks and providing information about options and potential resources available to reduce those risks. Educating the public about potential dangers will help each jurisdiction protect itself against the effects of future hazards and will enable informed decision-making regarding where to live, purchase property, or locate a business.

The 2018 plan was updated in 2023 by the Cumberland Plateau Planning District Commission. The 2023 version of the Plan includes the most current population and demographics, all mitigation strategies, goals, and objectives, and a review and update of most maps.

2.2 Organization of the Plan

The Plans organization parallels the structure provided in 44 CFR 201.6. It has nine plan sections, appendices containing mitigation assessment annexes, supporting documentation, and adoption resolutions. In addition, there are references to the CFR throughout the Plan. Where possible, these provide specific section and subsection notations to aid the review process. The plan organization is as follows:

Section 1: Table of Contents
Section 2: Introduction
Section 3: Community Profile
Section 4: Adoption and Approval
Section 5: Planning Process
Section 6: Hazard Identification and Risk Assessment
Section 7: Capability Assessment
Section 8: Mitigation and Action Plan
Section 9: Plan Monitoring and Maintenance
Appendices

There are references to 44 CFR throughout the Plan. The Plan also includes references to the FEMA crosswalk document, which informs and reviews mitigation plan development and assessment.

2.3 Hazards Identification and Risks Assessment

2.3.1 Hazards

The Hazard Identification and Risk Assessment (HIRA) provides a systematic and objective approach to assessing hazards and their associated risks that provides an objective measure of an identified threat and leads to the ability to mitigate the risk of a hazard. The HIRA assists by providing a tool that jurisdictions can use to assess risk based on potential impacts on a community and the frequency of an event.

Systematic risk assessments can shift the focus of programs from being solely reactive to being proactive. A proactive approach to emergency management leads to more disaster-resilient communities.

The HIRA is a crucial component of a hazard mitigation plan because it provides a solid fact base on which to base mitigation goals and strategies. The HIRA consists of three components:

1. Identification of hazards that could affect the Cumberland Plateau Region
2. Profiling hazard events and determining what areas and community assets are the most vulnerable to damage from these hazards
3. Estimation of losses and prioritization of potential risks to the community

The Cumberland Plateau Hazard Mitigation Working Group (CPHMWG) re-evaluated the identified hazards during the planning process to determine the threats with the most significant impacts. However, the CPHMWG did not address specific hazards due to the infrequency of occurrences and their limited impact. Section 6 of this Plan includes detailed descriptions of the process used to assess and prioritize the Cumberland Plateau Region's risks from natural and human caused hazards and quantitative risk assessments for the region. Fifteen hazards were identified in the 2018 Plan. The 2023 plan has identified thirteen hazards to be addressed, eliminating Karst Topography and Domestic Fires, combining Thunderstorms with Severe Wind and adding Hailstorms in this plan update. The current list of threats in priority order are:

- Flooding
- Severe Winds (Strong, High, and Thunderstorm Winds)
- Severe Winter Storm
- Tornadoes
- Hailstorms
- Extreme Temperatures – Heat/Cold
- Wildfire
- Earthquakes
- Dam/ Levee Failure
- Abandoned Mine Fire/ Flood
- Drought
- Landslides
- Algae Bloom (Dickenson ONLY)

For each of these hazards, the profiles in Section 6 include:

- Description
- Type & Location
- Previous Occurrences
- Vulnerabilities
- Potential Impacts
- Climate Change Influence
- Probability of Future Events
- CPRI Assessment Table

2.3.2 Risks

Calculating risk is a numerical indication of potential future damages and is a FEMA requirement. Although the range of events from flooding to earthquakes and landslides all have some potential to affect the

Cumberland Plateau Region, flooding, severe winter weather, severe winds, tornadoes, and hailstorms are the most significant countywide hazards, based on the criteria and experience.

2.4 Mitigation Goals, Objectives, and Actions

Section 9 of this Plan describes the Cumberland Plateau Region's priorities for mitigation actions. The section divides the actions by priority, and describes the funding required, sources of funding, the level of support, and the timing of the action. The section also includes the Cumberland Plateau Region's hazard mitigation goals and objectives.

2.4.1 Hazard Mitigation Goals & Strategy

During the development of a revised Hazard Identification and Risk Assessment, the Hazard Mitigation Working Group and Steering Committee was asked to provide comments and suggestions on actions and policies, which could lessen the area's vulnerability the identified hazards. The preliminary comments are represented below:

- Top priorities were for public safety, reduction of potential economic impacts of disasters and public education.
- Mitigation actions would consider the impacts on the Cumberland Plateau Planning District as a whole.
- Mitigation actions must not conflict with other legal government programs.
- Repetitive loss properties will be given a priority to be addressed.
- Past experiences from disasters should be built upon.
- The success of past mitigation projects should be considered in developing continuing efforts to mitigate hazards.

The following overarching goal and four specific goals were developed by consensus across the Cumberland Plateau Region's participating jurisdictions to guide the area's future hazard mitigation activities.

Overarching Community Goal:

"To develop and maintain disaster resistant communities that are less vulnerable to the economic and physical devastation associated with natural hazard events."

- **Goal 1:**
  Pursue **OPPORTUNITIES TO MITIGATE** appropriate hazard mitigation projects, programs, and activities with an emphasis on repetitive and severe repetitive loss properties.
- **Goal 2:**
  Increase the Planning District community's **FLOODPLAIN MANAGEMENT ACTIVITIES and NFIP** participation.
- **Goal 3:**
  Improve **EDUCATION AND OUTREACH** efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact. Publicize mitigation activities to reduce the area's vulnerability to hazards. Enhance community-wide understanding and awareness of community hazards.

- **Goal 4:**
  Improve **DATA COLLECTION, USE, AND SHARING** to reduce the impact of hazards and to ensure hazard awareness and risk reduction principles are institutionalized into the Planning District communities.

During jurisdictional interviews, the Working Group reviewed the objectives and strategies from the previous plan during Steering Committee and Working Group Meetings and within individual localities. Events, lessons learned, and revised goals were considered during these conversations.

This plan symbolizes the Cumberland Plateau Planning District's continued commitment and dedication to enhance the safety of its residents and businesses by taking actions before a disaster strikes. While each jurisdiction cannot necessarily prevent natural hazard event from occurring, they can minimize the disruption and devastation that so often accompanies these disasters.

2.4.2 Objectives

Objectives are well-defined intermediate points in the process of achieving goals. The Cumberland Plateau's Regional mitigation planning objectives include:

- Increase awareness of risks and understanding of the advantages of mitigation by the public and by local government officials
- Increase local government official awareness regarding funding opportunities for mitigation
- Improve data available to the county and participating communities for use in future planning efforts
- Provide government officials and local practitioners with educational opportunities and information regarding best practices for hazard mitigation planning, project identification, and implementation
- Acquire and maintain detailed data regarding critical facilities such that these sites can be prioritized and risk-assessed for possible mitigation actions
- Continue support of hazard mitigation planning, project identification, and implementation at the municipal and county level
- Support increased participation in the National Flood Insurance Program Community Rating System
- Support increased integration of municipal/county hazard mitigation planning and floodplain management with effective municipal/county zoning regulation, subdivision regulation, and comprehensive planning development
- Provide for user-friendly hazard data accessibility for mitigation and other planning efforts and for private citizens
- Provide direct support, where possible to municipal mitigation programs
- Facilitate development and timely submittal of project applications meeting state and federal guidelines for funding for repetitive and severe repetitive loss properties and hardening/retrofitting infrastructure and critical facilities with highest vulnerability rankings
- Maintain and enhance local regulatory standards including full and effective building code enforcement, floodplain management, and other vulnerability-reducing regulations

2.4.3 Actions

Actions are detailed and specific strategies, actions, and projects that help support regional natural hazard resilience and mitigation goal achievement. They are highly focused, precise, and measurable. The Cumberland Plateau's Regional mitigation actions include, but are not limited to:

- Acquisitions of flood prone properties
- Installation of check valves in storm water runoff system in Denville
- Community outreach programs

- Structural retrofits of flood prone critical infrastructure
- Stormwater runoff infrastructure improvements
- Engineering studies to improve drainage problems
- Generator acquisition and installation.

2.5 Planning Process

This Plan update is the product of the efforts of a cross-section of people from Buchanan, Dickenson, Russell, and Tazewell Counties, federal, state, and local jurisdictions, and other interested stakeholders. This effort builds on several mitigation planning initiatives dating back to 2003. The Executive Director, the staff from the Cumberland Plateau Planning District Commission (CPPDC), Virginia Department of Emergency Management (VDEM Region 3), and Federal Emergency Management Agency (FEMA) Region 3, have provided technical expertise, including a review of previous hazard mitigation planning initiatives, development of mitigation strategies, and the strategy implementation plan.

The Plan update was prepared following the process established in the State and Local Mitigation Plan Development Guides produced by the Federal Emergency Management Agency (FEMA) and 44 CFR 201.6 Local Mitigation Plan.

The process includes four basic steps:

Step 1 Organize Resources. Organizing resources is in Section 5 (Planning Process). The section details the jurisdictions involved, the processes used to establish leadership and advisory groups, and public and other outreach and involvement efforts.

Step 2 Hazard Identification & Assess Risks. The risk assessment was completed with the assistance of Olson Group consultants and approved by the Cumberland Plateau working Group. The Hazard Identification and Risk Assessment is in Section 6 of the Plan.

Step 3 Develop a mitigation plan. Development of the Mitigation Plan is in Section 5 (Planning Process) and Section 8 (Mitigation Action Plan). Section 5 includes details about who was involved, the processes used, and the products developed. Section 8 provides specific information about identifying and developing mitigation goals, objectives, and actions based on Section 6 (Risk Assessment) and Section 7 (Capability Assessment).

Step 4 Implement the Plan and monitor progress. Implementing the Plan is described in the Mitigation Action Plan in Section 8, which includes details about who is responsible for implementing specific strategies and actions. In Section 9, the Plan Monitoring and Maintenance section describes long-term implementation through periodic updates and reviews.

Once the Plan update is promulgated by the CPPDC and approved by FEMA, the Committee will function as an advisor to the State Hazard Mitigation Officer on hazard mitigation efforts, including future reviews and revisions.

2.6 Adoption and Approval

The Cumberland Plateau Planning District Commission, with the endorsement of the Cumberland Plateau Regional Steering Committee was responsible for recommending plan approval to the 16 jurisdictions within the Cumberland Plateau Region. The Plan was submitted to VDEM and then FEMA Region III for review. FEMA reviewed and approved the Plan pending adoption on [Insert DATE]. Subsequently, the participating jurisdictions adopted the Plan, submitted their adoption resolutions to FEMA, and received their own approval notifications (see Appendices G and H).

The following 16 jurisdictions participated in the Plan by taking an active part in the planning process, identifying mitigation actions, and will adopt the Plan:

- Buchanan County
- Town of Grundy
- Dickenson County
- Town of Clinchco
- Town of Clintwood
- Town of Haysi
- Russell County
- Town of Cleveland
- Town of Honaker
- Town of Lebanon
- Tazewell County
- Town of Bluefield
- Town of Cedar Bluff
- Town of Pocahontas
- Town of Richlands
- Town of Tazewell

2.7 Implementation

The implementation process is described as part of the specific actions in the Mitigation Action Plan in Section 8.

2.8 Monitoring and Updating the Plan

Section 9 (Plan Monitoring and Maintenance) describes the schedule and procedures for ensuring that the Plan stays current. The section identifies when the Plan must be updated, who is responsible for monitoring the Plan, and ensuring that the update procedures are implemented. This section provides a combination of cyclical dates (oriented toward FEMA requirements) and triggering events that will initiate amendments and updates to the Plan.

2.9 Plan Point of Contact

The CPPDC Executive Director is responsible for monitoring the Plan and initiating the cyclical update process. The point of contact for this plan is:

Charlie Perkins, Planner II
224 Clydesway Drive
Lebanon, VA 24266
cperkins@cppdc.org
(276) 889 1178

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Section 3

Community Profile

Contents of this Section

3.1 Introduction

The Cumberland Plateau Planning District Commission was created to promote regional cooperation and coordinate regional activities and policies. Since 1968, the CPPDC has initiated and operated many programs designed to improve the quality of life for Southwest Virginians through job creation, technical assistance grantsmanship, management services, GIS services, public works, waste management, transportation planning, shell building construction, industrial park management and development financing. This profile is based largely on information directly from the Cumberland Plateau Planning District Commission's website at http://www.cppdc.org/index.htm.

3.2 Geography, Climate, and Population of Cumberland Plateau

3.2.1 Geography

The Cumberland Plateau Planning District Commission (CPPDC) encompasses four counties and twelve towns in the western part of Virginia:

Counties:

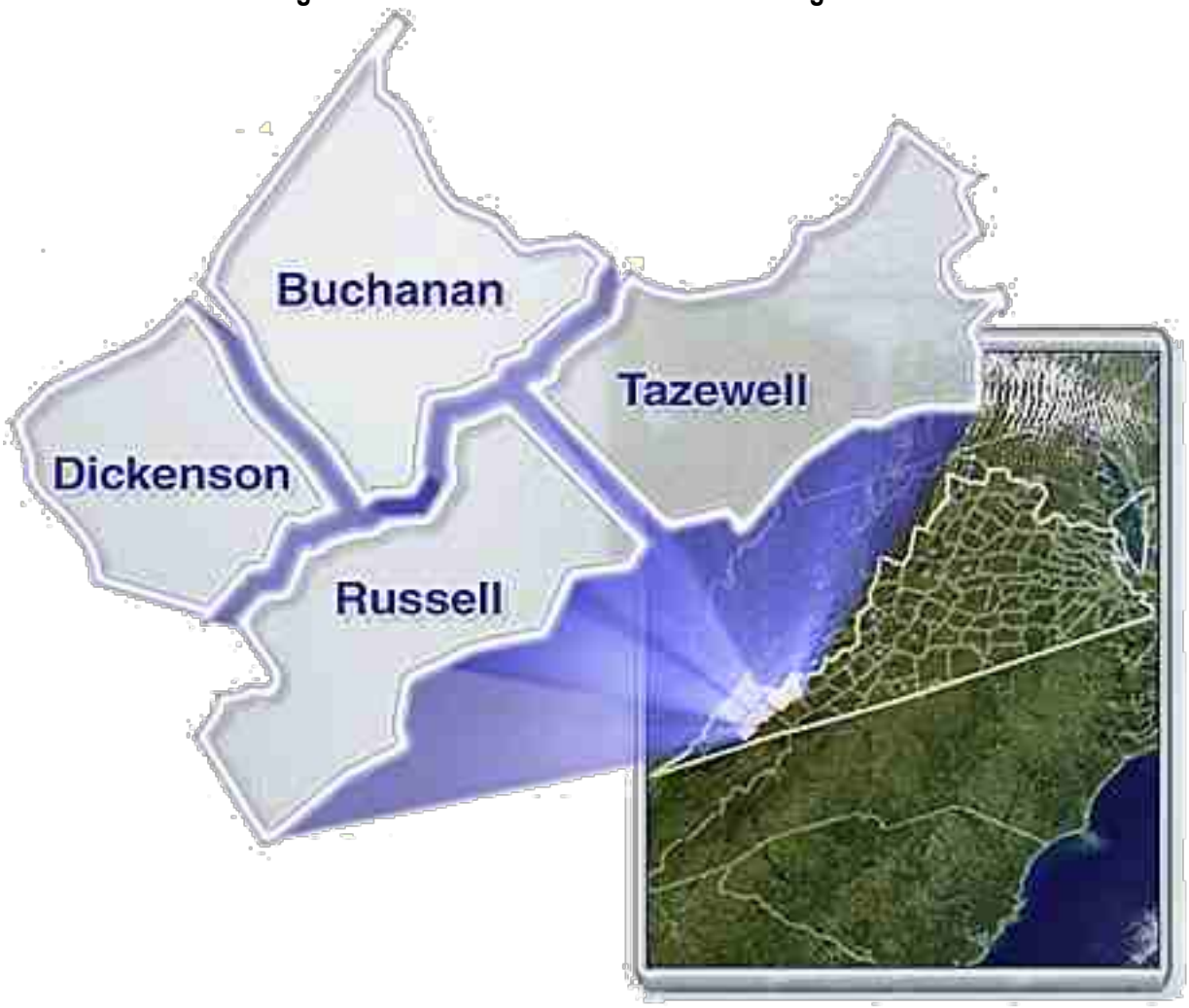
- Buchanan County
- Dickenson County
- Russell County
- Tazewell County

Towns:

- Town of Bluefield
- Town of Cedar Bluff
- Town of Cleveland
- Town of Clinchco
- Town of Clintwood
- Town of Grundy
- Town of Haysi
- Town of Honaker
- Town of Lebanon
- Town of Pocahontas
- Town of Richlands
- Town of Tazewell

The Cumberland Plateau Planning District is 67 miles long and 40 miles wide and covers approximately 1,848 square miles as shown in Figure 3-1. It borders West Virginia on the north and Kentucky on the northeast. Wise, Scott, Washington, Smyth and Bland Counties in Virginia form the boundaries on the west, south and east. The district bifurcated into two distinct regions, both lying in the Appalachian Highlands. The counties of Buchanan and Dickenson, along with the northern portions of Russell and Tazewell Counties, lie in the Cumberland Plateau which is, in turn, a part of the Appalachian Plateau. This area has a uniformly mountainous surface characterized by many small streams separated by sharply rising ridges, steep slopes, and narrow valleys. The remaining region of the district comprises the greater portion of Russell and Tazewell Counties, lies in the Valley and Ridge Province of the Appalachian Highlands. This belt, consisting of alternate valleys and ridges is bordered on the south by the Clinch Mountains and on the north by the Cumberland Plateau. Elevations vary from 845 feet above sea level to 4,705 feet above sea level where the Levisa Fork crosses into Kentucky to 4,705 feet atop Garden Mountain in the southeastern part of the District near the Bland County line.

Figure 3-1: The Cumberland Plateau Planning District



Source: Dickenson County Profile http://www.virginiaplaces.org/vacount/dickenco.html

Buchanan County

Buchanan County lies in the Appalachian Plateau Province of the Appalachian Highlands, southeast of the Appalachian Valley and northwest of the Cumberland and Allegheny Mountains. The county contains 508 square miles of land and is the 24th largest county of 95 in Virginia. The county has a rich history and tradition from the pioneer spirit of its earliest settlers to the rich legacy of timbering and mining and covers some of the richest coalfields in the United States. Buchanan County was named in honor of former U.S. President, James Buchanan; formed from the counties of Tazewell and Russell Counties in 1858.

The Buchanan County Public Service Authority plans and designs the county's sewer projects and is responsible for dealing with all water, sewer, solid waste and air pollution problems within the county. Sewage from the town of Grundy is treated at the Conaway treatment plant. Lack of water is a major problem for many residents in the outlying areas and remote sections of the county. Coal mining operations have damaged the supply of groundwater in Buchanan County and underground aquifers have been depleted in some areas,

with only a small amount of groundwater still available. Projects are currently underway to provide adequate water services for the county.

Town of Grundy

The Town of Grundy in Buchanan County, Virginia was founded in 1858. The small southwest town has a total of 5 (five) square miles and is in the coalfields of the Appalachian Mountains on the banks of the Levisa River. The Town of Grundy serves as the County seat of Buchanan County. The town's economy has been sustained by the Appalachian School of Law (ASL), and its largest industries include public administration, retail trade, and education services. The ASL has increased the demand for new construction and led to the opening of new businesses in the area.

Dickenson County

Dickenson County was formed in 1880 from Russell, Wise, and Buchanan Counties. The district was named for William J. Dickenson, a delegate to the general assembly, who played a major role in establishing the new county. This formation case resulted from the demands of the inhabitants that they be represented by a county government closer to the people. In 1880 Delegate Dickenson sponsored the bill in the House of Delegates to establish Dickenson as the one-hundredth county in Virginia. Dickenson County has since become known as "Virginia's Baby."

The rough mountainous terrain has greatly influenced the development of the Dickenson County area. The 331.7 square miles of land area includes rich coalfields, with only valley floors and ridge tops being suitable for development, however, areas along streambeds are not suitable for development due to constant flooding risks. The remaining portions of the county are too steep for development.

The chief mineral resources in Dickenson County are coal and natural gas. Coal mining operations have seriously damaged the county's supply of groundwater. Underground aquifers have been depleted and only a small amount of groundwater remains, however, the John Flannagan Reservoir provides much of Dickenson and Buchanan Counties with fresh surface water. Increases in natural gas demands are expected to continue to rise with Dickenson County as the second leading county in the state in the production of natural gas.

Town of Clinchco

The Town of Clinchco is in the northern area of Dickenson County, Virginia, near the western border of the commonwealth. The Town of Clinchco was founded in 1917 but started as an old coal mining town in the late 1800s. The town is in the valley of the McClure River and is accessible via Virginia State Routes 63 and 83, that pass through the town.

Town of Clintwood

Clintwood, VA is home to more than 1,500 people and covers 1.9 square miles. Founded in 1882 when the General Assembly opted to create a band new city on Holly Creek to serve as the County Seat of Dickenson County. The Town of Clintwood was named after Major Henry Clinton Wood of Scott County, Virginia, who was nicknamed "Clintwood".

Town of Haysi

The Town of Haysi is in Dickenson County was a laurel bed referred to “the Mouth of the McClure”. The area is surrounded by majestic cliff formations of the Appalachian Mountains and a riverside formed by the confluence of three major waterways of Dickenson County: the McClure River, the Russell Prater Creek and the Russell Fork Rivers. The Town of Haysi has a population of 529 (2021) covers 3.77 square miles, and has an elevation of 1270 ft.

Russell County

Russell County, Virginia was founded by Colonel William Russell in 1786 out of a section of Washington County. The first court met in May 1786 in the home of William Robinson in the Castle’s Woods settlement area. With a starting population of less than 4,000 people, Russell County has now expanded to be home to more than 28,000 people. According to the U.S. Census, Russell County covers 473.5 square miles of land and is the 31st county in Virginia by total area. Russell County is bordered by Buchanan, Dickenson, and Wise Counties to the north; Scott County to the West; Washington and Smyth County to the South; and Tazewell County to the East.

Much of the residential and commercial development occurs in the valley and ridge area south of the Clinch River, where the terrain and soil suitability have created an agricultural economy geared towards livestock and feed operations. The northern section of the county is chiefly oriented toward the coal industry, which is the most important mineral resource in Russel County. The control of drainage poses a serious problem to several areas in the County along the Clinch River.

Town of Cleveland

The Town of Cleveland is in Russell County, Virginia. Incorporated in 1946, Cleveland supports a diverse economic environment including coal mining, agriculture, power plant, railroads and the Clinch River Nature Preserve. The Gateway to the Clinch River runs through the town providing one of the world’s largest collections of rare and endangered freshwater species. The Nature Conservatory acquired a 438-acre area known as the Cleveland Natural Area Preserve to protect a globally rare plant community as well as significant habitat for endangered freshwater mussels.

The Town of Cleveland is especially susceptible to flooding from the Clinch River due to its low-lying position near the Clinch, and floods almost annually. A lack of flood control appears to deter growth in the area.

Town of Honaker

The Town of Honaker was purchased in 1797 by a settler named Martin Honaker who settled at the foot of the Big A Mountain and held several other county offices. Harvey Honaker, Martin’s grandson, was Justice of the Peace in New Garden (now called Lewis Creek).

Town of Lebanon

Located in the rolling hills of Clinch Mountain, covering 4.83 square miles, the Town of Lebanon serves as the county seat for Russell County in Southwest Virginia. Lebanon was established by the General Assembly as the Town of Lebanon on January 15, 1819. Farming and coal mining drove the economy in Lebanon until

1988 due to the downturn in the coal industry. Unemployment rates rose to 14% and many laid-off coal miners as well as high school and college graduates had to leave to find jobs.

Tazewell County

Tazewell County was formed in 1800 from portions of Russell and Wythe counties and is in the north central portion of southwest Virginia within the valley and ridge province of the Appalachian Mountains. The county is 20th largest county in Virginia at 520 square miles with highly rugged land, making infrastructure and structural development difficult. The geography of the county also restricts the provision of high-speed internet across the county, but broadband expansion projects have been progressing in partnership with Tazewell County Wireless Authority.

U.S. route 460 and 19 run through the center of Tazewell County, in addition to eleven state highways, linking the Town of Bluefield, Richlands, and Tazewell together. Tazewell County continues to improve its water and sewer services with plans underway to provide public sewer service and water to areas along the 19/460 corridor, which currently use private wells and septic systems.

Town of Bluefield

The Town of Bluefield lies in the Northeast corner of Tazewell County with a population of 5,079. Bluefield offers residents a sparse suburban feel and most residents own their homes. Many families, young professionals, and retirees make up the population of the town.

Town of Cedar Bluff

The Town of Cedar Bluff in Tazewell County covers a total of 2.3 square miles and was a 19th century mill town located on the banks of the Clinch River. Centered around the Old Kentucky Turnpike, a street looking much as it did when the Virginia Legislature chartered the thoroughfare in 1848, the nationally listed historic district extends from the restored old grist mill to the 1873 birthplace of Virginia Governor George C. Peery. Cedar Bluff is the home of the Clinch Valley Blanket Mill which housed the Goodwin weavers, in operation from 1890 through World War II. The Virginia Civil War Trails project includes a Cedar Bluff battle site, with two markers detailing the event. There are also several marked graves of Civil War Soldiers in the historic Jones Chapel Cemetery located in the West end of Cedar Bluff.

Town of Pocahontas

Pocahontas is a town in Tazewell County, Virginia, named for the Algonquian Indian woman Pocahontas. According to the U.S. 2021 Census, there is a population of 264 residents. The town is part of the Bluefield, WV-VA micropolitan area and was the start of the region's coal boom with a spur line that launched the Norfolk and Western Railroad (Norfolk Southern) into national prominence during the 1880s.

Town of Richlands

The Town of Richlands has a total of 5.7 square miles, and it situated along the Clinch River just east of the Tazewell-Russell County line. Richlands has access to several major interstates, which bring larger metropolitan markets within easy reach. The name Richlands originated from a land grant describing the land location as "in the rich lands on both sides of the Upper Fork of the Clinch River."

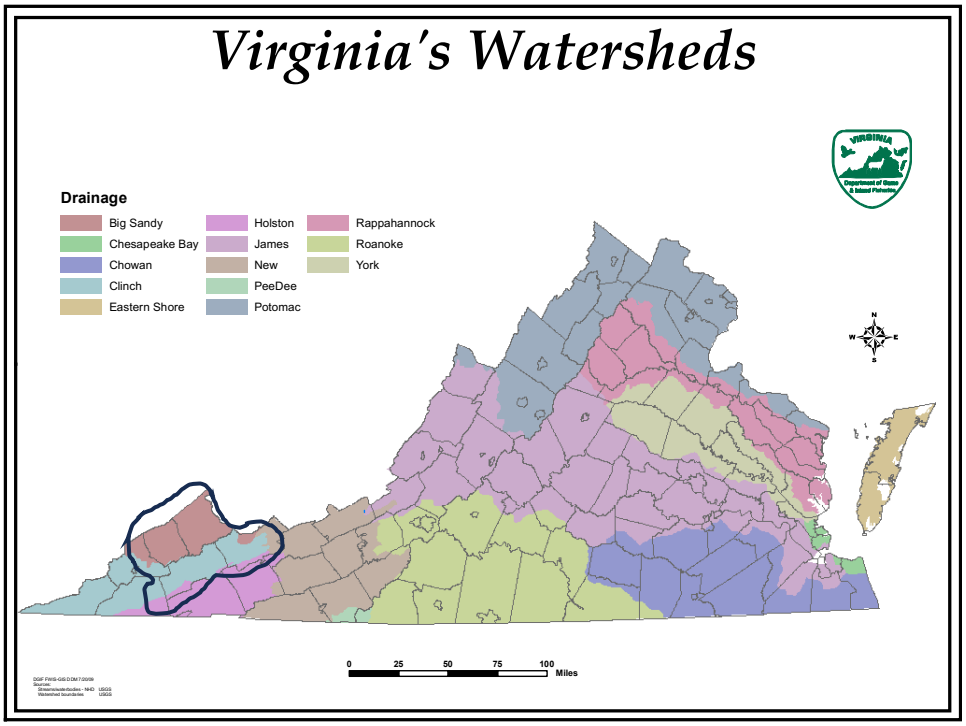
Town of Tazewell

The Town of Tazewell was established to serve as the county seat for Tazewell County in 1800. As one of the oldest communities in Southwestern Virginia, the Town of Tazewell is now home to more than 6,000 residents. Located at the headwaters of the Clinch River, the springs of Tazewell became part of the Tennessee, Ohio, and Mississippi Rivers.

3.2.2 Hydrology

The Cumberland Plateau Region lies within three major watersheds: the Clinch River Basin, the Levisa and Russell Forks of the Big Sandy River, and the Bluestone River Basin. Figure 3-2: Virginia's Watersheds, illustrates the significant watershed of Virginia, emphasizing the Cumberland Plateau Region in a bold black outline.

Figure 3-2: Virginia's Major Watersheds



Source: Virginia Department of Wildlife Resources https://dwr.virginia.gov/education/resources-for-teachers/virginia-watersheds/

The Clinch River Basin which flows through Russell and Tazewell Counties, the Levisa and Russell Forks of the Big Sandy River, which flow through Buchanan and Dickenson Counties, and the Bluestone River Basin, which flows through Tazewell County. Several smaller streams and tributaries are located within these watersheds. Watersheds in the Cumberland Plateau Planning District that have minimal impact and flooding information, and therefore, are not part of this study are the Tug Fork watershed, located in the northern portion; the Wolf Creek watershed located in the eastern portion; and the headwaters of the Holston River watershed, located in the southeastern portion of the Planning District.

3.2.3 Physiography

The Cumberland Plateau Planning District is part of the Appalachian Plateau which is known as the "Heart of Appalachia". The Appalachian Plateau is a large, flat-topped tableland characterized by rugged terrain that reaches from north-central Alabama through Tennessee, Kentucky, and Pennsylvania to the western New York border. Within Virginia, this region is thoroughly dissected by streams with a dendritic drainage pattern and rugged topography. Elevations range from 845 feet above sea level where the Levisa Fork crosses into Kentucky, to 4,705 feet atop Garden Mountain. The Appalachian Plateau lies to the northwest of the Valley and Ridge which contains part of the Cumberland Plateau Planning District area.

The most prominent physiographic features in the district are Clinch Mountain, Breaks of the Cumberland, Burkes Garden, Big A Mountain, and Pine Mountain. Comparatively smooth to moderately sloping uplands are found in places in the southern and southeastern portions of the district. The northern and northwestern portions of the district are areas that have been thoroughly dissected by streams, with the result that the land features consist of steep ridges and narrow valleys. There is practically no smooth upland or lowland in this area. The southern part of the district lies in the Clinch River Basin while the northern part lies in the Big Sandy River Basin. Numerous creeks and branches in all parts of the district afford a good drainage system for the upland areas. The only poorly drained areas are in the flat, low places near some of the streams.

3.2.4 Climate

The Cumberland Planning District is in the northeastern Appalachian region of the United States and enjoys a seasonal climate, with an average high temperature of 75.2 degrees Fahrenheit and an average low temperature of 35.9 degrees Fahrenheit. Virginia's climate results from global-scale weather patterns that are modified by the diverse landscape of the Commonwealth. The state's landscape provides local controls primarily in three ways. First, the Atlantic Ocean and its "river" of warm water, commonly called the Gulf Stream, play a dominant role in differentiating Virginia's precipitation climate. Winter storms generally move or "track" from west to east and, in the vicinity of the east coast, move northeastward paralleling the coast and the Gulf Stream. This shift to a northeast track result in part from the tendency of the storm to follow the boundary between the cold land and the warm Gulf Stream waters. These storms grow rapidly as they cross the coast; and as they move northeastward, moisture-laden air from the storm crosses Virginia from the east and northeast. The eastern slopes and foothills of the Blue Ridge Mountains are the prime recipients of this moisture. The great coastal storms of 1962, which are remembered primarily because of the high surf and storm surges along Virginia's coast, also produced record snowfalls along the northern section of the Blue Ridge Mountains.

The high relief of the Appalachian and Blue Ridge Mountain systems also helps to control Virginia's climate. The influence here originates with the well-developed rainfall pattern that is evident along the great mountains of the western margin of North America. Great quantities of rain fall on these western slopes as moist air from the Pacific Ocean flows eastward, rises, condenses, and precipitates. As the air flows down over the eastern slopes, however, little rain falls and a "rain shadow" pattern is the result. Along the Appalachian and Blue Ridge Mountains of western Virginia, this airflow is sometimes from the west and sometimes from the east. When the flow is from the west, the New River and Shenandoah River valleys are in the rain shadow of the Appalachian Mountains; when the airflow is from the east, they are in the shadow of the Blue Ridge Mountains. As a result, both the New River and the Shenandoah River valleys are the driest portions of the state. Regions of equally low rainfall are rare in the eastern United States (although common along the eastern margins of the great plains of the central United States).

The third important local control on climate is the state's complex pattern of rivers and streams, which drain the precipitation that falls and modify the pattern of moist airflow from which the precipitation falls. These river systems drain the Commonwealth's terrain in all four geographical directions. In far southwestern Virginia, the Clinch and Holston rivers drain south into North Carolina and Tennessee. The New River drains westward into the Ohio River, while the Shenandoah River drains northward into the Potomac. Finally, the Roanoke, James, York, and Rappahannock rivers drain eastward through the Piedmont and into the Tidewater area. The air that flows across Virginia flows either up these river valleys or over the crests of the mountains and down into the valleys. With a southerly flow of air, for example, moist air would move up the Holston River drainage, and rainfall would increase up valley with increasing elevation. However, this same southerly airflow would be downhill into the New River drainage, and on toward the Ohio River basin. This downward flow of air is not conducive to rainfall.

3.2.5 Population

Almost 100,000 people live in the Cumberland Plateau Planning District Region. The population is spread out over 1,830 square miles resulting in a 59.39 people per square mile density. Tazewell County's density (82.50 people per square mile) is quite a bit higher than the Planning District area average. According to the Census Bureau the population of the Cumberland Plateau Planning District has been declining since the 1980s after experiencing high rates of growths in the previous decade. This decline slowed between 1990 and 2000. Table 3-1 shows the Census 2020 population for the planning area, estimates of the 2022 population, and the growth rates since 1970.

Table 3-1: Population and Growth Rates for Cumberland Plateau

	CPPDC	Buchanan	Dickenson	Russell	Tazwell
2022 Estimates* (July 1, 2022					
Total	98,346	19,352	13,725	25,448	39,821
Census 2020 Population (April 1, 2020)					
Total	100,689	20,355	14,124	25,781	40,429
Census 2015 Population					
Total	108,681	22,776	15,115	27,891	42,899
Census 2010 Population					
Total	113,976	24,098	15,903	28,897	45,078
Change					
2016-2022*		-4.9%	-2.9%	-1.3%	-1.5%
2011-2015	-4.64%	-5.48%	-4.95%	-3.45%	-4.83%
2000-2010	-3.64%	-10.67%	-3.0%	-4.64%	-1.07%
1990-2000	-2.87%	-8.7%	-3.6%	3.5%	-2.6%
1980-1990	N/A	-17.4%	-10.9%	-9.6%	-8.9%
1970-1980	N/A	18.5%	23.2%	29.5%	26.9%

Source: 2022 U.S. Census Bureau Population Estimates

Table 3-2: Population Projections for the Cumberland Plateau Region, 2030–2050.

Jurisdiction	2030	2040	2050
Buchanan	16,374	12,870	9,558
Dickenson	12,168	10,870	9,734
Russell	22,340	19,781	17,517
Tazewell	35,267	32,693	30,609
CPPDC (total)	86,149	76214	67,418

Source: University of Virginia Weldon Cooper Center, Demographics Research Group (2022). Virginia Population Projections. Retrieved from https://www.coopercenter.org/virginia-population-projections

3.2.6 Race and Gender

According to the 2022 Census estimates, Cumberland Plateau's population by race is mainly white with 96% in the region. A breakdown of the population by race can be found in Table 3-3.

Table 3-3: Racial Demographics of the Cumberland Plateau Region.

Race	Buchanan	Dickenson	Russell	Tazewell	CPPDC (average)
White Alone (%)	94.10%	98.10%	97.30%	93.90%	95.85%
Black Alone (%)	4.50%	0.60%	1.10%	3.50%	2.43%
Hispanic or Latino (%)	1.10%	1.10%	1.50%	1.30%	1.25%
Asian Alone (%)	0.50%	0.20%	0.30%	0.90%	0.48%
American Indian and Alaskan Native (%)	0.20%	0.30%	0.30%	0.20%	0.25%
Two or More Races (%)	0.80%	0.80%	0.90%	1.50%	1.00%

Source: 2022 U.S. Census Bureau Population Estimates

According to the 2022 Census estimates, Cumberland Plateau's population is balanced between the genders with 51% of the population being male. A breakdown of the population by gender can be found in Table 3-4.

Table 3-4: Gender Statistics for the Cumberland Plateau Region.

Jurisdiction	Female (%)	Male (%)
Buchanan	48.00%	52.00%
Dickenson	48.30%	51.70%
Russell	50.80%	49.20%
Tazewell	49.80%	50.20%
CPPDC (Average)	49.23%	51.28%

Source: 2022 U.S. Census Bureau Population Estimates

3.2.7 Language

The 2022 Census American Community Survey data shows that language barrier issues may not be of concern for the Cumberland Plateau Planning District. Less than 2% of the population speaks a language other than English at home and less than one percent are foreign-born. See Table 3-5 Language Statistics for the Cumberland Plateau Region.

Table 3-5: Language Statistic for the Cumberland Plateau Region

Jurisdiction	Foreign born persons (%) 2018-2022	Language other than English spoken at home, percent of persons aged 5 years+, 2018-2022
Buchanan	0.8%	2.1%
Dickenson	0.3%	0.4%
Russell	0.6%	1.1%
Tazewell	0.9%	1.5%
CPPDC (average)	0.65%	1.28%

Source: 2022 U.S. Census Bureau Population Estimates

3.2.8 Age

Age can be used to identify certain groups of the population that have heightened risk to certain hazards. According to the 2022 Census Estimates, within the planning district, more than 4% of the population is under 5 years, 18% is under 18 years, 52% is between the ages of 18 and 65, and 24% is over 65 years old. In addition, about 27% of the population over the age of 5 years has a disability as defined by the 2010 U.S. Census.

Table 3-6: Age Statistics for the Cumberland Plateau Region

Jurisdiction	Persons under 5 years (%)	Persons under 18 years (%)	Persons between 18-65 years (%)	Persons 65 years and over (%)
Buchanan	4.1%	17%	54.4%	24.5%
Dickenson	4.3%	19.1%	52%	24.6%
Russell	4.6%	18.9%	52.7%	23.8%
Tazewell	4.7%	19.2%	52.4%	23.7%
CPPDC (average)	4.43%	18.55%	52.88%	24.15%

Source: 2022 U.S. Census Bureau Population Estimates

3.2.9 Education

Almost 82% of residents graduate from high school but less than 13% percent hold bachelor's degrees or higher. These numbers, coupled with the population characteristics described in the previous paragraph are important to keep in mind when developing public outreach programs. The content and delivery of public outreach programs should be consistent with the audiences' needs and ability to understand complex information.

Table 3-7: Education Statistics for the Cumberland Plateau Region

Jurisdiction	High school graduate or higher, percent of persons aged 25 years+, 2018-2022	Bachelor's degree or higher, percent of persons aged 25 years+, 2018-2022
Buchanan	74.2%	10.9%
Dickenson	81.4%	11.4%
Russell	82.9%	12.6%
Tazewell	86.4%	15.9
CPPDC (average)	81.23%	12.7%

Source: 2022 U.S. Census Bureau Population Estimates

3.2.10 Income

The average per capita household income of $42,582 is about 56% of the state per capita income of $68,211. About 21% of residents within the Cumberland Plateau planning area live below the poverty line. This rate is significantly higher than the national rate of 12.4% and the state rate of 10.60%. These numbers may indicate that a large portion of the population will not have the resources available to them to undertake mitigation projects that require self-funding.

Table3-8: Income Statistics for the Cumberland Plateau Region

Jurisdiction	Median household income (in 2022 dollars) 2018-2022	Per capita income in past 12 months (in 2022 dollars), 2018-2022	Persons in poverty, percent
Buchanan	$39,591	$24,126	26.9%
Dickenson	$40,143	$25,003	23.4%
Russell	$44,088	$25,939	18.4%
Tazewell	$46,508	$27,327	17.6%
CPPDC (average)	$42,582.50	$14,763.75	21.58%

Source: 2022 U.S. Census Bureau Population Estimates

3.2.11 Housing

There are over 53,025 housing units within the planning area. Approximately 5.0% are multi-family units. In Buchanan County, only 4.1% of the units are in multi-family dwellings while 7.2% of Tazewell County's units are in multi-family units. Over 77.4% of residents own their own homes, significantly higher than the national average of 66.6.% or the state average of 68.9%. The housing characteristics are broken down by jurisdiction in Table 3-9.

According to the 2010 American Community Survey collected for the United States Census Bureau, almost 70% of the Planning District area's population lived in the same home between 1995 and 2010. This indicates that residents tend not to be residentially mobile and may be more familiar with their surroundings and the associated natural hazards.

Table 3-9: Housing Statistics for the Cumberland Plateau Region

Jurisdiction	Housing units, July 1, 2022	Owner-occupied housing unit rate 2018-2022 (%)	Median value of owner-occupied housing units (2018-2022)
Buchanan	10,330	81.6%	$84,900
Dickenson	7,348	77.2%	$89,200
Russell	12,767	74.8%	$112,000
Tazewell	19,772	72.6%	$112,200
CPPDC	50,217	76.55%	$99,575

Source: 2022 U.S. Census Bureau Population Estimates

3.2.12 Business and Labor

Historically, the area's unemployment rates remain higher than U.S. rates and Virginia average rates (Table 3-10: Cumberland Plateau Regional Unemployment Rate). It is worth noting that the United States and the Commonwealth of Virginia declared a State of Emergency (SOE) for the COVID-19 pandemic which contributed to the sudden unemployment increase in 2020. The low labor force participation rates in the district indicate a disproportionately large number of people in the working age population are neither employed nor actively seeking employment.

Table 3-10: Cumberland Plateau Regional Unemployment Rate

Year	CPPDC	Virginia	United States
2012	8.7%	5.9%	8.1%
2013	9.1%	5.6%	7.4%
2014	8.6%	5.1%	6.2%
2015	8.0%	4.4%	5.3%
2016	7.9%	4.0%	4.9%
2017	5.8%	3.7%	4.4%
2018	4.7%	3.0%	3.9%
2019	4.5%	2.8%	3.7%
2020	8.0%	6.4%	8.1%
2021	5.2%	3.9%	5.3%
2022	4.0%	2.8%	3.6%
2023	4.0%	2.9%	3.6%

Source: Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics.

Table 3-10.1: Cumberland Plateau Region Unemployment Rates Past 12 Months

Month and Year	CPPDC	Virginia	United States
Jun. 2023	4.1%	2.9%	3.8%
Jul. 2023	4.1%	2.9%	3.8%
Aug. 2023	4.3%	3.2%	3.9%
Sep. 2023	4.1%	3.0%	3.6%
Oct. 2023	4.0%	3.0%	3.6%
Nov. 2023	3.8%	2.9%	3.5%
Dec. 2023	3.7%	2.7%	3.5%
Jan. 2024	4.0%	2.7%	4.1%
Feb. 2024	4.2%	2.9%	4.2%
Mar. 2024	3.4%	2.4%	3.9%
Apr. 2024	3.2%	2.3%	3.5%
May 2024	3.7%	2.6%	3.7%

Source: Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics.

The economy of the Cumberland Plateau Planning District is in transition from coal mining and timber operations to manufacturing, tourism, and telecommunications. The recruitment of manufacturing and telecommunications firms has been enhanced by the technical assistance the Planning District provides to member counties and towns. This transition is reflected in the top nine employment sectors summarized in Table 3-11: Top Nine Employment Sectors in the Cumberland Plateau Region.

Table 3-11: Top Nine (9) Employment Sectors in the Cumberland Plateau Region

Industry	Employment
Government Total	7,288
Local Government	5,490
Retail Trade	4,419
Health Care and Social Assistance	3,825
Mining, Quarrying, and Oil and Gas Extraction	2,716
Accommodation and Food Services	1,998
Manufacturing	1,840
State Government	1,589
Construction	1,421

Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW).

According to the profiles developed by the Virginia Economic Development partnership, major employers in the Cumberland Plateau Region are listed by county below.

Buchanan County

- Buchanan Minerals LLC
- Buchanan County School Board
- Keen Mountain Correctional Institute
- Rapoca Energy Company
- County of Buchanan

Dickenson County
- Paramont Coal Company
- Dickenson County School Board
- Food City
- County of Dickenson
- Heritage Hall

Russell County
- Russell County School Board
- Samuel Son Co USA Inc
- Walmart
- County of Russell
- CGI Federal Inc

Tazewell County
- Tazewell County School Board
- Walmart
- Clinch Valley Community Hospital
- Cumberland Mountain Community Services
- Southwest Virginia Community College

3.2.13 Agriculture

Agriculture and coal are the primary bases for of the regional Cumberland Plateau economy, however efforts have been in place since 1968 to diversify the economy. New efforts in agriculture development and agritourism present significant opportunities to reinvigorate farming, particularly in livestock. Young farmers are encouraged to start new enterprises due to the demand for local, hormone-free and grass-finished beef, sheep and goats. Total agricultural sales exceed $97 million annually, with most of the revenue from the sales of crops, including those from nurseries, greenhouses, and vineyards. Major crops in the region include corn, hay, and tobacco. According to the Virginia Employment Commission Economic Information and Analytics report, employment related to agriculture, farming, fishing and hunting declined 6.98% between 2014 and 2024. Table 3-12: Cumberland Plateau Regional Agriculture summarizes agriculture in the Cumberland Plateau Region based on 2017 U.S. Census of Agriculture statistics.

Table 3-12: Cumberland Plateau Regional Agriculture

Jurisdiction	Land in Farms (acres)	Total Value of Agriculture Products Sold	Total Value of Crops, including nursery and greenhouse crops	Total value of livestock, poultry, and their products
Buchanan	11,043	$434,000	$238,000	$196,000
Dickenson	11,169	$560,000	$99,000	$461,000
Russell	170,285	$23,204,000	$2,635,000	$20,569,000
Tazewell	137,943	$24,636,000	$2,105,000	$22,531,000
CPPDC	170,440	$48,843,000	$5,077,000	$43,757,000

Source: 2017 U.S. Census of Agriculture * USCA report withheld figures to avoid disclosing data for individual farms. **Totals unavailable secondary to (D) figures.

3.2.14 Transportation

The Cumberland Plateau District is served by three major U.S. highways (U.S. 19, U.S. 460, and U.S. 58), nine primary state highways, and numerous state secondary roads. No interstate highways pass directly through the Planning District, though I-81 is easily accessible via U.S. 19 and U.S. 16. Interstate 81 runs close to the southern county borders or Russell and Tazewell Counties and links the district to the metropolitan areas of Knoxville, Tennessee and Roanoke, Virginia.

The coal mines in the region are served by railroad lines operated by CSX Transportation and Norfolk Southern. These rail lines are used primarily to transport coal to power plants in the Southeast and to shipping nodes in Norfolk, Virginia.

The planning district is served by four commercial airports: Tri-Cities Airport (Tennessee), Roanoke Regional Airport, and Mercer County Airport. In addition, a general aviation facility is located near Richlands.

3.2.15 Infrastructure

Electricity

Electricity in Buchanan and Tazewell Counties is provided by the Appalachian Power Company. Dickenson and Russell Counties are serviced by both the Appalachian Power Company and Old Dominion Power Company.

The entire Cumberland Plateau District is served by the Appalachian Power Company which is headquartered in Charleston, West Virginia.

Heating and Gas

Bluefield Virginia Gas serves the Town of Bluefield in Tazewell County, Virginia. The Appalachian Natural Gas Company serves all other towns and counties in the Cumberland Plateau Region.

Telephone

A regional 4G wireless project in cooperation with Verizon Wireless, initiated in 2012, was completed in the Fall of 2016, making Southwest Virginia one of the few rural areas in the nation with 4G coverage. In the early 2000s, the PDC joined with LENOWISCO PDC to initiate a regional fiber optic broadband deployment project with the financial support of EDA and the Virginia Tobacco Commission. This project provides state-of-the-art broadband services to thousands of businesses, industries, institutions, and governments in the region in partnership with SunsetFiber and Scott County Telephone Cooperative.

Public Water and Wastewater

The Planning District has worked with its Counties, Towns, and Public Service Authorities to create and extend public water systems to now serve over 90% of households in the District. Public water systems serve residents and businesses within the towns of Bluefield, Cedar Bluff, Cleveland, Clintwood, Honaker, Lebanon, Richlands, and Tazewell. Wastewater treatment is available in the towns of Bluefield, Cleveland, Honaker, and Richlands. Bluefield Sanitary Board, Dickenson County Public Service Authority, Honaker Wastewater Treatment, Lebanon Utilities, Richlands Regional Wastewater Treatment Facility, and Tazewell Regional Wastewater Treatment Plant provide wastewater services. The Town of Bluefield has a water treatment plant that sources raw water from Bluestone River, Dill Spring, and three new wells and feeds water to the Town of Pocahontas. The water treatment facility in Richlands serves the Town of Cedar Bluff

and Tazewell County. Private wells and on-site sewage systems serve the remainder of the Cumberland Plateau Planning District.

Television

Cable television is available through Point Broadband, Shentel cable company, Spectrum, and Verizon Fios. The availability of company services is dependent on location.

Internet

Internet access is very limited in the region due to the vast mountainous, forestry area. For those areas that get internet, Point Broadband is the main service provider for the Cumberland Plateau district. Point Broadband is actively expanding residential broadband service in the Planning District. Recent Virginia Telecommunication Initiative (VATI) awards totaling more than $53 million to the Planning District will result in universal broadband coverage within the counties of Buchanan, Dickenson, Russell and Tazewell by the end of 2024. These efforts will impact homes and businesses that are currently unserved or underserved by high- speed internet.

3.2.16 Natural Resources

Coal remains the most abundant resource. Based on the Static Reserve Index (Reserves current annual production) the reserves would be depleted in 36 years. According to the Virginia Center for Coal and Energy Research there are less than 2,160 million tons, which would be mined out in less than 45 years. The Virginia Division of Mineral Resources gives a range of recoverable reserves of 1,995 to 4,393 million tons, which would last 44 to 98 years. Whether the coal resources will be depleted in 36 or 98 years, coal mining will remain a major economic activity for the foreseeable future. Additionally, a major portion of the known gas fields in Virginia are in the Cumberland Plateau Planning District and most of the area is either covered by or suitable for hardwood forest growth.

3.3 Disadvantaged Communities

It is essential to determine if any jurisdiction within the region would qualify as a Disadvantaged Community, formerly known as a special consideration community. Disadvantaged Communities are often eligible for grants for hazard mitigation and other community improvements on a preferential basis or with less stringent requirements for the non-federal, local share of grants. The Federal government defines a Disadvantaged Community as one with 3,000 or fewer individuals in a rural community and not within the corporate boundaries of a larger jurisdiction. In addition, to be categorized as a Disadvantaged Community, a jurisdiction must be economically disadvantaged, with residents having an average per capita annual income not exceeding 80% of the national per capita income based on the best available data. Further, Disadvantaged Communities must have a local unemployment rate that exceeds–by one percentage point or more–the most recently reported average national unemployment rate.

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Section 4

Adoption and Approval

Contents of this Section

4.1 44 CFR Requirement for Adoption and Approval

Requirement §201.6(c)(5): The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, if each jurisdiction has participated in the process … Statewide plans will not be accepted as multi-jurisdictional plans.

4.2 Authority

Article VII. The Constitution of Virginia – Article VII. Local Government gives authority to and defines the organization of communities, powers, duties, structure of governing bodies, procedures, and property use. Local governments in Virginia, including those in the Cumberland Plateau Region, have a wide range of tools for implementing mitigation programs, policies, and actions. A hazard mitigation program can use any or all the four broad types of government powers granted by the Commonwealth of Virginia, which are (a) regulation, (b) acquisition, (c) taxation, and (d) spending. The scope of this local authority is subject to constraints. However, all of Virginia's political subdivisions must not act without proper delegation from the Commonwealth. Therefore, all power is vested in the Commonwealth and can only be exercised by local governments to the extent it is delegated (per Dillon's Rule).

Under the 1968 Virginia Area Development Act and modified by the Regional Cooperation Act, 21 Planning District Commissions were formed within the Commonwealth. Beginning in 2003, the Commonwealth of Virginia encouraged these twenty-one planning districts to lead the development of local hazard mitigation plans. These plans, which are required by the Disaster Mitigation Act of 2000 (DMA 2000), help local governments determine risks and vulnerabilities and identify projects to reduce these risks.

4.2.1 Planning

According to State statutes, local governments in Virginia may create or designate a planning agency. The planning agency may perform several duties, including:

- Make studies of the area.
- Determine objectives.

- Prepare and adopt plans for achieving those objectives.
- Develop and recommend policies, ordinances, and administrative means to implement plans.
- Perform other related duties.

The requirement illustrates the importance of the planning powers of local governments that zoning regulations be made per a comprehensive plan. While the ordinance itself may provide evidence that zoning is being conducted "per a plan," a separate planning document ensures that the government is developing regulations and ordinances that are consistent with the community's overall goals.

Each county in the Cumberland Plateau Planning District have dedicated planning staff, zoning regulations, and comprehensive plans. Town managers, with county assistance, perform planning and floodplain management functions. In addition, the towns in the study area all have planning commissions that meet regularly, receiving support as necessary from county planning departments.

4.3 Adoption and Approval Procedure

Upon the Federal Emergency Management Agency (FEMA) Region III determination that the Cumberland Plateau Regional Hazard Mitigation Plan (the Plan) was “approvable pending adoption,” the Cumberland Plateau Planning District Commission, Steering Committee, and Working Group will meet and recommended that the participating jurisdictions should adopt the Plan. Accordingly, the Plan will be submitted to the appropriate entity for each participating jurisdiction for review and adoption. The resulting Adoption Resolutions will then be forwarded to FEMA Region III for approval and the appropriate documentation will be added to the Plan appendices: G: Adoption Resolutions and H: Approval Letters. FEMA will subsequently issue formal approval letters to the Virginia Department of Emergency Management (VDEM) for each participating jurisdiction that adopted the Plan. VDEM, in turn, will give approval letters to the approved jurisdictions.

4.4 Adoption Resolution

Appendix G contains the signed Adoption Resolutions for the participating jurisdictions.

4.5 Approval Letters

Appendix H contains the formal Approval Letters from FEMA Region III for the participating jurisdictions.

Section 5

Planning Process

Contents of this Section

5.1 44 CFR Requirements for the Planning Process

Requirement §201.6(c) (1): *[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Requirement §201.6(b): *An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval
(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process; and
(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

5.2 Description of the Planning Process

5.2.1 How the Plan was Prepared (Overview)

The Cumberland Plateau Planning District Hazard Mitigation Plan (the Plan) was updated in accordance with the process established in the State and Local Mitigation Planning How-to Guides (FEMA Publication Series 386) produced by the Federal Emergency Management Agency (FEMA), and the requirements of 44 CFR part 201.6. The process established in the FEMA 386 guides includes four basic steps.

- Step 1: Organize resources

- Step 2: Assess risks
- Step 3: Update the 2018 mitigation plan
- Step 4: Implement the plan and monitor progress

5.2.2 Step 1: Organize Resources

The Cumberland Plateau Planning District Commission (CPPDC) was the lead agency to update the 2018 Cumberland Plateau Planning District Commission Hazard Mitigation Plan Update. At the beginning of the process, a consultant firm, The Olson Group, LTD (OGL), was hired to provide technical support to the CPPDC and participating jurisdictions. In addition, several individuals and organizations worked together to update the Plan. These participants were organized into two different committees, the:

- Cumberland Plateau Planning District Committee Hazard Mitigation Steering Committee
- Cumberland Plateau Planning District Committee Hazard Mitigation Working Group

The Cumberland Plateau Planning District Hazard Mitigation Steering Committee (HMSC) was comprised principally of Planning District Commission personnel, selected county agency representatives, elected local representatives, and private concerned parties. This committee was formed to provide focus and leadership on behalf of all participating jurisdictions in the update of this Plan. HMSC meetings were regularly attended by other key county agency staff, including representatives from departments of planning, public works, and additional emergency management staff, in addition to Virginia Department of Emergency Management (VDEM) staff. The HMSC met at scheduled meetings as recorded, during the update process to receive progress reports from the consultant, review, and comment upon draft documents and procedures, implement relevant tasking, and coordinate efforts within their communities or organizations.

The Cumberland Plateau Planning District Committee Hazard Mitigation Working Group (HMWG) comprises the county and local jurisdiction representatives in the Cumberland Plateau Planning District. The majority of the HMWG membership has regular interaction with the CPPDC. In addition, the HMWG comprises representatives from each participating jurisdiction's OEM, other governmental representatives, related agencies within the counties, and public entities that wish to participate in the update effort. The duties and responsibilities of the HMWG consisted of representing their communities' interests, serving as the point of contact between their communities and the HMSC, and completing necessary planning tasks, including data collection, identification of local mitigation actions, and reviewing the plan products of the HMSC.

With input and consensus from the HMWG, the HMSC identified the 13 most significant countywide hazards for a risk assessment to be completed. Table 5-1: Cumberland Plateau Planning District Committee Hazard Mitigation Steering Committee shows the primary membership of the HMSC.

Table 5-1: Cumberland Plateau Planning District Committee Hazard Mitigation Steering Committee (HMSC) Members

Name	Organization
Scotty Wampler	Cumberland Plateau PDC
Charlie Perkins	Cumberland Plateau PDC
Angela Beavers	Cumberland Plateau PDC

Table 5-2: Cumberland Plateau Planning District Committee Hazard Mitigation Working Group (HMWG) Members lists the membership of the Cumberland Plateau Planning District Committee HMWG.

Table 5-2: Cumberland Plateau Planning District Committee Hazard Mitigation Working Group (HMWG) Members

Name	Organization
Cumberland Plateau Planning District Commission	Charlie Perkins – CPPDC Planner Angela Beavers – Transportation/GIS & I.T. Coordinator
Buchanan County	Bart Chambers – Emergency Manager, Building Official Allen Boyd – County Sheriff
Town of Grundy	Dennis Ramey – Town Manager Seth McGlothlin – Chief of Police
Dickenson County	Richard Thacker – Emergency Manager
Town of Clinchco	Jelane Mock – Town Mayor Katrina Deel – Town Clerk
Town of Clintwood	Danny Lambert - Mayor
Town of Haysi	Larry Yates – Town Mayor Bobby Edwards – Director of Operations, Police Chief Richard Thacker – Emergency Manager
Russell County	Jess Powers – Emergency Manager
Town of Cleveland	Linda Couch – Mayor Thoman Vance – Director of Maintenance
Town of Honaker	Jodi Eaton – Town Mayor Valerie Sykes – Town Clerk
Town of Lebanon	Drew Shortt – Town Manager
Tazwell County	Barry Brooks – Emergency Manager
Town of Bluefield	Andrew Hanson – Town Manager Shane gunter – Chief of Police Donnie Linkous – Town Mayor Nathaniel Mitchem – Zoning & Floodplain Manager
Town of Cedar Bluff	John Absher – Town Manager Robert Mosolgo – Town Public Works Administrator
Town of Pocahontas	Benjamin Gibson – Town Mayor/Manager Daren Jason – Police Chief
Town of Richlands	Jason May – Town Manager Rod Cury – Town Mayor
Town of Tazwell	Michael Hoops – Town Mayor Leanne Regon – Town Manager

Meeting Schedule

There were several meetings conducted during the update of the Plan per Table 5-3: Committee Meeting Schedule. The meetings focused primarily on the review of work-in-progress for the update of the Plan. However, in some cases, the meetings were essentially working sessions for the current needs of the update such as verification of hazard priorities, processes validation and draft documents review.

Table 5-3: Committee Meeting Schedule

Date	Meeting	Attendees
Dec 19, 2023	Initial Planning Meeting	CPPDC POC, OGL
January 17, 2024	Administrative Kickoff Meeting	CPPDC, FEMA, VDEM, OGL
March 28, 2024	HM Working Group/Public Meeting	HMWG, OGL, Public
June 25, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Town of Honaker Town of Bluefield Town of Haysi Town of Clintwood Town of Cleveland
June 26, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Town of Richlands
June 27, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Buchanan County Town of Tazwell
June 28, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Dickerson County Town of Cedar Bluff
July 1, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Buchanan County Town of Clinchco Town of Pocahontas
July 2, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Tazwell County Town of Grundy
July 11, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Town of Lebanon
July 16, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	Russell County
July 24, 2024	Jurisdictional Interview (Capabilities & Mitigation Actions)	CPPDC
August 13, 2024	HM Working Group Meeting & Public Input Meeting	HMWG, OGL, Public
September 12, 2024	HM Working Group Meeting & Public Input Meeting	HMWG, OGL, Public

Appendix C.1 contains documentation for these meetings including agendas, attendance rosters, presentation materials, and meeting notes where appropriate.

5.2.3 Step 2: Assess Risks

Under general mitigation planning practices and the process FEMA established in FEMA Local Mitigation Planning Handbook and FEMA Local Mitigation Planning Policy Guide, the risk assessment forms the basis for this Plan by quantifying and rationalizing information about how natural and human-caused hazards affect the Cumberland Plateau Region and its participating jurisdictions.

The processes used to complete the hazard identification and risk assessment update, and the results of these activities are described in Section 6, Appendices E and F. The assessment determined several aspects of the risks of hazards faced by the region and the participating jurisdictions:

- The natural hazards that are most likely to affect the region
- How often hazards are expected to impact the region
- The expected severity of the hazards
- Which areas of the region are likely to be affected by hazards
- How the regions assets, operations, people, and infrastructure may be impacted by hazards
- How private and commercial assets, operations, infrastructure may be impacted by hazards
- The expected future losses if the risk is not mitigated

The HMSC first verified the already identified hazards and added three additional to be assessed, with the potential to impact the region. Next, using a rating system called the Calculated Priority Risk Index (CPRI), explained in Section 6, the HMSC reassessed the region-wide hazards considered the most relevant for this planning process. The results of this selection process were discussed and validated by the HMSC. These hazards are described in the Plan's Hazard Identification, Profiling, and Ranking portion (Section 6).

As a result, the HMSC and HMWG were able to make qualitative determinations that allowed further refinement of the focus of this plan update to thirteen hazards: riverine flooding, severe winds (thunderstorm winds), severe winter storms, tornadoes, hailstorms, extreme temperatures (heat and cold), wildfires, earthquakes, dam/levee failures, abandoned mine fires or flooding, droughts, landslides, and algae blooms. The HMSC considers these to represent the most predominant risks to the region. The results of this secondary selection process were also discussed and validated by the HMWG.

For each of these hazards, the consultants performed detailed risk assessments, i.e., calculations of future expected damages, expressed in dollars where appropriate. The risk assessment results were also made available to the public during the public presentations (The entire process and results of this work are presented in the Risk Assessment portion of this Plan (Section 6).

5.2.4 Step 3: Update the Mitigation Plan

The Plan has a developed series of goals and objectives directly linked to updated risk assessment results. An updated capability assessment was also conducted to help determine the capacity of the region and the participating jurisdictions to implement hazard mitigation projects. In addition, the HMSC and the consultant worked individually with the participating jurisdictions to identify potential problems and mitigation solutions to be included in the updated Mitigation Action Plan. The Mitigation Action Plan was reviewed and validated by the HMSC and HMWG. The results of these efforts are detailed in Sections 8.

5.2.5 Step 4: Implement the Plan and Monitor Progress

Finally, the HMSC identified a process for on-going monitoring and revisions to the Plan over the next five years. Section 9 details the resulting monitoring, evaluation, and plan update procedures. This step was also reviewed and validated by the HMWG.

5.3 Involvement by the Public and Other Interested Parties

During the update of this Plan, the public was involved by requesting their participation in public presentations/meetings, providing drafts of the Plan for review, and inviting comments on the contents of the Plan. For each meeting, the public and interested parties were notified of the meetings via public notice in area newspapers, notice on the CPPDC website, and emails to interested groups. It is to be noted that no public comments were submitted to any HMWG representative for presentation and that no public participants attended either of the Public Input meetings that were advertised and occurred. The public outreach, meeting attendance lists, public presentations and meetings are detailed in Table 5-4: Public Involvement. In addition, continued outreach by the CPPDC and jurisdictional staff, including public education and work with stakeholders and other interested parties between now and the next five-year Plan update, will be included as part of the Mitigation Action Plan in Section 8.

Table 5-4: Public Involvement

Date	Type of Involvement	Meeting Location
January 17, 2024	Website with hazard mitigation and Plan development information posted	Website
March 28, 2024	Public meeting with presentation and open discussion	PDC Offices and virtual
August 13, 2024	Public meeting with presentation and open discussion	PDC Offices and virtual
September 12, 2024	Public meeting with presentation and open discussion	PDC Offices and virtual
Sept 16 to Oct 4, 2024	Draft posted online for public review and comment	Website
TBD	Draft made available to, *LENOWISCO PDC and Mount Rogers PDC Virginia, Pike County Kentucky, McDowell, Mercer, and Mingo Counties West Virginia*	Website
TBD	Final Draft Plan distributed to surrounding communities and agencies for viewing	

As part of the development of the Plan, Floodplain Administrators were engaged in Plan update and review in many jurisdictions. Involvement of Floodplain Administrators in the Cumberland Plateau Planning District is shown in Table 5-5: Cumberland Plateau Planning District Committee Floodplain Administrator Involvement. Additional outreach to Floodplain Administrators should result in enhanced participation in the next Plan update.

Table 5-5: Cumberland Plateau Planning District Committee Floodplain Administrator Involvement

Jurisdiction	Floodplain Administrator Name	Method of Involvement in Plan
Buchanan County	Bart Chambers (County)	Meeting participation, document review/revisions
Town of Grundy	Bart Chambers	Meeting participation, document review/revisions
Dickenson County	Chris Rakes (County	Meeting participation, document review/revisions
Town of Clinchco	Chris Rakes	Meeting participation, document review/revisions
Town of Clintwood	Chris Rakes	Meeting participation, document review/revisions
Town of Haysi	Chris Rakes	Meeting participation, document review/revisions
Russell County	Jess Powers (County)	Meeting participation, document review/revisions
Town of Cleveland	Jess Powers	Meeting participation, document review/revisions
Town of Honaker	Jess Powers	Meeting participation, document review/revisions
Town of Lebanon	Jess Powers	Meeting participation, document review/revisions
Tazwell County	Ken Dunford	Meeting participation, document review/revisions
Town of Bluefield	Nathaniel Mitchem	Meeting participation, document review/revisions
Town of Cedar Bluff	Ken Dunford	Meeting participation, document review/revisions
Town of Pocahontas	Ken Dunford	Meeting participation, document review/revisions
Town of Richlands	Ken Dunford	Meeting participation, document review/revisions
Town of Tazwell	Ken Dunford	Meeting participation, document review/revisions

Copies of the plan were made available to the Cumberland Plateau Region's neighbors, LENOWISCO PDC, the Mount Rogers PDC, Pike County Kentucky, McDowell, Mercer, and Mingo Counties West Virginia for their review and input.

Minutes of meetings with associated attendee lists, and copies of relevant correspondence are included in Appendix C.

Beyond this, email, and phone solicitations for involvement by potential stakeholders and interested parties, including non-profits, area utilities, school boards, significant employers, and others, were conducted during Plan development and reviews.

Relevant correspondence is contained in Appendix C3. Response to this outreach was sparse, but outreach by the CPPDC, including public education and work with stakeholders and other interested parties between now and the next five-year Plan update, should improve such involvement during the Plan update.

5.4 Review and Incorporation of Plans, Studies, Reports, and Other Information

The Cumberland Plateau Planning District Hazard Mitigation Plan 2024 Update incorporates information from multiple other plans, studies, and reports. Information about how these plans and studies were incorporated into the plan update is found in Sections 6, 7, and 8. These sections are where relevant and specific data sources are provided. Complete reference information is provided in Appendix B: Sources. The progress of plan implementation, including the monitoring schedule, evaluation of progress, success, lessons learned, and updates, are included in Section 7: Capability Assessment and Section 9: Plan Monitoring and Maintenance.

Section 6

Hazard Identification and Risk Assessment

Contents of this Section

6.1 44 CFR Requirement for Hazard Identification and Profiling

Requirement §201.6(c)(2)(i): The risk assessment shall include a description of the location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

6.2 Hazard Identification for Cumberland Plateau PDC Region

The Hazard Identification and Risk Assessment (HIRA) serves as a guide to all communities in the Cumberland Plateau planning area when assessing potential vulnerabilities to natural hazards. When developing this plan, every effort was made to gather input from all aspects of the project area communities to assure that the results of this analysis will be as accurate as possible.

The planning area for this study includes Buchanan County, Dickenson County, Russell County, and Tazewell County. All jurisdictions located throughout these counties also have been included in this portion of the study, as this analysis has been completed on a regional basis.

The purpose of this HIRA is to:

1. Identify all the natural hazards that could affect the Cumberland Plateau planning area.
2. Assess the extent to which the area is vulnerable to the effects of these hazards; and
3. Prioritize the potential risks to the community.

The first step, identifying hazards, will assess and rank all the potential natural hazards, in terms of probability of occurrence and potential impacts. It will also identify those hazards with the highest likelihood of significantly impacting the community. This section will be completed based on a detailed review of the Cumberland Plateau planning area's hazard history. The hazards determined to be of the highest risk will be analyzed further to determine the magnitude of potential events, and to characterize the location, type, and extent of potential impacts. This will include an assessment of what types of development are at risk, including critical facilities and community infrastructure.

While there are many different natural hazards that could potentially affect the communities within the Cumberland Plateau Planning District, some hazards are more likely to cause significant impacts and damages than others. Although reducing the community's vulnerabilities to all hazards is ideal, the highest level of consideration must be given to those hazards which pose the greatest possible risk. This analysis will attempt to quantify these potential impacts for all possible hazard events and identify those which could most significantly impact the communities involved. Once these hazards have been identified, further analysis will be conducted to profile potential hazard events and to assess vulnerability to such events.

6.2.1 Types of Hazards

While nearly all disasters are possible for any given area in the United States, the most likely hazards (based on local official knowledge and professional judgement) that could potentially affect the communities in the Cumberland Plateau Planning District generally include:

- Flooding
- Severe Winds
- Severe Winter Storms
- Tornadoes
- Hailstorms
- Extreme Temperatures – Heat/Cold
- Wildfires
- Earthquakes
- Dam/Levee Failures
- Droughts
- Landslides
- Abandoned Mine Fires/ Flooding (Buchanan)
- Algae Blooms (Dickenson)

Depending on the severity, location, and timing of the specific events, each of these hazards could have devastating effects on homes, business, agricultural lands, infrastructure and ultimately citizens.

To gain a full understanding of the hazards, an extensive search of historic hazard data was completed. This data collection effort utilized meetings with local community officials, existing reports and studies, state and national data sets, and other sources. A comprehensive list of sources utilized for this plan can be found at the conclusion of this document.

Unfortunately, extensive local historical data is not currently available for many of the potential hazards. In some cases, the precise number of events that have affected the Planning District and the subsequent level of impact to the local communities are not known. In these cases, state and regional hazard information was collected and referenced whenever possible. Table 6-1 and 6-2 list all hazard events within the Cumberland Plateau Region.

Table 6-1: Hazard Events for Cumberland Plateau Regional Counties (date range as noted)

Hazards	Reported Events	Property Damage	Crop Damage	Deaths	Injuries
Buchanan					
Flooding	56 (1970 – 2023)	$33.72 Million	$0.00	7	1
High Winds	92 (1970 – 2023)	$564,400	$0.00	0	1
Severe Winter Weather	73 (1970 – 2023)	$2.01 Million	$0.00	0	0
Tornadoes	0 (1970 – 2023)	$0.00	$0.00	0	0
Hailstorms	34 (1970 – 2023)	$53,000	$0.00	0	0
Extreme Temperatures – Heat/Cold	36 (1970 – 2023)	$77,000	$0.00	0	0
Wildfires	510 (1995 – 2023)	Not Available	Not Available	0	0
Earthquakes	6 (1970 – 2023)	Not Available	Not Available	0	0
Dam/Levee Failures	0 (1970 – 2023)	$0.00	$0.00	0	0
Droughts	14 (1970 – 2023)	$0.00	$0.00	0	0
Landslides	8 (1970 - 2023)	Not Available	Not Available	0	0
Abandoned Mine Fire/Floods	0 (1970 – 2023)	$0.00	$0.00	0	0
Dickenson					
Flooding	50 (1970 – 2023)	$2.32 Million	$0.00	0	0
High Winds	78 (1970 – 2023)	$451,250	$0.00	1	0
Severe Winter Weather	78 (1970 – 2023)	$3.81 Million	$0.00	0	0

Tornadoes	2 (1970 – 2023)	$255,000	$0.00	0	0
Hailstorms	43 (1970 – 2023)	$30,000	$0.00	0	0
Extreme Temperatures – Heat/Cold	36 (1970 – 2023)	$78,000	$0.00	0	0
Wildfires	287 (1995 – 2023)	Not Available	Not Available	0	0
Earthquakes	(1970 – 2023)	Not Available	Not Available	0	0
Dam/Levee Failures	0(1970 – 2023)	$0.00	$0.00	0	0
Droughts	14 (1970 – 2023)	$0.00	$0.00	0	0
Landslides	27 (1970 – 2023)	Not Available	Not Available	0	0
Abandoned Mine Fire/Floods	0 (1970 – 2023)	$0.00	$0.00	0	0
Algae Bloom (Dickenson)	2 (1970 – 2023)	$0.00	$0.00	0	0
Russell					
Flooding	29 (1970 -2023)	$1.14 Million	$0.00	0	0
High Winds	142 (1970 – 2023)	$806,000	$228,000	0	0
Severe Winter Weather	75 (1970 – 2023)	$485,000	$0.00	0	0
Tornadoes	6 (1970 – 2023)	$265,000	$10,000	0	0
Hailstorms	17 (1970 – 2023)	$0.00	$0.00	0	0
Extreme Temperatures – Heat/Cold	0 (1970 – 2023)	$0.00	$0.00	0	0
Wildfires	290 (1995 – 2023)	Not Available	Not Available	0	0
Earthquakes	2 (1970 – 2023)	Not Available	Not Available	0	0
Dam/Levee Failures	0 (1970 - 2023)	$0.00	$0.00	0	0
Droughts	0 (1970 – 2023)	$0.00	$0.00	0	0
Landslides	8 (1970 – 2023)	Not Available	Not Available	0	0
Abandoned Mine Fire/Floods	0 (1970 - 2023)	$0.00	$0.00	0	0
Tazewell					

Flooding	117 (1970 – 2023)	$32.52 Million	$0.00	0	0
High Winds	52 (1970 – 2023)	$866,100	$0.00	0	1
Severe Winter Weather	70 (1970 – 2023)	$1,000	$0.00	1	2
Tornadoes	0 (1970 – 2023)	$0.00	$0.00	0	0
Hailstorms	98 (1970 – 2023)	$57,000	$0.00	0	0
Extreme Temperatures – Heat/ Cold	6 (1970 – 2023)	$0.00	$3,000	0	0
Wildfire	176 (1995 – 2023)	Not Available	Not Available	0	0
Earthquake	5 (1970 – 2023)	Not Available	Not Available	0	0
Dam/ Levee Failures	0 (1970 - 2023)	$0.00	$0.00	0	0
Droughts	19 (1970 – 2023)	$0.00	$8.01 Million	0	0
Landslides	16 (1970 – 2023)	Not Available	Not Available	0	0
Abandoned Mine Fire/ Floods	0 (1970 – 2023)	$0.00	$0.00	0	0

Source: NOAA NCEI Storm Events Database; *FEMA National Risk Index; **VDOF Fire Incident Database ***HAZUS

Table 6-2: Total Unique Hazard Events in the Cumberland Plateau Region (as of August 2024)

Hazard	Total Unique Events
Flooding	252
Severe Winds	74
Severe Winter Weather	231
Tornadoes	7
Hailstorms	158
Extreme Heat/Cold	15
Wildfires	1,263
Earthquakes	15
Dam/Levee Failure	0
Droughts	119
Landslides	54
Abandoned Mine Fires/Flooding	0
Algae Bloom	2

Source: NOAA NCEI Storm Events Database; *FEMA National Risk Index. **USGS Earthquake Database ***HAZUS

6.2.2 Presidential Disaster Declarations

The Federal Emergency Management Agency (FEMA) maintains the National Disaster Declarations Summary dataset. The first disaster declared in the national dataset was in 1953 and was supplemented with the Robert T. Stafford Disaster Recovery Act and related Department of Homeland Security regulations. For an event to be declared a disaster by FEMA, the Governor of Virginia must declare a state of emergency and then formally demonstrate to the President that the Commonwealth and local government resources to support disaster recovery are exhausted, necessitating Federal assistance. Table 6-3 shows the FEMA Disaster Declarations Summary for events declared within the Cumberland Plateau Region from 1976 to August 2024. Fifteen significant disaster declarations have been made since 1976, and five emergency declarations since 1976, totaling 20.

Table 6-3: FEMA Declared Disasters for the Cumberland Plateau Region (1970-2024)

Disaster Number	Disaster Type	Incident Type	Incident Begin Date	Programs Declared		
				IA	PA	HM
3018	Emergency	Drought	10/15/1976	No	Yes	No
530	Major Disaster	Severe Storms, Flooding	04/07/1977	Yes	Yes	No
543	Major Disaster	Severe Storms, Flooding	11/12/1977	Yes	Yes	No
593	Major Disaster	Flash Floods	07/20/1979	Yes	Yes	No
707	Major Disaster	Severe Storms, Flooding	05/23/1984	Yes	Yes	No
847	Major Disaster	Mudslides, Flooding	10/16/1989	Yes	Yes	No
3112	Emergency	Severe Winter Storm	03/13/1993	No	Yes	No
1014	Major Disaster	Ice Storm, Severe Storm, Flooding	02/08/1994	No	Yes	Yes
1086	Major Disaster	Virginia Blizzard	01/06/1996	No	Yes	No
1318	Major Disaster	Winter Storm	01/25/2000	No	Yes	No
1458	Major Disaster	Severe Storm(s)	02/15/2003	Yes	Yes	No
1502	Major Disaster	Severe Storm(s) and Flooding	11/18/2003	Yes	No	No
4072	Major Disaster	Severe Storm(s)	06/29/2012	No	Yes	No
3359	Emergency	Hurricane Sandy	10/26/2012	No	Yes	No
4401	Major Disaster	Hurricane Florence	09/08/2018	No	Yes	No
3403	Emergency	Hurricane Florence	09/13/2018	No	Yes	No
4512	Major Disaster	COVID-19	01/20/2020	Yes	Yes	No
3448	Emergency	COVID-19	01/20/2020	No	Yes	No
4628	Major Disaster	Flooding	08/30/2021	No	Yes	No
4674	Major Disaster	Flooding and Mudslides	07/13/2022	Yes	Yes	No

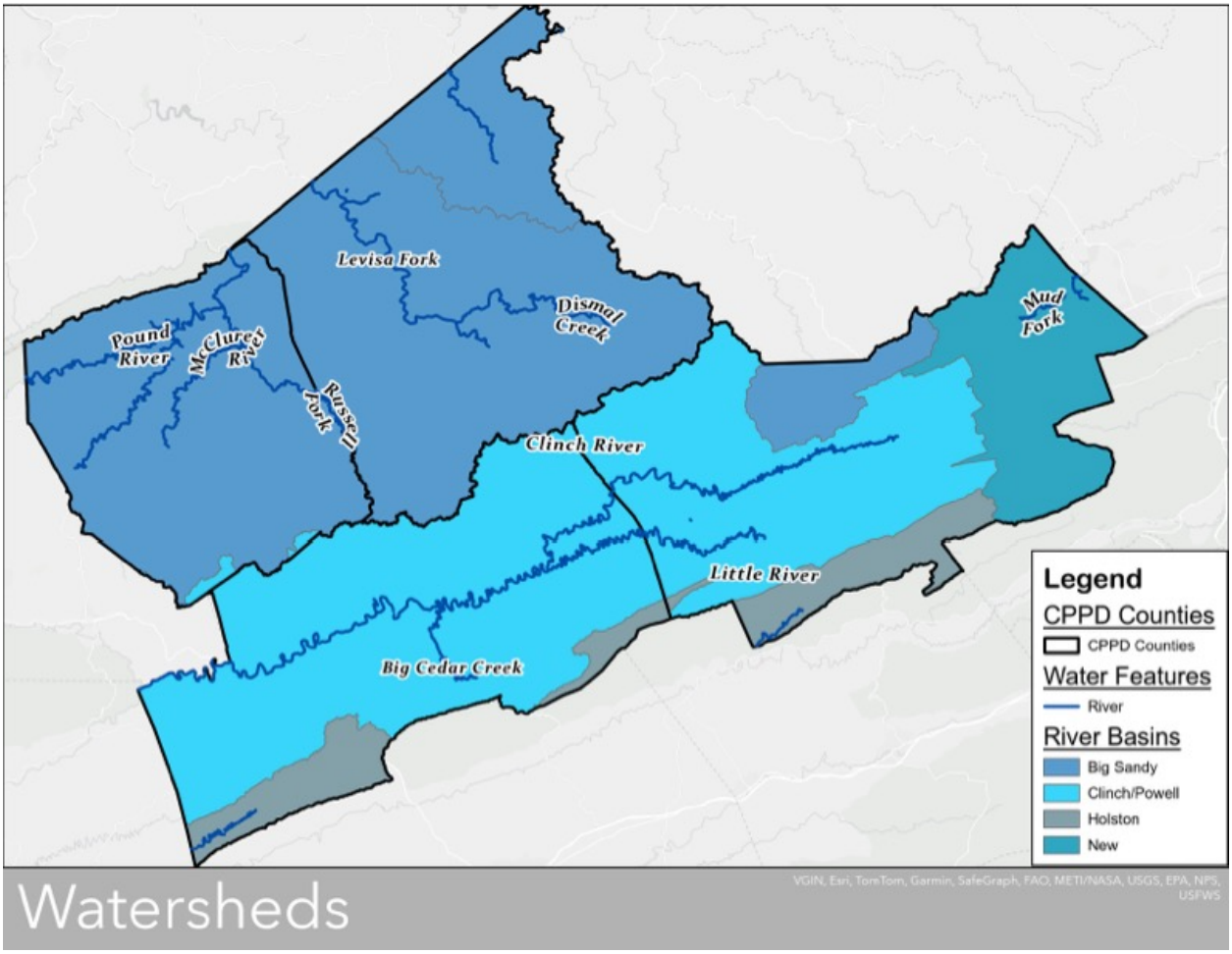
Source: FEMA Disaster Declarations Summary – Open Government Dataset.

6.3 Hazards Affecting the Cumberland Plateau PDC Region

6.3.1 Flooding

The most significant and frequent natural hazard to affect the Cumberland Plateau Planning District (CPPD) is flooding. The Planning District is a mountainous region with steep ridges and pronounced valleys, with three major watersheds, the Clinch River Basin, which flows through Tazewell and Russell Counties. The Levisa and Russell Forks of the Big Sandy River, which flows through Buchanan and Dickenson Counties; and the Bluestone River Basin, which flows through Tazewell County. Watersheds throughout the region are depicted in Figure 6-1.

Figure 6-1: Cumberland Plateau Watersheds



Source: Virginia Department of Environmental Quality

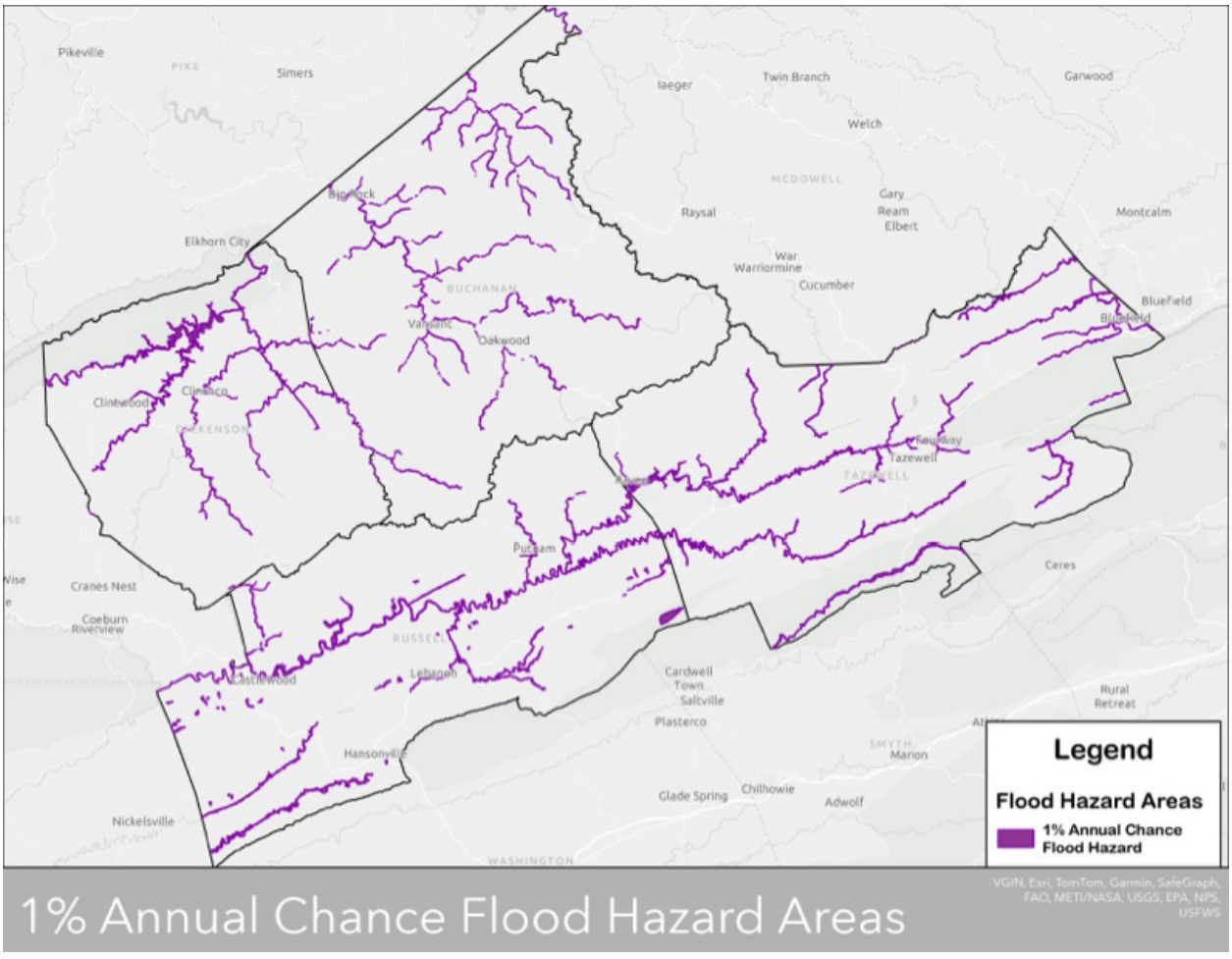
Type and Location

Most of the flooding in the Cumberland Plateau Region is flash flooding that occurs following a period of intense or sustained rainfall. The highly mountainous terrain and associated steep slopes cause rainwater to runoff rapidly, quickly filling streambeds following an event. Flood-producing storms can occur throughout the year; however, historically the most common months for significant flooding have been January – May. Although snowfall amounts in the area are minimal, flood events can be exacerbated by rapidly melting snow during the winter months. The duration of these flood events can and do vary depending on the specific

characteristics of the rain event. Flood waters generally recede rapidly once the rain event has ended but can last from a few hours to a few days.

FEMA, through the National Flood Insurance Program (NFIP), has developed Flood Insurance Rate Maps (FIRMs) that identify flood zones through detailed hydrologic and hydraulic studies. These flood zones represent the areas susceptible to the 1% annual chance flood, or 100-year flood. Whenever possible, FEMA will also determine a Base Flood Elevation (BFE) for the 100-year floodplain, which is the calculated elevation of flooding during this event. The BFE is a commonly used standard level for determining flood risk and managing potential floodplain development. Although each specific flood event is different, these maps provide a more definitive representation of the highest flood risks in the communities. Figure 6-2 depicts flood hazard areas for a 100-year flood. Table 6-4 lists the critical facilities located within the flood zone. The specific flood hazard areas in each of the major watersheds are described below.

Figure 6-2: FEMA 100 Year Flood Zone in the Cumberland Plateau Region



Source: Department of Conservation and Recreation, *FEMA ESRI Landscape

Table 6-4: Critical Facilities in the Flood Zone

Jurisdiction	Type	Facility Name
Buchanan County	Fire and Rescue	Knox Creek Volunteer Fire
	Fire and Rescue	Grundy Volunteer Fire
	Fire and Rescue	Quality Care Ambulance Service

Jurisdiction	Type	Facility Name
	Fire and Rescue	Dismal River Volunteer Rescue
	Fire and Rescue	Council Volunteer Fire
	Government Building	Buchanan County Courthouse
	School	Hurley Combined School
	School	Vansant Elementary School
	Hospital	Buchanan General Hospital
Dickenson County	Fire and Rescue	McClure River Volunteer Fire Department
	School	Sandlick Elementary School
	Government Building	Haysi Police Dept/ Town Hall
	Fire and Rescue	Haysi Rescue Squad
	Fire and Rescue	Clinchco Fire Department
Russell County	Government Building	Lebanon Town Hall
	Treatment Plant	Central Shop STP
	Treatment Plant	Cleveland STP
	Treatment Plant	Cleveland Water Treatment Plant
	Treatment Plant	Dante Wastewater Treatment Plant
	Treatment Plant	Lebanon Water/Wastewater Plant
	Treatment Plant	Honaker STP
Tazewell County	Police	Richlands Police
	Police/ Government Building	Pocahontas Police Dept/ Town Offices
	School	Raven Elementary School
	Fire and Rescue	Bandy Fire Department
	Fire and Rescue	Bluefield Fire Department
	Fire and Rescue	Clear Fork Fire Department
	Fire and Rescue	Pocahontas Fire Department
	School	North Tazewell Elementary
	School	Tazewell Elementary
	School	Tazewell Middle School
	School	Tazewell High School
	Treatment Plant	Bluefield Water Treatment Plant
	Treatment Plant	Bluefield Wastewater Treatment Plant
	Treatment Plant	Falls Mills Wastewater Treatment Plant
	Treatment Plant	Richlands Water Treatment Plant
	Treatment Plant	Richlands Wastewater Treatment Plant
	Treatment Plant	Pocahontas Water Treatment Plant
	Treatment Plant	Tazewell Wastewater Treatment Plant
	Treatment Plant	Wardell Wastewater Treatment Plant
	Treatment Plant	Misc. Wastewater Lift Stations
	Community Services	AASC Adult Day Care – Falls Mills
	Community Services	Clinch Valley Community Action
	Electrical Infrastructure	AEP Power Substations
	Communications	Verizon Phone Services
	Communications	Sunset Digital Fiber Optic Systems
	Community Access	Bridge – Sage Hill Road
	Community Access	Bridge – Mountain Road
	Community Access	Bridge – Fincastle Farms Road

FEMA National Flood Insurance Program Participation (NFIP)

The NFIP is a federal program that enables property owners in participating communities to purchase insurance for flood losses. For a community to participate in the NFIP, they must adopt FEMA's flood risk maps, the flood Insurance Study, and floodplain management regulations that reduce future flood damages.

Flood insurance is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damages to buildings and their contents caused by floods. Nationally, flood damage is reduced by nearly $1 billion annually through community implementation of sound floodplain management requirements and property owners purchasing flood insurance. Additionally, buildings constructed in compliance with NFIP building standards suffer approximately 80% less damage annually than those which predate floodplain management regulations or are not built within compliance.

In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP identifies and maps the nation's floodplains. Mapping flood hazards creates broad-based awareness of these hazards and provides data needed for floodplain management programs and to actuarially rate new construction for flood insurance.

Floodplain management regulations are the cornerstone of NFIP participation. Communities participating in the NFIP must adopt and enforce floodplain management regulations. These regulations apply to all types of floodplain development and ensure that development activities will not cause an increase in future flood damage. Buildings are required to be elevated at or above BFE, which is the predicted level of the one-percent flood. The BFE is determined based on modeling and mapping detailed in the community's Flood Insurance Study (FIS).

The FIS and its corresponding FIRMs provide information on flood risk areas per NFIP standards. FIRMs identify areas with a one-percent annual chance of flooding and those with a 0.2%-annual chance of flooding. When new structures are built or existing structures are improved at more than 50 percent of their market value, they must adhere to floodplain management regulations. If the structure is financed through a federally insured loan, there is a mandatory flood insurance purchase requirement. Many mortgage lenders in high-hazard areas now require flood insurance even for structures outside the regulated floodplain. Ensuring high-risk structures is one method the NFIP uses to offset the escalating costs of flood disasters.

The Towns of Grundy, Clinchco, Clintwood, Haysi, Cleveland, Honaker, Lebanon, Bluefield, Cedar Bluff, Pocahontas, Richlands, and Tazewell participate in the NFIP but do not participate in the Community Rating System. NFIP participation and each county and town's current effective map dates are listed in Table 6-5. The Reg-Emer Date is the date the community first joined the NFIP. All jurisdictions listed below participate in the "Regular" Program.

Table 6-5: Cumberland Plateau Regional Jurisdictions NFIP Participation Dates

County	Jurisdiction	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Reg-Emer Date
Buchanan	Grundy, Town of	05/24/1974	08/16/1982	08/19/1997	08/16/1982
Dickenson	Clinchco, Town of	Not Available	09/29/2010	09/29/2010	11/08/2011
	Clintwood, Town of	03/04/1977	02/06/1991	09/29/2010	03/04/1978
	Haysi, Town of	05/31/1974	01/17/1979	09/29/2010	01/17/1979
Russell	Cleveland, Town of	07/01/1970	05/14/1976	09/29/2010	02/19/1971
	Honaker, Town of	05/10/1974	04/05/1988	09/29/2010	04/05/1988
	Lebanon, Town of	05/10/1974	01/16/1987	09/29/2010	01/16/1987
Tazewell	Bluefield, Town of	08/09/1974	07/17/1978	02/18/2011	07/17/1978

County	Jurisdiction	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Reg-Emer Date
	Cedar Bluff, Town of	05/10/1974	04/04/1983	02/18/2011	04/04/1983
	Pocahontas, Town of	09/14/1983	09/14/1983	02/18/2011	09/14/1983
	Richlands, Town of	06/18/1976	04/04/1983	02/18/2011	04/04/1983
	Tazewell, Town of	05/17/1974	08/15//1983	02/18/2011	08/15/1983

Source: FEMA National Flood Insurance Program Flood Insurance Data and Analytics

Table 6-6 shows the total policies in force in the Cumberland Plateau Planning District, 367 policies, and their associated insurance value and premiums. The table also summarizes the NFIP policy and claim statistics for the counties and towns within the Cumberland Plateau Planning District Commission. Table 6-8 lists the NFIP claims to date within the region and total payments of the claims.

Reported losses include all flooding events. It should be emphasized that these numbers included only those losses to structures insured through the NFIP and losses in which claims were sought and received. It is likely that there are additional instances of flood losses in the counties and towns that were uninsured, denied claims payment, or not reported. Table 6-7 lists the repetitive and severe loss properties recorded for the Cumberland Plateau Region.

Table 6-6: NFIP Policies in Force in the Cumberland Plateau Planning District

County	Jurisdiction	Policies In-Force	Insurance In-Force Whole $	Written Premium In-Force
Buchanan	Grundy, Town of	27	$7,302,000	$36,896
	Unincorporated County	134	$25,528,000	$185,403
Dickenson	Clinchco, Town of	4	$287,000	$3,281
	Clintwood, Town of	N/A*	N/A*	N/A*
	Haysi, Town of	4	$1,095,000	$7,134
	Unincorporated County	16	$2,626,000	$19,286
Russell	Cleveland, Town of	2	$287,000	$1,399
	Honaker, Town of	5	$967,000	$5,397
	Lebanon, Town of	10	$1,685,000	$12,637
	Unincorporated County	40	$5,528,000	$46,142
Tazewell	Bluefield, Town of	42	$7,143,000	$68,097
	Cedar Bluff, Town of	14	$1,883,000	$15,570
	Pocahontas, Town of	6	$1,063,000	$12,110
	Richlands, Town of	48	$8,960,000	$95,806

County	Jurisdiction	Policies In-Force	Insurance In-Force Whole $	Written Premium In-Force
	Tazewell, Town of	13	$2,490,000	$24,033
	Unincorporated County	71	$16,273,000	$108,742
Total	**Cumberland Plateau Region**	**336**	**$83,117,000**	**$641,933**

Source: FEMA. NFIP – Data & Analytics

NOTE: Data on NFIP policies in force within the Town of Clintwood in Dickenson County is not available within FEMA's NFIP database.

Table 6-7: Repetitive and Severe Loss Properties in the Cumberland Plateau Region

Jurisdiction	RLP	RLP NFIP Insured	RLP Not NFIP Insured	Severe RLP	Residential	Non-Residential
Buchanan	14	1	13	1	5	9
Dickenson	4	0	4	0	1	3
Russell*	0*	0*	0*	0*	0*	0*
Tazewell	45	9	36	4	35	10
Cumberland Plateau Region	**63**	**10**	**53**	**5**	**41**	**22**

Source: Given by CPPDC contact

*NOTE: FEMA Region 3 representatives stated that data on repetitive and Severe Repetitive Loss Properties (SRLP) within Russell County is not available within FEMA's database, despite the county having 57 active NFIP policies.

Table 6-8: NFIP Claims 1979 to Current

County	Jurisdiction	Total Claims	Building Payments	Contents Payments	Total Payments
Buchanan	Grundy, Town of	31	$391,266.13	$454,706.66	$845,972.79
	Unincorporated County	13	$66,407.55	$26,508.44	$92,915.99
Dickenson	Clinchco, Town of	N/A*	N/A*	N/A*	N/A*
	Clintwood, Town of	N/A*	N/A*	N/A*	N/A*

County	Jurisdiction	Total Claims	Building Payments	Contents Payments	Total Payments
	Haysi, Town of	2	$7,158.15	$0	$7,158.15
	Unincorporated County	7	$43,248.82	$20,454.13	$63,702.95
Russell	Cleveland, Town of	N/A*	N/A*	N/A*	N/A*
	Honaker, Town of	N/A*	N/A*	N/A*	N/A*
	Lebanon, Town of	N/A*	N/A*	N/A*	N/A*
	Unincorporated County	N/A	N/A	N/A	N/A
Tazewell	Bluefield, Town of	32	$239,046.56	$52,645.11	$291,691.67
	Cedar Bluff, Town of	4	$25,252.45	$1,854.09	$27,106.54
	Pocahontas, Town of	2	$59,288.88	$0	$59,288.88
	Richlands, Town of	39	$336,869.58	$40,009.13	$376,878.71
	Tazewell, Town of	6	$390,429.66	$27,271.84	$417,701.50
	Unincorporated County	44	$1,024,307.76	$443,461.28	$1,467,769.04
Total	**Cumberland Plateau Region**	**180**	**$2,583,275.54**	**$1,066,910.68**	**$3,650,186.22**

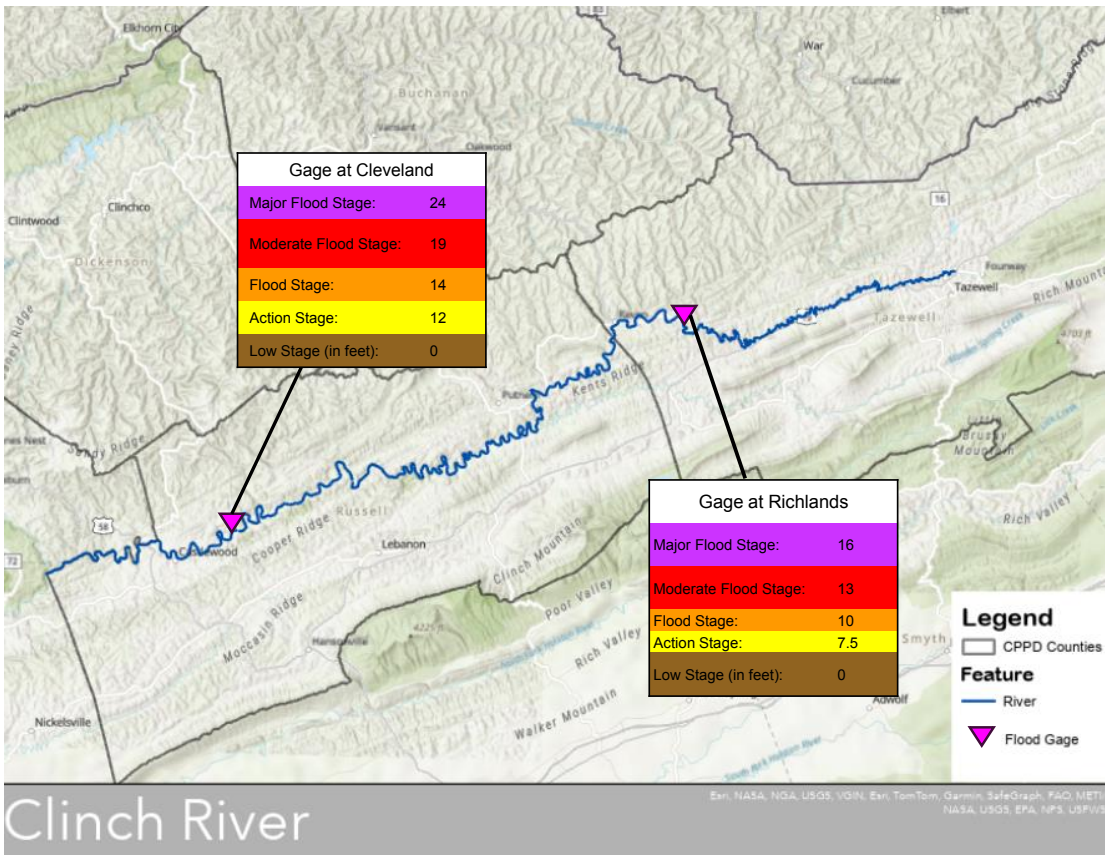
Source: FEMA. NFIP – Data & Analytics

NOTE: FEMA Region 3 representatives stated that data on repetitive and SRLP within Russell County. The Town of Clinchco, and the Town of Clintwood is not available within FEMA's database, despite having active NFIP policies.

Previous Occurrences

According to the NRI Community Risk Report and NCEI Storm Events database, 85 flooding events have been recorded in the Cumberland Plateau Planning District from the year 2000 to 2024 costing $11.494 million in property damages. Tables 6-9 through 6-12 describe flood occurrences at major rivers within the region. Heavy rains and thunderstorms were the primary cause of these events.

Figure 6-3: Clinch River Basin Map



Source: Virginia Department of Environmental Quality

Clinch River Basin

The Clinch River is a major river located in Russell and Tazewell Counties, with a drainage area of approximately 670 square miles, and is depicted in Figure 6-3. The Clinch River is fed by numerous tributaries, originating from the high mountain ridges throughout the drainage area. The primary tributaries to the Clinch are the Guest River, flowing from the northwestern portion (Wise County) of the watershed and the Little River, flowing from the east near the headwaters of the watershed in Tazewell County. Due to steep mountainous terrain in the area, the potential for rapid flooding following a moderate to significant rain event or spring snowmelt is high. Records of historic events in the Planning District are numerous; floods on the Clinch and its tributaries have been well documented. As for damages, like most floods in this area, much information is not available regarding damages. The determined flood stage for the Clinch River is 14 feet at Richlands in Tazewell County.

Table 6-9 and 6-10 include flood heights for events on the Clinch River compiled from USGS gage data. It should be noted that gauge readings prior to 1957 have been adjusted to the present gage location, and from personal accounts and high-water marks.

224 **Table 6-9: Historical Flooding on the Clinch River at Richlands Gage**

Event Date	Clinch River Height at Richlands Gage (Tazwell County)	Description
June 22, 1901	21.20 ft	Intense storms in the head water area caused great damage and loss in the Richlands area.
February 18, 1944	13.70 ft	No Description
January 29, 1957	19.30 ft	Records from this event indicate that several buildings were inundated with floodwaters, and roadways were blocked. Velocities of water ranged from 7 feet per second in the river channel and up to 4 feet per second on the flood plain in the Cleveland vicinity. During a Maximum Probable Flood the crest would be 12 to 16 feet higher than the 1957 flood, velocities in the channel would range up to 12 feet per second and up to 8 feet per second in the flood plain.
March 12, 1963	16.09 ft	Over 100 families were forced to be evacuated in Richlands.
April 14, 1972	14.65 ft	No Description Available.
April 5, 1977	16.06 ft	Record flood with $9.5 Million in damages with heavy agricultural damages.
January 26, 1978	16.10 ft	No Description Available.
May 7, 1984	14.70 ft	No Description Available.
March 18, 2002	11.74	Rains of 2.5 to 3.5 inches fell over the southern portion of the county in less than 24 hours. An automated rain gauge near Herald measured 3.1 inches, while one gage near Trammel had 2.8 inches.
November 19, 2003	14.65 ft	A strong but slow moving, storm system developed in the lower Mississippi Valley the morning of February 13, 2003, and moved northeast toward the southern Appalachian region. Several inches of snow had fallen across the region earlier in the week, with snowpack depths varying with terrain and location. It was estimated on the 13th that up to 10 inches of snow still lay on the ground on the higher ridges and mountains, especially across southwest Virginia in the Holston, Clinch, and Powell River headwater areas. By the morning of the 16th, the ground across the southern Appalachian region was fully saturated, with small streams everywhere flowing out of their banks, and larger streams and rivers starting to show either significant rises or flooding.
February 6, 2020	14.33 ft	No Description.

225 Source: USGS Surface Water for USA: Peak Streamflow, *Tennessee Valley Authority (TVA) Rainfall Gauge Data

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Table 6-10: Historical Flooding on the Clinch River at Cleveland Gage

Event Date	Clinch River Height at Cleveland Gage (Russell County)	Description
March 1, 1902	20.26 ft	One of the largest known floods in the area. Washouts and slides occurred on the Clinch Valley Division of the Norfolk and Western Railway.
June 14, 1907	20.30 ft	Extensive crop damage widely remembered flood.
December 22, 1926	21.38 ft	At 21 feet, the water treatment plant and several houses are flooded, along with about 100 acres in the area around Cleveland.
August 14, 1940	20.60 ft	Starting at 19 feet, water affects a few houses both on Main Street and adjacent to the ballpark entrance, approximately 25 acres (about two miles) up and downstream from the Highway 82 bridge. Tropical storm produced two to four inches of rain.
January 30, 1957	24.40 ft	Records from this event indicate that several buildings were inundated with floodwaters, and roadways were blocked. Velocities of water ranged from 7 feet per second in the river channel and up to 4 feet per second on the flood plain in the Cleveland vicinity. During a Maximum Probable Flood, the crest would be 12 to 16 feet higher than the 1957 flood, velocities in the channel would range up to 12 feet per second and up to 8 feet per second in the flood plain. At 24 feet of water, the old elementary school locations begin to flood and the river reaches the bottom of the Highway 82 bridge in Cleveland. About 30 to 40 houses are flooded with around 250 acres inundated.
March 12, 1963	22.70 ft	At 21 feet, the water treatment plant and several houses are flooded, along with about 100 acres in the area around Cleveland.
March 17, 1973	19.94 ft	Starting at 19 feet, water affects a few houses both on Main Street and adjacent to the ballpark entrance, approximately 25 acres (about two miles) up and downstream from the Highway 82 bridge.
April 5, 1977	26.40 ft	Beginning at 24.6 feet, water floods the lower ramp of Route 82 bridge, and affects 50 to 75 houses and 400 acres.
January 26, 1978	20.87 ft	No Description.

Event Date	Clinch River Height at Cleveland Gage (Russell County)	Description
May 7, 1984	19.46 ft	No Description Available.
March 18, 2002	20.71 ft	No Description Available.
February 6, 2020	20.43 ft	A cold front extending from the Texas coast to the southern Appalachians experienced little movement as low-pressure systems moved northeastward along the boundary. This resulted in heavy rainfall of 5 to 6 inches across most of area. Six structures flooded, including two community centers that are used as polling sites. The Cleveland Community Center had 11 inches or sewage backup from the sewer system. Four homes flooded, culverts washed out, some livestock drowned or washed away. Twenty-four families were unable to get their vehicles out or get emergency responders in. Mudslide in the Swords Creek area.

228 Source: USGS Surface Water for USA: Peak Streamflow, *Tennessee Valley Authority (TVA) Rainfall Gauge Data

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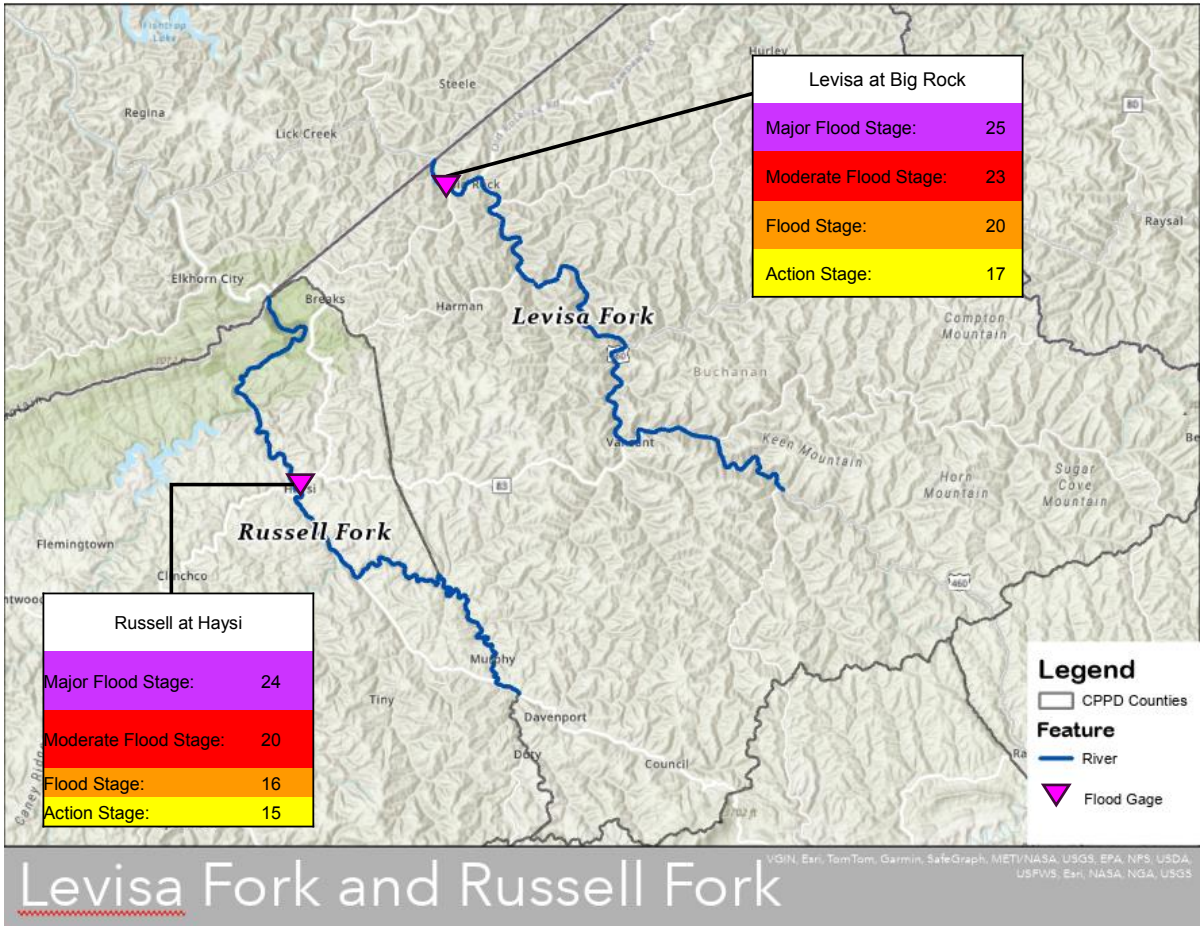
Figure 6-4: Levisa and Russell Fork Basin Map



Source: Virginia Department of Environmental Quality

Levisa Fork:

The Levisa Fork and Russell Fork of the Big Sandy River are major rivers located in Buchanan and Dickenson Counties. The Levisa Fork located in Buchanan County, has a drainage area of approximately 300 square miles as depicted in Figure 6-4. The Levisa Fork is fed by numerous tributaries, originating from high mountain ridges throughout the drainage area. The primary tributaries to the Levisa Fork are Slate Creek, Big Prater Creek, Dismal Creek and Garden Creek. Table 6-11 includes flood heights for events on the Levisa Fork at the Big Rock Gage compiled from USGS gage data.

Table 6-11: Historical Flooding on the Levisa Fork at Big Rock Gage

Event Date	Levisa Fork Height at Big Rock Gage (Buchanan County)	Description
January 29, 1957	23.00 ft	Records from this event indicate that several buildings were inundated with floodwaters, and roadways were blocked.
January 21, 1972	15.43 ft	No Description Available.
January 11, 1974	15.90 ft	No Description Available.
March 30, 1975	15.73 ft	No Description Available.
April 4, 1977	27.38 ft	No Description Available.
January 26, 1978	17.56 ft	No Description Available.
May 7, 1984	20.74 ft	No Description Available.
February 16, 2003	16.37 ft	Two-day rain totals of 3 to 4.5 inches accumulated from the 14th into the 16th. Grundy had 4.3 inches, Hurley had 3.7 inches, and Clintwood measured 3.3 inches. Small streams flooded or washed-out roads late on the 15th into the 16th. Mud slides occurred on steep slopes. The Virginia Department of Emergency Management reported 35 homes, and 20 businesses had major damage in Buchanan County. The town manager of Grundy said water had seeped under the floors of the police department and a lot of mud was in the basement below the town offices. Hurley High School also reported some damage. A federal disaster was declared, that included these 2 Virginia Counties. See FEMA disaster declaration number 1458.
June 14, 2004	Unavailable	Downpours, across saturated steep terrain, hit the Oakwood to Short Gap region of the county. Garden and Grassy Creeks flooded, including the smaller tributaries, such as

Event Date	Levisa Fork Height at Big Rock Gage (Buchanan County)	Description
		Pistol Branch and Trace Branch. Sections of Route 618 were washed out. One unoccupied car was found in the creek. A landslide blocked Route 460 near Short Gap.
June 3, 2010	Unavailable	A short line of heavy rain from thunderstorms trained west to east across eastern Dickenson County into western Buchanan County between 1430 and 1530E on the 3rd. Rain amounts of around 3 inches were likely from near Haysi to near Vicey and Prater. Between Vansant and the Dickenson County border, several roads were flooded by streams feeding into Russell Prater Creek.
March 4-5, 2015	Unavailable	Around 2245E on the 4th, a 61-year-old man drove his car into flood waters near the mouth of Hurricane Creek with the Russell Fork. This was along Route 80. His car was washed into the water. His body was recovered the next day. A female occupant of the car was able to escape.
February 6, 2020	17.45 ft	A cold front extending from the Texas coast to the southern Appalachians experienced little movement as low-pressure systems moved northeastward along the boundary. This resulted in heavy rainfall of 5 to 6 inches across most of area. Six structures flooded, including two community centers that are used as polling sites. The Cleveland Community Center had 11 inches or sewage backup from the sewer system. Four homes flooded, culverts washed out, some livestock drowned or washed away. Twenty-four families were unable to get their vehicles out or get emergency responders in. Mudslide in the Swords Creek area.

241 Source: USGS Surface Water for USA: Peak Streamflow, *Tennessee Valley Authority (TVA) Rainfall Gauge Data

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Russell Fork:

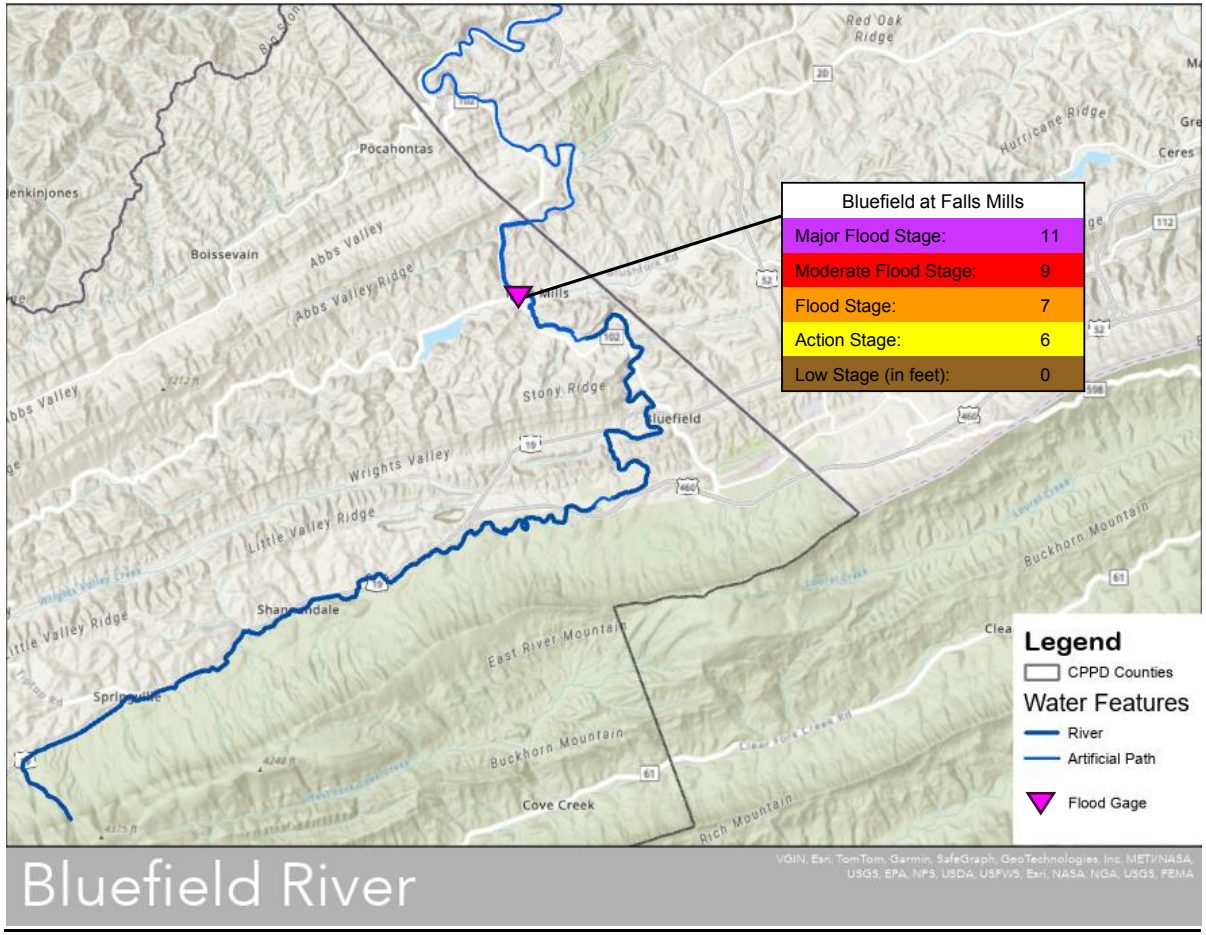
Russell Fork, located in Dickenson, is fed by numerous tributaries. The primary tributaries to the Russell Fork are Pound River, McClure River, and Cranes Nest River. Due to steep mountainous terrain in the area, the potential for rapid flooding following a moderate to significant rain event or spring snowmelt is high. Table 6-12 include flood heights for events on the Russell Fork at the Haysi gage compiled from USGS gage data.

Table 6-12: Historical Flooding on the Russell Fork at Haysi

Event Date	Russell Fork Height at Haysi Gage (Dickenson County)	Description
March 23, 1929	18.50 ft	No Description Available.
January 29, 1957	23.17 ft	$5.5 million in damages.
March 12, 1963	21.10 ft	No Description Available.
March 7, 1967	20.34 ft	No Description Available.
April 4 – 5, 1977	28.24 ft	Nine feet of water in homes and businesses; $8 million in damages.
January 26, 1978	19.12 ft	No Description Available.
March 7, 1984	22.08 ft	No Description Available.
February 16, 2003	18.89 ft	No Description Available.
March 5, 2015	18.91 ft	No Description Available.
February 6, 2020	18.19 ft	No Description Available.

Source: USGS Surface Water for USA: Peak Streamflow, *Tennessee Valley Authority (TVA) Rainfall Gauge Data

Figure 6-5: Bluestone River Basin Map



Source: Virginia Department of Environmental Quality

Bluestone River Basin:

The Bluestone River is a major river located in the eastern Tazewell County area near Bluefield, with a drainage area of approximately 39.9 square miles. The Bluestone is fed by numerous tributaries, originating from the high mountain ridges throughout the drainage area, as depicted in Figure 6-5. The three major tributaries are Wrights Valley Creek, Beaver Pond Creek, and Laurel Fork. Due to steep mountainous terrain in the area, the potential for rapid flooding following a moderate to significant rain event or spring snowmelt is high. The Bluestone River flows into West Virginia into the New River.

As for most floods in this area, not much information is available regarding damages due to these events. Records from these events indicate that several buildings were inundated with floodwaters, and roadways were blocked. Tables 6-13 and 6-14 include flood heights for events on the Bluestone River compiled from USGS gauge data. The events shown are those with crest levels higher than 7 feet, the flood stage on the Bluestone. It should be noted that gauge readings prior to 1965, when the gauge was installed at this location, have been estimated from personal accounts, newspaper articles, and high-water marks.

Table 6-13: Historical Flooding on the Bluestone River at Bluefield

Event Date	Bluestone River Height at Bluefield Gage in Feet (Tazewell County)	Description
January 29, 1957	10.6 ft	3.14" of rainfall, 1,000 persons displaced with over $100,000 in damages.
March 12, 1963	Unavailable	2.33" rainfall in 24 hours; $7,000 damages to roads.

Source: USGS Surface Water for USA: Peak Streamflow, *Tennessee Valley Authority (TVA) Rainfall Gauge Data

Table 6-14: Historical Flooding on the Bluestone River at Falls Mills Gage

Event Date	Bluestone River Height at Falls Mills Gage in Feet (Tazewell County)	Description
May 7, 1984	8.37 ft	No Description Available.
April 25, 1987	8.21 ft	No Description Available.
March 24, 1993	7.79 ft	No Description Available.
January 15, 1995	7.80 ft	No Description Available.
January 27, 1996	8.66 ft	No Description Available.
March 13, 2010	8.54 ft	No Description Available.
February 6, 2020	7.93 ft	No Description Available.

Event Date	Bluestone River Height at Falls Mills Gage in Feet (Tazewell County)	Description
May 28, 2020	7.58 ft	No Description Available.
June 19, 2020	7.76 ft	No Description Available.
May 29, 2023	10.96 ft	No Description Available.

Source: USGS Surface Water for USA: Peak Streamflow, *Tennessee Valley Authority (TVA) Rainfall Gauge Data

Vulnerabilities

Flash floods occur so rapidly and allow very little warning time, the only potential warning to an upcoming flood event comes through the ability to forecast a heavy rain event prior to its occurrences. The National Weather Service (NWS) issues flood watches and warnings when heavy rains or several storms threaten the area. These warnings are carried to residents through local media outlets such as television and radio stations. In addition, the NWS, in conjunction with the National Oceanic and Atmospheric Administration (NOAA), operates the NOAA Weather Radio System. This nationwide network of radio transmitters broadcast severe weather data to relatively inexpensive special receivers that can be purchased by the public.

Flooding impacts a community to the degree it affects the lives of its citizens and the community functions overall. Therefore, the most vulnerable areas of a community will be those most affected by floodwaters in terms of potential loss of life, damages to homes and businesses, and disruption of community services and utilities. For example, an area with a highly developed floodplain is significantly more vulnerable to the impacts of flooding than a rural or undeveloped floodplain where potential floodwaters would have little impact on the community. Table 6-15 demonstrates expected annual losses in damages, injuries, and deaths in the region from flooding annually.

Several factors contribute to the relative vulnerabilities of certain areas in the floodplain. Development, or the presence of people and property in the hazardous areas, is a critical factor in determining vulnerability to flooding. Additional factors that contribute to flood vulnerability range from specific characteristics of the floodplain to characteristics of the structures located within the floodplain. Some of these factors include:

- Flood depth: The greater the depth of the flooding, the higher the potential for significant damages. Flood depths have been estimated for the maximum probable events for this area by various TVA and Corps of Engineering studies.
- Flood duration: The longer the duration of time that floodwaters are in contact with building components such as structural members, interior finishes, and mechanical equipment, the greater the potential for damage. Due to the steep topography of the area, floodwaters tend to recede quickly following an event but may remain longer in localized areas.
- Velocity: Flowing water exerts forces on the structural members of a building, increasing the likelihood of significant damage. A one-foot-depth of water, flowing at a velocity of five feet per second or greater, can knock an adult over and cause significant scour around structures and roadways (FEMA 259). The relatively high velocity of floodwaters in the area will increase damages throughout the planning district.
- Elevation: The lowest possible point where floodwaters may enter a structure is the most significant factor contributing to its vulnerability to damage due to flooding. Entry point elevations of structures throughout the Planning District area vary greatly relative to the BFE. Data on the specific elevations of these structures have not been compiled for use in this analysis.
- Construction Type: Certain types of construction are more resistant to the effects of floodwaters than others. Masonry buildings, constructed of brick or concrete blocks, are typically the most resistant to flood damages simply because masonry materials can be in contact with limited depths of flooding without sustaining significant damage. Wood frame structures are more susceptible to flood damage because the construction materials used are easily damaged when inundated with water. The type of construction throughout the Planning District varies from area to area.

Table 6-15: Expected Annual Loss from Flooding

Riverine Flooding	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	1.6	$1,952,478	$55	$3,581,647	0.14	0
Dickenson	1.3	$178,168	$5	$242,091	0.01	0
Russell	0.9	$37,779	$2,895	$122,439	0.01	0
Tazewell	2.5	$3,300,381	$147	$3,881,992	0.05	0

Source: FEMA National Risk Index

Social Vulnerabilities

The portions of the Planning District most susceptible to flooding are those directly adjacent to the area's major waterways, however, flooding can occur along the smaller tributaries throughout the area. Due to the mountainous terrain in the area and the associated steep slopes, most of the development in the Planning District is in the valleys along these rivers. Development generally consists of residential and agricultural uses, with commercial districts typically limited within the incorporated towns. A significant amount of the development in the Planning District is in the floodplain.

Disabled and vulnerable populations are those that require additional attention during a flood event, are not as able to protect themselves prior to an event or are not able to understand potential risks. These can include non-English populations, elderly populations, or those in a lower socioeconomic group. Disable and vulnerable populations in the Planning District area are primarily lower income and elderly individuals living in a flood-prone area, without the resources to take actions to protect themselves.

Hazard Extent and Potential Impacts

The Cumberland Plateau Planning District experiences an average of 1 to 2 flooding events per year that cause costly damages to properties within the region. Most flooding events result from heavy rains over a prolonged period. The most damaging flooding event occurred in April 1977, when nine feet of water flooded homes and businesses costing $8 million in damages. Recent flooding events with the region have been estimated to cost over $1 million property, residential, and road damages. Future flooding events have potential for similar magnitude and extent.

Clinch River Basin:

The sections of the Clinch River area most susceptible to flooding are those directly adjacent to the Clinch River and Little River, however flooding can occur along the smaller tributaries throughout the area. Most of the development is in the valleys along the Clinch River and Little River and their tributaries. Development in this area consists of residential and agricultural uses. A significant amount of this development is in the Clinch River floodplain.

The Clinch River, and Little River have been studied in detail as part of the FEMA Flood Insurance Study, and BFE's have been determined for the 100-year flood. The 100-year floodplains along these rivers vary from 100 feet wide in some locations to over 1000 feet wide in others, depending on local topography. For areas along other small streams and creeks throughout the Clinch River area, where minimal development is present and the potential for damages is low, approximate methods were used to determine the extent of the floodplain, and no BFE's were determined.

As noted in the hazard history section, a 100-year flood has not been exceeded on the Clinch River. This does not preclude the occurrence of a 100-year event in the future. As previously stated, virtually all the Clinch River watershed located within the CPPDC area is located within Russell County. The effective date for the FIRM in Russell County is March 16, 1988. Watershed changes that have taken place since that date have not been accounted for but should be minimal due to the rural nature of the area.

Levisa Fork and Russell Fork Basin:

The sections of the Levisa Fork area most susceptible to flooding are those directly adjacent to the stream and its tributaries. Most of the development is in the valleys along the Levisa Fork and its tributaries. Development in this area consists of residential and agricultural uses. A significant amount of this development is in the Levisa Fork floodplain.

The Levisa Fork, Slate Creek, Big Prater Creek, Dismal Creek, and Garden Creek have all been studied in detail as part of the FEMA Flood Insurance Study, and BFE's have been determined for the 100-year flood. The 100-year floodplains along these rivers vary from 50 feet wide in some locations to over 500 feet wide in others, depending on local topography. For areas along other small streams and creeks throughout the Levisa Fork area, where minimal development is present and the potential for damages is low, approximate methods were used to determine the extent of the floodplain, and no BFE's were determined.

As noted in the hazard history section, a 100-year flood has not been exceeded on the Levisa Fork. This does not preclude the occurrence of a 100-year event in the future. The areas of the Levisa Fork and Russell Fork watershed located within the CPPDC area are primarily located within Dickenson and Buchanan Counties. The effective date for the Buchanan County FIRM is August 19, 1997, while the effective date for the Dickenson County FIRM is February 6, 1991. Watershed changes that have taken place since that date have not been accounted for but should be minimal due to the rural nature of the area.

Bluestone River Basin:

The sections of the Bluestone River area most susceptible to flooding are those directly adjacent to the Bluestone River, Wrights Valley Creek and Beaver Pond Creek, however flooding can occur along the smaller tributaries throughout the area. Most of the development is in the valleys along the Bluestone River and its tributaries. Development in this area consists of residential and commercial uses.

The Bluestone River, Wrights Valley Creek and Beaver Pond Creek have all been studied in detail as part of the FEMA Flood Insurance Study, and BFE's have been determined for the 100-year flood. The 100-year floodplains along these rivers vary from 50 feet wide in some locations to over 600 feet wide in others, depending on local topography. For areas along other small streams and creeks throughout the Bluestone River area, where minimal development is present and the potential for damages is low, approximate methods were used to determine the extent of the floodplain, and no BFE's were determined.

As noted in the hazard history section, a 100-year flood has been exceeded on the Bluestone River. This does not preclude the occurrence of another 100-year event in the future, as history has proven in many other places. A majority of the Bluestone River watershed located within the CPPDC area is located within the Town of Bluefield, while portions are also located in unincorporated areas of Tazewell County. The effective date for the FIRM for the Town of Bluefield is February 18, 2011, and the effective date for the Tazewell County FIRM is February 18, 2011, as well. Watershed changes that have taken place since that date have not been accounted for but should be minimal due to the rural nature of the area.

Climate Change Influence

According to NASA, climate change is a long-term change in the average weather patterns that have come to define Earth's local, regional, and global climates. The Cumberland Plateau Region's number one hazard is flooding, which is not likely to change over the next few years due to climate change.

Climate change may cause river floods to occur more often and be more significant than they used to be. The U.S. Environmental Protection Agency (EPA) notes that "as warmer temperatures cause more water to evaporate from the land and oceans, changes in the size and frequency of heavy precipitation events may in turn affect the size and frequency of river flooding." Increased rainfall and flooding can accelerate erosion along riverbanks increasing debris in river channels

Probability of Future Events

Floodplains are designated by the frequency of the flood that is large enough to inundate the area. Flood frequencies such as the 100-year flood are determined by plotting a graph of the size of all known torrents for a place and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence at any time, expressed as a percentage of the probability of flooding each year. For example, a 100-year flood has a one percent chance of occurring in any given year. The 500-year flood zone has a 0.2 percent chance of occurrence in any given year. FIRMs are developed as part of a FEMA FIS to delineate the areas at risk of being flooded during a one percent chance or 100-year flood event. The one percent chance floodplains are called the Special Flood Hazard Area (SFHA). Table 6-16 outlines the hazard rankings for each of the hazard priority criteria related to flooding.

CPRI Assessment

Table 6-16 CPRI Flood Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Flood	1.8	.9	.45	.3	3.45	1
Flood	(4x.45) =1.8	(3x.30) =.9	(3x.15) =.45	(3x.10) =.3	3.45	1

6.3.2 Severe Winds

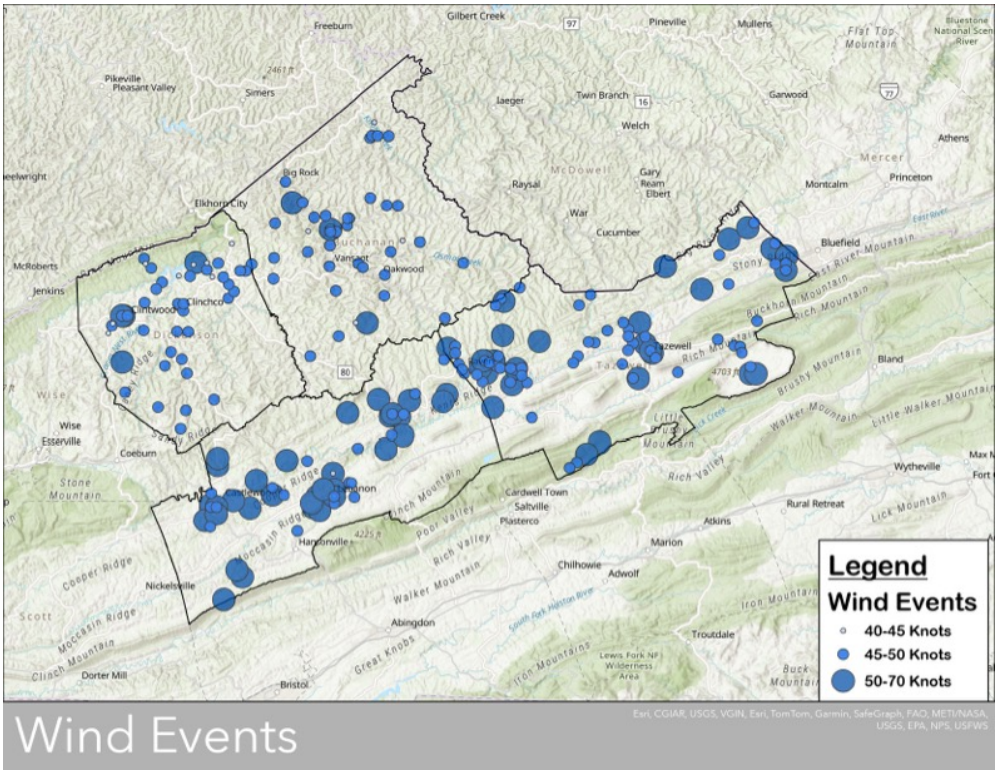
For the hazard mitigation plan update, severe winds include high wind, strong wind, and thunderstorm winds. Wind can be one of the most destructive forces of nature. Strong winds can erode mountains and shorelines, topple trees and buildings, and destroy a community's critical utilities and infrastructure. Primarily, damaging winds that affect the Cumberland Plateau Planning District are associated with severe thunderstorms, or the remnants of a tropical storm or hurricane. Winds from a severe thunderstorm can reach over 60 mph in the southwest Virginia region. These storms generally develop along a cold front and can extend for hundreds of miles.

Type and Location

The Planning District is not classified as an area with a higher-than-average base wind speed nationally. According to the Virginia Uniform Statewide Building Code (USBC, 1996), the minimum design wind speed for the Planning District area is 70 mph. High wind events, primarily severe thunderstorms, have occurred in

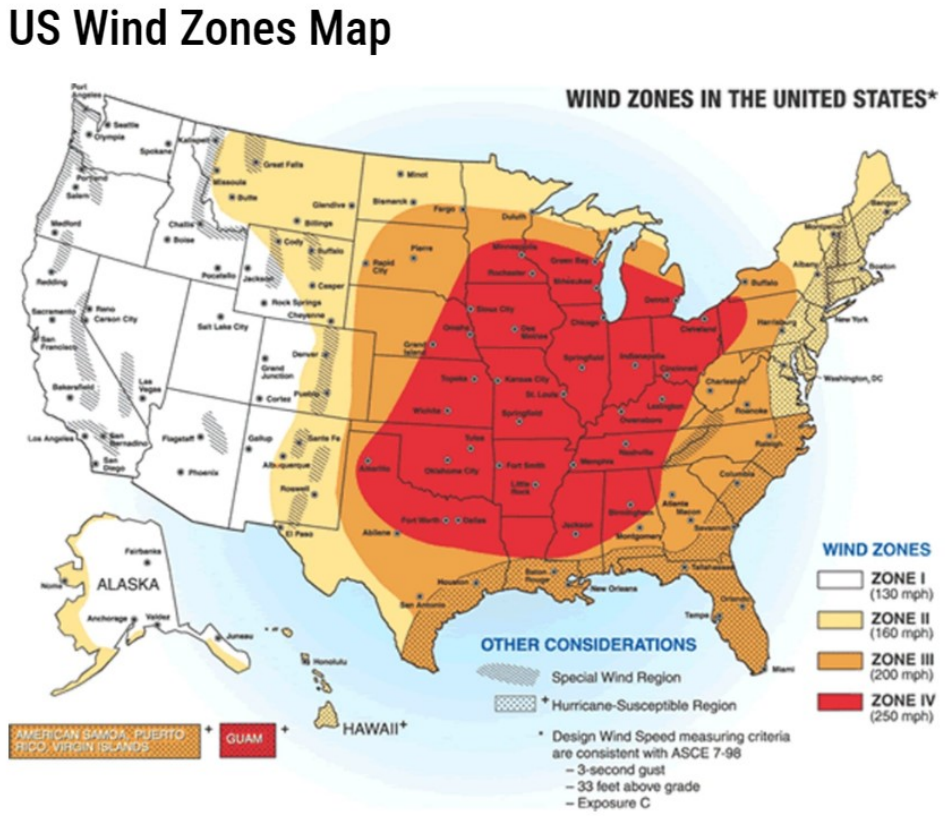
every portion of the Planning District. Figure 6-6 depicts wind events within the region. There are no proven indicators to predict specifically where high winds may occur, and these events can be expansive enough to affect the entire area. Figure 6-7 outlines wind zones applicable to the region. Although localized geography, such as mountain ranges and gorges, can contribute to potential damages caused by these events, no specific locations within the Planning District have been identified due to these conditions. Therefore, the entire Planning District is considered to have an equal risk of being impacted by a high wind event.

Figure 6-6: Cumberland Plateau Region Wind Map



Source: NWS Storm Events Database

Figure 6-7: U.S. Wind Zone Map



Source: Resilience Action Fund

Previous Occurrences

There have been several severe wind events recorded in the Cumberland Plateau Planning District since 1992. While most events did not cause injuries or death, they did result in significant property damage. Table 6-17 lists the recorded high wind events within the Cumberland Plateau Planning District since 1992. Tazwell County suffered significantly more events. The events of note are captured within the table and the total number of events have been provided in the county tabulation. Of the events, only one high wind event resulted in an injury, while there were no reported deaths.

Table 6-17: High Wind Events in the Cumberland Plateau Planning District

Location	Event Date	Magnitude (Knots)	Injuries	Deaths	Property Damage
Buchanan County					
Buchanan County	10/24/2001	Unavailable	0	0	$1,000
Buchanan County	12/09/2009	50	0	0	$10,000
Buchanan County	03/03/2023	50	0	0	$0
Buchanan County	04/01/2023	50	0	0	$0
Buchanan Event Total	**N/A**	**Varied**	**0**	**0**	**$11,000**
Dickenson County					
Dickenson County	10/24/2001	Unavailable	0	0	$3,000

Location	Event Date	Magnitude (Knots)	Injuries	Deaths	Property Damage
Dickenson County	12/09/2009	50	0	0	$10,000
Dickenson County	12/25/2009	50	0	0	$5,000
Dickenson County	03/03/2023	50	0	0	$0
Dickenson County	04/01/2023	50	0	0	$0
Dickenson Event Total	**N/A**	**Varied**	**0**	**0**	**$18,000**
Russell County					
Russell County	12/01/2006	60	0	0	$10,000
Town of Cleveland	12/25/2009	55	0	0	$5,000
Town of Lebanon	02/05/2010	65	0	0	$20,000
Russell County	11/29/2010	50	0	0	$0
Russell County	02/01/2011	60	0	0	$8,000
Town of Honaker	12/20/2012	55	0	0	$8,000
Town of Lebanon	12/26/2012	52	0	0	$5,000
Town of Honaker	02/26/2013	55	0	0	$20,000
Town of Lebanon	11/18/2015	50	0	0	$0
Town of Lebanon	03/18/2022	52	0	0	$0
Russell County	01/12/2024	83	0	0	$0
Russell Event Total	**N/A**	**Varied**	**0**	**0**	**$**
Tazewell County					
Tazewell County	02/18/1998	Unavailable	0	0	$150,000
Tazewell County	01/02/1999	Unavailable	0	0	$20,000
Tazewell County	03/03/1999	Unavailable	0	0	$2,000
Tazewell County	03/19/2000	Unavailable	0	0	$10,000
Tazewell County	02/22/2003	60	0	0	$3,000
Tazewell County	10/16/2006	63	0	0	$150,000
Tazewell County	11/15/2006	52	0	0	$900
Tazewell County	12/01/2006	52	0	0	$3,000
Tazewell County	12/25/2006	60	0	0	$5,000
Tazewell County	12/23/2007	52	0	0	$3,000
Tazewell County	02/01/2008	52	0	0	$5,000
Town of Lebanon	05/11/2008	55	0	0	$20,000
Tazewell County	02/11/2009	60	0	0	$25,000
Tazewell County	04/03/2009	50	0	0	$900
Tazewell County	12/02/2009	50	0	0	$15,000
Tazewell County	12/09/2009	55	0	0	$5,000
Tazewell County	12/25/2009	50	0	0	$5,000
Tazewell County	01/24/2010	56	0	0	$1,800
Tazewell County	02/05/2010	68	0	0	$80,000
Tazewell County	02/01/2011	61	0	0	$3,000
Tazewell County	03/09/2011	52	0	0	$4,500
Tazewell County	10/28/2012	50	0	0	$5,000
Tazewell County	12/20/2012	50	0	0	$500
Tazewell County	12/26/2012	55	0	0	$15,000
Tazewell County	02/26/2013	50	0	0	$7,000
Tazewell County	03/12/2014	50	0	0	$5,000
Tazewell County	10/14/2014	50	0	0	$1,000
Tazewell County	11/20/2014	50	0	0	$30,000
Town of Bluefield	01/04/2015	50	0	0	$2,000

Location	Event Date	Magnitude (Knots)	Injuries	Deaths	Property Damage
Tazewell County	11/18/2015	50	0	0	$10,000
Tazewell County	04/02/2016	50	0	0	$10,000
Tazewell County	03/01/2018	52	0	0	$12,500
Tazewell County	01/23/2019	54	1	0	$35,000
Tazewell County	02/20/2019	55	0	0	$111,000
Tazewell County	02/24/2019	54	0	0	$10,000
Tazewell County	11/27/2019	50	0	0	$10,000
Tazewell County	03/30/2022	52	0	0	$75,000
Town of Richlands	03/03/2023	50	0	0	$5,000
Tazewell County	04/01/2023	50	0	0	$10,000
Tazwell Event Total	**N/A**	**Varied**	**1**	**0**	**$866,100**

Source: NOAA NCEI Storm Database

The Cumberland Plateau Planning District also frequently experiences thunderstorm wind events that bring damaging winds. According to the NCEI the region experienced 347 thunderstorm wind events between the years 2000 and 2024, with wind speeds ranging from 40 to 70 knots. The 347 thunderstorm wind events totaled $2.26 million in property damages and $145,000 in crop damages, killing one and injuring two.

Vulnerabilities

The extent and degree of damages from a high wind event are primarily related to the intensity of the event, measured in terms of wind speed. Sustained high winds can be the most damaging, although a concentrated gust can also cause significant damage. As wind speed increases, the extent of damage varies depending on several site-specific characteristics. Certain characteristics of an area or of a structure increase its resistance to damage more than others. Many of these factors are extremely specific to the location, or the structure in question. However, each factor's effects on vulnerability can be discussed in general. The following is a list of these factors and a description of how they relate to vulnerability, particularly in the Cumberland Plateau Region. Table 6-18 details the expected annual loss of damages, injuries, and deaths from high wind events within the region.

Design Wind Pressures:

Buildings must be designed to withstand both external and internal wind pressures on the structural framing and exterior elements. The level to which these structures are designed, as expected, directly correlates with their ability to resist damages due to high winds. The state's building code dictates what design wind speed a structure must be designed to. When stipulating the design wind load of residential and commercial structures, the Virginia Uniform Statewide Building Code refers to the standards developed in BOCA, 1996. The design wind speed for the region is determined to be 70 mph. For some building types, those structures constructed after the adoption of the building code are the most likely to be the most resistant to damages from wind. However, the resistance to wind damage based on these code requirements is only effective to the level the requirements are enforced and no comprehensive data on the date built for these structures exist for the planning district.

Building Types:

The type of building construction will have a significant impact on potential damages from high wind events. The following basic building type list is ordered by vulnerability (most to least vulnerable).

- Manufactured buildings are produced in large number of identical or smaller units. These structures typically include light metal structures or mobile homes.
- Non-Engineered Wood and Non-Engineered Masonry buildings are those that have not been specifically engineered during design. These structures may include single and multi-family residences, some one- or two-story apartment units, and small commercial buildings.
- Lightly Engineered structures are those that may combine masonry, light steel framing, open-web steel joints, wood framing, and wood rafters. Examples of these structure include motels, commercial, and light industrial buildings.
- Fully Engineered buildings typically have been designed for a specific location and have been fully engineered during design. Examples include high-rise office buildings, hotels, hospitals, and most public buildings.

Critical Facilities:

The vulnerability of critical facilities such as police stations, hospitals, shelters, and utility services vary greatly depending on the factors above. To accurately assess the relative vulnerabilities of these structures, data regarding the vulnerability factors would be required. Due to the high level of importance to the community, the ability of these structures to resist the forces of high wind events greatly affects the community's overall vulnerability to these hazards.

Other building related factors that impact the potential for damage include height, shape, and the integrity of the building envelope. Taller buildings and those with complex shapes and complicated roofs are subject to higher wind pressures than those with simple configurations. The building envelope is composed of exterior building components and cladding elements including doors and windows, exterior siding, roof coverings, and roof sheathing. Any failure or breach of the building's envelope can lead to increased pressures on the interior of the structure, further damage to contents and framing, and possible collapse.

Table 6-18: Expected Annual Loss from Severe Winds

Severe Winds	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	2.8	$49,085	$39	$154,478	0	0
Dickenson	3.4	$62,561	$60	$151,915	0	0
Russell	3.1	$72,050	$15,639	$232,356	0	0
Tazewell	2.4	$125,060	$168	$294,340	0	0

Source: FEMA National Risk Index

Social Vulnerabilities

The Planning District includes a variety of building types. Residential construction is primarily wood framed, varying from single story to multiple stories, although some masonry residential properties are present as well. As mentioned, non-engineered wood framed structures are among the most susceptible to potential damage. Due to this type of construction being the most prevalent for residential properties in the region, many residential structures in the area could be classified to have a high level of vulnerability to damages should a high wind event occur.

Other types of structures found throughout the region that are vulnerable to damages during high wind events are metal framed buildings, primarily associated with light industrial buildings, as well as some agricultural buildings. According to the Virginia USBC, agricultural buildings, such as barns and silos, are required to meet minimum requirements and be constructed in accordance with the state building code. Although the potential for high amounts of damages is significant.

Hazard Extent and Potential Impacts

The Cumberland Plateau Planning District experiences an average of 2 to 3 severe wind events per year, usually resulting in property damages. Tazewell County experiences the most frequent and destructive high wind events of the region. The worst high wind event occurred in Tazewell County on October 16th, 2006, when a strong high pressure along the coast and a strong area low pressure approached from the west, developing a strong pressure gradient across the region with cross mountain flow helping to create damaging wings. Winds were recorded to be 63 knots in magnitude, which blew down at least 40 large trees and powerlines during the early morning hours. The event caused $150,000 in property damages power outages to 400 customers.

Depending on the type of wind event, the damage sustained can range from extremely localized to widespread, and from moderate to devastating. The potential impacts of a severe wind event to the Planning district depend on the specific characteristics of the event but can include:

- Broken tree branches and uprooted trees,
- Snapped power, cable, and telephone lines,
- Damaged radio, television, and communication towers.
- Damaged and torn off roofs,
- Blown out walls and garage doors,
- Overturned vehicles,
- Totally destroyed homes and businesses, and
- Serious injury and loss of life.

Downed trees and power lines can fall across roadways and block key access routes, as well as cause extended power outages to portions of the district.

The American Society of Civil Engineers (ASCE) houses the most up to date wind speed maps for different building occupancies within ASCE 7-16. Table 6-19 documents the mean recurrence interval (MRI) wind speed for each county within the Cumberland Plateau Planning District. MRI winds are used to determine design loads and assess load combinations for buildings and other structures. It is noted that MRI winds within the region are trending with that of most of the country.

Table 6-19: MRI Winds within the Cumberland Plateau Planning District

County	MRI 10 Year Event	MRI 25 Year Event	MRI 50 Year Event	MRI 100 Year Event
Buchanan	74 MPH	80 MPH	86 MPH	92 MPH
Dickenson	73 MPH	80 MPH	85 MPH	90 MPH
Russell	73 MPH	80 MPH	85 MPH	90 MPH
Tazwell	73 MPH	80 MPH	85 MPH	90 MPH

Source: Applied Technology Council (ATC) Hazards by Location Database

Climate Change Influence

The rise of global temperatures contributes to unstable weather patterns, leading to more frequent and severe storms that can generate high winds in the region. These changes in weather patterns are driven by factors such as increased atmospheric moisture and the shifting behavior of jet streams, which can result in stronger and more erratic wind events.

Probability of Future Events

Due to the frequency of both high wind and thunderstorm wind events within the Cumberland Plateau region and the influence of climate change, there is a high probability for future events to occur. The region experiences an average of 2.9 high wind events per year with the most recently recorded high wind event occurring in Russell County on January 12th, 2024. The event recorded wind speeds of 83 knots and reported no property damage. The most recent thunderstorm wind event in the region occurred in the Town of Richlands on February 12th, 2024, in which a frontal system intensified as it moved from the south Mississippi River Valley into southwest Virginia. Numerous trees were blown down by thunderstorm winds, falling onto powerlines and causing scattered power outages. One tree fell onto a house as well. A total of $20,000 in property damages were recorded for the incident. Table 6-20 (the CPRI assessment) outlines the hazard rankings for each of the hazard priority criteria related to severe winds.

CPRI Assessment

Table 6-20: CPRI Severe Wind Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Severe Wind	1.8	.6	.45	.3	3.15	2
Severe Wind	(4x.45) =1.8	(2x.30) =.6	(3x.15) =.45	(3x.10) =.3	3.15	2

6.3.3 Severe Winter Weather

For the Cumberland Plateau Hazard Mitigation Update, severe winter weather includes blizzard, frost/freeze, heavy snow, ice storm, sleet, winter storm, and winter weather. Severe winter storms and blizzards are extra-tropical cyclones that originate as mid-latitude depressions (FEMA, 1997). Snowstorms, blizzards, and ice storms are the most common examples. These storms can bring heavy snowfall, high winds, ice, and extreme cold with them. Historically, winter storms in Southwest Virginia have produced significant amounts of snowfall, sleet, and freezing rain. The following are the National Weather Service's descriptions of various components of a winter storm:

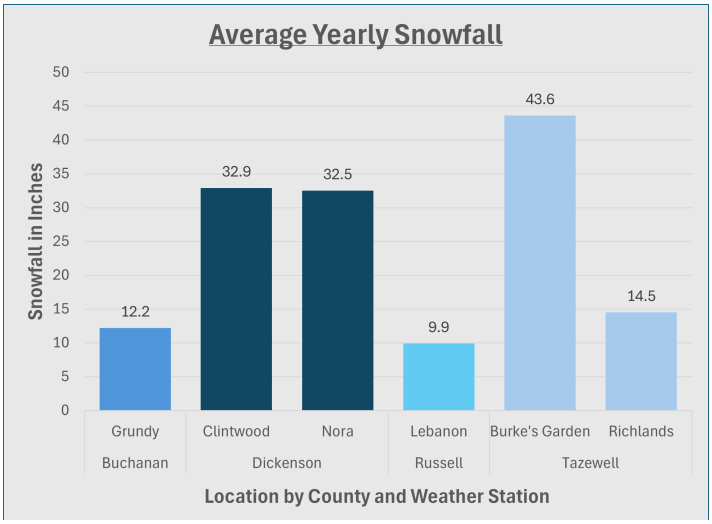
- **Heavy Snowfall –** The accumulation of six or more inches of snow in 12 hours or eight inches in 24 hours.
- **Blizzard –** Sustained wind speeds over 35 mph accompanied by heavy snowfall or large amounts of blowing or drifting snow for more than three hours.
- **Freezing Rain –** Precipitation falls as a liquid but freezes on contact with roads, trees, power lines, and other surface structures below 32 degrees F, forming a dangerous ice laze.

- **Ice Storm –** A type of winter storm characterized by freezing rain results in a dangerous coating of ice on trees, power lines, and road surfaces.
- **Sleet –** Solid grains or pellets of ice formed by the freezing of raindrops or the refreezing of primarily melted snowflakes. Sleet does not cling to surfaces.
- **Wind Chill –** A calculated temperature index that describes the combined effect of wind and low air temperatures on exposed skin.

Type and Location

Although the Commonwealth of Virginia is not generally associated with severe winter storms, the mountainous area in the southwestern portion of the state regularly experiences several snowstorms each year. These storms can produce between 4 and 12 inches of snow from each event. Total average annual snowfall within the Planning District varies from county to county. Figure 6-8 depicts the average yearly snowfall within the Cumberland Plateau Planning District as sourced from local weather stations.

Figure 6-8: Average Yearly Snowfall in the Cumberland Plateau Planning District



Source: Summarized Monthly Snowfall Data by Weather Station

Previous Occurrences

According to the NCEI Storm Events Database, there have been 231 recorded winter weather events across the Cumberland Plateau Region since 2000. Winter weather events include blizzards, heavy snow, ice storms, sleet, winter storms, and winter weather. These severe winter weather events have resulted in $4.545M in property damage, and 2 injuries. Table 6-21 identifies some of the most significant of these events.

Table 6-21: Previous Occurrences of Winter Weather Events in the Cumberland Plateau Region

Event Date	Hazard History
February 12 – March 10, 1960	A record snowfall with amounts of 65 inches hit the Cumberland Plateau Region.
December 10-12, 1960	4-13 inches of snow fell throughout the region.
January 20-22, 1985	An artic cold swept across the state ushering in extreme cold and high winds. Wind chill temperatures plunged well below zero. Winds knocked out power compounding the effects of the cold also allowing pipes to freeze and burst. Fresh snowfall of 4 inches helped temperatures across the entire state fall below zero setting new record lows in many locations.
March 12-15, 1993	The most significant winter storm to affect the Cumberland Plateau District was the “Super Storm of March ‘93”, also known as “The Storm of the Century”. This storm affected 26 states throughout the central and eastern portions of the U.S. resulting in a Federal Disaster Declaration. Throughout the region, the snowfall amounts ranged from 12 inches to over 48 inches depending on elevation. Extreme southwest Virginia saw 30 to 42 inches of snow, the most snow in more than 25 years. Winds produced blizzard conditions of portions of the west with snow drifts up to 12 feet. Interstates were closed, some roofs collapsed under the weight of the snow. Shelters opened for nearly 4,000 stranded travelers and those who were without heat and/or electricity.
February 10-11, 1994	This 1994 ice storm brought a devastating 3 inches of ice to some areas of southern Virginia cause tremendous tree damage and power outages for up to a week.
January 5-7, 1996	Known as the “Blizzard of ‘96” or the “Great Furlough Storm” brought a strong low-pressure system from the Gulf Coast region brought between one and three feet of snow to southwest Virginia. Numerous trees and powerlines fell. Many roads became impassable shutting down schools and businesses across the area. Numerous auto accidents occurred. There were also isolated incidents of collapsed rooves. The storm initially dropped wet snow on the 6th, causing widespread power outages. Around 10,000 customers were without electricity in Buchanan and Dickenson Counties. Roads became impassable from both fallen trees and deep snow. The morning of the 8th, snow depths of 14 to 18 inches were common in the valleys. Total storm snowfall was 23 inches at Clintwood in Dickenson County and 32 inches at Breaks Interstate Park in Buchanan County. The storm caused $100,000 in property damages.

Event Date	Hazard History
January 27-28, 1998	Main effects of the storm were electric power outages and transportation stoppages. A state of emergency was declared in Virginia with Dickenson and Buchanan Counties being two of the hardest hit counties. In Dickenson County, 99% of the county lost electricity during the storm. By February 3rd, 1,000 Buchanan County residents were still without power. Three shelters were opened in Dickenson and two opened in Buchanan County. A 34-year-old man in Boissevain in Tazewell County suffered an asthma attack at his residence shortly after midnight on the 28th. As a result of downed trees and tree limbs and extremely hazardous road conditions due to the snow, it took an extremely long time for help to safely reach the man. The man died prior to the arrival of help.
December 18-21, 2009	The region was hit by a heavy snowstorm that moved out of the eastern Gulf of Mexico. Total snow accumulations were just 5 to 7 inches along some of the river valleys, such as Grundy. Near Clintwood, snow accumulation was 11 inches. Above 2,000 feet, snow measured one to two feet. The heavy snow event was declared a state of emergency by Governor Kain. Multiple homes were damaged, and electricity was out for many days. The cost for debris removal of fallen trees in Buchanan County was around $450,000.
February 16-17, 2015	Light snow began falling around dawn on the 16th when the temperature was hovering in the 10-to-15-degree range. The snow increased during the morning, then decreased that evening. The snow ended early on the 17th. The temperature only crept up into the upper teens and lower 20s during the later part of the storm. Snow accumulations of 10 to 12 inches were common. For example, Grundy and Clintwood both measured around 11 inches. It was the first significant snowstorm of the 2014-2015 winter for this section of Virginia. The COOP observers at Burkes Garden and Richlands both measured 11.0 inches of snow. The was the maximum amount of snow reported from this event in the Virginia counties within the Blacksburg National Weather Service forecast area.
February 21, 2015	After the arctic deep freeze at dawn on the 20th, snow, sleet, and freezing rain overspread far western Virginia around 0300E on the 21st. After 1 to 2 inches of wet snow in the river valleys, the snow changed to freezing rain for 3 to 4 hours during the morning. The cold ground temperatures allowed freezing rain to continue even with air temperatures of 33 and 34 degrees. Ice accumulations reached a maximum of a quarter of an inch. The freezing rain became mostly rain by midday for these low elevations. However, in the higher terrain of eastern Buchanan and eastern Dickenson Counties, wet snow continued into the afternoon before ending as drizzle that evening. Clintwood observed 4 to 5 inches of snow. One spotter from the Sandy Ridge area, near the Wise County border, reported 18 inches of snow. Total melted precipitation totals were over 1.5 inches. Melting slush and snow piles from plowing and shoveling prevented the normal drainage of water. Water pooled on many roads. Ice filled streams were swollen, but no major flooding occurred. Ice dams in residential gutters and downspouts allowed runoff to seep into homes.

Event Date	Hazard History
February 8-11, 2016	Sub-freezing air spilled south through the Eastern United States for a two-day period of mainly orographic snowfall as several shorter wavelength systems dropped southeast out of the Northern Plains and Great Lakes. The snow accumulated to a depth of three to five inches on average. However, some greater snowfall totals occurred primarily in the highest terrain across Southwest Virginia and in the Smoky Mountains. Snowfall amounts between 6 to 7 inches were observed across several locations in the county. The highest accumulation was in the Tazewell area where 7 inches was estimated.
December 9-10, 2018	A strong southern stream low pressure system crossed the Gulf States on the 8th and 9th, moving out to sea late on the 9th. This storm brought significant snowfall to the central and southern Appalachians. Both Buchanan and Dickenson Counties in southwest Virginia were buried in 6 to 10 inches of snow. The snow started late on the 8th and continued into the afternoon of the 9th. The highest snow amount was reported by the cooperative observer near Nora in southeastern Dickenson County, where 10.3 inches of snow fell. On the western side of Dickenson County, in Clintwood, 7.5 inches of snow fell. Buchanan County saw similar snow accumulations with 8 inches in Vansant and 6.3 inches in Grundy.
December 24-25, 2020	An arctic cold front swept across southwest Virginia Christmas Eve. Rain changed to a period of heavy snow during the evening with a period of snowfall rates of nearly two inches an hour. Snowfall amounts ranged from 4 to 7 inches in Dickenson and Buchanan Counties, leading to treacherous road conditions and a few areas of significant car backups on the evening of December 24th. Snow showers remained in the air all of Christmas Day bringing some additional accumulations. This system produced the first white Christmas in several years for many locations.

Source: NOAA NCEI Storm Events Database

Vulnerabilities

Winter storms can disrupt lives for periods of a few hours or up to several days, depending upon the severity of the storm. Transportation systems are usually among the first and hardest hit sectors of a community. Snow and ice can block primary and secondary roads, and treacherous conditions make driving difficult; some motorists may be stranded during a storm, and emergency vehicles may not be able to access all areas. The steep slopes found throughout the Planning District exacerbate the situation, making some of the secondary roads impassable during even a minor winter weather event. Melting snow and rain leaves the region vulnerable to flooding during winter and early spring, while ice jams can damage road infrastructure and flood homes and businesses.

Utility infrastructure also can be adversely affected by winter storms. Heavy snow and ice can cause power lines to snap, leaving citizens without power and, in some cases, heat for hours or even days. Likewise, telephone lines can also snap, disabling communication within portions of a community. Frozen water pipes can rupture in people's homes, and water and sewer mains can also freeze and leak or rupture if not properly maintained. These ruptures can lead to flooding and property damage. Table 6-22 outlines the expected annual loss of property, injuries, and deaths from severe winter storm weather within the region.

Table 6-22: Expected Annual Loss from Severe Winter Weather

Severe Winter Weather	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	2.4	$2,304	$0	$10,155	0	0
Dickenson	2.3	$1,655	$0	$6,967	0	0
Russell	3.5	$2,379	$2	$17,308	0	0
Tazewell	4.4	$96	$3	$55,539	0	0

Source: FEMA National Risk Index

Social Vulnerabilities

People's health can also be adversely affected by severe winter weather. People who lose heat in their homes and do not seek alternate shelter, people who get stuck in snowdrifts while driving, or people working and playing outdoors can suffer from hypothermia and frostbite. Since winter weather hazards generally affect the entire Planning District and vary in intensity and form, it is not possible to quantify primary effects or specific damages.

Potential Impacts

In addition to snow, winter storms can also bring sleet and freezing rain to the area. Sleet is generally described as frozen water particles that fall in the form of ice, while freezing rain falls as super cooled water which can freeze on impact with the ground, trees, or roadways. In its most severe form, freezing rain can fall as part of an ice storm that can coat the area with a layer of ice up to 3" thick. Ice storms can cause significant damage by snapping tree limbs and bending trees to the ground. These fallen limbs and trees can completely block roadways, cut access to certain areas of the Planning District for days, and interfere with and destroy overhead utility lines.

Treacherous driving conditions can result in automobile accidents in which passengers may be injured and property damages may occur. Deliveries of heating fuel can be delayed by impassible roads. Impassable roads also can result in schools being closed because buses are not able to access their routes and bring children to school. The costs of salting and sanding roads and of snow removal can be staggering to communities both large and small. The costs to repair roads after spring thaws also can be significant.

After a significant snowfall, the resulting thaw that occurs when the temperature rises above freezing can cause flooding in some areas. As noted in the flood portion of this document, January through March are the months with the highest occurrences of flooding. The rainy season coincides with snowfall and subsequent melting. Because of the mountainous terrain in this area, flood events tend to occur rapidly and with little warning.

Climate Change Influence

While global temperatures are rising, leading to milder winters overall, climate change can also contribute to more extreme and unpredictable winter weather events in the Cumberland Plateau Planning District. Climate change can lead to greater variability in winter weather patterns due to the creation of a weakened and unstable polar vortex, which can result in sudden and severe cold snaps. Warmer global temperatures also increase the amount of moisture in the atmosphere, leading to heavier snowfall and more intense winter storms when cold air is present. As winters become more variable, the region may experience more frequent freeze-thaw cycles where temperatures fluctuate above and below freezing. Additionally, climate change can alter precipitation patterns, leading to shifts in the timing and type of winter precipitation.

Hazard Extent and Probability of Future Events

The Cumberland Plateau Planning District experiences an average of 2 to 4 severe winter weather events per year, usually resulting in minimal property and crop damages. The “Blizzard of ’96” and the “Storm of March ‘93” remain the most severe of winter weather events for the region. The “Super Storm of March ‘93” resulted in a Federal Disaster Declaration. Throughout the region, the snowfall amounts ranged from 12 inches to over 48 inches depending on elevation, the most snow in more than 25 years. Winds produced blizzard conditions of portions of the west with snow drifts up to 12 feet. Interstates were closed and there were reports of roofs collapsing under the weight of the snow. Shelters opened for nearly 4,000 stranded travelers and those who were without heat and/or electricity.

The NWS tracks winter storms by radar. Based on this radar information as well as models, the NWS provides up-to-date weather information and issues winter storm watches to indicate when conditions are favorable for a winter storm, and winter storm warnings if a storm is occurring or detected by radar. On average, southwestern Virginia will experience between one and two severe winter storms each year. Snowfalls amounts for these storms can vary from a few inches to up to a foot of snow in extreme cases. The higher elevations of the Planning District can experience several feet of snow in a severe winter storm. Table 6-23 outlines the hazard rankings for each of the hazard priority criteria related to severe winter weather events.

CPRI Assessment

Table 6-23: CPRI Severe Winter Weather Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Severe Winter Weather	1.8	.6	.3	.3	3	3
Severe Winter Weather	(4x.45) = 1.8	(2x.30) = .6	(2x.15) = .3	(3x.10) = .3	3	3

6.3.4 Tornado

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. The rotating column of air often resembles a funnel-shaped cloud. Winds are typically less than 100 mph, with the most violent tornado wind speeds exceeding 250 mph. The widths of most Virginia tornados are generally several yards across, but the path length can vary from a few hundred yards to dozens of miles long. A tornado moves at speeds between 30 and 125 miles per hour (mph) and can generate winds that reach 300 mph. Although rare, tornadoes can occur in the Planning District.

Type and Location

The total number may be higher as incidents may occur over areas with sparse populations or may not cause any property damage. The Tornado season is typically March through August; however, tornados can occur in any month. In Virginia, peak tornado activity is in July since hot, humid conditions stimulate tornado growth. Strong tornadoes may be produced by thunderstorms and are often associated with the passage of hurricanes.

Tornados may occur in any location across the Cumberland Plateau Planning District, as seen in Figure 6-10. In the United States, tornadoes have been classified on the Fujita Scale, assigning numeric scores from zero to five (or higher) based on the severity of observed damages. The traditional Fujita scale, introduced in 1971, was used to rate the intensity of tornadoes after that and was also applied to previously documented tornadoes. The scale assigns numerical values for wind speeds inside the tornado according to the type of damage and degree. In February 2007, an “enhanced” Fujita scale was implemented with somewhat lower wind speeds at the higher F-numbers and more thoroughly refined structural damage indicator definitions. In addition, it was developed to align tornado wind speeds with associated damages with better accuracy. Figure 6-9 demonstrates the “EF” tornado scale presented by the NWS.

687 **Figure 6-9: EF Rating Scale**

EF Rating	Wind Speeds	Expected Damage
EF-0	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.
EF-1	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.
EF-2	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.
EF-3	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.
EF-4	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.
EF-5	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.

Fujita scale	Wind speeds (3-s gust)		Enhanced Fujita scale	Wind speeds (3-s gust)	
	$m\ s^{-1}$	mph		$m\ s^{-1}$	mph
F0	20–35	45–78	EF0	29–38	65–85
F1	36–52	79–117	EF1	38–49	86–110
F2	53–72	118–161	EF2	50–60	111–135
F3	73–93	162–209	EF3	61–74	136–165
F4	94–117	210–261	EF4	74–89	166–200
F5	118–142	262–317	EF5	>89	>200

688
689 Source: https://www.weather.gov/images/cae/EF-Ratings.jpg

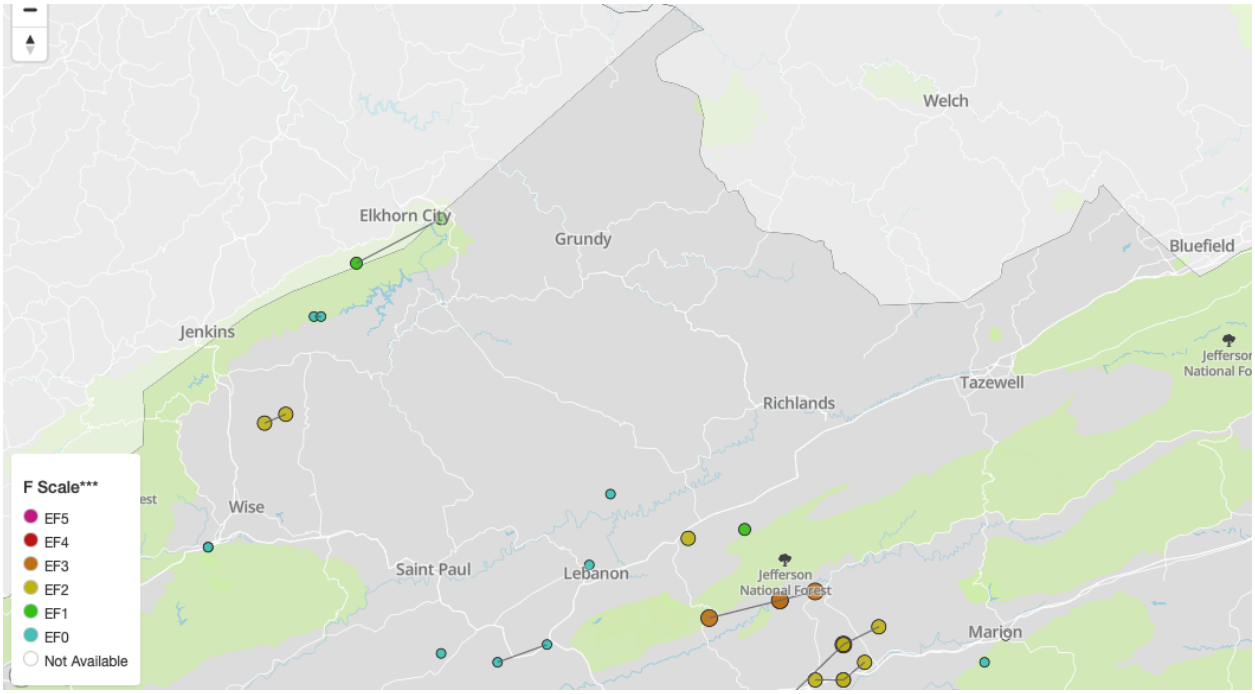
690 Most historic tornadoes within the area were EF0 and EF1. Low-intensity tornadoes will cause
691 localized transportation route disruption due to the number of debris, and utilities can also be out of service
692 for several days due to downed power and phone lines. A tornado's intense power can destroy buildings,
693 primarily manufactured homes, down power lines, and cause significant agricultural damage.

694 ## Previous Occurrences

695 Due to the mountainous terrain, tornado occurrences in the area have been rare, although they are possible.
696 According to the NCEI Storm Events Database, there have been seven tornado events in the region from
697 1950-2024. These tornado events have resulted in a total of $2.32 million in property damage and $10,000

in crop damage. Figure 6-10 shows the location of the historic tornado tracks and touchdowns in the Cumberland Plateau Planning District. Table 6-24 lists and describes the impact of the six tornadoes that have occurred.

Figure 6-10: Tornadoes in the Cumberland Plateau Region 1950-2024



Source: https://data.newsleader.com/tornado-archive/virginia/

706 **Table 6-24: Historical Tornado Occurrences in the Cumberland Plateau Planning District**

Event Date	Description
April 4, 1974	Dickenson County – F1 tornado hit the county with a length of 7.3 miles causing $250,000 in property damages.
July 19, 1996	Russell County – A F1 tornado damaged an elementary school, fire department, and a few homes. Numerous trees and powerlines were blown down. The event caused $2 million in property damages and $10,000 in crop damages.
February 11, 2009	Russell County – A EF0 tornado tracked 4.2 miles near Honaker with a maximum speed estimate around 70 mph. Several trees were downed, and one barn has its roof damaged. The event caused $30,000 in property damages.
May 8, 2009	Dickenson County – A EF0 tornado touched down intermittently along its path just north of Clintwood. Trees were uprooted, one tree fell on a mobile home, and two other homes had minor roof damage. The event caused $5,000 in property damage. Russell County – An EF0 tornado briefly touched down about one mile northwest of Lebanon. The path length was one-tenth of a mile, and the path width was 20 yards. The maximum wind speed was 65 miles an hour. Russell County – A EF2 tornado touched down about eight miles east-northeast of Lebanon, Virginia with maximum wind speeds of 125 miles an hour. The path length was 1.1 miles, and maximum width was 250 yards. Approximately 100 trees were snapped and uprooted along the tornado path. In addition, a well-constructed wooden barn was destroyed and while a home incurred moderate damage.
June 16, 2009	Russell County – An EF0 tornado touched down briefly south of Castlewood with a 20-yard path width and path length of two-tenths of a mile. The tornado produced maximum wind speeds at 70 mph. A few trees were downed due to the tornado. The event caused $5,000 in property damages.
May 24, 2011	Russell County – An EF0 tornado touched down near the Bolton area and moved northeast near Hansonville, Virginia before lifting. Several trees were downed in the path with $30,000 in property damages.

707 Source: NOAA NCEI Storm Events Database

708

Vulnerabilities

Table 6-25 demonstrates the estimated annualized damages for tornado events in the Cumberland Plateau Planning District. A structure's tornado vulnerability is the same as other extreme wind events, which are based on building construction and standards. Other factors, such as location, condition, and maintenance of trees, also play a significant role in determining vulnerability. A tornado will cause severe damage or destruction to any structure in its path. Clusters of mobile homes are more vulnerable to tornadoes. Proper anchoring can reduce damage exposure, but not entirely, as these structures are extremely vulnerable to damage from downed trees and a tornado's effect on the structure of the manufactured home itself.

Human vulnerability is based on the availability, reception, and understanding of early warnings of tornadoes, such as warnings issued by the NWS and access to safe, substantial indoor shelters. Once warned of an impending tornado hazard, seeking shelter indoors on the lowest floor of a substantial building away from windows is recommended as the best protection.

The vulnerability of critical facilities such as police and fire stations, hospitals, shelters, and utility services vary depending on building types, structural design, and characteristics of the event. For example, damage to power lines or communication towers can cause power and communication outages for residents, businesses, and critical facilities. In addition to lost revenues, downed power lines threaten personal safety. Further, downed wires and lightning strikes have been known to spark fires. Table 6-25 estimates the expected annual loss of property, injuries, and deaths from tornadoes within the region as identified by the National Risk Index.

Table 6-25: Expected Annual Loss from Tornadoes

Tornadoes	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	0.1	$16,330	$3	$35,487	0	0
Dickenson	0	$15,876	$5	$31,407	0	0
Russell	0.1	$55,423	$138	$111,710	0	0
Tazewell	0.1	$55,046	$147	$93,713	0	0

Source: FEMA National Risk Index

Hazard Extent and Potential Impacts

The Cumberland Plateau region experiences less than one tornado per year, and historically have not rated higher than an EF2. The tornado with the most impact occurred July 18th, 1996, when an EF1 caused $2 million in damages to homes, an elementary school, a fire department, and power lines within Russell County. The tornado also caused $10,000 in crop damages. Future tornado events have potential for decreased extent and magnitude in comparison to this event.

Although rare, tornadoes can occur in the Cumberland Plateau Planning District. If a tornado were to occur, the level of damages sustained would depend on the strength of the tornado and the type and number of resources impacted. According to Virginia USBC, the minimum design wind speed for The Cumberland Plateau Planning District is 70 mph. Property damage to infrastructure, residential, business, and agricultural

structures can be significant as the area has over $13.65 billion in buildings and $284.33 million in agriculture that face possible exposure to impact from tornadoes, according to the National Risk Index.

Potential environmental impacts include damage to forests, the triggering of landslides, and damage to sewage systems that lead to the contamination of local water supplies. Flooding from heavy rain associated with tornadoes can further exacerbate environmental impacts. Residents also face impacts such as displacement, injury, death, and loss of employment. It is also important to note that local emergency services may be overwhelmed by immediate response and recovery efforts needed after a tornado, which can lead to delays in assistance and prolonged recovery times.

Climate Change Influence

As demonstrated in the historical data presented, the occurrence of tornadoes in the Cumberland Plateau Planning District communities has been rare over the last 20 years. Tornadoes are most often spawned by severe thunderstorms and considering the frequency of severe thunderstorms, the risk of additional tornados is considered significant. According to the Center for Climate and Energy Solutions, conditions that produce the most severe thunderstorms from which tornadoes may form are more likely as the world warms. Climate change may also cause a shift in the seasonality of severe thunderstorms and the regions that are most likely to be hit. The jurisdictions of the Cumberland Plateau Planning District recognize the increasing risk and the need for education and awareness in the communities.

Probability of Future Events

From 2004 to 2023, the average annual number of tornadoes for Virginia is 20, which the NWS categorizes as low. Due to the mountainous terrain, tornado occurrences in the area have been rare. There have been no recorded tornado events within the Cumberland Plateau region for over thirteen years, however, tornadoes are stochastic events. The influence of climate change can lead to atmospheric instability which is a key factor in tornado formation. Any increase in frequency results in an increase in damages and loss. Table 6-26 below outlines the hazard rankings for each of the hazard priority criteria related to tornadoes.

CPRI Assessment

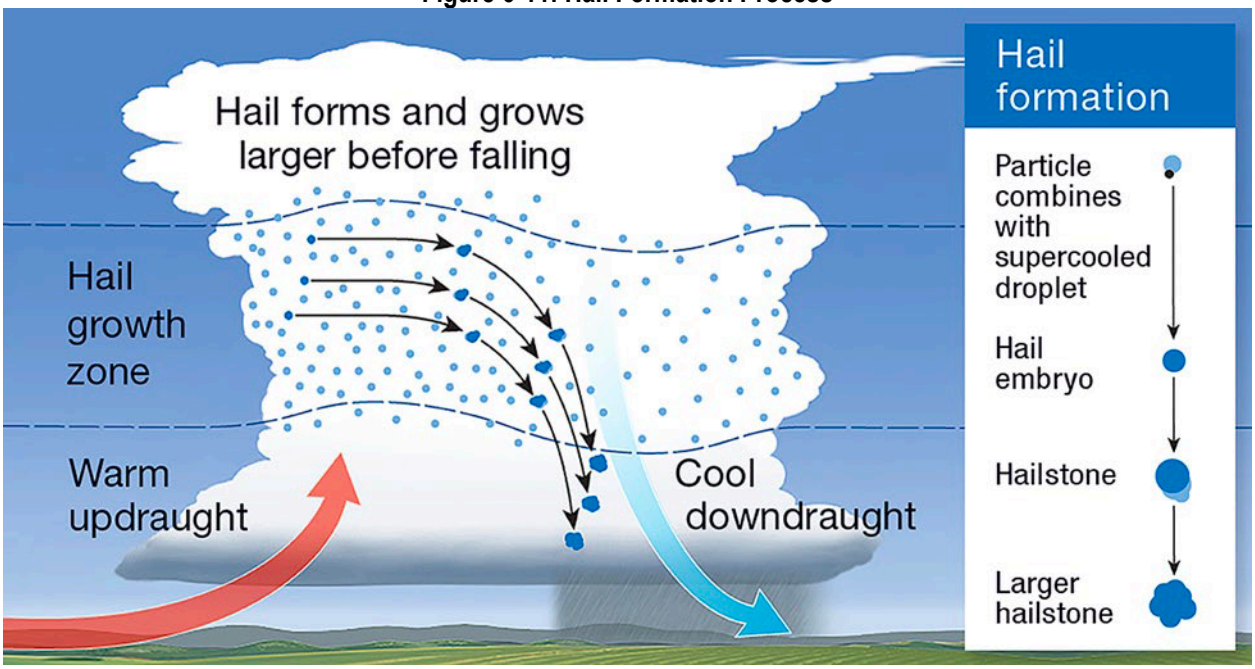
Table 6-26: CPRI Tornado Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Tornado	1.35	.3	.45	.10	2.35	4
Tornado	(3x.45) =1.35	(1x.30) =.3	(3x.15) =.45	(1x.10) =.10	2.45	4

6.3.5 Hailstorm

According to the NOAA National Severe Storms Laboratory (NSSL), hail is frozen precipitation that can grow to very large sizes through the collection of water that freezes onto the hailstone's surface. Hailstones begin as embryos, which include graupel or sleet, and then grow as depicted in Figure 6-11. Hailstones can have a variety of shapes and include lumps and bumps that may even take the shape of small spikes. Hailstones must be at least 0.2 inches in size.

774 **Figure 6-11: Hail Formation Process**



775

776 Source: National Weather Service (NWS)

777 ## Type and Location

778 Using the NWS definition for a severe thunderstorm, dime-sized hail is considered a minimum hazard, and
779 quarter-sized hail is regarded as a major hazard. Quarter-sized hail can cause significant damage to crop
780 and livestock, as well as property such as automobiles, aircraft, and roofs. Although rare, large hailstones
781 may even cause injury or death. However, the amount of cover obtained during a hailstorm can significantly
782 reduce the risk to human health during these events.

783 ## Previous Occurrences

784 The NCEI Storm Events database recorded 158 hail events from 2000 to 2024 in the Cumberland Plateau
785 Region, totaling $103,000 in property damages. Below are the most significant events in terms of property
786 damage and magnitude of hail (how much hail fell). According to the NRI, the region has an average
787 annualized frequency of 3.4 events per year. Table 6-27 lists and describes the worst hailstorm events for
788 the region.

789

790 **Table 6-27: Historical Occurrences of Hailstorms in the Cumberland Plateau Planning District**

Event Date	Description
June 19, 2007	Tazewell County – Severe thunderstorms produced wind damage and hail up to the size of quarters. 1" of hail fell causing $2,000 in property damages.
April 5, 2010	Tazewell County – Storms fired up initially in the afternoon of the 5th over the western mountains south of a front stalled out over the Ohio Valley. The primary severe mode was large hail over the mountains with some scattered wind damage in the piedmont. 1.75" of hail fell causing $2,000 in property damages.
April 9, 2011	Buchanan County – A mesoscale convective complex moved southeast out of Indiana across eastern Kentucky and into southern West Virginia and western Virginia. With ample moisture, instability, and lift, new storms formed ahead of the initial complex. Several of the leading cells showed signs of mid-level rotation, but that rotation did not translate to the lower levels. 2" of hail fell causing $10,000 in property damages.
May 24, 2011	Buchanan County – A disturbance in the winds aloft helped trigger a round of morning convection. The storms moved into Virginia from eastern Kentucky. 1.25" of hail fell causing $5,000 in property damages.
June 30th, 2012	Tazewell County – A passing upper-level disturbance interacted with an unstable atmosphere near the surface to generate scattered large hail, producing thunderstorms. Some thunderstorms were also accompanied by damaging winds. 2" of hail fell for a duration of 20 minutes, ranging from quarter size to hen's egg size. The hail caused an estimated $50,000 in property damage.
May 5, 2018	Dickenson County – Following a period of sunshine earlier in the day, thunderstorms formed across southwest Virginia and southeast Kentucky during the late afternoon of the 5th as a low-pressure system approached. Large hail fell out of these storms during the late afternoon and evening. Some cars were dented by hail near John Flannagan Lake. 1.75" of hail fell causing $15,000 in property damages.

791 Source: NOAA NCEI Storm Events Database

792 ## Vulnerabilities

793 Communities can be vulnerable to hailstorms due to physical, social, economic, and environmental factors.
794 These include damage to property, injury to people, and loss of utilities. Hail can damage structural roofs and
795 vehicles, with the potential to bring down trees. A buildup of hail can also cause power loss. Strong winds
796 during hailstorms can cause hail to fall at an angle, which can tear up siding, break windows, or blow into
797 houses. When hail melts, it has potential to cause flashfloods and mudslides in areas of steep terrain. Table
798 6-28 estimates the expected annual loss of property, injuries, and death from hailstorms within the region as
799 sourced by the National Risk Index.

800 Social vulnerability can affect the region's ability to prepare for, respond to, and recover from a hailstorm.
801 The National Risk Index gives the Cumberland Plateau Planning District an overall rating of "relatively high"
802 social vulnerability to hailstorms.

803

804 **Table 6-28: Expected Annual Loss from Hailstorms**

Hailstorms	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	3.4	$18,806	$1	$27,817	0	0
Dickenson	3.2	$11,190	$1	$20,149	0	0
Russell	3.4	$14,830	$6,878	$38,827	0	0
Tazewell	3.6	$11,221	$42	$30,243	0	0

805 Source: FEMA National Risk Index

806 ## Hazard Extent and Potential Impacts

807 The Cumberland Plateau region experiences an average of 3 to 4 hail events per year, usually causing
808 minimal property damages and smaller in magnitude. The most severe hailstorm event was in June of 2012
809 in Tazewell County, when thunderstorms and damaging winds were accompanied by 2 inches of hail for 20
810 minutes in duration. An estimated $50,000 in property damages occurred due to the event. Future hailstorm
811 events are expected to replicate the historical average hazard extent.

812 According to the NOAA NSSL, wind driven hail can tear up siding on houses, break car and home windows
813 and blow into houses, and can cause severe injury and/or to people and animals. Hail size is often estimated
814 by comparing it to a known object. Most hailstorms are made up of a mix of different sizes, and only the very
815 largest hail stones pose serious risk to people cause in the open. When reporting hail, estimates comparing
816 the hail to a known object with a definite size are good, but measurements using a ruler, calipers, or a tape
817 measure are best.

818 ## Climate Change Influence

819 Climate change is influencing the occurrence of hail in the Cumberland Plateau Planning District by
820 increasing the atmospheric conditions that favor hail formation. Warmer temperatures contribute to greater
821 moisture levels in the atmosphere and more intense updrafts during thunderstorms, both of which are key
822 factors in the development of hail. As a result, the region, which is already vulnerable to severe weather due
823 to its mountainous terrain, may experience more frequent and potentially larger hail events. The variability
824 and intensity of storms in this region could increase, leading to greater risks for agriculture, property, and
825 local infrastructure.

826 ## Probability of Future Events

827 When forecasting hail, forecasters look for deep moist convection in addition to adequate updraft, sufficient
828 supercooled water near the hailstone, and a piece of ice, snow, or dust for the hail to grow upon. Nearly all
829 severe thunderstorms produce hail, though it may melt before reaching the ground. Increased precipitation
830 and frequency of severe thunderstorms due to climate change suggests a highly likely probability of future
831 hailstorm events within the Cumberland Plateau Planning District. According to the NCEI the most recent hail
832 event occurred on April 16th, 2024, in Tazewell County, with a total of 0.75 inches of penny-sized hail. The
833 CPRI assessment in Table 6-29 outlines the hazard rankings for each of the hazard priority criteria related to
834 hailstorms.

835

CPRI Assessment

Table 6-29: CPRI Hailstorm Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Hailstorm	1.35	.3	.45	.10	2.2	5
Hailstorm	(3x.45) =1.35	(1x.30) =.3	(3x.15) =.45	(1x.10) =.10	2.2	5

6.3.6 Extreme Temperatures

Extreme Temperatures include cold/wind chill, extreme cold/wind chill, extreme heat, and heat. The NRI estimates the Cumberland Plateau Region can expect to suffer from less than one cold wave per year (0.23/year). Much of the risk in cold waves is to the population, primarily vulnerable populations, and persons with functional access needs.

Type and Location

Any type of extreme temperature-related event would most likely affect the entirety of the region. These types of events could be one day of extreme cold or heat that has the potential to expand into multiple days. Such events can cause schools and facilities without adequate air conditioning or heat to close, leaving citizens without means to cool or heat their homes and needing assistance such as a cooling or heating shelter. Virginia's average temperatures vary by season, but is generally mild and even. Average temperatures for the Cumberland Plateau Region currently range from 30-40°F in the winter to 80°F in the summer.

Previous Occurrences

The NCEI is the utilized source that provides dates of extreme temperatures and has 15 recorded events in the Cumberland Plateau Region from 1996-2024. The NRI notes 8 occurrences of extreme cold events in the region between 2000-2024 and 7 excessive heat events in this time range. Table 6-31 lists and describes the worst extreme cold and extreme heat events within the region.

Table 6-30: Historical Occurrences of Extreme Temperatures

Event Date	Description
February 4-5, 1996	Buchanan and Dickenson Counties – Extreme Cold A fresh snow cover combined with an artic outbreak to drop temperatures well below zero. The coldest readings in valleys were around minus 20 F.
January 2-4, 2000	Buchanan and Dickenson Counties – Excessive Heat Afternoon temperatures rose into the upper 60s to mid-70s on both the 2nd and 3rd. Grundy reached 75 degrees while Breaks Interstate Park was around 71 degrees.
February 25, 2000	Buchanan and Dickenson Counties – Excessive Heat Afternoon high temperatures reached well into the 70s, with a few urban valleys around 80 degrees. Preliminary data indicated 75 degrees from Clintwood and 81 degrees in Grundy.

Event Date	Description
April 16, 2002	Buchanan and Dickenson Counties – Excessive Heat Afternoon temperatures reached into the mid-80's to near 90 degrees. The Town of Grundy measured 90 degrees, while the Town of Clintwood measured 88 degrees. Breaks Interstate Park measured 87 degrees.
January 6-7, 2014	Buchanan and Dickenson Counties – Extreme Cold/Wind Chill An artic cold front swept through far western Virginia with rain showers and temperatures in the 40s and 50s. The rain showers quickly changed to snow shower with temperatures falling through the 20s. Wind chill readings bottomed out in the -20-to--30-degree range overnight and into the morning hours for most counties. A scattering of frozen pipes, power outages, home furnace difficulties, and vehicular engine problems that occurred keep repair companies busy. The county public school systems were closed. Both Buchanan and Dickenson County suffered $50,000 each in property damages.
December 23-24, 2022	Tazewell County – Extreme Cold/Wind Chill Across the Virginia Mountains, these wind chills ranged as low as 25 to 41 degrees below zero, with values over portions of the Piedmont dipping 17 to 32 degrees below zero. The impact of the strong to damaging winds were trees and power lines brought down with at least 27,128 power customers without service over parts of Virginia. The combination of very cold temperatures and gusty winds resulted in wind chill values dropping as low as thirty-five degrees below zero at Burkes Garden, thirty degrees below zero at Richlands, and twenty-one degrees below zero at Bluefield.

Source: NOAA NCEI Storm Events Database

Vulnerabilities

The rural and mountainous geography of the Cumberland Plateau Planning District can increase community vulnerability to extreme heat and extreme cold events. Limited access to resources such as healthcare, emergency services, and infrastructure can also increase community vulnerability. The geography can cause some residents to be isolated and struggle with accessibility during extreme weather events. Less energy-efficient homes are poorly equipped to endure extreme temperatures, which increases risk of heat or cold-related illnesses among the elderly and youth as well as those with pre-existing health conditions. Increased heat can lead to a strain on energy resources and potentially damage infrastructure.

Hazard Extent and Potential Impacts

There have been 8 extreme cold events and 7 extreme heat events within the Cumberland Plateau region. The extreme cold event occurring in January 2014 had the worst impact on the region, costing Buchanan and Dickenson county $50,000 in property damages each due to frozen pipes, power outages, vehicular engine problems, and home furnace difficulties. Excessive heat events are only recorded for Buchanan and Dickenson counties, in which the highest temperatures recorded occurred on April 16th, 2002. No property damages, injuries, or deaths were reported.

Extreme heat and extreme cold events have potential to cause social, economic, and infrastructural impacts to the Cumberland Plateau Planning District. Extreme heat can lead to heat-related illnesses such as heat exhaustion, heatstroke, and dehydration. Extreme cold temperatures can lead to hypothermia, frostbite, and

cold-related illnesses, particularly to residents without adequate heating or shelter. High temperatures also exacerbate chronic respiratory and cardiovascular conditions. As the need to heat and cool living spaces increases and strains the local power grid, so does the cost of energy bills for residents and the potential for power outages. For residents living in older homes, the financial burden can be significant.

Agriculture is an important part of the economy in the Cumberland Plateau Planning District. Extreme heat can stress crops, reducing yield and increasing the risk of wildfires. Extreme cold can also damage crops, kill livestock, and delay planting seasons. Frosts and freezes have the potential to destroy harvests, leading to economic losses for farmers.

Roads, bridges, and buildings may suffer damage due to the expansion of materials in extreme heat events, leading to costly repairs and disruptions in transportation. Snow and ice that form during extreme cold events can make roads impassable, isolating communities and delaying emergency services. Cold temperatures can cause pipes to freeze and burst, leading to water damage and costly repair. Roads and bridges can also be affected by freeze-thaw cycles, which can create potholes and other structural issues.

Climate Change Influence

As global temperatures rise, the frequency and intensity of extreme heat and cold events in the Cumberland Plateau Planning District have increased. Historical data in the NCEI database shows a trending increase in both maximum and minimum temperatures from 1995 to 2024 within the region, indicated warmer summers and winters. The disruption of traditional weather patterns can also lead to sudden and intense cold snaps even in regions that are warming overall. The variability and unpredictability of these extreme temperatures, driven by climate change, place additional stress on vulnerable populations and infrastructure.

Probability of Future Events

Data from the NOAA's U.S. Climate Explorer project an average daily maximum temperature increases between 2 to 4°F every 20 years within the Planning District as global emissions continue to rise. This increase in daily average temperature also increases the probability of future extreme heat events to occur. The disruption of traditional weather patterns caused by climate change also increases the region's probability to experience sudden and intense extreme cold events. Table 6-31 (the CPRI assessment) outlines the hazard rankings for each of the hazard priority criteria related to extreme temperatures.

CPRI Assessment

Table 6-31: CPRI Extreme Temperatures Hazard Priority

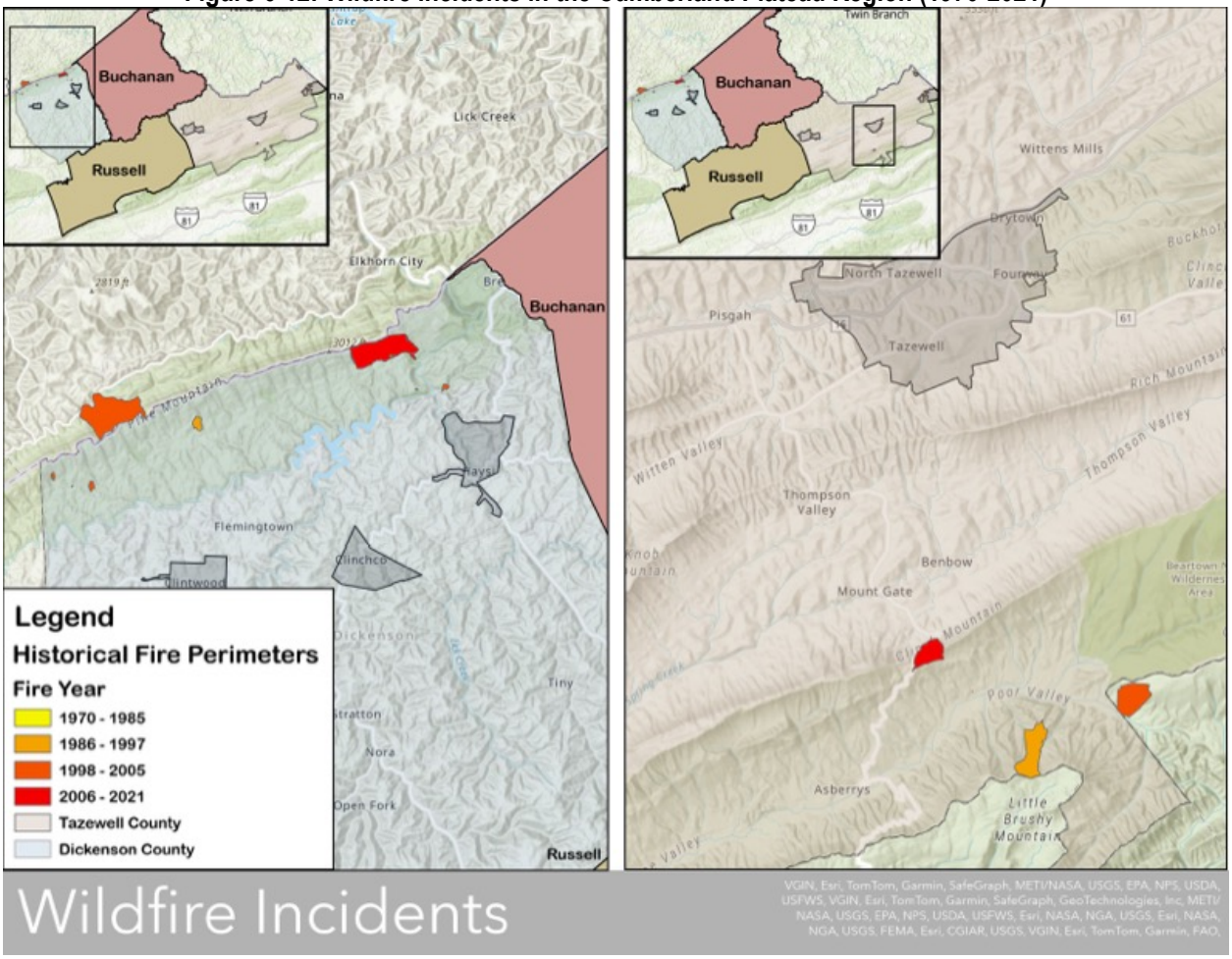
Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Extreme Temperatures	.9	.6	.3	.3	2.1	6
Extreme Temperatures	(2x.45) =.9	(2x.30) =.6	(2x.15) =.3	(3x.10) =.3	2.1	6

6.3.3 Wildfires

"A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures" (FEMA 386-2, 2001) and may originate from a variety of ignition sources. The risk of wildfires, though not as high as it is in the western U.S., is a genuine concern for the Commonwealth of Virginia. Each year, about 1,600 wildfires consume a total of 8,000 to 10,000 acres of forest and grassland in the Commonwealth. During the fall drought of 2001, Virginia lost more than 13,000 acres to wildfires.

Most of Virginia's wildfires were caused either intentionally or unintentionally by humans. Due to the growth of the population of the Commonwealth, there has been an increase in people living in the urban-wildland interface, as well as an increase in use of the forest for recreational purposes. Historical records of wildfire events specific to the Cumberland Plateau Planning District are limited, and not all wildfires are reported. As shown in Figure 6-12, there have been a higher number of incidents in the northwestern portion of the planning district.

Figure 6-12: Wildfire Incidents in the Cumberland Plateau Region (1970-2021)



Source: National Interagency Fire Center Wildfire Incident Data

Type and Location

Wildfires can be classified as either a wildland fire or an urban wildland interface (UWI) fire. A wildland fire involves situations where wildfire occurs in an area that is relatively undeveloped except for the possible existence of basic infrastructure such as roads and power lines. An urban-wildland interface fire includes situations in which a wildfire enters an area that is developed with structures and other human developments. In UWI fires, the fire is fueled by both naturally occurring vegetation and the urban structural elements themselves. According to the National Fire Plan issued by the U.S. Departments of Agriculture and Interior, the urban-wildland interface is defined as "...the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildlands or vegetative fuels."

A wildfire hazard profile is necessary to assess the probability of risk for specific areas. Certain conditions must be present for a wildfire hazard to occur. A large source of fuel must be present; the weather must be conducive (generally hot, dry, and windy); and fire suppression sources must not be able to easily suppress and control the fire. Once a fire starts, topography, fuel, and weather are the principal factors that influence wildfire behavior. There are several factors that influence an area's risk to the occurrence of wildfires. These include, but are not limited to:

Historical Wildfire Data:

It is generally accepted that areas where wildfires have historically been relatively prevalent (or absent) will remain similar in the future. As stated above, there are numerous portions of the Cumberland Plateau Planning District that have high numbers of historic wildfires. Therefore, it can be assumed that the conditions that contribute to a wildfire occurrence are present in these areas, increasing the likelihood that additional fires will occur in these areas.

Land Cover:

Wildfire fuels (e.g., grasses, crops, forest, and urban development) determine the ease of ignition, as well as the burn intensity and advancement opportunities. Because of the rural nature of the Cumberland Plateau Planning District, a large portion of the area is forested. These forested areas serve as a readily available fuel source, which also increases the risk of wildfire incidents and of widespread and larger events.

Percent Slope of Topography:

Through convective pre-heating, wildfires generally advance uphill. In general, the steeper the slope, the greater the ease of wildfire ignition. The mountainous terrain (i.e., steep slopes) of the planning district is conducive to the ignition and advancement of wildfires. In addition, the steep slopes are a detriment to firefighting efforts because of the difficulty in accessing and transporting firefighting equipment to wildfire sites.

Slope Orientation:

Slopes that generally face south receive more direct sunlight, thereby drying fuels and creating conditions more conducive to wildfire ignition. There are numerous south-facing slopes in the planning district, creating a greater potential for wildfire occurrence.

Population Density:

An overwhelming majority of wildfires in the Commonwealth are intentionally or unintentionally ignited by humans. As population increases, more opportunities for wildfire ignition exist. Therefore, although large

963 portions of the Cumberland Plateau Planning District possess many of the other factors that contribute to the
964 occurrence of wildfires, the rural characteristic of these areas decrease the risk of potential wildfires.

965 Distance to Roads:

966 Travel corridors increase the probability of human presence, which in turn can result in increased potential
967 for wildfire ignition. Hence, areas of the planning district that are near roadways have a higher probability of
968 wildfire. Approximately 21% of the fires reported in the Planning District were caused by people in cars.

969 Railroad Buffer:

970 Railroad operations can produce sparks that may ignite a wildfire. Numerous railroads run through the
971 Cumberland Plateau Planning District; however, this risk is low, with only about 1.5% of wildfires occurring in
972 the planning district having been reported as igniting from railroad use.

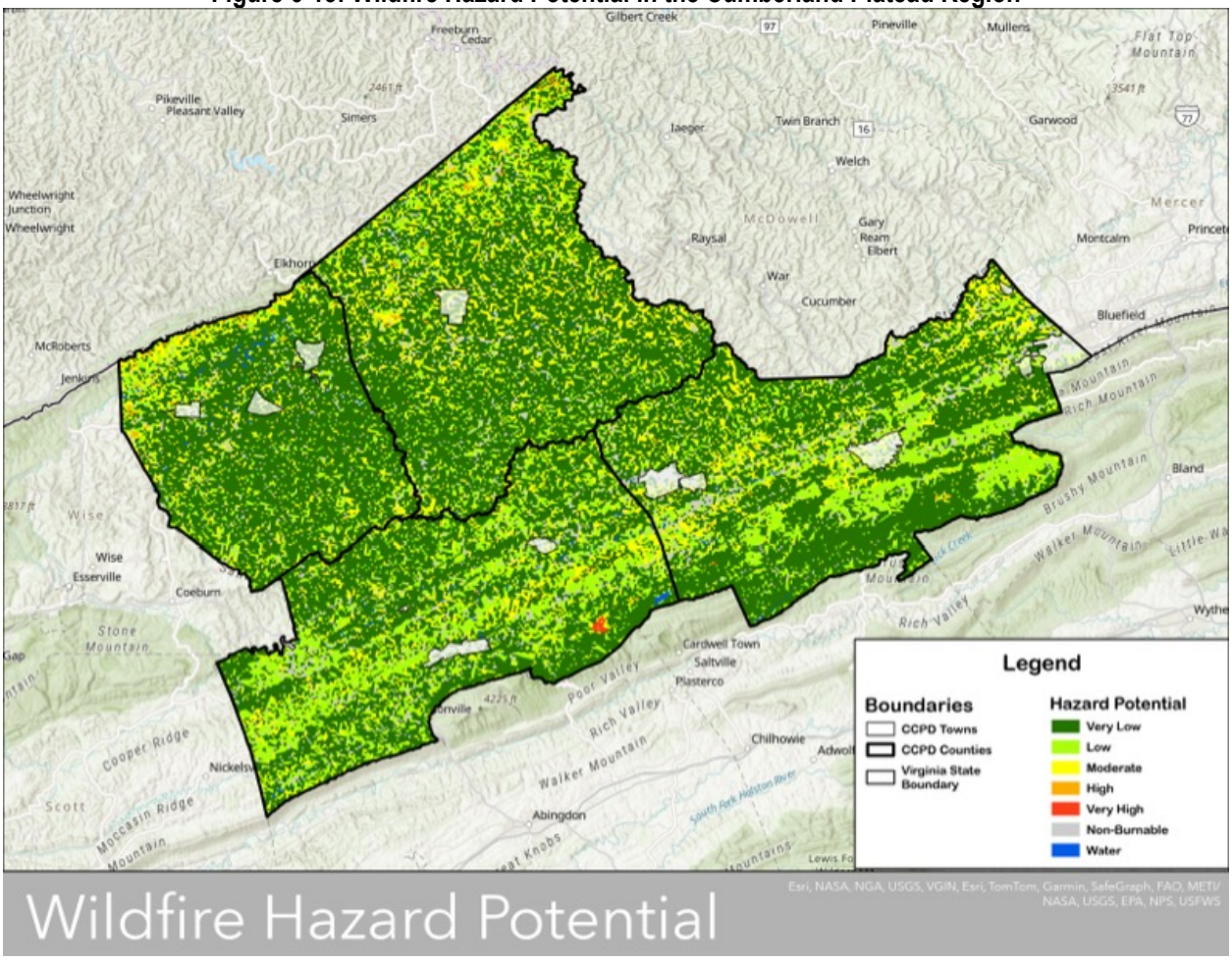
973 Road Density and Developed Areas:

974 Areas that contain a large percentage of developed land and roadway networks generally feature low
975 amounts of wildland fuels, which are typically fragmented to such a degree to minimize the risk of a wildfire.
976 This is the case in many of the towns and villages throughout the Cumberland Plateau Planning District,
977 thereby lowering the overall risk to the most densely populated portions of the area.

978 Figure 6-13 depicts areas of wildfire potential within the Cumberland Plateau region. Table 6-32 lists wildfire
979 events per year per county in the Cumberland Plateau Planning District from 1995 to 2023. It is important to
980 note that there is no available wildfire data for 2009-2017 in the Cumberland Plateau Region.

981

982 **Figure 6-13: Wildfire Hazard Potential in the Cumberland Plateau Region**



983
984 Source: USDA Forest Service Research Data Archive
985
986 **Table 6-32: Wildfire Incidents per Year per County**

Fire Year	Buchanan	Dickenson	Russell	Tazewell	Total
1995	43	20	18	No Data	**81**
1996	22	10	10	14	**56**
1997	20	11	9	10	**50**
1998	23	9	12	18	**61**
1999	40	16	21	14	**91**
2000	37	26	24	17	**104**
2001	71	20	19	17	**127**
2002	15	12	18	14	**59**
2003	24	7	7	6	**44**
2004	19	8	16	6	**49**
2005	12	13	10	7	**42**
2006	26	13	20	6	**65**

Fire Year	Buchanan	Dickenson	Russell	Tazewell	Total
2007	32	20	26	9	**77**
2008	25	15	18	9	**67**
2009 – 2017	No Data	No Data	No Data	No Data	**No Data**
2018	12	13	4	4	**33**
2019	14	13	10	6	**43**
2020	20	6	4	0	**30**
2021	6	15	4	4	**29**
2022	23	15	19	8	**65**
2023	26	25	21	7	**79**
TOTAL	**510**	**287**	**290**	**176**	**1,263**

Source: Virginia Department of Forestry

Buchanan County:

Between 1995 and 2008 there were 409 recorded incidents of wildfires which burned more than 18,140 acres and caused an estimated amount of $15.2M in damages. There is no available wildfire data for 2009-2017 in the Cumberland Plateau Region. From 2018-2023 Buchanan County had 101 recorded wildfires burning approximately 11,381.10 acres of land. As of August 2024, Buchanan County has had 25 wildfire incidents burning approximately 1,550.20 total acres of land.

Dickenson County:

Between 1995 and 2008 there were 200 recorded incidents of wildfire, which burned more than 3,046 acres causing an estimated amount of $2M in damages. There is no available wildfire data for 2009-2017 in the Cumberland Plateau Region. From 2018-2023 Dickenson County had 87 recorded wildfires burning approximately3,783.10 acres of land. As of August 2024, Dickenson County has had 32 wildfire incidents burning approximately 1,460 total acres of land and destroying one home.

Russell County:

Between 1995 and 2008 there were 218 recorded incidents of wildfire, which burned more than 2,221 acres and caused an estimated amount of $1.3M in damages. There is no available wildfire data for 2009-2017 in the Cumberland Plateau Region. From 2018-2022 Russell County had 62 recorded wildfire incidents burning approximately 1,202 acres of land. As of August 2024, Russell County has had 10 wildfire incidents burning approximately 59.40 total acres of land and destroying two buildings.

Tazewell County:

Between 1995 and 2008 there were 146 recorded incidents of wildfire which burned more than 1,382 acres and caused an estimated about $379K in damages. There is no available wildfire data for 2009-2017 in the Cumberland Plateau Region. From 2018-2022 Tazewell County had 29 wildfire incidents burning approximately 239.30 acres of land. As of August 2024, Tazewell County has had 3 recorded wildfire incidents burning approximately 180.20 total acres of land, destroying 2 buildings and 5 other properties.

Vulnerabilities

According to the VDOF Wildfire Risk Assessment large portions of the Cumberland Plateau Planning District are at high risk for wildfire occurrence. Although these high-risk areas tend to be located in the more rural

and mountainous portions of the planning district, higher density areas have also been classified as having a high risk. Because these high-risk areas are so vast, many of the residents of the planning area live or work in or near a high-risk area. Therefore, the most significant threat to the Cumberland Plateau Planning District is to human life and safety. Many residents in the area live within the urban-wildlife interface and are at the greatest risk from potential wildfires. A commonly found scenario in the Cumberland Plateau Planning District is the 'stacking' of structures up a ridge with one-way access and flammable fuels in between the structures. These circumstances can greatly increase the risk of loss from wildfire and is hazardous to firefighters trying to protect the structures. Table 6-33 estimates the expected annual loss of property, injuries, and deaths from wildfires within the Cumberland Plateau region as determined by NRI data.

Table 6-33: Expected Annual Loss from Wildfires

Wildfires	Chance of Yearly Occurrence per NRI	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	0.790%	$230,719	$2	$248,041	0	0
Dickenson	1.49%	$1,213,935	$29	$1,276,587	0.01	0
Russell	0.548%	$47,638	$18	$81,496	0	0
Tazewell	0.286%	$96	$8	$41,073	0	0

Source: FEMA National Risk Index (NRI)

Hazard Extent and Potential Impacts

According to Virginia Department of Forestry data a wildfire occurred on November 7th, 2023, in Buchanan County that destroyed a total of 2,232 acres. Of the total acreage, 2,200 acres were forest acres and 32 were non-forest acres. No homes or buildings were destroyed, but a total of 86 homes and 159 buildings were protected from the event. A wildfire occurred on March 20th, 2024, in Tazewell County that destroyed 2 buildings and 5 other structures, burning a total of 35 forest acres. Additional descriptions and data on the occurrences and their impact are not available. Historical data shows that wildfires within the region usually do not impact houses or local infrastructure. Future wildfire events are expected to replicate this hazard extent.

A wildfire can have numerous effects that could impact the Cumberland Plateau Region due to wildfires. These include a negative impact on tourism, and thus the local economy, through activities such as camping, hiking, hunting, and fishing. Additional environmental impacts include a degradation of air and water quality, as well as a threat to wildfire habitat including endangered species. Areas that have been burned due to wildfires also have an increased risk of flooding and landslides in the event of heavy rains.

Table 6-34 lists the percentage of structures facing exposure to wildfires in the region as documented by the U.S. Department of Agriculture (USDA) Forest Service. Buildings with minimal exposure are unlikely to be subjected to wildfire, while buildings with indirect exposure may be ignited by embers or building-to-building ignition. Buildings with direct exposure may be ignited by adjacent vegetation, flying embers, or other nearby structures.

Table 6-34: Structures in Wildfire Risk Areas

Jurisdiction	Total Buildings	Minimal Exposure	Indirect Exposure	Directly Exposed
Buchanan	17,326	0%	4.82%	95.18%
Dickenson	12,824	0%	5.48%	94.52%
Russell	24,019	0%	13.05%	86.95%
Tazewell	29,714	0%	33.21%	66.79%

Source: USDA Forest Service Wildfire Risk to Communities Database

Climate Change Influence

Climate change has the potential to affect multiple elements of the wildfire system: fire behavior, ignitions, fire management, and vegetation fuels. Hot dry spells create the highest fire risk. Increased temperatures may intensify wildfire danger by warming and drying out vegetation. Changes in climate patterns may impact the distribution and perseverance of insect outbreaks that create dead trees (increase fuel). When climate alters fuel loads and fuel moisture, forest susceptibility to wildfires changes. Climate change also may increase winds that spread fires. Faster fires are harder to contain, and thus are more likely to expand into residential neighborhoods.

Probability of Future Events

The Virginia wildfire season is normally in the spring (March and April) and then again in the fall (October and November). During these months, the relative humidity is usually lower, and the winds tend to be higher. In addition, the hardwood leaves are on the ground providing more fuel and allowing the sunlight to directly reach the forest flood, warming, and drying the surface fuels.

As fire activity fluctuates during the year from month to month, it also varies from year to year. Historically extended periods of drought and hot weather can increase the risk of wildfire. Some years with adequate rain and snowfall amounts keep fire occurrences low; while other years with extended periods of warm, dry, windy days exhibit increased fire activity. Long-term climate trends as well as short-term weather patterns play a major role in the risk of wildfires occurring. For instance, short-term heat waves along with periods of low humidity can also increase the risk of fire, while high winds directed at a fire can cause the fire to spread rapidly. Table 6-35 outlines the hazard rankings for each of the hazard priority criteria related to wildfires.

CPRI Assessment

Table 6-35 CPRI Wildfire Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Wildfire	.9	.3	.6	.2	2	7
Wildfire	(2x.45) =.9	(1x.30) =.3	(4x.15) =.6	(2x.10) =.2	2	7

6.3.8 Earthquakes

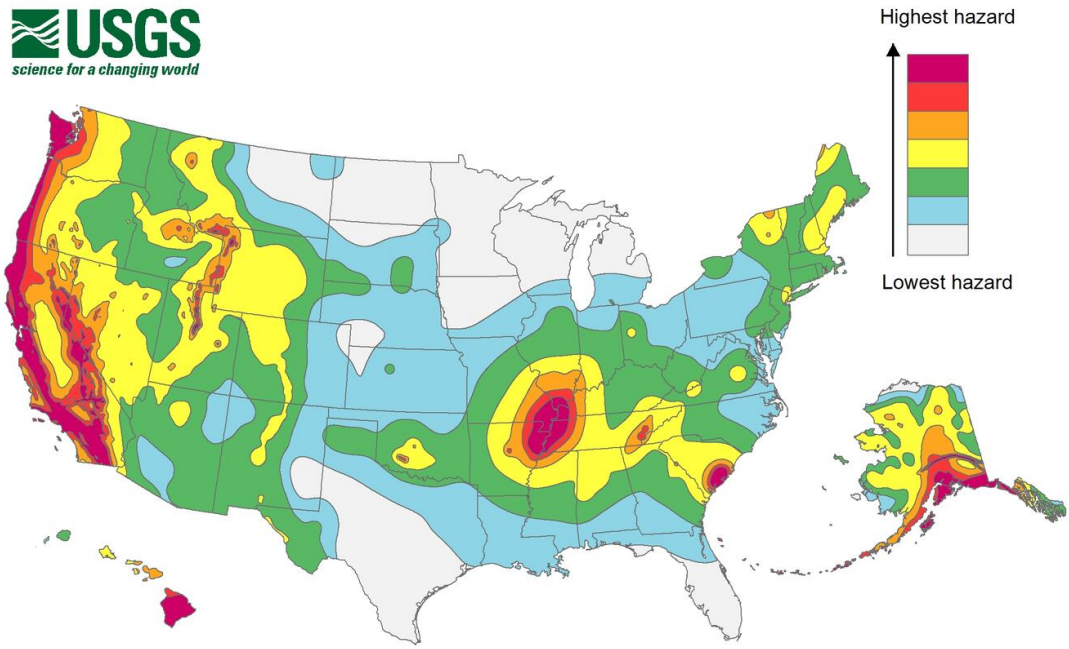
The earths' surface is composed of a series of tectonic plates, which are constantly moving and shifting against one another. The movement of these plates causes stress to develop along plate boundaries, and along fault lines. When the stress along one of these boundaries or fault lines exceeds the strength of the adjacent rock and earth, a slip or fracture occurs, releasing the built-up energy as waves. Energy waves travel through the earth's crust up to the ground surface, causing the shaking that is associated with an earthquake.

Earthquake in the United States occur most frequently along the West Coast, due to the close proximity to the North American plate boundary. Earthquakes can also occur along the East Coast of the United States, but the mechanisms causing these earthquakes are not as well understood since these earthquakes occur within the plate rather than at plate boundaries. Figure 6-14 depicts earthquake zones throughout the Unites States.

Type and Location

The Commonwealth of Virginia is subject to earthquakes occurring in two primary areas of seismic activity. The Eastern Tennessee seismic zone, which extends from Charleston, South Carolina through western North Carolina and eastern Tennessee into central Virginia. The New Madrid seismic zone is in southern Missouri. Both zones have the potential to affect the Cumberland Plateau Planning District. Although these faults have not produced a significant earthquake in recent years, both have a history and the potential to produce severely damaging earthquakes in the future.

Figure 6-14: Earthquake Zones



Source: USGS National Seismic Hazard Model

When earthquakes occur, the shaking motion is measured on an instrument called a seismograph. The wave peaks on a seismograph indicate the strength of the shaking motion of the earthquake. The magnitude of an earthquake depends on how much energy is released and is used to measure the size of an earthquake's source. The magnitude is expressed in terms of the Richter scale, which is a logarithmic mathematical formula based on the amplitude of the waves measured by the seismograph. The Richter scale uses whole numbers and decimals to measure earthquake magnitudes.

In addition to magnitude, an earthquake also can be measured in terms of intensity. The intensity of an earthquake is the effect of the earthquake on the earth's surface. In the United States, the intensity is commonly measured with the Modified Mercalli Intensity Scale (MMIS) as depicted in Figure 6-15. This scale assigns an intensity level to an earthquake depending on the effects of an earthquake felt at a particular location, such as chimneys damaged, people awakened, and levels of building damage. Because this scale is based on the actual effects of an event, the intensity of a particular earthquake will vary by location, generally decreasing in intensity the farther the location is from the epicenter (the source of the earthquake).

Figure 6-15: Mercalli Scale

Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest,especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

Source: USGS The Modified Mercalli Scale

Figure 6-16: Intensity vs Magnitude

PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	*<.17*	*.17-1.4*	*1.4-3.9*	*3.9-9.2*	*9.2-18*	18-34	34-65	65-124	>124
PEAK VEL. (cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	*16-31*	*31-60*	*60-116*	*>116*
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Source: USGS Earthquake Magnitude, Energy Release, and Shaking Intensity

Previous Occurrences

The largest recorded earthquake to occur along the East Coast of the United States occurred in Charleston, South Carolina on September 1, 1886. This earthquake is estimated to have been magnitude 7.3 on the Richter scale and was felt as far away as Boston, Massachusetts and Milwaukee, Wisconsin. Overall, this earthquake resulted in 60 lives lost and an estimated $5 - $6 million in damages.

The largest historic earthquake to occur within the Commonwealth of Virginia occurred in Giles County on May 31, 1897. There were other seismic events preceding the earthquake, as tremors on May 3, 1897, caused damage in the areas around Pulaski, Radford, and Roanoke. In addition, loud rumblings were reported near the epicenter between May 3 and May 31. The event of May 31 was felt from Georgia to Pennsylvania and as far west as Indiana and Kentucky, encompassing a 280,000 square mile area. In Pearisburg, Virginia, walls of old brick houses cracked, bricks were thrown from chimney tops, springs were muddied, and some earth fissures appeared. Minor aftershocks continued through June 6, 1897, and other shocks were observed on June 28, September 3, and October 21. On February 5, 1898, Pulaski reported additional chimney damage and people rushed into the street during a tremor.

Between February 21st, 1774, and May 11th, 2017, there have been 13 recorded earthquakes having an epicenter within the boundaries of the Cumberland Plateau Planning District as recorded by the United States Geological Survey (USGS). The USGS has recorded 2 additional earthquakes since May 2017. Table 6-36 lists the historical occurrences of earthquakes in the Cumberland Plateau Planning District. Descriptions and impacts of events are not recorded.

Table 6-36 Historical Occurrences of Earthquakes in the Cumberland Plateau Planning District

Event Date	Jurisdiction	Magnitude	Depth (kilometers)	Intensity
June 22nd, 1978	Russel County	1.0 MLD	9	N/A
April 14th, 1988	Buchanan County	4.1 Mb	0.0	N/A
December 4th, 1988	Dickenson County – 2 kilometers north of Clintwood	1.5 Md	19.6	N/A
April 10th, 1989	Buchanan County	4.3 Mb	0.0	N/A
January 2nd, 1990	Tazewell County – Town of Richlands	2.0 Mc	3.5	III
March 29th, 1997	Russell County	2.3 Md	4.4	N/A
October 17th, 2003	Tazewell County	2.5 Md	8.2	N/A
February 8th, 2005	Buchanan County	2.7 Md	9.4	N/A
February 15th, 2005	Buchanan County	2.8 Md	11.2	N/A
February 15th, 2005	Tazewell County	2.0 Md	9.1	N/A
November 2nd, 2006	Buchanan County	4.3 Mb	1.0	N/A
November 23rd, 2006	Buchanan County	4.3 Mb	0.0	N/A
February 17th, 2015	Tazewell County – Town of Bluefield	2.4 Md	5.7	N/A
May 14th, 2020	Tazewell County – Town of Richlands	2.1 Md	7.3	N/A
June 13th, 2021	Dickenson County	2.4	19.8	I

Source: USGS Earthquake Hazards Program

Vulnerabilities

The effects of earthquakes are wide-ranging, from little or no effect, to major structural damage. The degree of damage largely depends on the location of the epicenter relative to the community and the magnitude of the event. As stated previously, these factors cannot be controlled or predicted. Other factors such as the level of seismic design, the type of construction, and other site-specific characteristics also play a role in the level of damages sustained during an earthquake.

The municipalities within the Cumberland Plateau Planning District currently utilize the Virginia Uniform Building Code. The Code, which references the seismic design level from BOCA 96, requires varying levels of seismic design, which depend on an important factor determined by the structures use and nature of occupancy. The higher levels of seismic design are assigned to those structures where the risk of injury or loss of life is highest, or those whose function is most critical to the community should an event occur. Examples of these structures include schools, health care facilities, power generating facilities, water and wastewater treatment facilities, police stations, and fire stations. Although these structures are required to be designed to resist higher levels of seismic activity, they also represent the highest vulnerability to earthquake losses within the Planning District.

When assessing vulnerability, a discussion of the probability of earthquake activity is necessary. As noted in earlier sections, there are two distinct seismic zones affecting the Planning District - the New Madrid Seismic Zone and the East Tennessee Seismic Zone. Table 6-37 describes the estimated annual loss from earthquakes in the Cumberland Plateau Planning District.

Table 6-37: Estimated Annual Loss from Earthquakes in the Cumberland Plateau Planning District

Earthquakes	Chance of Yearly Occurrence per NRI	Annualized Property Damages	Expected Annual Total Loss Values	Estimated Deaths	Estimated Injuries
Buchanan	0.053%	$35,960	$49,723	N/A	N/A
Dickenson	0.057%	$32,311	$42,547	N/A	N/A
Russell	0.062%	$91,766	$118,653	N/A	N/A
Tazewell	0.057%	$136,571	$169,722	N/A	N/A

Source: FEMA National Risk Index

Hazard Extent and Potential Impacts

Available earthquake data shows that while earthquakes have occurred, they primarily are light and usually cause no damage. While magnitude 2.5 or less earthquakes are usually not felt, magnitude 4.0 to 4.9 are considered light and can be felt, but usually cause no damage. Historical data shows that earthquakes within the region are usually close in extent and magnitude. Future earthquake events are expected to replicate this hazard extent.

Depending on the location, magnitude, and intensity of an earthquake, the damages and associated impacts to the community can vary greatly. The impacts can be mild as light shaking barely noticeable to citizens, to large as destroying building and infrastructure. In larger events, loss of life and injuries can be extensive, and the cost of damages can be massive. Although historically moderate earthquakes have affected the

Cumberland Plateau Planning District, the potential for a higher magnitude earthquake exists due to the proximity of two key seismic zones.

Secondary impacts from an earthquake have potential to be as damaging and disruptive to a community as primary impacts. The most significant potential secondary effect of an earthquake to the Cumberland Plateau Planning District is the potential for landslides. Ground shaking during an earthquake can cause previously weakened steep slopes to fail. Other secondary effects can include the disruption of critical services such as water, electricity, and communication services. Damage to first responder facilities such as police stations, fire stations, and other emergency service facilities can impact a community's ability to respond in the crucial hours and days following an event.

Climate Change Influence

The impacts of global climate change on earthquake probability are unknown. Secondary impacts of earthquakes could be magnified by climate change. Soils saturated by repetitive storms or heavy precipitation could experience liquefaction or an increased propensity for slides during seismic activity due to the increased saturation. Dams storing increased volumes of water due to changes in the hydrograph could fail during seismic events.

Probability of Future Events

In the Cumberland Plateau Planning District, earthquakes are a very low risk with almost minimal historical data to show any major risk. However, Virginia has many fault lines that are inactive but that does not negate the responsibility of jurisdictions to consider mitigation actions for earthquakes. The priority hazard ranking process for the 2024 hazard risk assessment determined earthquakes to be a limited hazard in the Cumberland Plateau Planning District. As described in the profile above, earthquakes are unlikely events with only 15 epicenters recorded in the region. There are no recorded property damages secondary to earthquakes. The potential exposure for an earthquake event is significant, with greater than $1,183 billion in potential damages. Due to the infrequency of events in this area and utilization of the Virginia Uniform Building Code, infrastructure could sustain considerable damage in a moderate-strength earthquake. Earthquake is ranked 8th for having a warning time less than 24 hours before the event. Table 6-38 (the CPRI assessment) outlines the hazard rankings for each of the hazard priority criteria related to earthquakes.

CPRI Assessment

Table 6-38 CPRI Earthquake Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Earthquake	.9	.3	.6	.10	1.9	8
Earthquake	(2x.45) =.9	(1x.30) =.3	(4x.15) =.6	(1x.10) =.10	1.9	8

6.3.8 Dam/Levee Failures

Dams are manufactured structures that serve a variety of uses such as flood protection, power production, agriculture, water supply, and forming recreational areas. They are typically constructed of earth, rock, or concrete and come in all shapes and sizes. The Commonwealth of Virginia's Hazard Mitigation Plan of March 2018, Chapter 3.11 "Flooding due to Impoundment Failure" defines dam failure as the uncontrolled release of impounded water resulting in downstream flooding and other impacts affecting lives and property. Dams can fail because water heights or flows are above the capacity the structure was designed for (including flooding) or because the structure failed in some way. Structures fail for many reasons, including lack of maintenance, erosion, seismic events, insufficient design, development or alteration of the floodplain, or improper construction. Concrete/masonry dams usually fail from the loss of a section or undermining, while the primary causes of earthen dam failure are overtopping, piping failure, and foundation failure. In addition, concrete or masonry dams tend to fail suddenly, while earthen dams usually take longer.

The National Flood Insurance Program (NFIP) Title 44, Chapter 1, Section 59.1 of the Code of Federal Regulations defines a levee as a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water to reduce risk from temporary flooding. Levee failures can be caused by overtopping or structural failure. Levees are designed to manage a certain amount of floodwater and can be overtopped or fail during flood events exceeding the level for which they were designed. Structural levee failures result from improper maintenance, inadequate foundations, seismic activity, erosion, seepage, or burrowing of animals.

Please refer to section 6.5 for more detailed information on risks of high hazard probability dams.

Type and Location

Dams can be categorized based on various factors, including their design, purpose, materials used in construction, and height of the dam. Within the Cumberland Plateau Planning District, there are four types of dams.

- **Earth**: Also known as an earth-fill dam or embankment dam, the U.S. Army Corps of Engineers (USACE) defines an earth dam as a dam primarily constructed of natural materials such as clay, soil, sand, or rock. Earth dams are the most common dam type in the Cumberland Plateau Planning District.
- **Rockfill**: The USACE defines a rockfill dam as an embankment that is constructed primarily from large rocks and boulders, commonly used in areas with steep terrain.
- **Low Head Dam**: The USACE defines a low head dam as a structure that typically spans the full width of a river or stream and is relatively low in height, usually less than 15 feet. Low head dams are often used for water diversion, irrigation, maintaining levels of water for navigation, or providing a reliable source of water for industrial or municipal use.
- **Gravity, Low Head Dam**: The USACE generally defines a gravity dam as a type of dam typically made of concrete or stone that relies on its own weight and the force of gravity to resist water pressure. A gravity dam would be classified as a low head dam due to its height.

Table 6-50 in Section 6.5 contains an inventory of dams identified within the Cumberland Plateau Planning District, including location and type of dam, as provided by the Virginia Department of Conservation and Recreation.

Levees are constructed to a variety of heights and widths, and with a variety of materials. Most levees in the U.S. are earthen embankments, however, many levees are made of or include more than one type of material. Based on information available through the National Levee Database, there is one recorded leveed area within the Cumberland Plateau Planning District located in Buchanan County in the Town of Grundy. The Grundy levee system was completed in 2008 and is located on the right descending bank of the Levisa Fork of the Big Sandy River. The system consists of 787 feet of concrete floodwall and 607 feet of levee, with one pumping station and two traffic openings.

Previous Occurrences

There are no recorded events of dam or levee failure within the Cumberland Plateau Planning District.

Vulnerabilities

The geography, infrastructure, and nature of dam and levee operations within the Cumberland Plateau Planning District make the region vulnerable to dam or levee failure. The region is vulnerable to hazards such as flooding, earthquakes, landslides, severe weather, and drought have the potential to weaken or impact a dam or levee. In the event of dam or levee failure, steep valleys and narrow riverbeds increase the rapid release of water, causing flash flooding in the area.

The Grundy Levee was built to protect several buildings in the downtown area where Slate Creek flows into the Levisa Fork. Among the buildings being protected by the levee are the Buchanan County Courthouse and the Grundy Post Office. The estimated improvement value of all the structures protected by the levee is over $4 million, with the courthouse accounting for $3.6 millions of this value.

Hazard Extend and Potential Impacts

There is no recorded data on hazard extent for dam or levee failures within the Cumberland Plateau Planning District due to lack of previous occurrences. The failure of a dam or levee presents similar potential social, economic, and environmental impacts as seen during flooding events. Critical facilities and structures exposed to flooding ca be severely damaged by floodwaters. Building contents can be lost, damaged, or destroyed while building structures can be compromised. Failed dams can result in damage to the dam itself, as well as increased flooding downstream. Failure of dams that impound hazardous materials such as slurry or coal ash, may have severe environmental and public health impacts. Many residents rely on agriculture, mining, and other land-based activities for their livelihoods, which can be lost to water contamination and flooding.

Climate Change Influence

Dams are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can have significant effects on the hydrograph used for the design of a dam. If the hygrograph changes, it is conceivable that the dam can lose some or all its designed margin of safety,

also known as freeboard. If freeboard is reduced, dam operators may be forced to release increased volumes earlier in a storm cycle to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream. Projected increases in future streamflow within the region and flows of the Big Sandy River Basin could produce more strain on dams in the area. Climate change is expected to increase both the frequency and intensity of floods through heavy precipitation. As conditions of the dams deteriorate or climate factors worsen, mitigation actions may be required.

Dams are constructed with safety features known as "spillways." Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events, often referred to as "design failures," result in increased discharges downstream and increased flooding potential. Although climate change will not increase the probability of catastrophic dam failure, it may increase the probability of design failures.

Probability of Future Events

Due to no recorded dam or levee failure events, the probability of future events remains low for this hazard. Climate change impact and projected increases in flows of bodies of water within the region create a minimal risk. As of 2023, no dams within the Cumberland Plateau Planning District have received a poor or unsatisfactory rating by USACE as reported in county specific flood resilience plans. It is important to note that Buchanan County dams have not been evaluated for hazard potential. While the Grundy Levee system has not been tested during a major flood event yet, the USACE has determined the system to be low risk. Table 6-39 outlines the hazard rankings for each of the hazard priority criteria related to dam and levee failures.

CPRI Assessment

Table 6-39: CPRI Dam/Levee Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Dam/Levee	.45	.9	.15	.4	1.9	9
Dam/Levee	(1x.45) = .45	(3x.30) = .9	(1x.15) = .15	(4x.10) = .4	1.9	9

6.3.11 Droughts

A drought is an unusual scarcity of rain causing a severe hydrological imbalance in which water supply reservoirs empty, water wells dry up, and crop damage ensues. A prolonged period of drought may or may not accompany periods of extreme heat. A drought is a complex physical and social process that can vary nationally. Unlike floods, droughts are not a specific event and typically do not have a well-defined start or end date.

A drought can last for months or years or may be declared after as few as 15 days. Droughts are classified based on meteorological, agricultural, hydrological, and socio-economic effects. According to the Multi Hazard Risk Assessment, significant types of droughts that can affect the Cumberland Plateau Planning District are:

- Meteorological Drought is an extended period (six or more month) with precipitation of less than 75% of normal. Meteorological droughts usually precede other types of droughts, they are not reliant on any other factors.
- Agricultural Drought describes a soil moisture deficiency to the extent it effects the needs of plant life, primarily crops. Arid conditions characterize agricultural droughts during the growing season. A traditional agricultural drought is caused by an extended period of below-average precipitation.
- Hydrologic Drought is defined in terms of shortfalls of water levels of lakes and reservoirs, and stream flow in rivers, streams, and soils. Hydrological droughts tend to emerge more slowly because it involves stored water that is used but not replenished.
- Socio-economic droughts result from water shortages that limit the ability to supply water-dependent products in the marketplace.

Droughts are a natural part of most climatic areas, but the severity of droughts differs based on duration, geographic extent, and intensity. The period of data review for drought within the Cumberland Plateau Planning District starts in the year 2000 and ends in 2021. Data from 2021 to present is currently unavailable.

Type and Location

Agricultural droughts are the most common form of drought in the Cumberland Plateau Region and pose the greatest threat to the region's agricultural operations. The U.S. Drought Monitor (USDM) identifies areas in drought and labels them by intensity. The table uses four categories of drought, from D1 – the least intense – to D4, the most. It also highlights area with no drought and uses the D0 category to indicate abnormally dry areas that could be entering or recovering from drought. Drought severity categories are depicted in Figure 6-17.

Figure 6-17: Drought Severity Classification and Possible Impacts

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: • Short-term dryness slowing planting, growth of crops and pastures Coming out of drought: • Some lingering water deficits • Pastures or crops not fully recovered
D1	Moderate Drought	• Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent. • Voluntary water-use restrictions requested
D2	Severe Drought	• Crop or pasture losses likely • Water shortages common • Waster restriction imposed
D3	Extreme Drought	• Major crop/ pasture losses • Widespread water shortages or restrictions

D4	Exceptional Drought	• Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies

Source: United States Drought Monitor

The Drought Monitoring Task Force (DMTF) is a Commonwealth of Virginia interagency group of technical representatives from state and federal agencies responsible for monitoring natural resource conditions and the effects of drought on people, businesses, and natural resources. When activated, the Drought Task Force meets to assess conditions and make recommendations regarding drought status. The Task Force periodically releases Drought Status Reports summarizing drought conditions in the Commonwealth. Through the DMTF, the group can make recommendations for declaring four Drought Stages based on.

Table 6-40 summarizes the 2022 US Census of Agriculture Information by county in the Cumberland Plateau Region.

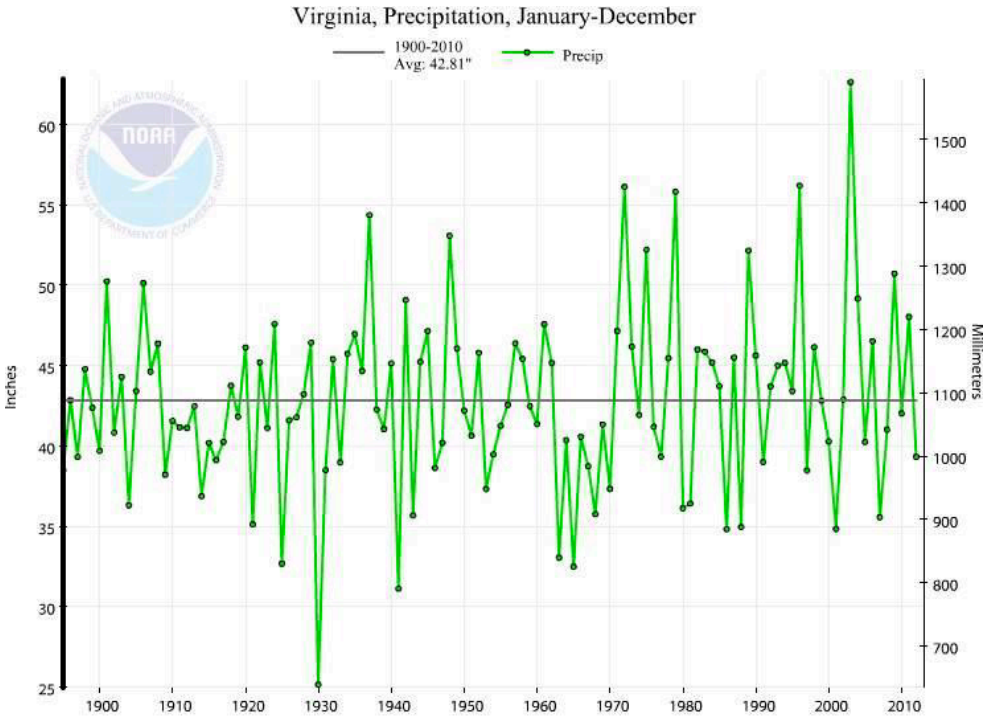
Table 6-40: 2022 USDA Census of Agriculture General Information by County

Jurisdiction	Number of Farms	Land in Farms (Acres)	Average Size of Farm (Acres)	Market Value of Products	Average Value Per Farm
Buchanan	88	8,501	97	$543,000	$6,172
Dickenson	108	48,885	98	$499,000	$4,618
Russell	808	176,732	219	$40,006,000	$49,513
Tazewell	500	123,581	247	$25,359,000	$50,717
CPPDC	1,504	357,699	165.25	$66,407,000	$27,755

Source: 2022 USDA Census of Agriculture

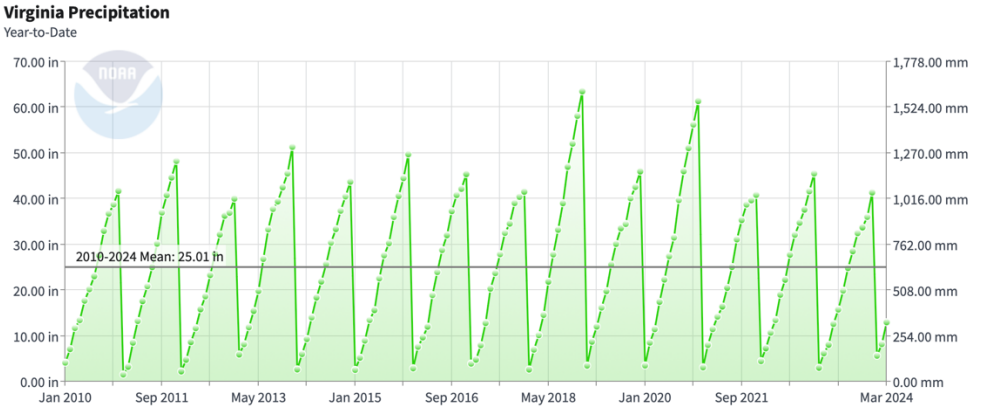
Although meteorologists have attempted to predict long term changes and trends in weather patterns, the onset of a significant drought cannot be predicted. Extended periods of dry weather have occurred many times from over the past 125 years.

1340 **Figure 6-18: Virginia Statewide Precipitation, January 1900 – 2010**



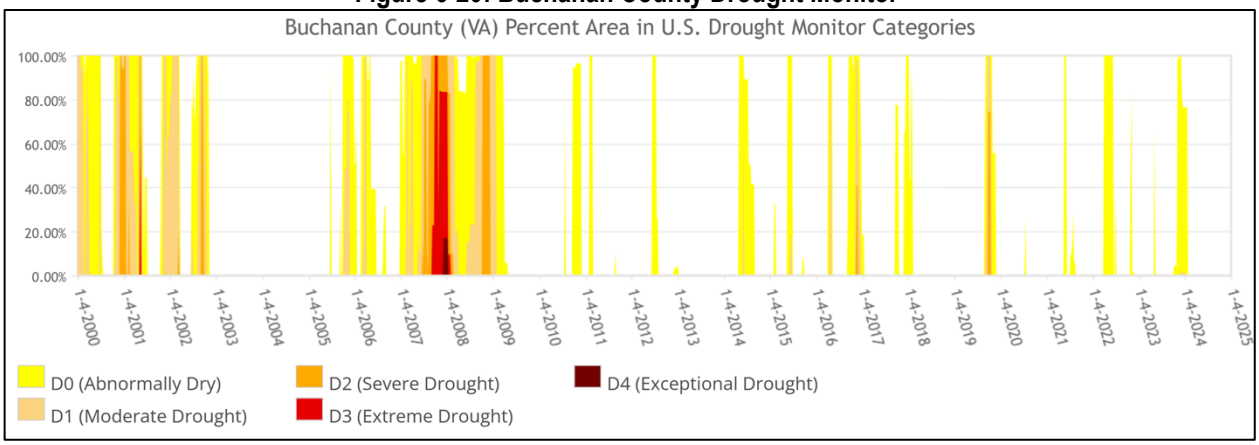
1341
1342 Source: NOAA National Center for Environmental Information
1343
1344

Figure 6-19: Virginia Statewide Precipitation, January 2010 – March 2024



Source: NOAA National Center for Environmental Information

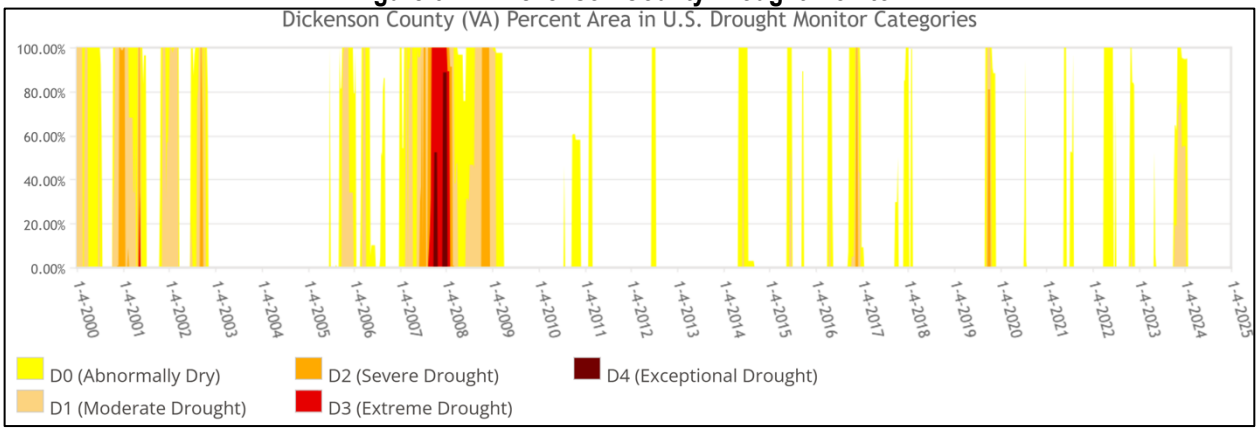
Figure 6-20: Buchanan County Drought Monitor



Source: U.S. Drought Monitor

According to the National Risk Index (NRI) there have been 154 drought events on record in Buchanan County from 2000 – 2021 (22 years) averaging about 5.6 drought events per year with no expected annual loss.

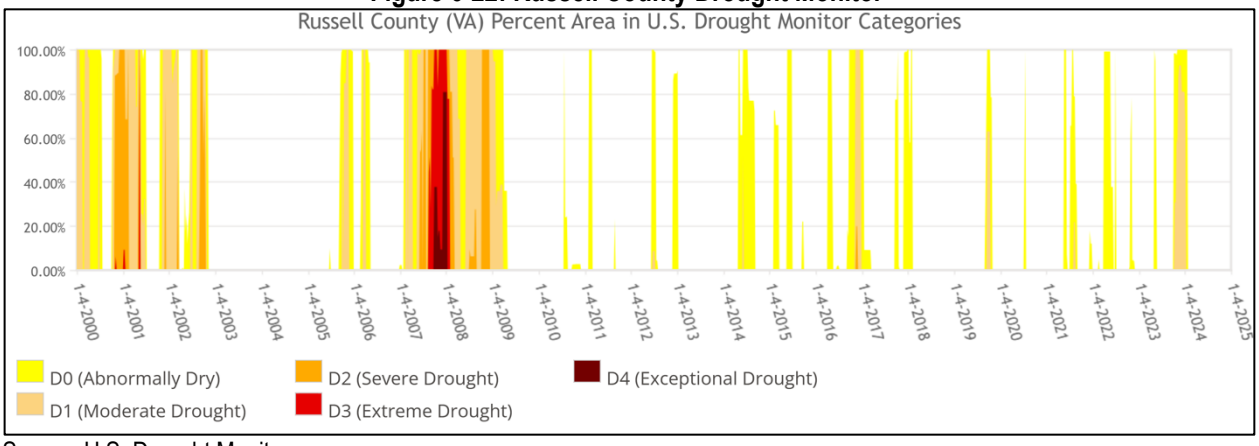
Figure 6-21: Dickenson County Drought Monitor



Source: U.S. Drought Monitor

According to the National Risk Index (NRI) there have been 175 drought events on record in Dickenson County from 2000 – 2021 (22 years) averaging about 7.7 drought events per year with no expected annual loss.

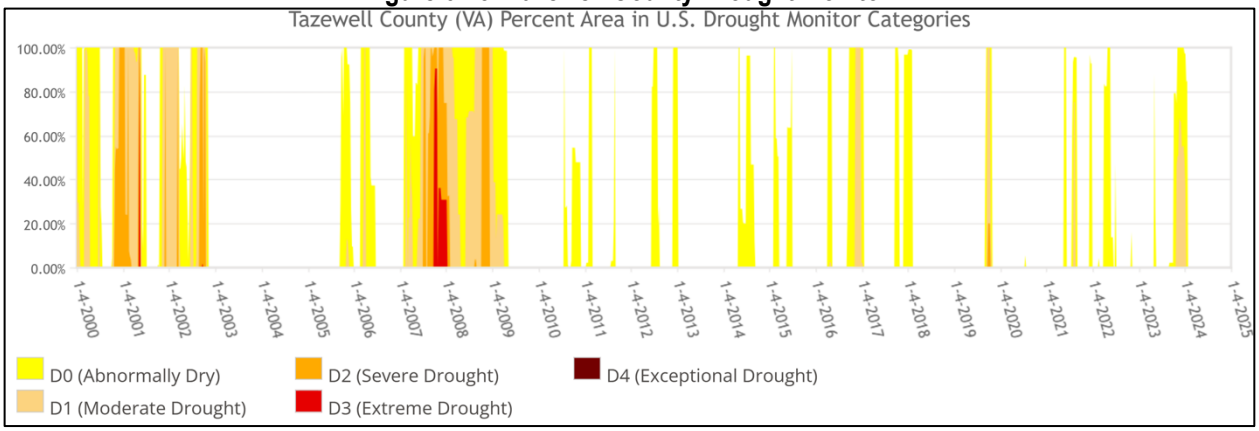
Figure 6-22: Russell County Drought Monitor



Source: U.S. Drought Monitor

According to the National Risk Index (NRI) there have been 196 drought events on record in Russell County from 2000 – 2021 (22 years) averaging about 8 drought events per year with an expected annual loss of $10,340 in agriculture.

Figure 6-23: Tazewell County Drought Monitor



Source: U.S. Drought Monitor

According to the National Risk Index (NRI) there have been 119 drought events on record in Tazewell County from 2000 – 2021 (22 years) averaging about 3.3 drought events per year. The county has an expected annual loss of $7,230 and an exposure value of $1.8 million, both in agriculture.

Impacts from droughts in the Town of Bluefield are a major concern. Most of the town's water supply comes from surface water (or wells supplied by surface water) and as a result, droughts can be detrimental to the town in respect to the societal demands placed on the water resources. Most of Bluefield is serviced by the Town's water systems, with the treatment located on the Bluestone River.

Previous Occurrences

There have been several significant droughts recorded in Virginia since 1900. The longest drought in the Cumberland Plateau Planning District history was from July 7, 2007, to December 1, 2008, lasting over one year. This period saw rainfall levels well below normal and caused many communities throughout the region to institute water restrictions. Table 6-41 lists the most significant droughts that impacted the Cumberland Plateau Planning District, with the most recent drought recorded in 2019. No other occurrences are recorded in the NCEI database.

The Cumberland Plateau Planning District has suffered dry conditions recently. According to U.S. Drought Monitor data, all counties endured D0 drought severity the week of June 25th, 2024, which have progressed and maintained D1 severity as of August 7th, 2024. National Integrated Drought Information System (NIDIS) data estimates current agricultural impacts to include 39,276 acres of hay, 4,618 acres of haylage, 193 acres of soybeans, 250 acres of corn, 34,514 cattle, and 5,943 sheep experiencing drought. However, U.S. NOAA's Climate Prediction Center predicts an end to current conditions as precipitation is forecasted for the area.

1394 **Table 6-41: Historical Occurrences of Droughts in the Cumberland Plateau Planning District**

Event Date	Description
1995	Tazewell County – Town of Bluefield A drought, which started earlier in the summer, peaked in many sections of southwest, south-central and west-central Virginia during the first two weeks of September. The drought damaged crops and resulted in many lakes and rivers being well below normal levels. Governor George Allen declared a state of emergency for southwest, south-central and west-central Virginia because of the drought.
October 1, 1998 – November 25, 1998	Tazewell County Dry conditions started in July, subsided in August, started again in September, and continued through most of November. In most areas, crops were damaged or destroyed. Water levels in creeks, streams, rivers, and lakes were low. Water levels in some shallow wells were low.
June 1, 1999 – October 31, 1999	Drought conditions spread into Buchanan and Dickenson Counties during the month. Monthly rain totals were mostly in the 2.5-to-3.5-inch range. However, the hot temperatures evaporated most of the moisture received from scattered showers. Clintwood reached 95 degrees on the afternoon of the 31st; the warmest temperature since 1985. The summer drought lingered during September, as the monthly rains amounted to only 1.5 to 2.75 inches. The drought severity eased, as monthly rainfall totals were around 3 inches. Ground water shortages were still a concern.
July 7, 2007 – December 15, 2008	An extended period of dry weather allowed parts of far southwest Virginia to be designated as being in Severe Drought (D2) on the U.S. Drought Monitor. Drought conditions continued and generally intensified. The monthly rainfall was mostly 1 to 1.5 inches. Some locations had even less. For example, John Flannagan Dam recorded only 0.78 inches of rain. Severe drought conditions existed at the beginning of November and continued until the end of the month. In western sections of the county, the drought worsened to the extreme level by November 6th and persisted until the end of the month. Rainfall was mainly confined to the typical summertime showers and thunderstorms for much of the month of August. Drought conditions in the moderate category at the beginning of the month, worsened to severe by August 19th. The effects of the remnants of Tropical Storm Fay toward the end of the month in terms of the long-term drought were significant. Nearly all areas experienced a one category improvement in the September 2nd issuance of the U.S. Drought Monitor. There was an estimated 16,000-ton loss of hay and pasture due to the drought resulting in a shortage of winter feed for livestock. Cow and calf weights were down fifteen to twenty percent. Severe drought (D2) conditions persisted for the first half of December. Sufficient rainfall subsided the drought by December 16th.
September 1-30, 2007	Tazewell County Drought conditions worsened across southwest Virginia, as seventeen counties fell into a severe drought (D2) on September 1st. This severe drought continued through the end of September. Crop damage estimates are from county extension offices.

Event Date	Description
	There was major loss of hay and pasture due to the drought resulting in a shortage of winter feed for livestock. Cow and calf weights were down twenty percent.
October 1-22, 2019	Tazewell County Parts of southwestern and south-central Virginia entered Severe Drought (D2) on October 1st remained there for the next three weeks. Dry conditions began as far back as July and August in some areas, but the rainfall was very uneven. An extremely dry and very warm September led to the worsening conditions in the county. Only 0.27 inches of rain were recorded in September for Tazewell County, making this the 3rd driest September on record with nearly complete data back to 1896.

Source: NOAA NCEI Storm Events Database

Vulnerabilities

Table 6-42 demonstrates the estimated annualized damages to property, agriculture, and people within the Cumberland Plateau Planning District.

Table 6-42: Expected Annual Loss from Drought in the Cumberland Plateau Planning District

Drought	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	5.6	$0	$0	$0	0	0
Dickenson	7.7	$0	$0	$0	0	0
Russell	8	$0	$10,340	$10,340	0	0
Tazewell	3.3	$0	$7,230	$7,230	0	0

Source: NOAA NCEI Storm Events Database, *FEMA National Risk Index

If a significant drought event were to occur, it could bring extensive economic, social, and environmental impacts to the Planning District. Commonly one of the most significant economic effects to a community is the agricultural impacts. Other economic effects could be felt by businesses that rely on adequate water levels for their day-to-day business such as carwashes and laundromats.

Droughts can also create conditions that promote the occurrence of other natural hazards such as wildfires and wind erosion. The likelihood of flash flooding is increased if a period of severe drought is followed by a period of extreme precipitation. Low-flow conditions also decrease the quantity and pressure of water available to firefighters to fight fires, while the dry conditions increase the likelihood fires will occur.

Environmental drought impacts include those on both human and animal habitats and hydrologic units.

Hazard Extent and Potential Impacts

The Cumberland Plateau Planning District experiences an average of 6 droughts per year, usually peaking at D2 severity. The longest drought in the Cumberland Plateau Region history was from July 7, 2007, to December 1, 2008, lasting over one year. This period had ranging intensities of D2 and D3 and limited rainfall, causing many small headwater streams and springs typically used to store drinking water to dry. The ongoing drought from 2007 lingered into 2008, creating an estimated crop damage total of $7.7 million for the area, with an estimated 16,000-ton loss of hay and pasture due to the drought resulting in a shortage of winter feed for livestock.

Droughts can have several potential impacts to the Planning District and its agricultural resources. Droughts reduce the availability and quality of water necessary for farming and grazing lands, causing crop failure and pasture losses and directly impacting the agricultural section of the economy and employment. Droughts also increase the potential for wildfires in the area, which can spread and are highly destructive.

Climate Change Influence

According to the USGS, climate change has further altered the natural pattern of droughts, making them more frequent, longer, and severe. In this update of the Cumberland Plateau Planning District HMP, drought remained on the lower end of the hazard risk list, but the threat remains. Some potential impacts from climate change on drought include water availability for public/domestic use and agriculture water supply. Ecological

impacts, forestry, and public health can also be affected. To mitigate the impacts of droughts increased by climate change, implementing water conservation measures and improvement of water management infrastructure. Most importantly is education and collaboration with stakeholders. Table 6-43 (the CPRI assessment) outlines the hazard rankings for each of the hazard priority criteria related to droughts.

Probability of Future Events

Based on historical occurrences of significant droughts, the probability of future events is likely, with a frequency of occurrence of 6 droughts annually impacting the Cumberland Plateau Planning District. According to the NIDIS the Planning District has experienced one of the driest months of June on record in 2024 since 1894. However, it is important to note that although meteorologists have attempted to predict long term changes and trends in weather patterns, the onset of a significant drought cannot be predicted.

CPRI Assessment

Table 6-43: Drought Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Drought	.9	.3	.15	.4	1.75	11
Drought	(2x.45) = .9	(1x.30) = .3	(1x.15) = .15	(4x.10) = .4	1.75	11

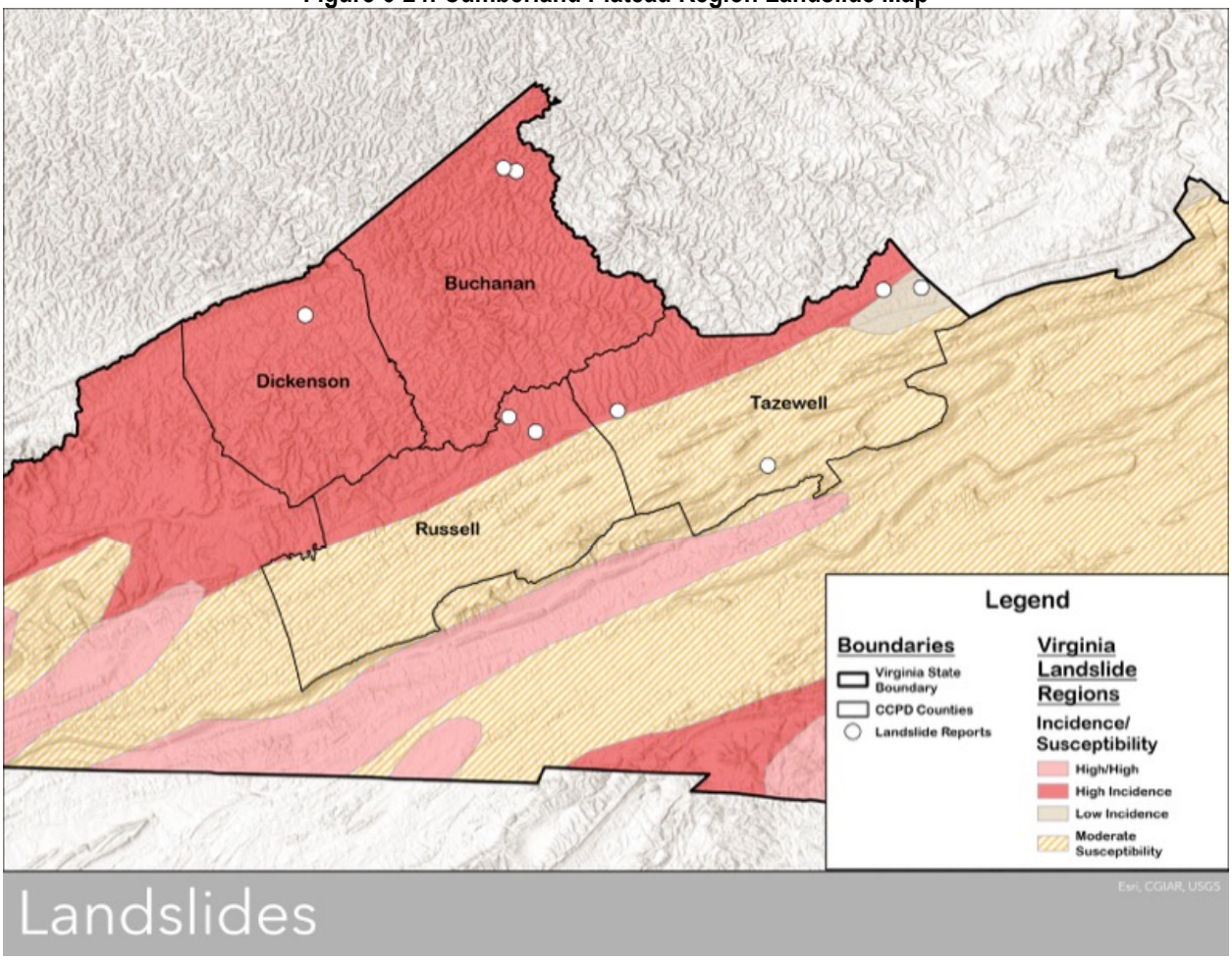
6.3.11 Landslides

A landslide is an occurrence of ground movement in which soil, rock, or debris move outward and downward along a slope. Types of landslides can include rock falls, deep-seated failures of slopes, shallow debris slides, and mudslides. The difference in these types of slides depends on the type of movement, as well as the type of material. Landslides can occur suddenly and dramatically or can occur slowly over a period. The exact location and timing of a landslide cannot be predicted. Landslides are common throughout the Appalachian Mountain region because of the extremely steep slopes present in the area.

Type and Location

Historically, numerous landslides have occurred throughout the Cumberland Plateau Region. In some cases, slide locations are still visibly apparent, however, detailed historic records of the location and extent of landslides have not been kept. Many landslide occurrences have occurred adjacent to existing roadways, or around a roadway under construction. The best resource for obtaining landslide data are the local offices of the Virginia Department of Transportation (VDOT).

Figure 6-24: Cumberland Plateau Region Landslide Map



Source: USGS via Homeland Infrastructure Foundation Level Data (HIFLD)

Previous Occurrences

Table 6-44 lists historical landslides reported within the Cumberland Plateau Planning District according to U.S. Landslide Inventory data. It should be noted that these locations do not represent all the historic landslide locations in the Region. Many small slides that do not directly impact the public are not reported or recorded. These landslides have typically been located along smaller roadways throughout the area, and the number of slides and potential damages are unknown.

1466 **Table 6-44: Historical Occurrences of Landslides in the Cumberland Plateau Planning District**

Event Date	Description
March 4th, 2015	Buchanan County – Community of Hurley Storms and rains lasting three weeks triggered a mudslide of estimated medium size. The mudslide destroyed one single family home; however, no fatalities or injuries were reported.
February 24th, 2016	Tazewell County A landslide of medium size occurred at Route 696 near the intersection of Route 702, blocking the road completely. Representatives of VDOT estimated it would take a week to accomplish excavation work required to reopen the road. No fatalities or injuries were reported. The trigger remains unknown.
April 23rd, 2017	Russel County – Town of Honaker Continuous weekend rains caused a small landslide above Drill Road, blocking Garden Creek Road. No fatalities or injuries were reported.
December 2nd, 2018	Tazewell County – Town of Bluefield A small rockslide closed a land near the intersection of Falls Mills Road and Brushfork Road just outside of Bluefield, VA. No fatalities or injuries were reported. The trigger remains unknown.
August 30th, 2021	Buchanan County Remnants of Hurricane Ida struck Southwest Virginia, leading to several inches of rainfall that caused flash floods and mudslides in several communities. The Hurley area of Buchanan County received enough rain that resulted in landslides that destroyed homes and structures. One flood victim was reported near Guesses Fork. No fatalities resulting from the mudslides were reported. No estimated size of the mudslides are available.

1467 Source: USGS U.S. Landslide Inventory, *NASA Landslide Viewer

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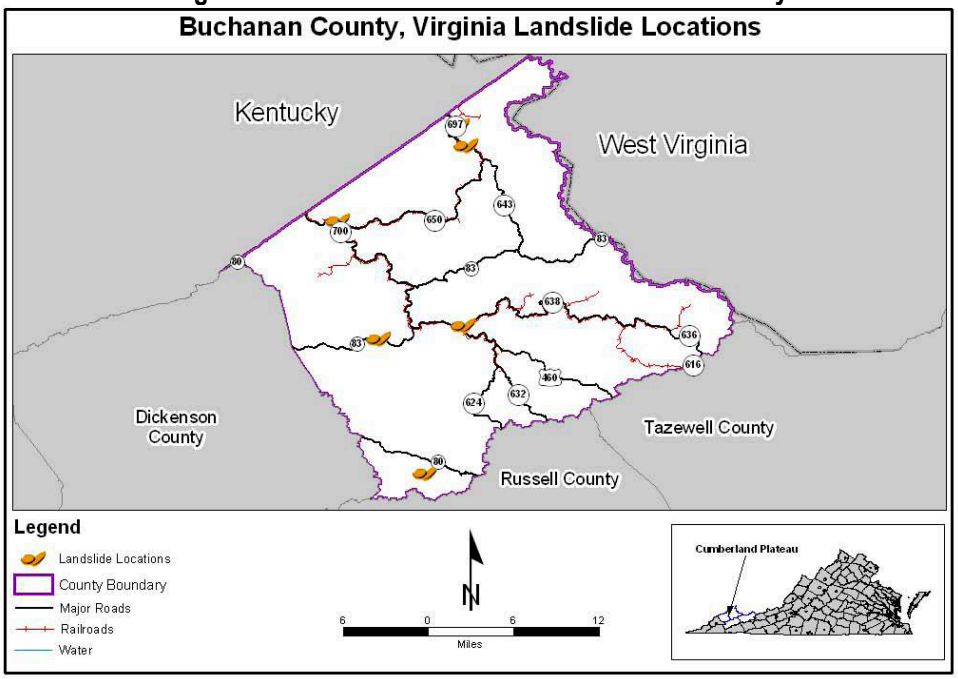
VDOT representatives were specifically contacted to gather as much information on historic landslides as possible. The following includes a description of the landslide data by county.

Buchanan County:

VDOT reported six individual locations throughout Buchanan County where historic landslide activity has been documented. The reported landslides documented by VDOT occur at various locations:

- Routh 672, along Copperhead Branch in the southern portion of the county
- Route 83 at Lovers Gap
- Route 648 and 460 at Dismal Creek
- Route 700 at Big Rock
- Route 643 in the northern portion of the county at Guesses Fork
- Route 697 north of Kelsa

Figure 6-25: Landslide Locations in Buchanan County

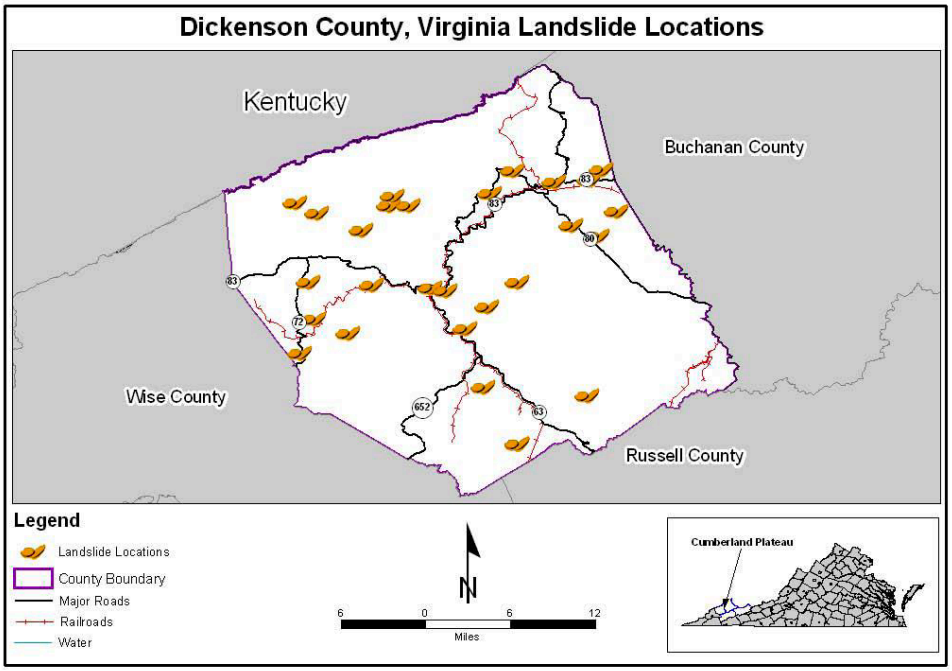


Source: USGS National Landslide Inventory Data

Dickenson County:

VDOT has documented historic landslides occurring at 27 different locations throughout the county, the following map shows these locations.

Figure 6-26 Landslide Locations in Dickenson County



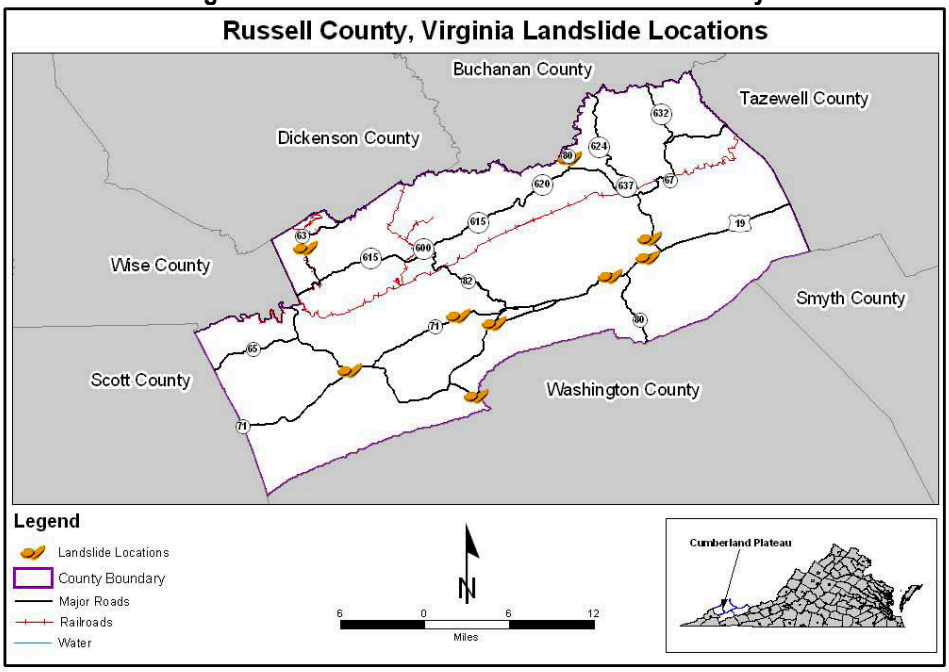
Source: USGS National Landslide Inventory Data

Russell County:

VDOT identified seven primary landslide locations throughout Russell County, a majority of which are located along major roadways throughout the county. VDOT also provided additional data regarding the characteristics of some of the historic slides.

- Route 63 between Sun and Dante – Fairly stable, monitoring for movement.
- Route 58 across from Route 71 in the western portion of the county.
- Route 19 near the Washington County line – southbound lanes settle periodically.
- Route 19 – northbound exit ramp at Coal Tipple Hollow, periodic cleanup and monitoring.
- Route 19 at Huffman Hill and has been stable for some time.
- Route 19 near Souls Harbor Church
- Route 80 at Doubles Branch
- Route 80 at Big A Mountain
- Route 71 below Lebanon town limits

Figure 6-27: Landslide Locations in Russell County



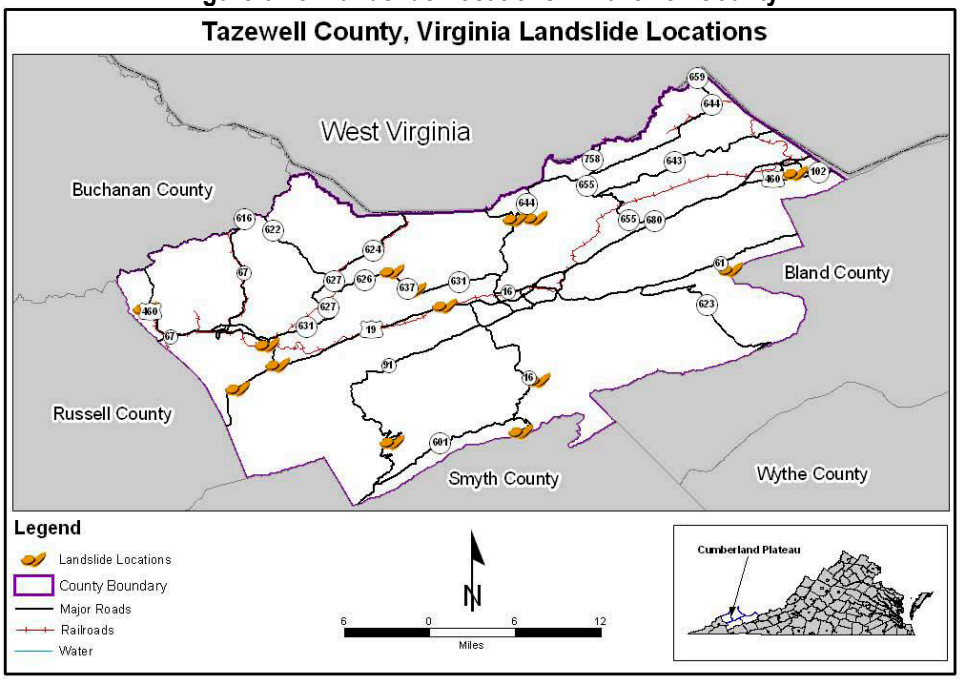
Source: USGS National Landslide Inventory Data

Tazewell County:

VDOT has documented historic landslides occurring at 14 different locations, a majority of which are located along major roadways throughout the County.

- Route 19 at several locations
- Route 460 in the city of Cedar Bluff
- Several locations along roadways in the Jefferson National Forest.
- Route 637 at the Jumps and the intersection with Route 626.

Figure 6-28: Landslide Locations in Tazewell County



Source: USGS National Landslide Inventory Data

Vulnerabilities

Due to the physical characteristics of the area, virtually the entire Cumberland Plateau Planning District is in an area that has a high risk to the effects of landslides. As stated previously, due to the many factors that contribute to when and where a landslide will occur, it is extremely difficult to indicate precise locations that are at a greater risk of being affected by a landslide than other areas. However, one of the best indicators of where a landslide may occur is the locations of past landslide activity. These areas have demonstrated susceptibility to landslide occurrence, making additional landslides at these locations likely. Table 6-45 demonstrates the estimated annualized damages to property, agriculture, and people within the Cumberland Plateau Planning District. According to NRI data, 5 landslide events have occurred between 2010 and 2021 within the region. Landslides in the region rarely impact the population.

Table 6-45: Expected Annual Loss from Landslides

Landslides	Annualized Events	Annualized Property Damages	Annualized Agriculture Value	Annualized Total Damage	Deaths	Injuries
Buchanan	0	$19,077	$0	$95,765	0	0
Dickenson	0	$4,500	$0	$21,900	0	0
Russell	0	$9,903	$0	$52,940	0	0
Tazewell	0	$249,613	N/A	$294,307	0	0

Source: FEMA National Risk Index

Hazard Extent and Potential Impacts

Available landslide data shows that while landslides occur, they primarily happen in uninhabited areas. On occasions when a landslide does occur, impacted infrastructure typically includes remote county roads in which counties will remove debris and repair. Historical data shows that landslides within the area are usually close in extent and magnitude. Future landslide events are expected to replicate this hazard extent.

Historical records of landslides in the Blueridge Mountains indicate that destructive landslides occur when unusually heavy rainfall from hurricanes and intense storms soak the ground, which reduce the ability of steep slopes to resist the downslope pull of gravity. Due to the extreme steep slopes throughout the Cumberland Plateau Planning District, virtually all the development in the area is at high risk to the effects of landslides. The vulnerability of specific structures and assets can only be determined by a detailed investigation of the site characteristics, primarily the proximity to at-risk slopes. Many of the more densely developed areas of the planning district are in areas with more gradual slopes. Therefore, the risk of widespread damages due to landslides in the densely developed areas is limited. However, many of the unincorporated areas throughout the planning district have extremely steep slopes. The potential for landslide damage to structures in these areas could be relatively high.

Climate Change Influence

Climate change may impact storm patterns, increasing the probability of more frequent, intense storms with varying duration. Warming temperatures also could increase the occurrence and duration of droughts, which would increase the probability of wildfire, reducing the vegetation that helps to support steep slopes. All these factors would increase the probability of landslide occurrences. The Cumberland Plateau Planning District's steep slopes and often shallow soils are vulnerable to intense rainfall saturating the soil, reducing its stability. To mitigate the impacts of landslides increased by climate change, communities may engage in slope stabilization and stormwater management techniques such as reforestation and vegetation management or implementing stormwater management systems. The utilization of early warning systems and community alerts remain crucial in maintaining public awareness.

Probability of Future Events

Based on past occurrences, the most vulnerable assets located within the Cumberland Plateau Planning District are its roadways. Many of the roads in the area traverse steep slopes increasing the vulnerability to damage. The damage to a roadway affected by a landslide can vary from partial blockage to destruction. In addition to the damage to the road itself, more significant economic and safety impacts may be felt by the community due to the loss of function of the roadway. Many of the roadways throughout the planning district

provide the only direct access from one community to another, or potentially the only access to certain remote areas. This reduction in access can increase the response time of emergency vehicles, creating a potentially serious threat to public safety in these areas. The CPRI assessment found in Table 6-46 below outlines the hazard rankings for each of the hazard priority criteria related to landslides.

CPRI Assessment

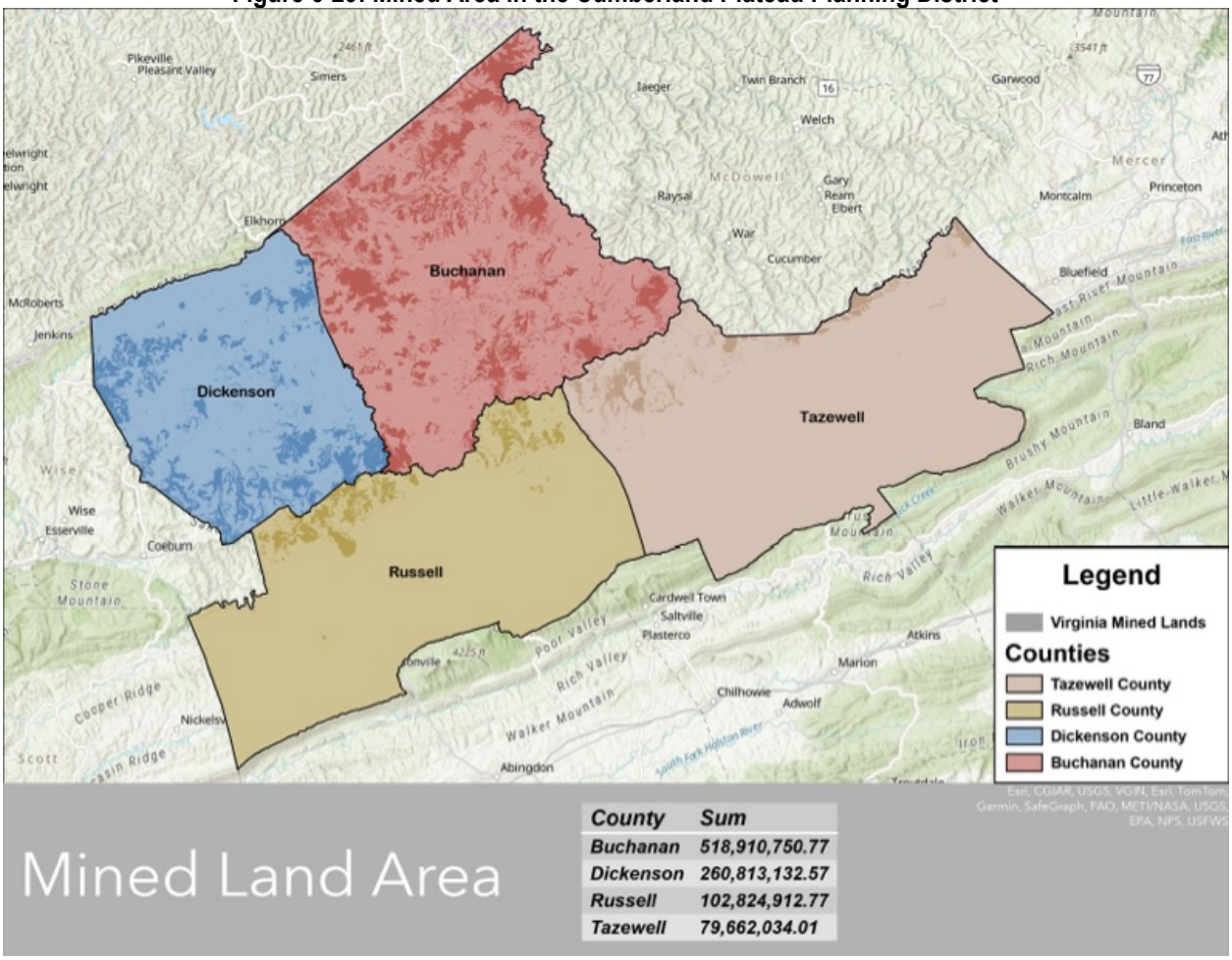
Table 6-46: Landslide Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Landslide	1.35	.3	.6	.10	1.35	12
Landslide	(3x.45) =1.35	(1x.30) =.3	(4x.15) =.6	(1x.10) =.10	1.35	12

6.3.12 Abandoned Mine Fire/Flood

Another threat to the region comes in the form of abandoned mine fires and floods. Coal is found in Virginia in three widely separated and dissimilar areas; one of which is the Southwest Virginia field, which comprises of all or part of Tazewell, Buchanan, Dickenson, Russell, Scott, Wise, and Lee counties. Figure 6-29 depicts the mine area withing the Cumberland Plateau Planning District. Thousands of currently operating and abandoned coal mines throughout the region present a threat to public safety if a fire were to break out or a mine seal to break, allowing water inside to escape. Abandoned mines also pose a threat due to flooding from “blowouts”, when mines fill with water during extreme rainfall events and burst. While abandoned mine fires are relatively infrequent, they can severely impact a region if they are not rapidly controlled, as seen in Centralia, Pennsylvania, where an entire town was required to be evacuated. Abandoned mine fires can result in toxic gas erupting from the ground, heavily increased temperatures in surface soil, and even suddenly forming sinkholes that threaten both homes and residents. Mine floods have become a threat as well, as many older mines in the area can potentially have water escape, threatening the property and lives of communities.

Figure 6-29: Mined Area in the Cumberland Plateau Planning District



Source: Virginia Department of Energy

Type and Location

According to the Active Mines and Mineral Plants data archive maintained by the U.S. Geological Survey (USGS), there are four active mines within the Cumberland Plateau Planning District and two active mines just outside Dickenson County lines. The Castlewood Quarry & Plant and the Swords Creek Plant are active mines located in Russell County. The Pounding Mill Quarry and Bluefield Quarry are active mines located in Tazewell County. All active mines are documented to have crushed stone as their commodity. The region is also home to the following closed mines:

- Clinchfield-Moss Mines
- Dixie Beaver Coal Company Mines
- Moss No 2 Mine
- Moss No 3 Mine
- Pocahontas Mine

Due to the Cumberland Plateau Planning District representing a large portion of the Southwest Virginia minefield, numerous strip mines, pits, diggings, and other mines are abundant throughout the region with the

most located in Buchanan County. A visual representation and archive of this data can be found using the USGS Mineral Resources Online Spatial Data, which combined mining-related features within the region since the 1880's. According to county officials, the Virginia Department of Energy located and mapped many abandoned mines in the 1970's and maintains an online mapping tool to show the location of known abandoned mines and associated impacts. However, counties do not maintain a complete inventory of abandoned mines within their respective counties.

According to the Environmental Protection Agency (EPA), abandoned mine drainage is water that has been polluted from contact with mining activity and is normally associated with coal mining. There are a few different issues with abandoned mines impacting water quality including:

- Acid mine drainage is the formation and movement of highly acidic water rich in heavy metals. The acidic water forms through the chemical reaction of surface water (rainfall, snowmelt, pond water) and shallow sub-surface water with rocks that contain sulfur-bearing minerals, resulting in sulfuric acid.
- Alkaline mine drainage which occurs when calcite or dolomite is present.
- Metal mine drainage is high levels of lead or other metals draining from an abandoned mine.

The U.S. Department of the Interior Office of Surface Mining Reclamation and Enforcement (OSMRE) describes abandoned mine flooding as flooding that is not caused by sedimentation of streams and not caused by impounding water escaping a containment area. Problems include soil saturation and flooding caused by rising mine pools. Infiltration of groundwater polluted by mining to improved property, or flooding in areas that have subsided below the historic flood plain elevation.

The OSMRE describes underground mine fires or coal mine fires as generic terms for coal seam fires. According to the OSMRE, most mine fires start through careless human activity, however, an also start naturally through forest fires, lightning strikes, or other natural heat sources. Underground coal mines send soot, toxic vapors, and greenhouse gases into the atmosphere which lead to the pollution of surface and groundwater, mine subsidence, and ignition of forest and structural fires. It is also important to note the occurrence of surface burning, which the OSMRE defines as continuous combustion of mine waste material, even if beneath the surface of mine dump material, that results in smoke, haze, heat, or venting of hazardous gases located within proximity to a populated area, public road, or other public use area and posing a danger to public health and safety.

Previous Occurrences

According to the 2023 Buchanan County Flood Resilience Plan, an incident in 2019 occurred in which a draining mechanism clogged with sediment and debris burst, causing 4 feet of water to rush down a neighborhood road. The incident damaged some homes, stranded one resident due to their driveway being washed out, and one elderly woman was forced to evacuate. A Buchanan County Board of Supervisors representative pointed out that at least 3 major floods in recent years were caused by mine blowouts or mining pond failures.

A 2008 mine methane ignition/fire accident investigation report by the Virginia Department of Mines, Minerals, and Energy Division of Mines records the details of a fire in Buchanan Mine No. 1. According to the investigation report several geologic bumps occurred at 9:43 a.m. on July 9th, 2007, which was reported to have likely ignited a methane gas ignition in the active gob area of the mine. Smoke was seen coming from the #9 shaft and crews smelled burning wood. No damages, injuries, or deaths were reported. A similar fire

incident occurred in Buchanan Mine No. 1 on February 14th, 2005, when a magnitude 3.0 energy release caused an underground shock bump and roof fall that contributed to a methane gas ignition. Damages included melted and burned materials such as plastic high voltage guards, curtains, timbers, cribs, and control box shields. No injuries or deaths were reported. It is important to note that at the time of these events, Buchanan Mine No. 1 was operational and not abandoned. While the fires are not abandoned mine events, they are examples of how fires and flooding can occur because of secondary hazard events and are possible within current abandoned mines.

Vulnerabilities

The communities within the Cumberland Plateau Planning District face significant vulnerabilities to floods and fires from abandoned land mines due to several interrelated factors. Counties within the region encompass the Southwest Virginia mine field and include hundreds of mine beds that drain into various bodies of water including the Big Sandy River, Clinch River, and Levisa Fork. These former mining sites can become unstable and are prone to flooding during heavy rainfall when water accumulates in improperly sealed mines. Additionally, the legacy of coal mining has left behind a network of abandoned mines that pose fire hazards, as underground coal can ignite and smolder for extended periods. Limited financial and technical resources hinder effective monitoring and mitigation of these risks, leaving communities ill-prepared for emergencies. Furthermore, pollutants from abandoned sites can contaminate local waterways during flooding, exacerbating health risks. Addressing these challenges requires coordinated efforts for mine reclamation, community preparedness, and enhanced resource allocation for emergency services.

Hazard Extent and Potential Impacts

There is no recorded data on hazard extent for floods and fires from abandoned land mines within the Cumberland Plateau Planning District. State and local communities do not keep records on the location and extent of abandoned mine incidents. However, local news reports document active mine explosions and fires during the 1980's.

Abandoned mine fires and flooding can have severe potential impacts to communities within the Cumberland Plateau Planning District, including threats to life, property, and agriculture. Secondary hazards such as water contamination, toxic emissions, landslides, subsidence, and flooding may occur and have serious impacts. Mine waste such as silt and debris can be carried downstream by surface runoff, reducing the carrying capacity of streams and resulting in a danger to improved properties and human health and safety. Unstable mine waste piles also have potential to destroy property and threaten lives with the occurrence of a landslide. Mine drainage water can saturate the ground, adversely impacting domestic water supplies, human health conditions, and the integrity of infrastructure. Earth material disturbed by mining activity can erode and cause clogged stream lands. Venting of hazardous gases and continuous smoke, haze, or heat also pose a danger to public health and safety.

Climate Change Influence

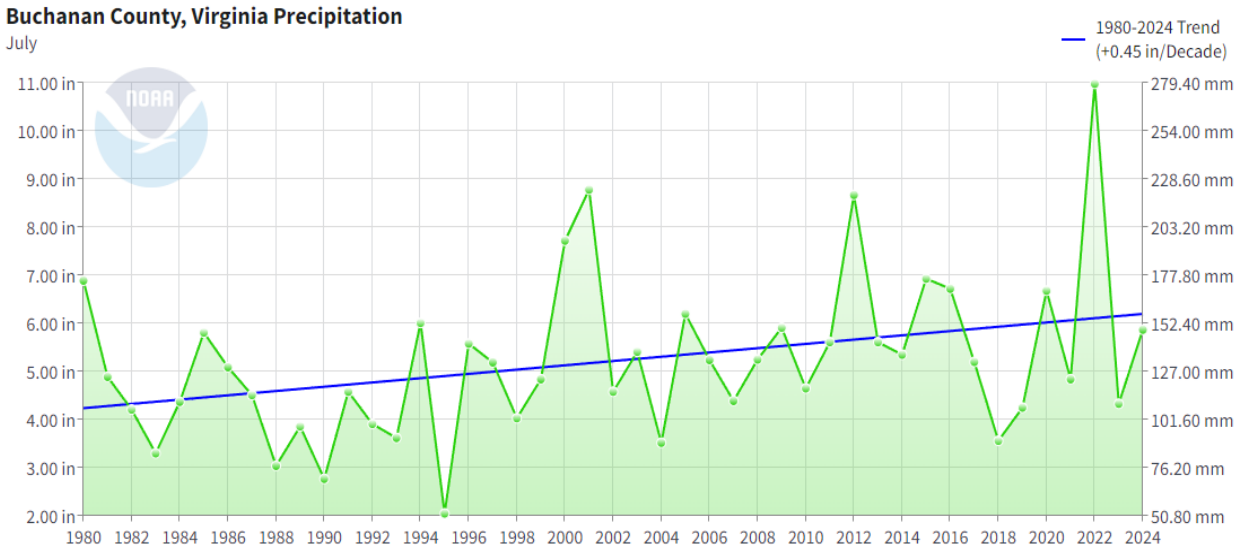
Climate change is likely to increase both the frequency and intensity of abandoned mine fires and floods. Rising temperatures and extended fire seasons lower the threshold for spontaneous combustion in exposed coal seams and waste piles, while prolonged droughts dry out vegetation and soils, making them more susceptible to ignition. Erratic precipitation patterns, including intense rainfall following dry periods, can destabilize abandoned mines and expose more combustible materials, raising the risk of fires. Climate change also contributes to more frequent and severe rainfall events, leading to increased flooding in

abandoned mines. Floods in abandoned mines can also be exacerbated by rising groundwater levels, which may lead to the reactivation of dormant or forgotten water-filled mines. The increased occurrence of wildfires, driven by climate change, heightens the likelihood of surface fires spreading into areas with abandoned mines, potentially igniting underground fires. Climate-driven changes not only increase the occurrence of mine fires and floods but also complicate firefighting and flood management efforts, while exacerbating air quality issues and increasing environmental and health risks for nearby communities.

Probability of Future Events

The likelihood of future abandoned mine floods and fires is influenced by weather patterns, mine conditions, underground conditions, and current mitigation efforts. The number of abandoned mines in the region, increased regional precipitation, and history of flooding make the occurrence of repeated mine flooding likely but of limited consequence to citizens of the region. Figure 6-30 displays the precipitation trends for Buchanan County from 1980 to 2024 as documented by the NOAA NCEI Storm Events Database. NCEI reports a 0.45-inch increase in precipitation over the decade. Precipitation trends for Buchanan County are representative of precipitation trends of the Cumberland Plateau region.

Figure 6-30: Buchanan County Precipitation Trends (1980-2024)



Source: NOAA NCEI Storm Events Database

While no documented mine fires have occurred, increasing drought conditions and extreme heat events contribute to a limited increased probability of future events. Recent legislation at the state and Federal level has been passed to reduce the impacts of abandoned mine fires and flooding through reclamation and revitalization practices. The Federal program is the Abandoned Mine Land Economic Revitalization Program which has provided Virginia with $10 million annually since 2017 to develop and repurpose abandoned mines. Since the Federal program began the region has been awarded over $5.2 million for Abandoned Mine Land Economic Revitalization projects. Table 6-47 below outlines the hazard rankings for each of the hazard priority criteria related to abandoned mine fires and floods.

CPRI Assessment

Table 6-47: Abandoned Mine Fire/Flood Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Abandoned Mine Fire/ Flood	.9	.3	.15	.10	1.8	10
Abandoned Mine Fire/ Flood	(2x.45) =.9	(1x.30) =.3	(1x.15) =.15	(1x.10) =.10	1.8	10

6.3.13 Algae Bloom – Dickenson County ONLY

According to the Virginia Department of Health (VDH), algae are naturally occurring microscopic organisms that are found in fresh and salt waters of Virginia and around the world. Algae species in fresh and salt water may multiply rapidly when environmental conditions are favorable for their development. The great number of algal cells in the water results in what is called an algal bloom. Sometimes the algae present aren't algae at all, but rather cyanobacteria, or 'blue-green algae'. These organisms may also 'bloom' and some species could produce toxins. Algal blooms often result in a noticeable change in the color of the water. They can come in many colors but are most commonly green or reddish-brown. An odor may also be present in the vicinity of the bloom. Blooms are commonly seen in summer, but have appeared earlier, wider and more intense than in years past. This is likely due to a very warm summer and atypically warm winter.

Most algae do not harm people, wildlife, or the environment. However, some types of algae in Virginia are dangerous and can affect fish and humans, as well as other animals like birds and mammals. These are known as Harmful Algae Blooms (HABs).

Type and Location

Algae Blooms present a threat both recreational activities in the John W Flannagan Dam reservoir – animals, especially pets, which are exposed to the algae can become sick or die because of ingesting the algae. But a major concern presents itself to residents as well. Since John W Flannagan Dam's reservoir provides public water to both Dickenson and Buchanan Counties, more frequent blooms can potentially impact public water services in the future. Several government organizations have begun studies on the algae blooms at the reservoir and will monitor the situation closely moving forward.

Previous Occurrences

Algae blooms are a very recently added threat to the region and primarily affect the residents in Dickenson and Buchanan Counties. The first major algae bloom in the region occurred at John W Flannagan Reservoir in Dickenson County from late February to early March 2017. This occurrence has been attributed to temperature variations in the region due to global climate change. Test results on the blue-green algae indicated that while several cyanobacteria species capable of producing toxins were present within the reservoir, they were not present at levels which posed a risk of toxic production. In August 2019, a second bloom occurred in the lower part of the reservoir near the dam affecting Skeetrock Branch and Lower Twin Branch to the dam. A health and swimming advisory was put into effect for two weeks.

Vulnerabilities

If an HAB event were to occur, it could bring social and environmental impacts to Dickenson County. The Flannagan Reservoir is withdrawn and treated to provide a source of drinking water for approximately 37,000 customers in Buchanan and Dickenson Counties, and small parts of Wise and Tazewell Counties. The reservoir also serves as a popular fishing and recreational destination. Social impacts include public health risks from exposure to toxins, contamination of drinking water, and unsafe recreational water use. Algae blooms can impact the environment by disrupting aquatic ecosystems through the depletion of oxygen levels in the water, leading to fish kills and loss of biodiversity. HABs can also degrade important habitats by blocking sunlight, altering water chemistry, and harming wildlife.

Hazard Extent and Potential Impacts

There is no recorded data on hazard extent for hazardous algae blooms within Dickenson County due to minimized impact and event data on the algae bloom events that occurred in 2017 and 2019. Future algae bloom events are expected to replicate this hazard extent. While most algae species are harmless, algae blooms can still pose potential impacts to Dickenson County. Some harmful algae, such as cyanobacteria, can cause rash and gastrointestinal illnesses such as upset stomach, nausea, vomiting, and diarrhea. Exposure to algal toxins through skin contact such as swimming and wading, and accidental ingestion may cause illness. While fish consumption is not affected by algal toxins, it is advised to thoroughly clean any caught fish, discard any waste, and wash hands and surfaces thoroughly with soapy water.

Climate Change Influence

Climate change is expected to exacerbate the conditions that lead to HABs, including warmer water temperatures and more intense rainfall, which increases runoff of farming nutrients. This influx of nutrients results in more frequent and severe blooms. Rising temperatures lead to warmer water in lakes, rivers, and reservoirs, creating an ideal environment for algae to thrive. Prolonged periods of heat also extend the growing season for algae, allowing blooms to persist for longer durations. Drought conditions within the region can reduce water flow and concentrate nutrients in stagnant bodies of water, which further promotes algae proliferation.

Probability of Future Events

Algae blooms are not uncommon in lakes and freshwater rivers in the spring in summer and are most likely to form when waters are warm and nutrient rich from farming runoff. Based on climate change influence and use of the geographic area, the probability of future events is likely. As of August 9th, 2024, the Virginia Department of Health has no report of a HAB within Dickenson County.

Currently, staff from the local Virginia Department of Health, Virginia Department of Environmental Quality, and the water treatment plant conduct weekly and/or bi-weekly observations of Flannigan Reservoir as temperatures rise to help in the detection of HABs. During a bloom event, the Virginia Harmful Algae Bloom Task Force monitors and analyzes samples for harmful species and/or algal toxins to determine any presence of risk to human health or shellfish. Analysis results are available on the Algal Bloom Surveillance Map located on the Virginia Department of Health website. The CPRI assessment found in Table 6-48 outlines the hazard rankings for each of the hazard priority criteria related to algae blooms.

CPRI Assessment

Table 6-48: Algae Bloom Hazard Priority

Calculated Priority Ranking Index Summary						
Hazard	**Probability**	**Magnitude and/ or Severity**	**Warning Time**	**Duration**	**CPRI Score**	**Hazard Ranking**
Algae Bloom	.45	.3	.15	.4	1.3	13
Algae Bloom	(1x.45) =.45	(1x.30) =.3	(1x.15) =.15	(4x.10) =.4	1.3	13

6.4 Identifying Hazards of Concern

Table 6-49: Hazards of Concern

Hazard	Identified Natural Hazard?	Rationale	Sources	Detailed Risk Assessment?
Riverine Flooding	Yes	High annual probability with impacts potentially severe in site specific areas. Severe thunderstorms cause pluvial flooding issues.	NCEI HAZUS; NRI;	Yes
Severe Winds	Yes	High annual probability, widespread impacts, losses are great when affected by a storm of this nature.	NCEI; HAZUS, NRI;	Yes
Severe Winter Storms	Yes	High annual probability, widespread impacts, but losses generally limited except in most extreme events.	NCEI; NRI;	Yes
Tornadoes	Yes	Widespread impacts, history of occurrences in the county, significant damages Increasing frequency.	NCEI; HAZUS; NRI:	Yes
Hailstorms	Yes			Yes
Extreme Temperatures	Yes	Relatively high annual probability, but impacts are limited	NCEI; NRI;	Yes
Wildfire	Yes	Relatively low annual probability for a significant	VDOF, USGS	Yes

Hazard	Identified Natural Hazard?	Rationale	Sources	Detailed Risk Assessment?
		size event, but potential for substantial consequences		
Earthquakes	Yes	Low probability, low risk of effects.	NCEI; USGS; HAZUS	Yes
Dam/ Levee Failure	Yes			Yes
Drought	Yes	High annual probability, with high agricultural risk, but impacts are generally limited.	NCEI; USDA; NRI;	Yes
Landslides	Yes	Low Probability but noteworthy due to certain landscape aspects.	NRI	Yes
Abandoned Mine Fire/Flood	Yes			Yes
Algae Bloom	Yes			Yes

6.5 High Hazard Potential Dams

6.5.1 High Hazard Probability Dams

Dams are manufactured structures that serve a variety of uses such as flood protection, power production, agriculture, water supply, and forming recreational areas. They are typically constructed of earth, rock, or concrete and come in all shapes and sizes. Dam failure is the uncontrolled release of impounded water resulting in downstream flooding and other impacts affecting lives and property. Dams can fail because water heights or flows are above the capacity the structure was designed for (including flooding) or because the structure failed in some way. Structures fail for many reasons, including lack of maintenance, erosion, seismic events, insufficient design, development or alteration of the floodplain, or improper construction. Concrete/masonry dams usually fail from the loss of a section or undermining, while the primary causes of earthen dam failure are overtopping, piping failure, and foundation failure. In addition, concrete or masonry dams tend to fail suddenly, while earthen dams usually take longer.

Dam Hazard Potential Classifications

Dams are classified with a hazard potential based on anticipated downstream losses in event of failure.

A dam's hazard potential is related to potential adverse downstream impacts should the dam fail. It is not based on the dam's structural integrity.

Dam safety inspections and monitoring have become essential tools in evaluating dam failure risk, ensuring proper maintenance, and prioritizing actions. The ranking of assessments is often based on a classification

system according to the potential impact a dam failure or mis operation would have on nearby populations and property. FEMA utilizes a Hazard Potential Classification System for Dams that categorizes them as High, Significant, or Low.

- **High Hazard Potential Dam:** Any dam whose failure or mis-operation will cause probable loss of human life.
- **Significant Hazard Potential Dam:** Any dam whose failure or mis-operation will cause possible loss of human life, economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns.
- **Low Hazard Potential Dam:** Any dam whose failure or mis-operation is unlikely to cause loss of human life but may cause minor economic and or environmental losses.

Dam failure can result from natural events, human-induced events, or a combination. Losses due to natural events such as hurricanes, earthquakes, or landslides are significant because there is generally little or no warning. However, the most common cause of dam failure is prolonged rainfall that produces flooding. State sources were used to create Table 6-50, which identifies the list of dams, and pertinent information, present in Cumberland Plateau Planning District (Buchanan, Dickenson, Russell, and Tazwell counties).

Exclusions

A dam is excluded if it:

- is less than six feet high
- has a maximum capacity less than 50 acre-feet and is less than 25 feet in height
- has a maximum capacity of less than 15 acre-feet and is more than 25 feet in height
- is operated primarily for agricultural purposes and has a maximum capacity of less than 100 acre-feet or is less than 25 feet in height (if the use or ownership changes, the dam may be subject to regulation)
- is owned or licensed by the federal government
- is operated for mining purposes under 45.1-222 or 45.1-225.1 of the Code of Virginia
- is an obstruction in a canal used to raise or lower water levels

Inspection Frequency

- High Hazard Dams - Every two years
- Significant Hazard Dams - Every three years
- Low Hazard Dams - Every six years. Note: Inspections by a professional engineer are not required for low hazard dams determined to cause damage to only the dam owner's property, but the dam owner must still annually inspect the dam and complete and submit an Annual Inspection Report to the regional dam safety engineer.

1841 **Table 6-50: Cumberland Plateau Planning District Dam Inventory**

Dam & (Other Name)	ID #	Hazard Classification	EAP	Inundation Study	Location	Owner	Dam Type
Buchanan County							
West Fork Slurry Impoundment Dam	027001	Unknown	No	No	Buchanan County	Not Listed	Earth
Long Bottom Branch Dam	027002	Unknown	No	No	Buchanan County	Not Listed	Earth
Buchanan Dam #2	027004	**High**	No	No	Buchanan County	CF Highlands LLC	Earth
Harman Mining Corp Dam	027005	Unknown	No	No	Buchanan County	Not Listed	Other
Star Branch Dam #1	027006	Unknown	No	No	Buchanan County	Not Listed	Earth
Virginia Energy Dam	027007	Unknown	No	No	Buchanan County	Not Listed	Earth
Buchanan Dam #3	027008	Unknown	No	No	Buchanan County	Not Listed	Earth
Dickenson County							
John W Flannagan Dam	051001	**High**	-	-	Dickenson County	US Army Corps of Engineers	Earth
White Oak Creek Dam	051004	**High**	No*	Yes	Dickenson County	Camp Jacob Inc	Earth
Nicewonder Dam	051005	Low, special	No	No	Dickenson County	Frank Segreti	Earth
Mullins Dam	051007	Low, special	No	No	Dickenson County	Mary Mullins	Earth
Moss Mine #1 Dam	051002	Unknown	No	No	Dickenson County	Not Listed	Other
Moss #1 Fresh Water Supply Dam	051003	Unknown	No	No	Dickenson County	Not Listed	Other
Laurel Lake Dam	051006	Unknown	No*	Yes	Dickenson County	Breaks Interstate Park Commission	Earth
Dickenson County Dam #2	051008	Unknown	No	No	Dickenson County	Not Listed	Not Listed

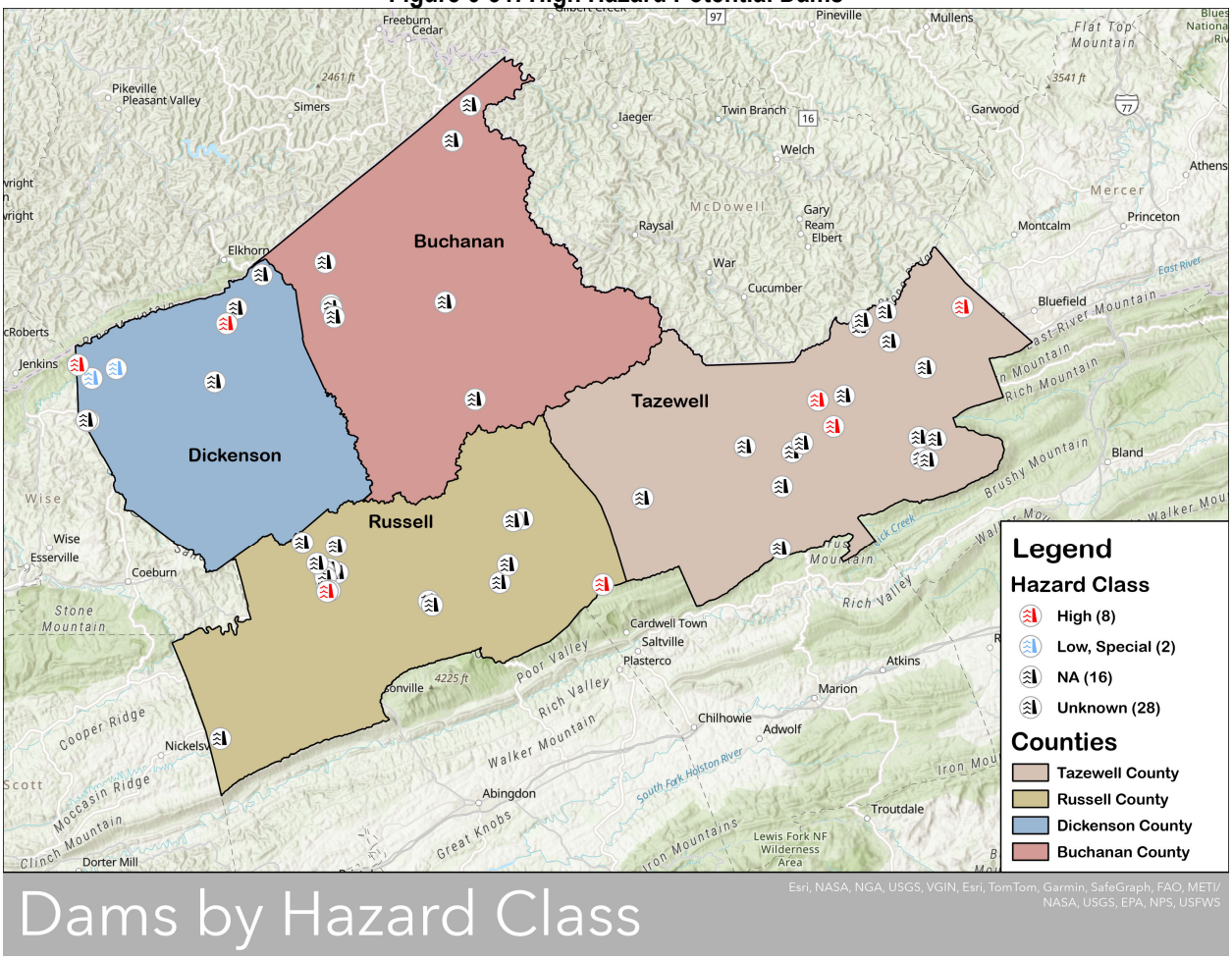
Dam & (Other Name)	ID #	Hazard Classification	EAP	Inundation Study	Location	Owner	Dam Type
Number 9 Dam	051009	NA	No	No	Dickenson County	Town of Clinchco	Low Head Dam
Russell County							
Laurel Bed Dam	167001	**High**	Yes	Yes	Russell County	VA Dept Wildlife Resources	Earth
Clinch River Flyash Dam #2	167002	**High**	Yes	Yes	Russell County	AEP – Tate Jackson	Rockfill
Clinch River Flyash Dam #1	167003	**High**	Yes	Yes	Russell County	AEP – Tate Jackson	Rockfill
Bonaventure Dam	167004	Unknown	No*	No	Russell County	Forest Land Group	Earth
Moss #2 Mine Dam	167005	Unknown	No	No	Russell County	Not listed	Other
Gilmer Dam	167006	Unknown	No	No	Russell County	Gent Brothers Inc	Earth
30 Acre Pond Dam	167008	Unknown	No	No	Russell County	Not listed	Not Listed
#30 Acre Pond (Moss Mine #3 Slurry Dam)	Not Found	Unknown	No	No	Russell County	Russell County Reclamation LLC	Earth
Moss No.3 Third Dam	167009	Unknown	No	No	Russell County	Russell County Reclamation LLC	Earth
Kiser Pond	167010	Unknown	No	No	Russell County	Russell County Reclamation LLC	Not Listed
Russell County Dam #1	167011	Unknown	No	No	Russell County	Not listed	Not Listed
Russell County Dam #2	167012	Unknown	No	No	Russell County	Not listed	Not Listed
Russell County Dam #3	167013	Unknown	No	No	Russell County	Not listed	Not Listed

Dam & (Other Name)	ID #	Hazard Classification	EAP	Inundation Study	Location	Owner	Dam Type
Moss No 3 Dam 3	167014	Unknown	No	No	Russell County	Russell County Reclamation LLC	Earth
Russell County Dam #5	167015	Unknown	No	No	Russell County	Not listed	Not Listed
Russell County Dam #6	167015	Unknown	No	No	Russell County	Not listed	Not Listed
Russell County Dam #7	167017	Unknown	No	No	Russell County	Not listed	Not Listed
Russell County Dam #8	167018	Unknown	No	No	Russell County	Fred Baily Gent	Not Listed
Tazewell County							
Upper Clinch River Dam #8	185001	**High**	Yes	Yes	Tazewell County	Town of Tazewell - Todd Day, Town Manager	Earth
Sportsman Club Dam	185002	Unknown	No*	Yes	Tazewell County	Tazewell Co Sportsmen's Club - Charles Brown	Earth
Falls Mill Dam	185003	**High**	Yes	Yes	Tazewell County	Falls Mill Lake, Inc.	Rockfill
Gose Mill Dam	185004	NA	Yes	Yes	Tazewell County	Not Listed	Gravity, Low Head Dam
Upper Clinch Valley Dam #1B	185005	High	Yes	Yes	Tazewell County	Tazewell County Board of Supervisors - Kenneth Dunford	Earth
Walden Keene Dam	185006	NA	No	No	Tazewell County	Walden E. Keene	Earth
Ralph Powers Dam	185007	NA	No	No	Tazewell County	Not Listed	Earth
Flora Ratliff Dam	185008	NA	No	No	Tazewell County	Not Listed	Earth
Donald Wadell Dam	185009	NA	No	No	Tazewell County	Not Listed	Low Head Dam

Dam & (Other Name)	ID #	Hazard Classification	EAP	Inundation Study	Location	Owner	Dam Type
Deel Dam	185010	NA	No	No	Tazewell County	Mark Deal	Earth
Mocomp Dam #1	185011	Unknown	No	No	Tazewell County	Claude R Yates	Not Listed
Mocomp Dam #2	185012	NA	No	No	Tazewell County	Not Listed	Earth
James Edward Dam	185013	NA	No	No	Tazewell County	Not Listed	Earth
Gladys Hughes Dam	185014	NA	No	No	Tazewell County	Not Listed	Earth
Industrial Dam	185015	NA	No	No	Tazewell County	Not Listed	Other
Carol Spencer Dam	185017	NA	No	No	Tazewell County	Not Listed	Not Listed
Beggs Dam	185018	NA	No	No	Tazewell County	Not Listed	Earth
Billy Barrett Dam	185019	NA	No	No	Tazewell County	Not Listed	Earth
Pocahontas Dam #1	185020	NA	No	No	Tazewell County	Not Listed	Earth

Source: Virginia Department of Conservation and Recreation

Figure 6-31: High Hazard Potential Dams



Source: USACE National Inventory of Dams

6.5.2 Previous Occurrences of Dam Failures

The planning team worked with Mr. Steven Bricker, Regional Dam Safety Engineer, Commonwealth of Virginia Department of Conservation and Recreation to determine potential impacts to Cumberland Plateau Region from HHPD classified structures. After providing Mr. Bricker with the dam inventory of the four participating counties within the PDC, the Dam Safety Section conducted an analysis of the dam inventory and produced the following assessment:

"There are eight dam structures that meet the qualifications to be classified as High Hazard Probability Dams within the PDC Region, Buchanan County has one, Dickenson County has two, Russell County has three, and Tazewell County has two. One structure, the John W Flannagan Dam located in Dickenson County has been identified as in need of an EAP update, but it is owned by the US Army Corps of Engineers and is not in the sphere of responsibility for the host county.

It appears to me that there are currently no dams that should be of immediate concern to their respective counties. There have been no past occurrences of dam failure in the region and there are no expectations of a future event."

6.6 Summary

As indicated in the above table, 13 natural hazards were identified as hazards of concern. As the regulations state, all these identified hazards must be profiled, their vulnerability assessed, and mitigation actions developed for them:

- Flooding
- Severe Winds (Thunderstorm Winds)
- Severe Winter Storms
- Tornadoes
- Hailstorms
- Extreme Temperatures−Heat/Cold
- Wildfires
- Earthquakes
- Dam/ Levee Failure
- Droughts
- Landslides
- Abandoned Mine Fires/Flooding (Buchanan)
- Algae Blooms (Dickenson)

Summary Description of the County's Vulnerability to Hazards

The DMA 2000 legislation and related FEMA planning guidance require mitigation plans to discuss community vulnerability to natural hazards. Vulnerability is generally defined as the damage (including direct damage and loss of function) that occurs when various risks impact a structure, operation, or population. For example, vulnerability can be expressed as the percent damage to a building when it is flooded or the number of days a government office will be shut down after a windstorm, assuming sufficient detailed data is available to support the calculations.

Because this Plan includes multiple jurisdictions and the available data is not very detailed, it is not practical to complete vulnerability assessments on the many individual assets, operations, and populations in respective jurisdictions.

However, it is appropriate for participating jurisdictions embark on a program to address these data deficiencies over the next five years in anticipation of the following Plan update. In addition, it is possible to make general observations based on the hazard identifications and risk assessments that are the subjects of Section 6 of this Plan.

As illustrated in Section 6 (Hazard Identification & Risk Assessment), the communities in the Cumberland Plateau Region are subject to numerous natural hazards, human-caused, although in some cases, the hazards have rarely impacted the area, or their effects have been relatively minor. Relatively localized,

flooding, and severe storms are the most frequent and damaging natural hazards, as with many states bordering the Atlantic. However, it is crucial to recognize that several other hazards present significant risks (i.e., the potential for future losses) to the communities, even though they have occurred infrequently or have not caused much damage.

Not all hazards carry the same weight risk. All hazards have some risk, and therefore the Cumberland Plateau Planning District Commission and the Working Group Members strive to seek out proactive strategies.

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Section 7

Capability Assessment

Contents of this Section

7.1 Overview and Purpose of Capability Assessment

Although not specifically required by Disaster Mitigation Act of 2000 or 44 CFR 201.6, a capability assessment adds context to a mitigation plan by providing an inventory of a Jurisdiction's programs and policies, and an analysis of its capacity to carry them out. These are essential for developing mitigation strategies and actions.

The capability assessment is a review of the Cumberland Plateau Region's resources to identify, review, and analyze what the jurisdictions are currently doing to reduce losses, and to identify the framework that is in place for the implementation of new mitigation activities. This section of the Plan also facilitates efforts with the Virginia Department of Emergency Management (VDEM) and with federal agencies and resources. In addition, this assessment will be useful in gauging whether the current local organizational structures and inter-jurisdictional or county coordination mechanisms for hazard mitigation could be improved, and how.

This local capability is extremely important because the municipal officials know their own landscape best. Additionally, many of the most critical and effective hazard mitigation strategies and programs, including floodplain management, enforcement of building codes, and land-use planning, require a strong local role to achieve effective implementation.

State statutes require each Jurisdiction to assign an individual to be responsible for its local emergency management duties. The jurisdiction's emergency management coordinator is responsible for coordinating emergency response and recovery operations with local, regional, state, and federal officials.

7.2 Methodology

This capability assessment results from research, interviews, and surveys. Relevant documents were reviewed related to hazard mitigation, including the Commonwealth of Virginia Hazard Mitigation Plan (2023), as well as state and federal sources related to funding, planning, and regulatory capability. For the participating jurisdictional capability assessments, a series of in-depth individual interviews provided key insights and information. These interviews were conducted during the months of June and July 2024. Table 7-1 identifies each jurisdictions interview attendees.

Table 7-1: Jurisdiction Capabilities Assessment Interviews

Agency/ Locality	Representatives
Cumberland Plateau Planning District Commission	Charlie Perkins – CPPDC Planner Angela Beavers – Transportation/GIS & I.T. Coordinator
Buchanan County	Bart Chambers – Emergency Manager, Building Official Allen Boyd – County Sheriff
Town of Grundy	Dennis Ramey – Town Manager Seth McGlothlin – Chief of Police
Dickenson County	Richard Thacker – Emergency Manager
Town of Clinchco	Jelane Mock – Town Mayor Katrina Deel – Town Clerk
Town of Clintwood	Danny Lambert - Mayor
Town of Haysi	Larry Yates – Town Mayor Bobby Edwards – Director of Operations, Police Chief Richard Thacker – Emergency Manager
Russell County	Jess Powers – Emergency Manager
Town of Cleveland	Linda Couch – Mayor Thoman Vance – Director of Maintenance
Town of Honaker	Jodi Eaton – Town Mayor Valerie Sykes – Town Clerk
Town of Lebanon	Drew Shortt – Town Manager
Tazwell County	Barry Brooks – Emergency Manager
Town of Bluefield	Andrew Hanson – Town Manager Shane gunter – Chief of Police Donnie Linkous – Town Mayor Nathaniel Mitchem – Zoning & Floodplain Manager
Town of Cedar Bluff	John Absher – Town Manager Robert Mosolgo – Town Public Works Administrator
Town of Pocahontas	Benjamin Gibson – Town Mayor/Manager Daren Jason – Police Chief
Town of Richlands	Jason May – Town Manager Rod Cury – Town Mayor
Town of Tazwell	Michael Hoops – Town Mayor Leanne Regon – Town Manager

To complete the capability assessment, interviews were held with each jurisdiction individually. In preparation for the interviews, packets were sent to each locality to review previous capabilities and mitigation goals and actions from the 2018 plan. The interviews addressed the following subjects:

- Staff, personnel, and technical capability
- Knowledge of Federal Emergency Management Agency (FEMA) mitigation programs

- Current/ongoing mitigation efforts
- Intra- and inter-governmental coordination
- Land use and regulation
- Floodplain management
- Building code inspection
- Capital improvement
- Land conservation programs

7.3 Federal and State Regulations, Plans, and Funding Sources

The responsibility to the public for effective hazard mitigation rests with the elected officials, which in the Cumberland Plateau Region are the County Boards of Supervisors and the Town Councils. They enact the codes, regulations, and ordinances through the authorities granted them by the Commonwealth of Virginia under the Dillon Rule. Emergency management is directed through local emergency management or emergency services offices. County and town leaders direct local hazard mitigation efforts and work cooperatively as appropriate on regional initiatives through the Cumberland Plateau Region Local Emergency Planning Committee or with specific counties to provide FEMA-VDEM Hazard Mitigation Assistance (HMA) grant project administration and management. Many related regional plans and programs are administered by the Cumberland Plateau PDC that directly inform and benefit its local governments related to natural resources, economic development, climate change and sea level rise.

This plan fulfills the standard local mitigation planning requirements (44 CFR §201.4) of the Disaster Mitigation Act of 2000 (Public Law 106-390, signed into law October 10, 2000). The Disaster Mitigation Act 2000 mends the 1988 Robert T. Stafford Disaster Relief and Emergency Assistance Act, and reinforces the importance of mitigation planning, emphasizing planning for disasters before they occur. Section 322 of the Act specifically addresses mitigation planning at state and local levels. New requirements are identified that allow Hazard Mitigation Grant Program (HMGP) funds to be used for mitigation activities and projects for states and localities with Hazard Mitigation Plans approved by November 1, 2004.

Federal regulations such as the Code of Federal Regulations, Title 44, Chapter 1, Part 201.4 (44 CFR Part 201) and the FEMA Local Mitigation Planning Policy Guide FP 206-21-0002, April 19, 2023, outline regulations of compliance in proper hazard mitigation planning that opens the ability to apply for funding such as:

7.4 Capability Assessment for the Northern Neck Region

The purpose of conducting the capability assessment is to assess methods that the Cumberland Plateau Region's County and local governments have available to implement successful mitigation programs. Through careful analysis, existing gaps, shortfalls, or weaknesses within existing governmental activities that could exacerbate a community's vulnerability were identified. The assessment also highlights the positive measures underway at the local level that will continue to be supported and enhanced through future mitigation efforts.

The Capability Assessment Matrix, found in Table 7-3, serves as the foundation for designing an effective hazard mitigation strategy. It not only helps inform Plan goals to be both achievable but aspirational to reduce regional exposure to natural hazards. The 2018 Capability Assessment Matrix did not contain an assessment for all participating communities but reflects a regional approach as each county is primarily responsible for local enforcement of building codes, floodplain management, emergency management, and zoning ordinances.

Appendix D provides the capability assessment surveys utilized in the capabilities review of all jurisdictions participating in the 2023 Cumberland Plateau Regional Hazard Mitigation Plan.

The Cumberland Plateau PDC acts in an advisory role in many of the capability categories contained in this assessment. Therefore, the Cumberland Plateau PDC does not staff technical positions such as civil engineers and building officials. The Cumberland Plateau PDC employs planners and hazard mitigation personnel that assist in advisory roles in planning, mitigation programs, floodplain, and stormwater management protocols, and they manage a range of community programs assisting citizens and jurisdictions with mitigation and planning efforts. Many regional plans and programs are administered by the Cumberland Plateau PDC that directly inform and benefit its local governments related to natural resources, economic development, climate change and sea level rise.

Cumberland Plateau Region's local governments do not have dedicated mitigation funding project sources to manage and administer HMP grant-funded projects, so the Cumberland Plateau PDC supports the administrative aspects of those project by facilitating the Hazard Mitigation Assistance grants process to assist with elevations of structures in the flood zones, specifically those of Repetitive Loss/Severe Repetitive Loss (RLP/SRLP) status. The Cumberland Plateau PDC's website offers a central location to publicize information about a variety of different hazard mitigation and planning efforts throughout the region.

7.5 Capability Assessment for Jurisdictions within the Cumberland Plateau Region

This portion of the Plan assesses the current capacity of the communities of the Cumberland Plateau Planning District to mitigate the effects of the natural hazards identified in Section 6 of the plan. This assessment includes a comprehensive examination of the following local government capabilities:

- Administrative Capability – describes the forms of government in the region, including the departments that may be involved in hazard mitigation.
- Technical Capability – addresses the technical expertise of local government staff.
- Fiscal Capability – examines budgets and currently used funding mechanisms.
- Relevant Ordinances and Policies – examines existing plans and policies (e.g., emergency operations plan, comprehensive plan).
- Regulatory Authority – describes how jurisdictions in the region use the four broad government powers (i.e., regulation, acquisition, taxation, and spending) to influence hazard mitigation activities.

The complete capabilities assessment is compiled in Appendix D for all participating jurisdictions.

7.5.1 Relevant Ordinances and Policies

This section provides guidance pertinent to the ordinances and policies that have the potential to affect and/or promote mitigation within the jurisdictions. Understanding which ordinances and policies affect mitigation is a helpful component to mitigation activities. Many of the ordinances and policies that most directly affect development in relation to hazards reside at the county level. As a result, the Strategic Committee and the Hazard Mitigation Working Group have taken a regional approach to the plan update as reflected in capability tables presented below. These include zoning, floodplain management, and building code enforcement.

- Comprehensive Plans – All sixteen jurisdictions maintained a locality Comprehensive Plan
    - Russell County, the Town of Clintwood, and the Town of Cleveland have infused a hazard mitigation element into their comprehensive plan.

- Floodplain Management Ordinances – All four counties maintain Floodplain Ordinances and comply with NFIP regulations by enforcing them.
  - The Towns of Clintwood, Town of Lebanon, Town of Bluefield, Town of Pocahontas, Town of Richlands, and Town of Tazewell maintain their own floodplain ordinances.
- Subdivision Regulations – Buchanan and Tazewell counties enforce a Subdivision Regulation.
  - Dickenson and Russell counties do not enforce a Subdivision Regulation.
  - All other jurisdictions except the Town of Pocahontas, Town of Cedar Bluff, Town of Honaker, Tow of Cleveland, Town of Haysi, Town of Clinchco, and the Town of Grundy enforce a Subdivision Regulation.
- Emergency Operations Plan – All four counties maintain a current Emergency Operations Plan (EOP).
  - The Town of Tazewell, Town of Richlands, Town of Lebanon, Town of Cleveland, Town of Haysi, Town of Clintwood, and Town of Grundy maintain individual EOPs.
  - The Town of Pocahontas and Town of Clinchco utilize their respective county's EOP.
- Erosion and Sediment Control Ordinance – All four counties maintain ordinances to address erosion and sediment control.
  - The four counties maintain and/or comply with ordinances that fulfill the principles of the Virginia Erosion and Sediment Control Law.
  - The Town of Pocahontas, Town of Bluefield, Town of Lebanon, and Town of Grundy maintains their own erosion and sediment control ordinances.
- Continuity of Operations Plan – COOP is not a requirement for hazard mitigation. It is a beneficial planning document that is recommended to be integrated for cross planning purposes.
  - Buchanan, Dickenson, and Tazewell counties maintain COOPs.
  - The Town of Cleveland and Town of Haysi maintain a COOP.
  - The Town of Clintwood participates in their county's COOP.

7.5.2 Fiscal Capabilities

For Fiscal Year 2023 (FY23), the budgets of the participating jurisdictions range from approximately $____ (__ County) to $_____ (_____ County) and smaller budgets for towns. Revenues which support local budgets come from property taxes, State and local taxes, local service fees, and through intergovernmental contributions (Federal and State pass through dollars). Mitigation projects have been funded through FEMA's post-disaster Hazard Mitigation Grant Program (HMGP), in addition to State and local agencies. The Commonwealth of Virginia historically and presently provides 20 percent of the required non-federal project match, leaving only a required 5 percent local match, typically using in-kind services or property owner resources.

FY23 budgets provided by local jurisdiction representatives and published jurisdiction budgets are shown in Table 7-2. Capital Improvement Projects (CIPs) and intergovernmental agreements are used by all the Cumberland Plateau Planning District's counties.

Table 7-2: Fiscal Budget Information

Jurisdiction	Total FY23 Budget	Public Safety FY23 Budget
CPPDC	N/A	N/A
Buchanan	N/A	N/A
Dickenson	N/A	N/A
Russell	$35.3 million	N/A

Jurisdiction	Total FY23 Budget	Public Safety FY23 Budget
Tazewell	$156.4 million	$16.9 million
Town of Bluefield	N/A	N/A
Town of Cedar Bluff	N/A	N/A
Town of Cleveland	N/A	N/A
Town of Clinchco	N/A	$47,426.00
Town of Clintwood	N/A	N/A
Town of Grundy	N/A	N/A
Town of Haysi	$457,288.00	$142,113.63
Town of Honaker	N/A	N/A
Town of Lebanon	N/A	N/A
Town of Pocahontas	N/A	N/A
Town of Richlands	$18.4 million	$3.3 million
Town of Tazewell	Need Total	Need Total

Source: FY23 Budgets for corresponding jurisdiction.

7.5.3 Taxes

The power to levy taxes and special assessments is an important tool delegated to local governments by Virginia's law. The power of taxation extends beyond merely the collection of revenue and can have a profound impact on the pattern of development in a community. Communities have the power to set preferential tax rates for areas which are more suitable for development to discourage development in otherwise hazardous areas. Local units of government also have the authority to levy special assessments on property owners for all of part of the costs of acquiring, constructing, reconstructing, extending or otherwise building or improving flood protection works within a designated area. This can serve to increase the cost of building in such areas, thereby discouraging development. Localities in Virginia collect a 1% sales tax. In addition, all the counties in the Cumberland Plateau PDC levy property taxes.

7.5.4 Spending

The fourth major power that has been delegated from the Virginia General Assembly to local governments is the power to make expenditures in the public interest. Hazard mitigation principles can be made a routine element of all spending decisions made by local governments, including during adoption of annual budgets and the CIP for protection of critical facilities.

A CIP is a schedule for provision of town or county services over a specified period. By tentatively committing itself to a timetable for provision of capital to extend services, a community can control growth in areas where the provision of on-site sewage disposal and water supply are unusually expensive. In addition to forming a timetable for provision of services, a local community can regulate the extension of and access to services. Participating jurisdictions that engage a CIP are presented in Table 7-3.

7.5.5 Technical, Administrative, and Regulatory Capacity

This section provides a review of the administrative and technical resources within the individual jurisdictions and assists with identifying any gaps, needs, available staff, use of available outside contractors, or other arrangements such as mutual aid. The following resources and further associated items are presented in the Capabilities Matrix in Table 7-3, below.

Technical

Mitigation is multi-disciplinary. For a successful mitigation program, it is necessary to have a broad range of people involved who can inform and contribute to holistic mitigation programs through diverse backgrounds and experience. The CPPDC and all four counties have dedicated mitigation project funding sources to manage and administer HMP grant-funded projects, however, towns within the region do not. The CPPC supports the administrative aspects of these projects. Currently, the CPPDC website does not offer a central location to publicize information about a variety of different hazard mitigation and planning efforts throughout the region. This has been identified as a mitigation action. Another mitigation action includes emergency managers devoting staff time and use of existing web sites, social media, and events like tornado awareness month and hurricane preparedness month as a platform for mitigation messaging. The CPPDC and participating jurisdictions plan on providing strong preparedness and mitigation messages, techniques, and program links on local websites to enable residents and businesses to create disaster preparedness plans and carry adequate flood insurance on at-risk properties and property contents.

- Hazard Mitigation Assignment – Is Hazard Mitigation assigned to a specific department?
  - All four counties have assigned hazard mitigation to the respective county's emergency managers.
  - All towns have assigned hazard mitigation to the respective town's emergency manager or town mayor.
  - Hazard mitigation planning and actions is supported in all regions by the Cumberland Plateau Planning District Commission.
- GIS Coordinator
  - All four counties and the Town of Bluefield, Town of Lebanon, Town of Clinchco, and Town of Grundy employ GIS staff.
- Zoning Staff – All four counties report fulltime Zoning and Building Officials staffing.
  - Five towns report at least part-time Zoning Staff.
  - The Town of Cedar Bluff reports utilizing their respective county's Building Inspectors.
- Floodplain Management Staff – All four counties report having a dedicated floodplain administrator.
  - The Town of Tazewell, Town of Bluefield, Town of Lebanon, Town of Haysi, and the Town of Grundy report having a dedicated floodplain administrator.

Overall, the participating jurisdictions have a limited technical staffing capability. All jurisdictions report the need for higher staff volume.

Administrative

The Cumberland Plateau Planning District Commission works with agencies and departments with specific responsibilities for hazard mitigation:

- Board of Supervisors, Town Councils and Local Government Administrators
  - The responsibility to the public for effective hazard mitigation rests with the elected officials, which in the Cumberland Plateau Region are the different County Board of Supervisors and the Town Councils. They enact the codes, regulations, and ordinances through the authorities granted to them by the Commonwealth of Virginia under the Dillon Rule.
  - Land Use – Regulatory powers granted by the state to local governments are the most basic way a local government can control the use of land within its jurisdiction. Through various land use regulatory powers, a local government can control the amount, timing, density, quality, and location of new development. All these characteristics of growth can determine the level of vulnerability of the community in the event of a natural hazard. Land use regulatory powers include the power to engage in planning, and to enact and enforce zoning

ordinances, floodplain ordinances, and subdivision controls. Each local community possesses great power to prevent unsuitable development in hazard-prone areas.

- Emergency Management
  - County and town emergency management operations are focused in two areas. First responders, which remain largely dependent on volunteer support immediate response to incidents such as building, brush and woodland fires, medical emergencies, accidents, and hazardous materials spills.
  - Emergency managers are responsible for the mitigation, preparedness, response, and recovery operations in relative to natural and man-made disaster events. Specifically, County Administrators and Town Managers, in their roles as Coordinator of Emergency Services, have designated management responsibility for the floodplain management and emergency management programs, often including the hazard mitigation program, and assigns program operations to appropriate departments or staff.

- Department of Health
  - The Virginia Department of Health enforces ordinances related to safe handling and the emergency distribution of water and food and is responsible for the prevention or reduction of spreading disease.
  - The Cumberland Plateau Planning District is served by the Cumberland Plateau Health District. Employees serve all four counties. An emergency coordinator and epidemiologist are on District staff.

- Building/Planning/Zoning
  - Planning, zoning, and site inspections are conducted by staff or departments which have responsibility for administering and enforcing existing building codes and zoning ordinances.
  - Planning and code compliance staff also ensure that all new construction, repair and building additions or improvements comply with state and county building codes, zoning, and land-use regulations.
  - Local compliance with erosion and sediment control regulations and stormwater management starts with proposed development plan review by local planners with additional technical and field inspection support. Departments also support the project review and code enforcement for hazard mitigation such as elevation of flood prone residential buildings and ensure that FEMA Elevation Certificated and Floodproofing Certificates are properly completed for applicable projects.
  - The County Building Official is licensed by the Commonwealth of Virginia and locally enforces the Virginia Uniform Statewide Building Code (USBC). This code includes implications for floodplain management. Local Planning or Community Development departments address land use planning and, in most cases, house the local floodplain management program enforcing the local floodplain management regulations.

- Law Enforcement
  - Each county has a Sheriff's Department which is primarily funded by the Commonwealth of Virginia Compensation Board. In most instances the county is providing additional budget funds to increase the coverage and abilities of their law enforcement agencies. Leaders of law enforcement agencies are included in hazard mitigation planning. All the jurisdictions in

the regional planning area have enacted and enforce regulatory ordinances designed to promote the public health, safety, and general welfare of its citizenry.

- All towns except the Towns of Honaker and Cleveland maintain a local jurisdiction police department as well.
- Sworn officers in all departments have the responsibility as essential personnel to respond in the face of a natural disaster.
- Virginia's local governments have been granted broad regulatory powers in their jurisdictions. The statues of the Commonwealth of Virginia bestow the general police power on local governments, allowing them to enact and enforce ordinances which define, prohibit, regulate, or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances (including public health nuisances). Since hazard mitigation can be included under the police power (as protection of public health, safety, and welfare), towns, cities, and counties may include requirements for hazard mitigation in local ordinances. Local governments also may use their ordinance-making power to abate "nuisances", which could include, by local definition, any activity or condition of making people or property more vulnerable to any hazard.

- Public Safety (including EMS, fire departments, and rescue squads)
  - Participating jurisdictions are facing this issue with the addition of paid staff employed by the local government. Emergency Medical Services (EMS) staff such as EMTs and Paramedics are hired to ensure ambulances can respond to 911 calls. Most of the fire service personnel remain volunteers with assistance from agencies such as VDEM which provides Regional Hazardous Materials (HAZMAT) Officers and teams that respond to assist as needed. The Virginia Department of Forestry staff aide responds to brush, woodland, and wildfires.
  - Virginia has a statewide fire code. The code establishes statewide standards to safeguard life and property from the hazards of fire or explosion arising from the improper maintenance of life safety, and fire prevention and protection of materials, devices, systems, and structures. The Virginia State Fire Marshal's Office is charged with enforcement of the code statewide except in those localities that choose to enforce the code locally. Localities that choose to enforce the code locally must employ their own certified fire official.

- Public Works
  - Departments have a role in hazard resiliency through oversight and maintenance of local infrastructure, some critical, which varies amongst Cumberland Plateau Regional jurisdictions. While the responsibilities and infrastructure are varied, critical infrastructure includes wastewater treatment facilities, a few local water treatment systems, and local drainage systems.
  - Primary and secondary road maintenance is largely the responsibility of the Virginia Department of Transportation which coordinates closely with local emergency managers during and immediately after disaster events and storms to address road closures and detours, debris management and messaging. Other departments may have responsibilities for programs that could complement hazard mitigation activities. For instance, parks and recreation departments may be responsible for open space programs. If demolition/acquisition projects are undertaken, coordination to manage created open space may include the parks and recreation staff.

Regulatory

Following a state or federal emergency and disaster declaration, VDEM coordinates recovery efforts with local governments through the LEPC, local emergency managers, and VDEM Regional Support teams. local governments through the LEPC, local emergency managers, and VDEM Regional Support teams.

The following items are utilized in jurisdictions to assist with Hazard Mitigation and Emergency Management planning. Local governments in Virginia, including those in the Cumberland Plateau Region, have a wide range of tools available to them for implementing mitigation programs, policies, and actions. A hazard mitigation program can use any of the four broad types of government powers granted by the State of Virginia, which are (a) regulation, (b) acquisition, (c) taxation, and (d) spending. The scope of this local authority is subject to constraints. All of Virginia's political subdivisions must not act without proper delegation from the state. All power is vested in the State and can only be exercised by local governments to the extent it is delegated (in accordance with Dillon's Rule).

- Emergency Operations Plans
    - Counties in the Cumberland Plateau Region are required to establish and maintain an Emergency Operations Plan for their locality. EOPs are to be updated every 4 years. This requirement is mandated under the following:
        - The Code of Virginia Chapter 3.2 - *Ch. 3.2 of the Code of Virginia establishes the State's Department of Emergency Management and provides the legal authority for the development and maintenance of the Commonwealth's emergency management program. Additionally, it defines the emergency powers, authorities, and responsibilities of the Governor and State Coordinator and requires that state and local governments be prepared for a variety of natural and human-caused hazards by developing, maintaining, and ensuring their ability to implement an emergency operations plan (EOPs).*
    - All four counties in the region along with the Towns of Tazewell, Richlands, Haysi, Clintwood, Grundy, and Cleveland have an EOP. The Towns of Pocahontas and Clinchco act under their respective county's EOP. The Towns of Bluefield and Lebanon maintain local government EOPs.
- Comprehensive Plans
    - A community's comprehensive plan provides the future vision for the community regarding growth and development. However, many of the plans include land use or environmental protection goals that could support future mitigation efforts. For example, limiting development in the floodplain (which is considered mitigation) may also help meet open space goals laid out in a comprehensive plan. Several comprehensive plans address mitigation, resiliency, and long-term community sustainability. These are new inclusions, and as communities continue to update their comprehensive plans it is anticipated that mitigation and resiliency issues will be more comprehensively addressed. Virginia comprehensive plans are usually updated on a five-year cycle.
    - For the most part, the region's comprehensive plans include strategies that address development in floodplain or otherwise flood-prone areas. The comprehensive plans indicate that communities in the Cumberland Plateau Region use zoning and subdivision

regulations to retain the rural character of their areas while they preserve traditional livelihoods like agriculture, forestry, fishing, and aquaculture.

- Buchanan County
  - Hazard mitigation concepts are found throughout the Buchanan County Comprehensive Plan.
  - Placeholder for mitigation concepts and goals mentioned in the Buchanan County Comprehensive Plan. Need the most up to date plan.
- Town of Grundy
  - Placeholder for mitigation concepts and goals mentioned in the Town of Grundy's Comprehensive Plan. Need the most up to date plan.
- Dickenson County
  - Dickenson County does not have a comprehensive plan, however, the Towns of Clinchco, Clintwood, and Haysi maintain local comprehensive plans. The Town of Clintwood is the only town that includes a hazard mitigation element within their comprehensive plan.
- Town of Clintwood
  - Placeholder for mitigation concepts and goals mentioned in the Town of Clintwood's comprehensive plan. Need the most up to date plan.
- Russell County
  - Placeholder for mitigation concepts and goals mentioned in Dickenson County's comprehensive plan, if a hazard mitigation element is included. Need the most up to date plan.
  - The Towns of Cleveland and Lebanon have a local comprehensive plan; however, no hazard mitigation element is included within the respective town's plan.
- Tazewell County
  - Placeholder for mitigation concepts and goals mentioned in Tazewell County's comprehensive plan, if hazard mitigation element is included. Need the most up to date plan.
  - The Towns of Bluefield, Richlands, and Tazewell maintain local comprehensive plans. However, the Towns of Richlands and Tazewell do not include a hazard mitigation element in their respective plans. The Town of Pocahontas adopts Tazewell County's comprehensive plan, including the hazard mitigation element.
- Town of Bluefield
  - Placeholder for mitigation concepts and goals mentioned in the Town of Bluefield's comprehensive plan. Need the most up to date plan.

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Table 7-3: Capability Assessment

Programs and Capabilities	CPPDC	Buchanan County	Town of Grundy	Dickenson County	Town of Clinchco	Town of Clintwood	Town of Haysi	Russell County	Town of Cleveland	Town of Honaker	Town of Lebanon	Tazewell County	Town of Bluefield	Town of Cedar Bluff	Town of Pocahontas	Town of Richlands	Town of Tazewell
Comprehensive Plan	Yes	Yes	Yes	No	Yes (UVA Master Plan)	Yes	Yes-	Yes	Yes	No	Yes	Yes	Yes	No	Yes (County)	Yes	Yes
With Hazard Mitigation Element	No	No	Yes	No	Unknown	Yes	No	No	No	No	No	No	Yes	No	Yes (County)	No	No
Adoption	2024	2017	12/2017	N/A	9/30/21	4/14/2020	--	--	09/2018	N/A	2007	2023	2016	N/A	2023	3/14/2017	9/30/2021
Capital Improvement Plan	No	No	No	Yes	No	No	Yes	No	Yes	No	Yes	No	No	No	No	Yes	Yes
Economic Development Plan	Yes	Yes	No	Yes	No	No	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No
Downtown Development/ Re-Development Authority Plans	No	No	No	No	Yes (UVA Master Plan)	No	No	No	Yes	No	Yes	No	Yes	No	No	Yes	Yes
Enterprise Zones	No	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes (Virginia Enterprise Zone)	No	Yes
Transportation Planning	Yes	Yes	No	Yes	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	Yes
Subdivision Regulations	No	Yes	No	No	No	Yes	No	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes
Zoning Ordinance	No	No	No	No	No	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Site Plan Review Procedures	No	Yes	No	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes

Programs and Capabilities	CPPDC	Buchanan County	Town of Grundy	Dickenson County	Town of Clinchco	Town of Clintwood	Town of Haysi	Russell County	Town of Cleveland	Town of Honaker	Town of Lebanon	Tazewell County	Town of Bluefield	Town of Cedar Bluff	Town of Pocahontas	Town of Richlands	Town of Tazewell
Buildin Page 2-13 **g Code (or Ordinance) Addresses Flood**	No	Yes	Yes	Yes	County Based	Yes	Yes	No	Yes	No	Yes	Yes	Yes	No	State Code	Yes	Yes
Designated Building Official	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes – 1	No	Yes	Yes	Yes – 1	Yes (County)	No	Yes	Yes – 1
Regular Inspection Protocols	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes – 1	No	No	No	Yes – 1
Civil Engineer Staff	No	Yes (on call)	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No
GIS Coordinator	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	No	No	No	No
Mitigation Projects																	
Private Residential Elevations (self-financed)	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Resident and Community Outreach Inc. Ready.gov	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No
Exclude Critical Infrastructure from SFHA	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Elevate Residences or Property Protection	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No

Programs and Capabilities	CPPDC	Buchanan County	Town of Grundy	Dickenson County	Town of Clinchco	Town of Clintwood	Town of Haysi	Russell County	Town of Cleveland	Town of Honaker	Town of Lebanon	Tazewell County	Town of Bluefield	Town of Cedar Bluff	Town of Pocahontas	Town of Richlands	Town of Tazewell
through HMA Grants																	
Grant Officials	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	Yes	No	Yes	No
Natural Systems Protection																	
Natural or Cultural Resources Inventory	No	No	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No	No	No	No
Open Space	No	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes	No	No	No	No
Parks and Recreation	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Stormwater Management and Water Quality Programs																	
Stormwater Management Plan	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No	No	No	No	No	No
Total Daily Maximum Load (TDML) Stream Segments**	No	Yes	No	No	No	No	No	No	Yes	No	Yes	No	Yes	No	No	No	No
Watershed Improvement Plans***	No	Yes	No	No	No	No	Yes	Yes	Yes	No	Yes 1	Yes	No	No	No	No	No
Erosion or Sediment Control Program																	
Erosion and Sediment Control Ordinances	No	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes	Yes	Yes	No	Yes	No	No
Floodplain Management																	
Floodplain Administrator	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes

Programs and Capabilities	CPPDC	Buchanan County	Town of Grundy	Dickenson County	Town of Clinchco	Town of Clintwood	Town of Haysi	Russell County	Town of Cleveland	Town of Honaker	Town of Lebanon	Tazewell County	Town of Bluefield	Town of Cedar Bluff	Town of Pocahontas	Town of Richlands	Town of Tazewell
Participates in NFIP	No	Yes	Yes	Yes	No	No	Yes	Yes	Unknown	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year Joined NFIP	N/A	1991	1974	1978	N/A	N/A	1974	1977	1970	1974	1974	1978	1978	05/10/74	09/14/83	1976	5/16/1989
Effective FIRM Date	No	1997	1997	2010	2010	N/A	2010	1988	1970	2010	2010	2001	2011	2011	2011	2011	2011
Additional Freeboard Requirements (inches)	No	18’	No	No	No	No	12”	No	No	No	No	No	No	No	No	No	No
Participates in CRS	No	No	No	No	N/A	No	No	No	Yes	No	No	No	No	No	No	No	No
Emergency Operations Management																	
Emergency Operations Plan	No*	Yes	Yes	Yes	County	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Operate under County EOP	Yes	Yes
Local Government EOPs	No	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	No
Continuity of Operations Plan	No	Yes	No	Yes	No	COUNTY OEM	Yes	No	Yes	No	No	Yes	No	No	No	No	No
Warning Sirens or Warning Alert Systems	No	Yes	No	Yes	No	Yes	No	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes
Evacuation Plans	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	No	No	No	No
Shelter and Family Re-Unification Plan	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes
Special Needs Population Emergency Planning	No	Yes	Unknown	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	No	No	No	No	No

Programs and Capabilities	CPPDC	Buchanan County	Town of Grundy	Dickenson County	Town of Clinchco	Town of Clintwood	Town of Haysi	Russell County	Town of Cleveland	Town of Honaker	Town of Lebanon	Tazewell County	Town of Bluefield	Town of Cedar Bluff	Town of Pocahontas	Town of Richlands	Town of Tazewell
Companion Animal Sheltering and Re-Unification Plan	No	Yes	Unknown	Yes	No	County	No	Yes	Yes	No	No	Yes	No	No	No	No	No
Dedicated Emergency Management Website	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No	No	No
Education Programs	No	Yes	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes
School Facility Emergency Operations Plans	No	Yes	Yes	Yes	No (No School)	Yes	No	Yes	No	No	No	Yes	Yes	No	No	No	No
School Emergency Notification, Evacuation, and Emergency Planning	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	Yes	Yes	No	No	Yes	Yes
College Campus Plans	No	No	No	No	N/A	No	No	Yes	No	No	No	Yes	No	No	No	No	No
College/University Emergency Notification, Evacuation, and Emergency Planning	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
Tourism	No	No	Unknown	No	Yes	No	No	Yes	Yes	No	No	Yes	No	No	Yes	No	No
Community Planner	No	Yes	Unknown	Yes	No	No	Yes	No	No	No	Yes	No	No	Yes	No	Yes	Yes

Programs and Capabilities	CPPDC	Buchanan County	Town of Grundy	Dickenson County	Town of Clinchco	Town of Clintwood	Town of Haysi	Russell County	Town of Cleveland	Town of Honaker	Town of Lebanon	Tazewell County	Town of Bluefield	Town of Cedar Bluff	Town of Pocahontas	Town of Richlands	Town of Tazewell
Additional Capabilities	No	No	Unknown	No	No	No	No	No	No	No	No	No	No	No	Mine Management Museum	No	No

Note:
N/A – Not Applicable
*Participates in County Plans
** In conjunction with the State
-in conjunction with County
1 Flood Plan only
General Note #1: The Towns within the region rely primarily on their respective counties for Building Code activities
General Note #2: Towns have engineering firms on call as consultants

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7.6 Current and Completed Hazard Mitigation Programs and Projects

The capacity to secure and successfully administer grants that fund a variety of projects, from capital improvements, infrastructure and protective/resiliency efforts, ranges from significant to minimal across the communities within the region. Table 7-4 illustrate the capacity found in the Cumberland Plateau Region to administer such grants and awards. The breakdown of the individual project specifics is found in Appendix D.

Table 7-4: Hazard Mitigation Programs and Projects Managed 2018-2023

Jurisdiction	Grants Managed	Dollars Managed
CPPDC/Regional	29 grants	$152,167,070
Buchanan County	33 grants	$25,535,003
Town of Grundy	8 grants	$1,801,700
Dickenson County	26 grants	$9,353,471
Town of Clinchco	1 grant	$25,000
Town of Clintwood	5 grants	$366,000
Town of Haysi	6 grants	$4,031,202
Russell County	20 grants	$8,807,505
Town of Cleveland	9 grants	$2,121,599
Town of Honaker	9 grants	$380,000
Town of Lebanon	7 grants	$2,703,970
Tazewell County	17 grants	$21,054,515
Town of Bluefield	6 grants	$2,849,002
Town of Cedar Bluff	2 grants	$80,000
Town of Pocahontas	5 grants	$2,217,900
Town of Richlands	5 grants	$3,714,656
Town of Tazewell	6 grants	$4,353,728

7.7 Summary and Conclusions

In conclusion, there are several areas which may be further investigated to determine the relevance of developing hazard mitigation strategies to fill gaps or shortcomings. Particularly, these areas include resources and grant application coordination.

As noted, additional time and resources need to be devoted at the local level to hazard mitigation related activities. These activities include project identification, data gathering, and overall knowledge about FEMA grants. Furthermore, additional education and training for current staff regarding hazard mitigation, the resources available, and methods of using specified grant funding could assist the Cumberland Plateau Region in reducing future risk. This knowledge would also assist in preparing better project applications that may be selected based on a competitive selection process. Increasing staff and resources would subsequently allow for greater coordination among all levels of government.

Section 8

Mitigation Strategy Action Plan

Contents of this Section

8.1 44 CFR Rule Requirement for the Mitigation Action Plan

Requirement §201.6(c)(3): *The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Requirement §201.6(c)(3)(ii): *[The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.*

Requirement: §201.6(c)(3)(iii): *[The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

Requirement §201.6(c)(3)(iv): *For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting Federal Emergency Management Agency (FEMA) approval or credit of the plan.*

8.2 Hazard Mitigation Goals

This section contains goals, objectives, and action items for the Cumberland Plateau Regional Hazard Mitigation Plan. For the purposes of this Plan, the following definitions are proposed:

- **Goals** are general guidelines that explain what the county and participating municipalities want to achieve. Goals are expressed as broad policy statements representing desired long-term results.
- **Objectives** (or strategies) describe strategies to attain an identified goal. Objectives are more specific statements than goals; objectives are also usually measurable and can have a defined completion date.
- **Mitigation Actions** are the specific steps (projects, policies, and programs) that advance a given objective. They are highly focused, specific, and measurable.

The hazard identification and risk assessment in Sections 6 consisted of identifying the hazards that affect Cumberland Plateau Region and the potential for damage to community assets that are vulnerable to the hazards. Section 7 identified the strengths and weaknesses of state and local capabilities. The goals and objectives listed below in Table 8-1 and were established by the Cumberland Plateau PDC's Hazard Mitigation Steering Committee and validated by the Cumberland Plateau PDC's Hazard Mitigation Working Group members in response to these assessment results. Many of the actions described below apply to the counties and all participating communities.

The broad goals and supporting objectives of the Cumberland Plateau Regional Hazard Mitigation Plan are as follows:

- Goal 1: Pursue **OPPORTUNITIES TO MITIGATE** appropriate hazard mitigation projects, programs, and activities with an emphasis on repetitive and severe repetitive loss properties.

- Goal 2: Increase the Planning District community's **FLOODPLAIN MANAGEMENT ACTIVITIES** and NFIP participation.

- Goal 3: Improve **EDUCATION AND OUTREACH** efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact. Publicize mitigation activities to reduce the area's vulnerability to hazards. Enhance community-wide understanding and awareness of community hazards.

- Goal 4: Improve **DATA COLLECTION, USE, AND SHARING** to reduce the impact of hazards and to ensure hazard awareness and risk reduction principles are institutionalized into the Planning District communities.

Supporting objectives for the stated goals are as follows:

- Objective: Increase green infrastructure measures utilizing natural vegetation and soils, pervious pavements, buffer zones, and living shoreline programs reducing storm water runoff and improve the drainage of flood waters.

Specific county and municipal actions to support these goals and objectives are described in Table 8-6.

Table 8-1 Cumberland Plateau Region Goals and Objectives

Objective	Action	Desired Outcome
***Goal 1*: Pursue OPPORTUNITIES TO MITIGATE appropriate hazard mitigation projects, programs, and activities with an emphasis on repetitive and severe repetitive loss properties.**		
1.1: Identify and Prioritize Vulnerable Areas	Conduct comprehensive risk assessments to identify areas most susceptible to hazards.	Create a prioritized list of high-risk areas for targeted mitigation efforts.
1.2: Develop and Implement Mitigation Projects	Design and deploy mitigation projects such as infrastructure improvements, natural resource conservation, and community resilience programs.	Reduce vulnerability and improve overall resilience in the identified high-risk areas
1.3: Leverage Funding and Partnerships	Seek out federal, state, and local funding opportunities, and build partnerships with private and non-profit sectors.	Secure necessary resources and support for effective implementation of mitigation measures.
***Goal 2*: Increase the Planning District community's FLOODPLAIN MANAGEMENT ACTIVITIES and NFIP participation.**		
2.1: Enhance Floodplain Regulations and Policies	Review and update local floodplain management regulations to ensure they align with NFIP standards and best practices.	Strengthened regulatory framework for managing flood risks and compliance with NFIP requirements.
2.2: Improve Floodplain Mapping and Risk Assessment	Utilize advanced technologies and data sources to enhance floodplain mapping and risk assessments.	More accurate and up-to-date floodplain maps that inform better land use and development decisions.
2.3: Promote Community Participation in NFIP	Educate local governments and residents about the benefits of NFIP participation and flood insurance.	Increased enrollment in NFIP and higher levels of community awareness and preparedness for flood events. Reduce the NFIP inventory in the area.
***Goal 3:* Improve EDUCATION AND OUTREACH efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact. Publicize mitigation activities to reduce the area's vulnerability to hazards. Enhance community-wide understanding and awareness of community hazards.**		
3.1: Develop and Disseminate Educational Materials	Create and distribute brochures, websites, workshops, and other materials focused on hazard preparedness and mitigation.	Improved public understanding and engagement in hazard mitigation practices
3.2: Conduct Community Workshops and Training	Organize regular workshops and training sessions for community members and stakeholders on hazard mitigation strategies.	Enhanced community capacity to effectively prepare for and respond to hazards.

3.3: Utilize Social Media and Technology	Leverage social media platforms and mobile applications to share timely information and resources related to hazard mitigation.	Broader reach and increased engagement in mitigation efforts through modern communication channels.
Goal 4: Improve DATA COLLECTION, USE, AND SHARING to reduce the impact of hazards and to ensure hazard awareness and risk reduction principles are institutionalized into the Planning District communities.		
Objective	Action	Desired Outcome
4.1: Standardize Data Collection Practices	Develop and implement standardized protocols for collecting and recording hazard-related data.	Consistent, reliable data that can be easily used for analysis and decision-making.
4.2: Enhance Data Integration and Analysis	Utilize Geographic Information Systems (GIS) and other analytical tools to integrate and analyze hazard data from various sources.	Improved ability to identify patterns, assess risks, and make informed decisions about mitigation strategies.
4.3: Facilitate Data Sharing Among Stakeholders	Establish systems and agreements for sharing hazard-related data among local, regional, and federal agencies, as well as community organizations.	Increased collaboration and more effective coordination in hazard mitigation efforts.

These objectives aim to provide a structured approach to hazard mitigation across various areas, ensuring comprehensive and effective strategies for reducing risk and enhancing community resilience.

8.3 Identification and Analysis of Mitigation Actions

The Cumberland Plateau Region has identified several hazard mitigation actions that would benefit all four counties. These were identified in the CPPDCSC and the HMWG meetings, which included input from representatives of governmental organizations, local businesses, and private citizens. This was based in part on consideration of the range of potential mitigation actions for hazards faced by the Cumberland Plateau region and its constituent municipalities which are described below.

Actions are detailed and specific strategies and projects that help support regional natural hazard resiliency and mitigation goal achievement. The actions from the 2018 plan formed a platform for discussing mitigation actions for the 2023 plan. The goal-action mitigation strategy structure was continued, and objectives were outlined as well to meet current standards and to provide a clear picture of the mission of the mitigation actions and strategies. A discussion was held via electronic means, interviews, and conversations at official meetings concerning the 2018 plan mitigation actions and strategies to help frame which actions should be continued and what organizational form the 2023-2028 mitigation actions should take.

Each participating community took part in an individual interview process attended by locality personnel, CPPDC Staff, and Olson Group personnel. In addition, the jurisdiction representatives evaluated the actions for inclusion in the plan with the following criteria from the FEMA Local Mitigation Planning Guidebook:

- What long-term goals does the community want to achieve?
- What specific actions will local government, community organizations, and others take to reduce risks to hazards?
- How will the actions be implemented and prioritized?
- How effectively will the action protect lives and prevent injuries?
- How significant will the action be at eliminating or reducing damage to structures and infrastructure?
- Is the mitigation action technically feasible? Is it a long-term solution?
- Does the public support the mitigation action? Is there the political will to support it?
- Does the community have the personnel and administrative capabilities to implement the action and maintain it, or will outside help be necessary?
- Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation?

The 2023-2028 mitigation actions are organized into six (6) major categories. Mitigation actions per community are organized by the following action types:

1) Prevention
    a. Planning and zoning
    b. Building codes
    c. Open space reservations
    d. Floodplain regulations
    e. Stormwater management regulations
    f. Drainage system maintenance
    g. Capital improvements programming
    h. Shoreline/Riverine setbacks
2) Property Protection

a. Acquisition/demolition
b. Relocation
c. Building elevation
d. Critical facilities protection
e. Retrofitting (wind proofing, flood proofing, seismic design)
f. Safe rooms, shutters, shatter resistant glass
g. Insurance

3) Natural Resource Protection
   a. Land Acquisition
   b. Floodplain protection
   c. Watershed management
   d. Beach and dune preservation
   e. Riparian buffers
   f. Forest and vegetation management (fire resistant landscaping, fuel breaks)
   g. Erosion and sediment control
   h. Wetland preservation and restoration
   i. Habitat preservation
   j. Slope stabilization
   k. Historic properties and archaeological site preservation
4) Structural Projects
   a. Reservoirs
   b. Dams/levees/dikes/floodwalls/seawalls
   c. Diversions/detention/retention
   d. Channel modification
   e. Beach nourishment
   f. Storm sewers
5) Emergency Services
   a. Warning systems
   b. Evacuation planning and management
   c. Emergency response training and exercises
   d. Sandbagging for flood protection
   e. Installing temporary shutters for wind protection
6) Education & Awareness
   a. Outreach projects
   b. Speaker series/demonstration events
   c. Hazard mapping
   d. Real estate disclosure
   e. Library materials
   f. School children's educational programs
   g. Hazard expositions

8.3.1 Potential Mitigation Actions

Public Awareness

Insurance industry and emergency management research has demonstrated that awareness of hazards is not enough. People must know how to prepare for, respond to, and take preventive measures against threats from natural hazards. This research has also shown that a properly run local information program is more effective than national advertising or public campaigns.

Although concerted local, county, and statewide efforts to inform the public exist, lives, and property continue to be threatened when segments of the population remain uninformed or chose to ignore the information available. Public education serves to assist the communities with problems experienced from floods, high wind, severe storms, earthquakes, and dam failure, as well as other lower priority hazards. Educating the public of these life and property saving techniques must remain a high priority item at the local, state, and federal level and is consistent with Goal 1.

Projects identified by the CPPDCSC and HMWG are as follows:

- Develop *All Hazards* public education and outreach program for hazard mitigation and preparedness.
- Initiate a public awareness program on local government websites for hazard safety.
- Coordinate with the CPPDC, VDEM and FEMA in public information concerning NFIP and Community Rating System (CRS) opportunities.
- Conduct workshops related to FEMA hazard mitigation grant programs, including Flood Management Assistance (FMA), Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure & Communities (BRIC), Pre-Disaster Mitigation (PDM), and Severe Repetitive Loss (SRL).
- Educate the public through CPPDC and Virginia Department of Forestry outreach on wildfire mitigation opportunities.

National Flood Insurance Program, Floodplain Management, and Building Codes

Improved floodplain management, including land use planning, zoning, and enforcement at the local level can reduce flood related damages for both existing buildings and new development and are consistent with Goal 2. The use of the National Flood Insurance Program (NFIP) is critical to the reduction of future flood damage costs to the taxpayer. The NFIP participation entry dates are provided for each community in Table 8-2 below.

Table 8-2: National Flood Insurance Program

Name of Jurisdiction	Date Joined NFIP
Cumberland Plateau PDC	Not Participating
Buchanan County	1991
Grundy, Town of	1974
Dickenson County	1978
Clinchco, Town of	2011
Clintwood, Town of	1977
Haysi, Town of	1974
Russell County	1977
Cleveland, Town of	1970
Honaker, Town of	1974

Lebanon, Town of	1974
Tazwell County	1978
Bluefield, Town of	1978
Cedar Bluff, Town of	1974
Pocahontas, Town of	1983
Richlands, Town of	1976
Tazewell, Town of	1989

Currently, the Cumberland Plateau Region has 68 (excluding Russell County) listed repetitive loss properties, including severe repetitive loss properties, spread over the four counties of the region. The properties values and claims are depicted in Table 8-3 below.

Table 8-3: Cumberland Plateau Region Repetitive Loss Properties

County	Jurisdiction	Estimated Value	Number of Claims	Damages Paid
Buchanan	Grundy, Town of	$1,322,694	31	$845,972.79
	Unincorporated County	$563,339	13	$92,915.99
Dickenson	Clinchco, Town of	N/A	N/A	N/A
	Clintwood, Town of	N/A	N/A	N/A
	Haysi, Town of	$56,000	2	$7,158.15
	Unincorporated County	$477,805	7	$63,702.95
Russell	Cleveland, Town of	N/A	N/A	N/A
	Honaker, Town of	N/A	N/A	N/A
	Lebanon, Town of	N/A	N/A	N/A
	Unincorporated County	N/A	N/A	N/A
Tazwell	Bluefield. Town of	$2,393,557	32	$291,691.67
	Cedar Bluff, Town of	$320,959	4	$27,106.54
	Pocahontas, Town of	$505,590	2	$59,288.88
	Richlands, Town of	$1,110,956	39	$376,878.71
	Tazewell, Town of	$5,045,725	6	$417,701.50
	Unincorporated County	$13,798,094	44	$1,467,769.04
Total	**Cumberland Plateau Region**	**$25,594,719**	**180**	**$3,650,186.22**

Source: FEMA. NFIP – Data & Analytics

Cumberland Plateau Region communities remain committed to the NFIP. They will continue to enforce floodplain regulations and undertake other actions to comply with the program, such as continued flood hazard risk evaluation and education and outreach activities directed at flood-prone residents and businesses within the Region.

Flood Mitigation Actions

Retrofitting structures prone to periodic flooding is an effective mitigation technique to reduce the flood loss of property and is consistent with Goals 1 and 2. The actions most consistent with the needs of the region are, mitigation reconstruction, dry flood-proofing, wet flood-proofing, drainage improvements, and installation of generators.

Hazard Mitigation Plan Update: This includes requests to update current Hazard Mitigation Plans.

Retrofits: Projects that are modifications to existing structures to reduce or eliminate the risk of future damage and to protect inhabitants. Retrofits can be structural or non-structural and can be done for a range of hazards.

Dry flood-proofing: techniques include the building of floodwalls adjacent to existing walls, the installation of special doors to seal out floodwaters, and special backflow valves for water and sewer lines.

Wet flood-proofing includes measures applied to a structure that prevent or provide resistance to damage from flooding while allowing floodwaters to enter the structure or area. Generally, this includes properly anchoring the structure, using flood resistant materials below the BFE, protection of mechanical and utility equipment, and use of openings or breakaway walls. Application of wet flood-proofing as a flood protection technique under the NFIP is limited to enclosures below elevated residential and non-residential structures and to accessory and agricultural structures that have been issued variances by the community.

Drainage: Improving the drainage capacity around roads and low-lying areas is a time-tested technique to mitigate flood damage. Maintenance of drainage canals and laterals is essential to maximize their efficiency and continued long term effectiveness. Actions in general to reduce the effects of flooding are widening and deepening the earthen canals, cleaning of existing ditches, and replacing existing culverts, upgrading pumps, installing check valves, and inverts in certain culverts. Maintaining and improving drainage serves to assist the communities with problems experienced from floods, high wind, and severe storms.

Utility/Infrastructure Protection: Projects that are ones that elevates, moves or improves a critical infrastructure such as elevating a pumping station or enhancing power poles to resist fire and/or wind.

Wind Retrofitting Mitigation Actions

Structures can be retrofitted to withstand high winds by installing hurricane shutters, roof tie-downs and other storm protection features. The exterior integrity is maintained by protecting the interior of the structure and providing stability against wind hazards associated with hurricanes. These types of measures can be relatively inexpensive and simple to put in place.

Another retrofitting technique is to bury electric power lines to avoid tree limbs falling on them or from wind damage resulting in a break in service to the consumer. Burying electric power lines serves to assist the communities with problems experienced from floods, high wind, and severe storms.

Early Warning Systems

With sufficient warning of a flood, the region and its residents can take protective measures such as moving personal property, cars, and people out of harm's way. When a flood threat recognition system is combined with an emergency response plan that addresses the flood problems, considerable flood damage can be prevented. This system must be coupled to warning the public, carrying out appropriate tasks, and coordinating the flood response plan with operators of critical facilities. A comprehensive education and outreach program is critical to the success of early warning systems so that the public, operators of critical facilities, and emergency response personnel will know what actions to take when warning is disseminated.

Early warning systems serve to assist the communities with problems experienced from floods, high wind, severe storms, dam failure, and hazardous materials incidents.

Severe Storms–Winter Storms

Heavy snowfall and extreme cold can immobilize the entire region. Winter storms can result in flooding, storm surge, closed highways, blocked roads, downed power lines, and hypothermia. Winter storm hazards that affect the greater Cumberland Plateau Region include:

Freezing Rain: Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees, and power lines.

Sleet: Rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.

Blizzard & High Winds: Sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.

Educational Outreach: develop and conduct educational outreach programs on the associated risks from living and working in areas susceptible to severe winter storm events. Outreach materials can include educating county and town facilities management, and residents on winterization activities, including caulking and weather-stripping doors and windows, and installing storm windows or covering windows, clear rain gutters; repair roof leaks and cut away tree branches that could fall during storms, as well as other possible mitigation activities.

8.3.2 Floodplain Management

Floodplain management and building codes serve to assist the communities with problems experienced from floods, high winds, earthquakes, and severe storms as well as other lower priority hazards. Floodplain Administrators play a significant role in mitigating flood related issues and maintain a dedicated Floodplain Administrator is a requirement for continued participation within the NFIP.

Statutes of the Commonwealth of Virginia provide cities and counties with land use authority. Floodwater control is empowered through §15.2-2223 and §15.2-2280 of the Code of the Commonwealth of Virginia. Each Cumberland Plateau Regional jurisdiction with land use authority has adopted a local floodplain ordinance as a requirement of participation in the NFIP. Due to staffing issues and budget considerations associated with smaller rural communities, all but one town, Bluefield, shares the County Floodplain Administrator as their own. Table 8-4 below identifies the Floodplain Administrator for each of the Cumberland Plateau jurisdictions.

Table 8-4: Floodplain Administrators

Name of Community	Floodplain Administrator
Buchanan County	Bart Chambers (County)
Town of Grundy	Bart Chambers
Dickenson County	Chris Rakes (County)
Town of Clinchco	Chris Rakes

Name of Community	Floodplain Administrator
Town of Clintwood	Chris Rakes
Town of Haysi	Chris Rakes
Russell County	Jess Powers (County)
Town of Cleveland	Jess Powers
Town of Honaker	Jess Powers
Town of Lebanon	Jess Powers
Tazwell County	Ken Dunford (County)
Town of Bluefield	Nathaniel Mitchem
Town of Cedar Bluff	Ken Dunford
Town of Pocahontas	Ken Dunford
Town of Richlands	Ken Dunford
Town of Tazwell	Ken Dunford

Community Rating System (CRS)

The Community Rating System (CRS) is a program within the National Flood Insurance Program (NFIP) established by the Federal Emergency Management Agency (FEMA). It is designed to recognize and encourage community floodplain management activities that exceed the minimum NFIP requirements. By participating in the CRS, communities can earn credits for their floodplain management activities, which translate into reduced flood insurance premiums for their residents.

The CRS aims to promote a proactive approach to flood risk management and mitigation. Communities that participate in the CRS demonstrate their commitment to reducing flood risks and protecting property, which contributes to:

- Enhanced Public Safety: By implementing and maintaining higher standards in floodplain management, communities help reduce the likelihood and severity of flooding.
- Lower Flood Insurance Premiums: CRS communities earn credits for their efforts, leading to discounts on flood insurance premiums for policyholders within their jurisdiction.
- Increased Awareness and Preparedness: CRS activities often involve public outreach and education, which improve community awareness and preparedness for flood events.

CRS participation is categorized into various classes, each reflecting the extent of the community's floodplain management activities. Communities are scored on their performance across several activity areas, including:

- Public Information: Efforts to educate and inform the public about flood risks and flood insurance. Activities may include public outreach programs, flood risk mapping, and community workshops.
- Flood Damage Reduction: Measures taken to reduce potential flood damage through regulatory changes, floodplain development controls, and property retrofitting.
- Floodplain Management: Implementation of advanced floodplain management practices, including higher regulatory standards and innovative approaches to floodplain management.

- Emergency Management: Activities that enhance the community's ability to respond to and recover from flood events, such as flood warning systems, emergency response plans, and post-flood evaluations.
- Open Space Preservation: Efforts to preserve open space in flood-prone areas to reduce flood impacts, which may include the creation of parks or conservation areas.

Communities are assigned a CRS class from 1 to 10, with Class 1 representing the highest level of floodplain management activity and Class 10 indicating that the community does not participate in the CRS. Each class corresponds to a specific discount on flood insurance premiums:

Class 1: 45% discount
Class 2: 40% discount
Class 3: 35% discount
Class 4: 30% discount
Class 5: 25% discount
Class 6: 20% discount
Class 7: 15% discount
Class 8: 10% discount
Class 9: 5% discount
Class 10: no discount

Participation within the CRS program is voluntary. The status of each jurisdiction within the CRS system is depicted in Table 8-5 below.

Table 8-5: CRS Participation Status

Name of Community	CRS Entry Date	Current Class	% Discount
Buchanan County	--	10	No Discount
Town of Grundy	--	10	No Discount
Dickenson County	--	10	No Discount
Town of Clinchco	--	10	No Discount
Town of Clintwood	--	10	No Discount
Town of Haysi	--	10	No Discount
Russell County	--	10	No Discount
Town of Cleveland	--	10	No Discount
Town of Honaker	--	10	No Discount
Tazwell County	--	10	No Discount
Town of Bluefield	--	10	No Discount
Town of Cedar Bluff	--	10	No Discount
Town of Pocahontas	--	10	No Discount
Town of Richlands	--	10	No Discount
Town of Tazwell	--	10	No Discount

To implement the CRS, communities must:

- Apply for Participation: Submit a CRS application to FEMA, detailing the community's floodplain management activities and policies.
- Develop a Floodplain Management Plan: Outline existing floodplain management practices and identify areas for improvement. (Potentially funded by the FEMA FMA program)

- Conduct Regular Reviews: Continuously evaluate and update floodplain management practices to maintain or improve CRS class status.
- Engage with the Public: Actively promote flood risk awareness and encourage public participation in floodplain management initiatives.

The CRS offers communities an opportunity to enhance their floodplain management efforts while providing tangible benefits to residents through reduced flood insurance premiums. By striving for higher CRS classes, communities not only improve their resilience to flooding but also contribute to broader national flood risk reduction goals.

8.4 Hazard Mitigation Actions

8.4.1 Cumberland Plateau Regional Mitigation Actions

Table 8-6: 2023 – 2028 Cumberland Plateau Region Mitigation Actions

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Cumberland Plateau Planning District Commission								
CPPDC-1: Reestablish the Mitigation Advisory Committee with county representatives to assist the Planning District's further developing and maintaining communities' mitigation program.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	CPPDC	Starting within six months, then ongoing	Staff Time	Local Budgets	1,2,3,4	High
CPPDC-2: Assist local jurisdictions in identifying and addressing Repetitive Loss properties and attaining funding for mitigation actions.	Flood	Protection Structural	CPPDC	1 year	$75,000	HMGP, PDM, FMA, BRIC	1,2	High
CPPDC-3: Develop all hazards public education and outreach program for hazard mitigation and preparedness.	All Hazards	Public Education, Awareness and Outreach	CPPDC	Immediate & Ongoing	Staff Time	CPPDC Budget	1,3	High
CPPDC-4 In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to CPPDC website.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	CPPDC	Immediate & Ongoing	Staff Time	CPPDC Budget	1,3	High
CPPDC-5 Engage and support municipalities to participate in the CRS program, including	Flood	Prevention Property Protection Education & Outreach	CPPDC, Administrators &	Immediate & Ongoing	Staff Time	CPPDC & Jurisdictions Budget	2,3,4	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
potentially setting up CRS site visits and/or workshops for interested jurisdictions.			OEM Coordinators					
CPPDC-6 Submit the updated Hazard Mitigation Plan to the CRS for review and consideration within the CRS program.	Flood	Prevention Property Protection Education & Outreach	Director CPPDC	Immediate	Staff Time	CPPDC Budget	1,2,3	High
CPPDC-7 Support jurisdictions in obtaining funding for stormwater management improvements and upgrades.	Flood	Prevention Property Protection Natural Resource Protection Structural Emergency Services	CPPDC, Administrators & OEM Coordinators	Starting within six months, then ongoing	Staff Time	CPPDC & Jurisdictions Budget	1,3	Medium
CPPDC-8 Continue support of hazard mitigation planning, project identification and implementation at the municipal and county level.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	CPPDC	Immediate & Ongoing	Staff Time	CPPDC Budget	1,3,4	High
CPPDC-9 Provide grants information, planning tools, training and technical assistance to increase the number of public and private sector hazard mitigation projects	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services	CPPDC	Immediate & Ongoing	Staff Time	CPPDC Budget	1,3	Medium
CPPDC-10 Assist towns in developing model floodplain ordinances.	Flood	Prevention Property Protection Natural Resource Protection	CPPDC	Immediate & Ongoing	Staff Time	CPPDC Budget	2,3	Medium

NOTE: Mitigation action plans were developed for all the identified actions. Each mitigation action plan includes:

The specific mitigation action to be undertaken
Hazard(s) it is designed to mitigate,
The project category/type,
Agency/department assigned responsibility for carrying out the strategy,
Timeframe for completion
Estimated cost of the action,
Possible funding source for the mitigation action,
Goal(s) it is intended to help achieve,
Priority level for its implementation (high, medium, or low).

8.4.2 Cumberland Plateau Region Jurisdictions Mitigation Actions

Table 8-7: 2023 – 2028 Cumberland Plateau Jurisdiction Specific Mitigation Actions

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Buchanan County								
Buchanan County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	CPPDC	Starting within six months, then ongoing	Staff Time	Local Budgets	1,2,3,4	High
Buchanan County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local	Flood	Prevention Property Protection Structural	County Administrator, Emergency	1-2 years	TDB as projects are developed	HMGP, PDM, FMA, BRIC	1,2	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.			Management Coordinator					
Buchanan County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Emergency Management Coordinator	Immediate & Ongoing	Staff Time	County Budget	1,3	High
Buchanan County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Emergency Management Coordinator	Immediate & Ongoing	Staff Time ($20,000)	County Budget	1,3	High
Buchanan County 5: Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in Buchanan County.	Wildfire	Prevention Property Protection Natural Resource Protection	Emergency Management Coordinator	Immediate & Ongoing	$20,000	VDOF	1,3	Low

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Structural Emergency Services Education & Outreach						
Buchanan County 6: Develop a comprehensive compilation of landslide activity in the county to be used as a planning tool for future infrastructure projects.	Landslide	Protection Prevention Public Education and Awareness	Emergency Management Coordinator	1-year	$40,000	VDOT, Local Budgets	1,3,4	Low
Buchanan County 7: Evaluate the county's flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	Flood	Prevention Protection	Floodplain Administrator	Immediate and ongoing	Staff Time	Local Budgets	2	Medium
Buchanan County 8: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	All Hazards	Public Education and Awareness	County Administrator, Emergency Management Coordinator	immediate and continuing	$40,000, Staff Time	Local Budgets	1,3	Medium
Buchanan County 9: Educate local community and assist in submitting Community Rating System Application for Town of Grundy.	All Hazards	Prevention	County Administrator Floodplain Administrator	1-year	Staff Time	Local Budgets	2,3	Medium
Buchanan County 10: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Flood	Structural Projects	Emergency Management Coordinator, DPW	1 year	TBD	EPA, USACE, FEMA	1	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Buchanan County 11: Pursue mitigation actions for all county facilities located within the floodplain	Flood	Prevention Protection Structural	County Administrator, Emergency Management Coordinator	1-2 years	$500,000	HMGP, PDM, BRIC	1	High
Buchanan County 12: Develop wildfire interface protection zones	Wildfire	Prevention Property Protection Natural Resource Protection	County Administrator, Emergency Management Coordinator	1-2 years	$200,000	VDOF HMGP, HMGP-Post Fire, BRIC	1	Medium
Buchanan County 11: Work with Federal Government to revise county flood boundaries	Flood	Prevention Property Protection Natural Resource Protection	County Administrator, Emergency Management Coordinator, Floodplain administrator	Immediate	Staff Time	Local Budget	2,3,4	High
Town of Grundy								
Town of Grundy 1: Develop potential acquisition, elevation, relocation mitigation projects for Town Repetitive Loss Properties	Flood	Prevention Protection Structural	Town Manager	Immediate	TDB as projects are developed	HMGP, PDM, FMA, BRIC	1,2	High
Town of Grundy 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention, Property, Protection, Natural Resource, Protection, Structural, Emergency	Town Manager, Emergency Management Coordinator	Immediate & Ongoing	Staff Time	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Services, Education & Outreach						
Town of Grundy 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property, Protection, Natural Resource, Protection, Structural, Emergency Services, Education & Outreach	Town Manager, Emergency Management Coordinator	Immediate & Ongoing	Staff Time	Town Budget	1,3	High
Town of Grundy 4: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	All Hazards	Public Education and Awareness	Town Manager, Emergency Management Coordinator	immediate and continuing	Staff Time	Town Budget	1,3	Medium
Town of Grundy 5: Submit application to join the Community Rating System	Flood	Property Protection Public Education and Awareness	Town Manager Floodplain Administrator	1-year	Staff Time	Town Budget	2	Medium
Town of Grundy 6: Roof wind retrofit od DOW storage facility	Wind, Severe Weather	Prevention, Property Protection	Town Manager, Emergency Manager, Public Works	1-year	$500,000	HMGP, PDM, BRIC	1	High
Town of Grundy 7: Develop wildfire interface protection zones	Wildfire	Prevention Property Protection	Town Manager, Emergency	1-2 years	$200,000	VDOF HMGP, HMGP-Post Fire, BRIC	1	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Natural Resource Protection	Manager, Public Works					
Dickenson County								
Dickenson County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Director Emergency Management	Starting within six months, then ongoing	Staff Time	County Budget	1,2,3,4	High
Dickenson County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	Flood	Protection	County Administrator, Director Emergency Management	1-year	TDB as projects are developed	County Budget	1,2	High
Dickenson County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Director Emergency Management	Immediate & Ongoing	Staff Time	County Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Dickenson County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Director Emergency Management	Immediate & Ongoing	Staff Time ($20,000)	County Budget	1,3	High
Dickenson County 5: Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in Dickenson County.	Wildfire	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	Director Management Coordinator	Immediate & Ongoing	$20,000	VDOF	1,3,4	Low
Dickenson County 6: Review and update County flood plain ordinances and enforcement procedures that may be outdated.	Flood	Prevention	County Floodplain Administrator	Immediate	Staff Time	County Budget	2	High
Dickenson County 7: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	All Hazards	Public Education and Awareness	County Administrator, Director Emergency Management	immediate and continuing	$40,000, Staff Time	Local Budgets	1,3	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Dickenson County 8: Assist jurisdictions in preparing and submitting Community Rating System Applications for non-participating jurisdictions.	All Hazards	Prevention	County Administrator, County Floodplain Administrator	immediate and continuing	Staff Time	County & Local Budgets	2	Medium
Dickenson County 9: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Flood	Structural Projects	Director Emergency Management	Immediate	TBD	EPA, USACE, FEMA	1	Medium
Dickenson County 10: Support jurisdictions in obtaining funding for stormwater management improvements and upgrades	Flood	Property Protection Structural Protection	DPW Coordinator	1-2 years	Staff Time	HMGP, BRIC, County Budget	1	Medium
Dickenson County 11: "Verify the geographic location of all NFIP repetitive losses, and make inquiries as to whether the properties have been mitigated, and if so, by what means."	Flood	Prevention	Director Emergency Management	Immediate	Staff Time	Local Budgets	2	High
Dickenson County 12: Identify and convert facility to meet FEMA heating/cooling facility requirements	Severe Weather, Extreme Heat/Cold	Prevention, Emergency Services	County Administrator, Director Emergency Management	1-year	$200,000	HMGP, PDM, BRIC, County Budget	1	High
Town of Clinchco								
Town of Clinchco 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Public Education and Awareness	Town Mayor Local OEMs	1 year	Staff Time	Town Budget	1,3	High
Town of Clinchco 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation	All Hazards	Public Education	Town Mayor Town OEMs	1 year	Staff Time ($20,000)	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Awareness/Education Webpage addition to county website		and Awareness						
Town of Clinchco 3: Continue acquisition project on McClure River (3 stages)	Flood	Prevention, Property Protection, Structural	Town Mayor USACE	Pending	$9,000 $25,000 $60,000	USACE	1	High
Town of Clinchco 4: Identification of potential participants for Acquisition of flood prone property located at 210 Main Street	Flood	Prevention, Property Protection, Structural	Town Mayor	Pending	$100,000	HMGP, VDEM	1	High
Town of Clinchco 5: Removal of US Fisheries Dam #9	Flood	Prevention, Property Protection, Structural	Town Mayor	Pending	$1 million	HMGP, BRIC, DCR	1	High
Town of Clinchco 6: Stormwater Management Plan to include abandoned mine assessment	Flood, Abandoned Mine Fire/Flood	Prevention, Property Protection, Natural Resource Protection, Structural	Town Mayor Town OEMs	2 years	$75,000	DCR, Town Budget	1,3	Medium
Town of Clinchco 7: Installation of a Wet Seal of abandoned mine located near Palmer Street	Flood, Abandoned Mine Fire/Flood	Prevention, Property Protection, Natural Resource Protection, Structural	Town Mayor Town OEMs	2 years	$30,000	DCR, EPA, CDGB, Town Budget	1	High
Town of Clinchco 8: Erosion and stormwater management upgrade and improvement near Gilmore Street	Flood	Prevention, Property Protection, Natural	Town Mayor Town OEMs	2 years	$300,000	HMGP, BRIC, VDOT	1	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Resource Protection, Structural						
Town of Clintwood								
Clintwood 1: Stormwater and flood control drainage ditch protecting new development at Food City Store location	Flood	Property Protection Structural Protection	Mayor / Town Manager, Public Works	Immediate	$75,000	HMGP, FMA, BRIC, Private	1	High
Clintwood 2: Increase Drainage area and capacity of Main Street and Jonah Mullens Drive	Flood	Property Protection Structural Protection	Mayor / Town Manager, Public Works	2.years	$250,000	HMGP, FMA, BRIC VDOT/CPPDC	1	High
Clintwood 3: Conduct annual forest interface defense zone clean and clear	Wildfire	Prevention, Property Protection, Natural Resource Protection	Mayor / Town Manager, Public Works	1 year	$75,000	VDOF HMGP	1	Medium
Clintwood 4: Study of stormwater runoff from abandoned mine to determine possible mitigation actions	Abandoned Mine Fire/Flood	Property Protection Structural Protection	Public Works	3 years	$200,000	FMA, Federal Mine Reclamation Admin	1,3	High
Clintwood 5: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services,	Mayor/Town Manager	Immediate & ongoing	Staff Tim3	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Education & Outreach						
Town of Haysi								
Town of Haysi 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	Flood	Prevention, Property Protection, Structural	Director of Operations	Immediate & ongoing	TDB as projects are developed	HMGP, PDM, FMA, BRIC	1,2	High
Town of Haysi 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention, Property Protection, Natural Resource, Protection, Structural, Emergency Services, Education & Outreach	Director of Operations	Immediate & Ongoing	Staff Time	Town Budget	1,3	High
Town of Haysi 3 In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource, Protection, Structural, Emergency Services, Education & Outreach	Director of Operations	Immediate & Ongoing	Staff Time ($10,000)	Town Budget	1,3	High
Town of Haysi 4: Support Public Works initiatives to improve stormwater infrastructure throughout	Flood	Structural Projects	Director of Operations	Immediate & Ongoing	TBD	EPA, USACE, FEMA	1,3	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
the Town.								
Town of Haysi 5: Stormwater infrastructure upgrade/improvement (culverts)located along Lazarus Br	Flood	Prevention, Property Protection Structural Projects	Director of Operations	1-2 years	$185,000	HMGP, PDM, BRIC	1	High
Town of Haysi 6: Stormwater infrastructure upgrade/improvement (100 feet of stormwater drainage pipe upgrade/increased capacity) located adjacent to the Haysi Presbyterian Church underneath Dickenson Hwy.	Flood	Prevention, Property Protection Structural Projects	Director of Operations	1-2 years	$500,000	HMGP, PDM, BRIC	1	High
Town of Haysi 7: Stormwater infrastructure upgrade/improvement (150 feet of stormwater drainage pipe upgrade/increased capacity) located adjacent to the Pizza Plus underneath Main Street.	Flood	Prevention, Property Protection Structural Projects	Director of Operations	1-2 years	$650,000	HMGP, PDM, BRIC	1	High
Town of Haysi 8: Stormwater infrastructure upgrade/improvement (100 feet of stormwater culvert upgrade/increased capacity) located adjacent to the Haysi Rescue Squad along Sandlick Rd.	Flood	Prevention, Property Protection Structural Projects	Director of Operations	1-2 years	$360,000	HMGP, PDM, BRIC	1	High
Town of Haysi 8: Stormwater infrastructure upgrade/improvement (culvert installation and upgrades) located at curve in Dickenson Hwy adjacent to the Haysi Funeral Home.	Flood	Prevention, Property Protection Structural Projects	Director of Operations	1-2 years	$1million	HMGP, PDM, BRIC	1	High
Town of Haysi 9: Working with VDOT, stormwater infrastructure upgrade/improvement study to mitigate river flooding along ½ mile portion of Splashdam Rd.	Flood	Prevention, Property Protection Structural Projects	Director of Operations	1-2 years	$75,000	HMGP, PDM, BRIC, VDOT	1	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Russell County								
Russell County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator	Starting within six months, then ongoing	Staff Time	Local Budgets	1,2,3,4	High
Russell County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	Flood	Prevention Property Protection Structural	County Administrator, Director Emergency Management	1-2 years	TBD as projects are identified	HMGP, PDM, FMA, BRIC	1,2	High
Russell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Emergency Management Coordinator	Immediate & Ongoing	Staff Time	County Budget	1,3	High
Russell County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation	All Hazards	Prevention Property Protection	County Administrator, Emergency	Immediate & Ongoing	Staff Time ($20,000)	County Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Awareness/Education Webpage addition to county website.		Natural Resource Protection Structural Emergency Services Education & Outreach	Management Coordinator					
Russell County 5: Advocate on behalf of the Virginia Department of Forestry's Money for Mitigation Program. Assist local jurisdictions in developing wildfire interface protection zone projects.	Wildfire	Prevention Property Protection Public Education and Awareness	County Administrator, Emergency Management Coordinator	1 year	TBD	VDOF HMGP	1,3	Low
Russell County 6: Evaluate the Russell County flood plain ordinances and enforcement procedures that may be outdated for possible upgrades/modification.	Flood	Prevention	Floodplain Administrator, County Administrator, County Attorney	Immediate & ongoing	Staff Time	County Budget	2	High
Russell County 7: Maintain coordination with public utility companies to incorporate mitigation as infrastructure is laid, maintained, or repaired.	All Hazards	Prevention	County Administrator, Director County Public Works	Immediate & ongoing	Staff Time	County Budget	1,3,4	Medium
Russell County 8: Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	All Hazards	Public Education and Awareness	Mitigation Advisory Committee, CPPDC. Local OEMs			FEMA, NWS, VDEM	1,3	Low
Russell County 9: Develop "hazard information centers" in libraries and government buildings and on the county	All Hazards	Public Education	County Administrator, Emergency	immediate and continuing	$40,000, Staff Time	Local Budgets	1,3	Low

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
website and providing hazard and mitigation information.		and Awareness	Management Coordinator					
Russell County 10: Educate local jurisdictions and assist in submitting Community Rating System Application for non-participating jurisdictions.	All Hazards	Prevention	County Administrator Floodplain Administrator	1-year	Staff Time	Local Budgets	2	Medium
Russell County 11: Determine appropriate mitigation actions for two critical facilities: the Dante Community Center and the Cleveland Community Center	Flood	Prevention Property Protection	Mitigation Advisory Committee, CPPDC. Local OEMs	1-2 year	TBD	FEMA, VDEM	1	High
Russell County 12: Support Public Works initiatives to improve stormwater infrastructure throughout Russell County.	Flood	Structural Projects, Structural	County Administrator, Director County Public Works	Immediate & ongoing	Staff Time	County Budget	1	Medium
Russell County 13: Identify and convert facility to meet FEMA heating/cooling facility requirements	Severe Weather, Extreme Heat/Cold	Prevention, Emergency Services	County Administrator, Director Emergency Management	1-year	$200,000	HMGP, PDM, BRIC County Budget	1	High
Russell County 14: Backup power (generator) for 6 designated shelters	All Hazards	Prevention, Emergency Services	County Administrator, Director Emergency	1-2 years	$150,000	HMGP 5%	1	High
Town of Cleveland								
Town of Cleveland 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	Flood	Prevention, Property Protection, Structural	Town Mayor, Town DPW	1-2 years	TBD as projects are determined	HMGP, PDM, FMA, BRIC	1,2	High
Town of Cleveland 2: Develop all hazards public education and outreach program centered with libraries and	All Hazards	Prevention, Property Protection,	Town Mayor,	Immediate & Ongoing	Staff Time	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
government buildings or hazard mitigation and preparedness.		Natural Resource Protection, Structural, Emergency Services, Education & Outreach						
Town of Cleveland 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Mayor	Immediate & Ongoing	Staff Time	Town Budget	1,3	High
Town of Cleveland 4: Riverbank Stabilization in the Community Park area	Flood	Prevention, Property Protection, Natural Resource Protection, Structural	Town Mayor, Town DPW	2 years	$200,000	DCR HMGP, BRIC	1	High
Town of Cleveland 5: Tree cutback and clearing to protect powerlines	High Winds	Prevention, Property Protection	Town Mayor, Town DPW	1 year	$65,000	HMGP, Town Budget	1	Low
Town of Cleveland 6: Stabilization study and prevention measures instillation	Landslide	Prevention, Property	Town Mayor, Town DPW	2 years	$100,000	VA Energy, BRIC	1	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Protection, Structural						
Town of Honaker								
Town of Honaker 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Mayor, Town DPW	6 months	Staff Time	Town Budget	1,3	High
Town of Honaker 2: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Mayor, Town DPW	6 months	Staff Time	Town Budget	1,3	High
Town of Honaker 3: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Flood	Prevention, Property Protection, Structural Projects	Town Mayor, Town DPW	1 year	TBD	HMGP, PDM, BRIC, Town Budget	1,2	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Town of Honaker 4: Stormwater management upgrade and improvement located at (XXX)	Flood	Prevention, Property Protection, Structural Projects	Town Mayor, Town DPW	1 year	TBD	HMGP, PDM, BRIC, Town Budget	1	High
Town of Honaker 5: Stormwater management upgrade and improvement located at (XXX)	Flood	Prevention, Property Protection, Structural Projects	Town Mayor, Town DPW	1 year	TBD	HMGP, PDM, BRIC, Town Budget	1	High
Town of Honaker 6: Stormwater management upgrade and improvement located at (XXX)	Flood	Prevention, Property Protection, Structural Projects	Town Mayor, Town DPW	1 year	TBD	HMGP, PDM, BRIC, Town Budget	1	High
Town of Honaker 7: Backup power generators for 4 water wells supplying the town with potable water	All Hazards	Prevention, Property Protection, Structural Projects	Town Mayor, Town DPW	1 year	TBD	HMGP, PDM, BRIC, Town Budget	1	High
Town of Lebanon								
Town of Lebanon 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	Flood	Prevention, Property Protection, Structural	Town Manager, Town DPW	1-2 years	TBD as projects are determined	HMGP, PDM, FMA, BRIC	1,2	High
Town of Lebanon 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural,	Town Manager,	Immediate & Ongoing	Staff Time	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Emergency Services, Education & Outreach						
Town of Lebanon 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Manager	Immediate & Ongoing	Staff Time	Town Budget	1,3	High
Town of Lebanon 4: Submit application to join the Community Rating System	Flood	Property Protection Public Education and Awareness	Town Manager Floodplain Administrator	1-year	Staff Time	Town Budget	2	Medium
Tazwell County								
Tazwell County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services	County Administrator	Starting within six months, then ongoing	Staff Time	Local Budgets	1,2,3,4	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Education & Outreach						
Tazwell County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	Flood	Prevention Property Protection Structural	County Administrator, Director of Public Safety	1-2 years	TBD as projects are determined	HMGP, PDM, FMA, BRIC	1,2	High
Tazwell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	Director of Public Safety	Immediate & Ongoing	Staff Time	County Budget	1,3	High
Tazwell County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	County Administrator, Emergency Management Coordinator	Immediate & Ongoing	Staff Time ($20,000)	County Budget	1,3	High
Tazwell County 5: Advocate on behalf of the Virginia Department of Forestry's Money for Mitigation Program. Assist	Wildfire	Prevention Property Protection	Emergency Management Coordinator	Immediate & Ongoing	$20,000	VDOF	1,3,4	Low

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
local jurisdictions in developing wildfire interface protection zone projects.		Natural Resource Protection Structural Emergency Services Education & Outreach						
Tazwell County 6: Evaluate the county's flood plain ordinances and enforcement procedures that may be outdated for possible upgrades/modifications.	Flood	Prevention Property Protection	Floodplain Administrator	1 year	Staff Time	Local Budgets	2	Medium
Tazwell County 7: Prioritize planning opportunities with public utility companies to prioritize incorporating mitigation in new infrastructure, maintained, or repaired.	All Hazards	Prevention Property Protection	Director Public Safety	Immediate & ongoing		HMGP, BRIC, VDEM, BVDC	1,3,4	Low
Tazwell County 8: Educate local jurisdictions and assist in submitting Community Rating System Application for non-participating jurisdictions.	All Hazards	Prevention Property Protection	County Administrator Floodplain Administrator	1-year	Staff Time	Local Budgets	2	Medium
Tazwell County 9: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Flood	Prevention, Property Protection, Structural Projects	County Administrator Floodplain Administrator	1 year	Staff Time, TBD	EPA, USACE, HMA Programs	1,2	Medium
Tazwell County 10: Develop and submit stormwater management upgrades and improvement projects at the following locations: (XXX)	Flood	Prevention, Property Protection, Structural Projects	County Administrator	1-2 years	TBD	HMGP CDBG BRIC	1	High
Town of Bluefield								

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Town of Bluefield 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	Flood	Prevention, Property Protection, Structural	Town Manager	1 year	TDB as projects are developed	HMGP, PDM, FMA, BRIC	1,2	High
Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	Flood	Public Education and Awareness	Town Manager	Immediate & Ongoing	Staff Time	FMA, VDEM	1,3	High
Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention Property Protection Natural Resource Protection Structural Emergency Services Education & Outreach	Town Manager	Immediate & Ongoing	Staff Time ($20,000)	Town Budget	1,3	High
Town of Bluefield 4: Submit application to join the Community Rating System	Flood	Property Protection Structural Public Education and Awareness	Town Manager, Floodplain Administrator	Immediate & Ongoing	Staff Time	Town Budget	2	Medium
Town of Bluefield 5: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Flood	Structural Projects	Town Manager	Immediate & Ongoing	Staff Time	EPA, USACE, HMGP, PDM, BRIC	1,2	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Town of Bluefield 6: Develop and submit stormwater management upgrades, improvements located at (XXX)	Flood	Structural Projects	Town Manager	1-2 years	TDB as project is developed	HMGP, PDM, BRIC UASCE	1	High
Town of Bluefield 7: Develop and submit stormwater management upgrades, improvements located at (XXX)	Flood	Structural Projects	Town Manager	1-2 years	TDB as project is developed	HMGP, PDM, BRIC UASCE	1	High
Town of Bluefield 8: Develop and submit stormwater management upgrades, improvements located at (XXX)	Flood	Structural Projects	Town Manager	1-2 years	TDB as project is developed	HMGP, PDM, BRIC UASCE	1	High
Town of Bluefield 9: Develop and submit stormwater management upgrades, improvements located at (XXX)	Flood	Structural Projects	Town Manager	1-2 years	TDB as project is developed	HMGP, PDM, BRIC UASCE	1	High
Town of Cedar Bluff								
Town of Cedar Bluff 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	Flood	Public Education and Awareness	Town Manager	Immediate & Ongoing	Staff Time	Town Budget	1,3	High
Town of Cedar Bluff 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Manager	Immediate & Ongoing	Staff Time ($20,000)	Town Budget	1,3	High
Town of Cedar Bluff 3: Submit application to join the Community Rating System	Flood	Property Protection Structural	Town Manager, Floodplain Administrator	Immediate & Ongoing	Staff Time	Town Budget	2	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Public Education and Awareness						
Town of Cedar Bluff 4: Clinch River waterway flood prevention study to determine most effective mitigation measures	Flood	Property Protection Structural Protection	Town Manager,	1 year	$75,000	DCR FMA, BRIC	1,2	Medium
Town of Cedar Bluff 5: Study of stormwater runoff in the Old Kentucky Turnpike area to determine possible mitigation actions	Flood	Property Protection Structural Protection	Manager, Public Works	3 years	$75,000	DCR FMA, BRIC	1	High
Town of Pocahontas								
Town of Pocahontas 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	Flood	Public Education and Awareness	Town Manager	Immediate & Ongoing	Staff Time	Town Budget	1,3	High
Town of Pocahontas 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Manager	Immediate & Ongoing	Staff Time ($15,000)	Town Budget	1,3	High
Town of Pocahontas 3: Submit application to join the Community Rating System	Flood	Property Protection Structural	Town Manager, Floodplain Administrator	Immediate & Ongoing	Staff Time	Town Budget	2	Medium

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
		Public Education and Awareness						
Town of Pocahontas 4: Canal upgrade and improvement	Flood	Property Protection Structural Protection	Town Manager,	3 years	$2.3 million	HMGP, BRIC,	1	High
Town of Pocahontas 5: Stormwater management study to determine most effective means to mitigate flooding located at (XXX)	Flood	Property Protection Structural Protection	Town Manager,	1 year	$150,000	DCR FMA, BRIC, DEQ	1,2	High
Town of Pocahontas 6: Develop and submit stormwater management upgrades, improvements located at (XXX) (Road modification)	Flood	Structural Projects	Town Manager	1-2 years	$260,000	HMGP, PDM, BRIC	1	High
Town of Pocahontas 7: Mitigation of electrical lines, tree cutbacks and or burying lines as required.	Severe Winds	Property Protection Emergency Services	Town Manager	Immediate & Ongoing	TBD	HMGP	1	High
Town of Richlands								
Town of Richlands 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	Flood	Prevention, Property Protection, Structural	Town Manager	1 year	TDB as projects are developed	HMGP, PDM, FMA, BRIC	1,2	High
Town of Richlands 2: Develop all hazards public education and outreach program centered with libraries and	Flood	Public Education and Awareness	Town Manager	Immediate & Ongoing	Staff Time	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
government buildings or hazard mitigation and preparedness.								
Town of Richlands 3: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Manager	Immediate & Ongoing	Staff Time ($15,000)	Town Budget	1,3	High
Town of Richlands 4: Submit application to join the Community Rating System	Flood	Property Protection Structural Public Education and Awareness	Town Manager, Floodplain Administrator	Immediate & Ongoing	Staff Time	Town Budget	2	Medium
Town of Richlands 5: Support Public Works initiatives to improve stormwater infrastructure in the following 5 areas (XXX, XXX, XXX, XXX, XXX…provide locations).	Flood	Structural Projects	Town Manager	1 year	TDB as projects are developed	HMGP, PDM, BRIC, USACE,	1,2	High
Town of Tazwell								
Town of Tazwell 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	Flood	Prevention, Property Protection, Structural	Town Manager	1 year	TDB as projects are developed	HMGP, PDM, FMA, BRIC	1,2	High
Town of Tazwell 2:	Flood	Public Education	Town Manager	Immediate & Ongoing	Staff Time	Town Budget	1,3	High

Mitigation Action, Program, or Project	Hazards Addressed	Project Type	Lead Organization	Timeframe	Estimated Cost ($)	Possible Funding Source	Goal Addressed	Priority
Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.		and Awareness						
Town of Tazwell 3: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	All Hazards	Prevention, Property Protection, Natural Resource Protection, Structural, Emergency Services, Education & Outreach	Town Manager	Immediate & Ongoing	Staff Time ($15,000)	Town Budget	1,3	High
Town of Tazwell 4: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Flood	Structural Projects	Town Manager	1 year	TDB as projects are developed	HMGP, PDM, BRIC, USACE,	1,2	Medium
Town of Tazwell 5: Submit application to join the Community Rating System	Flood	Property Protection Structural Public Education and Awareness	Town Manager, Floodplain Administrator	Immediate & Ongoing	Staff Time	Town Budget	2	Medium

Mitigation action plans were developed for all the identified actions. Each mitigation action plan includes:

The specific mitigation action to be undertaken
Hazard(s) it is designed to mitigate,
The project category/type,
Agency/department assigned responsibility for carrying out the strategy,

Timeframe for completion
Estimated cost of the action,
Possible funding source for the mitigation action,
Goal(s) it is intended to help achieve,
Priority level for its implementation (high, medium, or low).

2018 Hazard Mitigation Actions Status

The Cumberland Plateau Region 2018 Hazard Mitigation Plan Mitigation Action items have been reviewed and determinations of their status were made following the provided guidance below:

1. Keep the mitigation action as is currently written and continue to pursue.
2. Modify the action and continue to pursue.
3. Eliminate the action from further consideration.
4. Add additional (new) mitigation actions to pursue.

The status of the previous plan's mitigation actions may be found in Appendix E.

8.5 Prioritization and Implementation of Mitigation Actions

The preceding sections identify specific actions to achieve identified goals, an appropriate responsible party for each action, and a schedule for accomplishment and suggested funding sources. These tables also indicate an initial prioritization of the actions.

8.5.1 Prioritization

The Hazard Mitigation Steering Committee and Working Group used the STAPLE/E (*Social, Technical, Administrative, Political, Legal, Economic, and Environmental*) criteria to select and prioritize the most appropriate mitigation and adaptation alternatives (Table 8-8). This methodology requires that social, technical, administrative, political, legal, economic, and environmental elements be considered when reviewing potential actions for Cumberland Plateau Region jurisdictions to undertake. This process was used to help ensure that the most equitable and feasible actions would be undertaken based on each jurisdiction's capabilities.

Table 8-8: STAPLE/E Methodology

STAPLE/ E	Considerations
S - Social	• is the proposed action socially acceptable to the community(s)? • Are there equity issues involved that would mean that one segment of a community is treated unfairly? • Will the action cause social disruption?
T - Technical	• Will the proposed action work? • Will it create more problems than it solves? • Does it solve a problem or only a symptom? • Is it the most useful action considering other community(s) goals?
A - Administrative	• Can the community(s) implement the action? • Is there someone to coordinate and lead the effort? • Is there sufficient funding, staff, and technical support available? • Are there ongoing administrative requirements that need to be met?
P - Political	• Is the action politically acceptable? • Is there public support both to implement and to maintain the project?
L - Legal	• Is the community(s) authorized to implement the proposed action? • Is there a clear legal basis or precedent for this activity? • Are there legal side effects? • Could the activity be construed as a taking? • Is the proposed action allowed by a comprehensive plan, or must a comprehensive plan be amended to allow the proposed action • Will the community(s) be liable for action or lack of action? • Will the activity be challenged?
E - Economic	• What are the costs and benefits of this action? • Do the benefits exceed the costs? • Are initial, maintenance, and administrative costs considered? • Has funding been secured for the proposed action? If not, what are the potential funding sources (public, non-profit, and private)? • How will this action affect the fiscal capability of the community(s)? • What burden will this action place on the tax base or local economy?

STAPLE/ E	Considerations
	• What are the budget and revenue effects of this activity? • Does the action contribute to other community goals, such as capital improvements or economic development?
E - Environmental	• How will the action affect the environment? • Will the action need environmental regulatory approvals? • Will it meet local and state regulatory requirements? • Are endangered or threatened species likely to be affected?

This method was used by CPPDC and jurisdictions to weigh the various criteria for each of the identified actions and objectives including the relative cost-effectiveness as part of the "Economic" criteria. The resulting priority rankings are shown in Table 8-6 and Table 8-7.

Actions were developed for each community by creating a spreadsheet that carried forward each 2018 action that the community indicated it wished to "continue." Then through electronic correspondence and interviews, each community updated their mitigation actions, as did the Cumberland Plateau Planning District Commission.

8.5.2 Implementation

The 2023 Cumberland Plateau Regional Hazard Mitigation Plan outlines many mitigations action identified as "high" priority. The decision to address which actions first presents an ongoing challenge. Each participating jurisdiction is responsible for integrating mitigation actions into various planning documents, processes, and budgets under locally administered governing policies and procedures. Each action is assigned to a responsible department or departments that will work together to implement designated actions.

Funding is a crucial component of implementing mitigation actions. While several counties in the region have been actively pursuing and implementing mitigation projects funded by FEMA/VDEM Hazard Mitigation Assistance programs, low or no-cost high-priority strategies broaden the region's mitigation and long-term resiliency approach. The Planning District Commission and participating jurisdictions will continue to pursue grant funding to implement more challenging actions. The CPPDC has been successful at obtaining funding for elevations in the region.

Applying the "rolling snowball" method is another implementation approach that can be effective in prioritizing mitigation actions. Publicizing a successful project can build momentum to implement other mitigation actions.

It is essential to the long-term implementation of the plan update that the underlying principles of the hazard mitigation plan update are incorporated into other community plans and mechanisms, such as:

- Comprehensive plans
- Development ordinances (Zoning Ordinance, Subdivision Ordinance, or Building Code)
- Resiliency planning
- Disaster recovery planning
- Economic development plans
- Natural resource protection and shoreline protection plans

- Capital Improvement Program (CIP) budgeting

Section 7 Capability assessment provides insight into the current comprehensive plans for each community. Communities should work to ensure that the appropriate information from this plan is incorporated into the next update of their comprehensive plan. Data from the hazard identification and risk assessment, mitigation goals, and strategies can be directly included as a complete plan element. Projects that require significant investments, such as at-risk property acquisition or infrastructure hardening, are candidates for inclusion in capital improvement plans. Hazard vulnerability analysis can be incorporated into local emergency operations plans, debris management, coastal protection, and disaster recovery plans. Floodplain management data and mitigation actions can leverage Community Rating System (CRS) program participation. Mitigation is most successful when it is included in the day-to-day functions and priorities of the government. A constant network effort accomplishes integration and identifies and highlights multi-objective benefits to each program, the communities, and their constituents. This effort is achieved through continuous communication, messaging, monitoring agendas, attending meetings, and sending memos

Simultaneous with these efforts, it will be necessary to constantly monitor funding opportunities that can be used to implement high-priority, high-cost mitigation actions. Funding opportunities that can be monitored include special pre- and post-disaster funds, special district budgeted funds, state or federally earmarked funds, and grant programs that can serve or support multi-objective applications.

With adoption of the 2023 plan update, the Cumberland Plateau Regional communities commit to:

- Pursuing the implementation of the high-priority, low/no-cost recommended actions.
- Keeping the concept of mitigation in the forefront of community decision-making by identifying and stressing the recommendations of the Hazard Mitigation Plan when other community goals, plans and activities are discussed and decided upon.
- Maintaining a constant monitoring of multi-objective, cost-share opportunities to assist the participating communities in implementing the recommended actions of this plan for which no current regular funding or support exists.
- Incorporate hazard risk information, and priority mitigation actions into appropriate local initiatives and programs through collaborative interaction between all related community departments and staff.
- Evaluating and assessing regional mitigation plan goal and local jurisdiction action effectiveness to reduce hazard risk exposure.

In addition, the communities of the Cumberland Plateau Region remain committed to the NFIP. They will continue to enforce floodplain regulations and undertake other actions to comply with the program, such as continued flood hazard risk evaluation, participation in Community Assessments Visits (CAVs) with the Commonwealth of Virginia NFIP staff, and education and outreach activities directed at flood-prone residents and businesses.

Section 9

Plan Monitoring and Maintenance

Contents of this Section

9.1 44 CFR Requirement for Plan Monitoring and Maintenance

Requirement §201.6(c) (4) (i): *[The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle*

Requirement §201.6(c)(4)(ii): *[The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*

Requirement §201.6(c) (4) (iii): *[The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.*

9.2 Method for Monitoring the Plan

The Cumberland Plateau Regional Hazard Mitigation Plan (the Plan) will be monitored by the Cumberland Plateau Planning District Commission (CPPDC) for several related purposes:

- Maintain and update of hazard and risk information.
- Ensure that mitigation projects and actions reflect the priorities of jurisdictions that comprise the Cumberland Plateau Region PDC.
- To ensure compliance with Federal Emergency Management Agency (FEMA) and the Commonwealth of Virginia requirements for plan maintenance and maintain the regions jurisdictions eligibility for federal disaster assistance and mitigation grants.

The Cumberland Plateau Planning District Commission Executive Director and PDC staff will continuously monitor the plan with respect to the purposes noted above, according to the schedule described in Section 9.3, and with respect to the update triggers noted in Section 9.5 below.

Specifically, monitoring activities will consist of:

- Soliciting and reviewing reports from participating jurisdictions regarding status of implementation of action items from the Plan. Status reports will indicate if projects have been:

  - Scoped and/or documented for FEMA grant applications
  - Submitted for FEMA funding programs
  - Approved (or denied approval) for FEMA funding
  - Documented for funding by other means (e.g., jurisdictional capital improvement plans)
  - Funded (or not approved for funding) by other means
  - Under construction
  - Projects completed
  - (For completed projects only) Subject to hazard conditions such that avoided losses can be documented.
- Tracking progress of sources of improved or revised data for use in subsequent Plan updates on an annual (at a minimum) basis.
- Preparing a report of the status of implementation of action items from the Plan and the availability of improved or revised data. The report will include recommendations to the Hazard Mitigation Working Group regarding the need and/or advantages of undertaking updates to all or part of the Plan prior to the five-year required update (see Section 9.4).

9.3 Schedules for Monitoring the Plan

Informal Plan monitoring activities will be ongoing through:

- Annual progress reports from each jurisdiction on Mitigation Action Plan
- An annual review by the Steering Committee
- Annual updates submitted to VDEM and FEMA Region III

Timing of annual reports may coincide with either the anniversary of the approval date or any other date chosen by the committee in consultation with VDEM.

In addition to the scheduled reports, the Cumberland Plateau Region PDC will convene meetings after damage-causing natural hazard events to review the effects of such events. Based on those effects, adjustments to the mitigation priorities identified in Section 8 may be made or additional event-specific actions identified.

9.4 Method and Schedule for Maintaining and Updating the Plan

Comprehensive evaluation of and updates to this Plan will be undertaken on a five-year cycle (at a minimum). This Plan must undergo a formal FEMA-compliant update process five years from the adoption date of the first jurisdiction to formally adopt the plan. The Working Group will be responsible for setting annual measures of success and a five-year measure of success for each strategy (Table 19-1: Cumberland Plateau Regional Hazard Mitigation Plan Update Maintenance Schedule). These indicators will be used to measure the progress and success of implementation of the mitigation plan during the 2029 update process. The Working Group will be able to use this information to determine if corrective action is needed or if the action should be continued or discontinued. In addition, the Working Group should review the composition of the committee annually and add members if needed.

In evaluating the plan, the Working Group will assess:

- The goals and objectives addressed in the current plan and any expected conditions

- The nature, magnitude, and/or types of risk present in the region and assess if those risks have changed
- The current resources that are required and appropriate for implementing the plan
- Issues with implementation, (ex. technical, political, legal, or coordinating with state and federal agencies)
- The outcome of mitigation strategies, and evaluate their success
- The agencies and partners and their level of participation as originally proposed
- The Mitigation Steering Committee will determine at the annual meeting if an update of the plan is needed. Factors to consider when determining if an update is necessary include:
    - Lessened vulnerability because of implementing recommended actions,
    - Increased vulnerability because of failed or ineffective mitigation actions, and/or,
    - Increased vulnerability because of new development (and/or annexation).
    - New state/federal laws, policies, or programs
    - Changes in resource availability

Ongoing public outreach will continue, and public participation will be encouraged through available web postings, social media and press releases to local media outlets, primarily weekly community newspapers and radio stations. As with the previous plan, the Local Emergency Planning Committee (serving as the Working Group) shall be charged with maintaining public outreach through reporting back to government officials.

Table 91: Cumberland Plateau Regional Hazard Mitigation Plan Update Maintenance Schedule

Timeframe	Activity	Leadership
2024	Jurisdictions Adoption	Local jurisdictions; Cumberland Plateau PDC submittal to FEMA
2025	Annual implementation review	WORKING GROUP
2026	Annual implementation review	WORKING GROUP
2027	Annual implementation review; seek FEMA HMA funding for 2029 plan update	WORKING GROUP
2028	Annual implementation review initiates 2029 Plan update process;	WORKING GROUP
2029	Continue 2029 Plan update process	WORKING GROUP

9.5 Circumstances that will Initiate Plan Review and Updates

A major event, such as a Presidentially declared disaster, may trigger a need to review the plan. If such an event occurs in the Cumberland Plateau Region, the Working Group will coordinate to determine how best to review and update the plan. The updating of the plan will be through written changes and submissions, as the Cumberland Plateau Regional communities and Working Group deem appropriate and necessary. Major changes to the plan will be submitted to FEMA Region III via the State (VDEM).

Public notice will be given, and public participation will be invited, at a minimum, through available web postings and press releases to the local media outlets, primarily newspapers and radio stations. In addition, an annual event will be held to publicize progress on implementing the mitigation plan. This event could be timed to coincide with the anniversary of a significant event or annual awareness event (i.e., Hurricane Preparedness Week). The circumstances or conditions under which the PDC will initiate Plan reviews and updates are listed but not limited to:

- On the recommendation of the PDC Executive Director, at any time
- At approximately the six-month anniversary of the initial Plan adoption, and every six months thereafter
- After natural hazard events that appear to significantly change the apparent risk to the region's assets, operations, and/or constituents

9.6 Other Local Planning Mechanisms

The PDC has no land use planning and zoning authority, so it has few opportunities to incorporate this Plan into other local mechanisms, such as zoning and subdivision ordinances or master plans. However, this Plan will be included, to the extent possible, in the regional jurisdiction's comprehensive planning and capital improvement programs as opportunities occur.

Participating jurisdictions in this Plan will work to incorporate the goals of this Plan into the next update of relevant plans and regulations, including comprehensive plans, zoning codes, and capital improvement plans. Table 9-2: Updates to Relevant Plans and Documents show dates of upcoming jurisdiction updates to these plans and documents. Jurisdictions are not empowered to make alterations or improvements to the state's building code or the Uniform Construction Code.

Table 9-2: Updates to Relevant Plans and Documents

Plan or Document	Next Update
Buchanan County Comprehensive Plan	Not scheduled at the time of this plan update
Buchanan County Zoning	As needed
Buchanan County Capital Improvement Plan	Yearly
Town of Grundy Comprehensive Plan	Not scheduled, next plan update anticipated in 2027.
Town of Grundy Zoning	N/A
Town of Grundy Capital Improvement Plan	Yearly
Dickenson County Comprehensive Plan	Not scheduled at the time of this plan update
Dickenson County Zoning	N/A
Dickenson County Capital Improvement Plan	Yearly
Town of Clinchco Comprehensive Plan	Not scheduled, current plan adopted in 2021
Town of Clinchco Zoning	As needed
Town of Clinchco Capital Improvement Plan	Yearly
Town of Clintwood Comprehensive Plan	Not scheduled, current plan adopted in 2020
Town of Clintwood Zoning	As needed

Plan or Document	Next Update
Town of Clintwood Capital Improvement Plan	Yearly
Town of Haysi Comprehensive Plan	Incorporated into county plan.
Town of Haysi Zoning	N/A
Town of Haysi Capital Improvement Plan	Yearly
Russell County Comprehensive Plan	Not scheduled at the time of this plan update
Russell County Zoning	N/A
Russell County Capital Improvement Plan	Yearly
Town of Cleveland Comprehensive Plan	Not scheduled, current plan adopted in 2018
Town of Cleveland Zoning	As needed
Town of Cleveland Capital Improvement Plan	Yearly
Town of Honaker Comprehensive Plan	Incorporated into county plan.
Town of Honaker Zoning	N/A
Town of Honaker Capital Improvement Plan	Yearly
Town of Lebanon Comprehensive Plan	Not scheduled at the time of this plan update
Town of Lebanon Zoning	As needed
Town of Lebanon Capital Improvement Plan	Yearly
Tazwell County Comprehensive Plan	Not scheduled, current plan adopted in 2023
Tazwell County Zoning	N/A
Tazwell County Capital Improvement Plan	Yearly
Town of Bluefield Comprehensive Plan	Not scheduled, current plan adopted in 2016
Town of Bluefield Zoning	As needed
Town of Bluefield Capital Improvement Plan	Yearly
Town of Cedar Bluff Comprehensive Plan	N/A
Town of Cedar Bluff Zoning	N/A
Town of Cedar Bluff Capital Improvement Plan	Yearly
Town of Pocahontas Comprehensive Plan	Not scheduled, current plan adopted in 2023
Town of Pocahontas Zoning	N/A
Town of Pocahontas Capital Improvement Plan	Yearly
Town Richlands Comprehensive Plan	Not scheduled, current plan adopted in 2017
Town of Richlands Zoning	N/A
Town of Richlands Capital Improvement Plan	Yearly
Town of Tazwell Comprehensive Plan	Not scheduled, current plan adopted in 2021
Town of Tazwell Zoning	N/A
Town of Tazwell Capital Improvement Plan	Yearly

9.7 Continued Public Involvement

As noted above, this Plan will be evaluated and updated periodically and when certain triggering events occur. The PDC will utilize public notices and a centralized website to include the public in the update process.

In addition, the PDC will undertake public outreach and awareness activities as outlined in the Mitigation Action Plan that will include continuing updates on the progress of implementing the Plan and future updates.

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Appendix A

Acronyms

APL: Appalachian School of Law

ASCE: American Society of Civil Engineers

ATC: Applied Technology Council

BFE: Base Flood Elevation

BRIC: Building Resilient Infrastructure and Communities

CAV: Community Assessments Visit

CFR: Code of Federal Regulation

CIP: Capital Improvement Program

CMP: Comprehensive Management Plan

COOP: Continuity of Operations Plan

COVID-19: Coronavirus Disease of 2019

CPHMWG: Cumberland Plateau Hazard Mitigation Working Group

CPPDC: Cumberland Plateau Planning District Committee

CPPDCSC: Cumberland Plateau Planning District Committee Steering Committee

CPRI: Calculated Priority Risk Index

CRS: Community Rating System

DCR: Department of Conservation and Recreation

DEQ: Department of Environmental Quality

DHCD: Department of Housing and Community Development

DMA 2000: Disaster Mitigation Act of 2000

DMTF: Drought Monitoring Task Force

DPW: Department of Public Works

EF-Scale: Enhanced Fujita Scale

EMS: Emergency Medical Services

EOP:	Emergency Operations Plan
EPA:	United States Environmental Protection Agency
FEMA:	Federal Emergency Management Agency
FHBM:	Flood Hazard Boundary Map
FIRM:	Flood Insurance Rate Map
FIS:	Flood Insurance Study
FMA:	Flood Mitigation Assistance
F-Scale:	Fujita Tornado Scale
GIS:	Geographic Information System
HAB:	Harmful Algae Bloom
HAZMAT:	Hazardous Materials
HAZUS:	Hazards US
HHPD:	High Hazard Potential Dam
HIFLD:	Homeland Infrastructure Foundation Level Data
HIRA:	Hazard Identification and Risk Assessment
HMA:	Hazard Mitigation Assistance
HMGP:	Hazard Mitigation Grant Program
HMP:	Hazard Mitigation Plan
HMSC:	Hazard Mitigation Steering Committee
HMWG:	Hazard Mitigation Working Group
LEPC:	Local Emergency Planning Committee
MMIS:	Modified Mercalli Intensity Scale
MPH:	Miles Per Hour
MRI:	Mean Recurrence Interval
NASA:	National Aeronautics and Space Administration
NCEI:	National Center for Environmental Information
NFIP:	National Flood Insurance Program
NIDIS:	National Integrated Drought Information System

58	**NOAA:**	National Oceanic Atmospheric Administration
59	**NRI:**	National Risk Index
60	**NSSL:**	National Severe Storms Laboratory
61	**NWS**:	National Weather Service
62	**OEM:**	Office of Emergency Management
63	**OGL:**	Olson Group, LTD
64	**OSMRE:**	Office of Surface Mining Reclamation and Enforcement
65	**PA:**	Public Assistance
66	**PDC:**	Planning District Commission
67	**PDM:**	Pre-Disaster Mitigation
68	**QCEW:**	Quarterly Census of Employment and Wages
69	**RLP:**	Repetitive Loss Property
70	**SFHA:**	Special Flood Hazard Area
71	**SOE:**	State of Emergency
72	**SRL:**	Severe Repetitive Loss
73	**SRLP:**	Severe Repetitive Loss Property
74	**STAPLEE:**	Social, Technical, Administrative, Political, Legal, Economic, and Environmental
75	**TMDL:**	Total Maximum Daily Load
76	**TVA:**	Tennessee Valley Authority
77	**USACE:**	United States Army Corp of Engineers
78	**USBC:**	Uniform Statewide Building Code
79	**USCA:**	United States Census of Agriculture
80	**USDA:**	United States Department of Agriculture
81	**USDM:**	United States Drought Monitor
82	**USEDA:**	United States Economic Development Administration
83	**USGS:**	United States Geologic Survey
84	**UWI:**	Urban Wildland Interface
85	**VATI:**	Virginia Telecommunication Initiative

VDEM: Virginia Department of Emergency Management

VDH: Virginia Department of Health

VDOF: Virginia Department of Forestry

VDOT: Virginia Department of Transportation

VEC: Virginia Employment Commission

Appendix B

Sources

B.1 Sources for Introduction (Section 2)

- FEMA Hazard Mitigation Grants Program Guidance: https://www.fema.gov/grants/mitigation/learn/hazard-mitigation-assistance-guidance
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93288
- United States Code of Federal Regulations – Title 44 – Emergency Management Assistance
  - 44 CFR 201.6 Local Mitigation Plan
- 2018 Cumberland Plateau Planning District Commission Hazard Mitigation Plan

B.2 Sources for Community Profile (Section 3)

- Cumberland Plateau Planning District Commission Website: http://www.cppdc.org/index.htm
- Dickenson County Profile: http://www.virginiaplaces.org/vacount/dickenco.html
- The Heart of Appalachia Website: https://heartofappalachia.com/about-us/
- Russell County Profile: https://www.russellcountyva.us/199/History
- Tazewell County Profile: https://tazewellcountyva.org/
- Town of Bluefield Website: https://www.bluefieldva.org/
- Town of Cleveland Website: https://www.clevelandva.com/about
- Town of Clinchco Website: https://clinchcova.net/history
- Town of Clintwood Website: https://townofclintwood.com/history-gov
- Town of Grundy Website: https://www.townofgrundy.com
- Town of Haysi Website: https://haysivirginia.gov/about-haysi/
- Town of Honaker Website: http://www.townofhonaker.com/history.html#
- Town of Lebanon Website: https://lebanonva.net/about-lebanon/history/
- Town of Pocahontas Website: http://pocahontasva.org
- Town of Richlands Website: https://www.town.richlands.va.us/history/history.html
- Town of Tazewell Website: https://www.townoftazewell.org/history/
- United States Census Bureau: 2020 American Community Survey & Decennial Census
- United States Census Bureau: 2022 Population Estimates
- United States Department of Agriculture: 2017 Census of Agriculture
- United States Geological Survey: https://www.usgs.gov/products/data
- University of Virginia Weldon Cooper Center, Demographics Research Group, Virginia Population Projections
- Virginia Department of Energy: Natural Gas
- Virginia Department of Wildlife Resources: Virginia Watersheds

- Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics; Community Profile
- Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW)

B.3 Sources for Adoption and Approval (Section 4)

- Code of Virginia, Article VII: Local Government of the Constitution of Virginia
- Disaster Mitigation Act of 2000 (DMA 2000)
- 1968 Virginia Area Development Act and modified by the Regional Cooperation Act, 21

B.4 Sources for Planning Process (Section 5)

- FEMA 386: Local Mitigation Planning Guide

B.5 Sources for Hazard Identification, Profiling, Ranking, and Risk Assessment (Section 6)

- Abandoned Mine Drainage: https://www.epa.gov/nps/abandoned-mine-drainage
- Abandoned Mines GIS: https://vadmme.maps.arcgis.com/home/webmap/viewer.html?webmap=d8ea5313fd0b4feea8ddd8a768c58b17
- Applied Technology Council Hazards by Location Database: https://hazards.atcouncil.org/
- Buchanan County 2023 Flood Resiliency Plan
- Code of the Commonwealth of Virginia: §15.2-2223 and §15.2-2280
- Dickenson County 2022 Flood Resiliency Plan
- EF Rating Scale - https://www.weather.gov/images/cae/EF-Ratings.jpg
- ESRI U.S. State Boundaries Database: https://hub.arcgis.com/datasets/1612d351695b467eba75fdf82c10884f_0/explore
- ESRI U.S. States Generalized Boundaries Database
- ESRI 2020 U.S. Census Tract Boundaries
- FEMA Declared Disasters Database: https://www.fema.gov/disaster/declarations
- FEMA ESRI Landscape GIS Database
- FEMA National Flood Insurance Program Data and Analytics: https://nfipservices.floodsmart.gov/reports-flood-insurance-data
- FEMA National Risk Index Community Reports
- Fire data and stat quick links: https://www.vafire.com/fire-data-and-statistics-quick-links/
- HAZUS
- NASA Climate Change: https://science.nasa.gov/climate-change/what-is-climate-change/
- National Centers for Environmental Information Community Precipitation Maps: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/statewide/time-series/44/pcp/1/7/1895-2024?base_prd=true&begbaseyear=1901&endbaseyear=2000
- National Fire Incident Reporting system: https://www.vafire.com/virginia-fire-incident-reporting-system-vfirs/

- National Interagency Fire Center, Interagency Fires Database: https://data-nifc.opendata.arcgis.com/datasets/nifc::interagencyfireperimeterhistory-all-years-view/explore?location=36.939473%2C-82.089016%2C8.56
- National Weather Service: https://www.weather.gov/
- News Leader, A history of twisters: Tornadoes in Virginia since 1950: https://data.newsleader.com/tornado-archive/virginia/
- NOAA NCEI Storm Events Database: https://www.ncdc.noaa.gov/stormevents/
- NOAA National Severe Storms Laboratory: https://www.nssl.noaa.gov/education/svrwx101/hail/
- Resilience Action Fund, US Wind Zones Map: https://www.buildingresilient.com/resources/us-wind-zones-map/
- Tazewell County 2023 Flood Resiliency Plan
- Tennessee Valley Authority Rainfall Gage Data: https://www.tva.com/environment/lake-levels/rainfall-gauge-data
- United States Drought Monitor: https://droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification.aspx
- United States Department of Agriculture Forest Service Research Data Archive
- United States Department of Agriculture Wildfire Risk to Communities Database: https://wildfirerisk.org/download/
- United States Department of the Interior, U.S. Geological Survey Earthquake Database
- United States Department of the Interior, U.S. Geological Survey Landslide Handbook: https://pubs.usgs.gov/circ/1325/
- United States Environmental Protection Agency, Climate Change Indicators: https://www.epa.gov/climate-indicators/climate-change-indicators-river-flooding#:~:text=As%20warmer%20temperatures%20cause%20more,see%20the%20Heavy%20Precipitation%20indicator
- U.S. Army Corps of Engineers, National Inventory of Dams: https://nid.sec.usace.army.mil/#/
- U.S. Army Corps of Engineers, National Structure Inventory Database: https://www.hec.usace.army.mil/confluence/nsi
- U.S. Department of Agriculture, Forest Service Research Data Archive: https://www.fs.usda.gov/rds/archive/catalog/RDS-2015-0047-4
- U.S. Geological Survey, Earthquake Magnitude, Energy Release, and Shaking Intensity: https://www.usgs.gov/programs/earthquake-hazards/earthquake-magnitude-energy-release-and-shaking-intensity
- U.S. Geological Survey Gauge @ Cleveland: https://waterdata.usgs.gov/monitoring-location/03524000/#parameterCode=00065&showMedian=false&period=P365D
- U.S. Geological Survey Gauge @ Bluestone river at Falls Mills, VA: https://waterdata.usgs.gov/monitoring-location/03177710/#parameterCode=00065&period=P365D&showMedian=false
- U.S. Geological Survey Gage@ Levisa Fork at Big Rock, VA: https://waterdata.usgs.gov/monitoring-location/03207800/#parameterCode=00065&period=P7D&showMedian=false
- U.S. Geological Survey, Earthquake Hazards Program: https://www.usgs.gov/programs/earthquake-hazards
- U.S. Geological Survey, Karst and Potential Karst Areas Database
- U.S. Geological Survey, Landslide Regions vis HI-FLD

- U.S. Geological Survey, The Modified Mercalli Intensity Scale: https://www.usgs.gov/programs/earthquake-hazards/modified-mercalli-intensity-scale
- U.S. Geological Survey, National Landslide Inventory Data:https://www.usgs.gov/tools/us-landslide-inventory-and-susceptibility-map
- U.S. Geological Survey, Surface Water for USA: Peak Steamflow: https://nwis.waterdata.usgs.gov/usa/nwis/peak
- U.S. Geological Survey, Waterwatch Streamflow Map: https://waterwatch.usgs.gov/new/index.php?mt=mv01d&st=clinch+river&usst=&ushuc=&id=wwlmap_viewer
- Virginia Department of Conservation and Recreation, Dam Break Inundation Zones: https://dsfpm-vdcr.hub.arcgis.com/content/28c387561d124611a7473efceefdcd8e/about
- Virginia Department of Conservation and Recreation, Dam Points and Attributes: https://dsfpm-vdcr.hub.arcgis.com/datasets/vdcr::dam-points-attributes-2023q2/about
- Virginia Department of Conservation and Recreation, Flood Hazard Areas
- Virginia Department of Emergency Management, Virginia Administrative Boundaries Database: https://vgin.vdem.virginia.gov/datasets/777890ecdb634d18a02eec604db522c6/about
- Virginia Department of Energy Abandoned Mine Land Database: https://energy.virginia.gov/webmaps/abandonedmineland/
- Virginia Department of Energy Earthquake Hazard Mapping Database: https://energy.virginia.gov/geology/EQHazardMapping.shtml
- Virginia Department of Environmental Quality, Virginia Major River Basins/ HUC 8 Watersheds: https://geohub-vadeq.hub.arcgis.com/datasets/34f20cee4a2447fea570225f947fd8e4_195/explore?location=37.835134%2C-81.270458%2C8.50
- Virginia Department of Fire Programs Fire Incident Database
- Virginia Department of Forestry: https://dof.virginia.gov/wildland-prescribed-fire/wildfire-suppression/
- Virginia Department of Health Frequently Asked Questions, John W. Flannagan Reservoir Algae Bloom Investigation: https://www.vdh.virginia.gov/environmental-epidemiology/frequently-asked-questions-faq-john-w-flannagan-reservoir-algae-bloom-investigation/
- Virginia Department of Mines, Minerals, and Energy, Division of Mines, *Accident Investigation Report Underground Coal Mine: Geologic Bump/Methane Ignition/Fire July 9, 2007 to February 12, 2008*: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://energy.virginia.gov/coal/coal-mine-safety/documents/AccidentsandFatalities/070907Accident.pdf
- Virginia Department of Mines, Minerals, and Energy, Division of Mines, *Accident Investigation Report Underground Coal Mine: Methane Ignition/Mine Fire Accident February 14, 2005*: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://energy.virginia.gov/coal/coal-mine-safety/documents/AccidentsandFatalities/021405Accident.pdf
- Virginia Department of Transportation: https://dashboard.virginiadot.org/
- Virginia 1996 Uniform Statewide Building Code (USBC)
- WJHL - $10M awarded to Southwest Virginia abandoned mine land projects: https://www.wjhl.com/news/local/10m-awarded-to-southwest-virginia-abandoned-mine-land-projects/

B.6 Sources for Capability Assessment (Section 7)

- 44 CFR §201.4 of the Disaster Mitigation Act of 2000 (DMA2K; Public Law 106-390, signed into law October 10, 2000
- Code of Federal Regulations, Stafford Act Title 44, Chapter 1, Part 201 (44 CFR Part 201)
- FEMA Local Mitigation Planning Policy Guide FP 206-21-0002, April 19, 2023
- The Code of Virginia Chapter 3.2 – Commonwealth of Virginia Department of Emergency Management establishment
- Jurisdiction Comprehensive Plans
  - Buchanan County
  - Town of Grundy
  - Town of Clintwood
  - Russell County
  - Town of Bluefield
- Virginia Uniform Statewide Building Code (VUSBC)

B.7 Sources for Mitigation Action Plan (Section 8)

- Code of the Commonwealth of Virginia: §15.2-2223 and §15.2-2280
- FEMA Building Resilient Infrastructure & Communities Program
- FEMA Community Rating System Program
- FEMA Flood Mitigation Assistance Grant Program
- FEMA Local Mitigation Planning Guidebook
- FEMA Local Multi-Hazard Mitigation Planning Guidebook
- FEMA National Flood Insurance Program Data and Analytics: https://nfipservices.floodsmart.gov/reports-flood-insurance-data
- National Flood Insurance Program
- 2018 Cumberland Plateau Planning District Commission Hazard Mitigation Plan
-

B.8 Sources for Plan Monitoring and Maintenance (Section 9)

- 44 CFR Requirement for Plan Monitoring and Maintenance: Requirement §201.6(c)(4)

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Appendix D

Capabilities

D.1 Capabilities Assessments

Cumberland Plateau Planning District Commission
Buchanan County
Town of Grundy
Dickenson County
Town of Clinchco
Town of Clintwood
Town of Haysi
Russell County
Town of Cleveland
Town of Honaker
Town of Lebanon
Tazwell County
Town of Bluefield
Town of Cedar Bluff
Town of Pocahontas
Town of Richlands
Town of Tazwell

D.2 Grant Program Management

Cumberland Plateau Planning District Commission
Buchanan County
Town of Grundy
Dickenson County
Town of Clinchco
Town of Clintwood
Town of Haysi
Russell County
Town of Cleveland
Town of Honaker
Town of Lebanon
Tazwell County
Town of Bluefield
Town of Cedar Bluff
Town of Pocahontas
Town of Richlands
Town of Tazwell

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D.1 Capabilities Assessments

Programs and Capabilities	CPPDC
Comprehensive Plan	Yes
With Hazard Mitigation Element	
Adoption Date	2024
Capital Improvement Plan	
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	Yes
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	No
Building Code (or ordinance) addresses flood	No
Designated Building Official	No
Regular Inspection Protocols	No
Civil Engineer Staff	No
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	Yes
Resident and Community Outreach Inc. Ready.gov	Yes
Exclude critical infrastructure from SFHA	Yes
Elevate Residences or Property Protection through HMA grants	Yes
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	No
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	No
Year Joined NFIP	No
Effective FIRM Date	No
Additional Freeboard Requirements (inches)	No
Participates in CRS	No

Programs and Capabilities	CPPDC
Emergency Operations Management	
Emergency Operations Plan	No
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	No
Shelter and Family Re-Unification Plan	No
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	No
Community Planner	No
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Buchanan County
Comprehensive Plan	Yes
With Hazard Mitigation Element	--
Adoption Date	2017
Capital Improvement Plan	
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	Yes
Subdivision Regulations	Yes
Zoning Ordinance	No
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes (on call)
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	Yes
Resident and Community Outreach Inc. Ready.gov	Yes
Exclude critical infrastructure from SFHA	Yes
Elevate Residences or Property Protection through HMA grants	Yes
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	Yes
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	Yes
Total Daily Maximum Load (TMDL) Stream Segments**	Yes
Watershed Improvement Plans***	Yes
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1991
Effective FIRM Date	1997
Additional Freeboard Requirements (inches)	18’
Participates in CRS	No
Emergency Operations Management	Yes
Emergency Operations Plan	Yes

Programs and Capabilities	Buchanan County
Local Government EOPs	Yes
Continuity of Operations Plan	Yes
Warning Sirens or warning alert systems	Yes
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	Yes
Dedicated Emergency Management Website	No
Education Programs	Yes
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	No
Community Planner	Yes
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Grundy
Comprehensive Plan	Yes
With Hazard Mitigation Element	Yes
Adoption Date	December 2017
With Coastal Protection Element	No
Capital Improvement Plan	No
Economic Development Plan	No
Downtown Development/Re-Development Authority Plans	Yes
Enterprise Zones	No
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	Yes
Resident and Community Outreach Inc. Ready.gov	Yes
Exclude critical infrastructure from SFHA	Yes
Elevate Residences or Property Protection through HMA grants	Yes
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	Yes
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	Yes
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1974
Effective FIRM Date	
Additional Freeboard Requirements (inches)	No
Participates in CRS	No

Programs and Capabilities	Town of Grundy
Emergency Operations Management	Yes
Emergency Operations Plan	Yes
Local Government EOPs	Yes
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Unknown
Companion Animal Sheltering and Re-Unification Plan	Unknown
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	Unknown
Community Planner	Unknown
Additional Capabilities	Unknown

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	Y	Y	N	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Dickenson County
Comprehensive Plan	No
With Hazard Mitigation Element	--
Adoption Date	--
Capital Improvement Plan	Yes
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	Yes
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	Yes
Resident and Community Outreach Inc. Ready.gov	Yes
Exclude critical infrastructure from SFHA	--
Elevate Residences or Property Protection through HMA grants	Yes
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	Yes
Open Space	Yes
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	Yes
Total Daily Maximum Load (TMDL) Stream Segments**	--
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1978
Effective FIRM Date	2010
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	
Emergency Operations Plan	Yes

Programs and Capabilities	Dickenson County
Local Government EOPs	Yes
Continuity of Operations Plan	Yes
Warning Sirens or warning alert systems	Yes
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	Yes
Dedicated Emergency Management Website	Yes
Education Programs	Yes
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	--
Community Planner	Yes
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	N	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Clinchco
Comprehensive Plan	Yes (UVA Master Plan)
With Hazard Mitigation Element	Unknown
Adoption Date	9/30/21
Capital Improvement Plan	no
Economic Development Plan	--
Downtown Development/Re-Development Authority Plans	Yes (UVA Master Plan)
Enterprise Zones	No
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	No
Building Code (or ordinance) addresses flood	County Based
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	Yes
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	No
Year Joined NFIP	N/A
Effective FIRM Date	09/2010
Additional Freeboard Requirements (inches)	

Programs and Capabilities	Town of Clinchco
Participates in CRS	N/A
Emergency Operations Management	
Emergency Operations Plan	County
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	No
Shelter and Family Re-Unification Plan	No
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	No (No School)
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	N/A
College/University Emergency Notification, Evacuation and Emergency Planning	
Tourism	Yes
Community Planner	
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Clintwood
Comprehensive Plan	Yes
With Hazard Mitigation Element	Yes
Adoption Date	April 14, 2020
With Coastal Protection Element	
Capital Improvement Plan	No
Economic Development Plan	No
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	
Transportation Planning	Yes
Subdivision Regulations	Yes
Zoning Ordinance	Yes
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	No
Regular Inspection Protocols	Yes
Civil Engineer Staff	No
GIS Coordinator	
Mitigation Projects	
Private Residential Elevations (self-financed)	Yes
Resident and Community Outreach Inc. Ready.gov	Yes
Exclude critical infrastructure from SFHA	Yes
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	No
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	No
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	No
Year Joined NFIP	
Effective FIRM Date	
Additional Freeboard Requirements (inches)	
Participates in CRS	

Programs and Capabilities	Town of Clintwood
Emergency Operations Management	Yes
Emergency Operations Plan	Yes
Local Government EOPs	Yes
Continuity of Operations Plan	COUNTY OEM
Warning Sirens or warning alert systems	Yes
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	County
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	
College/University Emergency Notification, Evacuation and Emergency Planning	
Tourism	
Community Planner	
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

Programs and Capabilities	Town of Haysi
Comprehensive Plan	Yes
With Hazard Mitigation Element	No
Adoption Date	--
Capital Improvement Plan	Yes
Economic Development Plan	--
Downtown Development/Re-Development Authority Plans	--
Enterprise Zones	--
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	No
Regular Inspection Protocols	No
Civil Engineer Staff	No
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	
Resident and Community Outreach Inc. Ready.gov	
Exclude critical infrastructure from SFHA	
Elevate Residences or Property Protection through HMA grants	
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	Yes
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	--
Watershed Improvement Plans***	Yes
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1974
Effective FIRM Date	--
Additional Freeboard Requirements (inches)	12”
Participates in CRS	No
Emergency Operations Management	
Emergency Operations Plan	Yes
Local Government EOPs	No

Programs and Capabilities	Town of Haysi
Continuity of Operations Plan	Yes
Warning Sirens or warning alert systems	No
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	No
Community Planner	Yes
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	N	N	N	N	Y	N	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Russell County
Comprehensive Plan	Yes
With Hazard Mitigation Element	--
Adoption Date	--
Capital Improvement Plan	
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	Yes
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	Yes
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	Yes
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	Yes
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1977
Effective FIRM Date	1988
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	
Emergency Operations Plan	Yes

Programs and Capabilities	Russell County
Local Government EOPs	--
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	Yes
Evacuation Plans	No
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	Yes
Dedicated Emergency Management Website	Yes
Education Programs	Yes
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	Yes
College/University Emergency Notification, Evacuation and Emergency Planning	Yes
Tourism	Yes
Community Planner	No
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	N	N	N	N	Y	N	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Cleveland
Comprehensive Plan	Yes
With Hazard Mitigation Element	No
Adoption Date	09/2018
With Coastal Protection Element	No
Capital Improvement Plan	Yes
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	Yes
Subdivision Regulations	No
Zoning Ordinance	Yes
Site Plan Review Procedures	No
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes – 1
Regular Inspection Protocols	No
Civil Engineer Staff	Yes
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	No
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	Yes
Total Daily Maximum Load (TMDL) Stream Segments**	Yes
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	Unknown
Year Joined NFIP	yes
Effective FIRM Date	7/1/1970
Additional Freeboard Requirements (inches)	No
Participates in CRS	Yes

Programs and Capabilities	Town of Cleveland
Emergency Operations Management	Yes
Emergency Operations Plan	Yes
Local Government EOPs	Yes
Continuity of Operations Plan	Yes
Warning Sirens or warning alert systems	No
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	Yes
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	--
College/University Emergency Notification, Evacuation and Emergency Planning	--
Tourism	Yes
Community Planner	No
Additional Capabilities	No

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	N	Y	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

Programs and Capabilities	Town of Honaker
Comprehensive Plan	No
With Hazard Mitigation Element	No
Adoption Date	
With Coastal Protection Element	No
Capital Improvement Plan	No
Economic Development Plan	No
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	No
Building Code (or ordinance) addresses flood	No
Designated Building Official	No
Regular Inspection Protocols	No
Civil Engineer Staff	No
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	No
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	No
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	No
Year Joined NFIP	
Effective FIRM Date	
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	No

Programs and Capabilities	Town of Honaker
Emergency Operations Plan	No
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	No
Shelter and Family Re-Unification Plan	No
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	
College/University Emergency Notification, Evacuation and Emergency Planning	
Tourism	No
Community Planner	No
Additional Capabilities	No

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	N	Y	N	N	N	N	N	N	N	Y	N	N		N	N	N	Y

HMP – Hazard Mitigation Plan
DRP – Disaster Recovery Plan
CLUP – Comprehensive Land Use Plan
FMP – Floodplain Management Plan / Flood Mitigation Plan
SMP – Stormwater Management Plan
EOP – Emergency Operations Plan
COOP – Continuity of Operations Plan
REP – Radiological Emergency Plan
SARA – SARA Title III Emergency Response Plan
TRANS – Transportation Plan
CIP – Capital Improvements Plan (that regulates infrastructure in hazard areas)
REG-PL – Regional Planning
HPP – Historic Preservation Plan
ZO – Zoning Ordinance
SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Lebanon
Comprehensive Plan	Yes
With Hazard Mitigation Element	--
Adoption Date	2007
Capital Improvement Plan	Yes
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	Yes
Enterprise Zones	No
Transportation Planning	Yes
Subdivision Regulations	Yes
Zoning Ordinance	Yes
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	Yes
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	Yes
Total Daily Maximum Load (TMDL) Stream Segments**	Yes
Watershed Improvement Plans***	Yes
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1974
Effective FIRM Date	2010
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	

Programs and Capabilities	Town of Lebanon
Emergency Operations Plan	Yes
Local Government EOPs	--
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	Yes
Evacuation Plans	No
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	Yes
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	--
College/University Emergency Notification, Evacuation and Emergency Planning	--
Tourism	--
Community Planner	Yes
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	Y	Y	N	Y

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FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
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BC – Building Codes

290

Programs and Capabilities	Tazewell County
Comprehensive Plan	Yes
With Hazard Mitigation Element	--
Adoption Date	2023
Capital Improvement Plan	
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	Yes
Transportation Planning	Yes
Subdivision Regulations	Yes
Zoning Ordinance	No
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes
Regular Inspection Protocols	Yes
Civil Engineer Staff	Yes
GIS Coordinator	Yes
Mitigation Projects	Yes
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	Yes
Exclude critical infrastructure from SFHA	--
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	Yes
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	Yes
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	Yes
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1978
Effective FIRM Date	2001
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	Yes
Emergency Operations Plan	Yes

Programs and Capabilities	Tazewell County
Local Government EOPs	Yes
Continuity of Operations Plan	Yes
Warning Sirens or warning alert systems	Yes
Evacuation Plans	Yes
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	Yes
Companion Animal Sheltering and Re-Unification Plan	Yes
Dedicated Emergency Management Website	Yes
Education Programs	Yes
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	Yes
College/University Emergency Notification, Evacuation and Emergency Planning	Yes
Tourism	Yes
Community Planner	No
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	N	Y	N	Y	Y	N	N	Y	Y	Y	Y	N	N	Y	Y	N	Y

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FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

312

Programs and Capabilities	Town of Bluefield
Comprehensive Plan	Yes
With Hazard Mitigation Element	Yes
Adoption Date	2016
Capital Improvement Plan	No
Economic Development Plan	Yes
Downtown Development/Re-Development Authority Plans	Yes
Enterprise Zones	Yes
Transportation Planning	No
Subdivision Regulations	Yes
Zoning Ordinance	Yes
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes – 1
Regular Inspection Protocols	Yes – 1
Civil Engineer Staff	No
GIS Coordinator	Yes
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	No
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	Yes
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	Yes
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	1978
Effective FIRM Date	--
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	No

Programs and Capabilities	Town of Bluefield
Emergency Operations Plan	No
Local Government EOPs	Yes
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	Yes
Evacuation Plans	No
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	Yes
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	No
Community Planner	No
Additional Capabilities	No

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	Y	Y	N	Y	N	N	N	N	Y	N	N	Y	Y	N	Y	N	Y

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FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

334

Programs and Capabilities	Town of Cedar Bluff
Comprehensive Plan	No
With Hazard Mitigation Element	No
Adoption Date	No
Capital Improvement Plan	No
Economic Development Plan	No
Downtown Development/Re-Development Authority Plans	No
Enterprise Zones	No
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	No
Site Plan Review Procedures	No
Building Code (or ordinance) addresses flood	No
Designated Building Official	Yes (County)
Regular Inspection Protocols	No
Civil Engineer Staff	Yes
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	No
Year Joined NFIP	05/10/74
Effective FIRM Date	02/18/11
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	No

Programs and Capabilities	Town of Cedar Bluff
Emergency Operations Plan	No
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	No
Shelter and Family Re-Unification Plan	No
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	No
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	No
College Campus Plans	No
College/University Emergency Notification, Evacuation and Emergency Planning	No
Tourism	No
Community Planner	Yes
Additional Capabilities	No

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N	Y	N	Y

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REG-PL – Regional Planning
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SO – Subdivision Ordinance
FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Pocahontas
Comprehensive Plan	Tazewell County's Comprehensive Plan
With Hazard Mitigation Element	Yes County Plan
Adoption Date	2023
Capital Improvement Plan	
Economic Development Plan	No
Downtown Development/Re-Development Authority Plans	
Enterprise Zones	Yes Virginia Enterprise Zone
Transportation Planning	No
Subdivision Regulations	No
Zoning Ordinance	Yes
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	State Code
Designated Building Official	No – 0
Regular Inspection Protocols	No – 0
Civil Engineer Staff	No
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	No
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	No
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	Yes
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	Yes
Year Joined NFIP	09/14/83
Effective FIRM Date	02/18/11
Additional Freeboard Requirements (inches)	No

Programs and Capabilities	Town of Pocahontas
Participates in CRS	No
Emergency Operations Management	No
Emergency Operations Plan	Operate under County EOP
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	--
Shelter and Family Re-Unification Plan	--
Special Needs Population Emergency Planning	--
Companion Animal Sheltering and Re-Unification Plan	--
Dedicated Emergency Management Website	--
Education Programs	--
School Facility Emergency Operations Plans	--
School Emergency Notification, Evacuation and Emergency Planning	--
College Campus Plans	--
College/University Emergency Notification, Evacuation and Emergency Planning	--
Tourism	Yes
Community Planner	
Additional Capabilities	Mine Management Museum

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	N	N	Y	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y

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REG-PL – Regional Planning
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FDPO – Flood Damage Prevention Ordinance
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CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Richlands
Comprehensive Plan	Yes
With Hazard Mitigation Element	No
Adoption Date	March 14, 2017
Capital Improvement Plan	Yes
Economic Development Plan	No
Downtown Development/Re-Development Authority Plans	Yes
Enterprise Zones	No
Transportation Planning	No
Subdivision Regulations	Yes
Zoning Ordinance	Yes
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes
Regular Inspection Protocols	No
Civil Engineer Staff	No
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	Yes
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	No
Participates in NFIP	Yes
Year Joined NFIP	Unknown
Effective FIRM Date	
Additional Freeboard Requirements (inches)	
Participates in CRS	No
Emergency Operations Management	No

Programs and Capabilities	Town of Richlands
Emergency Operations Plan	Yes
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	No
Evacuation Plans	No
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	Yes
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	
College/University Emergency Notification, Evacuation and Emergency Planning	Yes
Tourism	No
Community Planner	Yes
Additional Capabilities	No

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	Y	Y	N	N	Y	N	N	N	N	Y	Y	Y	Y	N	N	Y	N	Y

HMP – Hazard Mitigation Plan
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REG-PL – Regional Planning
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FDPO – Flood Damage Prevention Ordinance
NFIP – National Flood Insurance Program
CRS – Community Rating System
BC – Building Codes

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Programs and Capabilities	Town of Tazewell
Comprehensive Plan	Yes
With Hazard Mitigation Element	
Adoption Date	9/30/2021
Capital Improvement Plan	Yes
Economic Development Plan	
Downtown Development/Re-Development Authority Plans	Yes - 2016
Enterprise Zones	Yes – 8/9/2016
Transportation Planning	Yes
Subdivision Regulations	Yes
Zoning Ordinance	Yes
Site Plan Review Procedures	Yes
Building Code (or ordinance) addresses flood	Yes
Designated Building Official	Yes – 1
Regular Inspection Protocols	Yes – 1
Civil Engineer Staff	No
GIS Coordinator	No
Mitigation Projects	
Private Residential Elevations (self-financed)	No
Resident and Community Outreach Inc. Ready.gov	No
Exclude critical infrastructure from SFHA	No
Elevate Residences or Property Protection through HMA grants	No
Grant Officials	No
Natural Systems Protection	
Natural or Cultural Resources Inventory	No
Open Space	No
Parks and Recreation	Yes
Stormwater Management and Water Quality Programs	
Stormwater Management Plan	No
Total Daily Maximum Load (TMDL) Stream Segments**	No
Watershed Improvement Plans***	No
Erosion or Sediment Control Program	
Erosion and Sediment Control Ordinances	No
Floodplain Management	
Floodplain Administrator	Yes
Participates in NFIP	Yes
Year Joined NFIP	5/16/1989
Effective FIRM Date	2/18/2011
Additional Freeboard Requirements (inches)	No
Participates in CRS	No
Emergency Operations Management	No

Programs and Capabilities	Town of Tazewell
Emergency Operations Plan	Yes
Local Government EOPs	No
Continuity of Operations Plan	No
Warning Sirens or warning alert systems	Yes
Evacuation Plans	No
Shelter and Family Re-Unification Plan	Yes
Special Needs Population Emergency Planning	No
Companion Animal Sheltering and Re-Unification Plan	No
Dedicated Emergency Management Website	No
Education Programs	Yes
School Facility Emergency Operations Plans	No
School Emergency Notification, Evacuation and Emergency Planning	Yes
College Campus Plans	--
College/University Emergency Notification, Evacuation and Emergency Planning	--
Tourism	--
Community Planner	Yes
Additional Capabilities	

HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	CRS	BC
Y	N	Y	Y	N	Y	N	N	N	N	Y	Y	Y	Y	Y	N	Y	N	Y

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D.2 Grant Program Management

Grants Managed 2018 -2023

Grants Managed	Dollars Managed
Cumberland Plateau PDC	
Cumberland Plateau Regional Waste Management Authority Study (ARC, CPRWMA)	$50,000
Cumberland Plateau Regional Waste Management Authority (ARC)	$500,000
Cumberland Plateau Regional Waste Management Authority Regional Recycling and Litter Awareness Project (ARC)	$55,000
Coalfield Regional Water Study (DHCD)	$106,000
Cumberland Plateau Water & Sewer TA Program (RD)	$120,000
Coalfield Regional Sewer Study (RD, Tobacco Commission)	$200,000
Coalfield Regional Water Project Planning Funds (State)	$1,998,306
Virginia Coalfield Coalition (State)	$1,277,777
Infrastructure Development for the 21st Century (ARC)	$500,000
Forest Products – Appalachian's New Future (ARC)	$45,935
Sustainable Forest Products Study (EDA)	$25,000
2023 Regional Hazard Mitigation Plan & Update (FEMA, VDEM)	$150,000
Forest Products Marketing Project (ARC, RD, Tobacco Commission, Private)	$119,200
Cumberland Plateau Revolving Loan Fund (EDA, RD)	$1,200,000
Value-Added Wood Products (ARC)	$37,000
Appalachian Authors Guild (Tobacco Commission)	$25,000
Regional Broadband Infrastructure (EDA, Tobacco Commission, NTIA, VCEDA)	$34,427,648
Regional Rural Transportation Planning (VDOT)	$840,000
Cumberland Plateau Regional Water Supply Plan (DEQ)	$40,000
State Assign-A-Highway (VDOT, DEQ)	$40,000
Regional Wireless Initiative (Tobacco Commission, VCEDA)	$14,000,000
SWVA Regional Telecommunication Planning Grant (ARC POWER, CDBG)	$101,603
Regional Economic Recovery Coordinator (EDA CARES Act)	$400,000
CARES ACT RLF (EDA)	$770,000
Cumberland Plateau Regional Broadband Expansion Project (VATI, Point Broadband, CAF2, CPC, RDOF)	$45,491,831
Cumberland Plateau Regional Broadband Universal Coverage Project (VATI, Point-Broadband, CPC)	$44,676,525
Cumberland Plateau Regional Housing (VA Housing)	$2,000,000
VA Housing PDC 2 Housing Study	$80,000
Rt. 460 Cell Coverage Project (AMLER, ARC POWER, VCC, VCEDA, Thompson Foundation)	$2,890,245
Total	**$152,167,070**

Grants Managed	Dollars Managed
Buchanan County	
Coon Branch Waterline Extension (Hurley 7) (CDBG, SWVW/WW, CDWF)	$1,192,798
Swan Fork Waterline Ext. Project (Hurley 8)(CDBG, SWVW/WW, CWDF, ARC)	$1,323,010
Paw Paw Water Project (Hurley 9) (CBDG, ARC, SWVW/WW, CWDF, Thompson)	$1,676,576
Buchanan County Elk Viewing Project (AML Pilot)	$2,254,750
Hunt's Fork Water Project (CDBG, ARC, CWDF, VAE)	$3,399,342
Breeden Branch/G.P. Hollow/Booster Pumps Water (SWVWW/WW)	$156,750
Buchanan County Tank Rehab Project (VDH)	$1,651,700
Council to Davenport Broadband (VATI)	$226,560
VEC Call Center Improvements (CProp)	$200,000
BC TTHM Project (VDH, Coalfield Water Development Fund)	$1,651,700
Remaining Phases of Hurley (DOE, CDBG, ARC, CWDF, Thompson Foundation, SWVW/WW, Local)	$6,134,637
BC Sewer Rehab & Replacement (Flood) (FEMA, SWVW/WW, DEQ)	$1,961,380
Leemaster (Dry Fork + Pump Stations) Water Project (VDH, ARPA)	$3,500,000
Grundy Airport - PER (SWVW/WW)	$35,000
Kentucky Road/Elk Creek Water Line Extension - PER (SWVW/WW)	$35,800
Oakwood Sewer Line Extension Study (SWV/WW)	$35,000
Project Planet (Cprop)	$100,000
Total	**$25,535,003**
Town of Grundy	
Grundy Downtown Redevelopment Site Infrastructure (CDBG, Corps, VCEDA)	$1,403,700
Grundy Wireless Communications Project (RD)	$198,000
Richardson Building Renovation (CProp)	$200,000
Breaks Regional Airport Utilities Extension Planning Grant (EDA)	$120,000
Total	**$1,801,700**
Dickenson County	
Russell Fork River TMDL Project (DEQ)	$84,500
Cranesnest Trail & Portal Closure (DMME/AML Pilot)	$711,100
Backbone Ridge/Burrhead Barton Waterline Replacement (SWVW/WW, RD)	$244,950
Splashdam Campground Waterline Extension Project (AML Pilot)	$356,500
Red Onion Industrial Park (AML-Pilot, ARC, VCEDA)	$2,987,056
Thunder River Campground Development (CProp)	$200,000
Baker St. Sewer Repair (SWVWW/WW)	$100,000
Backbone Ridge/Edwards Ridge Replacement Project (ARC, VDH-WIIN, CWDF)	$1,016,500
Backbone Ridge/Low Gap Water Project (CWDF, SWVW/WW)	$266,665
Backbone Ridge Low Gap II (ARC, SWVW/WW, CWDF)	$679,600
Brushy Ridge, Nealy Ridge & Aily Road Pump Station Project (VDH, ARPA)	$2,000,000

Grants Managed	Dollars Managed
Low Gap Phase II WLRP (ARC, SW/WW, CWDF)	$676,600
Sandy Ridge Waterline Extension Study (SWVW/WW)	$30,000
Total	**$9,353,471**
Town of Clinchco	
Tiny Business Village Feasibility Study (CProp)	$25,000
Total	**$25,000**
Town of Clintwood	
Mullins Ridge #2 Pump Station (CWDF)	$85,000
Clintwood Water System Study (SWVW/WW)	$25,000
Clintwood H.S. Campground (CProp)	$50,000
Baker Ridge Water Booster Pump Station (SWVW/WW)	$56,000
Lyle Ridge Waterline Replacement (SWVW/WW)	$150,000
Total	**$366,000**
Town of Haysi	
Haysi DT Revitalization Project (CDBG)	$1,000,000
Haysi Downtown Riverfront/Breaks Trail/Artisan Center Development Plan (ARC)	$75,000
Haysi Trail Center Development (ARC, Tobacco Comm., VCEDA)	$1,588,722
Haysi Riverfront Trail and Motorized Trailhead Amenities (ARC, DCR, POWER, Tobacco Comm., CProp, CFCF)	$1,202,480
Haysi Kiwanis Campground Sewer (SWVWW/WW)	$65,000
Haysi Kiwanis Campground Sewer line Extension (SWVWW/WW)	$100,000
Total	**$4,031,202**
Russell County	
Dante Depot Project (VDOT)	$148,325
Belfast Waterline Extension Project, Phase 2 (CDBG/VWDF)	$864,806
Fincastle Estates Waterline Extension (SWVWW/WW)	$40,000
Eagles Nest Water Tank (SWVWW/WW)	$13,700
Creekside/Eagles Nest/Booty Waterline Extension (SWVWW/WW, CWDF)	$140,000
Dante Community Development (AML Pilot)	$269,000
Project Greenhouse (AML Pilot)	$200,000
Cleveland to Carbo Broadband Expansion Project (Tobacco Commission)	$544,137
Cleveland Area Regional Sewer Study	$60,000
Belfast Waterline Extension Project, Phase 3 (SW W/WW, CWDF, CDBG)	$799,950
Dante Campground Water and Sewer Project (SWVW/WW)	$55,000
Clinch River Hemp Project (CProp)	$500,000
Chiggersville/Elam Rd Waterline Replacement	$45,200
Cleveland Broadband Expansion (Tobacco Comm)	$544,137
Three Rivers Destination Center (CProp)	$100,000

Grants Managed	Dollars Managed
Nash's Ford/Clinch Mtn Waterline Extension (CWDF)	$50,000
Dante Regional Sewer Line Project (SWVW/WW, CDBG, Local)	$3,799,750
Dante Downtown Comprehensive Planning Grant (CDBG)	$60,000
Town of Lebanon Storm Water System Study (SWVW/WW)	$9,000
Tiller Trailer Park Water Line Extension (CDBG)	$564,500
Total	**$8,807,505**
Town of Cleveland	
Cleveland DT Revitalization Planning Grant (CDBG)	$35,000
Cleveland DT Revitalization Project (CDBG, VDEM, ARC)	$1,617,079
Cleveland Park Canoe Access (DGIF)	$10,000
Cleveland Barrens Trail/Overlooks (DCR)	$62,400
Water & Sewer Utilities Equipment (SWVW/WW)	$17,000
Cleveland Water/Sewer line Extension (SWVW/WW)	$205,120
Cleveland Wastewater Improvement Project (SWVW/WW)	$75,000
Water Facility Project	$50,000
Clinch Riverbend Campground Improvements (CProp)	$50,000
Total	**$2,121,599**
Town of Honaker	
Honaker Downtown Business & Upper Story Housing Survey (DHCD)	$35,000
Honaker DT Upper Story Housing Assessment & Slate Building PAR (VHDA)	$20,000
Honaker Brownfields Assessment-Slate Building (EPA/VT)	$27,000
Honaker VEDP Brownfields Grant	$50,000
Honaker DT Revitalization 2.0 Planning Grant (CDBG)	$40,000
Honaker DT Lighting Project (DHCD)	$7,000
Honaker Welcome Center & Tourism Facilitation (CProp)	$150,000
Honaker Playground Slide (Hometowns of the Clinch-Flow Grant)	$1,000
Downtown Master Plan Addendum/Lockhart House Study (CProp)	$50,000
Total	**$380,000**
Town of Lebanon	
Lebanon Downtown Revitalization Planning Grant (CDBG)	$35,000
Lebanon Downtown Revitalization Grant (CDBG)	$1,000,000
Lebanon Gateway Project (VDOT)	$68,500
Russell Theater Renovation (Tobacco Comm., CProp, ARC, VCEDA, CDBG)	$1,365,947
Wastewater Treatment SCADA Improvements	$45,000
Russell Theater Business Plan (ARC)	$35,000
Stoots Road Sewer line Replacement	$154,523
Total	**$2,703,970**
Tazewell County	

Grants Managed	Dollars Managed
Greater Tazewell to Pocahontas Water Supply Project - Phase IV (VDH, SWVW/WW, CWDF, CDBG, Thompson Foundation)	$3,526,335
Falls Mills Adult Daycare (CDBG, TCIDA, ARC, AASC, VTC, USDA-RD, Thompson Foundation, Shott Foundation)	$1,596,740
Fort Witten Water Pump Station (SWVW/WW, CWDF)	$130,000
Baptist Valley West Sewer PER (SWVWW/WW)	$35,000
Tazewell Co. PSA WW Treatment Plant Upgrade (SWVWW/WW)	$91,011
Tazewell County Business Recruitment and Attraction Strategy (CProp)	$186,456
Tazewell Co. Capital Improvement Plan Phase I (VDH)	$3,578,820
Tazewell Co. Capital Improvement Plan Phase II (VDH, CWDF)	$2,638,300
Pocahontas West Railroad WL Replacement	$20,000
Drytown Water Tank flow Project (CWDF)	$20,000
Falls Mills Sewer Rehab & Replacement (DEQ, SWVW/WW)	$3,620,960
Cavitt's Creek Park Expansion (CProp)	$100,000
Project Jonah Water & Sewer Improvements (EDA, ARC, Local)	$5,380,866
Wardell Water Treatment Plant - PER (SWVW/WW)	$35,000
Nemours Area PER (SWVW/WW)	$35,000
TCPSA Leak Detection Equipment Upgrade (SWVW/WW)	$37,987
Total	**$21,032,475**
Town of Bluefield	
Bluefield Neighborhood Planning Grant (CDBG)	$20,000
Bluefield Downtown Planning Grant (CDBG)	$35,000
Town of Bluefield Tank Rehab (VDH)	$2,494,002
Fincastle Restaurant Renovation (CProp)	$200,000
Fincastle Restaurant Renovation - Phase 2 (CProp)	$50,000
Town of Bluefield - Downtown Façade (Cprop)	$50,000
Total	**$2,849,002**
Town of Cedar Bluff	
Cedar Bluff Sewer System Study (SWVW/WW)	$30,000
Indian Creek Sewer Crossing Replacement (SWVW/WW)	$50,000
Total	**$80,000**
Town of Pocahontas	
Pocahontas Exhibition Mine and Museum Improvements (DMME/AML Pilot, Shott, Skewes and Thompson Foundations)	$2,032,900
Pocahontas Opera House PAR (CProp)	$30,000
Exhibition Mine & Museum Parking Expansion (CProp)	$5,000
Laural Meadows Park Grinder Pump (SWVW/WW)	$75,000
Pocahontas Park Sewer Line (SWVW/WW)	$75,000

Grants Managed	Dollars Managed
Total	**$2,217,900**
Town of Richlands	
Big Creek Housing Rehab Grant (CDBG) Phase 1, 2	$1,000,000
Birmingham Sewer Project (ARRA)	$2,486,642
West Fork Sewer line Extension (SWVW/WW)	$53,697
Richlands Community Development Center (CProp)	$124,317
Richlands DT Planning Grant (CDBG)	$50,000
Total	**$3,714,656**
Town of Tazewell	
Drytown Sewer Project (CDBG, DEQ)	$3,679,731
North Tazewell Train Depot (VDOT)	$323,997
Tazewell STP Upgrade PER (SWVW/WW)	$25,000
Tazewell STP Upgrade Construction (SWVWW/WW)	$75,000
Sunnyside Apartment Project Phase 1 (CProp)	$200,000
Sunnyside Apartment Project Phase 2 (CProp)	$50,000
Total	**$4,353,728**

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Appendix E

Jurisdiction Mitigation Action Changes

2018 Plan Action #	2018 Plan Action	Action Status	2023 Plan Action
Cumberland Plateau Planning District Commission			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is continuing but modified.	CPPDC 1: Reestablish the Mitigation Advisory Committee with county representatives to assist the Planning District's further developing and maintaining communities' mitigation program.
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	CPPDC 2: Assist local jurisdictions in identifying and addressing Repetitive Loss properties and attaining funding for mitigation actions.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	CPPDC 3: Develop all hazards public education and outreach program for hazard mitigation and preparedness.
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.	Action eliminated as no longer relevant to the CPPDC.	N/A
5	Develop a comprehensive compilation of landslide activity in the Planning District to be used as a planning tool for future infrastructure projects.	Action eliminated as not relevant to the CPPDC.	N/A

6	Evaluate the Planning District's community flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	Action eliminated as the CPPDC has no and are not responsible for floodplain ordinances.	N/A
7	Initiate discussion concerning which individuals shall be designated as the Floodplain Manager in each of the four Planning District's jurisdictions. MAC and PDC will make recommendations to the appropriate decision-makers in each jurisdiction.	Action has been completed.	N/A
8	Initiate discussions with public utility companies about incorporating mitigation as infrastructure is laid, maintained, or repaired. Invite utilities to make a presentation to the MAC to begin dialogue.	Action eliminated as not relevant to the CPPDC but is to the counties and towns of the region.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #3 and will continue.	CPPDC 3: Develop all hazards public education and outreach program for hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been combined with action #3 and will continue.	CPPDC 3: Develop all hazards public education and outreach program for hazard mitigation and preparedness.
11	Investigate the benefits of submitting Community Rating System Applications for non-participating jurisdictions.	Action is continuing.	N/A
12	Investigate all critical facilities to evaluate their resistance to wind, fire, landslide and flood hazards. This study will examine all critical facilities within the Planning District communities and make recommendations as to ways in which the facilities can be strengthened or hardened.	Action has been completed.	N/A
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action will continue but has been broken up across 5 different actions..	New CPPDC Actions 5 thru 9
14	Verify the geographic location of all NFIP repetitive loss properties and make inquiries as to whether the properties have been mitigated, and if so, by what means."	Action has been completed.	N/A
Buchanan County			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is continuing with CPPDC prioritizing this effort.	N/A

2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Buchanan County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	New CPPDC Actions 3 & 4
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.	Action is ongoing.	N/A
5	Develop a comprehensive compilation of landslide activity in the county to be used as a planning tool for future infrastructure projects.	Action is ongoing pending funding.	N/A
6	Evaluate the Planning District's community flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	Action is ongoing.	N/A
7	Initiate discussion concerning which individuals shall be designated as the Floodplain Manager in each of the four Planning District's jurisdictions. MAC and PDC will make recommendations to the appropriate decision-makers in each jurisdiction.	Action has been completed.	N/A
8	Initiate discussions with public utility companies about incorporating mitigation as infrastructure is laid, maintained, or repaired. Invite utilities to make a presentation to the MAC to begin dialogue.	Action eliminated as not relevant to the county and was written as a regional action.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #3 and will continue.	Buchanan County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries	Action has been refocused and will continue.	Buchanan County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation

	where individuals can find hazard and mitigation information.		Awareness/Education Webpage addition to county website.
11	Investigate the benefits of submitting Community Rating System Applications for non-participating jurisdictions.	Action is continuing.	N/A
12	Investigate all critical facilities to evaluate their resistance to wind, fire, landslide and flood hazards. This study will examine all critical facilities within the Planning District communities and make recommendations as to ways in which the facilities can be strengthened or hardened.	Actionhas been completed.	N/A
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action is continuing.	N/A
14	Verify the geographic location of all NFIP repetitive loss properties and make inquiries as to whether the properties have been mitigated, and if so, by what means."	Action has been completed.	N/A
Town of Grundy			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Grundy as this id a CPPDC mitigation action.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified from a regional action to a Town specific action.	Town of Grundy 1: Develop potential acquisition, elevation, relocation mitigation projects for Town Repetitive Loss Properties
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been modified and will continue.	Town of Grundy 4: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been combined with action #2 and will continue.	Town of Grundy 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
Dickenson County			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is continuing with CPPDC prioritizing this effort.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Dickenson County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in

			developing projects mitigating their Repetitive Loss and flood prone properties.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	Elements incorporated into new Actions 3, 4, & 7
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.	Action refocused to be Dickenson County specific and will continue pending funding.	Dickenson County 5: Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in Dickenson County.
5	Develop a comprehensive compilation of landslide activity in the Planning District to be used as a planning tool for future infrastructure projects.	Action eliminated. This was a CPPDC mitigation action that is of little to no value to the county.	N/A
6	Evaluate the Planning District's community flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	Action is continuing.	N/A
7	Initiate discussion concerning which individuals shall be designated as the Floodplain Manager in each of the four Planning District's jurisdictions. MAC and PDC will make recommendations to the appropriate decision-makers in each jurisdiction.	Action has been completed.	N/A
8	Initiate discussions with public utility companies about incorporating mitigation as infrastructure is laid, maintained, or repaired. Invite utilities to make a presentation to the MAC to begin dialogue.	Action eliminated as not relevant to the county and was written as a regional action.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been modified/focused but is continuing.	Elements incorporated into new Actions 3, 4, & 7
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been combined with actions #3 & 4and will continue.	Dickenson County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Dickenson County 4:

			In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
11	Investigate the benefits of submitting Community Rating System Applications for non-participating jurisdictions.	Action is continuing.	N/A
12	Investigate all critical facilities to evaluate their resistance to wind, fire, landslide and flood hazards. This study will examine all critical facilities within the Planning District communities and make recommendations as to ways in which the facilities can be strengthened or hardened.	Action has been completed.	N/A
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action will continue but has been modified to provide focus in the support of the region's jurisdiction.	Dickenson County 9: Support Public Works initiatives to improve stormwater infrastructure throughout the area.
14	Verify the geographic location of all NFIP repetitive loss properties and make inquiries as to whether the properties have been mitigated, and if so, by what means."	Action has been completed.	N/A
Town of Clinchco			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Clinchco as this is a CPPDC mitigation action.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been modified/focused but is continuing.	Town of Clinchco 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been combined with action #3 and will continue.	Town of Clinchco 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Clinchco 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website
Town of Clintwood			
	Did not participate in last Hazard Mitigation Plan	N/A	N/A
Town of Haysi			

1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Clinchco as this is a CPPDC mitigation action.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Town of Haysi 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been expanded and is continuing.	Town of Haysi 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Haysi 3 In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been combined with action #3 and will continue.	Town of Haysi 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Haysi 3 In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action will continue but has been modified to provide focus in the support of the Town.	Town of Haysi 4: Support Public Works initiatives to improve stormwater infrastructure throughout the Town.
Russell County			
1	Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	Action is continuing with CPPDC prioritizing this effort.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Russell County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.

3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	Russell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.	Action refocused to advocate for the program and assist in related project development. The mitigation action is ongoing.	Russell County 5: Advocate on behalf of the Virginia Department of Forestry's Money for Mitigation Program. Assist local jurisdictions in developing wildfire interface protection zone projects
5	Develop a comprehensive compilation of landslide activity in the Planning District to be used as a planning tool for future infrastructure projects.	Action eliminated. This was a CPPDC mitigation action that is of little to no value to the county.	N/A
6	Evaluate the Planning District's community flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	Action is continuing.	N/A
7	Initiate discussion concerning which individuals shall be designated as the Floodplain Manager in each of the four Planning District's jurisdictions. MAC and PDC will make recommendations to the appropriate decision-makers in each jurisdiction.	Action has been completed.	N/A
8	Initiate discussions with public utility companies about incorporating mitigation as infrastructure is laid, maintained, or repaired. Invite utilities to make a presentation to the MAC to begin dialogue.	Action is continuing/ongoing.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been modified/focused but is continuing.	Russell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Russell County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries	Action will continue.	N/A

	where individuals can find hazard and mitigation information.		
11	Investigate the benefits of submitting Community Rating System Applications for non-participating jurisdictions.	Action is continuing.	N/A
12	Investigate all critical facilities to evaluate their resistance to wind, fire, landslide and flood hazards. This study will examine all critical facilities within the Planning District communities and make recommendations as to ways in which the facilities can be strengthened or hardened.	Action has been redefined and focused to two critical facilities.	Russell County 11: Determine appropriate mitigation actions for two critical facilities: the Dante Community Center and the Cleveland Community Center
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action will continue but has been modified to provide focus in the support of the region's jurisdiction.	Russell County 12: Support Public Works initiatives to improve stormwater infrastructure throughout Russell County.
14	Verify the geographic location of all NFIP repetitive loss properties and make inquiries as to whether the properties have been mitigated, and if so, by what means."	Action has been completed.	N/A
Town of Cleveland			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Cleveland as this is a CPPDC mitigation action.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Town of Cleveland 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #3 and will continue.	Town of Cleveland 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Cleveland 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused and will continue.	Town of Cleveland 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Cleveland 3:

			In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
Town of Honaker			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Honaker as this is a CPPDC mitigation action.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #3 and will continue.	Town of Honaker 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused and will continue.	Town of Honaker 2: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action is continuing.	N/A
Town of Lebanon			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Honaker as this is a CPPDC mitigation action.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Town of Lebanon 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #2 and will continue.	Town of Lebanon 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused and will continue.	Town of Lebanon 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
Tazwell County			

1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is continuing with CPPDC prioritizing this effort.	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Tazwell County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	Tazwell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.	Action is ongoing but refocused on developing potential projects with the jurisdictions.	Tazwell County 5: Advocate on behalf of the Virginia Department of Forestry's Money for Mitigation Program. Assist local jurisdictions in developing wildfire interface protection zone projects.
5	Develop a comprehensive compilation of landslide activity in the county to be used as a planning tool for future infrastructure projects.	Action is eliminated as no very relevant for Tazwell County.	N/A
6	Evaluate the Planning District's community flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	Action is ongoing.	N/A
7	Initiate discussion concerning which individuals shall be designated as the Floodplain Manager in each of the four Planning District's jurisdictions. MAC and PDC will make recommendations to the appropriate decision-makers in each jurisdiction.	Action has been completed.	N/A
8	Initiate discussions with public utility companies about incorporating mitigation as infrastructure is laid, maintained, or repaired. Invite utilities to make a presentation to the MAC to begin dialogue.	Action eliminated as not relevant to the county and was written as a regional action.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #3 and will continue.	Tazwell County 3:

			Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused and combined with action #4 and will continue.	Tazwell County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
11	Investigate the benefits of submitting Community Rating System Applications for non-participating jurisdictions.	Action is continuing.	N/A
12	Investigate all critical facilities to evaluate their resistance to wind, fire, landslide and flood hazards. This study will examine all critical facilities within the Planning District communities and make recommendations as to ways in which the facilities can be strengthened or hardened.	Action has been completed.	N/A
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action is continuing.	N/A
14	Verify the geographic location of all NFIP repetitive loss properties and make inquiries as to whether the properties have been mitigated, and if so, by what means."	Action has been completed.	N/A
Town of Bluefield			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Bluefield as this is a CPPDC mitigation action	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Town of Bluefield 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to	Action is eliminated as not essential to the Town.	N/A

	prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.		
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #2 and will continue.	Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused and combined with action #2 and will continue.	Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
12	Investigate all critical facilities to evaluate their resistance to wind, fire, landslide and flood hazards. This study will examine all critical facilities within the Planning District communities and make recommendations as to ways in which the facilities can be strengthened or hardened.	Action has been completed.	N/A
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action is ongoing.	N/A
Town of Cedar Bluff			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Cedar Bluff as this is a CPPDC mitigation action	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #2 & 3 and will continue.	Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.

			Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused, combined with action #2 and will continue.	Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness. Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
Town of Pocahontas			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Pocahontas as this is a CPPDC mitigation action	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #1 and will continue.	Town of Pocahontas 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused, combined with action #2 and will continue.	Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
Town of Richlands			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Richlands as this is a CPPDC mitigation action	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Town of Richlands 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation	Action is ongoing but modified and combined with other education actions.	

	measures emphasizing acquisition, relocation and elevation.		
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.	Action is eliminated as ineffectual for the town.	N/A
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #2 and will continue.	Town of Richlands 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been refocused, combined with action #3 and will continue.	Town of Richlands 3: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action is ongoing.	N/A
Town of Tazwell			
1	Obtain official recognition of the Mitigation Advisory Committee by the Planning District's communities to help institutionalize and develop an ongoing mitigation program.	Action is eliminated as is not relevant to the Town of Tazwell as this is a CPPDC mitigation action	N/A
2	Target FEMA's Repetitive Loss Properties, and other known repetitively flooded properties, throughout the Planning District for potential mitigation projects.	Action is continuing but modified.	Town of Tazwell 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.
3	Undertake educational outreach activities by developing and distributing brochures and education materials for FEMA's Repetitive Loss Properties with specific mitigation measures emphasizing acquisition, relocation and elevation.	Action is ongoing but modified and combined with other education actions.	Town of Tazwell 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness
4	Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in the Planning District. SECTION VII - MITIGATION STRATEGY Page VII-7Cumberland Plateau Planning District Commission Hazard Mitigation	Action is eliminated as ineffectual for the town.	N/A

	Plan Assist residents, in priority areas, to reduce wildfire hazards using funding from the Money for Mitigation Program.		
9	Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	Action has been combined with action #2and will continue.	Town of Tazwell 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness
10	Develop "hazard information centers" on the Planning District's community's websites and in public libraries where individuals can find hazard and mitigation information.	Action has been combined with action #3 and will continue.	Town of Tazwell 3: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website
13	Support Public Works initiatives to improve stormwater infrastructure throughout the area.	Action is continuing.	N/A

Appendix F

STAPLEE Analysis of Mitigation Actions

Section 8 identified specific actions to achieve identified goals, an appropriate responsible party for each action, a schedule for accomplishment, suggested funding sources and priority rankings. The tables contained within this appendix provide the detailed basis for this initial prioritization of the actions.

In drafting this initial prioritization, the Cumberland Plateau Region Hazard Mitigation Strategic Committee, the consultant, and participating municipalities worked cooperatively to determine which STAPLEE criteria each action did or was likely to meet. The criteria that were considered "met" are identified with a "+", and the criteria that were not considered met are identified with a "0". The methodology also allows for a "-" designation when impacts are expected to be negative, but none of the projects below required it at this time. The participants in this process have defined High, Medium, and Low priorities to be assigned as follows:

- High: Meets five of the seven STAPLEE criteria
- Medium: Meets four of the seven STAPLEE criteria
- Low: Meets three of the seven STAPLEE criteria

This prioritization is considered preliminary and will be revisited in the future by the Working Group and the participating municipalities as funding becomes available.

Table F-1
Prioritization of Morris County Hazard Mitigation Goals, Objectives, and General Actions

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Cumberland Plateau Planning District Commission									
CPPDC-1: Reestablish the Mitigation Advisory Committee with county representatives to assist the Planning District's further developing and maintaining communities' mitigation program.	+	+	+	o	+	+	+	6	High
CPPDC-2: Assist local jurisdictions in identifying and addressing Repetitive Loss properties and attaining funding for mitigation actions.	+	+	+	+	+	+	+	7	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
CPPDC-3: Develop all hazards public and outreach program for hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
CPPDC-4 In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to CPPDC website.	+	+	+	o	+	+	+	6	High
CPPDC-5 Engage and support municipalities to participate in the CRS program, including potentially setting up CRS site visits and/or workshops for interested jurisdictions.	+	+	o	o	+	o	+	4	Medium
CPPDC-6 Submit the updated Hazard Mitigation Plan to the CRS for review and consideration within the CRS program.	+	+	+	o	+	+	+	6	High
CPPDC-7 Support jurisdictions in obtaining funding for stormwater management improvements and upgrades.	+	+	+	+	o	o	+	5	High
CPPDC-8 Continue support of hazard mitigation planning, project identification and implementation at the municipal and county level.	+	+	+	o	+	+	+	6	High
CPPDC-9 Provide grants information, planning tools, training and technical assistance to increase the number of public and private sector hazard mitigation projects	+	+	o	o	+	o	+	4	Medium
CPPDC-10 Assist towns in developing model floodplain ordinances.	+	+	o	o	+	o	+	4	Medium
Buchanan County									
Buchanan County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	+	+	+	o	+	+	+	6	High
Buchanan County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	+	+	+	+	+	+	+	7	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Buchanan County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Buchanan County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Buchanan County 5: Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in Buchanan County.	+	o	+	+	o	o	o	3	Low
Buchanan County 6: Develop a comprehensive compilation of landslide activity in the county to be used as a planning tool for future infrastructure projects.	+	o	+	+	o	o	o	3	Low
Buchanan County 7: Evaluate the county's flood plain ordinances and enforcement procedures that may be outdated for possible upgrades.	+	+	o	+	o	o	+	4	Medium
Buchanan County 8: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	+	+	o	+	o	o	+	4	Medium
Buchanan County 9: Educate local community and assist in submitting Community Rating System Application for Town of Grundy.	+	+	o	o	+	o	+	4	Medium
Buchanan County 10: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	+	+	o	+	o	o	+	4	Medium
Buchanan County 11: Pursue mitigation actions for all county facilities located within the floodplain	+	+	+	+	o	o	+	5	High
Buchanan County 12: Develop wildfire interface protection zones	+	+	o	+	o	o	+	4	Medium
Buchanan County 13: Work with Federal Government to revise county flood boundaries	+	+	+	+	o	o	+	5	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Grundy									
Town of Grundy 1: Develop potential acquisition, elevation, relocation mitigation projects for Town Repetitive Loss Properties	+	+	+	+	+	+	+	7	High
Town of Grundy 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Grundy 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Grundy 4: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	+	+	o	+	o	o	+	4	Medium
Town of Grundy 5: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium
Town of Grundy 6: Roof wind retrofit od DOW storage facility	+	+	+	+	o	o	+	5	High
Town of Grundy 7: Develop wildfire interface protection zones	+	+	o	+	o	o	+	4	Medium
Dickenson County									
Dickenson County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	+	+	+	o	+	+	+	6	High
Dickenson County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	+	+	+	+	+	+	+	7	High
Dickenson County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Dickenson County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation	+	+	+	o	+	+	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Awareness/Education Webpage addition to county website.									
Dickenson County 5: Publicize the Virginia Department of Forestry's Money for Mitigation Program. Utilize existing wildfire maps to prioritize project areas in Dickenson County.	+	o	+	+	o	o	o	3	Low
Dickenson County 6: Review and update County flood plain ordinances and enforcement procedures that may be outdated.	+	+	+	+	o	o	+	5	High
Dickenson County 7: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	+	+	o	+	o	o	+	4	Medium
Dickenson County 8: Assist jurisdictions in preparing and submitting Community Rating System Applications for non-participating jurisdictions.	+	+	o	o	+	o	+	4	Medium
Dickenson County 9: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	+	+	o	+	o	o	+	4	Medium
Dickenson County 10: Support jurisdictions in obtaining funding for stormwater management improvements and upgrades	+	+	o	+	o	o	+	4	Medium
Dickenson County 11: "Verify the geographic location of all NFIP repetitive losses, and make inquiries as to whether the properties have been mitigated, and if so, by what means."	+	+	+	+	+	+	+	7	High
Dickenson County 12: Identify and convert facility to meet FEMA heating/cooling facility requirements	+	+	+	+	+	o	+	6	High
Town of Clinchco									
Town of Clinchco 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Clinchco 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website	+	+	+	o	+	+	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Clinchco 3: Continue acquisition project on McClure River (3 stages)	+	+	+	+	+	o	+	6	High
Town of Clinchco 4: Identification of potential participants for acquisition of flood prone properties located along the McClure River (Dickenson Highway)	+	+	+	+	+	o	+	6	High
Town of Clinchco 5: Removal of US Fisheries Dam #9	+	+	+	+	+	o	+	6	High
Town of Clinchco 6: Stormwater Management Plan to include abandoned mine assessment	+	+	o	+	o	o	+	4	Medium
Town of Clinchco 7: Installation of a Wet Seal of abandoned mine located near Palmer Street	+	+	+	+	o	o	+	5	High
Town of Clinchco 8: Erosion and stormwater management upgrade and improvement near Gilmore Street	+	+	+	+	o	o	+	5	High
Town of Clintwood									
Clintwood 1: Stormwater and flood control drainage ditch protecting new development at Food City Store location	+	+	+	+	o	o	+	5	High
Clintwood 2: Increase Drainage area and capacity of Main Street and Jonah Mullens Drive	+	+	+	+	o	o	+	5	High
Clintwood 3: Conduct annual forest interface defense zone clean and clear	+	+	o	+	o	o	+	4	Medium
Clintwood 4: Study of stormwater runoff from abandoned mine to determine possible mitigation actions	+	+	+	+	o	+	+	6	High
Clintwood 5: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Haysi									
Town of Haysi 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	+	+	+	+	+	+	+	7	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Haysi 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Haysi 3 In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Haysi 4: Support Public Works initiatives to improve stormwater infrastructure throughout the Town.	+	+	o	+	o	o	+	4	Medium
Town of Haysi 5: Stormwater infrastructure upgrade/improvement (culverts)located along Lazarus Br	+	+	+	+	o	o	+	5	High
Town of Haysi 6: Stormwater infrastructure upgrade/improvement (100 feet of stormwater drainage pipe upgrade/increased capacity) located adjacent to the Haysi Presbyterian Church underneath Dickenson Hwy.	+	+	+	+	o	o	+	5	High
Town of Haysi 7: Stormwater infrastructure upgrade/improvement (150 feet of stormwater drainage pipe upgrade/increased capacity) located adjacent to the Pizza Plus underneath Main Street.	+	+	+	+	o	o	+	5	High
Town of Haysi 8: Stormwater infrastructure upgrade/improvement (100 feet of stormwater culvert upgrade/increased capacity) located adjacent to the Haysi Rescue Squad along Sandlick Rd.	+	+	+	+	o	o	+	5	High
Town of Haysi 8: Stormwater infrastructure upgrade/improvement (culvert installation and upgrades) located at curve in Dickenson Hwy adjacent to the Haysi Funeral Home.	+	+	+	+	o	o	+	5	High
Town of Haysi 9: Working with VDOT, stormwater infrastructure upgrade/improvement study to mitigate river flooding along ½ mile portion of Splashdam Rd.	+	+	o	+	o	o	+	4	Medium
Russell County									
Russell County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning	+	+	+	o	+	+	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
District's further developing and maintaining communities' mitigation program.									
Russell County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	+	+	+	+	+	+	+	7	High
Russell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Russell County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Russell County 5: Advocate on behalf of the Virginia Department of Forestry's Money for Mitigation Program. Assist local jurisdictions in developing wildfire interface protection zone projects.	+	o	+	+	o	o	o	3	Low
Russell County 6: Evaluate the Russell County flood plain ordinances and enforcement procedures that may be outdated for possible upgrades/modification.	+	+	+	+	o	o	+	5	High
Russell County 7: Maintain coordination with public utility companies to incorporate mitigation as infrastructure is laid, maintained, or repaired.	+	+	o	+	o	o	+	4	Medium
Russell County 8: Develop and distribute a brochure targeting the Planning District jurisdiction's community staff, which details mitigation principles and options.	+	o	+	+	o	o	o	3	Low
Russell County 9: Develop "hazard information centers" in libraries and government buildings and on the county website and providing hazard and mitigation information.	+	o	+	+	o	o	o	3	Low
Russell County 10: Educate local jurisdictions and assist in submitting Community Rating System Application for non-participating jurisdictions.	+	+	o	o	+	o	+	4	Medium

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Russell County 11: Determine appropriate mitigation actions for two critical facilities: the Dante Community Center and the Cleveland Community Center	+	+	+	+	o	o	+	5	High
Russell County 12: Support Public Works initiatives to improve stormwater infrastructure throughout Russell County.	+	+	o	+	o	o	+	4	Medium
Russell County 13: Identify and convert facility to meet FEMA heating/cooling facility requirements	+	+	+	o	+	+	+	6	High
Russell County 14: Backup power (generator) for 6 designated shelters	+	+	+	+	o	o	+	5	High
Town of Cleveland									
Town of Cleveland 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	+	+	+	+	+	+	+	7	High
Town of Cleveland 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Cleveland 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Cleveland 4: Riverbank Stabilization in the Community Park area	+	+	+	+	o	o	+	5	High
Town of Cleveland 5: Tree cutback and clearing to protect powerlines	+	o	+	+	o	o	o	3	Low
Town of Cleveland 6: Stabilization study and prevention measures instillation	+	+	o	+	o	o	+	4	Medium
Town of Honaker									
Town of Honaker 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Honaker 2: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Honaker 3: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	+	+	o	+	o	o	+	4	Medium
Town of Honaker 4: Stormwater management upgrade and improvement located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Honaker 5: Stormwater management upgrade and improvement located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Honaker 6: Stormwater management upgrade and improvement located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Honaker 7: Backup power generators for 4 water wells supplying the town with potable water	+	+	+	o	+	+	+	6	High
Town of Lebanon									
Town of Lebanon 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	+	+	+	+	+	+	+	7	High
Town of Lebanon 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Lebanon 3: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Lebanon 4: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium
Tazwell County									
Tazwell County 1: Actively participate within the CPPDC sponsored Mitigation Advisory Committee to assist the Planning District's further developing and maintaining communities' mitigation program.	+	+	+	o	+	+	+	6	High
Tazwell County 2: Develop potential mitigation projects for county Repetitive Loss Properties and support local jurisdictions in developing projects mitigating their Repetitive Loss and flood prone properties.	+	+	+	+	+	+	+	7	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Tazwell County 3: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Tazwell County 4: In conjunction with action #3, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Tazwell County 5: Advocate on behalf of the Virginia Department of Forestry's Money for Mitigation Program. Assist local jurisdictions in developing wildfire interface protection zone projects.	+	o	+	+	o	o	o	3	Low
Tazwell County 6: Evaluate the county's flood plain ordinances and enforcement procedures that may be outdated for possible upgrades/modifications.	+	+	o	o	+	o	+	4	Medium
Tazwell County 7: Prioritize planning opportunities with public utility companies to prioritize incorporating mitigation in new infrastructure, maintained, or repaired.	+	o	+	+	o	o	o	3	Low
Tazwell County 8: Educate local jurisdictions and assist in submitting Community Rating System Application for non-participating jurisdictions.	+	+	o	o	+	o	+	4	Medium
Tazwell County 9: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	+	+	o	+	o	o	+	4	Medium
Tazwell County 10: Develop and submit stormwater management upgrades and improvement projects at the following locations: (XXX)	+	+	+	+	o	o	+	5	High
Town of Bluefield									
Town of Bluefield 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	+	+	+	+	+	+	+	7	High
Town of Bluefield 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Bluefield 3: In conjunction with action #2, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Bluefield 4: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium
Town of Bluefield 5: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	+	+	o	+	o	o	+	4	Medium
Town of Bluefield 6: Develop and submit stormwater management upgrades, improvements located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Bluefield 7: Develop and submit stormwater management upgrades, improvements located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Bluefield 8: Develop and submit stormwater management upgrades, improvements located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Bluefield 9: Develop and submit stormwater management upgrades, improvements located at (XXX)	+	+	+	+	o	o	+	5	High
Town of Cedar Bluff									
Town of Cedar Bluff 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Cedar Bluff 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Cedar Bluff 3: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium
Town of Cedar Bluff 4: Clinch River waterway flood prevention study to determine most effective mitigation measures	+	+	o	+	o	o	+	4	Medium
Town of Cedar Bluff 5: Study of stormwater runoff in the Old Kentucky Turnpike area to determine possible mitigation actions	+	o	+	+	+	o	+	5	High

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Pocahontas									
Town of Pocahontas 1: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Pocahontas 2: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Pocahontas 3: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium
Town of Pocahontas 4: Canal upgrade and improvement	+	+	+	+	o	o	+	5	High
Town of Pocahontas 5: Stormwater management study to determine most effective means to mitigate flooding located at (XXX)	+	+	+	+	o	+	+	6	High
Town of Pocahontas 6: Develop and submit stormwater management upgrades, improvements located at (XXX) (Road modification)	+	+	+	+	o	o	+	5	High
Town of Pocahontas 7: Mitigation of electrical lines, tree cutbacks and or burying lines as required.	+	o	+	+	o	o	o	3	Low
Town of Richlands									
Town of Richlands 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	+	+	+	+	+	+	+	7	High
Town of Richlands 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Richlands 3: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Richlands 4: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium

Action	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total	Priority
Town of Richlands 5: Support Public Works initiatives to improve stormwater infrastructure in the following 5 areas (XXX, XXX, XXX, XXX, XXX…provide locations).	+	+	o	+	+	o	+	5	High
Town of Tazwell									
Town of Tazwell 1: Develop potential mitigation projects for identified Repetitive Loss Properties and other flood prone structures.	+	+	+	+	+	+	+	7	High
Town of Tazwell 2: Develop all hazards public education and outreach program centered with libraries and government buildings or hazard mitigation and preparedness.	+	+	+	o	+	+	+	6	High
Town of Tazwell 3: In conjunction with action #1, create a dedicated Emergency Management and Hazard Mitigation Awareness/Education Webpage addition to county website.	+	+	+	o	+	+	+	6	High
Town of Tazwell 4: Support Public Works initiatives to improve stormwater infrastructure throughout the area.	+	+	o	+	o	o	+	4	Medium
Town of Tazwell 5: Submit application to join the Community Rating System	+	+	o	o	+	o	+	4	Medium

Appendix G

Adoption Resolutions

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G.1 Buchanan County

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G.3 Dickenson County

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G.4 Town of Clinchco

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G.5 Town of Clintwood

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G.6 Town of Haysi

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G.7 Russell County

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G.8 Town of Cleveland

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G.9 Town of Honaker

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G.10 Town of Lebanon

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G.11 Tazwell County

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G.12 Town of Bluefield

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G.13 Town of Cedar Bluff

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G.14 Town of Pocahontas

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G.15 Town of Richlands

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G.16 Town of Tazwell

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Appendix H

Approval Letters

H.1 Buchanan County
H.2 Town of Grundy
H.3 Dickenson County
H.4 Town of Clinchco
H.5 Town of Clintwood
H.6 Town of Haysi
H.7 Russell County
H.8 Town of Cleveland
H.9 Town of Honaker
H.10 Town of Lebanon
H.11 Tazwell County
H.12 Town of Bluefield
H.13 Town of Cedar Bluff
H.14 Town of Pocahontas
H.15 Town of Richlands
H.16 Town of Tazwell

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H.1 Buchanan County

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H.2 Town of Grundy

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H.16 Town of Tazwell

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BUCHANAN COUNTY
2017
COMPREHENSIVE
PLAN

The Code of Virginia section 15.1- 446.1 grants the county planning commission in Buchanan County the authority to undertake a planning program which includes the preparation of a county comprehensive plan. The comprehensive plan is an important step in the growth and development of a county. Implementation of a long range plan aids in the practice of good public management and provides a framework for orderly development in terms of land use and facilities.

The officials of Buchanan County intend that the comprehensive plan serve as a broad policy guide to assist in the decisions necessary for future development and redevelopment in Buchanan County. The comprehensive plan provides an analysis of present conditions and trends in areas such as population and the local economy. Plans for capital improvements, community facilities, and future land use can be based on this analysis. By nature, the comprehensive plan is a general document, and to be useful in the long range management of the county it should be updated and revised as changing conditions warrant. This revision is in accordance with the Code of Virginia's requirements that the comprehensive plan be updated as needed.

Because county planning requires specialized technical skill and experience, the government of Buchanan County, Virginia enlisted the help of Cumberland Plateau Planning District Commission for the preparation of this document. Every effort was made to use the most current data available.

LOCATION AND HISTORICAL PERSPECTIVE

Buchanan County lies in the Appalachian Plateau Province of the Appalachian Highlands, between the Appalachian Valley on the southeast and the Cumberland and Allegheny Mountains on the northwest. The county contains 508 square miles, and covers some of the richest coalfields in the United States.

The county seat of Buchanan County is Grundy, Virginia. Grundy functions as the trade center for Buchanan County as well as portions of neighboring counties in Kentucky and Virginia. Buchanan County joins with Dickenson, Russell and Tazewell Counties to form the Cumberland Plateau Planning District. Buchanan County compromises 27.4 percent of the district's total land.

Buchanan County is bordered in the west by Dickenson County, Virginia; in the south by Russell and Tazewell Counties, Virginia; in the north by Pike County, Kentucky, and in the northeast by McDowell and Mingo Counties, West Virginia. Major access to Buchanan County from an east-west direction is Virginia Highway 83. Major access from a north-south direction is provided by U.S. Highway 460. U.S. Highway 460 intersects Interstate 77, which links the south central coastal states to the midwestern United States and intersects with Interstate 81. Interstate 81 is the major transportation route linking die northeast and southeast United States.

Southwest Virginia began to be settled over 200 years ago. Farmers migrated across the Appalachian Valley from the Atlantic Coast. The mountainous terrain of Buchanan County, characteristic of that found in the Appalachian Plateau, forced settlers to locate along the stream beds, filling the narrow valley floors.

Most of the early development in Buchanan County occurred in the Grundy area, spreading from the center of town along the Levisa Fork and Slate Creek. The tributaries to these streams have also been heavily developed, including Garden Creek, Dry Fork, Poplar

Creek, Trace Fork, Bull Creek, Looney's Creek and Roddick Creek. The southeastern section of the county (around Whitewood) and the southwestern section (around Council) are the less populated areas of the county, mainly because they lack good access.

The people of the county lived by tilling the soil for food and by hunting and fishing. In the 1880's, activity in the lumber industry began but it was difficult to deliver the timber to markets. By the early 1900's, lumber had grown to be the main industry in the county and continued to be until the late 1920's when most of the marketable timber had been cut.

In 1931 the Norfolk and Western Railway Company completed construction of the first standard gauge railroad into Buchanan County. This was a very significant event in the history of Buchanan County, because coal could be mined profitably for the first time. From then on the coal industry grew, making Buchanan County the number one coal producing county in the state of Virginia.

The growth of the coal industry brought many families into Buchanan County to live and work. The population of the county nearly doubled between 1930 and 1940. Growth slowed during the next twenty years, and declined considerably during the sixties, as jobs within the mining industry were eliminated. The county is dependent on coal for its livelihood but reliance on the "boom and bust" coal industry poses certain problems. High unemployment and population declines are common. Increased use of automation requires fewer workers for coal production, and many people have been forced to seek employment in other regions.

TOPOGRAPHY

In this mountainous region, flat lands even a few acres in extent are at a premium, and valley slopes are very steep. The surface is deeply and maturely dissected by streams, with the water courses being only a few miles apart but separated by ridges that rise 500 to 1,000 feet above them. Many of the valleys are winding, so that water in the streams travels long distances

between points not far apart. The valleys are also deep and V-shaped, with flat bottom lands along the rivers and creeks. The ridges are flat-topped, presenting a nearly even skyline, and the heights of neighboring ridges are approximately the same in most areas. Some of the principal ridges, mostly those in the southern portion of the county, are wide enough on the top to support a road and houses.

The highest point in the county is found on Big A Mountain, an elevation of 3,735 feet. The lowest point, 845 feet above sea level, is found on the Levisa Fork at the Kentucky border. The maximum relief of the county is 2,890 feet.

CLIMATE

Buchanan County has a continental climate, with temperatures averaging highs of 42 degrees in January and 83 degrees in July. Despite the variation in temperature, the climate is mild, with the average annual temperature being 54 degrees. Precipitation averages 45 inches annually.

Buchanan County is at a lower elevation than many other counties in southwestern Virginia, and therefore has a slightly longer growing season.

SOILS

Soil properties exert a strong influence on the manner in which land is used. Soils are an irreplaceable resource and mounting pressures continue to make soil more valuable. The Cooperative Extension Service of Virginia Polytechnic Institute and State University has done some on-site survey work in Buchanan County in order to compile general information on the county's soils, since soil capabilities influence development. Careful surveys should be made prior to construction in order to determine the suitability of each individual site for such things as foundation and septic tank support.

The flatter ridge tops offer soils of sufficient thickness on developable terrain. On these

uplands, where soils are found in place from residual rock materials, the only two series suitable for development are the Hartsells and Enders. The Hartsells is developed in sandstone and the Enders in micaceous shale. Both the soils average less than three feet to bedrock, but both are sometimes found to range up to five and one-half feet in depth. The Coeburn, which is associated with the Enders, is also present on the ridge tops but its depth is insufficient for development.

Areas that are located at the mouths of some mountain hollows may support very limited development. Most of the soils in this area are colluvial, they were formed with materials accumulated from the adjacent higher upland slopes. The two most prevalent soils in these colluvial lands, the Leadville and the Jefferson, were formed from areas of Coeburn soils. These soils are usually thicker than the upland soils, but they are subject to considerable seepage from high lying areas.

On the terrace lands, which are those benchlike areas bordering, but higher than stream bottoms, the chief soils are the Holston and the Monongahela. These soils were deposited by streams at a time when their channels were higher. Poor drainage makes most of this area unsuitable for development. Areas along the stream beds contain alluvial soils washed away from areas underlain by sandstone and shales. These soils are very sandy and gravelly, and the depth to water level of these soils is usually 0 to 20 inches during wet periods.

ROCK CLASSIFICATIONS

There are six classifications of rocks which have been identified in the Buchanan County study area. Four of these - the Wise Formation, the Gladeville Sandstone, the Norton Formation and the Lee Formation - belong to the Pennsylvanian series, in which all of the commercially important coal beds of the area are located. Each of these rock classifications consist of sandstone, shale, coal, and thin beds of clay.

The Wise Formation averages about 1,080 feet thick in Buchanan County. Except near

Kentucky, the Wise Formation is confined to the upper parts of ridges. It occupies a large irregular area in the northern part of Buchanan County where it is interspersed with bands of the Norton Formation along the streams and hilltops. The major coal beds found in the Wise Formation are Eagle, Clintwood, Campbell Creek, Blair and Cedar Grove.

The Gladeville sandstone lies just below the Wise Formation and just above the Norton Formation. It is located throughout the coal fields, but is less conspicuous in outcrop in Buchanan County than in other areas. The Gladville is commonly 50 to 100 feet thick, is brownish-red, and contains considerable mica and other minerals.

The Norton Formation includes all the strata, with several minable coal beds. It lies between the Gladeville sandstone and the Lee formation. The thickness of the Norton Formation ranges from 825 feet along the southeast slope of Pine Mountain to about 1,300 feet along the southeast border of the county on Big A Mountain. The Norton Formation thins in the northern part of the county where it intersperses with the Wise Formation.
The Norton Formation contains several of the important coal beds of the county, including Upper Banner, Lower Banner, Splash Dam, Hagy, Big Fork, Kennedy, Raven, Jawbone and Tiller.

The Lee Formation is the lowest formation in the Pennsylvanian series. Only small parts of the Lee Formation are exposed in Buchanan County. These exposures are present in the southeast portion of the county near Big A Mountain along Indian Creek and its tributaries, and near the Breaks in the extreme northwest portion of the county. The exposures are in areas where faulting and folding have occurred. Along the southern border of the county, the Lee Formation has the same characteristics as the Norton and Wise Formations. The Lee here is from 1,500 to 1,600 feet thick. On Pine Mountain along the northwest border, the Lee consists of more sandstone than in the south. The sandstone here contains white quartz pebbles and is more silicious than the Lee sandstones in the southern portion of the county. In the north, the Lee

Formation is only 300 feet thick, considerably thinner than in the south. The Lee Formation in the south contains some of the Pocahontas coal beds, but the northern Lee contains very little coal.

Rocks from the Silurian System and the Mississippian series of the Carboniferous System are also found in Buchanan County. These rocks, however, are only found in small quantities around Big A Mountain in the southern portion of the county. The Clinch sandstone is a massive white sandstone composed chiefly of quartz grains so firmly cemented that die rock forms cliffs and has notable effects on the topography. It outcrops in two strips on Big A Mountain - one near the top of the northwestern knob and the other along the northwestern border. The Pennington shale, the only Mississippian Formation exposed in the county, outcrops on the northwestern slopes of Big A Mountain. The rocks are overturned so that the oldest beds appear near the top of the mountain.

FAULTS

The only fault of any importance to development in Buchanan County is the Russell Fork fault, which has caused disturbances in the areas surrounding it. The largest disturbed zone was caused by shearing along one or more vertical faults. This area extends for eight miles along Russell Fork, from its head to about halfway between Murphy and Indian. Evidence of crumbling exists in this area, especially around Indian. Rock beds within parts of the zone are dragged and crumpled, producing irregular dips. These dips have been found in several places along Russell Fork and short distances back from the stream, going from Murphy to a point about a mile northwest. Heavy construction should not take place along the Russell Fork fault.

There are two other faults in Buchanan County, one along Pine Mountain and the other along Big A Mountain. Neither of these faults should have any significant effect on development in Buchanan County.

GROUND AND SURFACE WATER

Water is a very important natural resource, necessary to maintain human life itself. Additionally, a safe, clean and dependable water supply is required for many commercial, industrial, and recreational purposes. The availability and quality of water is therefore an important consideration in assessing the development potential of Buchanan County.

Water resources exist as surface water and also as ground water. Streams, rivers and lakes comprise our surface water, since they occur on the surface of the earth. Ground water is stored in open spaces underneath the surface of the earth. Coal mining operations have damaged the supply of ground water in Buchanan County. Underground aquifers have been depleted and only a small amount of groundwater is available.

Traditionally, wells provided most of the water for Buchanan County, but many of these wells have gone dry. Surface water can be found in the three major rivers and many smaller streams, but these rivers cannot supply the daily demand for water without impoundment. This water shortage has necessitated that the county receive water from neighboring counties. Dickenson County suffers from similar problems of groundwater depletion, but contains a reservoir. The John Flannagan Reservoir in neighboring Dickenson County provides Buchanan County with much of its water.

DRAINAGE

All of the drainage in Buchanan County is tributary to the Big Sandy River through its three main branches - Levisa Fork, Russell Fork and Tug Fork. Numerous creeks and branches ramify practically all parts of the county, creating a good drainage system for most of the county, as well as beautiful scenery and a great deal of recreational potential. In 1971 the Army Corps of

Engineers published a report on the flooding situation along a 14.7 mile segment of the Levisa Fork and portions of its tributaries. This is the only known published study of flooding conditions in Buchanan County.

Grundy suffers the majority of the flood damages that occur along the Levisa. The valley in the Grundy area is narrow and major floods overflow the floodplain. Most of the flood damage occurs to stock stored in the basements of business establishments. Residences situated along the lower portion of Slate Creek also suffer heavy damages. The Levisa is tightly flanked in many areas by highways, railroads, and streets. These transportation arteries are prone to the ravages of high stream flow.

The topography of the area has dictated that most of the development in Buchanan County take place in the bottom lands that are subjected to frequent flooding. Several structures in the Grundy, Vansant, Tookland and Oakwood areas are located in the floodplain. Vansant, Garden, Whitewood and D.A. Justus Elementary schools have been flooded.
Several industries are also located in the floodplain.

This level of development in the floodplain has further aggravated the flooding problem. The commercial and residential buildings, along with the highway and roadway embankments which are adjacent to the streams, encroach upon the stream channels and raise flood heights for some distance upstream from these obstructions. Highway and railway bridges across the streams restrict flood flows and result in higher crests upstream from their location. All of these obstructions, coupled with the steep slopes of the stream channels, produce hazardous water velocities during severe storms.

The Army Corps of Engineers report computed the magnitude of the Intermediate Regional Flood and the Standard Project Flood. The Intermediate Regional Flood (100 year-flood) is a flood having an average frequency of occurrence in the order of once in 100 years, although the flood could occur in any year. It is based on the statistical analyses of

rainfall and runoff characteristics in the general region of the watershed. The Standard Project Flood is the largest flood that may be expected from the most severe combination of meteorological and hydrological conditions that is considered reasonably characteristic of the region involved.

One of the greatest known floods on the Levisa Fork during the past 100 years occurred in April 1977. This flood also caused major damage, and several homes and some businesses were washed away. The flood was nearly equal in magnitude to a statistical 100 year flood. Prior to the April 1977 flood, the January 1957 flood caused a great deal of damage. During a Standard Project Flood, velocities would be extremely dangerous to life and property. According to reports by the Army Corps of Engineers, a Standard Project Flood, with its great velocity and depth (20 to 25 feet higher than the 1957 flood), would be catastrophic to the areas along the Levisa and its tributaries.

Possible measures to alleviate the flooding problem include: stream clearance and channel improvements for those areas where flooding is greatest; protection of the watershed areas of streams to see that runoff is properly controlled; construction of flood protection works; and regulatory measures to control future use of the flood plains.

NATURAL RESOURCES

The chief mineral resource in Buchanan County is coal. The southwestern Virginia coalfields are part of a larger central Appalachian coal region which also includes parts of southern West Virginia and eastern Kentucky. Buchanan County is the leading coal producer in the state, in 2013 Buchanan County produced over 7 million tons of coal.

One measure of coal's significance is the value of its production. The dramatic increases in coal's price in 1974 caused coal's value to more than double, but as prices declined throughout the decade of the eighties, so did the value of production. This reduction in price has forced

coal companies to increase productivity (tonnage mined per miner) in order to be profitable.

According to a 1987 report published by the department of Mines, Minerals and Energy, coal reserves can last up to 78 more years in Buchanan County at current production levels.

These figures, however, do not take into account many variables such as less profitable operations, a volatile market, and overseas competition. Some of the most profitable mines may be nearing depletion. Mines in the western United States and in other countries have large, easy to reach seams with high quality coal. With this type of competition, the coal market is highly unpredictable. Production in Virginia has dropped from 46 million tons in 1988 to 42 million tons in 1991, and that trend has continued through 2013.

In addition to being the leading producer of coal in the state, Buchanan County is also one of the major producers of natural gas. In Virginia in 1989, natural gas provided about 10 percent of the primary energy and 14 percent of the end-use energy. Because of concerns about oil imports and the air emissions from coal burning, many look to natural gas as an increasing source of energy for Virginia and the nation. Natural gas has been produced from the natural gas fields in southwestern Virginia since the 1930's. Production as a whole doubled in the mid-to-late eighties, and the development of coalbed methane improved the prospects for a continued increase in natural gas production through the 2010's.

It is important to distinguish between reserves and resources. Reserves include those known deposits that are recoverable at today's prices using today's technologies. In addition to reserves, resources also include unknown deposits, as well as those that are known but cannot be developed profitably at today's prices. According to recent government estimates, the nation's natural gas reserve and resource base is weak. This weakness could be a strength for the gas producing counties of southwestern Virginia.

Coalbed methane found in the coal seams offers an opportunity for production of unconventional gas. A long-time hazard of underground mining, this gas has had to be vented from mines to insure safe mining conditions. After successful commercial development in Alabama and New Mexico, this methane is now seen as a valuable resource. The greatest potential coalbed methane resources are in the coal seams of Buchanan and Dickenson Counties.

Coal Production (Tons)

Year	Buchanan	Dickenson	Russell	Tazewell	PDC Total
1990	20,938,340	6,686,984	926,249	3,716,869	32,268,442
1991	17,479,189	5,857,352	1,114,282	3,921,886	28,372,709
1992	17,962,757	6,360,976	1,094,510	3,534,018	28,952,261
1993	13,958,036	5,516,515	1,552,558	2,862,372	23,889,481
1994	13,594,006	4,303,346	1,467,694	2,481,842	21,846,888
1995	13,791,629	2,704,253	1,728,600	2,156,220	20,380,702
1996	14,783,931	2,988,258	1,345,502	1,839,618	20,957,309
1997	14,224,401	3,699,032	696,401	1,699,083	20,318,917
1998	12,467,167	4,021,151	705,429	1,806,652	19,000,399
1999	10,655,918	4,168,329	394,430	2,069,730	17,288,407
2000	11,154,684	4,259,431	156,525	1,469,825	17,040,465
2001	11,589,519	3,230,718	665,065	1,626,539	17,111,841
2002	10,048,222	2,779,463	556,557	1,435,455	14,819,697
2003	10,812,659	2,735,067	555,534	1,293,990	15,397,250
2004	10,347,697	2,564,014	489,984	1,335,068	14,736,763
2005	7,756,474	2,566,576	952,366	1,237,844	12,513,260
2006	10,180,930	2,582,717	980,663	1,349,704	15,094,014
2007	7,777,265	2,139,842	1,072,568	1,165,052	12,154,727
2008	8,438,897	2,070,185	1,133,535	744,959	12,387,576
2009	6,799,719	1,384,909	1,031,003	836,322	10,051,953
2010	8,744,056	1,058,819	726,205	943,236	11,472,316
2011	9,315,749	1,331,667	881,376	1,118,585	12,647,377
2012	7,183,857	3,412,332	725,511	1,410,408	12,732,108
2013	7,695,116	3,542,761	397,957	1,248,095	12,883,929

Source: Department of Mines Minerals and Energy

POPULATION

PAST GROWTH

One of the most effective ways to track population growth in this county is to trace the population growth of Buchanan County from 1900 when there were only 9,692 persons living in the county to the most recent census total of 24,098. Population growth in the county began as the lumber and coal industries grew. As these industries grew many new inhabitants migrated to the county. By 1920 the county's population stood at 15,441 an increase of 24.94 percent from the 1910 count of 12,334. The county continued to grow as the population increased 8.62 percent during the 1920's to 16,740 in 1930. Between 1930 and 1940 the population showed its largest increase by reaching 31,477 persons, a rise of over 88 percent. An increase of 13.56 percent during the 1940's brought the county's population up to 35,748 in 1950.

Growth slowed considerably during the next twenty years. After reaching a high in 1960 of 36,724 persons, the following years saw the county's population decreased rapidly as the introduction of machines into the coal industry eliminated many jobs. This decrease totalled 12.67 percent during the 1960's. The years between 1970 and 1980 saw another increase in population, 18.46 percent, as the mining industry expanded. This increase led the county to its peak number of inhabitants, but a population drop of 17.53 percent by 1990 is proof that the mining boom was short lived. Unfortunately, these trends have continued in the current direction, with the 2000 census revealing a population decrease of over 13% with 26,978 county residents and further decline in the most recent census with a total of 24,096 county residents.

The population of Grundy reached 2,054 persons in 1970, but had dropped to 1,699 persons in 1980, then to 1,305 persons in 1990, then to 1,105 in 2000, and then to 1,021 residents in the most recent census.

Table 6 BUCHANAN COUNTY GROWTH TRENDS: 1900-1990

Year	Population	% Changes
1900	9,692	
		+27.25% (1900-1910)
1910	12,334	
		+24.94% (1910-1920)
1920	15,441	
		+ 8.62% (1920-1930)
1930	16,740	
		+88.03% (1930-1940)
1940	31,477	
		+ 13.56% (1940-1950)
1950	35,748	
		+2.73% (1950-1960)
1960	36,724	
		-12.67% (1960-1970)
1970	32,071	
		+ 18.45% (1970-1980)
1980	37,989	

		-17.52%	(1980-1990)
1990	31.333		
		-13.90%	(1900-2000)
2000	26,978		
		-10.68%	(2000-2010)
2010	24,098		

Source: U.S. Department of Commerce, Bureau of the Census.

DENSITY

Approximately 96 percent of Buchanan County's population reside in the county, while 4 percent reside in the town of Grundy. According to the 2010 Census of Population, Buchanan County has a density of 62.2 people per square mile. The density for the town of Grundy is much greater, 259 people per square mile. In 1980, 7.3 percent of the county's population was considered urban. By 1990, population density in the Town of Grundy had dropped below the threshold level and 100 percent of Buchanan County's population is currently considered to be rural.

The distribution pattern of Buchanan County's population is linear, with development following the major streams, ridgetops and highways. This linear growth is likely to continue, given the limited amount of developable land.

RACIAL CHARACTERISTICS

Buchanan County has a primarily white population with minority groups in 2010 totaling approximately 664 persons, less than one percent of the population.

Selected Racial Data By Population and Percentage

Jurisdiction	Population	White	Percent	Black or African American	Percent	Asian	Percent	Hispanic Latino	Percent
Buchanan County	24,098	23,271	96.6%	616	2.6%	53	0.2%	95	0.4%
Dickenson County	15,903	15,712	98.8%	51	0.3%	18	0.1%	86	0.5%
Russell County	28,897	28,270	97.8%	233	0.8%	53	0.2%	275	1.0%
Tazewell County	45,078	42,868	95.1%	1,333	3.0%	289	0.6%	296	0.7%
CPPDC	113,976	109,689	96.2%	2,222	2.0%	409	0.4%	752	0.7%
Virginia	8,001,024	5,486,852	68.6%	1,551,399	19.4%	439,890	5.5%	631,825	7.9%

Source : U.S. Census Bureau 2010

Selected Racial Data Estimates By Population and Percentage

Jurisdiction	Population	White	Percent	Black or African American	Percent	Asian	Percent	Hispanic Latino	Percent
Buchanan County	23,683	22,760	96.1%	549	2.3%	215	0.9%	106	0.5%
Dickenson County	15,612	15,376	98.5%	118	0.8%	13	0.1%	114	0.7%
Russell County	28,444	27,615	97.1%	384	1.4%	64	0.2%	126	0.4%
Tazewell County	44,331	42,070	94.9%	1,221	2.8%	163	0.4%	354	0.8%
CPPDC	112,070	107,821	96.2%	2,272	2.0%	455	0.4%	700	0.6%
Virginia	8,185,431	5,668,363	69.3%	1,577,943	19.3%	475,632	5.8%	687,265	8.4%

Source : U.S. Census Bureau American Community Survey 2010-2014

AGE CHARACTERISTICS

The age of a population can be used as a rough indicator of the level and type services which are needed and desired in an area. Each age group generally possesses certain needs and desires which are quite different from those of the other age groups. The obvious trend is that the population of Buchanan County is growing older. A steady decrease in the number of young people and a steady increase in the number of elderly people causes the median age of the population to increase.

The median age of all the counties within the Cumberland Plateau Planning District is increasing, and currently Buchanan County's median age is 43.8 years old, is middle aged. This median age is expected to increase, due to several factors such as a lack of job opportunities for young adults and the resulting outward migration as graduates leave and do not return. Also contributing to the aging population is the influence of the nationwide group known as Babyboomers. As this segment of the nation's population grows old, no county will be left unaffected and many adjustments will need to be made to support their needs.

Table 8 MEDIAN AGES: 1990- 2010

	1990	2000	2010
Buchanan	32.2	38.8	43,8
Dickenson	34.0	39.7	43
Russell	34.6	38.7	43
Tazewell	35.4	40.7	43.2
CPPD	34.1	39.5	43.2
Virginia	32.6	35.7	37.5

Source: 1990, 2000 and 2010 U.S. Census of Population.

ECONOMY AND EMPLOYMENT

The basic employment of Buchanan County is the coal mining industry. Basicemployment is defined as the employment in industries which sell most of their goods and services outside of the area. Emphasis is always placed on the basic employment sector because it is the primary source of area growth. An economy based on a single industry, such as coal, creates problems which are difficult to correct. Dependence on one basic industry makes the economy of an area highly susceptible to changes in that industry. Industries which sell most of their goods to outside areas depend on national or regional demand rather than on local demand.

The national demand for coal during the 1960's decreased, as oil and natural gas moved into coal's major markets as home and industrial heating fuel. To further impact employment in the coal mining industry, greater mechanization allowed for higher production rates with fewer people. The coal boom of the 1970[f]s brought a short-lived boost to the economy of the area. In the later part of the 1970's, environmental controls were tightened and over time impacted several of the smaller marginally profitable companies. These companies were able to withstand this burden until the market price of coal began to decline in the early 1980's. The coal mining industry again made a large come back in the early 1990's leading to a drastic decrease in unemployment and a host of economic opportunities throughout the county. However, coal again precipitously declined in the early 2000s leading to a major economic downturn county wide.

During this time economic decline became apparent by the high rates of unemployment and the low levels of family income for Buchanan County.

Recent efforts to diversify the economy include the following additions to Buchanan County's employment base: Keen Mountain Correctional Center; Heritage Hall XIV, which is an elderly care center; Application School of Law; and the Appalachian school of Pharmacy.

FORECASTS

According to Virginia Employment Commission reports, 2020 Buchanan County population projections are forecasted to continue dropping slightly over the next ten years leveling off at 2030 and even increase by 2040.

Population decline can cause a county's tax revenues to decrease, making it more difficult and expensive to deliver services to the remaining residents. Additional jobs could be lost, as businesses leave the area due to lack of demand for the goods they provide. Declining enrollment in local schools shifts more financial responsibility to the county, since state funding is based on the number of students. If population loss continues, certain changes will be necessary to ensure the most efficient use of limited funds. To minimize the effects of population loss, consolidation of certain schools may be required, and businesses should be recruited that produce products with a national or international market.

Many tools are available that will enable Buchanan County officials to provide services efficiently and maintain an adequate tax base. The Geographic Information System (GIS) currently being developed by Cumberland Plateau Planning District Commission can greatly improve the county's ability to collect property taxes and keep up-to-date records on parcels within the county. GIS technology can also be used to locate areas most in need of specific services. Technology such as this will greatly aid in planning for the 21st century.

COUNTY POPULATION PROJECTIONS

	2010	2020	2030	2040
VA EC	24,098	23,383	23,263	23,298

Population Projections By Gender & Age

Age	Buchanan County									Dickenson County								
	2020			2030			2040			2020			2030			2040		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Under 5 years	895	475	420	830	440	390	801	425	376	732	373	359	673	343	330	669	341	328
5 to 9 years	1,016	509	507	966	484	482	908	455	453	763	391	372	728	373	355	700	358	342
10 to 14 years	1,304	669	635	1,123	576	547	1,092	560	532	1,003	500	503	878	438	440	833	416	417
15 to 19 years	1,183	659	524	1,096	611	485	1,093	609	484	948	480	468	827	419	408	815	413	402
20 to 24 years	1,059	568	491	1,098	589	509	993	533	460	692	366	326	748	396	352	676	358	318
25 to 29 years	1,113	606	507	997	543	454	970	528	442	714	373	341	738	385	353	666	348	318
30 to 34 years	1,365	772	593	1,179	667	512	1,280	724	556	771	411	360	740	395	345	826	441	385
35 to 39 years	1,483	783	700	1,229	649	580	1,155	610	545	1,003	499	504	814	405	409	868	432	436
40 to 44 years	1,451	747	704	1,498	771	727	1,356	698	658	980	508	472	828	429	399	820	425	395
45 to 49 years	1,519	785	734	1,591	822	769	1,383	715	668	1,041	521	520	1,091	546	545	913	457	456
50 to 54 years	1,721	909	812	1,539	813	726	1,666	880	786	1,034	527	507	1,056	538	518	921	469	452
55 to 59 years	1,968	987	981	1,619	812	807	1,777	891	886	1,197	604	593	1,049	529	520	1,136	573	563
60 to 64 years	2,023	949	1,074	1,790	840	950	1,679	788	891	1,275	630	645	1,065	526	539	1,123	555	568
65 to 69 years	1,788	885	903	1,950	965	985	1,682	832	850	1,154	609	545	1,187	626	561	1,074	566	508
70 to 74 years	1,429	648	781	1,784	809	975	1,656	751	905	948	445	503	1,112	522	590	959	450	509
75 to 79 years	980	454	526	1,389	644	745	1,590	737	853	621	266	355	839	360	479	891	382	509
80 to 84 years	648	239	409	898	331	567	1,175	433	742	401	143	258	590	210	380	714	254	460
85 and over	437	149	288	687	234	453	1,039	354	685	324	106	218	415	135	280	588	192	396
Total population	23,382	11,793	11,589	23,263	11,600	11,663	23,295	11,523	11,772	15,601	7,752	7,849	15,378	7,575	7,803	15,192	7,430	7,762

Age	Russell County									Tazewell County								
	2020			2030			2040			2020			2030			2040		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Under 5 years	1,327	667	660	1,341	674	667	1,344	676	668	2,127	1,073	1,054	2,032	1,025	1,007	2,020	1,019	1,001
5 to 9 years	1,379	694	685	1,380	694	686	1,401	705	696	2,329	1,165	1,164	2,229	1,115	1,114	2,203	1,102	1,101
10 to 14 years	1,743	859	884	1,544	761	783	1,601	789	812	2,599	1,360	1,239	2,448	1,281	1,167	2,400	1,256	1,144
15 to 19 years	1,669	864	805	1,499	776	723	1,539	797	742	2,679	1,372	1,307	2,536	1,299	1,237	2,492	1,276	1,216
20 to 24 years	1,490	768	722	1,601	825	776	1,455	750	705	2,166	1,132	1,034	2,194	1,146	1,048	2,122	1,109	1,013
25 to 29 years	1,624	854	770	1,597	840	757	1,472	774	698	2,219	1,178	1,041	2,212	1,174	1,038	2,149	1,141	1,008
30 to 34 years	1,679	863	816	1,692	870	822	1,865	959	906	2,465	1,327	1,138	2,354	1,267	1,087	2,448	1,318	1,130
35 to 39 years	1,608	784	824	1,730	844	886	1,747	852	895	2,698	1,412	1,286	2,503	1,310	1,193	2,561	1,340	1,221
40 to 44 years	1,682	834	848	1,737	861	876	1,797	891	906	3,058	1,577	1,481	2,796	1,442	1,354	2,740	1,413	1,327
45 to 49 years	1,944	950	994	1,680	821	859	1,856	907	949	2,997	1,462	1,535	2,878	1,404	1,474	2,741	1,337	1,404
50 to 54 years	2,016	991	1,025	1,803	886	917	1,911	939	972	2,961	1,435	1,526	3,293	1,596	1,697	3,092	1,499	1,593
55 to 59 years	2,211	1081	1,130	2,015	985	1,030	1,788	874	914	3,264	1,621	1,643	3,109	1,544	1,565	3,065	1,522	1,543
60 to 64 years	2,488	1244	1,244	2,080	1,040	1,040	1,908	954	954	3,668	1,829	1,839	3,033	1,512	1,521	3,463	1,727	1,736
65 to 69 years	2,097	982	1,115	2,134	999	1135	1,996	935	1061	3,365	1,581	1,784	3,157	1,483	1,674	3,086	1,450	1,636
70 to 74 years	1,657	741	916	2,126	951	1175	1,825	817	1008	2,711	1,225	1,486	3,141	1,419	1,722	2,667	1,205	1,462
75 to 79 years	1,153	480	673	1,588	661	927	1,660	691	969	1,794	749	1,045	2,550	1,065	1,485	2,455	1,025	1,430
80 to 84 years	676	280	396	967	401	566	1,274	528	746	1,115	421	694	1,696	640	1,056	2,018	762	1,256
85 and over	609	219	390	781	281	500	1,097	395	702	1,083	338	745	1,275	398	877	1,811	565	1,246
Total population	29,052	14,155	14,897	29,295	14,170	15,125	29,536	14,233	15,303	45,298	22,257	23,041	45,436	22,120	23,316	45,533	22,066	23,467

Age	CPPDC								
	2020			2030			2040		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Under 5 years	5,081	2,588	2,493	4,876	2,482	2,394	4,834	2,461	2,373
5 to 9 years	5,487	2,759	2,728	5,303	2,666	2,637	5,212	2,620	2,592
10 to 14 years	6,649	3,388	3,261	5,993	3,056	2,937	5,926	3,021	2,905
15 to 19 years	6,479	3,375	3,104	5,958	3,105	2,853	5,939	3,095	2,844
20 to 24 years	5,407	2,834	2,573	5,641	2,956	2,685	5,246	2,750	2,496
25 to 29 years	5,670	3,011	2,659	5,544	2,942	2,602	5,257	2,791	2,466
30 to 34 years	6,280	3,373	2,907	5,965	3,199	2,766	6,419	3,442	2,977
35 to 39 years	6,792	3,478	3,314	6,276	3,208	3,068	6,331	3,234	3,097
40 to 44 years	7,171	3,666	3,505	6,859	3,503	3,356	6,713	3,427	3,286
45 to 49 years	7,501	3,718	3,783	7,240	3,593	3,647	6,893	3,416	3,477
50 to 54 years	7,732	3,862	3,870	7,691	3,833	3,858	7,590	3,787	3,803
55 to 59 years	8,640	4,293	4,347	7,792	3,870	3,922	7,766	3,860	3,906
60 to 64 years	9,454	4,652	4,802	7,968	3,918	4,050	8,173	4,024	4,149
65 to 69 years	8,404	4,057	4,347	8,428	4,073	4,355	7,838	3,783	4,055
70 to 74 years	6,745	3,059	3,686	8,163	3,701	4,462	7,107	3,223	3,884
75 to 79 years	4,548	1,949	2,599	6,386	2,730	3,636	6,596	2,835	3,761
80 to 84 years	2,840	1,083	1,757	4,151	1,582	2,569	5,181	1,977	3,204
85 and over	2,453	812	1,641	3,158	1,048	2,110	4,535	1,506	3,029
Total population	113,333	55,957	57,376	113,372	55,465	57,907	113,556	55,252	58,304

Source : Virginia Employment Commission

ECONOMY AND EMPLOYMENT

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County's employment base: Keen Mountain Correctional Center; Heritage Hall XIV, which is an elderly care center; Application School of Law; and the Appalachian school of Pharmacy.

UNEMPLOYMENT

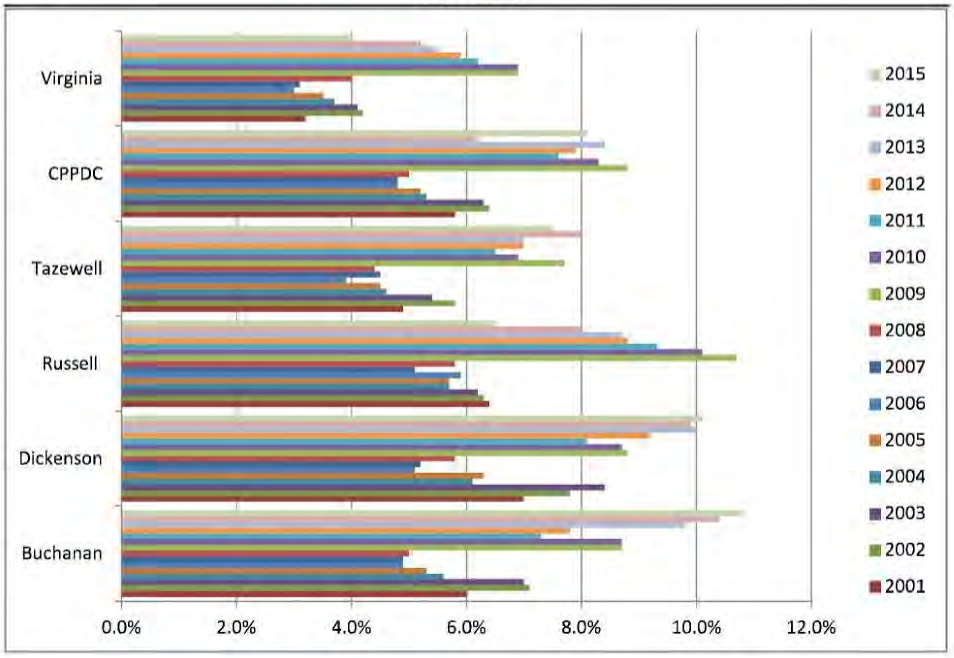
Unemployment has plagued Buchanan County over the past 35 years. The unemployment level peaked in 1983 at 26.4 percent, and although the figure dropped to 4.9 percent in 2007 it rose again to 10.8 percent in 2015. In comparison to the other counties in Cumberland Plateau Planning District and the state of Virginia average, Buchanan County has had the highest rate of unemployment for the past two years.

Average Unemployment Rates
2000-2015

Year	Buchanan	Dickenson	Russell	Tazewell	CPPDC	Virginia
2000	5.8%	5.8%	5.1%	5.1%	5.3%	2.3%
2001	6.0%	7.0%	6.4%	4.9%	5.8%	3.2%
2002	7.1%	7.8%	6.3%	5.8%	6.4%	4.2%
2003	7.0%	8.4%	6.2%	5.4%	6.3%	4.1%
2004	5.6%	6.1%	5.7%	4.6%	5.3%	3.7%
2005	5.3%	6.3%	5.7%	4.5%	5.2%	3.5%
2006	4.9%	5.1%	5.9%	3.9%	4.8%	3.0%
2007	4.9%	5.2%	5.1%	4.5%	4.8%	3.1%
2008	5.0%	5.8%	5.8%	4.4%	5.0%	4.0%
2009	8.7%	8.8%	10.7%	7.7%	8.8%	6.9%
2010	8.7%	8.7%	10.1%	6.9%	8.3%	6.9%
2011	7.3%	8.1%	9.3%	6.5%	7.6%	6.2%
2012	7.8%	9.2%	8.8%	7.0%	7.9%	5.9%
2013	9.8%	10.0%	8.7%	7.0%	8.4%	5.5%
2014	10.4%	9.9%	8.0%	8.0%	6.2%	5.2%
2015	10.8%	10.1%	6.5%	7.5%	8.1%	4.0%

Source: Virginia Employment Office

Average Unemployment Rates
2000-2015



INCOME

All counties within the district have below average incomes for the state of Virginia. Disparity in income is expected to lower somewhat as more jobs become available and educational attainment rises.

Income Type

Income Type	Buchanan County		Dickenson County		Russell County		Tazewell County		CPPDC		Virginia	
	2000	2010-2014	2000	2010-2014	2000	2010-2014	2000	2010-2014	2000	2010-2014	2000	2014
Median Household Income	22,213	29,678	23,431	33,106	26,834	34,768	27,304	36,248	24,946	33,450	46,667	64,902
Median Family Income	27,328	39,722	27,986	42,308	31,491	48,495	33,732	46,768	30,134	44,323	54,169	78,290
PerCapita Income	12,788	18,357	12,822	17,954	14,863	20,117	15,282	21,558	13,939	19,497	23,975	34,052

Source: U.S. Census Bureau 2000 data - 2010-2014 American Community Survey
Virginia is from 2014 1 yr American Community Survey

The median family income has dropped for Buchanan County, along with the entire district, but has risen for the state of Virginia.

POVERTY

In Buchanan County, 20.60 percent of the population lives below poverty level, or 18.9 percent of all families. When female householder families are singled out, the rate increases to 47.3 percent living below poverty level.

Poverty Status

Group	Buchanan County	Percent Below Poverty	Dickenson County	Percent Below Poverty	Russell County	Percent Below Poverty	Tazewell County	Percent Below Poverty	CPPDC	Percent Below Poverty	Virginia	Percent Below Poverty
All Families	6,618	20.60%	4,289	15.50%	7,386	15.00%	12,369	14.20%	30,662	16.33%	2,047,106	8.20%
Families With Children Under 18	2,569	35.90%	1,743	26.60%	2,808	24.80%	5,075	24.70%	12,195	28.00%	990,615	13.00%
Families With Female Head of Household	1,326	47.30%	669	39.90%	1,119	37.20%	1,924	37.80%	5,038	40.55%	375,722	25.50%

Source: 2010-2014 American Community Survey

With over 20 percent of all households below the poverty level and a dearth economic opportunity within the county, many families remain at a low income level, thus becoming permanently dependant on state and federal assistance.

TAXABLE SALES

Taxable sales in Buchanan County have dropped since 2012, while Russell, Tazewell, and Dickenson Counties tend to oscillate by year.

Taxable Sales
2000-2015

Year	Buchanan	Dickenson	Russell	Tazewell	CPPDC
2000	$115,923,478	$48,398,260	$107,862,419	$409,177,303	$681,361,460
2001	$114,597,950	$47,977,617	$101,878,423	$414,883,974	$679,337,964
2002	$114,720,922	$49,531,310	$122,525,574	$421,810,028	$708,587,834
2003	$112,152,118	$50,249,767	$129,188,820	$439,228,597	$730,819,302
2004	$116,924,712	$52,914,791	$138,753,368	$462,767,675	$771,360,546
2005	$107,211,477	$50,357,215	$132,085,662	$433,462,904	$723,117,258
2006	$123,290,187	$57,182,687	$149,040,720	$503,888,173	$833,401,767
2007	$127,687,900	$60,083,344	$156,657,814	$520,718,233	$865,147,291
2008	$139,948,887	$63,232,095	$161,030,985	$541,605,045	$905,817,012
2009	$127,560,716	$64,054,957	$157,889,960	$532,354,982	$881,860,615
2010	$125,345,514	$65,984,411	$158,276,136	$531,158,462	$880,764,523
2011	$142,304,553	$68,042,398	$159,840,501	$540,216,247	$910,403,699
2012	$156,984,874	$66,417,728	$160,139,687	$552,018,668	$935,560,957
2013	$148,802,737	$65,552,723	$153,199,811	$527,292,801	$894,848,072
2014	$147,726,232	$69,962,263	$159,893,054	$521,246,767	$898,828,316
2015	$141,875,222	$60,520,561	$172,010,922	$531,489,881	$905,896,586

Source: Virginia Department of Taxation

The trend in taxable sales for Buchanan County appears to show steady nominal growth in most years peaking 2012, and decreasing steadily since.

FORECASTS

The different segments of the economy are interrelated. If employment is to increase, sales and production must expand. If sales and production are to expand, there must be an increase in demand. If demand is to increase, there must be an increase in income, in the size of the economic base, or both.

The Woods and Poole Forecast, like all economic and demographic forecasts, analyzes historical data to make estimates of future data. One limitation is that the future is never known

with any certainty. There is always the possibility of an unprecedented shock to the economy, or of some other event that could not be foreseen based on analysis of historical data. Small area forecasts are subject to more error because of the small sample size. The larger the area, the more reliable the model will be.

The Woods and Poole Forecast expects that areas of Virginia which have strong manufacturing economies or are regional centers for retail trade, transportation and services will have high growth. Regional economies dependant on mining, however, are expected to have the slowest economic growth. The mining industry is considered to be stabilized, with only slight changes in mining employment expected.

Employment growth for Buchanan County is likely to occur in the areas of state and local government, services, manufacturing and retail trade. When the forecasted population growth is compared to the forecasted growth in employment, the result is an expected 4,040 more jobs, and an expected 1,800 more people. This indicates that the unemployment rate will decline. As the population ages and people begin to leave the labor force, labor market pressures will be eased further, with the changes most keenly felt in 2015 when the bulk of the baby-boom generation enters retirement.

EMPLOYMENT/POPULATION FORECAST

	1995	2000	2005	2010	2015
Population	31,700	32,100	32,520	32,990	33,500
Employment	16,030	16,990	17,960	18,970	20,070

Source: Woods and Poole Economics, Inc.

EMPLOYMENT FORECASTS BY INDUSTRY

Sector	1995	2000	2005	2010	2015
Agriculture	10	10	10	10	10
Mining	5,750	5,910	6,070	6,270	6,520
Construction	800	840	890	930	980
Manufact.	340	350	360	370	380
Tran, Com, PU	1,630	1,820	2,010	2,200	2,380
Wholesale	690	790	880	980	1,080
Retail	1,910	2,100	2,310	2,530	2,760
Fin, Ins, R.E.	370	390	400	410	430
Service	2,530	2,750	2,980	3,210	3,450
Govt.	1,900	1,930	1,950	1,980	2,000

Source: Woods and Poole Economics, Inc.

Buchanan County has the institutional, locational, and human resources necessary to plan and successfully stimulate a recovery in the local economy. Efforts must be made to allow the residents to fully satisfy their demands for consumer goods locally, by encouraging expansion and revitalization of the retail sector. Since the county does not contain any large towns or urban centers with which to attract business and secure economic diversification, local government must be very attentive to business's needs.

Unskilled workers can be viewed as a strength, since national shortages of reliable unskilled workers are expected to develop during the 1990's. Facilities formerly used by coal companies have potential as industrial incubators and small industry buildings, they have both office and industrial purposes.

TRANSPORTATION

The effects of a community's transportation system are vital. The distance from the county seat of Buchanan County to nearby metropolitan areas pushes the county into an isolated and remote situation. These distances can be used to partially explain the value of a good transportation system, one which will counteract the problems created by isolation. An improved transportation system would tremendously help Buchanan County in its efforts to diversify the local economy.

A transportation plan must take into consideration topography, population density and distribution, land development policies and the overall planning objectives of the community. A safe and efficient transportation system is a critical service provided and maintained by the government. It provides means of transportation for goods and services and connects citizens to their areas of employment, schools, shopping, and community activities. Due to the overall topography and as Buchanan County continues to struggle with growth and economic development, careful consideration must be given to the relationship between land use and development and transportation

needs. Buchanan County must consider economic impacts and must find a balance that will be in the best interest of its residents.

BUCHANAN COUNTY ROAD NETWORK

The primary mode of transportation in Buchanan County is the road system. This system utilizes a combination of interstate roads (through access routes), state primary roads, state secondary roads, Buchanan County road system, and privately maintained roads to serve the needs of Buchanan County residents. The Virginia Department of Transportation (VDOT) maintains, improves, and develops state roads and road infrastructure. Though maintenance of transportation infrastructure occurs at the state level, transportation planning occurs on a national, state, regional and local level. It is important for the county to study transportation issues to ensure the needs of Buchanan County citizens are reflected in regional and state plans. Roads classifications, locations, maintenance, and access have a strong influence on the economic development and interest of Buchanan County and its' residents.

Virginia's Highway System is divided into four (4) categories: Interstate, Primary, Secondary, and Frontage. The Virginia Department of Transportation (VDOT) divides the state into nine (9) districts. Each district oversees maintenance and construction projects on the state-maintained highways, bridges, and tunnels within its region. Buchanan County state highway system is maintained by the Virginia Department of Transportation, Bristol District. The Bristol District consist of four (4) residencies and includes more than 7,400 miles of roads located within twelve (12) counties. Buchanan County has three (3) primary state roads and numerous secondary state roads within their highway system.

INTERSTATE HIGHWAYS in Virginia are four (4) – to – ten (10) lane highways that connect states and major cities. The nearest interstates to serve Buchanan County are Interstate 77 and Interstate 81. Interstate 81 in Virginia extends for a total of 325 miles from the Virginia –

Tennessee state line near Bristol to the Virginia – West Virginia state line near Winchester. Interstate 81 corridor functions as a freight corridor for both trucks and rail. This interstate links twenty (20+) plus colleges and universities and many tourism attractions including state parks, recreations areas, Civil War battlefields, and National Forests. Interstate 77 in Virginia extends for a total of 69 miles from the North Carolina state line near Carroll County to the West Virginia state line near Bland County. Interstate 77 includes a high traffic volume, eight-mile overlap with Interstate 81 in Wytheville/Wythe County. The nearest Interstate 81 access for Buchanan County is located in Washington County at Exit 14. The nearest Interstate 77 access for Buchanan County is located in Bluefield, WV.

STATE PRIMARY ROADS in Virginia are numbered and maintained by the Virginia Department of Transportation as a system of state highways. Primary routes are typically two (2) – to – six (6) lane roads that connect cities and towns with each other and also connects with interstates. Primary State Routes receive more funding that Secondary State Routes and are numbered as U.S. Routes or State Routes with numbers ranging from 1 to 599. Buchanan County is served by three (3) primary state highways: US 460, SR 80, and SR 83. VDOT maintains, improves and develops state roads and road infrastructure in Buchanan County. In Buchanan County there are 93 road miles (187 lane miles) of state primary roads.

STATE SECONDARY ROADS are generally numbered 600 and above. Secondary roads absorb traffic from busier primary roads and locally maintained roads. In Buchanan County there are 462 road miles (926 lane miles) of state secondary roads.

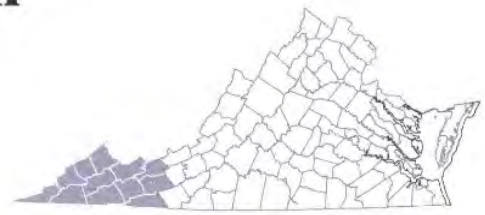
BUCHANAN COUNTY ROAD SYSTEM, under Virginia Code section § 58.1-3713, was first created in 1987. Buchanan County is one (1) of three (3) counties in the state of Virginia that operate their own county road system. Buchanan County's road system is separate from the Virginia Department of Transportation road system and includes its own numbering system, policy, and

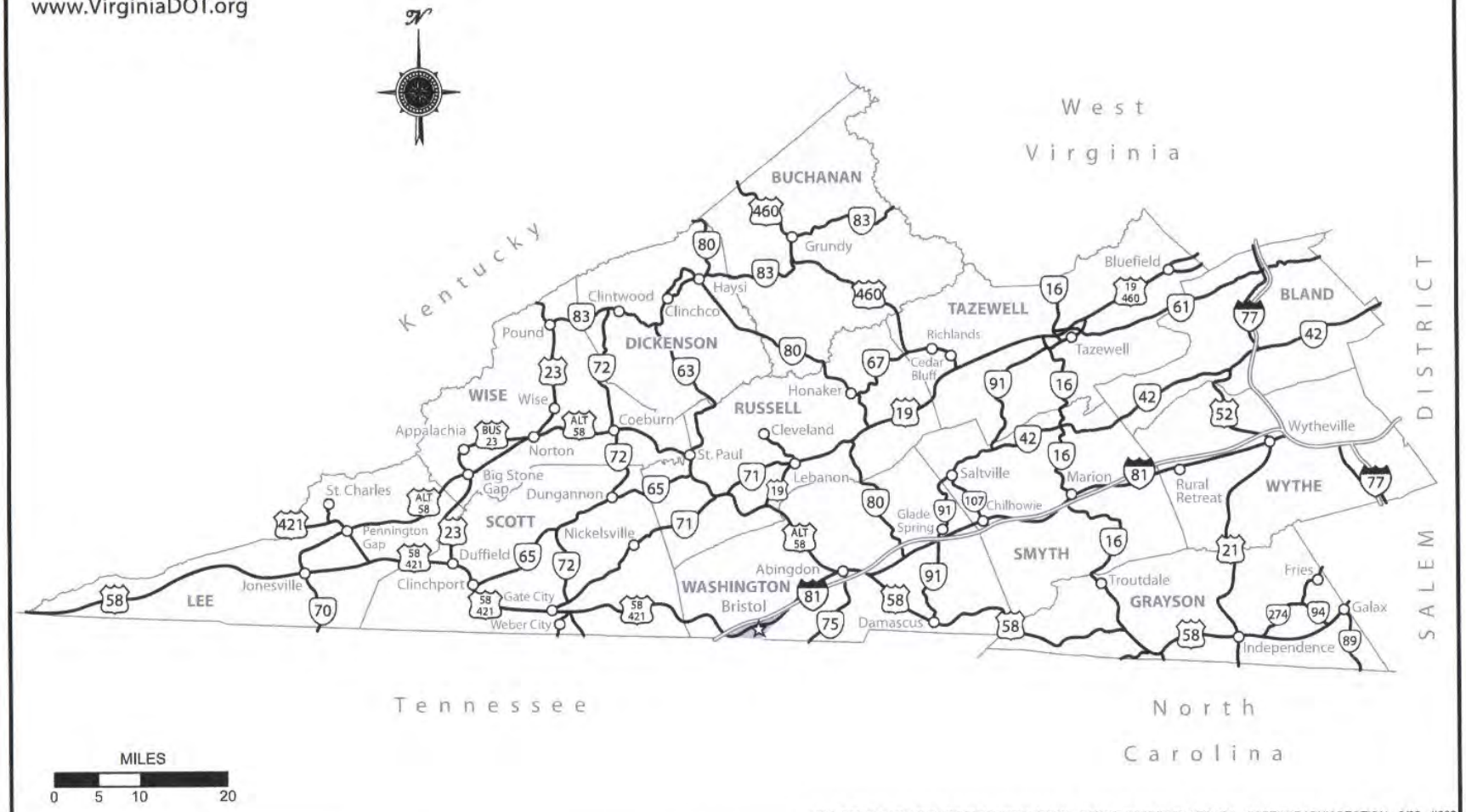
guidelines, and funding source. Buchanan County has over 700 roads & bridges in excess of 220 miles of roadway they operate and maintain each fiscal year pending on available funds. This system is operated with coal and gas severance tax funds and funding is not limited to county roads or bridges. Each fiscal year, Coal Haul Road Plan funding includes, but is not limited to, county road maintenance and construction, PSA, State Revenue Sharing, Disaster Relief, CEDA transfer, Bridge Crew, and Mapping & Engineering Administrative. Construction and Maintenance funding is approved on a fiscal year basis by the Coal Haul Road Committee and submitted to the Board of Supervisors for their review and acceptance. The fiscal year coal haul road plan must be submitted and accepted by the Board of Supervisors prior to July 1, which is the beginning of each fiscal year.

PRIVATE ROADS may be taken into the Buchanan County Road System by the Board of Supervisors under certain guidelines and restraint as deemed under the current revision of the Buchanan County Road and Bridge Policy.

Virginia Department of Transportation
BRISTOL DISTRICT

Bristol District Office (☆)
870 Bonham Road
Bristol, Virginia 24201
276-669-6151
www.VirginiaDOT.org





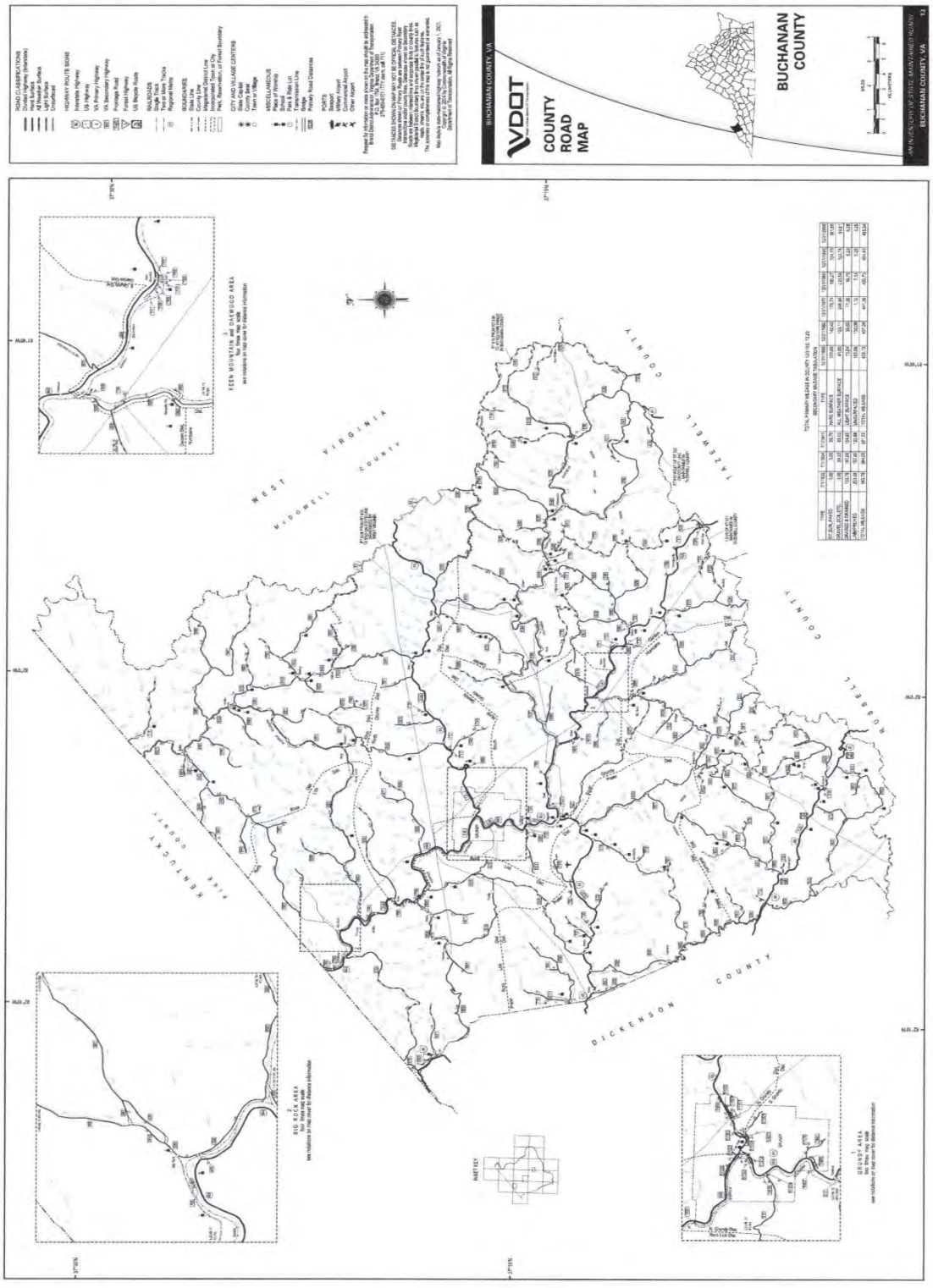
VIRGINIA DEPARTMENT OF TRANSPORTATION - OFFICE OF PUBLIC AFFAIRS - CARTOGRAPHY SECTION - 8/03 - #002

PRIMARY ROADS TRAFFIC VOLUME: 2016

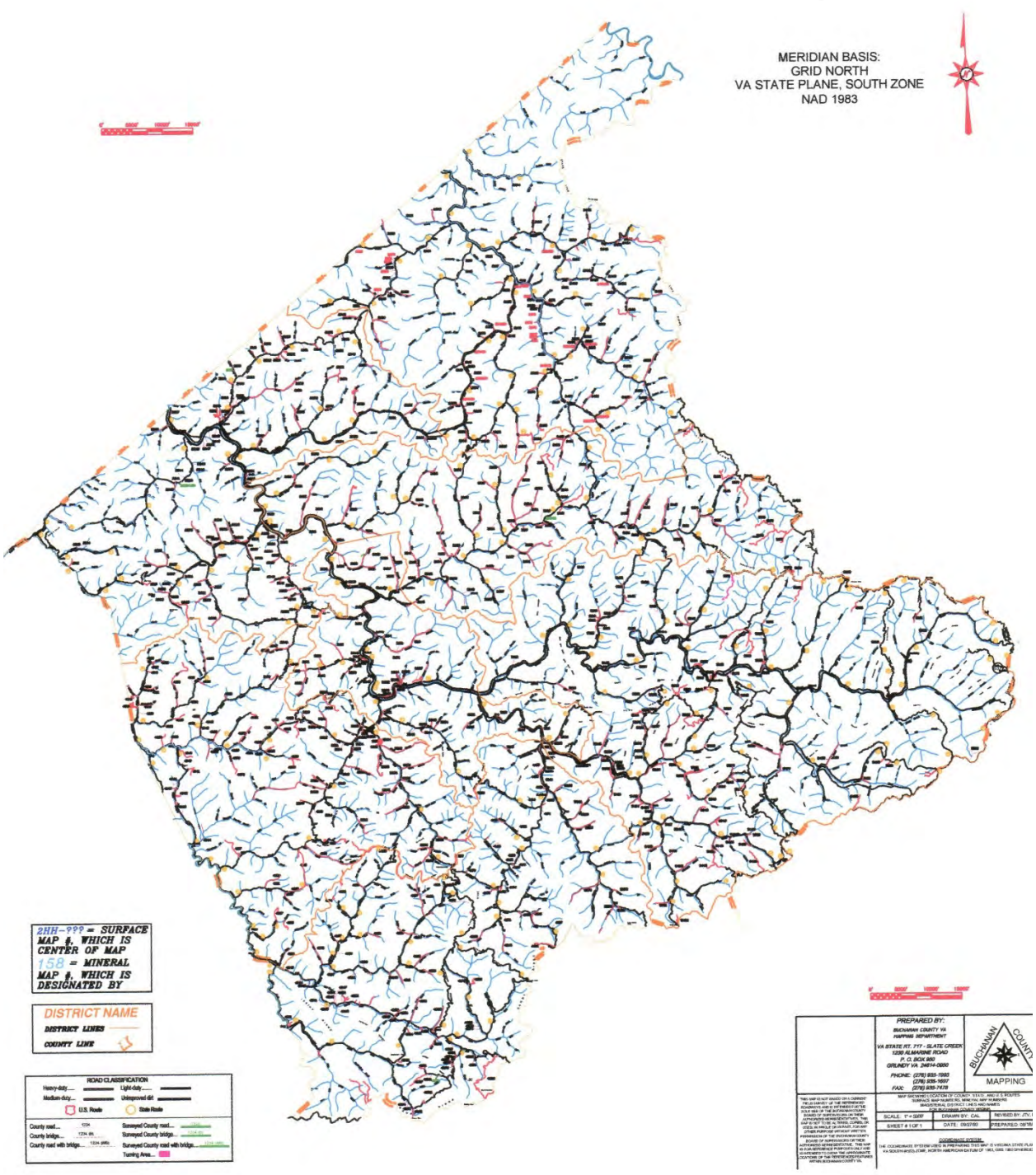
Route	From	To	# Vehicles
80	Dickenson Co. Line	Russell Co. Line	1,600
83	SR 640	West VA State Line	830
83	460 Intersection SR 642	5,400	
83	SR 642	SR 643	2,900
83	SR 643	SR 640	1,800
83	460 Intersection SR 619	4,700	
83	SR 619	SR 604	2,900
83	SR 604	Dickenson Co. Line	3,000
460	460/83 Intersection	SR 656	5,800
460	SR 656	SR 609	5,600
460	SR 609	SR 700	3,900
460	SR 700	SR 645	3,200
460	SR 645	Kentucky State Line	3,200
460	460/83 Intersection	SR 1006	9,700
460	460/83 Intersection	SR 83	10,000
460	SR 83	SR 638	8,100
460	SR 638	SR 1101	7,100
460	SR 1101	SR 680	7,200
460	SR 680	Tazewell Co. Line	6,700

Source: Commonwealth of Virginia Department of Transportation. *Average Daily Traffic Volumes 2016.*

VDOT SECONDARY ROAD SYSTEM MAP

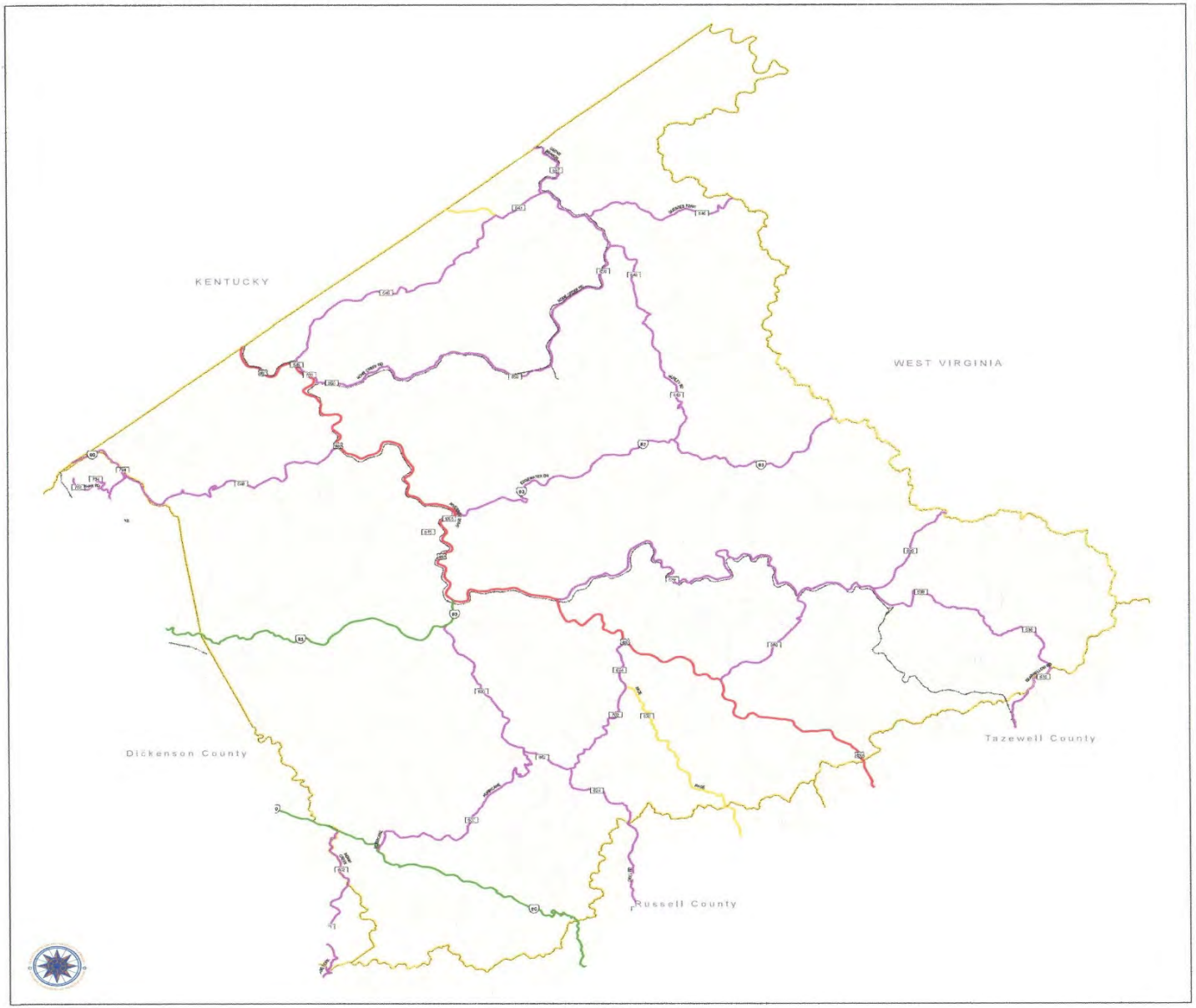


BUCHANAN COUNTY ROAD SYSTEM MAP



Roads are classified in this system based on the functions they perform such as minimizing traffic and land use conflicts, improving safety, and enhancing mobility. Roads in cities and towns with populations over 5,000 receive an "Urban" designation from VDOT and those with populations under 5,000 are designated as "Rural". A descriptive list of VDOT road classifications is included in the table below.

Virginia Department of Transportation Road Classifications	
Rural Functional	**Rural minor arterial/primary** Links cities and large towns (and other generators, such as major resorts), Spaced at such intervals so that all developed areas of the state are within a reasonable distance of an arterial highway, Provides service to corridors with trip lengths and travel density greater than those served by rural collectors or local systems, Design should be expected to provide for relatively high overall speeds, with minimum interference to through movement
	Rural minor collector/secondary Spaced at intervals, consistent with population density, Collects traffic from local roads and bring all developed areas within a reasonable distance of a collector road, Provides service to the remaining smaller communities, Link local traffic generators with their rural hinterland
	Rural major collector/secondary Provides service to any county seat not on an arterial system, to larger towns not directly served by higher systems, Links the above to nearby larger towns or routes of higher classification, Serves the more important intra-county travel corridors
	Rural local Serves primarily to provide direct access to adjacent land , Provides service to travel over relatively short distances as compared to collectors or other higher systems, All facilities not on one of the higher systems
Urban Functional	**Urban principal arterial/primary** Serves the major centers of activity of a metropolitan area, Highest traffic volume corridors, Roads serving the longest trip desires, Carry a high proportion of the total urban area travel on a minimum of mileage, Carries significant amounts of intra-area travel
	Urban minor arterial/primary Interconnect with and augment the urban principal arterial system and provide service to trips of moderate length at a lower level of travel mobility than principal arterials Include all arterials not classified as a principal and contains facilities that place more emphasis on land access, and offer a lower level of traffic mobility
	Urban collector/secondary Provides land access and traffic circulation within residential neighborhoods, commercial, and industrial areas, Distributes trips from the arterials through these areas to their ultimate destination, Collects traffic from local streets and channels it to the arterial system
	Urban local All facilities not on one of the higher systems, Serves primarily as direct access to abutting land, Serves as access to the higher order systems, Through traffic movement is deliberately discouraged.



Functional Classification Actions	FHWA Approval Date
1995 Functional Classification	*May 10, 1993*
2005 Functional Classification	*August 20, 2007*

The accuracy or completeness of this map is not guaranteed or warranted. The purpose of this map is to illustrate the Commonwealth of Virginia's official highway functional classification system. Information and mileages stated on this map are relevant to the highway functional classification system only.

Jurisdiction Boundaries, Urban Cluster Boundaries, Urbanized Area Boundaries, and MPO Study Area Boundaries based on Census 2000 data. However, some boundary data has been modified, or smoothed, for transportation planning purposes. Urban Cluster Boundaries are only shown when outside of Urbanized Area Boundaries.

Request for information on the functional classification of roads on this map should be addressed to: Virginia Department of Transportation, Transportation and Mobility Planning Division, State Transportation Planner, 1401 East Broad Street, Richmond VA 23219, 804-786-2965 (TTY users, call 711).

Proposed / Existing

FUNCTIONAL CLASSIFICATIONS
- Urban Interstate
- Urban Freeway & Expressway
- Urban Other Principal Arterial
- Urban Minor Arterial
- Urban Collector
- Rural Interstate
- Rural Other Principal Arterial
- Rural Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Not Classified, Urban Local, Rural Local

HIGHWAY ROUTE SIGNS
- Interstate
- US Highway
- VA Primary
- VA Secondary

BOUNDARIES
- Jurisdiction Boundary
- Urban Cluster Boundary
- Urbanized Area Boundary
- MPO Study Area Boundary

OTHER
- Railroads
- Major Water Feature

VIRGINIA HIGHWAY FUNCTIONAL CLASSIFICATION

Buchanan County
2005 Functional Classification

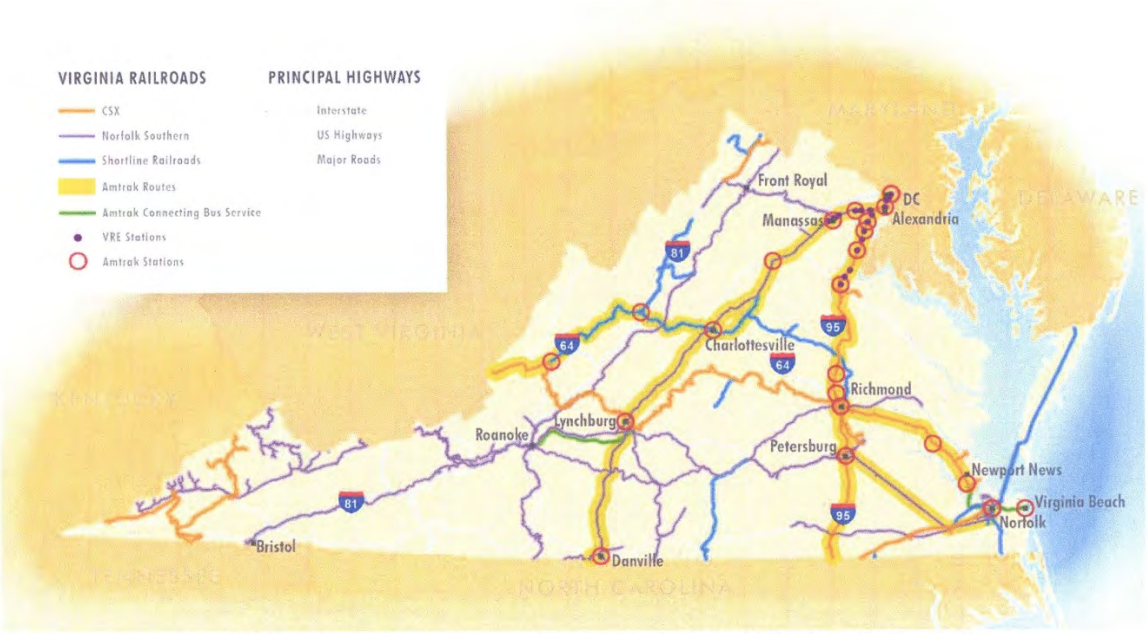
Miles
0 .25 .5 1 2 3 4

VDOT
Virginia Department of Transportation

Buchanan County 013

RAIL SERVICE

Passenger Rail Service is not currently available in Buchanan County. The nearest passenger service stations are located in Danville, VA and Lynchburg, VA. Connecting bus service from Blacksburg, VA and Roanoke, VA to the Lynchburg service station is also available. Freight railroads have a successful working relationship with passenger railroads all across the country. Approximately 97% of Amtrak's 22,000 mile rail system consists of tracks owned and operated by freight railroads. The Department of Rail and Public Transportation (DRPT) and Norfolk Southern Corporation entered into an agreement to improve rail related infrastructure between Lynchburg and Roanoke. The improvements will allow passenger rail to serve the Roanoke region. Grant funding to study the need and interest for passenger rail service toward Bristol from Roanoke has been awarded and is currently being evaluated.



- **Two passenger rail operators – Amtrak and Virginia Railway Express**
- **Eleven freight railroads –**
  - **Two national Class I Railroads: Norfolk Southern and CSX**
  - **Nine local shortline railroads**

Commercial Freight Rail Service is available in Buchanan County and is provided by Norfolk Southern Railway Corporation. Norfolk Southern owns and operates a network of 19,500 miles of rail lines East of the Mississippi River in 22 different states and the District of Columbia. Norfolk Southern serves 24 sea ports, 10 river ports, and 9 lake ports. Norfolk Southern offers many interchange points with rail partners, including CSX, BNSF, KCS, UP, CN, and CP. Norfolk Southern has more short line partners than any other Class 1 railroad. Norfolk Southern partners cover nearly 41,000 additional miles within their system. Norfolk Southern infrastructure in Virginia consists of 1990 miles of track, 1240 bridges, and 37 tunnels. Norfolk Southern operates the most extensive intermodal network in the East is a major transporter of coal and industrial products.

Airports

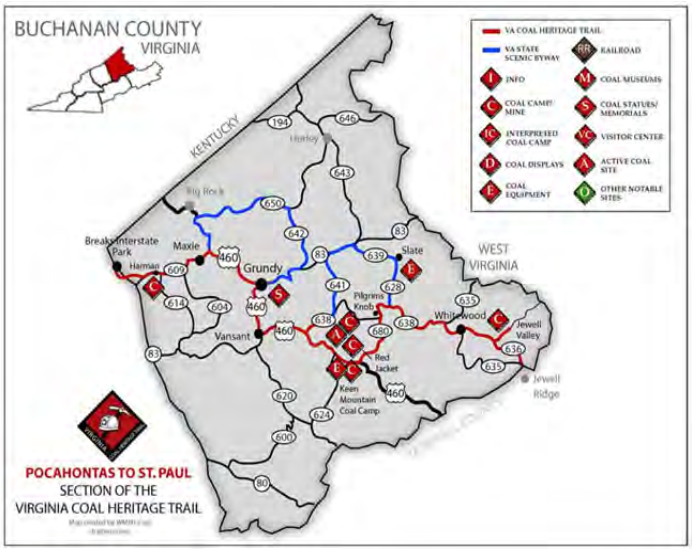
Air travel for Buchanan County is done through the use of regional and local airports. Nestled in the mountains of Southwest Virginia, Buchanan County utilizes regional airports to connect to larger airports hubs.

Grundy Municipal Airport is a small 2,256 ft. runway nestled atop the mountains of Buchanan County. Located 3 nautical miles southwest of the central business district of Grundy, the county seat of Buchanan County, this airport is used only by small personal and charter planes.

Tri-Cities Regional Airport, located approximately 110 miles southwest of Grundy, near Blountville, Tennessee, is the region's primary full-service commercial airport which offers non-stope service to five major hubs, primarily Charlotte, Atlanta and Chicago.

Scenic Drives

Although most drives through Buchanan County could be viewed as a scenic drive, the sights and overall atmosphere can take you on a journey through history with scenic beauty measured in memories instead of miles.



Coal Heritage Trail is part of the Virginia Byway system located in the Heart of Appalachia's coalfield region and encompasses 7 Southwest Virginia counties. A drive along the Coal Heritage Trail in Buchanan County will lead you pass active mining operations, where you can see coal being loaded into trucks and railroad cars. Some for transportation to a coal preparation plant, others for the delivery to customers within the United States or even international deliveries. Other sites along this route will lead you pass the Grundy Mural, located on the outer wall of a local supermarket, this mural depicts the history of Buchanan County and the town of Grundy. Once in the town of Grundy, in front of the courthouse you can find a bronze statue honoring local coal miners which was donated by the local Girl Scout Troops.

Nature Drive is a secluded one way road tucked away deep within the Breaks Interstate Park. Extending approximately 0.7 miles through the wilderness, this small one lane road traverses through the center of an area of the park that several forms of wildlife call home. Lined with laurel bushes and various types of hardwood, rests this hidden gem of the "Grand Canyon of the South".

Appalachian Backroads is a scenic byway directed towards the motorcycle enthusiasts which covers the entire Coalfield Region of Virginia and Eastern Kentucky. The Appalachian Backroads - Ridge Runner Trail will take you on a 112 mile loop through the heart of Buchanan County with a good portion of the trail taking you on Route 80, which is known as the Great 80 Curves of Challenge.

Bicycle and Pedestrian Modes

Buchanan County is home to some wonderful trail systems. Recreational hiking trails and bicycling opportunities are available at the Bull Creek Bike and Pedestrian Trail, Michael D. Young Memorial Bike Trail, Coal Canyon Trail and the US Bicycle Route 76.

Bull Creek Bike and Pedestrian Trail a former Norfolk & Southern railroad bed converted into a trail for pedestrians and bicyclists was opened to the public in 2013. This trail currently provides 1.53 miles of beautiful scenery for bicyclists and pedestrians alike. Special events are held throughout the year, such as Autism Awareness 5k, and a Zombie 5k Run. Future additions are planned to extend the trail.

Michael D. Young Memorial Bike Trail is an intense hiking and mountain bike trail converted from an old abandoned coal mining road. The trail was opened to the public 2004 and consists of 2 miles of mountainous scenic beauty that will test your abilities. From the Town of Grundy, the trail will take you north adjacent to State Route 83.

Coal Canyon Trail, although primarily an ATV trail system, is also welcome to hiking and cyclists as well. Located near Poplar Gap Park, it provides enthusiasts and hobbyists with 61 miles of trails, beautiful scenery, and the possibility of viewing the county's growing elk population. Over 100 miles of additional trails are planned for future expansions connecting the town of Grundy to the town of Haysi.

US Bike Route 76, known as the Transamerica Trail, is a well-known bicycle route that stretches 4,300 miles from the coast of Virginia to the coast of Oregon. Bike Route 76, a shared-use facility and is widely recognized as the greatest and most traveled bike trail in America. The trail will pass through the community of Council located in the far southwest portion of Buchanan County. The trail runs adjacent to the Russel Fork River before entering neighboring Dickenson County.

Public Transit

The effects of a community's transportation system is vital to a community, providing residents and visitors access to shopping, dining, recreation and health care services.

Four County Transit is a fully coordinated public transit system serving the residents of Buchanan, Dickenson, Russell, and Tazewell counties. Four County Transit was created in 1998 and operated by the Appalachian Agency for Senior Citizens and funded by the Virginia's Department of Rail and Public Transportation public transportation system. Four County Transit offers public transportation

to local colleges. Public transportation is available throughout the day and with convenient fixed routes and demand responses. Four County Transit provides a variety of services to complement the need for public transportation service in Buchanan, Dickenson, Russell and Tazewell Counties.

Travel Demand Management

Travel Demand Management (TDM) holds the potential for enhancing many elements of the transportation network, and with other improvements, has been shown to greatly aid in reducing single-occupant vehicle trips. TDM measures include carpooling and vanpooling programs, expanded peak hour public transit, commuter buses, park and ride lots, as well as better coordination between modes to facilitate intermodal transfers. According to the 2000 U S Census, workers traveling outside their county of residence for employment was approximately 28 percent in Buchanan County. Additional commuter-oriented pieces of the transportation network in the region include park and ride lots. There are twenty VDOT maintained park and ride lots in the region, however only one (1) park and ride lot is located in Buchanan County.

Transportation Planning / Programs

SIX – YEAR Improvement Program (SYIP) is a critical document that outlines planned spending for transportation projects proposed for construction development or study for the next six years. The SYIP is updated annually and is the means by which the Commonwealth Transportation Board (CTB) meets its statutory obligation under the Code of Virginia to allocate funds to interstate, primary, secondary and urban highway systems, public transit, ports and airports and other programs for the immediate fiscal year. The SYIP also identifies planned program funding for the succeeding five fiscal years. The CTB allocates funds for the first fiscal year of the SYIP but the remaining five years are estimates of future allocations. Fiscal years start on July 1 and end on June 30. The CTB updates the SYIP each year as revenue estimates are updated, priorities are revised, and project

schedules and costs change. Development of the SYIP begins in the fall and the Virginia Department of Transportation the Virginia Department of Rail and Public Transportation host a series of meetings seeking public comment with various other multi-modal transportation agencies. Each spring, a DRAFT SYIP is presented to the CTB and made available for public comment. The FINAL SYIP is adopted at the June CTB meeting. The Six-Year Improvement Program database is available on VDOT's website. The project list for Buchanan

VDOT Six-Year Improvement Plan - Buchanan County					
UPC	**Description**	**Route**	**District**	**Road System**	**Jurisdiction**
76507	RTE 83 - 2 LANE RECONSTRUCTION	83	Bristol	Primary	Buchanan County
107124	ROUTE 83 RUMBLE STRIP INITIATIVE	83	Bristol	Primary	Buchanan County
85126	RTE 121 - VDOT ALPHA/PIONEER OVERSIGHT CFX - FEDERAL	121	Bristol	Primary	Buchanan County
90096	CFX - HAWKS NEST - VDOT OVERSIGHT	121	Bristol	Primary	Buchanan County
100521	CFX - DOE BRANCH	121	Bristol	Primary	Buchanan County
64144	ROUTE 460 CONNECTOR PHASE I, VDOT OVERSIGHT	460	Bristol	Primary	Buchanan County
85914	NEW 460 CONNECTOR, PHASE 1, DESIGN BUILD	460	Bristol	Primary	Buchanan County
86599	WBL460 OVER DISMAL RIVER & NS RWY VA STRUC 1074 FED ID 3819	460	Bristol	Primary	Buchanan County
88140	OVERSIGHT CORRIDOR Q - 460 CONN. 2, INTERCHANGE & HAWKS NEST	460	Bristol	Primary	Buchanan County
90282	121 CFX - 460 CORRIDOR Q POPLAR CREEK PHASE A FINISH	460	Bristol	Primary	Buchanan County
100468	CORRIDOR Q ROUTE 121-460 CONNECTION VDOT OVERSIGHT	460	Bristol	Primary	Buchanan County
107072	US 460 SHOULDER INITIATIVE - BUCHANAN COUNTY	460	Bristol	Primary	Buchanan County
108045	ON-SITE MITIGATION (PLANTING & MONITORING) -RTE. 460 PHASE 1	460	Bristol	Primary	Buchanan County

Secondary Six-Year Plan is the development of separate programs for the secondary system state highways in each county. This plan is administered differently from the SYIP. Each county oversees their own secondary roads plan which is approved each year by the Board of Supervisors. Decisions on which projects are included in the plan are based on traffic counts, immediate safety need, and projects that provide the most economically feasible. Funding allocations for each locality is often insufficient to meet the needs of the locality. Even after a project is approved for the Secondary Six-Year Plan, the project might be delayed for numerous reasons, including: changes in

local government priorities and needs, funding availability, escalating land costs and environmental concerns. Changes to both the SYIP and Secondary Six-Year Plan may occur each year. Buchanan County projects included in the Secondary Six-Year Improvement Plan are listed in database provided on VDOT's website.

VDOT Secondary Six-Year Improvement Plan - Buchanan County					
UPC	**Description**	**Route**	**District**	**Road System**	**Jurisdiction**
101062	Main Knox Road -Rural Rustic 4.70 Mile East of Route 706 to WV Stateline	652	Bristol	Secondary	Buchanan County
104793	Burnt Chestnut Road - Grade, Ditch, Pave 2.25 Mile S Rte. 638 to 0.75 Mile S Rte. 638	628	Bristol	Secondary	Buchanan County
108751	Slate Creek Road - Curve Realignment 0.2 Mile West Rte. 686 to 0.4 Mile North Rte. 686	83	Bristol	Primary	Buchanan County
102628	Bull Creek Road - Bridge Replacement 0.9 Mile East Rte. 614 to 0.93 Mile East Rte. 614	609	Bristol	Secondary	Buchanan County

Rural Rustic Road Program, initially implemented in July 2002, is a practical approach to paving Virginia's low volume unpaved roads. The 2003 Session of the General Assembly amended the legislation to provide that this method be considered as a first alternative for improving all unpaved roads in the future. The Rural Rustic Road Program, under § 33.2-332 of the Code of Virginia, became effective July 1, 2003. The Virginia Department of Transportation's Local Assistance Division working with the Rural Rustic Road Policy Committee established the initial guidelines for this program.

The General Assembly, during the 2008 Session, expanded the program by increasing the maximum traffic count on eligible roads from the initial 500 vehicles per day (VPD) to the current 1,500 VPD. Improvements along a Rural Rustic Road project may be less than minimum design standards. AASHTO's *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* may be used as a guide for roads with current traffic volumes up to 400 VPD. For roads with traffic volumes between 400 and 1,500 VPD, an 18-foot paved surface with 2-foot shoulders is desirable, but not required. The District Location and Design Engineer will be consulted for the higher volume roads (over 400 VPD). The General Assembly also established that the maximum

speed limit for a road designated as a Rural Rustic Road, on or after July 1, 2008, is 35 MPH. The Commissioner of Highways is authorized under § 46.2-878 of the Code of Virginia to increase, or decrease, this speed limit based on an engineering study. The ideal Rural Rustic Road project usually involves reshaping of the roadbed, cleaning ditches and applying a hard surface within existing right of way. In most cases, it is assumed there are no actual construction plans and therefore, few occasions when a Rural Rustic Road project would require an engineered solution.

Buchanan County Unpaved Routes: 2016 Year End Final May 30, 2017 Snapshot

Route Name	Route From	Intersection Offset Start	Offset Desc From	Route To	Offset End	Offset Desc To	Centerline Miles
603	0.00	0.000	Dead End	0.90	0.000	Joe Branch Rd; Rt. 679E/W	0.90
613	3.85	3.850	Jewell Valley Rd; White Mountain Rd; Rt. 636N/S	6.80	0.000	Bearwallow Rd; Pea Patch Rd; Rt. 616N/S	2.95
621	0.00	0.000	Dead End	2.00	0.000	Brown Mountain Rd; Rt. 635N/S	2.00
623	0.10	0.100	Helen Henderson Hwy; VA-80N/S	1.60	1.600	Helen Henderson Hwy; VA-80N/S	1.50
623	1.60	1.600	Helen Henderson Hwy; VA-80N/S	1.96	1.960	Helen Henderson Hwy; VA-80N/S	0.36
623	1.96	1.960	Helen Henderson Hwy; VA-80N/S	2.09	2.090	Helen Henderson Hwy; VA-80N/S	0.13
623	2.09	2.090	Helen Henderson Hwy; VA-80N/S	2.10	2.100	Helen Henderson Hwy; VA-80N/S	0.01
628	0.00	0.000	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	0.17	0.170	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	0.17
628	0.17	0.170	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	0.27	0.270	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	0.10
628	0.27	0.270	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	0.42	0.420	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	0.15
628	0.42	0.420	Clifton Fork Rd; Osborne Mountain Rd; Rt. 629N/S	3.91	0.000	Ferrell Cemetery Rd; Rt. 633E/W	3.49
628	3.91	0.000	Ferrell Cemetery Rd; Rt. 633E/W	5.85	1.940	Ferrell Cemetery Rd; Rt. 633E/W	1.94
628	5.85	1.940	Ferrell Cemetery Rd; Rt. 633E/W	6.34	2.429	Ferrell Cemetery Rd; Rt. 633E/W	0.49
628	6.34	2.429	Ferrell Cemetery Rd; Rt. 633E/W	6.34	2.430	Ferrell Cemetery Rd; Rt. 633E/W	0.00
629	11.62	0.070	Rt. 800E/W	11.64	0.090	Rt. 800E/W	0.02
629	11.64	0.090	Rt. 800E/W	12.19	0.640	Rt. 800E/W	0.55
629	12.19	0.640	Rt. 800E/W	12.29	0.744	Rt. 800E/W	0.10
629	12.29	0.744	Rt. 800E/W	12.30	0.750	Rt. 800E/W	0.01
629	12.30	0.750	Rt. 800E/W	12.38	0.000	Big Branch Rd; Rt. 715N/S	0.08
629	13.38	1.000	Big Branch Rd; Rt. 715N/S	14.92	0.000	Contrary Creek Rd; Rt. 680N/S	1.54
629	5.90	1.100	Horn Mountain Rd; Rt. 628N/S	6.30	1.500	Horn Mountain Rd; Rt. 628N/S	0.40
633	0.00	0.000	Horn Mountain Rd; Rt. 628N/S	0.50	0.000	Dead End	0.50
636	4.30	0.000	Jewell Valley Rd; Rt. 613N/S	4.34	0.040	Jewell Valley Rd; Rt. 613N/S	0.04
636	4.34	0.040	Jewell Valley Rd; Rt. 613N/S	7.09	2.790	Jewell Valley Rd; Rt. 613N/S	2.75
636	8.54	4.240	Jewell Valley Rd; Rt. 613N/S	9.54	0.000	Pea Patch Rd; Rt. 616N/S	1.00
637	0.00	0.000	Dead End	1.90	0.000	Bearwallow Rd; Rt. 616N/S	1.90
649	1.40	1.400	Hurley Rd; Rt. 643N/S	1.41	1.408	Hurley Rd; Rt. 643N/S	0.01
649	1.41	1.408	Hurley Rd; Rt. 643N/S	1.65	1.650	Hurley Rd; Rt. 643N/S	0.24
655	4.50	4.500	Riverside Dr; US-460E/W	4.54	4.544	Riverside Dr; US-460E/W	0.04
655	4.54	4.544	Riverside Dr; US-460E/W	4.55	4.550	Riverside Dr; US-460E/W	0.01
655	4.55	4.550	Riverside Dr; US-460E/W	4.59	4.585	Riverside Dr; US-460E/W	0.04
655	4.59	4.585	Riverside Dr; US-460E/W	4.60	4.600	Riverside Dr; US-460E/W	0.02
655	4.60	4.600	Riverside Dr; US-460E/W	4.69	4.685	Riverside Dr; US-460E/W	0.09
655	4.69	4.685	Riverside Dr; US-460E/W	4.78	4.784	Riverside Dr; US-460E/W	0.10
655	4.78	4.784	Riverside Dr; US-460E/W	4.88	4.884	Riverside Dr; US-460E/W	0.10
655	4.88	4.884	Riverside Dr; US-460E/W	4.90	0.000	Dead End	0.02
679	0.00	0.000	Jakes Fork Rd; Rt. 603N/S	0.50	0.000	Dead End	0.50
685	0.10	0.100	Dismal River Rd; Rt. 638E/W	2.50	0.000	Dead End	2.40
704	0.00	0.000	Dead End	0.75	0.000	Pea Patch Rd; Rt. 616N/S	0.75
708	0.00	0.000	Not Available	0.05	0.050	Not Available	0.05
708	0.05	0.050	Not Available	0.30	0.300	Not Available	0.25
713	0.00	0.000	Horn Mountain Rd; Rt. 628N/S	0.20	0.200	Horn Mountain Rd; Rt. 628N/S	0.20
713	0.20	0.200	Horn Mountain Rd; Rt. 628N/S	0.50	0.000	Dead End	0.30
						Maintenance Jurisdiction Query Total:	**28.18**

Revenue Sharing Program provides additional funding for use by a county, city, or town to construct, reconstruct, improve or maintain the highway systems within such county, city, or town and for eligible rural additions in certain counties of the Commonwealth. Locality funds are matched, dollar for dollar, with state funds, with statutory limitations on the amount of state funds authorized per locality. The program is administered by the Department of Transportation, in cooperation with the participating localities and the Commonwealth Transportation Board's Revenue Sharing Program Policy. An annual allocation of funds for this program is designated by the Commonwealth Transportation Board.

- Project funding is allocated by resolution of the Commonwealth Transportation Board. Projects may be developed and constructed by VDOT or the locality. Application for program funding must be made by resolution of the governing body of the jurisdiction requesting the funds. A locality may request funds for a project located within its own jurisdiction or in an adjacent jurisdiction, with concurrence from the governing body of the Revenue Sharing Program Guidelines. Towns not maintaining their own streets may not directly apply for Revenue Sharing Program funds but may include their requests as part of the package submitted by the county in which they are located. Requested funds should cover the entire cost of the project or the application must indicate where additional funds are coming from to fully fund the project.

Buchanan County has participated in the Revenue Sharing Program and strongly anticipates future participation, pending available coal haul road funding, each fiscal year through the approval and implementation of the annual Coal Haul Road Plan. In years past, Buchanan County has participated in the Revenue Sharing Program for projects such as, but not limited to, roadway construction, roadway reconstruction due to geometric deficiencies, structural rehabilitation, bridge replacement, traffic signals, intersection improvements, guardrail installation, sidewalk enhancements, rural rustic projects, and various drainage issues. Buchanan County has applied for

Revenue Sharing funds through the adoption and approval of their annual Coal Haul Road Plan which is brought before the Board of Supervisors for approval in the spring of each calendar year. If approved, the Coal Haul Road Plan will be implemented beginning July 1 of each calendar year which constitutes the beginning of each Fiscal Year. Applied funding amounts have varied in the past due to availability of funds and project scale. Each year, Buchanan County works closely with VDOT personnel to identify the state maintained roadway needs and improvements. Through this partnership, Buchanan County and VDOT can then determine the best course of action to address these needs within the allowable state programs and funding such as the Revenue Sharing Program. Buchanan County faces many different challenges in their roadway network mainly due to its steep and natural topography roadway alignments. A brief description of the typical deficiencies found among each Primary and Secondary state maintained roadway is identified in the charts below. Buchanan County exhaust their efforts and maximizes their available funding to address these deficiencies along various routes throughout the County as deemed priority by VDOT in conjunction with the Board of Supervisors request each fiscal year. Please see the below chart identifying the proposed Revenue Sharing Projects for Fiscal Year 2020-2021 & Fiscal Year 2021-2022.

Buchanan County - Revenue Sharing Projects FY 21 & FY 22

Route	Termini From	Termini To	Estimate
643	1.03 Mi N Rt 643 / 83 Int.	1.19 Mi N Rt 643 / 83 Int.	$ 598,788

The total funds available each fiscal year will be determined by the Commonwealth Transportation Board. The maximum allocation the CTB may make to the Revenue Sharing Program is $200 million annually. The minimum allocation the CTB may make to the Revenue Sharing Program is $15 million annually. A locality may apply for up to a maximum of $10 million in matching allocations. Up to $5 million of these requested funds may be specified for maintenance projects. Priority will be given first to construction projects that have previously received Revenue

Sharing funding.

SMART SCALE (House Bill 2) stands for System for the Management and Allocation of Resources for Transportation. House Bill 2 legislation passed unanimously by the Virginia House of Delegates in 2014. It represents a reform in how the Commonwealth prioritizes and spends transportation dollars. It is a prioritization process that evaluates each project's merits using key factors, including: improvements to safety, congestion reduction, accessibility, land use, economic development and the environment. The Bill has implications for the Six-Year Improvement Program. Projects submitted by localities will be screened to determine whether they meet a need identified in VTrans 2040. If they do, the project is then evaluated and scored using the prioritization process. Projects planned for Fiscal Year 2017 and later will be reevaluated through the prioritization process.

The SMART SCALE process identifies projects that provide the greatest return on investment, and the results are used by the CTB to select projects for funding. In 2016, Buchanan County submitted their priority project list as approved by the Board of Supervisors which included shoulder widening and geometric design on Route 83, high wall stabilization along US Route 460 near the intersection of Route 460 / 638, and sight distance improvements along the intersection of US Route 460 / 624.

State of Good Repair Program under § 33.2-369 of the *Code of Virginia, states the Commonwealth Transportation Board* shall use funds allocated in § 33.2-358 and § 58.1-1741 for state of good repair purposes for reconstruction and replacement of structurally deficient state and locally-owned bridges and reconstruction and rehabilitation of deteriorated pavement on the Interstate System and Primary State Highway System including municipality-maintained primary extensions in all nine (9) construction districts based on a priority ranking system. The State of Good Repair is not a Maintenance Program not strictly for bridge replacements. This ranking system takes

into consideration the following:

1. The number, condition, and costs of structurally deficient bridges
2. The mileage, condition, and costs to replace deteriorated pavements

Annual basis for selection of bridge rehabilitation, or reconstruction projects shall include the following:

1. Bridge must be structurally deficient
2. National Bridge Inventory Only
3. Proposed work must take bridge out of structurally deficient status
4. Localities must be current on bridge inspections
5. Projects receiving funding under this program must initiate the Preliminary Engineering or the Construction Phase within 24 months of award of funding or become subject to deallocation

During the 2015 Session, the Virginia General Assembly passed HB 1887. Approved under HB1887, VDOT was able to accelerate the availability of funding for paving and bridge projects under this program well before the originally planned program date of FY2021. The Commonwealth Transportation Board (CTB) recently approved the prioritization process and methodology for selecting SGR Pavement and Bridge projects. The priority ranking system required by § 33.2-369 will have two components – one for bridges eligible for State of Good Repair funding and one for pavements eligible for State of Good Repair funding.

At their February 16, 2017 meeting, the Commonwealth Transportation Board (CTB) approved allocations for locally-owned bridge projects under the State of Good Repair (SGR) Locally-Owned Bridge Program. The CTB approved additional locally-owned bridge projects under this program at their March 15, 2017 meeting. The complete list of approved SGR locally-owned bridge projects, which includes a total of thirteen (13) deficient bridges structures within the Buchanan County Road System can be found at the following link: http://www.ctb.virginia.gov/resources/2017/feb/reso/Resolution_7_SGR.pdf. In accordance with

CTB policy, all projects receiving funding under this program must initiate the Preliminary Engineering or the Construction Phase within 24 months of award of funding or become subject to deallocation.

VTrans 2040 (Virginia's State Highway Plan) is the statewide long-range, multimodal policy plan prepared by the Commonwealth Transportation Board. It concludes components of each region's Rural Long Range Plan. VTrans is developed by VDOT to identify needs and recommend solutions for the commonwealth's interstate and primary highway systems. The Code of Virginia requires the Commonwealth Transportation Board (CTB) to update the plan every five (5) years. The CTB designates Corridors of Statewide Significance. The regional transportation plans serve as the building blocks for the State Highway Plan (VTrans) and are being developed in cooperation with planning districts commissions throughout the commonwealth. The complete 2035 Cumberland Plateau Planning Commission Regional Long Range Transportation Plan can be found on the following web page: http://www.virginiadot.org/projects/resources/Rural/Cumberland_Plateau.pdf.

U.S. Route 460 Corridor (Heartland Corridor) passes through Buchanan County. This corridor is mostly defined by U.S. 460, which is a highway running east-to-west from Norfolk, Virginia to Frankfort, Kentucky. There are two (2) separate stretches of U.S. 460. The main highway runs between Norfolk and West Virginia, exiting Virginia West of Blacksburg in Giles County. It re-enters Virginia in the Town of Bluefield in Tazewell County and continues to the West into Kentucky.

Corridors of Statewide Significance	Corridor Major Components
Coastal Corridor	Route 17, Local Transit Services, Port of Virginia, Port of Richmond, Rappahannock River, Norfolk

(Route 17)	Southern Heartland Corridor, Norfolk Southern Coal Corridor, CSX National Gateway Corridor, CSX Coal Corridor, Amtrak, Norfolk International Airport, Newport News/Williamsburg International Airport
Crescent Corridor (I-81)	I-81, Route 11, I-381, I-581, Local Transit Services, Virginia Inland Port, Norfolk Southern Crescent Corridor, Short Line Railroads, Shenandoah Valley Regional Airport, Roanoke Regional Airport
East-West Corridor (I-64)	I-64, Routes 250, 60 and 11, I-664, I-564, I-264, I-464, Local Transit Services, Port of Virginia, Port of Richmond, James River, York River, CSX Coal Corridor, Norfolk Southern Coal Corridor, Amtrak, Norfolk International Airport, Newport News/Williamsburg International Airport, Richmond International Airport, Charlottesville-Albemarle Airport
Eastern Shore Corridor (Route 13)	Route 13, Local Transit Services, Port of Virginia, Bay Coast Railroad and Barge, Norfolk Southern, CSX, Amtrak, Norfolk International Airport, Newport News/Williamsburg International Airport
Heartland Corridor (US 460)	Route 460, Coalfields Expressway, Local Transit Services, Port of Virginia, James River, Norfolk Southern Heartland Corridor, Elliston International, Norfolk International Airport, Newport News/Williamsburg International Airport, Richmond International Airport, Lynchburg Regional Airport, Roanoke Regional Airport
North Carolina to WV Corridor (Route 220)	Route 220, Local Transit Services, Norfolk Southern, Roanoke Regional Airport
North – South Corridor (new)	Route 234, Local Transit Services, Prince William County Parkway, Washington Dulles International Airport
Northern Virginia Corridor (I-66)	I-66, Routes 50 and 55, WMATA Orange Line, Virginia Railway Express, Amtrak, Local Transit Services, Virginia Inland Port, Norfolk Southern Crescent Corridor, Washington Dulles International Airport, Ronald Reagan Washington National Airport
Seminole Corridor (Route 29)	Routes 29, 50 and 28, WMATA Orange Line, Virginia Railway Express, Local Transit Services, Norfolk Southern Crescent Corridor, Amtrak, Washington Dulles International Airport, Charlottesville Albemarle Airport, Lynchburg Regional Airport
Southside Corridor (Route 58)	Route 58, Local Transit Services, Port of Virginia, CSX National Gateway, Norfolk International Airport, Newport News/ Williamsburg International Airport
Washington to NC Corridor (I-95)	I-95. I-395, I-495, I-85, I-195, I-295, Routes 1 and 301, WMATA Blue and Yellow Lines, Local Transit Services, Virginia Railway Express, Ports of Alexandria and Richmond, James River, CSX National Gateway Corridor, Amtrak, Ronald Reagan Washington National Airport, Richmond International Airport
Western Mountain Corridor (I-77)	I-77, Local Transit Service, Routes 52 and 11

The Coalfields Expressway / Corridor Q, two (2) major transportation initiatives, will improve travel safety and help to bring an end to the isolation that has stifled economic opportunity for generations of people in the Appalachian region. By providing safe, modern and efficient highway access, the Coalfields Expressway and Corridor Q will reduce travel time, open the area to tourism, and help reverse the region's current population and employment decline. CFX and Corridor

Q also will provide important links to a broader network of highways that promotes trade and job growth within the multi-state Appalachian region and the nation as a whole.

While there has been widespread and long-standing support for improving highways in the Appalachian region, the cost of building roads has been a major stumbling block. Virginia lawmakers approved legislation in the mid-1990s to allow the Commonwealth to consider creative funding and construction solutions with the private sector. About a decade later, the emergence of "coal synergy" would finally set the stage to make it feasible to build the Coalfields Expressway and accelerate completion of Corridor Q.

The process of coal synergy reduces road building costs substantially by using larger-scale earth moving equipment from coal companies to prepare the road bed to rough grade, and allowing the companies to recover marketable coal reserves during the road bed preparation. It is projected that coal synergy would reduce the cost of building CFX by approximately 45% compared to traditional highway construction methods. In 2013, VDOT estimates the cost of CFX construction at $5.1 billion using traditional construction methods. Using coal synergy, CFX could be built for $2.8 billion.

Coalfields Expressway (CFX), designated as U.S. Route 121, is a Congressional High Priority Corridor. CFX is a proposed four-lane limited access highway to provide a modern, safe and efficient transportation artery through the coalfields region of far southwestern Virginia and southern West Virginia. The route is also expected to be an economic lifeline for Buchanan County and the region which experiences high unemployment and a declining population. It is expected that the entire multi-state Appalachian region should see a boost in commerce and tourism as a result of the Coalfields Expressway. Designated as part of the National Highway System, the new road will link Interstates 64 and 77 in West Virginia with Route 23 in Virginia, which links to interstates in Kentucky and Tennessee.

This is a region now served mainly by narrow rural roads. The expressway will provide safe

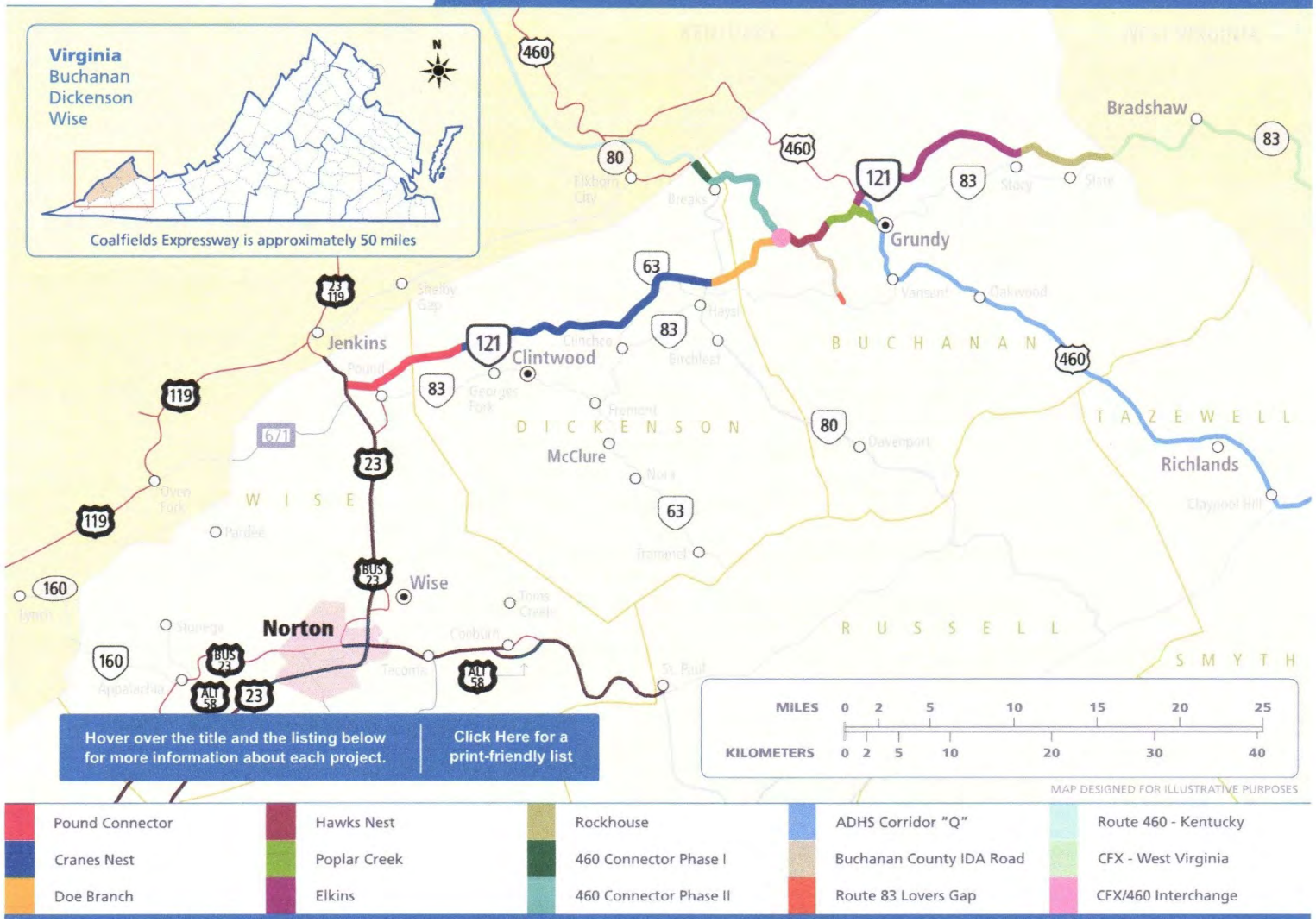
and rapid access to communities along the corridor, with interchanges connecting citizens of Pound, Clintwood, Clinchco, Haysi, Breaks, Grundy and Slate. The Virginia portion of the expressway stretches east approximately 50 miles from U.S. Route 23 near Pound, through Wise County Dickenson and Buchanan counties to the West Virginia line near Slate.

Corridor Q, designated as US Route 460, is part of the National Highway System. The Virginia portion of Corridor Q is located in southwest Virginia and shares a portion of its alignment with the CFX. Corridor Q in Virginia extends 127.5 miles eastward from the Virginia/Kentucky state line near Breaks Interstate Park to Interstate 81 near Christiansburg. Approximately 14 miles of Corridor Q in Virginia remain uncompleted with three miles currently under construction. The Kentucky portion of Corridor Q, approximately 17 miles in length, would extend westward from the Virginia/Kentucky state line to US Route 23. Kentucky currently has approximately 16 miles under construction.

Currently the Corridor Q/U.S. Route 460 Connector Phase II is under construction. This project consists of a 6.2-mile four-lane, limited access highway. Phase II is located between the U.S. Route 460 Connector Phase I, constructed near Breaks Interstate Park, Route 460 and a connection with the proposed Route 121 (Coalfields Expressway) in Buchanan County. The Phase II design-build contract with Bizzack Construction, LLC, Lexington, Ky., uses the coal synergy concept to provide a road to rough grade at a reduction in costs. A second contract will pave the road and complete the project for motorists to use. This route is designated as part of Corridor Q by the Appalachian Regional Commission and part of the Appalachian Development Highway System.

VDOT Virginia Department of Transportation

Route 121 Coalfields Expressway



VDOT Virginia Department of Transportation

Route 121 - Coalfields Expressway
Construction Project Names, Descriptions
Updated December 2016

1 Pound Connector
The proposed 7-mile Pound Connector begins at Route 23 near the Pound Corporate Limits in Wise County and extends into Dickenson County where it will connect to Route 83 via a connector road at Route 721.

2 Cranes Nest
The proposed 15.65-mile Cranes Nest segment begins near Route 83/Route 721 in Dickenson County and extends to Route 80 in Dickenson County.

3 Doe Branch
The proposed 5-mile Doe Branch segment begins on Route 80 near the Haysi area of Dickenson County. It travels east tying into the Corridor Q/Route 460 Connector and Route 121 (Coalfields Expressway).

4 Hawks Nest
The 2-mile Hawks Nest segment is located between the proposed tie in with the US Route 460 Connector Phase II and Route 614 in Buchanan County. The Hawks Nest section was completed to rough grade in summer 2011 at a cost of $10 million, a savings to VDOT of over $90 million using coal synergy techniques.

The Hawks Nest segment will also tie in with Buchanan County Industrial Development Authority's road, connecting to the county's Southern Gap development and Route 83 (Lovers Gap Road).

5 Poplar Creek
The Poplar Creek segments combined with the Route 460 Connector and the Route 460/121 connection will complete Virginia's section of federally designated Corridor Q, providing four-lane highway from the Virginia/Kentucky border to Christiansburg, Virginia. Phase A of Poplar Creek will travel from the east end of the Hawks Nest section to Route 604. Phase B of Poplar Creek will travel from Route 604 to existing Route 460 below Grundy.

6 Elkins
The proposed 11.5-mile Elkins segment picks up at the connection to Route 460 at Grundy and extends east to Route 643.

7 Rockhouse
The proposed 5-mile Rockhouse segment begins at Route 643 and will connect to West Virginia's Coalfields Expressway near Slate, W. Va.

8 Corridor Q: Route 460 Connector Phase I
VDOT's design-build contract for the Route 460 Connector Phase I in Buchanan County was completed September 2015. The project, located at the Kentucky State Line, included construction of twin high-level bridges that are 1,700 linear feet in length and over 250-foot-high. The bridges are currently the tallest in Virginia. They will be open to traffic in late 2017 when Kentucky opens an adjacent section of their Route 460 construction.

9 Corridor Q: Route 460 Connector Phase II
The 6-mile Phase II of the US Route 460 Connector travels from the end of Phase I to a proposed connection with Route 121 Coalfields Expressway.

Bizzack Construction, LLC, Lexington, Ky., is currently constructing the road to rough grade.

10 Corridor Q Route 460 Connector and Coalfields Expressway Connection
The .3-mile proposed project will tie together the Route 460 Connector and the Route 121 (Coalfields Expressway) in Buchanan County.

VDOT Virginia Department of Transportation

Route 121 - Coalfields Expressway
Construction Project Names, Descriptions
Updated December 2016

11 **ADHS Corridor Q**

Designated as US Route 460, Corridor Q is part of the National Highway System and the Appalachian Development Highway System. Corridor Q in Virginia extends 127.5 miles eastward from the Virginia/Kentucky state line near Breaks Interstate Park to Interstate 81 near Christiansburg.

The Virginia portion of Corridor Q is located in southwest Virginia and shares a portion of its alignment with Route 121 (Coalfields Expressway). Upon completion of the Route 460 Connector Phases I and II as well as connecting sections of Route 121 (Coalfields Expressway), Route 460 improvements from the Kentucky state line to Virginia Beach will be complete.

12 **Route 83 Lover's Gap**

Reconstruction of a one-mile section of Route 83 located near the intersection of Route 718 was completed in 2015. Improvements to Route 83 provide better access to Buchanan County's Southern Gap development as well as Route 121 (Coalfields Expressway.

13 **Buchanan County Industrial Development Road – Southern Gap**

The Buchanan County Industrial Development Road connects to Buchanan County's Southern Gap development, an area for residential, commercial and retail development.

BUCHANAN COUNTY ROAD NETWORK DEFICIENCIES

Primary Routes Deficiencies

1. U.S. 460 – Improved site distances along intersections. Reconstruct sections due to geometric deficiencies. Improve drainage. Stabilize shoulders. Guardrail installation and replacement. Replace structure no. 1044.
2. SR 83 – Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement. Replace structure no. 1023.
3. SR 80 – Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.

Secondary Routes Deficiencies

4	VA 600	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	36	VA 636	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
5	VA 601	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	37	VA 637	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
6	VA 602	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	38	VA 638	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
7	VA 603	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	39	VA 639	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
8	VA 604	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	40	VA 640	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
9	VA 605	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	41	VA 642	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
10	VA 606	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	42	VA 643	Reconstruct sections due to geometric deficiencies. Improved site distances. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
11	VA 608	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	43	VA 644	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
12	VA 609	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	44	VA 645	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
13	VA 610	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	45	VA 646	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
14	VA 611	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	46	VA 647	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
15	VA 613	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	47	VA 649	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
16	VA 615	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	48	VA 650	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
17	VA 616	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	49	VA 651	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
18	VA 617	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	50	VA 652	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
19	VA 618	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	51	VA 653	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
20	VA 619	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	52	VA 654	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
21	VA 620	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	53	VA 655	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
22	VA 621	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	54	VA 656	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
23	VA 622	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	55	VA 657	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
24	VA 623	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	56	VA 658	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
25	VA 624	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	57	VA 660	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
26	VA 625	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	58	VA 662	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
27	VA 626	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	59	VA 663	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
28	VA 627	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	60	VA 664	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
29	VA 628	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	61	VA 674	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
30	VA 628	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	62	VA 675	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
31	VA 629	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	63	VA 678	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
32	VA 631	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	64	VA 680	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
33	VA 632	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	65	VA 681	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
34	VA 634	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	66	VA 685	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.
35	VA 635	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.	67	VA 690	Reconstruct sections due to geometric deficiencies. Structural Rehab sections. Stabilize shoulders. Improve drainage. Guardrail installation and replacement.

BUCHANAN COUNTY TRANSPORTATION CHALLENGES

- Buchanan County has steep topography, with slopes in excess of 20%. Road construction that follows the natural topography reduces costs and runoff concerns but may lead to safety, line of sight and other geometric issues.
- Limited signage allowed on VDOT right of ways discourage economic development.
- Development along corridors also increase safety issues, such as multiple entrances and traffic carrying capacity of the road.
- Local involvement in the Six Year Improvement Program to ensure that statewide projects reflect the needs of Buchanan County.
- Shorten commute distances traveled by residents to work and/or school due to the topography.
- Residents are paying larger percentage of their budget on transportation fuel cost due to the distances for which they must travel.
- Safety concerns on rural roads, lack of adequate line of sight issues and lack of adequate shoulders and guardrails.
- Lack of pedestrian and bicycling transportation options in rural areas, due to lack of adequate shoulders.
- The required travel distance to a public airport transit, major bus terminal and rail line.

HOUSING

HOUSING DEMAND

Housing is a factor in the national economy, and increased building is a sign of economic growth, as well as an economic stimulator. Nationally, growth in housing is primarily determined by government decisions such as interest rates, tax codes, and regulation of financial institutions. Local and state governments have attempted to encourage housing production by providing financial incentives. Since investment in housing is so highly leveraged, the availability of money has the most significant impact on construction. The declining income of Buchanan County residents has prompted a shift in demand away from single family homes, and toward the less expensive alternative, a mobile home. The price difference between a mobile home and a site-built house makes the former the only affordable choice for many residents. While mobile homes have solved the short-term problem of housing, they also have a much shorter life-span than does a site built home, so the need for adequate housing in the future should not be forgotten.

As of 2014 single family units still make of the majority of home in Buchanan County with 60% of all homes in the county qualifying as a “single county unattached” home. However, mobile homes are rapidly increasing in number with over 37% of homes in the county qualifying as mobile homes.

Housing Composition By Type of Structure

UNITS IN STRUCTURE	Census 2000										2010 - 2013 American Community Survey									
	Buchanan	% of Total	Dickenson	% of Total	Russell	% of Total	Tazewell	% of Total	CPPDC	% of Total	Buchanan	% of Total	Dickenson	% of Total	Russell	% of Total	Tazewell	% of Total	CPPDC	% of Total
1-unit, detached	6,278	60.0%	4,148	61.6%	7,763	65.8%	12,331	67.5%	30,520	64.6%	7,278	63.2%	4,362	57.8%	8,830	65.7%	13,639	65.8%	34,109	64.1%
1-unit, attached	68	0.6%	78	1.2%	73	0.6%	277	1.5%	496	1.0%	113	1.0%	48	0.6%	268	2.0%	333	1.6%	762	1.4%
2 units	52	0.5%	27	0.4%	87	0.7%	167	0.9%	333	0.7%	46	0.4%	40	0.5%	101	0.8%	194	0.9%	381	0.7%
3 or 4 units	30	0.3%	16	0.2%	124	1.1%	351	1.9%	521	1.1%	74	0.6%	87	1.2%	224	1.7%	446	2.2%	831	1.6%
5 to 9 units	58	0.6%	82	1.2%	198	1.7%	367	2.0%	705	1.5%	103	0.9%	93	1.2%	206	1.5%	621	3.0%	1,023	1.9%
10 to 19 units	22	0.2%	61	0.9%	54	0.5%	128	0.7%	265	0.5%	110	1.0%	156	2.1%	94	0.7%	202	1.0%	562	1.1%
20 or more units	6	0.1%	42	0.6%	44	0.4%	136	0.7%	228	0.5%	70	0.6%	30	0.4%	95	0.7%	227	1.1%	422	0.8%
Mobile home	3,912	37.4%	2,271	33.7%	3,446	29.2%	4,518	24.7%	14,147	30.0%	3,703	32.2%	2,732	36.2%	3,609	26.9%	5,075	24.5%	15,119	28.4%
Boat, RV, van, etc.	38	0.4%	7	0.1%	0	0.0%	2	0.0%	47	0.1%	11	0.1%	0	0.0%	12	0.1%	0	0.0%	23	0.0%
Total housing units	10,464	100.0%	6,732	100.0%	11,789	100.0%	18,277	100.0%	47,262	100.0%	11,508	100.0%	7,548	100.0%	13,439	100.1%	20,737	100.0%	53,232	100.0%

Source: US Census Bureau 2000 data - 2010-2014 American Community Survey

The coal boom years of the 1970 created a growth in the number of houses built in Buchanan County. This building activity surpassed that of the rest of the counties in the district. District housing growth during these years surpassed that of the state, as increases in population and income provided stimulus to build. Between 1970 and 1980, housing stock increased by 38.7 percent, while the population of the county increased by 23.2 percent. This indicates that the number of people residing in a housing unit became smaller.

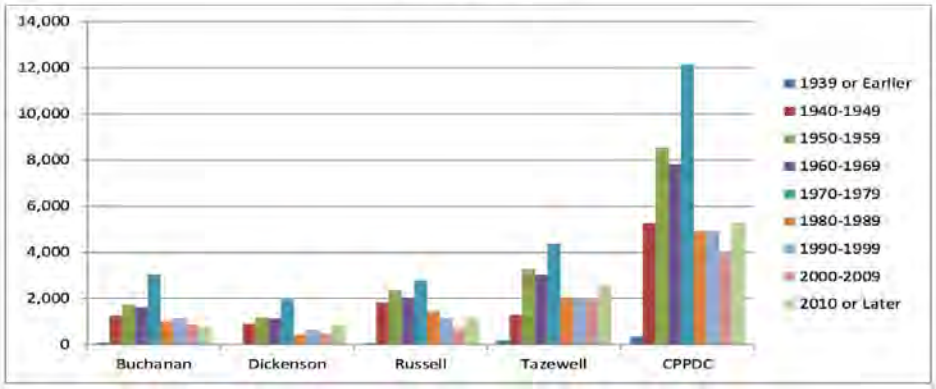
In the current decade, demand for new housing has been greatly reduced with only 75 new housing units being built in the county from 2010 to 2014. The current trends in demand for new housing in Buchanan County and surrounding areas can be seen in the figure below.

Housing Units by Year Built

Year	Buchanan	Dickenson	Russell	Tazewell	CPPDC	Virginia
2010 or Later	75	19	59	199	352	86,006
2000-2009	1,248	900	1,815	1,295	5,258	548,484
1990-1999	1,722	1,189	2,353	3,283	8,547	560,182
1980-1989	1,615	1,136	2,039	3,033	7,823	572,756
1970-1979	3,060	1,934	2,773	4,363	12,130	554,487
1960-1969	1,010	430	1,425	2,054	4,919	379,829
1950-1959	1,147	649	1,135	2,000	4,931	316,799
1940-1949	870	452	699	1,947	3,968	162,906
1939 or Earlier	761	839	1,141	2,563	5,304	265,136
Total	11,508	7,548	13,439	20,737	53,232	3,446,585

20010-2014 United States Census Bureau American Community Survey
Virginia is from 2014 1 year estimate American Community Survey

Housing Units by Year Built



20010-2014 United States Census Bureau American Community Survey
Virginia is from 2014 1 year estimate American Community Survey

HOUSING VALUE

Between 1980 and 1987 housing values declined substantially in Buchanan County, around 18 percent. The same is true for Dickenson County, and in Russell and Tazewell Counties housing values increased slightly. However, housing prices have increased over the last several years, from 42,800 dollars in 2000 to 68,700 in 2014.

The median value for housing units in Buchanan County is 68,700 dollars, compared to Dickenson County's 72,000; Tazewell County at 89,600; and Russell County, with the highest median value of 94,500 per unit. This shows that while the housing market may be weak in

Buchanan County, housing here is more affordable.

Comparative Values for Owner Occupied Housing By Value Range

Value	2000 Census						20010-2014 American Community Survey					
	Buchanan	Dickenson	Russell	Tazewell	CPPDC	Virginia	Buchanan 2010-2014 ACS	Dickenson 2010-2014 ACS	Russell 2010-2014 ACS	Tazewell 2010-2014 ACS	CPPDC 2010-2014 ACS	Virginia 2014 ACS
Less than $50,000	4,861	3,016	4,360	6,315	18,552	91,881	2,861	1,717	2,153	3,453	10,184	120,905
$50,000 to $99,999	2,960	1,984	3,722	5,532	14,198	462,870	2,440	1,543	2,459	3,980	10,422	155,433
$100,000 to $149,999	499	370	1,013	1,314	3,196	373,288	880	786	1,287	2,259	5,212	223,854
$150,000 to $199,999	210	68	226	509	1,013	233,999	427	480	1,071	1,627	3,605	295,456
$200,000 to $299,999	97	53	136	301	587	209,613	451	190	989	1,296	2,926	453,886
$300,000 to $499,999	24	9	84	82	199	107,093	385	56	523	558	1,522	453,831
$500,000 to $999,999	9	13	15	60	97	28,041	85	37	75	110	307	279,469
$1,000,000 or more	14	12	8	14	48	4,013	47	27	42	164	280	45,320
Median (dollars)	42,800	45,100	55,200	55,700	49,700	118,800	68,700	72,400	94,500	89,600	81,300	243,500

Source: U.S. Census Bureau (2000 data) and 2010-2014 U.S. Census Bureau American Community Survey Estimates

LAND USE

RESIDENTIAL LAND USE

Residential land use encompasses the entire mix of dwelling unit types and densities. The location, character and intensity of residential development should be linked to natural characteristics of the land, such as topography, soils, existing vegetation and water flow.

COMMERCIAL LAND USE

Commercial land use includes all activities which are predominantly connected with the sale of products or the performance of services. This includes retail trade, office space, personal and professional services, and entertainment facilities. Retail establishments can be classified according to the type market that they serve, such as regional, community, or neighborhood scales. Convenience, neighborhood and community scale retail provide every day, immediate goods, while regional and sub-regional retail provide more specialized goods.

Commercial land use guidelines:

1. Provisions should be made for two principle types of commercial areas: neighborhood shopping areas and community shopping areas.
2. New commercial developments should be in the form of unified and concentrated planned developments. Spot commercial development in residential neighborhoods and the stringing out of commercial development along streets, or what has been referred to as a strip commercial development, should be discouraged.
3. Commercial areas should not detract from residential and industrial development nor should residential and industrial development adversely affect commercial areas.
4. The protection of pedestrian traffic should be given adequate consideration to insure the safety and flow of pedestrians in new commercial development areas without unnecessary interruption of

automobile traffic.

5. Existing commercial establishments should be encouraged and assisted to the fullest extent possible in correcting any deficiencies, to improve traffic safety and convenience.

INDUSTRIAL LAND USE

Activities predominantly connected with the manufacturing, assembly, processing, storage and distribution of products are considered industrial. Industrial facilities place a heavy demand on local resources, and have the greatest impact on the surrounding environment. Land use policies which promote the efficient utilization of industrial development is to be realized. The location must respect air and water flows and the more visible environmental features.

In general, "cleaner" industries are preferred over those which employ heavily impactive processes. Any new industrial activity should not impede the county's efforts to meet established environmental quality standards. In order to attract desired industries, it is necessary to reserve enough suitable land as is deemed necessary for future growth. Industrial activities should be located where land use buffers can be established to separate and protect non-industrial uses, and where natural land characteristics are conducive to high site development intensities.

Industrial land use guidelines:

1. Industrial development should take place on land having stable, well drained soils. Topography should be reasonably level and free from flooding and grading problems. Climatic factors such as prevailing

wind speed and directions should be considered in potential industrial locations.

2. Appropriate transportation facilities with good access to highways, and where possible rail facilities, should be available to industrial areas. Industrial plants which generate large volumes of traffic should be located on major streets so as not to encourage traffic through residential areas; and, where possible, industrial areas should be buffered by major highways, railroads, and greenbelt areas, greater set-back depth or natural topographic features.
3. Basic utilities such as water, sewer, electricity, and gas should be available in adequate capacities to industrial areas.
4. Site size requirements for different types of industrial usage vary widely as does the locational requirements. Therefore, there should be provided a range of choice in site sizes and location with sufficient flexibility to meet the need of a wide variety of industries.
5. Land set aside for industrial use should not overshadow other community needs nor be arranged so as to hinder proper residential or commercial growth. At the same time, it is equally important that residences and commercial establishments not be allowed to encroach upon land planned for industrial use.

RECREATIONAL AND OPEN SPACES

The recreational and open space areas are ordinarily included in a larger category "public and semi-public lands" which includes areas containing schools, churches, police stations and other necessary lands. Although recreation will be dealt with in the community facilities category, recreational space and open space land use guidelines are presented in the land use plan.

Recreational and open space land use guidelines:

1. Appropriately located community recreation facilities should be provided to serve the residents. These facilities should be adequate in terms of size, number and variety. The facilities should serve the needs of the total population.
2. Places of historical significance, as well as areas having rare natural beauty should be preserved and well maintained.
3. Whenever possible, natural boundaries such as steeply sloping ridges, sinkable areas, areas of exposed bedrock, stream flood plains, and the areas unsuitable for urban development should be used as natural dividers between neighborhoods and retained as recreation and for open spaces.
4. Areas designated in the land use plan as intended for permanent open space or recreation should be reserved as such.
5. Agricultural uses should be retained in areas subject to periodic

flooding and in outlying areas where premature urbanization would be detrimental to the community.

6. Where feasible, land use for the production or extraction of natural resources should be isolated in compact areas so as not to detract from the beauty and integrity of the community.

RESIDENTIAL LAND USE

Residential land use encompasses the entire mix of dwelling unit types and densities. The location, character and intensity of residential development should be linked to natural characteristics of the land, such as topography, soils, existing vegetation and water flow.

SUITABILITY

The ability of soil to support various land uses effects suitability. Soil properties such as percolation, compaction, shrink-swell potential, density, slope, depth to bedrock, underlying material, location, water table and composition are factors considered in determining the suitability and limitations that soil may possess for different land uses.

SUMMARY OF EXISTING LAND USE

A comprehensive view of the existing land use composition in Buchanan County was determined approximately eighteen years ago. Recent field studies indicate slight changes in land use acreage since the original calculations were compiled.

The total amount of developed land in Buchanan County has grown by an estimated 2,120 acres since the original land use studies were completed. The greatest amount of growth has taken place in residential land use. This can be attributed to two main reasons, population growth during the 1970's and fewer persons living in each housing unit. In addition to residential land use, more acreage is being devoted to industrial, commercial (trade), and public land use, although some buildings have been abandoned or temporarily vacated due to economic conditions in the 1980's and the outward migration that resulted from those economic declines.

EDUCATION

Buchanan County has 10 public schools. Total enrollment for the 2014-2015 school year was 2,974 students. Enrollment has declined significantly over the past several decades. For example, enrollment on August 31, 1993 was 5,732. In fact enrollment has been on the decline since the 1960's, following the same trend as most schools in Southwest Virginia and the Appalachian region. For instance, enrollment for the 1975-1976 school year was 9,614, and improvements were needed at many schools in order to reduce crowding. Now, focus is on building maintenance, improving test scores and maintaining a high quality teaching staff.

Pupil Teacher Ratios Fiscal Year 2014 - 2015

Table 21

Elementary	Virginia	Buchanan	Dickenson	Russell	Tazewell
Teaching Positions	57,644.07	163.50	113.50	199.45	368.75
End of Year Membership, K-7	765,380.04	1,778.12	1,374.38	2,402.65	3,750.64
Pupil/Teacher Ratio	13.28	10.88	12.11	12.05	10.17
Secondary					
Teaching Positions	37,064.10	117.00	66.50	125.94	164.40
End of Year Membership, 8-12	463,019.57	1,195.69	842.29	1,537.67	2,229.04
Pupil/Teacher Ratio	12.49	10.22	12.67	12.21	13.56

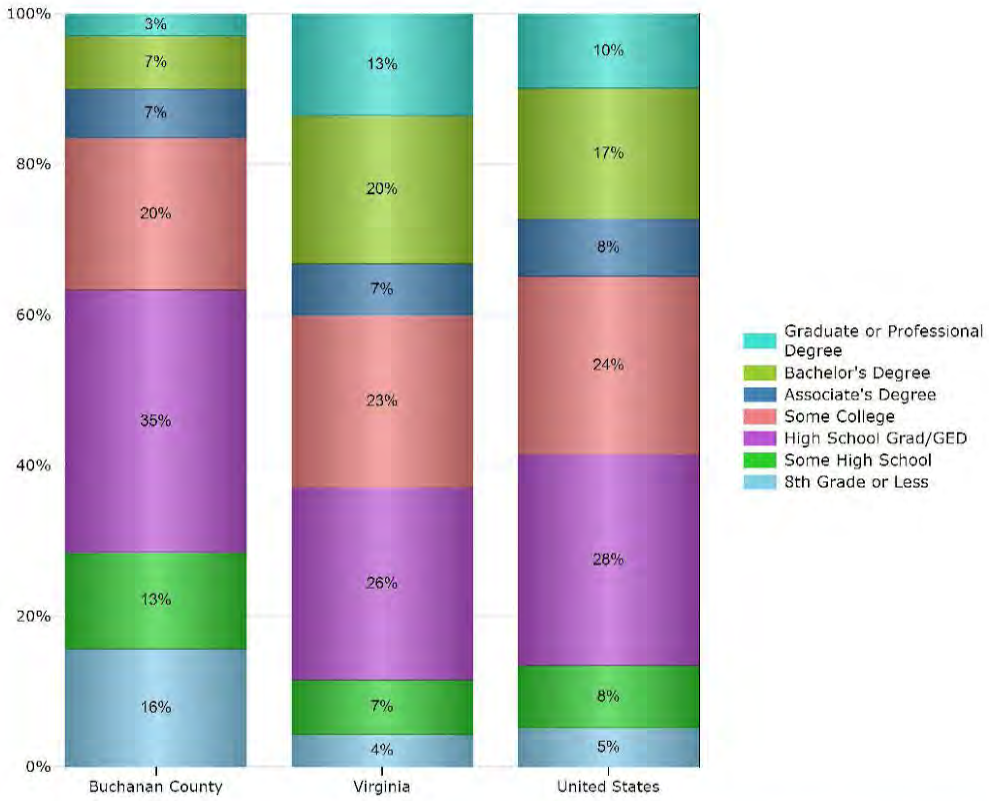
Source: Virginia Department of Education Superintendent's Annual Report

Public responsibility for education does not stop at the provision of schools and libraries, it extends to such diverse areas as public television and radio, adult literacy, and job training. Educational television and radio provide ways of making specialized information available to the majority of the population.

Colleges and universities are often the best providers of higher education for non-traditional adult students in this region, and these institutions may require local government assistance in performing this function. Community-based educational programs or extension services sometimes need the part-time use of public facilities to hold weekend and evening programs. Schools, libraries, and other public structures should be made available for this purpose.

Educational Attainment

(Population 18 years and over)



	Buchanan County	Virginia	United States
8th Grade or Less	3,024	275,329	12,639,425
Some High School	2,470	464,075	20,093,117
High School Grad/GED	6,709	1,633,105	68,044,371
Some College	3,895	1,457,887	57,431,237
Associate's Degree	1,258	440,219	18,586,866
Bachelor's Degree	1,351	1,258,661	42,027,629
Graduate or Professional Degree	565	862,686	24,008,551
	19,272	**6,391,962**	**242,831,196**

Source: U.S. Census Bureau
American Community Survey, 2011-2015.

Two major institutions of higher learning in the county are the Appalachian School of Pharmacy (ASP) and the Appalachian School of Law (ASL). Both of these institutions offer professional degrees in their respective fields. Enrollment in ASP has remained strong with 225 students enrolled in their full time program. Enrollment in ASL has declined in recend years, slipping below 150 students in 2016. Enrollment has seemed to recover somewhat as of 2017 with the closure of some competing law schools.

Southwest Virginia Community College operates the Booth Center in Grundy jointly with ASL. This facility offers classes leading to an R.N. degree and provides employment training such as computer classes through the JTPA program. Another educational facility in the immediate area is the SVCC A.R.C.H.S. Incorporated Education and Training Center in Haysi, Virginia. Although it is located in Dickenson County, it can be reached hi a few minutes by many of Buchanan County's residents.

The following colleges are located within three hours driving time from Buchanan County :

University of Virginia at Wise	Wise,VA
Emory and Henry College	Emory, VA
Virginia Polytechnic Institute & State Univ.	Blacksburg, VA
Radford University	Radford, VA
East TN State University	Johnson City, TN
King College	Bristol, TN
Lincoln Memorial University	Harrogate, TN
Pikeville College	Pikeville, KY
Southwest Virginia Community College	Richlands, VA
Appalachian School of Law	Grundy, Va
Appalachian School of Pharmacy	Oakwood, VA

INDUSTRIAL PARKS

Built in 2004 Buchanan County has invested heavily in developing modern infrastructure and buildings to suit industry needs. The Buchanan Information Park is a modern, multi-tenant facility that has approximately 26,000 sq. ft. of available office space.

Buchanan County has numerous other sites which are well suited for industrial facilities. Most of these sites are situated in the valleys of the county, and lie alongside public highways, streams and the Norfolk & Southern Corporation's rail lines. Most of these sites are currently being used, or have been used, as sites for coal preparation and loading facilities. As the coal industry continues to decline, less of these sites will be needed for use by the coal industry. These sites are served by public water and sewer facilities and are accessible to large gas transmission lines. An example of such a site is the location of Island Creek Coal Company's Beatrice/Pocahontas mine. This site is located directly across the Levisa River from U.S. Route 460 (a four - lane highway) between Oakwood and Keen Mountain, Virginia. The site contains

approximately twenty acres of level land; is served by the Norfolk & Southern Corporation's rail line; is served by public water and public sewer; and is located within close proximity to several gas transmission lines, which transmit to areas outside of the County millions of cubic feet of gas per day which has been produced in Buchanan County. The site is also located near abundant supplies of high grade bituminous coal and hardwood timber. The site has not been used for coal mining for several years, and some reclamation work has been completed on the site.

There are also numerous large tracts of level land which lie along the ridgetops of the County which may be developed for industrial use or for use by the tourism industry. Many of these sites have magnificent views.

HOSPITALS

Approximately 20 primary care physicians provide health care services in Buchanan County. The Buchanan General Hospital, which is located on State Route 83 in Slate Creek, provides ICU, PCCU, laser surgery, minor and major surgery as well as same-day surgery services. The Buchanan General offers many other services including ultrasound, mammography and physical therapy.

Regional hospitals include:

Russell County Medical Center	Lebanon, VA
Norton Community Hospital	Norton, VA
St. Mary's Hospital	Norton, VA
Wise Appalachian Regional Hospital	Wise,VA
Johnston Memorial Hospital	Abingdon,VA

Bristol Regional Hospital	Bristol, TN
Indian Path Pavilion	Kingsport, TN
Indian Path Hospital	Kingsport, TN
Holston Valley Medical Center	Kingsport, TN
Buchanan County General	Grundy, VA

PUBLIC SAFETY

A major responsibility of local government is to keep public order and to protect citizens from the dangers of crime, fire and natural catastrophes. Volunteer fire departments in Buchanan County work to protect all the development in the county from fire. Each department serves a roughly defined area in the county, but each one has a mutual agreement with the others to assist each other upon request.

Police protection in Buchanan County is provided by the Buchanan County Sheriff's Department, which has 33 sworn officers, the Town of Grundy Police Department, which has 4 sworn officers, and several Virginia State Police Officers. Vansant is the location of this area's Virginia State Police Headquarters. Police activities include the prevention of crime, apprehension of offenders, recovery of property and regulation of noncriminal conduct.

The duties of policemen in a rural county such as Buchanan also include traffic supervision, patrolling, prevention of delinquency, crime investigation, and performance of administrative functions within the department. Buchanan County police departments should continue efforts to obtain new equipment in order to provide the latest technology available to aid the police in crime prevention and detection.

Rescue squad units are located throughout Buchanan County to offer assistance to all citizens of the community on a twenty-four hour basis. These organizations provide on the-spot first aid to victims of accidents, natural disasters, sudden illness or any other emergency situation.

RECREATION

The Breaks Interstate Park is a recreational and scenic area encompassing 4,500 acres located on the Virginia-Kentucky border in Dickenson County. The park's close proximity to Buchanan County allows residents of both counties to enjoy the facilities and share the benefits of the park's increasing recognition. The park includes a 1,000 foot deep canyon carved by the Russell Fork River, which is often referred to as the "Grand Canyon of the South".

SEWERAGE

The Buchanan County Public Service Authority plans and designs the county's sewer projects. This agency is responsible for dealing with all water, sewer, solid waste and air pollution problems within the county. The sewer treatment capacity is 1,250,000 gallons per day, with an average of 314,490 gallons per day being treated. Sewerage from the town of Grundy is treated at the Conaway treatment plant.

SOLID WASTE DISPOSAL

Solid Waste is defined as any type of garbage or refuse including solid, liquid, semi-solid or contained gaseous material. This includes industrial, hazardous, medical and municipal waste,

each of which requires different treatment. Most of these waste types are strictly regulated by federal agencies, but several aspects of their collection, processing, and disposal are local planning issues. Solid Waste collection and disposal is a growing responsibility for county, city and town governments.

Once refuse has been collected, there are two main methods of preparing it for final disposal, incineration and compacting. Both methods are aimed at reducing the mass and volume of waste, the former by burning and the latter by compression. Incineration, although sometimes thought to be more cost effective and efficient, may produce gaseous pollutants which can be removed from the exhaust gases only by stack scrubbing. However, wet scrubbers produce liquid effluent, creating a trade off between polluted air and polluted water. The heat generated by combustion can be recovered for beneficial uses such as the generation of steam, chilled water or electricity. Compacted waste is placed in a sanitary landfill, where fresh waste is covered with clean fill.

There are a number of ways to limit the need for disposal, including recycling, source reduction, composting and energy reclamation. All of these methods should be elements of a comprehensive solid waste management program.

Buchanan County operated a non-hazardous industrial waste disposal facility, but this landfill closed in the Spring of 1994. At this time disposal services are being provided by the Cumberland Plateau Regional Waste Management Authority (CPRWMA). A regional approach to solid waste management is offered by the Cumberland Plateau Regional Waste Management Authority, which includes Dickenson, Buchanan and Russell Counties. The authority has signed a five-year option with BFI, Inc., to dispose of solid waste at a facility outside the three-county

area.

Three transfer stations should be constructed, one in each county. Buchanan County will send its waste to the county transfer station, where the waste becomes property of the authority.

The Cumberland Plateau Regional Waste Management Authority has compiled a regional waste management plan and is reviewing waste management options being operated successfully in other regions, in order to provide the three-county area with safe and adequate disposal in the future.

Private landfills will not be established in Buchanan County until the private enterprise meets the requirements of each ordinance of Buchanan County, including, but not limited to, performance standards, health, and safety ordinances.

WATER

As stated in the survey of Buchanan County's natural resources, a safe, clean, and dependable water supply is required for many commercial, industrial, agricultural and recreational purposes. Coal mining operations have damaged the supply of groundwater in Buchanan County. Underground aquifers have been depleted in some areas and only a small amount of groundwater is still available.

Lack of water is a major problem for many residents in the outlying areas and remote sections of the county. Projects are currently underway to provide adequate water services for all of Buchanan County.

A master water plan has been designed for Buchanan County by Thompson and Litton

Engineers. The first priority is to replace water lines in the town of Grundy. The plan will be developed, designed, and installed in phases. The Buchanan County Public Service Authority provides water for much of Buchanan County. The PSA's average daily water use is approximately 3,947,556 gallons.

FINANCE

BUSINESS ASSISTANCE

Business and industrial financial assistance is available through the Buchanan County Industrial Development Authority. This Authority is empowered to issue Industrial Revenue Bonds and can also act as the recipient of Virginia Revolving Loan Funds.

The Virginia Coalfield Economic Development Authority (VCEDA) manages a financing program that provides grants and loans for infrastructure improvements and for the location of new industry and the expansion of existing industry. Its funding is derived from a portion of the coal severance tax. The VCEDA maintains a current listing of all available industrial property in its service area, and coordinates its activities with the local government jurisdictions that it serves. The Virginia Coalfield Economic Development Authority also serves as an advocate for the coalfield region, representatives from VCEDA serve on numerous organizations, committees, and special task forces dealing with economic development related issues for the coalfields.

TAX RATES

Buchanan County has a 1% local sales tax above and beyond the 4.3% state sales tax imposed on sale of goods throughout the state. The amount of taxable sales in Buchanan County has risen over 20% in the past 15 years. This rise is within the same approximate range as other counties in the area.

Taxable Sales
2000-2015

Year	Buchanan	Dickenson	Russell	Tazewell	CPPDC
2000	$115,923,478	$48,398,260	$107,862,419	$409,177,303	$681,361,460
2001	$114,597,950	$47,977,617	$101,878,423	$414,883,974	$679,337,964
2002	$114,720,922	$49,531,310	$122,525,574	$421,810,028	$708,587,834
2003	$112,152,118	$50,249,767	$129,188,820	$439,228,597	$730,819,302
2004	$116,924,712	$52,914,791	$138,753,368	$462,767,675	$771,360,546
2005	$107,211,477	$50,357,215	$132,085,662	$433,462,904	$723,117,258
2006	$123,290,187	$57,182,687	$149,040,720	$503,888,173	$833,401,767
2007	$127,687,900	$60,083,344	$156,657,814	$520,718,233	$865,147,291
2008	$139,948,887	$63,232,095	$161,030,985	$541,605,045	$905,817,012
2009	$127,560,716	$64,054,957	$157,889,960	$532,354,982	$881,860,615
2010	$125,345,514	$65,984,411	$158,276,136	$531,158,462	$880,764,523
2011	$142,304,553	$68,042,398	$159,840,501	$540,216,247	$910,403,699
2012	$156,984,874	$66,417,728	$160,139,687	$552,018,668	$935,560,957
2013	$148,802,737	$65,552,723	$153,199,811	$527,292,801	$894,848,072
2014	$147,726,232	$69,962,263	$159,893,054	$521,246,767	$898,828,316
2015	$141,875,222	$60,520,561	$172,010,922	$531,489,881	$905,896,586

Source: Virginia Department of Taxation

A portion of the coal severance tax provides revenue for the Buchanan County general fund. The coal severance tax is also used for road improvements.

Real Estate tax in Grundy is .39 cents, and personal property tax is 1.95 dollars per hundred dollars of assessed value.

GOALS AND OBJECTIVES

COMMUNITY FACILITIES

Goal: Improve the quality of education for all students.

Objective: Structure curricula to promote acquisition of basic educational skills.

Policies:

1. Promote the development of a satellite educational system.
2. Expand special needs programs.
3. Carefully monitor population and enrollment trends to accurately project educational needs.

Goal: To encourage an acceptable level of community facilities to be located in areas throughout Buchanan County where they will be most efficiently and effectively utilized.

Objective: Provide all citizens of Buchanan County with access to community facilities.

Policies:

1. Insist that all new public buildings are built in compliance with the Americans with Disabilities Act.
2. Follow the county ADA Plan to make the necessary renovations to existing public buildings, to ensure that they meet ADA standards.

ECONOMY AND EMPLOYMENT

Goal: To diversify the county's economic base in order to reduce the dependence on coal mining.

Objective: Foster new or expanding local business by creating the necessary incentives. Policies:

1. Work with financial institutions to improve the availability of venture capital for existing and new industries.
2. Provide a highly trained and motivated work force by using jobs training programs to improve the skills of unemployed and underemployed workers.
3. Increase inventory of industrial buildings and developed land.
4. Commit resources into market research and technical assistance for local businessmen and local developers.
5. Encourage the development of industries utilizing raw materials from our area's natural resources.

Goal: To reduce the number of persons and families living below poverty level.

Objective: Strengthen Buchanan County's economy so that all residents will have access to suitable employment.

Policies;

1. Continue area-specific industrial marketing and recruitment program.
2. Improve entrepreneurial opportunities, especially for unemployed workers.
3. Improve access to skill training programs and enhance the programs' linkages with industry.

FINANCE

Goal: To provide the needed funding for county improvements and expansions.

Objective: Maintain an adequate tax base.

Policies:

1. Consider the development of retirement facilities as a potential foundation for diversified future growth and revenue.
2. Consider long terms gams from increased public investment in education, transportation, and public utilities.
3. Support efforts to collect all assessed taxes.

Objective: Use Geographic Information System technology to develop an organized, up-to-date cadastral system. Policies:

1. Convert Buchanan County tax maps into digital format and link the geographical features with all tabular data relative to each parcel.
1. Periodically renew data in order to sustain accurate records.

HOUSING

Goal: To expand the range of housing opportunities for all county citizens.

Objective: Define and implement a residential development policy which will protect and enhance the right of citizens of modest means to acquire housing.

Policies:

1. Develop programs to construct affordable housing.
2. Support the development of housing for citizens who are handicapped.
3. Support the development of low-income housing.
4. Support the development of alternative housing options for senior citizens.

Objective: Provide for safe and attractive housing and housing areas.

Policies:

1. Encourage property owners to maintain their dwelling units.
2. Promote rehabilitation of existing housing units which are below standards, where possible seek federal and state funding to assist in making the renovations.
3. Encourage cleaning and fix-up campaigns, calling upon the civic and church groups within the community.
4. Sponsor a housing maintenance/housekeeping educational training program.

LAND USE

Goal: To encourage harmonious and wise use of land through future developmental decisions.

Objective: Implement a land use plan which will be used to guide future development.

Policies:

1. Encourage new housing in areas where water and sewer service exists or is planned.
2. Encourage development to occur in a manner which will best utilize the natural characteristics of the land.
3. Discourage non-residential encroachment on residential areas, where feasible and in the best interest of the area.

TRANSPORTATION

Goal: To promote feasible solutions to relieve current traffic problems and support future land use objectives.

Objective: Provide a street and highway system that is compatible with residential, commercial and industrial uses.

Policies:

1. Encourage improvement in the primary and secondary road system.
2. Improve traffic flow and circulation in the commercial areas.
3. Encourage the development of the Coalfield Expressway.
4. Encourage the development of scenic roads to help develop tourism.

IMPLEMENTATION

A number of tools and mechanisms may be used to implement a comprehensive plan. These tools are mostly the responsibility of local governments and their administrative officials. The effectiveness of these tools is dependent upon official commitment and citizen understanding and endorsement. Some of the more common methods of plan implementation include capital improvement programs, water and sewer facilities, subdivision regulations, road improvement programs, community codes, ordinances and several state and federal grant and loan programs.

CAPITAL IMPROVEMENTS PROGRAM

A capital improvements plan is a very effective implementation tool. This program is a budgetary listing of all major public improvements needed over the next five to ten years, along with the estimated costs of the improvements. The improvements are itemized on the basis of priorities. Advantages to preparing such a budget are that ample time is available for perfection of designs and gaining the best deal in terms construction costs, and adequate time is also available for selecting the least burdensome method of financing.

COMMUNITY CODES

Housing, building, plumbing, electrical and fire codes are important to the implementation of any planning program. Codes can aid in ensuring adequate health, sanitation and safety standards for the citizens of the county.

PERFORMANCE STANDARDS

Performance standards can be used in the implementation of plans. They can be used as a method of insuring that sub-standard development does not occur. Performance standards may be oriented toward flood protection, preservation of open space and agriculture lands,

historical and cultural areas, as well as the more traditional residential, commercial, and industrial areas.

CITIZEN INVOLVEMENT

The citizens, individually and collectively, can be of assistance and important in implementing the comprehensive plan by keeping well informed to the changes in Buchanan County's growth patterns and using this knowledge to formulate sound and sensible recommendations for needed revisions to the plan; by fostering widespread support for the goals; by working with the administrative officials, offering advice and suggestions; and by supporting other governmental and planning endeavors which endorse updates of the plan.

SUBDIVISION REGULATIONS

Subdivision regulations are available as a way by which control can be exercised over the division and development of land. They may be used to set standards for future development by establishing design standards for block lengths and widths, street widths and grades, street intersections, street alignment, lot sizes and other important features. Subdivision regulations may be used to require the installation of basic improvements on land being developed, such as

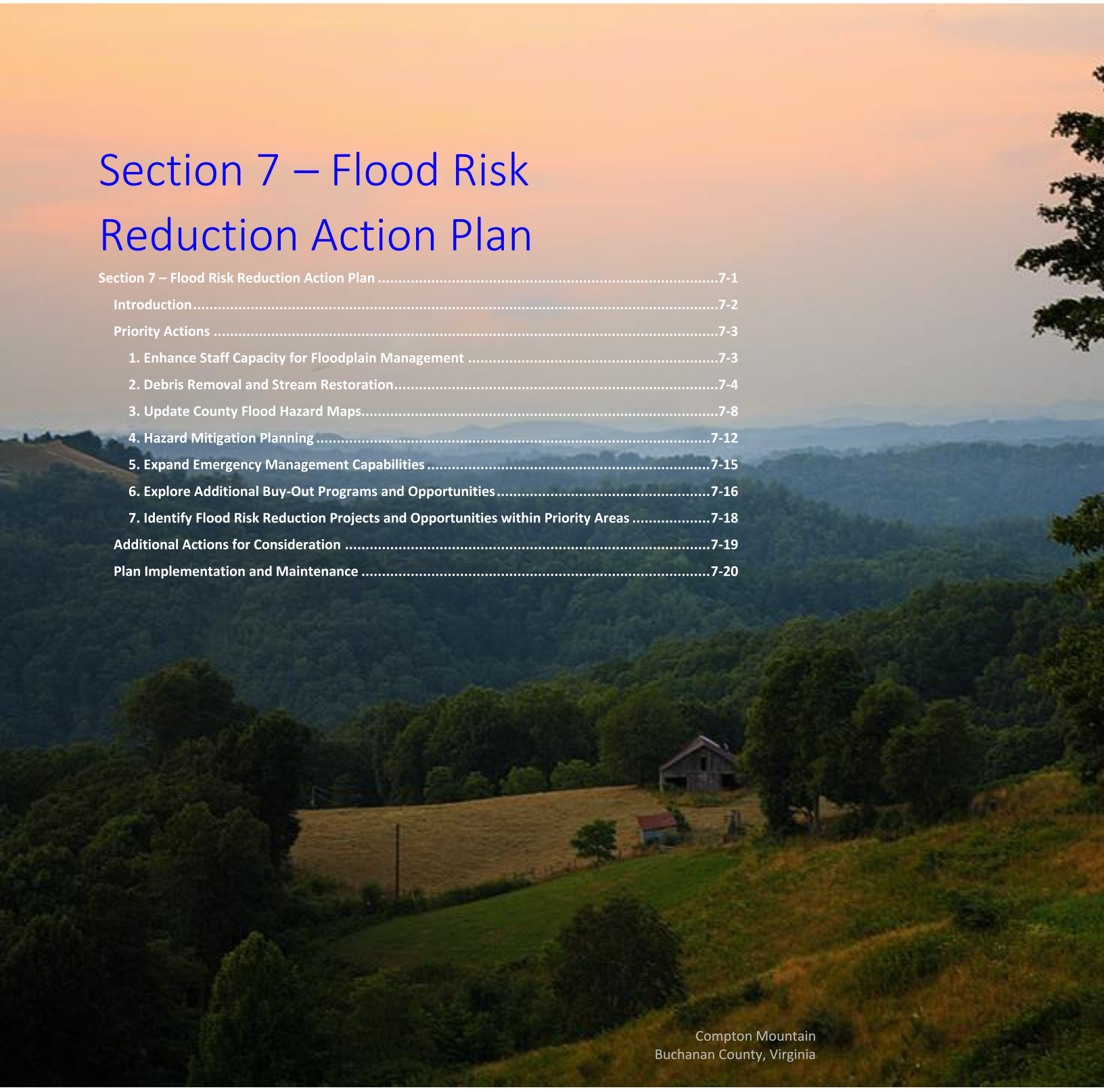
water distribution and sewage collection facilities, utilities easements, sidewalks, curbs, gutters, etc. They may also be used to require open space or recreation areas.

LAND ACQUISITION AND ASSESSMENT

The acquisition and/or assessment of land areas by a jurisdiction for the preservation of open space, natural, or agricultural areas, is becoming important as a planning tool. Land acquisition obtained by total, partial, lease, sale, rental or other techniques provides a wide range

of alternatives for Buchanan County or for any town therein.

Section 7 – Flood Risk Reduction Action Plan



Compton Mountain
Buchanan County, Virginia

Introduction

The purpose of the Flood Risk Reduction Action Plan is to provide Buchanan County with strategies to reduce the impact of flood hazards. It is designed to be targeted, strategic, and functional in nature:

- In being targeted, the action plan focuses on actions the County can take to reduce unique flood risks identified in the plan's risk assessment (Section 6) with consideration to the County's capabilities and capacity (Section 5) and previous or ongoing flood mitigation efforts.
- In being strategic, the action plan ensures that the actions are presented in a logical manner. Actions are designed to build off the capabilities gained by achieving a prior action. This structure aims to minimize potential roadblocks and improve the potential for successful implementation.
- In being functional, each prioritized action, when possible, is broken down into implementable steps. When available, funding sources are identified that may assist in project implementation.

Developing the Flood Risk Reduction Action Plan involves the identification, consideration, and analysis of available flood mitigation measures (i.e., activities, policies, projects, etc.) that will reduce flood risk within Buchanan County. These actions include plans and policies (such as the regulation of land in known hazard areas through a local ordinance), data and studies to enhance understanding of localized flood risks, and flood mitigation projects that seek to address targeted flood risks (such as the acquisition and relocation of structures at high risk to flooding).

The action plan includes seven prioritized actions for flood risk reduction. These actions are identified as those necessary to expand the County's ability to appropriately scope future projects and/or those considered to be highest priority for life safety. **Priority actions are those that should be implemented as soon as possible, with an estimated timeline of 0-3 years, unless otherwise noted.** Priority actions are focused on:

1. Enhance staff capacity for floodplain management;
2. Debris removal from waterways;
3. Floodplain mapping;
4. Hazard mitigation planning;
5. Emergency management;
6. Buy-out programs; and,
7. Identifying projects within areas prioritized for flood risk reduction.

Priority actions are detailed, and when necessary, broken in multiple steps to provide direction on how actions can be achieved. In addition, potential funding sources and/or additional resources have been identified for priority actions. It should be noted that identified funding sources may have their own unique requirements (e.g., benefit-cost analysis, programmatic requirements); these requirements have been taken into consideration when possible.

In addition to priority actions, several additional actions have been identified. These actions were identified through the planning process, however given the County's current needs and capacity, may not be a priority relative to other actions. Identified actions (priority and otherwise) are further detailed below.

Priority Actions

1. Enhance Staff Capacity for Floodplain Management

Buchanan County currently has a limited capacity to conduct floodplain management activities, as described further in *Section 5: Capability and Capacity Assessment*. A county official dedicated to a floodplain manager role, with a CFM designation, would have the capacity and expertise for such activities.

Description	Timeline	Estimated Cost	Potential Funding Sources
Grow Buchanan County's ability to implement flood risk reduction measures by: 1) hiring a staff member who is a Certified Floodplain Manager (CFM) under the Virginia Association of Floodplain Managers, 2) having an existing staff member obtain the CFM designation, or 3) contracting out the position to a qualified firm. The CFM should act as a dedicated Floodplain Manager for the County and should also be identified as a lead to track the need for and implementation of flood risk reduction activities. The responsibilities of the CFM should include, but not be limited, to the following: 1) The tracking, application, and management of grants and awards allocated to Buchanan County for the purpose of flood risk reduction. 2) Implementation and enforcement of Buchanan County's Flood Damage Prevention Ordinance. 3) Act as a community resource for the National Flood Insurance Program (NFIP). 4) Participate in FEMA Risk Mapping, Assessment, and Planning (MAP) studies (i.e., updates to FIRMs and development of floodplain mapping products for Buchanan County). 5) Coordination with state and local agencies for the purpose of flood risk reduction activities. 6) Participating in the CPPDC Hazard Mitigation Plan Update as a representative from Buchanan County.	Through December 2023	For new hire or contract position: annual cost of staff salary and benefits, CFM maintenance For existing staff: cost of exam, study materials, and CFM maintenance	Funding for a staff member to obtain CFM designation was under 2021 CFPF award; County general funds

2. Debris Removal and Stream Restoration

The localized extreme rain and flood events of the past two years created tremendous damage to infrastructure and the environment. Much of the damage was caused by the incredible amount of debris that the floods moved through the valleys. The federal government administers grant programs to help local governments pay for debris removal and the repair or replacement of community facilities and public infrastructure. These grant programs, while helpful, require considerable expertise to successfully apply for and administer the funds. Many local governments hire on-call disaster recovery services contractors to provide the necessary expertise and staff needed to complete applications and maintain compliance with state and federal regulations. These contractors also assist with procurement for additional services such as debris removal and monitor those activities.

One of the largest disaster recovery federal grant programs is the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Program, as authorized by section 406 of the Stafford Act. All FEMA PA grants come with an additional 5% for management costs (Category Z), which most local governments use to pay the disaster recovery services contractor. FEMA also provides additional funding as part of the PA program for hazard mitigation, so that recovery projects built using PA funds are more sustainable and resilient in the face of future, similar disasters. Finally, once FEMA PA funds are totaled, a percentage of those funds may be added and given to the state to manage and fund other types of hazard mitigation projects as part of the Hazard Mitigation Grant Program (HMGP) as authorized by section 404 of the Stafford Act.

This resilience action recommends Buchanan County hire a disaster recovery services contractor immediately to assist the County with securing FEMA, HUD, and other disaster recovery grants. The contractor must be hired immediately so that the County can meet the application deadlines for the FEMA PA funds approved for the July 2022 floods (4674-DR-VA).

Removing debris from the July 2022 floods is the highest priority. Following debris removal, stream restoration projects will be necessary to repair the creeks, re-establish proper flow, and provide natural flood mitigation and water storage where possible. The steps outlined below offer the County an action plan for hiring a contractor, removing debris, and beginning stream restoration projects.

Description	Timeline	Estimated Cost	Potential Funding Sources
Coordinate with Virginia Department of Environmental Quality (DEQ) to develop an Emergency Debris Management Plan. This plan may be integrated into the County's Emergency Operations Plan, and is intended to identify the following **prior to an emergency event**:[1] • Staff roles and responsibilities,	ASAP	$50,000-$100,000 (contracted out) or staff time to develop plan	County operating funds

[1] Virginia DEQ: Severe Weather Debris Management. Retrieved from Severe Weather Debris Management | Virginia DEQ.

Description	Timeline	Estimated Cost	Potential Funding Sources
• Waste and debris collection methods (curbside pickup, citizen drop-off, etc.), • Potential locations for emergency debris management sites, • Waste management options (reuse, recycle, mulch, compost, landfill, etc.), • Resources needed (such as heavy equipment, fuel, or additional staff), • Contracted services for cleanup and monitoring (see next action), • Special procedures for private property demolition and debris removal, and • Plans for communicating information to the public.			
Hire a disaster recovery services contractor to manage Public Assistance and other recovery grant applications and administration. Recovery contractor will guide County in submitting applications to fund debris removal, pump station repairs, road and culvert repairs and other recovery projects. Recovery contractor may be paid with a portion of the 5% administration costs that accompany FEMA grants.	ASAP	Staff time to prepare RFP, advertise, and initiate a contract	County operating funds; PA Management Costs (Category Z)
Meet with FEMA Program Delivery Manager (PDMG) and establish what meetings (Recovery Scoping Meeting) have occurred and deadlines for project submittal. Discuss options for debris removal and stream restoration, including Natural Resources Conservation Service (NRCS) and United States Army Corps of	ASAP	Staff time to meet with recovery contractor and FEMA	County operating funds

Description	Timeline	Estimated Cost	Potential Funding Sources
Engineers (USACE) management of debris removal projects and stream restoration.			
Under direction of recovery contractor, complete Damage Inventory (DI), including detailed inventory of debris associated with the July 2022 storm (quantity and amount can be updated). Identify sources of debris and what debris was already removed.	ASAP	Staff time to contribute to damage inventory	County operating funds; PA Management Costs; NRCS Emergency Watershed Protection (EWP) funds; USACE Direct Federal Assistance (DFA) or Federal Operations Support (FOS) Mission Assignments
Under direction of recovery contractor, prepare and issue RFP for July 2022 storm debris removal. RFP should highlight requirement that contractor comply with all environmental regulations, including the Endangered Species Act and Clean Water Act in addition to FEMA debris removal requirements.	ASAP	Staff time to approve and post RFP	County operating funds; PA Management Costs
In coordination with recovery contractor and RES identify funding sources to assist property owners with debris removal not covered by FEMA PA	May - August 2023	Staff time for meetings	County operating funds
Compete debris removal projects	May-December 2023	25% of project costs	County operating funds, bonds, FEMA PA; NRCS Emergency Watershed Protection (EWP) funds; USACE Direct Federal Assistance (DFA) or Federal Operations Support

Description	Timeline	Estimated Cost	Potential Funding Sources
			(FOS) Mission Assignments
In coordination with recovery contractor and RES, identify projects to repair damage to streams and provide additional flood mitigation.	June 2023	Staff time to meet with recovery contractor and RES	County operating funds
In coordination with recovery contractor and RES, develop scopes of work and identify potential funding sources for stream restoration projects	June 2023	Staff time for meetings with RES	County operating funds
In coordination with RES and recovery contractor, apply for funding and complete projects to repair damage to streams	2024-2025	TBD	Grants - FEMA PA-Hazard Mitigation, FEMA-HMGP; Housing and Urban Development (HUD)-Community Development Block Grant (CDBG); NRCS Emergency Watershed Protection (EWP), Watershed and Flood Prevention Operations (WFPO), other funds; USACE Aquatic Ecosystem Restoration Projects (Section 206, other); Environmental Protection Agency (EPA) grants

3. Update County Flood Hazard Maps

Buchanan County's current flood maps (FIRMs) were developed over 25 years ago, in 1997. Further, while the 1997 study was countywide, certain stream reaches were not within the study boundaries. For instance, the stretches of Dismal Creek in the Whitewood/Jewell Valley that do not have mapped flood hazard area had extensive flooding and damages during the July 2022 flood event. Ideally, Flood Risk Data products should be developed for the entire county (e.g., Base Level Engineering (BLE)). BLE mapping would allow for maps that cover areas beyond the one square mile drainage area associated with traditional modeling and will allow for development of products such as depth and water surface elevation (WSEL) grids. In some studies, additional products such as velocity and particulate movement grids may be produced. Given the prevalence of structures in Buchanan County being washed downstream during flood events, depth and velocity grids could be used to better inform risk and could be incorporated into planning (e.g., Flood Damage Prevention Ordinance, transportation), building code updates, soil and erosion control, emergency management (e.g., evacuation planning), capital improvement planning, and decision-making. Further, flood risk products often include flood data for additional flood recurrence intervals other than the 100-year (1% annual) and 500-year (0.2%) events.

Description	Timeline	Estimated Cost	Potential Funding Sources
Work with the Virginia Floodplain Management Program (administered through the DCR) and FEMA Region 3 to have an updated county-wide flood study produced to replace current regulatory floodplain maps (FIRMs). Buchanan County is currently scheduled for a new flood study under the FEMA Risk MAP program, to begin in 2023. Draft maps are currently being completed in the northern portion of the county. DCR anticipates the first touchpoint with local leaders for the rest of the county, the Discovery Meeting, to be held prior to the end of the 2023 calendar year. An overview of the Risk MAP process is presented in Figure 7-1.	Discovery meeting to be scheduled prior to end of calendar year by DCR. Flood study estimated to be completed within 5 years.	Minimal cost to the County, includes staff time to participate in the flood study.	Flood study funded by FEMA Region 3
Prep for Discovery Meeting. Designate a County official to lead participation in the Risk MAP Discovery Meeting. This person should lead communication with DCR and FEMA Region 3 to understand opportunities for the County to participate in the floodplain mapping process. In addition, this person should be tasked with collecting the necessary data to successfully participate in the Discovery process. Flood data shared by the County will facilitate map products that more accurately represent flood risk. Data to	ASAP	Staff time to collect information and participate in meetings.	Flood study funded by FEMA Region 3

Description	Timeline	Estimated Cost	Potential Funding Sources
be shared includes, but is not limited to, high water marks, damage/claims information, areas of known risk, and local infrastructure data. The information collected during this planning process should be leveraged in during Discovery along with other local data and knowledge.			
Participate throughout the Risk MAP process. Opportunities for County officials to participate in the flood study process include: • Discovery (data gathering and information sharing; • Flood Risk Review Meeting (review draft floodplain data); • Resilience Meeting (plan for the future); and, • Consultation Coordination Officer (CCO) Meeting (review preliminary FIRMs and FIS).	2023 - 2028	Staff time to collect information and participate in meetings.	Flood study funded by FEMA Region 3
Adopt new flood data. Once the preliminary flood data completes its required 90-day appeal period and the County receives a Letter of Final Determination (LFD), the County must adopt or amend the Flood Damage Prevention Ordinance to reflect new regulatory maps within 6 months in order to remain compliant.	2025-2028	Staff time	Flood study funded by FEMA Region 3
Pursue additional flood risk products and/or studies, as necessary. If flood risk products outside of the standardized sets provided through the flood study (depths grids, WSELs, and changes since last FIRM (CSLF)) are desired to achieve targeted emergency management and planning needs, the County should pursue funding outside of the current FEMA Risk MAP study to develop these products. For example, the County may wish to pursue a Comprehensive Watershed-wide Drainage Study for the Whitewood area (part of the Upper Levisa Watershed) prior to the completion of the Risk MAP study, as the Whitewood area does not currently have mapped FEMA special flood hazard	1-10 years	Variable (>$50,000)	CFPF; FEMA Mitigation Technical Assistance

Description	Timeline	Estimated Cost	Potential Funding Sources
areas. A drainage study could be used to identify locations where culverts may need to be upsized to accommodate current and/or future flows, and where other flood control measures would reduce risk. In certain instances, the County may adopt flood data developed outside of the Risk MAP program as "best available data." Generally, this can be done in areas where there is no mapped FIRM available, or where the data being used as "best available" is more conservative than FIRMs.			

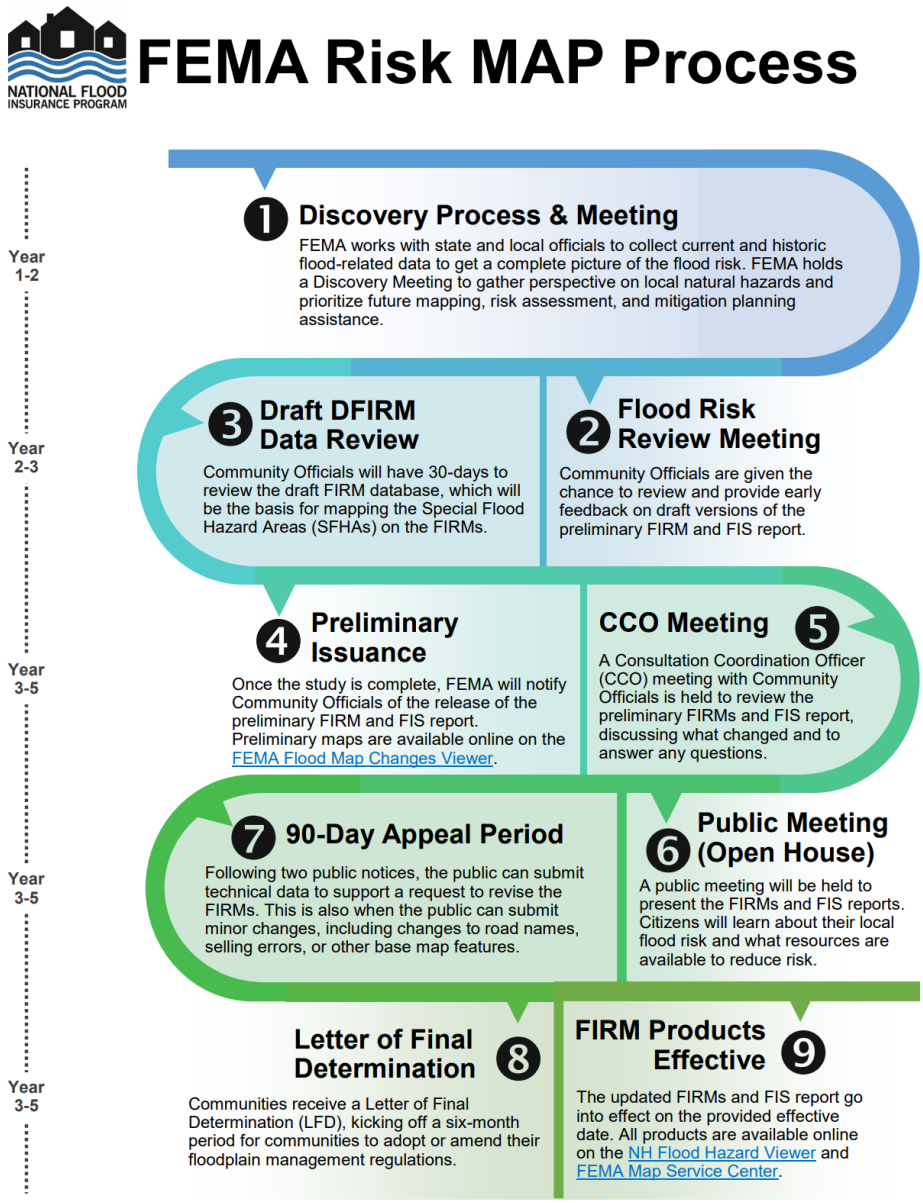


Figure 7-1: FEMA Risk MAP Flood Study Process

4. Hazard Mitigation Planning

Hazard mitigation planning reduces loss of life and property by minimizing the impact of disasters. It begins with state, tribal and local governments identifying natural disaster risks from all hazards and vulnerabilities that are common in their area. After identifying these risks, they develop long-term strategies for protecting people and property from similar events.

FEMA-approved hazard mitigation plans are required in order to be eligible for certain types of FEMA funding aimed at mitigating risk from natural hazards, including flooding. Hazard mitigation plans must be updated every five years and approved by the State and applicable FEMA region and adopted by the community in order to maintain eligibility. Types of FEMA grants requiring a community to have an approved hazard mitigation plan in place include:

- **Hazard Mitigation Grant Program (HMGP)**: HMGP provides funding to state, local, tribal and territorial governments so they can develop hazard mitigation plans[2] and rebuild in a way that reduces, or mitigates, future disaster losses in their communities. When requested by an authorized representative, this grant funding is available after a presidentially declared disaster. Types of projects covered under HMGP include planning and enforcement, flood protection (e.g., acquisitions, levees, floodwalls, elevation, drainage improvements), retrofitting, and slope stabilization.[3]

- **Building Resilient Infrastructure and Communities (BRIC):** BRIC supports state, local, tribal and territorial governments as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency. Projects covered under BRIC include planning/ordinance updates, building codes, flood control, drainage improvements, buy-out programs, stormwater management, nature-based solutions, and landslide mitigation, among others.[4]

- **Flood Mitigation Assistance (FMA)**: FMA is a competitive grant program that provides funding to states, local communities, federally recognized tribes and territories. Funds can be used for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program.

Buchanan County is currently eligible for these funds by participating under the CPPDC Hazard Mitigation Plan. However, this plan was last updated in 2018 and will expire this year, in 2023. Per information from the CCPDC, the District has requesting FEMA funding in order to complete the plan update, however it is possible that the current plan will expire prior to an update being completed, approved, and adopted. The State Hazard Mitigation Officer (SHMO) can provide guidance for hazard

[2] Planning grants are available to communities without current, approved hazard mitigation plans in order to develop plans.
[3] Hazard Mitigation Grant Program (HMGP) | FEMA.gov
[4] About BRIC: Reducing Risk through Hazard Mitigation | FEMA.gov

mitigation planning. Two pathways for Buchanan County to maintain a current hazard mitigation plan are presented below.

Description	Timeline	Estimated Cost	Potential Funding Sources
Path A Work with CCPDC to complete the 2023 update of the CCPDC Hazard Mitigation Plan. This is dependent on the CPPDC obtaining funding for and completing the plan update. Buchanan County should designate an official to spearhead this effort. This individual should be tasked with: • Maintaining communication with CPPDC regarding plan updates and information (e.g., selection and award for funding to update the plan, plan schedule); • Participating on the hazard mitigation plan Planning Team; • Acting as a liaison between the CPPDC planning effort and Buchanan County, including notifying County officials and the public of opportunities to participate in plan development and supporting timely plan adoption by the Board of Supervisors; • Providing required information for the Buchanan County sections of the plan update, such as an updated critical facilities list, information of previous events and damages since last plan, and risk reduction actions or projects (also called mitigation strategies or actions). **Much of this information can be leveraged directly from this flood resilience planning effort.** Including this type of information in the hazard mitigation plan is essential – projects must be included in the plan's mitigation strategy to be eligible for funding, and information on previous events and critical facilities can be pulled from the plan for use in grant applications.	2023 - 2024	Minimal cost to the County, includes staff time to participate in the planning process.	Hazard Mitigation Plan funded by FEMA via CPPDC

Description	Timeline	Estimated Cost	Potential Funding Sources
Path B Apply for funding to develop a standalone all-hazards mitigation plan for Buchanan County. It is recommended this path only be pursued if CPPDC does not undertake the effort to update their hazard mitigation plan, which is not anticipated. It is unlikely the County would be awarded FEMA funds (administered through the State) to complete a hazard mitigation plan if Buchanan County was included in an awarded scope under CPPDC's submitted application. Under this path, the County would need to apply for and be selected for funds and meet grant requirements throughout the planning process.	2024 - 2025	Staff time to complete plan OR approximately $100,000 - $200,000 if contracted out	HMGP; BRIC (excluding local match requirements): CFPF

5. Expand Emergency Management Capabilities

The two recent catastrophic flood events in Buchanan County reinforced the need to update the County's Emergency Operations Plan (EOP) and to create an Evacuation Plan, Continuity of Operations Plan (COOP), and Disaster Recovery Plan. The EOP provides a description of the roles, responsibilities, tasks, actions, and processes for integration with other departments and agencies. EOPs should be updated annually to respond to changing conditions. Newer EOPs follow the concept of operations presented in the National Response Framework (NRF) and the 15 Emergency Support Functions (ESF), which group and describe the kinds of resources and types of Federal assistance available to augment state and local response efforts. The ESFs cover topics such as communications, transportation, mass care, hazardous materials, and search and rescue. Topics addressed in evacuation plans include evacuation routes, timeframes, shelter locations, and communications. COOPs detail how and where the government will perform essential functions during and following an emergency event. Disaster recovery plans assess needs following an event and identify projects and programs to address those needs while making the community more resilient. These plans typically create redevelopment policies and activities focused on reducing hazard risk. Evacuation plans, COOPS, and disaster recovery plans can be stand-alone plans or integrated into the EOP. The steps below offer a path for the County to update the EOP and create an Evacuation Plan, COOP, and Disaster Recovery Plan.

Description	Timeline	Estimated Cost	Potential Funding Sources
With assistance from recovery contractor apply for funding to support updating the County's Emergency Operations Plan (EOP) and creating an Evacuation Plan, Continuity of Operations Plan (COOP), and Disaster Recovery Plan.	June 2023-October 2020	Staff time to complete applications, local match	FEMA Emergency Management Performance Grant (EMPG)[5], County operating funds
With assistance from recovery contractor, develop RFP and advertise for consulting services to update/create the County EOP, Evacuation Plan, COOP, and Disaster Recovery Plan.	August 2023	staff time to review, approve and post RFP	County operating funds
Update EOP and develop new plans.	September 2023-March 2024	$200,000	FEMA EMPG, County operating funds
Develop evacuation route materials for communities across the county and educate the public on evacuation routes and procedures. Consider installing evacuation route signage.	April-June 2024	$50,000	FEMA EMPG, County operating funds

Commented [BJ1]: what if they don't have one of those contractors? Can RES administer that through the CFPF grant?

Commented [BJ2]: same

[5] https://www.fema.gov/grants/preparedness/emergency-management-performance

6. Explore Additional Buy-Out Programs and Opportunities

Buy-out programs are designed to remove structures with the highest risk of flooding out of harm's way. Often, these are homes or businesses that have flooded repeatedly in the past, or are within high-risk flood hazard areas, such as the floodway. Property owners typically participate voluntarily in such programs, and are paid market value for their property, giving them the opportunity to relocate to a lower risk area. The acquired structures are then removed, and the property is reverted to its natural state, which further reduces flood risk within the watershed by removing impervious cover and increasing capacity to store floodwaters.

Buchanan County has a current buy-out program in place through USACE. This program, called the Section 202 program (see Section 5: Capability and Capacity Assessment) made structures that flooded during the 1977 flood of record eligible for a buy-out. According to County officials, the program has been well-utilized, however there are structures within the county that have flooded one or more times in recent years that remain ineligible as they did not flood in 1977. Given the community's familiarity with the Section 202 buy-out program, there is potential for another program, targeted at properties not included under the Section 202 program, to be successful. Any potential buy-out program implemented by the County should consider equity and strive to make sure participants achieve a higher quality of life post buy-out.

A timeline is not provided for this action, as several other steps may need to be taken prior to undertaking this action, such as adopting the Flood Resilience Plan and adopting an updated hazard mitigation plan to be eligible for funding. Further, the County may wish to wait until updated FEMA flood maps and/or watershed drainage studies have been performed to achieve a better understanding of risk.

Description	Timeline	Estimated Cost	Potential Funding Sources
Select properties to be included in buy-out application: 1. Target highest risk properties. Consider structures that 1) are within FEMA special flood hazard areas (Zone A or Zone AE), with special consideration for properties within floodway; 2) have previously flooded (e.g., recipient of Individual Assistance (IA), prior NFIP claims, and have documentation of damages). Data documenting flood damages should be obtained. Structures within identified priority areas (see Section 6) may also be considered. 2. Once the highest risk properties are identified, work with property owners to understand interest/support for buy-outs.	N/A	Staff time to complete applications or completed as part of grant application assistance (see below)	County operating costs

Description	Timeline	Estimated Cost	Potential Funding Sources
3. Prioritize highest risk properties that were not eligible for a buy-out under the USACE Section 202 program. 4. Prioritize highest risk properties that have been identified as critical facilities (see Section 6). 5. Prioritize residential structures within socially vulnerable areas or those within low-income geographic areas. Properties housing socially vulnerable populations (such as the elderly or disabled) should be given special consideration. 6. Prioritize critical facilities (see Section 6). 7. Prioritize abandoned properties. Abandoned properties, especially those abandoned after sustaining damages during previous flood events, contribute to debris.			
Update / amend local comprehensive plan to include areas selected for buy-outs, with future land uses identifying these areas as natural or open space (e.g., floodplain restoration). *Best practice, can help achieve higher score under CFPF.	N/A	staff time to update comprehensive plan	County operating costs
Apply for buy-out funding. Assistance with grant application materials may need to be obtained (e.g., contracted out) to meet requirements. Each funding mechanism will have specific application criteria that will need to be met.	N/A	Buy-out program cost: $1M+ Application assistance costs: $5,000 - $10,000 (potential for reimbursement through grant award)	FEMA HMGP; FEMA BRIC; CFPF; VDEM (excluding any local match requirements)
Once obtained, administer buy-out program and restore high risk properties to achieve floodplain restoration. Program should be administered in a manner that meets grant requirements. The County may wish to contract out the administration of the buy-out program.	N/A	Administered using funds awarded.	N/A (see above)

7. Identify Flood Risk Reduction Projects and Opportunities within Priority Areas

Section 6: Risk Assessment describes areas within Buchanan County that should be prioritized for risk reduction. These are areas with recorded flood impacts. In many of these areas, there are concentrations of structures and/or infrastructure within FEMA special flood hazard areas, including structures within the floodway (area of highest risk). In addition, these areas may house vulnerable populations or have high social vulnerability relative to other parts of state.

Description	Timeline	Estimated Cost	Potential Funding Sources
As opportunities are presented, identify and pursue flood risk reduction projects within areas prioritized for risk reduction. Such projects may include: • Property acquisition and/or relocation (e.g., buy-outs); • Structure, road, or bridge elevation; • Retrofitting (e.g., dry floodproofing, elevating utilities and mechanical equipment); • Hardening of critical facilities and infrastructure; • Construction of levees/floodwalls, storm sewers, detention/retention basins, or channel modifications; • Stream restoration; • Floodplain protection or preservation; and • Acquisition of temporary flood barriers or sandbags for deployment in priority areas. Actions 13-16, presented below, may present specific opportunities for reducing flood risk within priority areas. These opportunities should be considered as staff time, funding, or external opportunities permit.	Ongoing	N/A	CFPF; FEMA BRIC; FEMA HMGP; FEMA FMA

Additional Actions for Consideration

In addition to the seven priority actions detailed above, the following flood risk-reduction actions were identified during the planning process. These actions should be revisited as this plan is implemented and updated in the future.

Action No.	Action
Data Collection	
8	Expand and enhance the county's network of stream and rain gauges that update in real time and can provide warnings when flood stages are being approached. Rain gauges can be used to understand changes in the frequency and severity of extreme rainfall events. • Funding: Gauges are eligible for funding through CFPF. • Additional Resources: VDEM can assist the County with revamping the iFlows Program (Sarah Harrington is VDEM point of contact for this program).
9	Develop and maintain a system to track damages from flood events (to both private and public property).
10	Develop a High Water Mark program, which is a community awareness program to train volunteer residents to collect high water mark data after flood events. High water marks can be used to update flood studies (FIRMs) produced by FEMA and in post-disaster studies. High water marks can also be used to inform whether a flood event is a 100-year event or caused by something greater (such as a mine blowout) by comparing high water marks to base flood elevations and event rainfall totals. • Additional Resources: the State Flood Data Intel Unit Manager, Steven Pile, can provide assistance with a High Water Mark Program.
11	Pursue funding to survey and map abandoned mines within the county. DMME provides locations of known abandoned mine lands, but it is incomplete and does not reflect risk throughout the county. Note: this is considered a low-priority action relative to other actions.
Public Education	
12	Develop a public education campaign for the following: • Response and evacuation procedures (e.g., evacuation routes, when to call 9-1-1); • Requirements under the Flood Damage Prevention Ordinance, including why compliance is important for maintaining good-standing in the NFIP. This can be timed with the adoption of the County's updated ordinance; • Permitting requirements for grading, drainage, and erosion control; • Opportunities for post-disaster assistance and how to access.
Property Protection	
13	Perform hydrologic and hydraulic (H&H) modeling in order to appropriately upsize culverts at identified pinchpoints in order to reduce flooding during extreme rainfall events, especially road-flooding. This should be completed after a watershed-wide drainage study is performed or new FEMA flood maps are available to achieve a watershed-wide approach to managing extreme rainfall events with consideration to future conditions. Pichpoints identified during the planning process include: • Dismal River Road and Spruce Pine Road (high priority – culvert overtops every 2 years); • Slate Creek Road at Enochs Branch Road (road flooding near Heritage Hall);

Action No.	Action
	• Hurley Road at Lester's Fork Road (high priority); • Greenbriar Road and Lovers Gap Road (Vicey); and, • Riverside Drive and Garden Creek Road (Oakwood) (low priority relative to others).
14	Elevate section of Slate Creek Road at Heritage Hall. This area floods every 1-2 years and creates access issues (people cannot get to work or school, or get home).
15	Work with AEP to protect/harden the county's electrical system, particularly AEP substations that are impacted by flooding and landslides.
16	Relocate the water utility's SCADA building to an area not vulnerable to flooding that also has cellular service. The SCADA building was damaged during recent floods, and the temporary location currently being utilized does not have cellular service. Acquire a back-up SCADA server to be located on a separate site for redundancy.
Programs and Policies	
17	Consider joining the Community Rating System (CRS) to reduce flood insurance premiums for residents.
Emergency Response	
18	Explore opportunities to enhance cellular, radio, and broadband coverage in the Hurley / Guesses Fork area. Current gaps in coverage have caused gaps in emergency communication and information sharing, impacting preparedness and response, including evacuations.

Plan Implementation and Maintenance

The actions included in this section are intended to provide a near-term roadmap for Buchanan County to implement flood risk reduction measures. Going forward, it is recommended that the Planning Team meet annually (at a minimum) to review progress and discuss actions to be taken in the following year.

Further, while not required, it is recommended that the County update the Flood Resilience Plan every 5-10 years in order to reassess capability and capacity and flood risk and vulnerability, as well as understand the progress made toward implementation of actions identified during this planning process, and to identify new actions for flood risk reduction.

FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

SECTION 1: GENERAL PROVISIONS (**APPLICANT** to read and sign)

1. No work may start until a permit is issued. This includes grading.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Compliance is issued.
5. The permit is invalid if no work is commenced within six months of issuance, and expires 2 years from date of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state and federal regulatory requirements.
7. Applicant hereby gives consent to the Local Floodplain Administrator or his/her representative to make reasonable inspections required to verify compliance.
8. I, THE APPLICANT, CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.

(APPLICANT'S SIGNATURE) _____ DATE _____

SECTION 2: PROPOSED DEVELOPMENT (To be completed by **APPLICANT)**

	NAME	ADDRESS	TELEPHONE
APPLICANT			
BUILDER			
ENGINEER			

PROJECT LOCATION:

To avoid delay in processing the application, please provide enough information to easily identify the project location. Provide the street address, lot number or legal description (attach) and, outside urban areas, the distance to the nearest intersecting road or well-known landmark. A map attached to this application, and a sketch showing the project layout would be helpful.

DESCRIPTION OF WORK (Check all applicable boxes):

A. STRUCTURAL DEVELOPMENT:

ACTIVITY	STRUCTURE TYPE
☐ New Structure	☐ Residential (1-4 Family)
☐ Addition	☐ Residential (More than 4 Family)
☐ Alteration	☐ Non-residential (Dry Floodproofing? ☐ Yes)
☐ Relocation	☐ Combined Use (Residential & Commercial)
☐ Demolition	☐ Manufactured Home (In a Manufactured Home Park? ☐ Yes ☐ No)
☐ Replacement	☐ Accessory Structure

B. OTHER DEVELOPMENT ACTIVITIES:

☐ Fill ☐ Mining ☐ Drilling ☐ Grading
☐ Excavation (Except for Structural Development Checked Above)
☐ Watercourse Alteration (Including Dredging and Channel Modifications)
☐ Drainage Improvements (Including Culvert Work), Stormwater Control Structures or Ponds
☐ Road, Street or Bridge Construction
☐ Subdivision (New or Expansion) ☐ Manufactured Home, Recreational Vehicle or Trailer Park
☐ Individual Water or Sewer System
☐ Other (Please Specify)_____

C. ESTIMATED COST OF PROJECT: $_____

After completing SECTION 2, APPLICANT should submit form to Local Floodplain Administrator for review.

SECTION 3: FLOODPLAIN DETERMINATION (To be completed by **LOCAL FLOODPLAIN ADMINISTRATOR)**

The proposed development is located in the Town / Village / City of _____
on FIRM Panel No. _____, Dated _____.

☐ The proposed development site is reasonably safe from flooding (in Zone B, C or X).
(Notify the applicant that NO FLOODPLAIN DEVELOPMENT PERMIT IS REQUIRED.)

☐ The proposed development is located partially or completely in a "special flood hazard area."

Base flood elevation at the site is: _____Ft. ☐ NGVD 1929 / ☐ NAVD 1988 / ☐ other datum (describe) _____
☐ Unavailable

Required flood protection level is: _____Ft. ☐ NGVD 1929 / ☐ NAVD 1988 / ☐ other datum (describe) _____
_____Ft. above the highest adjacent grade

☐ The proposed development is located in a regulatory floodway.
FBFM or FIRM Panel No._____ Dated_____

☐ See Section 4 for additional instructions for development that is or may be in a flood prone area.

SIGNED (by LOCAL ADMINISTRATOR) _____ DATE_____

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by **LOCAL FLOODPLAIN ADMINISTRATOR**)

The applicant must submit the documents checked below before the application can be processed:

☐ A **site plan** showing the location of all existing structures, water bodies, adjacent roads, lot dimensions, flood zone boundaries, and proposed development.

☐ **Development plans and specifications,** drawn to scale, including where applicable: details for anchoring structures, proposed elevation of lowest floor (including basement), types of water resistant materials used below the flood protection level, details of floodproofing of utilities located below the flood protection level, and details of flood vents for enclosures below the flood protection level.
Other _____

☐ If flood vents for enclosures below the flood protection level do not meet the minimum design criteria specified in the Local Law for Flood Damage Prevention, provide certification by a Professional Engineer or architect specifying that the proposed design will provide for equalization of hydrostatic flood forces.

☐ Certification by a Professional Engineer or architect that proposed utilities located below the flood protection level are resistant to flood damage.

☐ **Elevation Certificate** for proposed building.

☐ Subdivision or other development plans. If the subdivision or development exceeds 50 lots or 5 acres, whichever is the lesser, the applicant must provide base flood elevations determined using detailed methods if they are not otherwise available.

☐ Plans showing the watercourse location, proposed relocations, technical evaluation by a licensed professional engineer demonstrating that the conveyance capacity will be maintained, application materials for FIRM revision, and maintenance plan for the relocated portion of the watercourse.

☐ **Topographic information** showing existing and proposed grades and the location of all proposed fill.

☐ Top of new fill elevation _____Ft. ☐ NGVD 1929 / ☐ NAVD 1988 / ☐ other datum (describe) _____

☐ Dry floodproofing protection level (non-residential only) _____ Ft. ☐ NGVD 1929 / ☐ NAVD 1988 / ☐ other datum (describe) _____ For dry floodproofed structures, applicant must attach a FEMA Floodproofing Certificate signed by a registered engineer or architect.

☐ Certification from a Professional Engineer that the proposed activity in a **regulatory floodway** will not result in any increase in the height of the base flood. A copy of all data and calculations supporting this finding must also be submitted.

☐ Technical analysis by a Professional Engineer showing that the proposed development will not result in physical damage to any other property

☐ Other: _____

_____

_____

NOTE: Any work performed prior to submittal of the above information and completion of Section 5 is at the risk of the Applicant.

SECTION 5: PERMIT DETERMINATION (To be completed by **LOCAL FLOODPLAIN ADMINISTRATOR**)

I have determined that the proposed activity: A. ☐ Is
B. ☐ Is not
in conformance with provisions of Local Law #_____, (yr)_____. This permit is herby issued subject to the conditions attached to and made part of this permit.

SIGNED_____, DATE_____

If BOX A is checked, the Local Floodplain Administrator may issue a Development Permit upon payment of designated fee.
If BOX B is checked, the Local Floodplain Administrator will provide a written summary of deficiencies. Applicant may revise and resubmit an application to the Local Floodplain Administrator or may request a hearing from the Board of Appeals.

APPEALS: Appealed to Board of Appeals? ☐ Yes ☐ No
Hearing date:_____
Appeals Board Decision: Approved? ☐ Yes ☐ No

Conditions: _____

_____

SECTION 6: AS-BUILT ELEVATIONS AND CERTIFICATIONS (To be submitted by **APPLICANT** before Certificate of Compliance is issued)

Certification of as-built elevations must be provided for project structures. Attach an Elevation Certificate or Floodproofing Certificate completed by an authorized professional or official and complete 1 or 2 below.

1. Actual (as-built) elevation of the top of the lowest floor, including basement, is: _____ Ft. ☐ NGVD 1929 / ☐ NAVD 1988 / ☐ other datum (describe) _____
or _____ Ft. above highest adjacent grade. **Attach Elevation Certificate, FEMA Form 81-31.**

2. Actual (as-built) elevation of dry floodproofing protection is _____ Ft. ☐ NGVD 1929 / ☐ NAVD 1988 / ☐ other datum (describe) _____.
Attach Floodproofing Certificate, FEMA Form 81-65.

Attach any additional certifications that are required to document compliance. These may include: "no-rise" certification, certification of flood resistant design, certification of soil compaction, non-conversion agreement, etc.

SECTION 7: COMPLIANCE ACTION (To be completed by **LOCAL FLOODPLAIN ADMINISTRATOR**)

The **LOCAL FLOODPLAIN ADMINISTRATOR** will complete this section as applicable based on inspection of the project to ensure compliance with the community's local law for flood damage prevention.

INSPECTIONS: DATE_____BY_____DEFICIENCIES? ☐ YES ☐ NO
DATE_____BY_____DEFICIENCIES? ☐ YES ☐ NO
DATE_____BY_____DEFICIENCIES? ☐ YES ☐ NO

SECTION 8: CERTIFICATE OF COMPLIANCE (To be completed by **LOCAL FLOODPLAIN ADMINISTRATOR**)

Certificate of Compliance issued: DATE:_____ BY: _____

BUCHANAN COUNTY (VA) NONSTRUCTURAL PROJECT
DETAILED PROJECT REPORT
APPENDIX U
SECTION 202 GENERAL PLAN

EXECUTIVE SUMMARY

This report has been prepared as Appendix U of the Section 202 General Plan under authority of Section 202 of the 1981 Water and Energy Development Appropriation Act (P.L. 96-367). The study addresses those areas in Buchanan County, Virginia that would be affected by an occurrence of a flood equivalent to the April 1977 flood. The project area encompasses those portions of Buchanan County adjacent to the Levisa Fork, the Russell Fork, Knox Creek and their tributaries, except for the Town of Grundy, which was addressed in the Grundy, Virginia Nonstructural Project.

The project area has been devastated by numerous floods during the past years including the 1929, 1946, 1948, 1957, 1958, 1963, 1967, 1977, and 1978 floods. The April 1977 flood caused severe damages to the project area totaling approximately $100 million in damage to residential and nonresidential structures. The April 1977 flood varied over the Buchanan County project area from approximately a 40-year flood event to in excess of a 100-year flood event.

The most cost effective implementable plan addressing the 730 residential and nonresidential structures in the project area consist of a voluntary program of floodproofing (raise in place, veneer walls, and ringwalls) and permanent floodplain evacuation of those structures not eligible for floodproofing. The plan calls for floodproofing 275 residential and 44 nonresidential structures and floodplain evacuation of 273 residential and 135 nonresidential structures. The project is similar to the approved nonstructural projects in Wayne, McDowell, Upper Mingo, and Lower Mingo County, West Virginia and the Pike and Martin County, Kentucky nonstructural projects. The total project cost for the Buchanan County Nonstructural Project is estimated to be $118,595,000 (fully funded) and will be carried out over a six year implementation period.

The Buchanan County Board of Supervisors will serve as non-Federal sponsor for the project. Based on Section 336 of the Water and Resources Development Act (WRDA) of 2000 and Section 352 of WRDA 1996, HQ USACE has interpreted the legislation to effectively set the non-Federal cost share to the minimum requirement of 5% of the total project cost. The Board of Supervisors will provide the required 5% non-Federal share of $5,929,750, satisfy the operation and maintenance (O&M) requirements of the project, and be responsible for enforcement of floodplain ordinances as required by Section 202(c) of the WRDA 1996.

The Environmental Assessment (EA) has been prepared and has undergone public review. Implementation of the project is considered to have insignificant environmental impacts and a FONSI has been signed.

Although the plan does provide flood protection for Buchanan County, this plan does not meet the current Corps economic criteria and is therefore not supported by the Administration. This PDR only identifies the most cost effective implementable plan for flood damage reduction in the Buchanan County Project area in accordance with the Section 202 legislation.

BUCHANAN COUNTY (VA) NONSTRUCTURAL PROJECT
DETAILED PROJECT REPORT
APPENDIX U
SECTION 202 GENERAL PLAN

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Section 1. The Study and Report

Project Purpose and Background.

1.01 The Levisa Fork Basin was devastated in the April 1977 flood, causing an estimated $198.0 million (October 1999 price level) in damages. As a direct result of the losses from this flood, the Energy and Water Development Appropriations Act of 1981 (Public Law 96-367) provided authorization for development of flood protection measures for the Levisa and Tug Forks of the Big Sandy River Basin. Section 202 of that legislation directed the Secretary of the Army, acting through the Chief of Engineers, to design and construct, at full Federal expense, flood damage reduction measures in those areas impacted by the flood.

1.02 Based upon the Section 202 legislation, the Corps of Engineers submitted its proposed plans for flood damage reduction measures to the Assistant Secretary of the Army for Civil Works (ASA(CW)) in the "Section 202 General Plan for Project Implementation," (General Plan) dated 28 April 1982. The General Plan summarized the Tug Fork Valley General Design Memorandum (GDM) which evaluated three alternative plans (Plans E-1, F-1 and G-1) for the entire Tug Fork Basin and recommended Plan F-1. The General Plan discussed potential flood damage reduction for the Levisa Fork Basin but did not recommend specific measures.

1.03 Subsequent to the authorizing legislation another major flood occurred in the Tug Fork Basin in May 1984 resulting in damages of approximately $152.8 million (October 1999 price level). As a result of the May 1984 flooding, legislation (Public Law 98-332) was passed directing expeditious implementation of the nonstructural features of the General Plan with $21 million specifically appropriated for that purpose. The new legislation directed the Chief of Engineers to "...implement immediately nonstructural flood control measures such as relocation sites, floodproofing and floodplain evacuation as described in the General Plan..."

Authorization.

1.04 The Detailed Project Report (DPR) for Buchanan County Nonstructural Project is submitted as Appendix U to the Section 202 General Plan. The appendix is prepared in accordance with and in response to the following Congressional and ASA(CW) directives.

A. Section 202 Of Public Law. 96-367 (October 1980).

(1) Authorizes design and construction at full Federal expense of flood control measures as the Chief of Engineers determines necessary and advisable.

(2) Afford a level of protection sufficient to prevent any future losses to the community from a recurrence of a flood such as the April 1977 flood.

(3) Non-Federal interests shall operate and maintain all such works after their completion, in accordance with regulations prescribed by the Secretary of the Army.

(4) The benefits attributable to the project objectives exceed the costs of the measures authorized therein.

B. ASA(CW) Memo for the Acting Director of Civil Works (12 August 1982).

States in part: "The Corps should proceed to do whatever it can through proper design and by requiring adoption of appropriate nonstructural measures by local interests to reduce the intangible costs of a levee or floodwall failure or overtopping."

C. FY 1982 Supplemental Appropriation Act (Public Law 97-257).

States in part: "Flood control measures authorized by Section 202 of the 1981 Energy and Water Development Appropriations Act involving high levees and floodwalls in urban areas should provide for a standard project flood level of protection when consequences from overtopping caused by large floods would be catastrophic."

D. ASA(CW) Memo for the Acting Director of Civil Works (4 October 1982).

States in part and referencing Public Law 97-257 as quoted previously: "In order to comply with this Congressional direction your proposed plan for structural protection at each community will have to include an evaluation in terms of this legislative provision."

E. Senate Report (No. 97-673) on FY 1983 Energy and Water Development Appropriations Act (6 December 1982).

States in part: "The Committee directs the Secretary of the Army, acting through the Chief of Engineers, to proceed as rapidly as possible with planning, engineering, land acquisition, and construction of the projects authorized by Section 202 of Public Law 96-367 ... with respect to

the Tug Fork Valley, the Corps is directed to proceed to implement those measures, structural and nonstructural, identified in the F-1 plan as prepared by the Huntington District office.... The Corps should proceed with all planning efforts for those areas not presently afforded flood protection or for which such plans have not previously been complete."

F. House Joint Resolution 492 (Public Law 98-332, 3 July 1984).

(1) States in part: "Not withstanding current administrative procedures, the Secretary of the Army, acting through the Chief of Engineers, is directed to implement immediately nonstructural flood control measures such as relocation sites, floodproofing and floodplain acquisition and evacuation as described in the General Plan for Section 202 Program Implementation...."

(2) Appropriated $21 million to remain available until expended for nonstructural measures.

G. Section 103b. Of Public Law 99-662 (Water Resources Development Act 1986).

States that "the non-Federal share of the cost of nonstructural flood control measures shall be 25 percent of the cost of such measures. The non-Federal interests for any such measures shall be required to provide all lands, easements, rights-of-way, dredged material disposal areas, and relocations necessary for the project, but shall not be required to contribute any amount in cash during construction of the project."

H. Public Law 104-206 (30 September 1996).

(1) States in Section 105 that "From the date of enactment of this Act, non-structural flood control measures implemented under Section 202(a) of Public Law 96-367 shall prevent future losses that would occur from a flood equal in magnitude to the April 1977 level by providing protection from the April 1977 level or the 100-year frequency event whichever is greater."

H. Section 202 of Public Law 104-303 (Water Resources Development Act of 1996).

(1) States in (b) of Section 202 that the Secretary of the Army shall revise the criteria and procedures for calculating the non-Federal sponsor's ability to pay the non-Federal cost share.

I. Public Law 105-62 (The Energy and Water Development Appropriations Act of 1998)

Appropriates $26,390,000 for the Levisa and Tug Forks of the Big Sandy River and Upper Cumberland River. The House Report explains that the bill includes $500,000 to initiate a Detailed Project Report for the Buchanan County Project.

J. Section 336 of P.L. 106-541 (The Water Resources Development Act of 2000)

States that "The project for flood control, Levisa and Tug Forks of the Big Sandy River and Upper Cumberland River, authorized by section 202 of the Energy and Water Development Appropriation Act, 1981 (94 Stat. 1339), and modified by section 352 of the Water Resources Development Act of 1996 (110 Stat. 3724-3725), is further modified to direct the Secretary to determine the ability of Buchanan and Dickenson Counties, Virginia, to pay the non-Federal share of the cost of the project based solely on the criterion specified in section 103(m)(3)(A)(i) of the Water Resources Development Act of 1986 (33 U.S.C. 2213(m)(3)(A)(i))."

Project Scope.

1.05 The scope of the project reported upon herein is limited to the 730 residential and nonresidential structures located within the floodplain of the 1977 flood in the Buchanan County Project Area that would receive significant damage to habitable living space from a recurrence of the 1977 flood. Figure 1-1, page 6, depicts the Buchanan County Project Area in relation to the entire Levisa Fork Basin. The 730 eligible structures consist of 548 residential structures and 184 nonresidential structures. = 732 ?.

Problems.

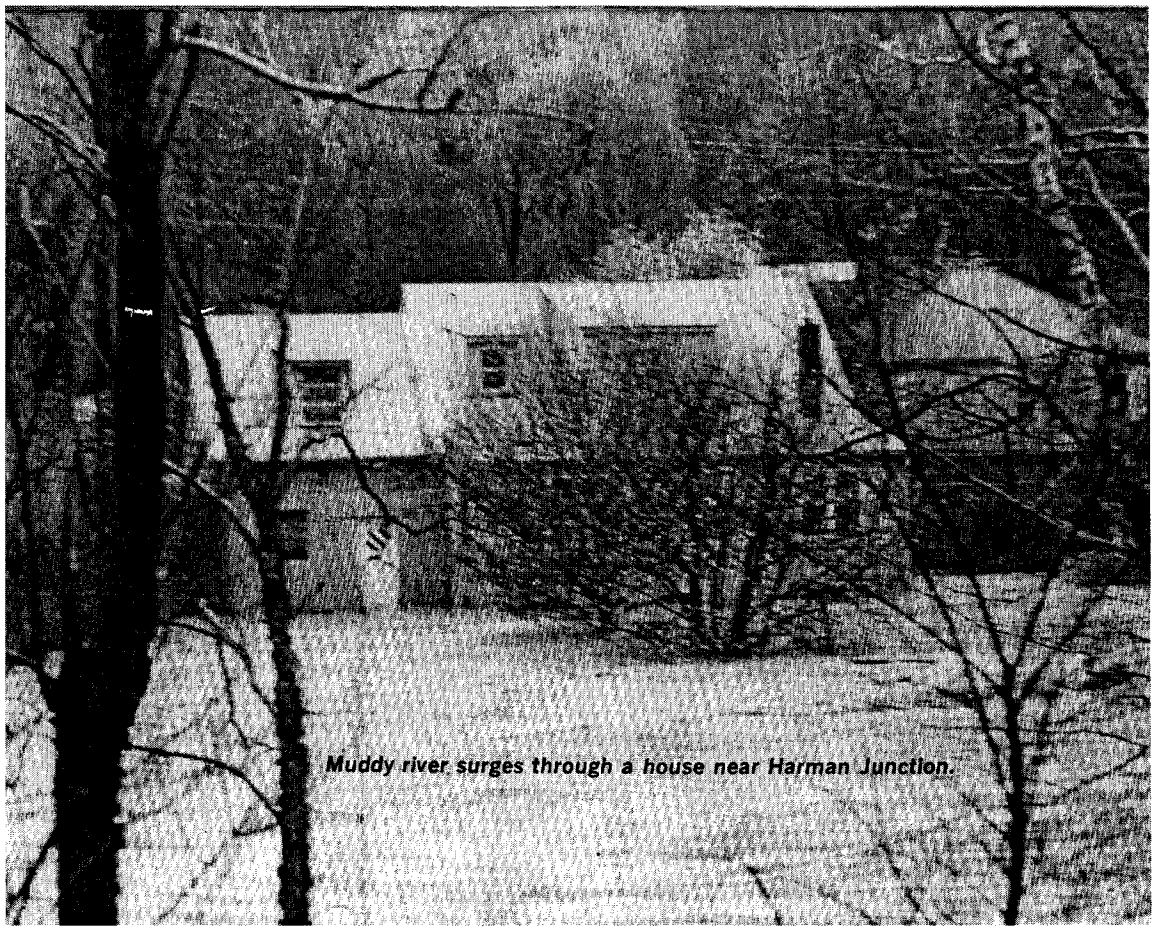
1.06 The project area is typical of other Appalachian regions where streams frequently undergo extreme flow fluctuations that result in overbank flooding. Due to the topography throughout the project area, the majority of the level, developed land is located in flood hazard areas. Consequently, the vast majority of the community and other cultural improvements are threatened by recurring floods, a situation that is likely to continue unless there is intervention.

1.07 The project area has been devastated by recurring flooding. In particular, the April 1977 flood, which was approximately equivalent to a 100-year flood event within the project area, caused extensive damages to residential and nonresidential structures. Homes and businesses were completely inundated, causing severe financial losses to the residents. The flood damage depicted in the photograph on page 5 is from the April 1977 flood. This flood event graphically demonstrates the extent of flood damage endured by the community on a recurring basis. The April 1977 flood is the flood of record for Buchanan County.

1.08 Buchanan County is located in the southwestern portion of Virginia. It is bordered by Dickenson County, Virginia to the southwest; Russell County, Virginia, to the south; Tazewell County, Virginia to the southeast; McDowell County, West Virginia to the northeast, Mingo County, West Virginia to the north; and Pike County, Kentucky to the northwest. The total land area in Buchanan County encompasses 508 square miles. The population of Buchanan County was 26,978 in 2000. The county seat of Buchanan County is the City of Grundy.

1.09 Buchanan County is primarily in the drainage basin of the Levisa Fork of the Big Sandy River. A portion in the southwest of Buchanan County is in the Russell Fork drainage basin. The Russell Fork flows into the Levisa Fork at Millard, KY. A portion in the northeast of Buchanan County is in the Knox Creek drainage basin. Knox Creek flows into the Tug Fork of the Big Sandy River at Devon, West Virginia. The Big Sandy River begins at the confluence of the Levisa Fork and Tug Fork at Louisa, KY.

1.10 In addition to the severe financial losses incurred due to the frequent flooding in the area, there is an adverse psychological effect on the population. The prospect of future flooding discourages proper maintenance and repair of structures. This in turn causes early deterioration of dwellings and business structures and accounts for a large number of floodplain structures not considered to be decent, safe and sanitary (DSS) and in need of rehabilitation.



Muddy river surges through a house near Harman Junction.

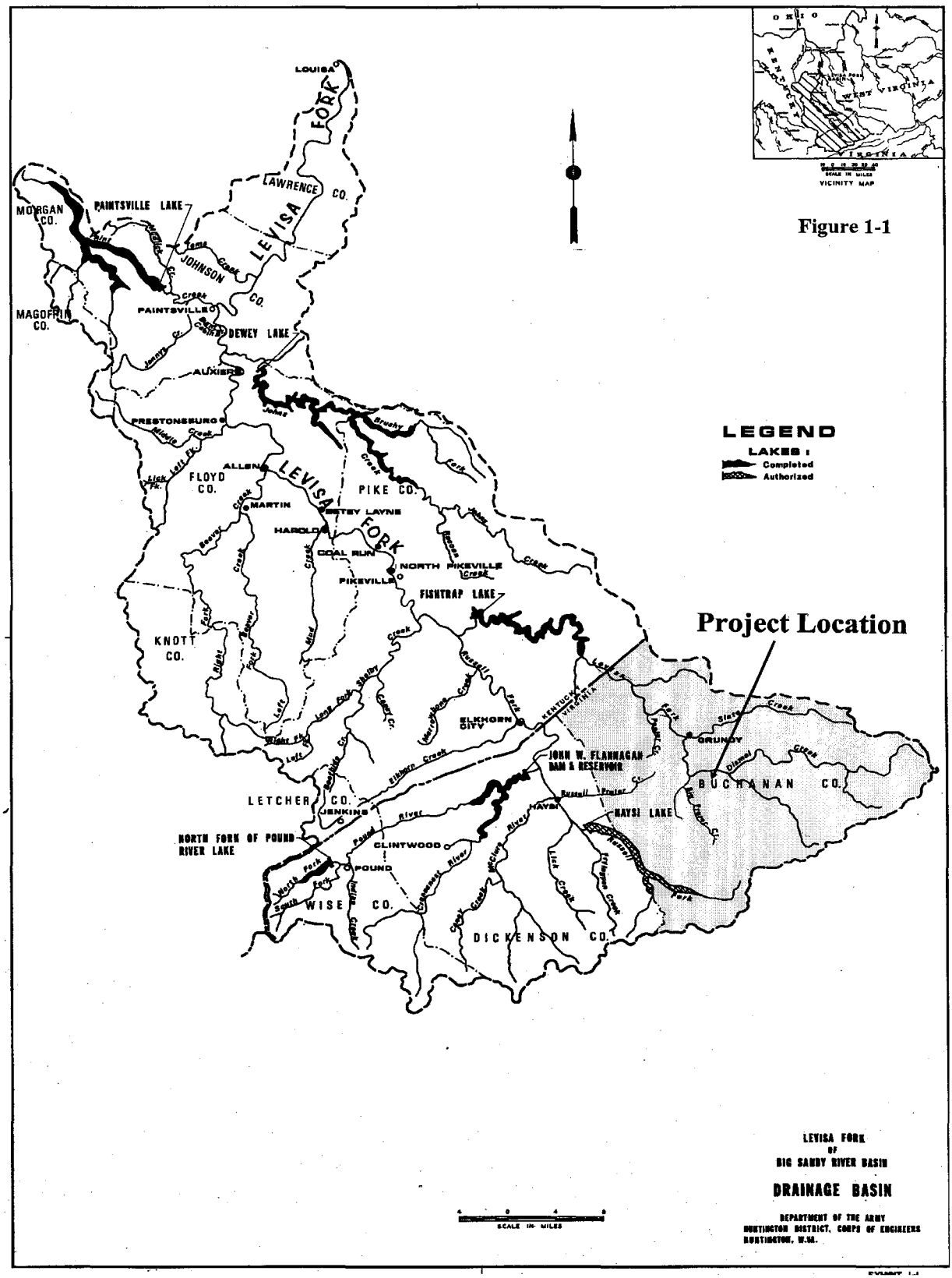

LOUISA
LEVISA FORK
LAWRENCE CO.
MORGAN CO.
PAINTSVILLE LAKE
JOHNSON CO.
MAGOFFIN CO.
PAINTSVILLE
DEWEY LAKE
AUXIER
PRESTONSBURG
FLOYD CO.
ALLEN
PIKE CO.
MARTIN
BETSY LAYNE
HAROLD
COAL RUN
NORTH PIKEVILLE
PIKEVILLE
FISHTRAP LAKE
KNOTT CO.
ELKHORN CITY
JOHN W. FLANNAGAN DAM & RESERVOIR
GRUNDY
BUCHANAN CO.
LETCHER CO.
JENKINS
HAYSI LAKE
NORTH FORK OF POUND RIVER LAKE
CLINTWOOD
POUND
WISE CO.
DICKENSON CO.
LEGEND
LAKES :
Completed
Authorized
Project Location
VICINITY MAP
SCALE IN MILES
LEVISA FORK
OF
BIG SANDY RIVER BASIN
DRAINAGE BASIN
DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
HUNTINGTON, W.VA.

Figure 1-1

Opportunities.

1.11 Years of deferred maintenance, due to recurring flood damages, could be reversed provided that recurring damages could be eliminated. A nonstructural project, if found to be feasible, may result in improvements to local housing quality and increase the community property tax base.

Planning Objectives.

1.12 Based upon the identified problems and opportunities within the Buchanan County Project area, local desires, and the intent of the aforementioned authorization, the planning objectives of this study have been identified as follows:

- develop the most cost-effective, implementable plan to provide the mandated flood protection, which complies with Section 202 of Public Law 96-367 and all other applicable laws and regulations;
- reduce, to the extent possible, financial and personal losses;
- maintain, to the extent possible, the social and cultural resources of the area;
- minimize, to the extent possible, the social and economic disruptions;
- and develop the most socially acceptable and environmentally sound plan.

Section 2. Prior Studies, Reports, and Existing Water Resource Projects

Section 202 General Plan.

2.01 Based upon the Section 202 legislation, the Corps of Engineers submitted its proposed plans for flood damage reduction measures for the entire Section 202 project area (consisting of the Levisa and Tug Forks of the Big Sandy River Basin and the Upper Cumberland River Basin) to the Assistant Secretary of the Army for Civil Works (ASA(CW)) in the "Section 202 General Plan for Project Implementation," (General Plan) dated 28 April 1982. The General Plan summarized the Tug Fork Valley Flood Damage Reduction Plan General Design Memorandum (GDM) which evaluated three alternative plans (Plan E-1, F-1, and G-1) for the entire Tug Fork Basin and recommended Plan F-1 for implementation.

2.02 ASA(CW) approved the General Plan with immediate implementation of the Williamson, West Virginia area structural components of the plan. However, the ASA(CW) reserved the approval for the implementation of all remaining plan components dependent on submittal of future Specific Project Reports (SPR's)[1] for each plan increment. Figure 2-1, page 9, provides a general listing of previously prepared reports as appendices to the General Plan.

2.03 The Levisa Fork Basin "Draft" General Planning Memorandum was completed in 1986. This report included a detailed formulation and evaluation of both structural and nonstructural measures in the Levisa Fork Basin. This report did not address flooding problems at Grundy, Virginia (covered by separate report) or Levisa Fork tributary areas experiencing headwater flooding during the April 1977 flood event. Buchanan County, Virginia was assumed to be primarily impacted by headwater flooding, and therefore was not addressed in the Levisa Fork "Draft" General Planning Memorandum.

2.04 This DPR, Appendix U, has been prepared to satisfy that requirement for the Buchanan County Project Area. Figure 1-1, page 6, shows the Levisa Fork Basin Section 202 project study area and existing projects.

Levisa Fork Basin Projects Overview.

2.05 Five Corps flood control dams were constructed on the Levisa Fork or its tributaries below the project area prior to the April 1977 flood. These five downstream reservoirs (John W. Flannagan Dam and Reservoir, Fishtrap Lake, North Fork of Pound River Lake, Dewey Lake, and Paintsville Lake) reduced basin-wide flood damages from the April 1977 flood by approximately $455.4 million (Oct 1999 price level). Haysi Lake is also an authorized study for a downstream reservoir on the Russell Fork which is not approved. There are no reservoirs located above the project area within the watersheds of the Levisa Fork or its tributaries.

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[1] These were converted to Detailed Project Reports in accordance with CEORDR 1105-2-4, Section III.

FIGURE 2 - 1
Section 202 Implementation
Appendices to The General Plan

REPORT	DATE	TITLE
Appendix A	April 1982	Formulation of Defined Program
Appendix B	April 1982	Implementation Schedule
Appendix C	April 1982	Budget Constrained Implementation Schedule
Appendix D	April 1982	Pineville, KY Project Summary
Appendix E	April 1982	Pikeville, KY Project Summary (Pikeville Gate Closure)
Appendix F	April 1982	Williamson, WV Area Project Summary (West Williamson Floodwall/Williamson CBD Floodwall/Snagging and Clearing)
Appendix G	December 1983	Barbourville, KY Levee Project Summary
Appendix H	May 1985	Matewan, WV Area S/NS Project Summary SPR
Supplement to Appendix F	January 1985	Williamson, WV NS Project SPR
Appendix I	N/A	Untitled
Appendix J	January 1986	Upper Slate Creek (Grundy, VA) SPR (Terminated/Incorporated Appendix O)
Appendix K	January 1986	South Williamson, KY S/NS Project Summary SPR
Appendix L	February 1990	Lower Mingo County, WV SPR
Appendix M	September 1991	Hatfield Bottom (Matewan, WV) DPR
Appendix N	October 1993	Pike County, KY DPR
Appendix O	August 1993	Grundy, VA DPR
Appendix P	February 1995	Upper Mingo County, WV DPR
Appendix Q	July 1996	Martin County, KY NS Project DPR
Appendix R	January 1997	Wayne County, WV DPR
Appendix S	May 1998	McDowell County, WV DPR
Supplement to Appendix P	September 1998	Upper Mingo County, WV NS Project Supplement
Appendix T	March 2000	Town of Martin, KY DPR
Supplement to Appendix N	2002	Pike County, KY Tributaries, NS Supplement
Appendix U	**January 2002**	**Buchanan County, VA DPR*** *This Submittal

Levisa Fork Structural Projects.

2.06 The North Fork Dam and North Fork of Pound Lake were authorized by the Flood Control Act of 1960 (PL 86-645) and completed in January 1966. The reservoir provides minimum winter flood control storage of 9,300 acre-feet and summer flood control storage of 8,100 acre-feet with a maximum surface area of 349 acres.

2.07 John W. Flannagan Dam And Reservoir were authorized by the Flood Control act of 1938 (PL 75-761) as amended by the Federal Water Pollution Control Act, Amendments of 1961 (PL 87-88) and completed in December 1963. The reservoir provides minimum winter flood control storage of 94,700 acre-feet and summer flood control storage of 78,200 acre-feet with a maximum surface area of 2098 acres.

2.08 Fishtrap Lake and Dam were authorized in the Flood Control Act of 1938 (PL 75-761) and completed February 1969. The reservoir provides minimum winter flood control storage of 153,800 acre-feet and summer flood control storage of 126,600 acre-feet with a maximum surface area of 2631 acres.

2.09 Dewey Lake and Dam were authorized in the Flood Control Act of 1938 (PL 75-761) and placed in operation in July of 1949. The reservoir provides winter flood control storage of 81,000 acre-feet and summer flood control storage of 76,100 acre-feet with a maximum surface area of 3340 acres.

2.10 Paintsville Lake and Dam were authorized in the Flood Control Act of 1965 (PL 89-298) and placed in operation in September of 1983. The reservoir provides flood control storage of 32,800 acre-feet with a maximum surface area of 1861 acres.

Levisa Fork Nonstructural Projects.

2.11 The Grundy, Virginia component (Appendix O) of the Section 202 program is currently in the implementation phase and the only approved nonstructural project in the Levisa Fork basin. Total project cost is estimated to be $101,600,000 with a federal share of $72,300,000 and non-federal share of $29,300,000. The project includes 48 structures eligible for floodproofing, 48 voluntary acquisitions, 69 mandatory acquisitions, construction of a floodsafe commercial redevelopment site, and protection of 17 structures by ringwall/levee. The co-sponsors are the town of Grundy and the Virginia Department of Transportation.

Section 3. Existing Conditions - Resources and Economy of the Study Area

Climate.

3.01 The climate of the Levisa Fork River basin is temperate and includes the usual seasonal variations in temperature. Seasonal variation in temperatures range from an average of 38 degrees in January to 77 degrees in July, with a mean temperature of 53 degrees. The growing season averages six months long, from mid-April to mid-October. Average annual rainfall amounts to about 45 inches and average annual snowfall averages 18 inches across the Levisa Fork basin.

Precipitation.

3.02 Observed rainfall data are not available for the entire project area. There are six rainfall gage stations within the Levisa Fork River Basin. Based upon available gage information, the normal annual precipitation is about 45 inches and is fairly evenly distributed throughout the year. The highest monthly average rainfall of 4.6 inches occurs in July and the minimum average rainfall of 3.1 inches occurs in January.

3.03 The basin lies directly in the path of extensive meteorological disturbances, which in winter and spring generally travel from southwest to northeast. Two distinct types of storms result in floods; they are summer-type and winter-type storms. The summer-type usually occurs during the period April to October and is characterized by rainfall of high intensity, short duration, and relatively small areal extent. The winter-type storm usually occurs during the period November to March and is characterized by less intense rainfall of extended duration and large areal extent, often affecting several states. The winter-type storms are generally caused by the interaction of cold air masses originating in Alaska, with warm, moist air sweeping northward from the Gulf of Mexico and southern Atlantic Ocean. Occasional stagnation and stationary developments produce prolonged precipitation. Snow cover, saturated or frozen ground, or combinations thereof may increase runoff rates and volumes. Storms of the conventional or "thunderstorms" type are also prevalent over the basin.

Flooding History.

3.04 The primary flooding season for the Buchanan County Project area is typically from December through April, with the most severe floods generally occurring from January through March. A 100-year flood event on the Levisa Fork is slightly lower than the flooding that occurred in April 1977. Some of the headwaters included in the project area only experienced a flood event approximately equal to a 40-year flood event in the April 1977 flood.

3.05 The project area has experienced numerous floods throughout the past 72 years based on historical data obtained from various sources for the five streamflow gaging stations in Buchanan County. The earliest recorded flood occurred in 1929 when the Levisa Fork rose to a river stage

of 16 feet at Grundy with an estimated discharge of 21,800 cfs. After 1929, three other major floods occurred in the project area in 1957, 1963, and 1967. Then in April 1977, the flood of record for the Levisa Fork occurred when the water rose to the river stage of 28.87 at Grundy, passing an estimated 52,000 cfs. Since 1977, significant floods occurred in 1984 and 2001 and resulted in substantial damage to Buchanan County communities but failed to exceed the 1977 flood of record for the Levisa Fork. The May 1984 flood is actually the flood of record for some of the tributaries in the Buchanan County Project. Although the gage on the Big Prater Creek at Vansant, VA was removed after 1977, its flood of record is estimated to be the 1984 flood event. Two other gages were added on tributaries in the county between the 1977 and the 1984 floods.

Geology and Soils.

3.06 The entire area lies in the Appalachian Highlands Physiographic Province in southeastern Virginia. This region is one of the most significant coal producing areas of the State. The soils of the study area are of the following associations: Stienberg-Shelocta-Rigley, Dekalb-Weikert-Shelocta, Dekalb-Jefferson, and Allegheny-Pope-Jefferson. Each of these soil types have severe septic tank absorption field limitations and moderate infiltration rates. Soils on side slopes are thin and are highly erodable. Eroded soils are carried to rivers and streams, where they are deposited in downstream floodplain areas during flood events.

Socioeconomics.

3.07 Economic conditions throughout the project area have been below average for the United States. Incomes, living conditions, employment, and necessary facilities have been behind national averages for the past 10-15 years. In general, the economy of the area is primarily supported by coal mining operations.

3.08 The project area is similar to other rural project areas in the Big Sandy Basin and is characterized by a linear development pattern. Housing locations, roads, and rail lines follow the streams. Because of the narrowness of the valley bottoms, rail lines follow one side. Except for an occasional logging road, strip mine road, or jeep trail, only a few paved roads emerge from the narrow valleys crossing a divide from the headwaters of one stream to the headwaters of an adjacent basin. Industrial and housing developments are restricted by the rugged topography of the region and the potential for damages caused by floods.

Population.

3.09 The population of Buchanan County was 32,071 in 1970 and an increase of 18.5 percent brought the population to 37,989 in 1980. The 1990 census determined that Buchanan County's total population was approximately 31,333. This represents a decrease of nearly 18 percent from 1980. This trend continued with a decrease of 13.9 percent to 26,978 in 2000. Table 3-1

characterizes the population by age and gender. Table 3-2 lists population for the county from 1970 - 2000.

3.10 Resource extraction (lumber and coal) in the late 1800's sparked rapid economic growth throughout the Levisa Fork Valley because of railroad expansion. As a result of the huge demand for labor to support the economic boom, migration to the area increased, causing drastic changes in the region's population. Lumber, land and coal companies imported European immigrants to meet the increasing demand for labor. Although major timber operations ceased in the 1940's, coal production continued to increase until the 1950's. Cyclic conditions in the demand for coal since the 1950's have had a direct impact on the valley's population. Population is expected to continue to be dependent on the coal industry. The population decrease shown in Table 3-2 reflects the decreasing availability of mineable coal near the Buchanan County and the effect of technological improvements in mining methods.

3.11 The growth of lumber operations gave rise to distinctive community development patterns in the Levisa Fork region. Initially, the Levisa Fork region developed slowly, in isolated pockets along the river and its tributaries. As access to the region and its natural resource wealth improved, community development and growth was stimulated. Most communities grew up as "company towns" built by lumber companies to house the immigrant workforce. Other towns developed along transportation routes, which for the most part included only railroad lines.

Land Use.

3.12 Land use in the Levisa Fork Basin is determined in large part by the topography, the historical trends of the area, and the natural and mineral sources located in the project area. Most of the entire Levisa Fork Basin, including the project area, was practically undeveloped until the mid-1850's, when outside interests recognized the value of the area's natural and mineral resources such as timber, coal, natural gas, petroleum, and aggregate. The region's most abundant natural resources include reserves of bituminous coal, limestone, sand and gravel, and water and forest resources. Also present are reserves of natural gas, petroleum, oil shale, clay, and fluorspar. Mining and industry occupy about 20% of the land, public services 7%, agriculture 5%, and about 43% of the region is undeveloped.

3.13 A 1993 study on Buchanan County found over 96 percent of total land area is devoted to undeveloped land, water, or agriculture. Residential uses made up slightly less than two percent of the total land area. Commercial and industrial areas combined made up 0.37 percent of total land area. Due to the steep topography of the project area, most of the county's structures lie in the floodplain. The primary source of employment in the project area is coal mining and its associated satellite industries, such as trucking and rail transportation.

TABLE 3-1
Population Characteristics (2000)

	Buchanan County	Adjacent Counties (1)	Virginia
AGE			
Under 18 Years (%)	21.4	22.5	24.6
65 Year & Over (%)	11.5	14.0	11.2
Median Age	38.8	39.3	35.7
SEX			
Male (%)	50.7	48.7	49.0
Female (%)	49.3	51.3	51.0
RACE			
White (%)	96.7	95.9	72.3
Black (%)	2.6	3.0	19.6
Amer. Ind., Esk., and/or Aleut. (%)	.1	.1	.3
Asian or Pac. Islander	.1	.3	3.7
Other Race (%)	.4	.7	4.0

(1) Average of five adjacent counties combined: Dickenson, Russell, and Tazewell in VA, McDowell, WV, and Pike County, KY.

SOURCE: US Department of Commerce, Bureau of the Census

TABLE 3-2
Population 1970-2000

	1970	1980	1990	2000	Percent Change 1970-2000
Buchanan County	32,071	37,9897	31,333	26,978	-15.8
Adjacent Counties[(1)]	38,430	46,620	40,013	37,473	-0.2
Virginia	4,651,448	5,346,797	6,187,358	7,078,515	52.2

(1) Average of five adjacent counties combined: Dickenson, Russell, and Tazewell in VA, McDowell, WV, and Pike County, KY.

SOURCE: US Department of Commerce, Bureau of the Census.

Housing.

3.14 One of the overriding problems in the Levisa Fork Basin is the lack of decent, safe, and sanitary (DSS) housing to accommodate existing and future needs. Repeated flooding has been the major factor causing accelerated attrition in the quality and quantity of housing and public infrastructure. Recovery costs associated with chronic flooding have resulted in the neglect of homes and businesses. Further, the prospect of future floods tends to discourage investments for proper maintenance and repair of structures. Many of the existing structures in the valley are in a dilapidated or deteriorating condition and in serious need of replacement or rehabilitation. Exhibit 3-2 depicts a structure in the Buchanan County Project area that demonstrates the typical condition of the housing stock. Ability to move from the flood-prone areas is constrained by very rugged topography and restrictive land ownership. These factors make moving from the floodplain prohibitively expensive for most residents.

3.15 Other obstacles also hamper the supply of DSS housing in the valley. The rough topography has helped constrain the construction of good transportation routes for the movement of materials and prefabricated homes into the valley. Also, there is the absence of a housing construction industry and a lack of affordable financing for home purchases. The valley's boom-and-bust economy has not made high volume home construction a desirable alternative to builders. Few local area builders have the financial resources--in terms of working capital or credit availability--necessary for large-scale speculative development. Mortgage money is extremely difficult to obtain, and the financing terms are restrictive. Commercial banks are hesitant to approve, and residents are reluctant to assume the high monthly mortgage payments because of variable incomes (boom and bust cycles) associated with coal mining and the potential for recurring flood damages.

3.16 The "string town" pattern of development along the river and tributaries has resulted in a relatively inefficient arrangement of improvements. Problems in the location of schools and other public infrastructure, such as water and sewage, are evident.

Educational Facilities.

3.17 Since the settlement of Appalachia, education deficiencies have been one of the major problems of the area. Median years of school completed have been below state and national levels. However, since the late 1970's, levels of education have risen at a rate equal to or greater than the surrounding states and nation.

3.18 Buchanan County has ten elementary/middle schools, five high schools, a vocational school and the Appalachian School of Law in Grundy. Two schools are located in areas flooded by the 1977 flood. Hurley High School and the Buchanan County Technology and Career Center are were selected for ring walls in this study. The Vansant Elementary and Garden Elementary Schools were also flooded in 1977. However, as of the conclusion of this DPR study, they are no longer being used for educational purposes. The Buchanan County school board had passed ownership to Buchanan County and discontinued traditional use of the schools.

3.19 Of the 19,467 residents age 25 and older in 1990, 42.5 percent were high school graduates or higher and 4.0 percent had bachelors degrees or higher. A comparison of these data for Buchanan County with the five adjacent counties is presented in Table 3-3.

TABLE 3-3
Educational Characteristics - 1990

	Buchanan County	Adjacent Co.s [1]	Virginia
Total School Enrollment	8,251	49,961	1,546,257
Population Age 25 or Older	19,467	127,082	3,962,889
High School Graduates (%)	42.5	50.3	75.4
College Degree (%)	4.0	4.6	16.1

(1) Average of five adjacent counties combined: Dickenson, Russell, and Tazewell in VA, McDowell, WV, and Pike County, KY.

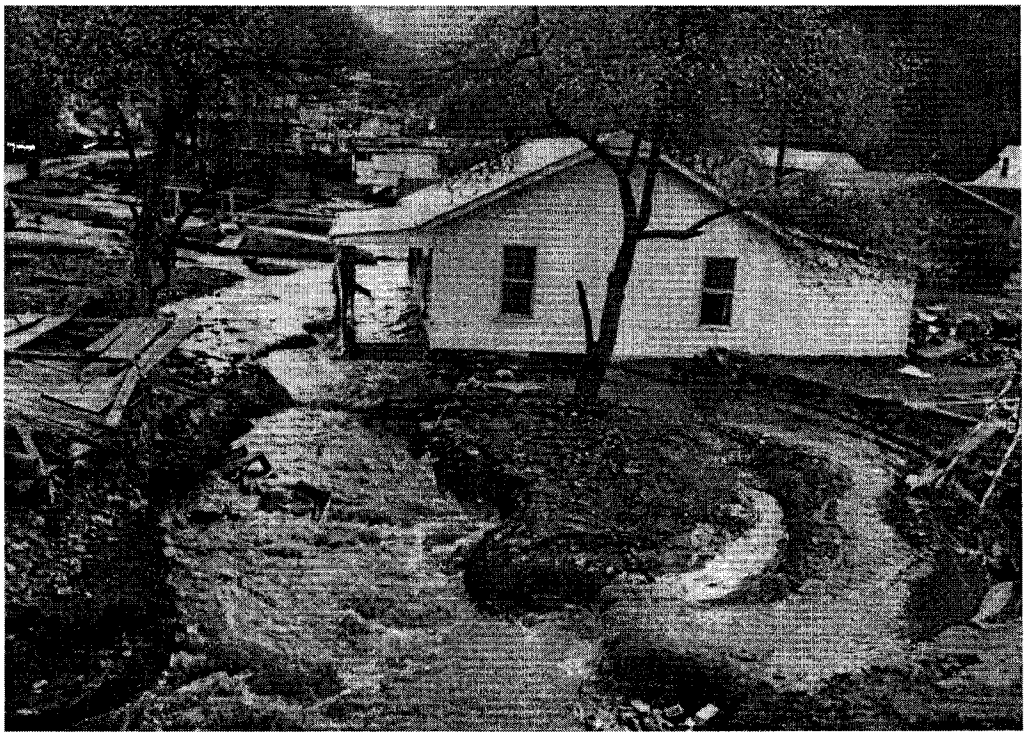
SOURCE: U.S. Dept of Commerce, Bureau of the Census.

Cultural Resources.

3.20 The first documented exploration into the region occurred in 1756 with the Big Sandy Expedition. Early settlers of this region greatly depended upon major stream valleys and natural passes which generally offered the easiest transportation route from one region to another. The Levisa Fork Basin and its tributaries provided a natural travel route between the mountains and the Ohio River Valley. The availability of certain basic resources within the watershed, such as water, food, game, and fertile farmland, served to attract settlers. Timber, coal, natural gas, and petroleum, became important in more recent years.

3.21 Record of man's occupation of the Levisa Fork Basin is more than a matter of casual or academic interest. Changes in the types of human settlement and the nature of human activities can be traced through time to provide an enlightening view of interactions between man and his environment. Like its neighboring counties, Buchanan County was initially based upon small, subsistence farming and lumbering operations. The commercial timber operations affected the county dramatically after 1890 and resulting in the addition of railroads. Buchanan County is in the Kanawha section of the Appalachian Plateau physiographic providence, part of the richest coal producing area in the United States. In the 1930s, the coal industry began in Buchanan County in earnest. Resources dating after the turn of the twentieth century, more commonly reflect changes introduced by the commercial lumber and coal industries. The extent of lumber company town development and later coal town development was extensive in Buchanan County, similar to coal towns developed in West Virginia in McDowell and Mingo counties. Since the expiration of corporate ownership of structures in the company towns, there has been a major loss of material culture at these locations.

EXHIBIT 3-2
Example of Housing
In the Project Area



Transportation, Public Utilities and Communications.

3.22 US Route 460 runs northwest-southeast through the middle of Buchanan County. It goes west to intersect US 23 near Pikeville, Kentucky, and east to Interstate 81 at Christiansburg. Virginia Route 83 intersects US 460 at Grundy and travels west to Haysi and east toward Welch, West Virginia. The other VA primary highway in the county is Route 80 which passes through the southern corner of the county and goes southeast to the intersection of US Route 19 at Rosedale and northwest to Haysi.

3.23 Rail service in Buchanan County is provided by Norfolk Southern Corporation. Commercial airline service is available at the Tri-City Airport in Blountville, Tennessee and the Grundy Municipal Airport. The nearest navigable waterway is the Big Sandy River.

3.24 Electric power transmission in the Buchanan County is provided by American Electric Power Company. The Buchanan County PSA provides both water and sewer throughout the county. There is no Natural gas service provided.

3.25 Verizon provides telephone service to the project area. There is one newspaper publication and one radio station located in the county.

Recreation and Other Public Facilities.

3.26 Recreation opportunities for Buchanan County residents are available both locally and regionally. Community recreational programs are available year round and a number of community facilities are provided for the enjoyment of the residents. Buchanan County maintains 18 tennis courts, 11 softball fields, two horse rinks, four swimming pools, and a 9-hole golf course. The Breaks Interstate Park and Clinch Mountain Wildlife Areas are located within a reasonable drive of the county and offer a variety of opportunities. The Breaks Interstate Park includes walking/hiking trails, an Olympic-sized swimming pool, fishing, and lodging – motel and campgrounds. The Clinch Mountain Wildlife Areas includes camping, hiking, fishing, hunting, water sports, mountain biking, and nature viewing.

3.27 Buchanan County is served by a medical center, 11 community medical clinics, and 2 nursing homes. The Buchanan County Medical Center offers a full range of medical care and is a 144-bed facility. The area is also served by 22 physicians and six dentists.

3.28 Community services include a full time police department, volunteer fire protection, and a solid waste disposal service.

Aesthetics.

3.29 Aesthetics in the project area range from very good in some of the residential areas and riparian zone along the Knox Creek, Levisa Fork and Russell Fork watersheds to extremely unpleasant in the unreclaimed surface mined areas and "coal camps". Generally, indiscriminate dumping of refuse along the road networks and streambanks in the county is a common practice, significantly reducing the aesthetics quality of the project area.

Section 4. Potential Flood Damage Reduction Measures

4.01 The General Plan considered a number of alternative measures for alleviating the flooding problem in the project area. These measures included both engineering and institutional measures, as well as structural and nonstructural measures. The nature and location of the Buchanan County project area, with respect to the rest of the basin, as well as the type and distribution of development, limit the range of feasible alternatives.

Potential Structural Measures.

4.02 The project area is typical of other areas located in the Big Sandy River Basin, characterized by rugged topography and linear development primarily located along the river. This development pattern limits the number of structural measures which can be formulated to provide cost effective flood protection to the project area. Structural measures considered for the project area include an upstream tributary impoundment, levees and floodwalls, and channel modification, complemented with nonstructural measures, when necessary, to achieve the mandated level of protection.

4.03 Floodwalls at several Tug Fork basin locations were constructed pursuant to Plan F-1 of the General Plan and approved by the ASA(CW). These were constructed prior to WRDA 1986 and provide SPF level of protection to the following densely developed communities:

Location	Floodwall Length
Williamson,WV	3500'
West Williamson, WV	6000'
South Williamson, KY	2750'
Matewan, WV	2200'

Potential Nonstructural Measures.

4.04 The nonstructural measures evaluated for the project area include floodproofing, permanent floodplain evacuation, flood warning and emergency evacuation planning and flood insurance/floodplain zoning. These measures have proven to be very effective flood damage reduction measures in areas where scattered and linear flood prone development prevails over extensive reaches of the floodplain, such as found in the project area. These measures have been effectively implemented in the following Tug Fork areas:

West Virginia	Kentucky
Williamson	South Williamson
Matewan	Pike County
Upper Mingo County	Martin County
Lower Mingo County	
Wayne County	
McDowell County	

4.05 Voluntary Floodproofing and Floodplain Evacuation. Nonstructural alternatives such as floodproofing and floodplain evacuation have proven to be very effective flood damage reduction measures in areas such as this project area where scattered and linear flood prone development prevails over extensive reaches of the floodplain. Application of these measures in an area such as this project area enables location-specific flooding problems to be addressed directly without incurring the problems and costs associated with providing equitable protection to adjacent structures or clusters of structures. The acceptability of these measures is evidenced by the high participation rates (80%+ for floodproofing and 80%+ for floodplain evacuation) of eligible property owners volunteering for the programs in the approved Williamson and Matewan, WV, and South Williamson, WV, nonstructural project areas. A 100% voluntary plan is considered to be a viable and acceptable solution to the flooding problem in the Buchanan County project area.

4.06 Flood Insurance/Floodplain Zoning. The combination of floodplain zoning and the National Flood Insurance Program (NFIP) can contribute to reducing financial losses due to flooding. However, in the Buchanan County Project area, the sole use of floodplain zoning and flood insurance as a solution to flood damages is not effective. The combination of linear development and recurring high flood damages results in frequent heavy losses to the local economy (business taxes) and many financial losses (lost business) that will not be reimbursed by flood insurance. This measure is best used in combination with other damage reduction methods and is retained for further consideration. Currently, Buchanan County is enrolled in the NFIP.

4.07 Flood Warning and Emergency Evacuation Plan (FWEEP). The development, installation and operation of an effective flood warning system and a well coordinated and efficient emergency evacuation program can help reduce flood damages and the likelihood of fatalities during flooding events. Such a system allows residents and businesses the opportunity to relocate or evacuate a structure's contents and other valued property prior to flooding. However, residual damages to remaining structures and immobile facilities are not reduced by this alternative. While ineffective as a single solution for reducing flood damages, a FWEEP can be effective when used in combination with other flood damage reduction methods. A FWEEP was incorporated in the Grundy Project and is being installed in that area. Although not designed to protect all of this project area, it will provide substantially improved warning capability for most of the county. Therefore, this measure was not considered any further.

4.08 Financial Compensation. This measure consists of providing financial compensation to eligible property owners for future damages incurred due to flooding. This measure was determined not to be acceptable as a potential nonstructural measure for Buchanan County since

it does not meet the dictate of Section 202 of Public Law 96-367 and was not retained for further consideration.

4.09 Relocation/Floodproofing of Government Owned Structures. Eligible state or local government and school board owned structures required for the continuing performance of a governmental function and located on property owned by the government entity are either protected in place or relocated under the relocation provisions of EFARS Appendix Q. Final structure eligibility and construction costs will be documented during the implementation phase through preparation of a Relocation Design Memorandum. Structure eligibility and baseline cost estimates developed for this report were developed for alternative selection and budgetary projection purposes only. Eligible government owned structures not meeting the "continuing performance of a government function" criteria are still eligible for the Floodproofing and Floodplain Evacuation measure. Utilization of this measure is required due to government owned structures in the project area.

Section 5. Formulation of Alternative Measures

Structural Alternatives.

5.01 General. Several structural measures were investigated for reducing flood damages in the Buchanan County Project Area. The alternative structural measures investigated include an impoundment, floodwalls, and channel modification. All structural alternatives would require nonstructural components to provide project wide protection to the April 1977 flood. These measures were originally presented in the General Plan. The following paragraphs provide a summary of the specific structural measures investigated for the Buchanan County Project Area.

5.02 Upstream Tributary Impoundment. Impoundment's were eliminated early in the study due to the geography of the project. The project targets structures all over Buchanan County and involves three separate drainage basins (Levisa Fork, Russell Fork, and Knox Creek) and eighteen tributary streams. Impoundments on the tributaries would require numerous impoundments and the removal of upstream structures, while impoundments on the main streams would actually worsen flooding on the tributaries from backwater as opposed to providing any protection. There was no concentrated area to target for protection at the cost of removing a limited number of remote structures. Additionally, impoundments on most tributaries potentially be above the drainage of multi-seam underground mines in the basin and any impoundment would impact the county's existing valley floor road and railway network. It was obvious that impoundments were not feasible from an engineering and cost perspective.

5.03 Floodwalls/Levee. The use of structural features such as floodwalls to protect floodplain developments in areas where damaged structures are densely clustered has proven effective in many Corps projects in other locations. As stated in paragraph 5.02, the Buchanan County project area does not contain any concentrated areas to target for protection. The towns which exist in the project area are small and linear in nature. A floodwall would require a very long length to protect a small number of structures. The structures are typically in two parallel rows adjacent to the top of the stream banks and would require removal of the closer row of structures in order to construct either a floodwall or a levee. For these reasons floodwall and levee alternatives were ruled out early in the project and not considered further.

5.04 Channel Modification. Widening, deepening, and other channel improvements are generally most effective on small to medium sized streams and where adjacent developments are located so as not to be a constraint on construction. Widening the stream channel and straightening occasional meanders to increase channel capacities and velocities can provide significant reductions in flood heights in areas subject to headwater flooding. Enlarging tributaries to provide appreciable flood height reductions is limited by backwater flooding from the three main streams and the proximity of the communities to the existing channel. Due to the linear nature of the towns, a very long reach of channel modification would be required to provide appreciable flood height reductions for a very small number of structures. Additional nonstructural measures would be required to provide protection for the property owners displaced by construction and those structures ineligible for floodproofing due to water depth or floodway

location. These factors combine to make channel modification not feasible for the Buchanan County project for a combination of engineering and cost reasons. No further analysis was prepared.

Nonstructural Alternatives

5.05 Based on evaluation of individual flood damage reduction measures as previously addressed, four primary measures were selected as being cost effective, viable, proactive approaches to reducing flood damages in the project area. These measures are floodproofing, floodplain evacuation, relocation of public facilities, and strict enforcement of NFIP ordinances currently in effect for Buchanan County. The following paragraphs discuss how these nonstructural flood damage reduction measures were applied and evaluated for the project area. Screening level costs for the chosen plan, including construction of relocation sites and real estate, were estimated at $118,595,000 (Baseline Cost Estimate, Tab C). These measures are discussed in detail in the following paragraphs:

Voluntary Floodproofing and Floodplain Evacuation

5.06 Eligibility Criteria. All structures located within the project limits that would receive significant finished (habitable) floor damage in a recurrence of the April 1977 flood are considered eligible for the project. Eligibility of a specific structure for floodproofing or floodplain evacuation is based on several factors specific to the individual structure and the flooding experience of the structure. Other eligibility factors include:

1) location of the structure in the floodplain;
2) depth of flooding experienced during the higher of the 1977 or the 100-year flood;
3) floodwater velocities;
4) DSS status;
5) structural stability and;
6) the use of the structure.

Structures located within the floodway and structures requiring a lowest finished (habitable) floor raise exceeding twelve feet above low ground elevation around the structure were determined to be ineligible for floodproofing.

5.07 Eligible Structures. The initial estimate of eligible structures for the Buchanan County Project using the criteria listed above was 731 eligible structures including; 171 residential acquisition structures, 377 residential floodproofers, 104 nonresidential acquisition structures, 74 potential nonresidential floodproofers, and five potential veneer or ring walls.

Wet Floodproofing by Raise-In-Place.

5.08 LRD policy requires that all structures eligible for floodproofing must meet certain requirements to be considered DSS. All floodproofed structures must have a safe and potable water system. If an approved potable water source cannot be provided on site, the structure will be considered ineligible for floodproofing and the structure owner will be given the acquisition option. All floodproofed structures ~~will~~ must be connected to a State/County approved sewage disposal system. If an acceptable system cannot be provided on the lot and an alternative treatment system cannot be provided, the structure will be converted to the acquisition program.

5.09 Flood flow velocities were not considered to be a significant factor in the project area affecting determination of eligibility for floodproofing. Flood flow velocities in the project area outside the regulatory floodway were estimated to be substantially less than the maximum velocity of 8 fps considered safe for floodproofing.
— ? where did this come from ?

5.10 All structures eligible for floodproofing will be evaluated during implementation to determine their structural integrity. If the structure cannot be raised and left in a structurally sound condition or if the cost of eliminating structural deficiencies increases the cost to where it is greater than 110% of the acquisition cost, the structure will be converted to acquisition.
— not true

5.11 Structure Type and Use. The primary means of floodproofing eligible residential structures is by raising the structure in-place. Exhibit 5-1 shows a typical residential structure before and after floodproofing. Determination of the means of floodproofing a specific nonresidential structure is highly dependent upon the construction of the structure, its size and functional use. Access for the physically challenged, if required, would be provided for any nonresidential structure found to be eligible to be raised-in-place. The floodproofing of commercial structures is primarily applicable in those instances where residential type structures are used for commercial purposes or sufficient ceiling clearance exists in the structure to construct a raised floor which does not restrict business activities. Specific details of the wet floodproofing process are included in Volume 3, the Engineering Technical Appendix (ETA).

5.12 Based on a preliminary engineering analysis utilizing the aforementioned eligibility criteria, it was determined that 377 residential and 74 nonresidential structures, representing approximately 62% of the total, were considered eligible for floodproofing.

5.13 The minimum level of protection provided to those eligible for participation is the April 1977 flood level plus one foot (the elevation required to protect the floor structure), or the 100-year flood level, whichever is higher.

5.14 Cost Comparison. The 377 residential and 74 nonresidential structures eligible for wet floodproofing, based upon aforementioned eligibility criteria, were analyzed based upon a comparison of the costs of floodproofing versus acquisition. Both a cost to acquire and cost to floodproof were developed for each individual structure eligible for floodproofing by raising-in-place in order to determine the more cost effective alternative. The cost to acquire included the

following: the fair market value including appropriate relocation benefits; real estate administrative costs; demolition costs (dependent upon structure type); monumentation costs; HTRW and asbestos costs (Phase I investigation, asbestos investigation, and asbestos removal); cost to improve to DSS standards; and contingencies. The cost to floodproof included the following costs: construction cost for raising-in-place (based upon a cost estimating method that uses the height of raise, the square footage of the structure, and the structure type); contingencies; engineering and design costs; supervision and administration costs; HTRW and asbestos costs (Phase I investigation, asbestos investigation, and asbestos removal); and real estate administration costs. Floodproofing cost must exceed 110% of acquisition cost before the structure is converted to acquisition. Only for DPR cost comparison analysis

5.15 This cost comparison resulted in changing the status of 102 residential and 30 nonresidential structure from floodproofing to acquisition since acquisition proved to be the least costly option for that structure.

Dry Floodproofing by Veneer Wall or Ringwall.

5.16 The viability and feasibility of floodproofing an individual nonresidential structure by means of veneer wall or ringwall may require extensive engineering detail and study, including subsurface and geotechnical investigations. Pursuit of efforts required to verify the feasibility of utilizing such alternatives were considered to be impractical at the study stage due to the voluntary nature of participation in the nonstructural program.

5.17 Evaluation. The District did conduct a preliminary investigation into the possibility of dry floodproofing five nonresidential structures. Eligibility for floodproofing by means of a veneer wall or ringwall on an individual structure basis was governed by several factors specific to the individual structure and the flooding experience of the structure. These factors included the location of the structure in the floodplain, the depth of flooding experienced during the April 1977 flood, and the condition of the structure. Based upon the criteria enumerated above, site visits, information review, and engineering judgment, two of the nonresidential structures were determined to be feasible for floodproofing by means of a ring wall and one by a veneer wall.

5.18 Application. At the time of implementation, should the nonresidential property owners elect to participate and be eligible for the floodproofing option, a more detailed engineering evaluation - (including geotechnical investigations if necessary) will be conducted. If, at that time, another alternative is determined to be the most cost-effective approach to reducing flood damages, the individual structure will be floodproofed by that means.

Floodplain Evacuation.

5.19 Evacuation of floodprone areas can be an effective solution for reducing flood damages, especially in situations where protection in place by floodproofing options are not feasible. Therefore, all structures receiving lowest, finished (habitable) floor damages in the April 1977 flood and not eligible for floodproofing were considered to be eligible for floodplain evacuation.

5.20 Cost Comparison. Based on the previously discussed eligibility criteria, a preliminary determination was made that 171 residential and 104 nonresidential structures would be eligible for voluntary floodplain evacuation. An additional 102 residential and 31 nonresidential structures were also included in the cost to acquire as a result of the cost effective comparisons described in paragraphs 5.14 and 5.17.

5.21 Application. The floodplain evacuation plan includes purchase of floodplain properties (structure and lot) at fair market value, demolition of the flood-prone structure and payment of appropriate relocation benefits if the structure is occupied. This alternative is not applicable to vacant lots or uninhabitable structures not meeting DSS criteria. The following paragraph addresses the availability of floodsafe DSS housing in the project area.

5.22 Available Floodsafe DSS Housing in the Project Area. A replacement housing survey was completed in October 2001. The conclusion of that survey was that: The turnover in the general housing market in the project area of Buchanan County is such that there may be concern in finding suitable flood safe housing for persons to be displaced by the project. It is anticipated that the market will increase as the project progresses, however, and more dwellings will become available to accommodate those displaced. Also, the increased difference between the cost of available DSS dwellings and the projected acquisition cost of many of the displaced dwellings is anticipated to exceed the maximum replacement housing payment authorized by Section 203, Public Law 91-646 of $22,500. It is anticipated that additional measures will be evaluated under the parameters of the last resort housing provisions of Section 206, Public Law 91-646. Accordingly, approval of this report will allow the District to administer last resort housing on a case-by-case basis project wide. The last resort housing determination will utilize the most cost effective means to provide comparable DSS housing.

Flood Insurance/Floodplain Zoning

5.23 Use of floodplain zoning and the National Flood Insurance Program (NFIP) will gradually contribute to reducing financial losses due to flooding. However, the Buchanan County Project Area will continue to experience frequent flooding that results in damages and heavy losses to the local economy (business taxes) and many financial losses (lost business) that will not be reimbursed by flood insurance. The effectiveness of these measures is normally enhanced by real estate sales and will be positively impacted by implementation of this project. The sole use of floodplain zoning and flood insurance as a solution to flood damages is not effective and is best used in combination with other damage reduction methods. Currently,

Buchanan County is enrolled in the NFIP and these measures will be included in the county's floodplain management plan.

Relocation/Floodproofing of Government Owned Structures

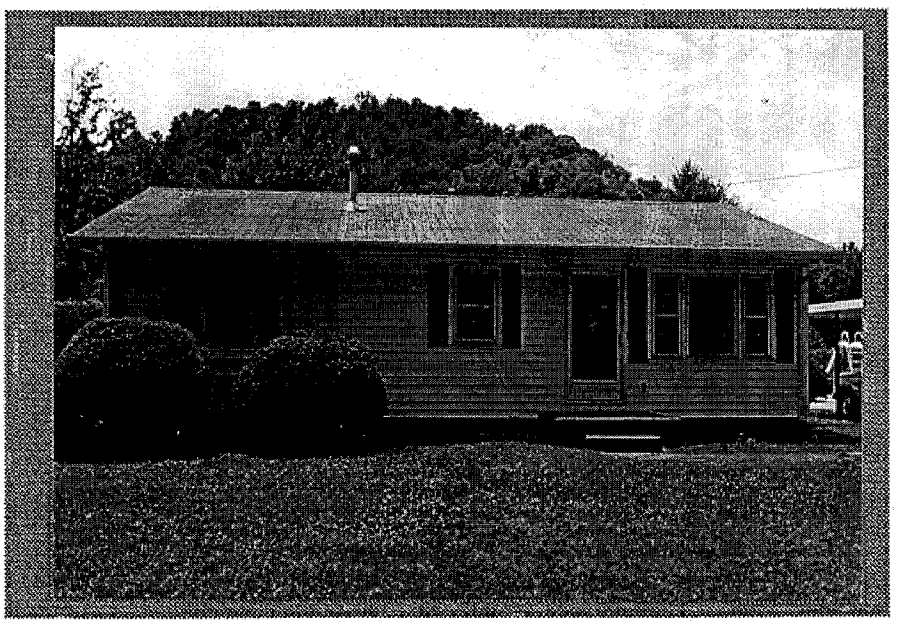
5.24 Eligible state or local government and school board owned structures required for the continuing performance of a governmental function are floodproofed or relocated under the relocation provisions of EFARS Appendix Q. The four structures considered for relocation were evaluated in accordance with paragraphs 5.11, 5.18, and 5.20. Two school board owned structres were determined to be feasible for ringwall construction. The other two eligible government owned structures did not meet the "continuing performance of a government function" criteria, but are still eligible for the Floodproofing and Floodplain Evacuation measures and are included in the nonresidential structure count of Table 5-1. A more detailed description of the relocation investigation is available in Tab III of the Engineering Technical Appendix, Volume 3 of this report.

No Federal Action Plan.

5.25 The without project condition assumes no action by the Federal government to implement any type of comprehensive flood damage reduction program in the project area. It reflects the continuation of existing economic, social, and environmental conditions and trends in the project area. Inherent with this condition would be the continuation of federally subsidized flood insurance coverage for property owners that is currently available through the NFIP and the enforcement of local floodplain zoning ordinances. This condition would result in no expenditure of Federal funds to implement a comprehensive flood damage reduction plan in the project area; however, Federal expenditures to subsidize the flood insurance program and to assist in flood recovery operations would continue.

5.26 In the absence of flood damage reduction measures for the project area, the potential for future growth and development is limited. It is expected that the residents of the project area would be subjected to future floods and flood damages, similar to those that have occurred in previous years. The housing in the project area would continue to deteriorate. Flood insurance, now available for floodplain occupants, does provide some economic protection, but would not necessarily guarantee a decent, safe, and sanitary residential environment. Continued flooding will perpetuate the slow erosion of local government tax revenue due to loss of structures, structure deterioration, and diversion of private and public funding to flood cleanup activities.

EXHIBIT 5-1
Typical Residential Structure Before and After Floodproofing



BEFORE

AFTER

Table 5-1

Structure Eligibility

Method of Flood Protction	Structure Status Based on Eligibility				Change in Structure Count Due to Cost Comparison				Final Structure Status			
	Resid.	Non-Resid.	Reloc. Cont.	Total	Resid.	Non-Resid.	Reloc. Cont.	Total	Resid.	Non-Resid.	Reloc. Cont.	Total
Wet Floodproofing	377	74		451	–102	–30		–132	275	44		319
Dry Floodproofing		1	4	5			–2	–2		1	2	3
Floodplain Evacuation	171	104		275	+102	+31		+133	273	135		408
Total	548	179	4	731				–1*	548	180	2	730

* During the course of the study, one non-residential structure was removed.

Section 6. Selection of the Most Cost Effective Plan

6.01 The No Federal Action Plan does nothing to address the specific planning objective and, given the serious nature of the flooding problem in the Buchanan County Project area, is not considered to be viable or acceptable. The resulting without project condition serves as the base against which to compare the remaining action plans.

6.02 The three structural measures investigated include upstream impoundments, floodwalls/levees, and channel modification. These three structural alternatives do not provide project wide protection and require nonstructural components to provide complete project protection in compliance with Public Law 96-367.

6.03 Nonstructural measures that have proven to be cost effective, viable approaches to reducing flood damages in Section 202 project areas are floodproofing, floodplain evacuation supplemented by a FWEEP for the project area, and strict enforcement of NFIP ordinances. A FWEEP was not considered because one is already in place for the county. The Buchanan County nonstructural alternative is based on these other nonstructural measures.

6.04 The four alternatives identified above where then evaluated by comparing each alternative to the Planning Objectives listed in paragraph 1.12. Each alternative is discussed in paragraphs 5.02 through 5.24. A brief narrative of each evaluation by objective is listed below and summarized in Table 6-1. The evaluation of each alternative to the identified objective in Table 6-1 consists of "3" if the alternative improves the objective, "2" if there is no effect, and "1" if the alternative negatively affects the objective.

6.05 Most Cost Effective Plan. The nonstructural alternative was found to be the most cost effective method of providing flood protection to the Buchanan County Project Area. The upstream tributary impoundment plan was significantly more expensive than the nonstructural plan because the upstream tributary impoundment plan can not decrease water surface levels sufficiently to provide the necessary level of protection without adding nonstructural measures including floodplain evacuation unless an unreasonable number of upstream impoundments are made. The channel modification plan was significantly more expensive than the nonstructural plan because the channel modification would require many miles of channel modification and still would not decrease water surface levels sufficiently to provide the necessary level of protection without adding nonstructural measures including floodplain evacuation. The floodwall/levee plan was significantly more expensive than the nonstructural plan because the floodwall/levees would be many miles long and require removal or relocation of many of the structures they could help and would still require additional nonstructural measures including floodplain evacuation in the less concentrated areas of development.

6.06 Reduce Financial Loss to Property Owners. All alternatives meet this objective because all are designed to protect to a minimum of the 1977 or 100-year flood level.

6.07 Maintain Cultural Resources. The Channel modification and nonstructural alternatives were formulated to meet applicable federal and state laws governing protection of significant historical or archaeological sites. The upstream tributary impoundments and floodwall/levee alternatives would require removal or relocation of some historical or archaeological sites.

6.08 Minimize Social/Economic Disruption. Implementation of the nonstructural alternative results in minimum social and economic disruption when compared to the other alternatives. The upstream tributary impoundments would essentially have the same impact as the nonstructural alternative, with the exception of construction activities in the proposed reservoir areas that would disrupt recreation and logging activities and require construction of new roads and rail lines. The floodwall/levee alternative would result in acquisition of significant numbers of structures for construction and right-of-way purposes and seriously impact traffic through the community during construction. The channel modification alternative would have the same disruptive effect as the floodwall alternative with additional disruptions for road and railway relocations. These impacts include loss of utility customers for existing water companies and commercial enterprises, and loss of community identity.

6.09 Most Socially and Environmentally Acceptable Plan. The voluntary nonstructural alternative has the least social and environmental impact on the project area. The upstream tributary impoundments would adversely affect the streams impounded and the areas of impoundment and require construction of new infrastructure. Construction of the floodwall or channel modification alternatives would require a major property acquisition program for construction of right-of-way which would result in a loss of most of the structures we are attempting to protect.

6.10 Given the array of alternatives evaluated and planning objectives, protection of the Buchanan County Project Area by means of the structural alternatives is not cost effective or is otherwise infeasible. Consequently, this report has identified the nonstructural alternative as the most cost effective plan for reducing flood damages to the Buchanan County project area under the Section 202 program. The nonstructural alternative is composed of nonstructural measures including floodplain evacuation, floodproofing, and floodplain regulation enforcement.

Table 6-1
Comparison of Alternatives to Planning Objectives

Alternative / Objective	Upstream Tributary Impoundments (1)	Channel Modification (1)	Floodwall/Levee (1)	Nonstructural
Most Cost Effective Plan	1	1	1	3
Reduce Financial Loss to Property Owners	3	3	3	3
Maintain Cultural Resources	1	2	1	2
Minimize Social/Economic Disruption	1	1	1	2
Most Socially and Environmentally Acceptable Plan	1	1	1	3
Total	7	8	7	13

(1) Structural alternatives include nonstructural components to provide 1977 or 100-year flood level protection to entire project area

Section 7. The Most Cost Effective Plan.

Project Features.

7.01 The most cost effective, implementable plan, which satisfies the established planning objectives, is a comprehensive flood damage reduction plan consisting of voluntary floodproofing, floodplain evacuation program, and continued participation in the National Flood Insurance Program. Table 7-1 shows the disposition of the total structures in the project area by structure type and program eligibility.

TABLE 7-1
Cost Effective Plan
Disposition of Project Structures
By Structure Type and Option

PROGRAM ELIGIBILITY	RESIDENTIAL	NONRESIDENTIAL	PUBLIC FACILITIES	TOTAL
Wet Floodproofing	275	44		319
Dry Floodproofing		1	2	3
Floodplain Evacuation	273	135		408
Total	548	180	2	730

7.02 All property would be acquired under authority of Section 202 with relocation assistance payments determined in accordance with provisions of the Uniform Relocations Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646).

Residual Damages.

7.03 Inherent in the nonstructural program are residual flooding damages to the residences, businesses, utilities, highways, etc., that remain in the area subject to flooding after completion of the project. Floodproofing structures raises them above the designated flood elevation, but powerlines, utility lines, roads, garages, outbuildings, warehouses etc., remain at their original level. These will still sustain damages during floods. Additionally, since floodproofed structures must be evacuated during flooding events, there is always the possibility of structural damages from floating debris. Floodproofed structures must then have the areas that were inundated

cleaned and any deposited debris removed. Since the program is voluntary, there will also be damages to those structures whose owners elected not to participate in the program.

7.04 Once it is determined that a flood threat exists and that emergency response actions are required, it is necessary to select the actions and levels of activity that are most appropriate to the situation. General categories of emergency response activities are; implementation of temporary flood mitigation measures, raising or removing household goods, search and rescue efforts, and temporary evacuation and sheltering of flood victims. The Emergency Evacuation Plan discussed in Paragraph 4.07 will delineate the measures and actions required to help protect life and property from flooding. The willingness of the public to participate in a voluntary floodproofing program and evacuation procedures developed for flood events will determine the extent of residual damages experienced by the project area during flood events which exceed the 1977 or 100-year flood.

NEPA Compliance.

7.05 Impacts and assessments associated with the plans under consideration for reducing flood damages in the Tug Fork Valley as addressed in the "Flood Damage Reduction Plan - Tug Fork Valley" were contained in the FEIS dated December 1982 with a Record of Decision filed on 23 February 1983. Subsequent SPR's and/or DPR's for specific project elements included in the Basin's recommended plan have identified project specific impacts and have addressed their relationship to the overall FEIS.

7.06 An Environmental Assessment (EA) has subsequently been prepared to specifically address the Buchanan County Nonstructural Project. Based on that assessment, it was determined that the impacts due to floodproofing activities are of a very short duration (in most instances less than 90 days) and are temporary. Revegetation of each site to its previous condition is accomplished upon completion of the floodproofing activity. Therefore, floodproofing is considered to have insignificant environmental impacts and mitigation is not required.

7.07 It was also determined that voluntary floodplain acquisition and evacuation activities have insignificant impacts on the environment, therefore not requiring mitigation. The activity consists of removing all development from a lot either by demolition or by relocation of the structure and restoring the lot to natural contours. The lot is reseeded and any future use of the lot is restricted to floodplain compatible uses through the local floodplain management ordinances and the Project Cooperation Agreement (PCA).

7.08 The EA was circulated for public and agency review and was received favorable by all entities. A Finding of No Significant Impact (FONSI) was executed by the District Engineer in November 2001. The FONSI is presented as an exhibit to the EA.

Hazardous, Toxic, and Radioactive Waste (HTRW) Evaluation and Remediation.

7.09 In accordance with ER 1165-2-132 and CEORD-DL-P memorandum dated 9 September 1994, Phase I Hazardous, Toxic, and Radioactive Waste (HTRW) investigations were completed on 90 nonresidential structures. Prior to completing all the nonresidential Phase I HTRW investigations, The CECW-PM memorandum dated 2 May 2001 was implemented which deferred Phase I investigations for voluntary nonstructural participants to the project implementation. The CECW-PM recommendation for deferral of HTRW investigations does not apply to properties on which dry floodproofing alternatives are proposed. Six nonresidential properties have been screened at the Phase I level and three tracts with non-CERCLA HTRW concerns have been identified. Phase I investigations have been deferred on all residential properties within the project limits until project implementation. During the initial site visits of residential properties at the time of implementation, the District field inspection team will verify program and option eligibility, and the Phase I HTRW investigation will be performed. Subsequent investigations required (Phase IIA) will be based on the Phase I HTRW investigation. A more detailed description of the HTRW investigations is available in Tab II of the Engineering Technical Appendix, Volume 3 of this report.

Summary of the Cost Effective Alternative for Accomplishing Flood Damage Reduction.

7.10 The plan that is the most cost effective alternative of accomplishing flood damage reduction includes the following features:

* *residential structures eligible for wet floodproofing by raise-in-place.*
* *nonresidential structure eligible for wet floodproofing by raise-in-place.*
* *nonresidential structures eligible for dry floodproofing by veneer wall.*
* *residential structures eligible for floodplain evacuation.*
* *nonresidential structures eligible for floodplain evacuation.*
* *governmental structures eligible for floodplain evacuation by relocation contract.*
* *governmental structures eligible for dry floodproofing by ringwall through relocation contract.*

The plan will be implemented over a six-year period, as described in Section 8, at a total project cost (fully funded) of $118,595,000. Complete structure by structure information is available in Appendix 3 of this volume.

Section 8. Project Implementation.

8.01 The District has developed specific policies applicable to the implementation of nonstructural projects based upon experience gained during the ongoing nonstructural activities being implemented in the approved Section 202 project areas. These policies guide implementation of the plan in direct response to project objectives identified by authorizing legislation. The policies are summarized as:

1) Participation in the nonstructural program is voluntary except in designated Housing and Commercial Development (H&CD) site locations.

2) The only options available for owners of structures located in the floodway and those structures requiring elevation of 12 feet or greater above low ground elevation are acquisition or nonparticipation.

3) The most cost effective alternative, floodproofing or floodplain evacuation, will be offered to owners eligible to participate. Homeowners may choose to buy-up to the floodproofing option if all criteria are met.

4) When last resort housing is required to provide DSS housing for the floodplain evacuees, the most cost-effective relocation plan available at that time will be utilized.

5) Relocation site will **not** be offered to residential floodplain evacuees unless required under Public Law 91-646.

6) Vacant lots will not be acquired. Restrictions on floodplain development contained in the PCA and in the existing floodplain ordinances administered and enforced by Buchanan County will control development of vacant property to prevent future development subject to flood damage.

8.02 The project will be implemented in a single phase over six fiscal years. This determination is based on assumptions of reasonable levels of manpower and funding to be made available for construction and administration of the voluntary program. As participants make application to the voluntary project, the Corps will confirm the applicant's eligibility and option (floodproofing or acquisition) to be offered the prospective participant.

8.03 Work on the two school board structures eligible for relocation contract will begin in the first year at the sponsor's request to allow sufficient time for engineering, design, and construction activities to dry floodproof or relocate the school facilities. Early completion of any school relocations will also allow the sponsor to utilize the facilities as floodsafe evacuation centers at an earlier date. All other publicly owned structures eligible for participation will be addressed in normal order.

TABLE 8-1
Project Funding Schedule
Fully Funded Schedule Based on an FY 2001 Start
** Project implementation is scheduled to begin in the first quarter of FY 2003.*
($1,000)

Feature Code	Title	Prior Years	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	Total
01	Lands & Damages		2,751.3	9,873.0	10,123.8	10,381.9	10,654.9	5,203.7	48,988.6
02	Relocations		3,125.2	11,218.1	11,506.4	11,803.2	12,116.9	5,919.3	55,689.1
22	Feasibility (Includes Prior Expenditures)	2,405.8							2,405.8
30	Planning, Engineering & Design		505.5	1,832.2	1,902.8	1,976.4	2,053.0	1,015.5	9,285.3
31	Construction Management		121.4	439.8	456.4	473.8	491.8	243.1	2,226.3
	Total Project Cost	2,405.8	6,503.4	23,363.1	23,989.4	24,635.2	25,316.5	12,381.7	118,595.1
	Federal Share	2,285.5	6,178.2	22,194.9	22,789.9	23,403.5	24,050.7	11,762.6	112,665.4
	Non-Federal Share	120.3	325.2	1,168.2	1,199.5	1,231.8	1,265.8	619.1	5,929.8

8.04 Actual implementation procedures are defined in the Buchanan County Nonstructural PMP (Project Management Plan). These procedures are similar to those utilized in previous Section 202 nonstructural projects, where over 600 structures have been successfully floodproofed and evacuated from the floodplain.

Project Costs.

8.05 The total project cost is estimated to be $118,595,000 (fully funded). The following are major assumptions in the development of that cost:

1) Use of 100 percent participation rate for both residential and nonresidential floodproofing and acquisition. Although projects have realized less than 100% participation, full participation must be utilized in developing the authorizing total project costs for contractual purposes and notification of the sponsor of all potential project costs.

2) Study costs incurred from 1 October 1998 to date are subject to cost-sharing, with the non-Federal share of those costs recovered during the first year of project implementation.

Table 8-2 displays the fully funded total project cost by account.

TABLE 8-2
Total Project Costs by Account

Account	Plan Component	Cost (1 Oct 2001)	Cost (Fully Funded)
01	Lands and Damages	$48,945,000	$54,878,000
02	Relocations	$44,416,000	$49,800,000
22	Prior Expenditures	$2,406,000	$2,406,000
30	Planning, Engineering, and Design	$8,009,000	$9,285,000
31	Construction Management	$1,920,000	$2,226,000
	Total Project Cost	$105,696,000	$118,595,000

Project Cost Sharing

8.06 The Buchanan County (VA) Nonstructural Project is subject to the cost-sharing requirements of Public Law 96-367 (the 1986 Water Resources Development Act). Any flood control project or separable element subject to the cost-sharing provisions of Public Law 99-662 requires an "Ability-to-Pay" determination in accordance with Section 103(m) of the Act.

Under the ability-to-pay determination—based on State and County per capita income—the Buchanan County Nonstructural Project Area is eligible for a full reduction as the following demonstrates:

EF (Eligibility Factor) = $a - b_1$ (State PCI Index) - b_2 (County PCI Index)

Where $a = 15.86794$

$b_1 = 0.06771$

$b_2 = 0.13543$

Virginia PCI Index = 80.68

Buchanan County PCI Index = 63.30

EF = 15.86794 - 0.06771(80.68) - 0.13543(63.30)

EF = 1.832 (Greater than unity, i.e., one)

Since EF is greater than one, the Buchanan County Nonstructural Project is eligible for a full application of reduction in the cost-sharing formula equal to the Benefits Base Floor (BBF)—BBF = BCR / 4—not to fall below the minimum non-Federal share of 5 percent in accordance with ER 1165-2-121. This calculation is made only for the purposes of deriving a cost-sharing formula.

The Average Annual Project Benefits (AAPB) solely reflect inundation reduction benefits, that is the total difference in flood damages with and without the project for all eligible structures in the project area. Estimates of benefits for this project were based on analyzing the correlation between the number of structures and AAPB of previous 202 projects. Within an EXCEL spreadsheet, the FORECAST function was used to estimate benefits for the Buchanan County Nonstructural Project.

FORECAST returns a predicted value for x (AAPB) based on a linear regression of known x and y (# of structures) arrays or ranges of data. Examples for which these functions apply include predicting future trends or interpolating for a value based on known data.

The equation for FORECAST is a+bx, where:

$$a = \overline{Y} - b\overline{X}$$

And:

$$b = n\sum xy - (\sum x)(\sum y)\frac{n\sum xy - (\sum x)(\sum y)}{n\sum x\text{^}2 - (\sum x)\text{^}2}.$$

Based upon this formula, the AAPBs for the Buchanan County McDowell County are estimated to be $125,000.

The Average Annual Project Costs (AAPC) reflects total project costs amortized at the current interest rate over a 50-year project life (nonstructural).

The project AAPC is calculated as follows:
Discount Rate = 6 5/8 % = 0.06625
Amortization Rate = 0.0027936

Base-line Project Cost x Discount Rate $118,595,000 x 0.06625	=	$7,856,919
Base-line Project Cost x Amortization Rate $118,595,000 x 0.0027936	=	$331,307
TOTAL AVERAGE ANNUAL COST	=	$8,188,226

All dollar figures in the following calculations represent Oct 2001 price levels.

$$\frac{\text{AAPB}}{\text{AAPC}} = \frac{\$\ 125{,}000}{\$8{,}188{,}226} = 0.015\ (\text{BCR})$$

The project BBF is calculated as follows:

$$\frac{(\text{BCR})}{4} = \frac{0.015}{4} = 0.00625 \times 100 = 0.625\%$$

Since the calculated BBF is 0.625%, the non-Federal share to be applied to the total project cost is 5%, the minimum allowable. The total non-Federal share is determined as follows:

Non-Federal Share = 5% (Total Project Cost to be cost shared)

= 0.05 ($118,595,113)

= $5,929,756

Federal Share = $112,665,357

Therefore, the non-Federal share is 5 percent or approximately $5.9 million. The Federal share is 95 percent or approximately $112.7 million.

Project Sponsorship.

8.07 A Project Cooperation Agreement (PCA) will be executed between the Corps and the non-Federal sponsor, Buchanan County, Virginia. As defined in the agreement, Buchanan County, will then serve as the non-Federal cost-sharing sponsor for the project, providing the required 5 percent non-Federal share. The District has reviewed Buchanan County's draft Financing Plan and has found it reasonable to expect that ample funds will be available to satisfy the non-Federal sponsor's financial obligation for the project. The following summarizes the contractual obligations of Buchanan County as the non-Federal sponsor for project implementation.

ck PMP language

Do we have LOI of intent?

* *Provide the non-Federal cost-share of the project.*
* *Satisfy the O&M requirements of the project.*
* *Enforce Floodplain Ordinances.*
* *Prepare and implement the required FPMP.*

Available Floodsafe DSS Housing in the Project Area.

8.08 Repeated flooding has severely impacted the quality and structural integrity of the floodplain housing stock. The extent of damage is not detectable without a thorough inspection of the individual structure. A last resort housing analysis has been performed in the Buchanan County Project Area as a part of the Real Estate Plan. This report requests last resort housing payments in excess of the delegated limit on a project wide basis, but will be implemented on a case-by-case basis due to an apparent lack of DSS housing in the project area.

8.09 Under last resort housing, a number of alternatives will be considered and utilized where applicable. These alternatives include but are not limited to the use of replacement housing supplemental payments exceeding $22,500. In all cases the least expensive alternative will be used.

Project Operation, Maintenance (O&M), and Management

8.10 The project components recommended for implementation in this report require the cooperation and coordination of Federal, state and non-Federal agencies to be successful. The following paragraphs summarize the operation, maintenance, and management responsibilities of the non-Federal sponsor that are contained in the PCA.

Disposition of Evacuated Floodplain Properties.

8.11 It will be the responsibility of the non-Federal sponsor to determine the appropriate use of lands evacuated as a part of the floodplain acquisition program in their FPMP. Appropriate deed restrictions will be recorded on those lands deemed to be excess and sold by the local sponsor. These deed restrictions will restrict development in the floodplain and prevent development in the floodway of the April 1977 or 100-year flood.

Floodproofing O&M.

8.12 Each structure floodproofed will have a Floodproofing Agreement recorded in the property deed which includes provisions for the prevention of living space with development in floodprone spaces created by the floodproofing process. Buchanan County, will assume the responsibility to assure each structure owner properly maintains the floodproofing features of the structure and also complies with all requirements of the county floodplain ordinances. Buchanan County will provide annual certification to the Corps that the items of O&M regarding floodproofed structures have been addressed per the PCA and the floodproofing agreements.

OMRR&R Costs.

8.13 Subject to the terms of the PCA, the sponsor is required to provide an annual report to the District on the compliance with the nonstructural program objectives by the program participants. This effort will be accomplished by the Buchanan County Floodplain Coordinator on behalf of the sponsor. It is anticipated that the additional costs for accomplishing this activity are minimal since the Coordinator was previously tasked with inspection requirements for the city's participation in the National Flood Insurance Program. Buchanan County recognizes their responsibility to prepare the report and has agreed to furnish this report to the District on an annual basis.

Section 9. Public Involvement

Overview.

9.01 Public involvement is an important aspect of plan formulation and is the coordination activity that often results in the selection of the best alternative. From the inception of the Section 202 program, the Huntington District has made a concerted effort to maintain an excellent relationship with the populace in the entire Section 202 project area. To this end, the District has met with and coordinated with local governmental bodies, citizen action groups, state representatives, governors, Congressmen and Senators. This is true as well for the Buchanan County Nonstructural Project area. Coordination has included the following activities: correspondence to local residents, coordination with Buchanan County, Congressman Rick Boucher, and U.S. Senators John Warner and George Allen; local and congressional briefings; news releases; and other meetings. A detailed list of meetings and briefings held is included as Appendix 1, Public Involvement. Additionally, a Social Impact Analysis was performed for the project area. This report indicates a great deal of public acceptance of the voluntary floodproofing and acquisition program and participation is expected to be high.

County Government.

9.02 The primary local governmental body associated with the Buchanan County Project is the Buchanan County Board of Supervisors. The Board of Supervisors has shown a high level of interest in the project, and is fully expected to do so throughout the life of the project. In their role as non-Federal sponsor for the project, the Board of Supervisors has become familiar with the project formulation and implementation processes.

9.03 The basic requirements of a PCA were explained to the County Administrator. The Board of Supervisors was briefed and is fully aware of the responsibilities associated with the project including implementation, operation, and maintenance. The Board of Supervisors is interested in implementing the project and A Letter of Intent (LOI) for the Buchanan County Nonstructural Project was signed by the Board of Supervisors President on March 11, 2002. A copy is included in Section 26 of the PMP and will be included in the PCA package.

9.04 The project components recommended for implementation in this report require the cooperation and coordination of Federal, state and non-Federal agencies to be successful. The following paragraphs summarize the operation, maintenance, and management responsibilities of the non-Federal sponsor that are contained in the PCA.

a. Provide 5% of the total project costs allocated to nonstructural flood control as further specified below:

(1) Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocation

determined by the Federal Government to be necessary for the construction, operation, and maintenance of the project;

(2) Provide retaining dikes, waste weirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project; and

(3) Provide, during implementation, any additional costs as necessary to make its total contribution equal to 5 percent of the total project costs allocated to nonstructural flood control.

b. For so long as the project remains authorized; operate maintain, repair, replace, and rehabilitate the completed project or functional portion of the project, at no cost to the Federal Government, in accordance with applicable Federal and State laws and any specific directions prescribed by the Federal Government.

c. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon land that the non-Federal sponsor owns or controls for access to the project for the purpose of inspection and, if necessary after failure to perform by the non-Federal sponsor, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project.

d. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project-related betterments, except for damages due to the fault or negligence of the United States or its contractors.

e. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 Code of Federal Regulations (CFR), Section 33.20.

f. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for the operation, maintenance, repair, replacement and rehabilitation of the project. However, for lands that the Federal Government determines to be subject to the navigation servitude, only the Federal Government shall perform such investigations unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction.

g. Assume complete financial responsibility, as between the Federal Government and the non-Federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for the operation, maintenance, repair, replacement, or rehabilitation of the project.

h. As between the Federal Government and the non-Federal sponsor, the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability. To the maximum extent practical, operate maintain, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

i. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR, Part 24, in acquiring lands, easements, and rights-of-way required for the operation maintenance repair, replacement, and rehabilitation of the project, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

j. Comply with all applicable Federal and State laws and regulations including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army, and Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), requiring non-Federal preparation and implementation of floodplain management plans.

k. Provide 5 percent of that portion of total cultural resources preservation, mitigation and data recovery costs attributed to flood control that are in excess of 1 percent of the total amount authorized to be appropriated for flood control.

l. Participate in and comply with applicable Federal floodplain management and flood insurance programs.

m. Prescribe and enforce regulations to prevent obstruction of or encroachment on the project that would reduce the level of protection it affords or that would hinder operation and maintenance of the project.

n. Not less than once each year, inform affected interests of the extent of the protection afforded by the project.

o. Publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the

floodplain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the project.

p. Comply with Section 221 of Public law 91-611, as amended, and Section 103 of Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element.

q. Provide and maintain necessary access roads, parking areas and other public use facilities, open and available to all on equal terms.

r. Not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.

Congressional Representation.

9.05 The Buchanan County Nonstructural Project Area lies within the Ninth Congressional District of Virginia. Congressman Rick Boucher represents this District and has been supportive of the Section 202 program as evidenced by his support and funding for the Pike and Martin County (KY) Nonstructural Projects in the Tug Fork Valley.

9.06 The two U.S. Senators for Virginia are John Warner (R) and George Allen (R).

USFWS

9.07 The Corps has coordinated with resource agencies, such as the US Fish and Wildlife Service (USFWS). In November 2001, the USFWS completed review of the EA and replied that they anticipated no adverse impacts. The response letter, included as an appendix to the EA, recognizes that environmental design measures have been incorporated in the nonstructural floodproofing and floodplain evacuation program to minimize adverse impacts to fish and wildlife resources.

Future Meetings and Coordination

9.08 The District will continue its level of cooperation with the local entities and project sponsors. District representatives will attend public meetings and information hearings as necessary during project implementation in accordance with the PCA.

9.09 Once the project is approved, Real Estate Division (RE) will conduct landowner's meetings to elicit participants for the program. At this meeting, both the acquisition and floodproofing options will be explained by the appropriate District element. The meeting will be conducted in accordance with previously established procedures.

9.10 A Project Coordination Team (PCT) will be established once implementation of the project has begun. The PCT will have representatives from both the District and Board of Supervisors and will meet periodically to discuss the project's status and resolve issues.

Section 10. Conclusion

10.01 This Detailed Project Report describes the project elements determined to be necessary and advisable to reduce future flood damages in the Buchanan County Project Area. The most cost effective plan was found to be effective in reducing flood damages, cost-effective in relation to other alternatives considered, and both socially acceptable and environmentally suitable. The cost effective project satisfies the legislative requirements of both Section 202 of the 1981 Water and Energy Development Appropriations Act (Public Law 96-367), the FY 84 Urgent Supplemental Appropriations Act (Public Law 98-332), and the FY 98 Appropriations Act (Public Law 105-62).

10.02 Although the cost effective plan does provide flood protection for the unprotected increment of the Levisa Fork, Russell Fork, and Knox Creek within the Buchanan County project area, this plan does not meet the current Corps economic criteria for water resource projects and is therefore not supported by the Administration. Therefore, funding for this project **must** be provided through direct Congressional appropriations on an annual basis.

BUCHANAN COUNTY (VA)
NONSTRUCTURAL PROJECT

DETAILED PROJECT REPORT

APPENDIX 1

Structure Specific Information

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
BC-01	RES.	N	39072	966.19	965.45	968.96	967.80	MASONRY	BASEMENT INHABITABLE	
BC-11	MIXED	N	14499	1159.86	1158.82	1162.64	1167.00	MASONRY	SLAB	
BPC-003	COMM.	N	1237	1117.7	1115.80	1122.82	1122.50	MASONRY	SLAB	
BPC-005	RES.	N	1174	1122.8	1119.70	1122.84	1122.32	FRAME	CRAWLSPACE	
BPC-008	RES.	N	1362	1122.0	1120.20	1122.78	1122.86	FRAME	CRAWLSPACE	
BPC-009	COMM.	Y	1414	1122.7	1120.20	1122.76	1123.01	FRAME	CRAWLSPACE	
BPC-016	CHURCH	N	1935	1123.6	1126.10	1126.74	1127.55	MAS. VEN.	BASEMENT INHABITABLE	
BPC-024	CHURCH	N	2390	1130.0	1130.10	1130.55	1131.81	MASONRY	BASEMENT INHABITABLE	
BPC-035	RES.	N	3012	1137.2	1133.00	1137.66	1138.75	MAS. VEN.	SLAB	
BPC-037	COMM.	N	3338	1140.3	1140.00	1141.43	1142.40	MAS. VEN.	SLAB	
BPC-040	RES.	N	3686	1139.2	1144.50	1145.53	1146.31	FRAME	BASEMENT INHABITABLE	
BPC-041	RES.	N	3804	1148.1	1145.40	1146.91	1147.64	FRAME	BASEMENT INHABITABLE	
BPC-042	COMM.	N	3954	1147.5	1146.40	1148.68	1149.33	FRAME	SLAB	
BPC-043	COMM.	N	4052	1148.5	1147.50	1149.55	1150.27	FRAME	SLAB	
BPC-045	COMM.	N	4188	1149.8	1149.20	1150.35	1151.34	FRAME	SLAB	
BPC-050	RES.	N	4475	1148.2	1154.40	1152.02	1153.60	FRAME	BASEMENT INHABITABLE	
BPC-051	RES.	N	4568	1150.1	1154.80	1152.56	1154.34	MAS. VEN.	BASEMENT INHABITABLE	
BPC-059	RES.	N	5494	1165.5	1162.90	1165.89	1166.21	FRAME	CRAWLSPACE	
BPC-060	RES.	N	5536	1165.2	1163.30	1166.58	1166.80	FRAME	CRAWLSPACE	
BPC-061	RES.	N	5594	1166.3	1163.50	1167.55	1167.61	FRAME	CRAWLSPACE	
BPC-062	RES.	N	5662	1166.1	1163.60	1168.67	1168.57	FRAME	CRAWLSPACE	
BPC-063	RES.	N	5729	1167.50	1164.1	1169.78	1169.51	FRAME	CRAWLSPACE	
BPC-064	RES.	N	5796	1167.4	1164.50	1170.89	1170.46	FRAME	CRAWLSPACE	
BPC-065	RES.	N	5898	1171.2	1166.80	1172.42	1172.03	MAS. VEN.	CRAWLSPACE	
BPC-066	COMM.	N	5983	1165.1	1166.90	1173.65	1173.38	MASONRY	SLAB	
BPC-067	RES.	Y	6063	1174.4	1167.10	1174.79	1174.66	FRAME	CRAWLSPACE	
BPC-068	COMM.	N	5785	1168.3	1167.90	1170.71	1170.30	FR/MAS VEN	SLAB	
BPC-069	CHURCH	N	5912	1167.1	1172.80	1172.63	1172.25	FRAME	BASEMENT INHABITABLE	
BPC-075	RES.	N	7781	1202.8	1202.20	1203.46	1203.96	FRAME	CRAWLSPACE	
BPC-082	RES.	N	9068	1220.1	1224.50	1225.15	1225.67	FRAME	BASEMENT INHABITABLE	
BPC-105	RES.	N	14409	1315.2	1312.10	1317.22	1317.42	MAS. VEN.	CRAWLSPACE w/ 1/2 BSMT	
BPC-110	RES.	N	16540	1349.9	1347.70	1351.10	1351.26	MAS. VEN.	CRAWLSPACE	
BPC-111	RES.	N	16658	1351.3	1349.40	1352.93	1353.09	FRAME	CRAWLSPACE	
BPC-113	RES.	N	16978	1356.80	1353.1	1357.96	1358.10	FRAME	CRAWLSPACE	
BPC-116	RES.	N	17557	1359.8	1362.20	1367.42	1367.48	FRAME	BASEMENT INHABITABLE	
DC-001	COMM.	N	4866	1193.2	1192.70	1200.22	1196.63	METAL	SLAB	
DC-002	COMM.	N	5131	1194.8	1192.40	1200.51	1197.04	METAL	SLAB	
DC-005	RES.	Y	12607	1236.2	1233.30	1237.13	1233.35	FRAME	CRAWLSPACE	
DC-006	RES.	Y	12691	1236.1	1233.30	1237.41	1233.75	FRAME	CRAWLSPACE	
DC-007	RES.	Y	12875	1234.2	1230.70	1238.04	1234.62	FRAME	CRAWLSPACE	
DC-008	RES.	Y	12988	1235.3	1230.90	1238.83	1235.46	FRAME	CRAWLSPACE	
DC-009	RES.	N	13133	1234.8	1233.00	1239.84	1236.54	FRAME	CRAWLSPACE	
DC-010	COMM.	Y	14033	1243.8	1240.50	1245.35	1242.38	FRAME	CRAWLSPACE	
DC-011	RES.	Y	16071	1256.5	1253.70	1257.88	1254.49	FRAME	CRAWLSPACE	
DC-012	RES.	N	16213	1258.8	1254.80	1259.19	1255.50	FRAME	CRAWLSPACE	
DC-013	MIXED	N	16445	1257.90	1257.4	1260.45	1256.69	MAS. VEN.	BASEMENT NOT INHABITABLE	
DC-019	RES.	Y	20636	1276.4	1273.50	1278.91	1276.07	FRAME	CRAWLSPACE	
DC-023	RES.	Y	20883	1279.8	1275.10	1282.15	1279.07	FRAME	CRAWLSPACE	
DC-024	RES.	Y	21010	1281.4	1278.10	1283.82	1280.62	FRAME	CRAWLSPACE	
DC-025	RES.	Y	21124	1283.2	1279.10	1285.34	1282.05	FRAME	CRAWLSPACE	
DC-026	RES.	Y	21195	1284.3	1280.30	1286.34	1283.03	FRAME	CRAWLSPACE	
DC-027	RES.	Y	21451	1289.0	1285.00	1289.95	1286.56	FRAME	CRAWLSPACE	
DC-029	RES.	N	26805	1326.3	1321.70	1329.11	1325.75	FRAME	CRAWLSPACE	
DC-034	RES.	Y	32493	1373.1	1370.00	1373.37	1370.46	FRAME	CRAWLSPACE	
DC-053	RES.	N	34290	1386.8	1382.80	1387.34	1385.14	FRAME	CRAWLSPACE	
DC-056	RES.	Y	34959	1391.0	1387.60	1391.70	1389.42	FRAME	CRAWLSPACE	
DC-058	RES.	Y	35022	1390.4	1387.50	1392.16	1389.88	FRAME	CRAWLSPACE	
DC-064	RES.	N	46012	1463.7	1460.30	1471.54	1468.02	MAS. VEN.	CRAWLSPACE	
DC-065	RES.	Y	48918	1481.7	1478.50	1483.15	1479.16	FRAME	CRAWLSPACE	
DC-066	RES.	N	49128	1480.8	1477.80	1483.81	1479.98	FRAME	CRAWLSPACE	
DC-067	RES.	Y	49321	1481.1	1478.00	1484.83	1481.26	FRAME	CRAWLSPACE	
DC-068	RES.	Y	49666	1485.8	1482.40	1486.74	1483.55	FRAME	CRAWLSPACE	
DC-069	RES.	N	52994	1503.1	1500.20	1506.61	1503.01	FRAME	CRAWLSPACE	
DC-070	RES.	Y	53543	1504.8	1500.90	1510.38	1507.42	FRAME	CRAWLSPACE	
DC-071	RES.	Y	53656	1503.3	1499.20	1511.16	1508.32	FRAME	CRAWLSPACE	
DC-072	RES.	Y	53805	1503.4	1500.90	1512.19	1509.52	FRAME	CRAWLSPACE	
DC-073	RES.	Y	53880	1504.9	1502.40	1512.70	1510.12	FRAME	CRAWLSPACE	

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
DC-074	RES.	Y	53978	1503.5	1500.20	1513.03	1510.42	FRAME	CRAWLSPACE	
DC-075	RES.	Y	54384	1504.4	1501.60	1514.25	1511.46	FRAME	CRAWLSPACE	
DC-076	RES.	Y	54504	1504.0	1501.50	1514.60	1511.76	FRAME	CRAWLSPACE	
DC-077	RES.	Y	54602	1506.0	1502.90	1514.90	1512.01	FRAME	CRAWLSPACE	
DC-078	RES.	N	55126	1509.2	1506.30	1516.92	1513.74	FRAME	BASEMENT NOT INHABITABLE	
DC-079	RES.	Y	55183	1511.6	1507.80	1517.16	1513.96	FRAME	CRAWLSPACE	
DC-081	RES.	N	58331	1521.8	1519.70	1522.70	1521.23	FRAME	CRAWLSPACE	
DC-082	RES.	N	70131	1564.6	1564.30	1568.35	1566.71	FRAME	CRAWLSPACE	
DC-085	RES.	N	70561	1569.6	1566.00	1570.40	1568.50	FRAME	BASEMENT NOT INHABITABLE	
DC-086	RES.	N	70668	1569.3	1567.40	1570.91	1568.95	MAS. VEN.	BASEMENT NOT INHABITABLE	
DC-087	RES.	N	70771	1570.6	1568.30	1571.31	1569.28	FRAME	CRAWLSPACE	
DC-088	RES.	N	70639	1567.30	1564.5	1570.77	1568.83	FRAME	BASEMENT NOT INHABITABLE	
DC-089	RES.	N	70942	1567.4	1565.10	1571.31	1569.07	FRAME	CRAWLSPACE	
DC-090	RES.	N	70954	1570.9	1565.50	1571.31	1569.06	FRAME	CRAWLSPACE	
DC-091	RES.	N	70954	1567.5	1564.30	1571.31	1569.06	FRAME	CRAWLSPACE	
DC-092	RES.	N	70993	1569.8	1566.60	1571.31	1569.01	FRAME	CRAWLSPACE	
DC-093	RES.	N	71036	1568.3	1566.90	1571.31	1568.96	FRAME	CRAWLSPACE	
DC-095	RES.	Y	70887	1570.6	1567.00	1571.31	1569.14	FRAME	CRAWLSPACE	
DC-096	RES.	N	70774	1570.3	1567.00	1571.31	1569.27	MAS. VEN.	CRAWLSPACE	
DC-097	RES.	N	70727	1568.2	1566.00	1571.19	1569.20	FRAME	CRAWLSPACE	
DC-098	RES.	N	70520	1569.4	1566.00	1570.20	1568.33	FRAME	BASEMENT NOT INHABITABLE	
DC-100	RES.	N	72283	1572.6	1571.40	1574.81	1572.91	MAS. VEN.	CRAWLSPACE	
DC-101	RES.	Y	72458	1574.1	1571.50	1575.98	1574.08	FRAME	CRAWLSPACE	
DC-102	RES.	N	72465	1575.4	1573.40	1576.03	1574.13	FRAME	CRAWLSPACE	
DC-105	RES.	N	74549	1586.4	1585.50	1594.36	1591.81	FR/MAS. VEN.	SLAB	
DC-106	CHURCH	N	75063	1585.3	1585.40	1594.52	1591.94	MASONRY	BASEMENT INHABITABLE	
DC-107	RES.	Y	75148	1589.9	1587.80	1594.54	1591.97	FRAME	CRAWLSPACE	
DC-108	RES.	N	75208	1588.6	1587.30	1594.56	1591.98	FRAME	CRAWLSPACE	
DC-109	RES.	N	75252	1589.4	1587.80	1594.57	1591.99	FRAME	CRAWLSPACE	
DC-110	RES.	N	75294	1589.9	1588.00	1594.61	1592.03	FRAME	CRAWLSPACE	
DC-111	RES.	N	75374	1592.2	1589.90	1594.72	1592.15	FRAME	CRAWLSPACE	
DC-113	RES.	N	75652	1591.70	1589.3	1595.11	1592.59	MAS. VEN.	CRAWLSPACE	
DC-114	RES.	Y	76000	1593.8	1590.10	1595.45	1592.90	FRAME	CRAWLSPACE	
DC-115	CHURCH	N	76304	1589.6	1588.60	1595.58	1592.90	MASONRY	BASEMENT INHABITABLE	
DC-118	RES.	N	79295	1599.1	1597.20	1606.81	1604.86	MASONRY	CRAWLSPACE	
DC-119	RES.	N	79412	1599.8	1597.70	1607.53	1605.56	FRAME	CRAWLSPACE	
DC-120	CHURCH	N	80688	1608.3	1605.00	1613.86	1612.46	MASONRY	CRAWLSPACE	
DC-121	CHURCH	N	80646	1604.6	1603.50	1613.76	1612.36	MASONRY	SLAB	
DC-122	CHURCH	N	80685	1605.0	1603.30	1613.85	1612.45	MASONRY	SLAB	
DC-123	RES.	N	80865	1610.2	1605.60	1614.28	1612.87	MASONRY	BASEMENT NOT INHABITABLE	
DC-124	RES.	N	80922	1608.9	1604.60	1614.41	1613.01	FRAME	CRAWLSPACE	
DC-125	MIXED	N	81502	1610.2	1606.60	1615.79	1614.38	MASONRY	SLAB	
DC-126	COMM.	N	81556	1613.4	1608.80	1615.83	1614.45	MASONRY	BASEMENT NOT INHABITABLE	
DC-127	COMM.	Y	81559	1613.4	1610.50	1615.83	1614.45	FRAME	CRAWLSPACE	
DC-128	RES.	Y	81713	1609.7	1606.60	1615.90	1614.63	FRAME	CRAWLSPACE	
DC-129	RES.	N	85074	1627.7	1625.40	1630.97	1629.43	FRAME	CRAWLSPACE	
DC-130	RES.	N	85136	1629.5	1626.00	1631.34	1629.83	FRAME	CRAWLSPACE	
DC-131	RES.	N	85307	1628.4	1627.30	1633.02	1631.32	FRAME	CRAWLSPACE	
DC-132	RES.	N	85483	1630.8	1628.90	1634.75	1632.86	FRAME	CRAWLSPACE	
DC-133	RES.	N	85606	1632.1	1629.30	1635.96	1633.94	FRAME	BASEMENT NOT INHABITABLE	
DC-134	COMM.	N	86292	1633.9	1632.50	1638.98	1637.01	MASONRY	SLAB	
DC-135	MIXED	N	86316	1635.5	1634.90	1639.03	1637.08	MASONRY	SLAB	
DC-136	RES.	Y	86347	1638.1	1634.90	1639.10	1637.16	FRAME	CRAWLSPACE	
DC-137	RES.	N	86478	1634.3	1633.80	1639.38	1637.52	FRAME	CRAWLSPACE	
GBC-004	RES.	N	3561	1436.17	1434.31	1441.21	1443.80	FRAME	CRAWLSPACE	
GBC-005	RES.	N	4907	1446.17	1443.66	1447.57	1450.18	FRAME	CRAWLSPACE	
GBC-006	RES.	N	8222	1466.67	1464.98	1467.54	1470.76	FRAME	CRAWLSPACE	
GC-009	RES.	N	1831	1334.5	1331.60	1335.04	1334.74	FRAME	CRAWLSPACE	
GC-010	RES.	N	1883	1334.6	1332.50	1335.72	1335.41	FRAME	CRAWLSPACE	
GC-017	RES.	Y	2239	1339.4	1334.30	1339.88	1339.55	FRAME	CRAWLSPACE	
GC-019	RES.	Y	2060	1336.4	1332.40	1338.03	1337.70	FRAME	CRAWLSPACE	
GC-020	RES.	Y	2094	1336.4	1332.50	1338.47	1338.14	FRAME	CRAWLSPACE	
GC-021	RES.	Y	2196	1336.8	1332.90	1339.52	1339.19	FRAME	CRAWLSPACE	
GC-022	RES.	Y	2239	1336.7	1333.20	1339.88	1339.55	FRAME	CRAWLSPACE	
GC-023	RES.	Y	2331	1336.9	1335.30	1340.65	1340.32	FRAME	CRAWLSPACE	
GC-024	RES.	Y	2441	1339.1	1335.70	1341.57	1341.24	FRAME	CRAWLSPACE	
GC-025	RES.	Y	2485	1338.9	1335.30	1341.94	1341.61	FRAME	CRAWLSPACE	

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
GC-026	RES.	N	2680	1340.6	1336.50	1343.57	1343.25	FRAME	BASEMENT NOT INHABITABLE	
GC-027	RES.	N	2745	1338.8	1337.80	1344.11	1343.79	MAS.VEN.	SLAB	
GC-028	RES.	N	2817	1341.6	1339.20	1344.71	1344.39	MAS.VEN.	SLAB	
GC-029	RES.	N	2891	1340.7	1340.00	1345.33	1345.01	FRAME	CRAWLSPACE	
GC-030	RES.	N	2982	1337.3	1341.10	1346.09	1345.77	FRAME	BASEMENT INHABITABLE	
GC-031	RES.	N	3061	1342.5	1341.50	1346.75	1346.43	MAS.VEN.	CRAWLSPACE	
GC-032	RES.	N	3149	1343.3	1342.60	1347.49	1347.17	FRAME	CRAWLSPACE	
GC-033	RES.	Y	3356	1347.3	1344.70	1349.22	1348.90	FRAME	CRAWLSPACE	
GC-034	RES.	N	3441	1347.9	1345.40	1349.93	1349.61	FRAME	CRAWLSPACE	
GC-035	COMM.	N	3366	1347.1	1345.80	1349.30	1348.99	MASONRY	SLAB	
GC-036	COMM.	N	3495	1347.7	1343.40	1350.38	1350.07	FR/MAS.VEN	SLAB	
GC-038	RES.	Y	3659	1348.70	1345.6	1351.75	1351.44	FRAME	CRAWLSPACE	
GC-039	RES.	N	3777	1350.5	1346.40	1352.57	1352.27	FR/MAS.VEN	CRAWLSPACE	
GC-040	RES.	N	3903	1350.5	1347.80	1353.29	1353.01	MAS.VEN.	CRAWLSPACE	
GC-041	RES.	Y	4008	1352.5	1348.40	1353.90	1353.62	FRAME	CRAWLSPACE	
GC-042	COMM.	N	4105	1352.2	1351.30	1354.45	1354.19	MASONRY	SLAB	
GC-072	RES.	N	7207	1375.1	1375.00	1376.71	1376.92	MASONRY	SLAB	
GC-082	RES.	N	7993	1383.4	1380.70	1383.49	1383.51	FRAME	CRAWLSPACE	
GC-083	RES.	N	8055	1383.6	1380.00	1384.10	1384.06	FRAME	CRAWLSPACE	
GC-085	RES.	Y	8245	1384.6	1381.40	1386.00	1385.74	FRAME	CRAWLSPACE	
GC-086	CHURCH	N	8341	1384.4	1383.00	1386.95	1386.58	FRAME	SLAB	
GC-087	RES.	N	8392	1386.0	1384.70	1387.46	1387.03	FRAME	CRAWLSPACE	
GC-088	COMM.	N	8925	1389.70	1384.1	1392.59	1391.80	FRAME	SLAB	
GFC-008	RES.	N	4151	984.4	984.00	986.53	989.41	FR/MAS VEN	CRAWLSPACE	
GFC-032	RES.	N	14403	1091.6	1088.90	1091.78	1094.81	FR./MAS.	CRAWLSPACE	
HC-12	RES.	N	12401	1056.84	1056.83	1057.08	1060.11	FRAME	BASEMENT INHABITABLE	
HC-14	RES.	N	13937	1081.34	1076.04	1074.38	1077.38	MAS. VEN.	BASEMENT INHABITABLE	
HC-25	RES.	N	19692	1164.39	1166.30	1165.43	1168.24	FRAME	BASEMENT INHABITABLE	
HUC-01	RES.	N	349	1454.40	1454.60	1456.01	1456.65	MAS/VEN	INHABITABLE BASEMENT	
HUC-05	RES.	N	1112	1458.90	1457.80	1460.15	1460.41	FRAME	CRAWLSPACE	
HUC-06	RES.	N	1242	1458.50	1458.70	1461.29	1461.37	MAS/VEN	SLAB	
HUC-08	RES.	N	1574	1462.70	1461.70	1464.18	1463.82	FRAME	BASEMENT NOT INHAB.	
HUC-10	RES.	N	3300	1479.80	1478.00	1479.87	1478.81	MAS/VEN	CRAWLSPACE	
HUC-14	RES.	N	4156	1487.40	1485.90	1488.03	1487.10	MAS/VEN	CRAWLSPACE	
HUC-15	RES.	N	4409	1487.90	1485.70	1489.77	1488.82	FRAME	CRAWLSPACE	
HUC-16	RES.	Y	4722	1490.90	1489.50	1491.92	1490.94	FRAME	CRAWLSPACE	
IC-007	RES.	N	5078	1458.5	1457.50	1459.72	1461.99	FR/METAL	SLAB	
IC-009	MIXED	N	7678	1474.5	1466.00	1476.61	1478.28	MASONRY	SLAB	
IC-010	RES.	N	7993	1477.3	1471.90	1477.94	1479.45	FRAME	CRAWLSPACE	
KC-012	COMM.	N	19991	970.0	969.60	971.90	976.10	METAL	SLAB	
KC-013	COMM.	N	20205	971.10	967.3	972.20	976.30	MASONRY	CRAWLSPACE	
KC-014	COMM.	N	20107	970.3	969.90	972.20	976.20	MAS. VEN.	SLAB	
KC-015	COMM.	N	20322	970.7	966.30	972.20	976.30	MAS. VEN.	CRAWLSPACE	
KC-019	COMM.	N	20457	969.6	967.00	972.30	976.30	MAS. VEN.	CRAWLSPACE	
KC-020	COMM.	N	20786	969.5	969.30	972.50	976.50	MAS. VEN.	SLAB	
KC-021	COMM.	N	20866	971.6	968.20	972.60	976.60	MASONRY	BASEMENT	
KC-022	RES.	N	20912	972.2	969.50	972.60	976.70	MAS. VEN.	CRAWLSPACE	
KC-024	RES.	N	20861	970.8	969.00	972.60	976.60	MASONRY	CRAWLSPACE	
KC-025	COMM.	N	21330	972.1	971.90	974.30	977.40	FRAME	SLAB	
KC-026	RES.	N	21615	976.3	973.50	975.60	978.00	FR/MAS VEN	INHAB. BASEMENT	
KC-036	INSTIT	Y	24098	989.0	985.20	989.60	993.10	FRAME	CRAWLSPACE	
KC-037	INSTIT	N	24157	989.4	985.80	989.90	993.30	FRAME	CRAWLSPACE	
KC-038	INSTIT	N	24217	990.00	986.2	990.20	993.60	FRAME	CRAWLSPACE	
KC-039	INSTIT	N	24255	990.0	987.40	990.40	993.70	FRAME	CRAWLSPACE	
KC-040	INSTIT	N	24410	990.4	987.70	991.20	994.40	FRAME	CRAWLSPACE	
KC-042	INSTIT	N	24471	990.4	987.90	991.50	994.70	FRAME	CRAWLSPACE	
KC-043	INSTIT	N	24831	990.7	987.70	994.60	997.60	MAS/VEN	CRAWLSPACE	
KC-044	INSTIT	N	25139	992.9	990.30	997.40	1000.30	MAS/VEN	SLAB	
KC-045	RES.	Y	25305	995.4	992.80	998.90	1001.70	FRAME	CRAWLSPACE	
KC-046	RES.	N	25919	1002.0	998.50	1002.70	1005.40	FRAME	CRAWLSPACE	
KC-047	RES.	Y	26329	1003.5	999.70	1005.00	1007.70	FRAME	CRAWLSPACE	
KC-048	RES.	N	28192	1015.3	1012.30	1018.10	1021.30	MAS/VEN	CRAWLSPACE	
KC-049	RES.	N	28600	1013.1	1010.40	1019.20	1022.50	FRAME	CRAWLSPACE	
KC-050	RES.	N	28802	1016.1	1013.00	1019.80	1023.00	FRAME	CRAWLSPACE	
KC-051	RES.	N	28926	1018.5	1013.30	1020.10	1023.30	FRAME	CRAWLSPACE	
KC-054	RES.	N	29861	1022.5	1019.40	1022.60	1025.60	FRAME	CRAWLSPACE	
KC-066	RES.	N	34049	1048.0	1045.00	1051.30	1053.00	MAS/VEN	CRAWLSPACE	

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KC-067	RES.	N	35611	1059.4	1056.00	1062.30	1064.70	MAS/VEN	BASEMENT NOT INHAB.	
KC-068	RES.	Y	35841	1061.5	1057.70	1063.10	1065.70	FRAME	CRAWLSPACE	
KC-069	RES.	N	35986	1062.5	1059.20	1063.60	1066.30	MAS/VEN	CRAWLSPACE	
KC-070	RES.	N	36080	1061.1	1058.00	1064.00	1066.70	FRAME	CRAWLSPACE	
KC-071	RES.	N	36221	1062.9	1059.10	1064.50	1067.20	MAS/VEN	CRAWLSPACE	
KC-072	RES.	N	36316	1063.2	1060.20	1064.80	1067.60	FRAME	CRAWLSPACE	
KC-074	RES.	N	36578	1065.7	1062.90	1065.70	1068.70	FRAME	CRAWLSPACE	
KC-075	RES.	Y	36766	1066.4	1064.20	1066.50	1069.50	FRAME	CRAWLSPACE	
KC-076	RES.	Y	36851	1066.2	1064.30	1066.80	1069.90	FRAME	CRAWLSPACE	
KC-094	RES.	Y	46417	1154.75	1151.14	1157.10	1159.80	FRAME	CRAWLSPACE	
KC-095	RES.	Y	46512	1157.31	1153.36	1159.60	1162.00	FRAME	CRAWLSPACE	
KC-096	RES.	N	46882	1155.80	1155.45	1161.20	1164.10	FRAME	CRAWLSPACE	
KC-097	RES.	N	47040	1161.62	1158.04	1161.80	1164.80	FRAME	CRAWLSPACE	
KC-100	RES.	Y	51346	1192.03	1188.76	1192.20	1194.30	FRAME	CRAWLSPACE	
KC-106	RES.	Y	57444	1249.75	1245.29	1252.00	1253.70	FRAME	CRAWLSPACE	
LF-001B	RES.	N	73	863.5	861.00	869.16	869.71	FRAME	NOT INHAB. BASEMENT	
LF-001C	COMM	N	384	869.0	861.20	869.71	870.19	MASONRY	NOT INHAB. BASEMENT	
LF-002	RES.	Y	1224	871.10	867.90	872.19	872.36	METAL	BLOCK	744
LF-003	RES.	N	1315	868.10	868.00	872.53	872.66	MASONRY	BLOCK	1445
LF-004	COMM	N	1717	868.80	845.80	874.03	873.98	MASONRY	SLAB	1900
LF-005	COMM	N	2568	865.00	864.20	876.29	876.07	MASONRY	SLAB	2400
LF-006	RES.	N	5327	875.50	872.60	880.26	880.31	FRAME	BLOCK	1287
LF-007	RES.	N	5394	878.90	878.40	880.32	880.39	FRAME	BLOCK	1575
LF-008	RES.	N	5481	879.40	876.80	880.41	880.50	MASONRY	BLOCK	1677
LF-009	RES.	N	5892	874.10	870.60	880.86	881.09	FRAME	BLOCK	1200
LF-010	COMM	Y	5992	880.10	877.00	881.04	881.29	METAL	SLAB	1462
LF-011	RES.	Y	6074	879.30	873.60	881.19	881.46	METAL	SLAB	952
LF-012	COMM	N	6522	879.50	878.90	881.98	882.36	MASONRY	SLAB	748
LF-015	RES.	Y	9911	887.60	884.60	893.68	893.42	METAL	BLOCK	980
LF-016	RES.	N	10082	887.20	882.70	893.68	893.44	FRAME	BLOCK	1200
LF-017	RES.	N	10237	892.50	887.20	893.68	893.45	FRAME	BLOCK	1710
LF-020	COMM	N	10553	887.90	883.90	893.68	893.49	METAL	SLAB	14280
LF-021	RES.	N	10605	892.90	887.90	893.68	893.50	FRAME	BLOCK	1363
LF-022	RES.	Y	10748	890.00	887.40	894.22	894.18	METAL	BLOCK	780
LF-023	RES.	N	10979	891.10	887.50	895.33	895.58	FRAME	BLOCK	957
LF-024	COMM	N	11105	893.00	890.50	895.93	896.34	METAL	SLAB	2400
LF-026C	RES.	N	13994	901.6	898.7	903.63	903.97	MAS/VEN	NOT INHAB. BASEMENT	
LF-036	RES.	Y	22399	920.70	916.60	926.37	926.04	FRAME	BLOCK	1440
LF-037	MIXED	N	22604	920.90	918.30	926.37	926.36	FRAME	BLOCK	1250
LF-038	RES.	Y	22720	921.30	917.90	926.38	926.54	FRAME	BLOCK	1456
LF-039	RES.	N	22944	921.20	918.40	926.38	926.89	MASONRY	BLOCK	1185
LF-040	RES.	N	22487	917.40	915.20	926.37	926.18	FRAME	BLOCK	897
LF-041	RES.	N	23673	921.10	918.40	928.91	929.20	MASONRY	SLAB	990
LF-042	MIXED	N	23846	923.60	915.90	929.57	929.78	MASONRY	SLAB	3072
LF-043	RES.	Y	25046	924.20	921.50	931.54	931.83	FRAME	BLOCK	672
LF-044	RES.	Y	25136	928.40	923.30	931.67	931.94	METAL	BLOCK	924
LF-045	RES.	N	26691	931.30	928.50	933.69	933.78	FRAME	BLOCK	1480
LF-048	RES.	Y	32411	942.10	939.60	943.12	943.45	METAL	BLOCK	840
LF-050	RES.	N	32602	943.10	941.70	943.41	943.89	FRAME	BLOCK	
LF-052	RES.	N	35921	950.40	948.00	954.51	954.70	FRAME	SLAB	813
LF-053	RES.	N	36030	950.80	948.20	955.07	955.18	FRAME	SLAB	1697
LF-054	RES.	Y	36148	953.10	948.60	955.68	955.69	METAL	BLOCK	910
LF-055	RES.	N	36233	949.90	947.50	956.12	956.06	FRAME	BLOCK	988
LF-056	RES.	N	36376	952.20	950.20	956.78	956.72	MASONRY	BLOCK	1050
LF-057	RES.	N	36415	953.50	949.70	956.94	956.91	FRAME	BLOCK	943
LF-058	RES.	N	36421	953.80	952.00	956.96	956.94	MASONRY	SLAB	891
LF-059	RES.	N	36551	953.60	951.00	957.48	957.58	FRAME	BLOCK	1008
LF-060	RES.	Y	36543	955.00	952.60	957.45	957.54	METAL	BLOCK	720
LF-069	RES.	N	37985	960.60	958.70	963.02	962.08	FRAME	BLOCK	1710
LF-070	COMM	N	38281	963.30	957.60	964.41	963.15	MASONRY	SLAB	11322
LF-071	COMM	N	39103	965.70	964.50	969.14	967.99	FRAME	BLOCK	620
LF-072	MIXED	Y	39189	968.00	965.00	969.63	968.49	METAL	BLOCK	360
LF-072A	RES.	Y	39240	969.7	965.7	969.92	968.79	FRAME	CRAWLSPACE	
LF-073	COMM	N	39650	967.50	967.00	972.28	971.20	FRAME	SLAB	1800
LF-074	COMM	N	39721	967.20	966.60	972.69	971.62	FRAME	BLOCK	1044
LF-075	RES.	N	39783	966.90	962.70	973.05	971.98	FRAME	BLOCK	986
LF-076	CHURCH	N	39878	968.40	962.70	973.59	972.54	MASONRY	BLOCK	1176.00

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
LF-076	CHURCH	N	39878	968.40	962.70	973.59	972.54	MASONRY	BLOCK	1176
LF-077	COMM	N	40358	968.50	967.90	974.35	973.98	MASONRY	BLOCK	1890
LF-078	COMM	N	40430	969.10	963.20	974.40	974.15	MASONRY	SLAB	630
LF-079	COMM	N	40617	968.70	965.00	974.54	974.61	MASONRY	SLAB	5400
LF-080	COMM	N	40772	967.40	963.80	974.66	974.99	FRAME	BLOCK	1365
LF-081	COMM	N	40830	966.30	962.60	974.71	975.13	FRAME	BLOCK	1196
LF-082	COMM	N	40907	967.80	959.10	974.79	975.32	MASONRY	BLOCK	3111
LF-083	RES.	N	40964	963.10	957.80	975.03	975.51	FRAME	BLOCK	1804
LF-084	RES.	N	41046	961.30	957.80	975.39	975.78	FRAME	BLOCK	1073
LF-085	RES.	N	41178	966.00	957.80	975.96	976.22	FRAME	BLOCK	1295
LF-086	RES.	N	41318	964.30	961.20	976.56	976.69	FRAME	BLOCK	1008
LF-087	RES.	N	41491	969.50	961.20	977.31	977.26	FRAME	BLOCK	1218
LF-088	RES.	N	43221	973.70	970.90	980.19	980.21	FRAME	BLOCK	960
LF-088A	RES.	N	42768	977.5	975.1	979.89	979.69	MAS/VEN	NOT INHAB. BASEMENT	
LF-088C	RES.	N	42768	979.1	975.4	979.89	979.69	FRAME	CRAWLSPACE	
LF-089	RES.	N	43284	976.70	972.90	980.21	980.27	MASONRY	BLOCK	957
LF-090	RES.	Y	43199	979.20	977.20	980.18	980.19	METAL	BLOCK	1280
LF-091	RES.	N	43363	973.70	970.20	980.24	980.35	FRAME	BLOCK	1464
LF-093	RES.	Y	43451	974.90	970.50	980.28	980.43	METAL	BLOCK	1210
LF-094	RES.	Y	43728	975.60	973.40	980.38	980.71	METAL	BLOCK	952
LF-095	RES.	N	43774	975.00	971.50	980.40	980.75	MASONRY	BLOCK	1120
LF-098	RES.	N	43834	973.70	971.80	980.47	980.84	FRAME	BLOCK	874
LF-099	RES.	N	43901	973.70	972.00	980.75	981.07	FRAME	BLOCK	2576
LF-100	RES.	N	44010	974.30	972.40	981.19	981.44	FRAME	BLOCK	1023
LF-101	MIXED	N	45761	987.30	984.60	988.16	987.22	FRAME	SLAB	2275
LF-102	COMM	N	45923	984.00	983.90	988.36	987.46	MASONRY	SLAB	1560
LF-103	MIXED	N	46016	984.30	983.30	988.48	987.59	MASONRY	SLAB	2325
LF-104	RES.	Y	46123	976.60	974.50	988.61	987.74	METAL	CRAWLSPACE	798
LF-105	RES.	N	46236	977.70	975.60	988.75	987.91	MASONRY		1650
LF-106	RES.	Y	46725	981.10	978.50	989.17	988.40	METAL	BLOCK	744
LF-107	RES.	N	47190	984.90	982.20	989.17	988.40	MASONRY		1363
LF-108	RES.	Y	47314	986.60	982.90	989.28	988.53	METAL	BLOCK	910
LF-110	RES.	N	47578	985.60	982.30	989.81	989.13	FRAME	SLAB	1080
LF-112	COMM	N	48220	987.50	987.10	991.10	990.60	MASONRY	SLAB	1584
LF-113	RES.	N	48299	987.80	985.20	991.26	990.78	FRAME	BLOCK	1560
LF-114	CHURCH	N	48383	989.40	985.10	991.43	990.97	MASONRY	BLOCK	2880
LF-115	RES.	N	48656	978.60	978.20	991.98	991.59	MASONRY	BLOCK	1508
LF-116	RES.	Y	48699	981.20	977.50	992.06	991.69	METAL	BLOCK	700
LF-117	RES.	N	48668	982.30	978.90	992.00	991.62	FRAME	BLOCK	1023
LF-118	RES.	N	48853	982.10	978.30	992.14	991.84	MASONRY	BLOCK	1419
LF-119	COMM	Y	49020	985.30	982.00	992.22	991.99	METAL	BLOCK	448
LF-121	COMM	N	52572	996.50	996.20	1000.96	1000.51			
LF-122	COMM	N	52610	996.90	996.90	1001.18	1000.70	FRAME	SLAB	384
LF-123	RES.	N	52818	993.70	991.40	1002.19	1001.65	FRAME	SLAB	
LF-124	RES.	N	52929	992.60	992.20	1002.25	1001.82	FRAME	BLOCK	
LF-125	RES.	Y	52962	994.10	989.90	1002.27	1001.86	METAL	BLOCK	
LF-126	RES.	N	53035	993.10	989.30	1002.31	1001.97	FRAME	BLOCK	
LF-127	RES.	N	52988	989.80	989.50	1002.29	1001.90	MASONRY	SLAB	600
LF-128	MIXED	N	53088	993.20	992.60	1002.34	1002.05	MASONRY	BLOCK	3496
LF-129	COMM	N	53199	995.00	993.30	1002.41	1002.22	MASONRY	SLAB	2160
LF-131	RES.	N	52995	995.60	995.40	1002.29	1001.91	MASONRY	BLOCK	1666
LF-132	RES.	Y	53239	996.40	994.30	1002.43	1002.28	METAL	BLOCK	672
LF-133	RES.	Y	53268	996.90	994.50	1002.45	1002.32	METAL	BLOCK	616
LF-134	RES.		53296	996.60	994.10	1002.46	1002.36	METAL	BLOCK	552
LF-135	RES.	Y	53228	996.80	994.00	1002.43	1002.26	METAL	BLOCK	744
LF-136	RES.	Y	53255	995.80	993.90	1002.44	1002.30	METAL	BLOCK	696
LF-137	RES.	Y	53287	996.10	993.70	1002.46	1002.35	METAL	BLOCK	684
LF-138	RES.	Y	53332	996.30	993.60	1002.49	1002.42	METAL	BLOCK	768
LF-139	RES.	Y	52815	1000.10	998.50	1002.19	1001.64	METAL	BLOCK	462
LF-140	COMM	N	53410	995.00	994.10	1002.53	1002.53	MASONRY	BLOCK	2438
LF-141	COMM	N	53999	995.10	993.70	1003.13	1003.58	MASONRY	BLOCK	1218
LF-142	RES.	N	54070	995.00	993.50	1003.24	1003.72	MASONRY	BLOCK	1218
LF-143	RES.	N	54117	993.90	993.00	1003.31	1003.82	MASONRY	BLOCK	1218
LF-145	COMM	N	54763	998.60	997.90	1004.43	1005.39	MASONRY	SLAB	7482
LF-146	COMM	N	55063	999.40	998.70	1005.14	1006.39	MASONRY	SLAB	266
LF-147	COMM	N	55123	1000.60	1000.50	1005.28	1006.59	MASONRY	BLOCK	1575
LF-149	CHURCH	N	57199	1008.70	1005.40	1013.53	1013.31	MASONRY	BLOCK	4900

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
LF-150	RES.	N	57300	1001.80	1002.40	1013.63	1013.42		BLOCK	1120
LF-151	RES.	Y	57396	1010.50	1007.60	1013.73	1013.52	METAL	BLOCK	980
LF-152	RES.	N	57354	1004.30	1002.80	1013.68	1013.48	MASONRY	BLOCK	1080
LF-153	RES.	N	57300	1006.00	1002.60	1013.63	1013.42	MASONRY	BLOCK	784
LF-154	RES.	N	57442	1005.00	1003.00	1013.77	1013.57	MASONRY	BLOCK	1161
LF-155	RES.	N	57493	1006.70	1003.10	1013.82	1013.62	MASONRY	BLOCK	986
LF-156	RES.	N	57560	1005.90	1003.20	1013.89	1013.70	MASONRY	BLOCK	1020
LF-157	RES.	N	57548	1006.90	1005.50	1013.88	1013.68	MASONRY	BLOCK	1110
LF-158	COMM	N	57639	1008.80	1008.20	1013.97	1013.78	MASONRY	SLAB	525
LF-159	RES.	N	57598	1007.30	1005.20	1013.93	1013.74	MASONRY	BLOCK	1764
LF-160	COMM	N	57764	1008.20	1007.80	1014.09	1013.91	MASONRY	BLOCK	3484
LF-161	RES.	Y	57764	1011.20	1008.90	1014.09	1013.91	METAL	BLOCK	696
LF-162	COMM	N	57934	1011.50	1011.40	1014.26	1014.09	METAL	SLAB	6363
LF-163	COMM	N	58119	1011.40	1010.90	1015.00	1014.84			950
LF-166	RES.	Y	59219	1014.10	1012.40	1019.49	1019.37	METAL	BLOCK	840
LF-168	RES.	Y	59670	1016.30	1013.50	1021.33	1021.22	METAL	BLOCK	684
LF-169	RES.	Y	59712	1017.00	1013.90	1021.50	1021.40	METAL	BLOCK	938
LF-170	RES.	Y	59748	1017.00	1014.10	1021.62	1021.52	METAL	BLOCK	858
LF-171	RES.	Y	59840	1016.50	1013.80	1021.79	1021.67	METAL	BLOCK	819
LF-172	RES.	Y	59323	1015.30	1012.80	1019.91	1019.80	METAL	BLOCK	756
LF-173	RES.	Y	59548	1016.10	1013.90	1020.83	1020.72		BLOCK	672
LF-174	RES.	Y	59697	1015.90	1013.10	1021.44	1021.34	METAL	BLOCK	754
LF-180	RES.	N	84651	1081.50	1078.50	1086.49	1082.70	MASONRY	BLOCK	1102
LF-181	RES.	N	84773	1082.30	1079.70	1087.45	1083.74	MASONRY	BLOCK	2268
LF-182	RES.	N	84932	1083.60	1082.20	1088.70	1085.09	MASONRY	BLOCK	1482
LF-183	RES.	N	86346	1086.20	1081.40	1094.29	1090.16	MASONRY	BLOCK	2775
LF-184	RES.	Y	86502	1087.60	1087.00	1094.44	1090.23	MASONRY	BLOCK	1200
LF-185	RES.	N	86566	1089.90	1088.20	1094.50	1090.27		BLOCK	750
LF-186	COMM	N	86662	1091.70	1090.90	1094.59	1090.31	METAL	SLAB	4550
LF-187	RES.		86702	1091.50	1089.00	1094.62	1090.33	FRAME	BLOCK	1053
LF-190	COMM	N	86978	1093.40	1093.30	1094.88	1090.47	MASONRY	BLOCK	5670
LF-193	COMM	N	88143	1095.80	1094.30	1096.47	1093.51	MASONRY	BLOCK	11200
LF-195	COMM	N	88499	1092.50	1092.00	1097.09	1094.42	MAS/METAL	SLAB	18462
LF-196	COMM	N	88548	1094.30	1093.40	1097.17	1094.55	MASONRY	BLOCK	1560
LF-197	COMM	N	88548	1092.20	1090.40	1097.17	1094.55	MASONRY	BLOCK	1734
LF-198	COMM	N	88625	1092.20	1090.80	1097.31	1094.74	MASONRY	BLOCK	2952
LF-199	COMM	N	89203	1093.50	1090.70	1098.38	1095.99	MASONRY	BLOCK	63585
LF-200	COMM	N	89324	1094.40	1094.50	1098.62	1096.20	MASONRY	BLOCK	2272
LF-201	COMM	N	89309	1093.70	1093.20	1098.59	1096.17	MASONRY	BLOCK	2500
LF-202	COMM	Y	89668	1096.10	1093.40	1099.30	1096.79	METAL	BLOCK	460
LF-203	COMM	N	89583	1094.80	1092.60	1099.13	1096.64	MASONRY	BLOCK	2904
LF-204	RES.	Y	90441	1100.90	1099.00	1102.72	1099.46	METAL	BLOCK	400
LF-205	RES.	Y	90445	1098.50	1095.60	1102.74	1099.47	METAL	BLOCK	460
LF-206	RES.	Y	90438	1096.60	1095.40	1102.70	1099.45	METAL	BLOCK	468
LF-207	RES.	Y	90534	1099.30	1096.60	1103.20	1099.83	METAL	BLOCK	840
LF-208	RES.	Y	90536	1102.90	1099.30	1103.21	1099.84	METAL	BLOCK	
LF-209	RES.	N	90679	1101.60	1100.50	1103.95	1100.41	MASONRY	BLOCK	1995
LF-210	RES.	N	90792	1101.40	1100.10	1104.53	1100.86	MASONRY	BLOCK	1482
LF-211	RES.	N	90906	1102.50	1099.70	1105.12	1101.31	MASONRY	BLOCK	3159
LF-212	RES.	N	91141	1101.80	1100.20	1106.34	1102.25	MASONRY	BLOCK	672
LF-213	RES.	N	91206	1102.40	1100.40	1106.67	1102.51	MASONRY	BLOCK	1200
LF-214	RES.	N	91257	1102.20	1100.60	1106.94	1102.71	MASONRY	BLOCK	
LF-215	RES.	N	91277	1101.10	1100.90	1107.04	1102.79	MASONRY	BLOCK	1295
LF-218	COMM	N	92054	1103.40	1102.80	1110.74	1106.81	MASONRY	BLOCK	1440
LF-220	RES.	N	92252	1109.70	1109.10	1111.63	1107.97	MASONRY	SLAB	3440
LF-222	RES.	N	92296	1110.80	1109.20	1111.83	1108.23	MASONRY	BLOCK	4224
LF-223	RES.	Y	92375	1107.20	1104.10	1112.18	1108.70	MASONRY	BLOCK	943
LF-226	RES.	N	92423	1108.40	1106.00	1112.40	1108.98	MASONRY	BLOCK	2193
LF-227	COMM	N	92479	1105.10	1103.90	1112.65	1109.32	MASONRY	SLAB	672
LF-228	COMM	N	92974	1104.50	1103.00	1113.02	1110.15	MASONRY	BLOCK	27268
LF-229	COMM	N	92795	1105.50	1104.70	1113.02	1110.00	FRAME	SLAB	7171
LF-230	COMM	N	93067	1108.30	1105.30	1113.02	1110.23	FRAME	BLOCK	1224
LF-231	COMM	N	93238	1108.20	1106.20	1113.02	1110.38	FRAME	SLAB	
LF-232	COMM	N	93220	1108.00	1105.60	1113.02	1110.36	FRAME	SLAB	
LF-233	COMM	N	93182	1108.00	1105.60	1113.02	1110.33	FRAME	SLAB	840
LF-240	RES.	Y	96185	1115.40	1112.20	1120.04	1117.30	METAL	BLOCK	1344
LF-241	RES.	N	96218	1114.70	1113.20	1120.14	1117.39	FRAME	SLAB	990

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
LF-242	RES.	N	96269	1115.80	1113.90	1120.30	1117.52	FRAME	SLAB	868
LF-244	MIXED	N	96412	1116.50	1115.20	1120.66	1117.89	MAS VEN	SLAB	
LF-247	RES.	Y	96412	1117.10	1114.20	1120.66	1117.89	METAL	BLOCK	
LF-248	RES.	N	96487	1117.90	1115.00	1120.82	1118.08	MAS VEN	SLAB	1240
LF-253	COMM	N	97849	1118.40	1117.40	1122.20	1120.09	FRAME	BLOCK	6272
LF-254	RES.	Y	97915	1121.50	1118.70	1122.20	1120.13	METAL	BLOCK	768
LF-256	RES.	N	97958	1120.20	1118.60	1122.20	1120.15	MASONRY	BLOCK	1040
LF-257	RES.	N	98092	1121.70	1119.50	1122.35	1120.34	MASONRY	BLOCK	1892
LF-265	COMM	N	99606	1119.70	1119.20	1128.62	1125.34	MASONRY	SLAB	7800
LF-276	RES.	N	99838	1129.60	1128.40	1129.79	1126.22	MASONRY	BLOCK	1344
LF-278	RES.	N	100327	1125.90	1124.90	1132.25	1128.05	MASONRY	BLOCK	3948
LF-279	RES.	N	100522	1123.00	1121.80	1133.23	1128.78	FRAME	BLOCK	896
LF-280	COMM	N	100424	1125.50	1123.60	1132.74	1128.41	MASONRY	SLAB	
LF-281	COMM	N	100641	1122.90	1122.90	1133.83	1129.23	MAS/METAL	SLAB	
LF-282	COMM	N	100803	1123.60	1123.20	1134.64	1129.84	METAL	SLAB	
LF-283	COMM	N	100917	1123.90	1123.70	1134.87	1130.13	MASONRY	BLOCK	1517
LF-284	MIXED	N	100974	1124.70	1123.80	1134.95	1130.26	MASONRY	SLAB	1419
LF-285	RES.	N	100984	1126.70	1126.70	1134.96	1130.28	MASONRY	SLAB	2142
LF-285A	RES.	N	100848	1129.2	1129.2	1134.77	1129.97	FR/MAS/VEN	CRAWLSPACE	
LF-285B	RES.	N	100848	1133.5	1127.10	1134.77	1129.97	FRAME	CRAWLSPACE	
LF-286	RES.	N	101049	1125.60	1124.50	1135.06	1130.44	MASONRY	BLOCK	1392
LF-287	RES.	N	101092	1126.60	1125.00	1135.12	1130.54	MASONRY	BLOCK	1260
LF-288	COMM	N	101152	1125.10	1124.60	1135.20	1130.68	MASONRY	BLOCK	2400
LF-289	RES.	N	101240	1124.40	1123.70	1135.33	1130.88			1457
LF-290	COMM	N	100995	1123.80	1123.00	1134.98	1130.31	METAL	BLOCK	1800
LF-291	COMM	N	101261	1126.50	1126.50	1135.36	1130.93	MASONRY	BLOCK	3096
LF-292	COMM	N	101413	1130.40	1130.40	1135.58	1131.29	FRAME	SLAB	2666
LF-293	RES.	N	101297	1128.00	1125.70	1135.41	1131.01	MASONRY	BLOCK	1056
LF-294	RES.	N	101491	1132.30	1130.90	1135.69	1131.47	MASONRY	BLOCK	1350
LF-295	COMM	N	101664	1128.10	1127.70	1135.90	1131.84	MASONRY	BLOCK	1715
LF-296	COMM	N	101418	1126.20	1126.00	1135.58	1131.30	MASONRY	BLOCK	5412
LF-297	RES.	N	101577	1129.00	1128.00	1135.81	1131.67	MASONRY	SLAB	2340
LF-297U	COMM	N	101686	1129.70	1128.20	1135.90	1131.87	FRAME	SLAB	
LF-298	RES.	N	101858	1133.80	1131.20	1135.95	1132.11	MASONRY	BLOCK	1320
LF-299	COMM	N	101845	1129.80	1129.20	1135.94	1132.09	MASONRY	SLAB	1584
LF-311	COMM	N	108308	1150.00	1148.20	1152.91	1150.64	METAL	SLAB	2250
LF-312	COMM	N	108375	1148.40	1147.70	1153.15	1150.85	MASONRY	BLOCK	1800
LF-313	RES.	N	108530	1152.10	1150.40	1153.72	1151.33	MASONRY	BLOCK	
LF-314	RES.	N	108591	1152.90	1149.20	1153.94	1151.52	MASONRY	BLOCK	1008
LF-315	RES.	N	108745	1148.80	1143.70	1154.50	1152.00	MASONRY	BLOCK	1406
LF-316	COMM	N	108863	1147.00	1144.40	1154.93	1152.36	MASONRY	BLOCK	
LF-317	COMM	N	108963	1149.20	1146.90	1155.28	1152.67	MASONRY	BLOCK	1800
LF-318	COMM	N	109224	1150.50	1149.40	1156.06	1153.47	MASONRY	SLAB	3486
LF-320	COMM	N	106993	1149.70	1149.10	1150.23	1147.61	METAL	SLAB	2604
LF-351	COMM	N	125396	1235.80	1234.80	1236.47	1237.05	FRAME		5160
LF-353	COMM	N	125674	1237.10	1236.50	1238.53	1238.91	METAL	SLAB	13869
LF-360	RES.	Y	128476	1267.00	1263.10	1275.73	1274.81	METAL	BLOCK	720
LF-361	RES.	Y	128446	1266.90	1263.80	1275.57	1274.65	METAL	BLOCK	720
LF-362	RES.	Y	128535	1265.30	1263.40	1275.97	1275.05	METAL	BLOCK	720
LF-363	RES.	Y	128652	1266.80	1264.60	1276.44	1275.53	METAL	BLOCK	600
LF-364	RES.	N	128768	1267.50	1264.90	1276.91	1276.01	FRAME	SLAB	
LF-365	RES.	Y	129001	1274.30	1271.90	1277.85	1276.96	METAL	BLOCK	980
LF-366	RES.	Y	129100	1275.80	1272.20	1278.25	1277.36	METAL	BLOCK	980
LF-367	RES.	N	129156	1275.60	1272.40	1278.47	1277.59	MASONRY	BLOCK	1652
LF-368	RES.	Y	129237	1276.90	1274.40	1278.80	1277.93	METAL	BLOCK	980
LF-369	RES.	Y	129304	1277.30	1274.70	1279.07	1278.20	METAL	BLOCK	720
LF-370	RES.	Y	129408	1277.40	1275.10	1279.49	1278.63	METAL	BLOCK	500
LF-371	RES.	N	129751	1278.70	1277.00	1280.88	1280.03	FRAME	BLOCK	1739
LF-373	RES.	Y	129655	1275.90	1275.40	1280.49	1279.64	METAL	BLOCK	2730
LF-374	COMM	N	131624	1293.80	1281.70	1298.89	1297.66	METAL	SLAB	
LF-375	COMM	N	131768	1296.90	1295.20	1300.06	1298.81	METAL	SLAB	4284
LF-379	COMM	N	134712	1312.60	1312.50	1314.13	1313.14	MASONRY	SLAB	36450
LF-388	INSTIT	N	136000	1321.80	1319.60	1321.83	1321.94	FRAME	SLAB	1596
LF-390	INSTIT	N	136259	1322.70	1318.40	1323.38	1323.71	MASONRY	SLAB	13320
LF-391	INSTIT	N	136374	1323.70	1321.20	1324.07	1324.50	METAL	BLOCK	300
LF-392	INSTIT	N	136458	1324.10	1321.30	1324.57	1325.07	FRAME	SLAB	1224
LF-393	RES.	Y	136521	1324.50	1322.30	1324.95	1325.50	FRAME	BLOCK	1380

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
LF-395	RES.	N	136361	1315.90	1322.50	1323.99	1324.41	MASONRY	SLAB	1680
LF-396	CHURCH	N	136422	1322.00	1321.40	1324.36	1324.83	MASONRY	BLOCK	2912
LF-407	RES.	N	137427	1331.90	1329.50	1332.44	1333.10	FRAME	BLOCK	784
LF-408	RES.	N	137492	1332.60	1329.80	1333.14	1333.75	FRAME	BLOCK	660
LF-409	RES.	N	137539	1332.50	1330.30	1333.64	1334.22	FRAME	BLOCK	792
LF-411	RES.	N	137667	1333.50	1330.80	1335.01	1335.51	FRAME	BLOCK	903
LF-412	RES.	N	137721	1334.20	1331.70	1335.59	1336.05	FRAME	BLOCK	784
LF-413	RES.	N	137804	1335.50	1331.70	1336.48	1336.89	FRAME	BLOCK	784
LF-414	RES.	N	137846	1335.30	1332.60	1336.93	1337.31	FRAME	BLOCK	980
LF-415	RES.	N	137935	1336.00	1333.40	1337.76	1338.17	FRAME	BLOCK	1008
LF-416	RES.	N	138008	1336.40	1334.80	1338.33	1338.84	FRAME	BLOCK	1287
LF-419	CHURCH	N	137787	1331.40	1336.80	1336.29	1336.72	MAS/VENEER	BLOCK	1782
LF-420	MIXED	N	138419	1339.50	1340.00	1341.54	1342.63	FRAME	SLAB	3270
LF-421	COMM	N	138527	1340.30	1340.50	1342.39	1343.63	MAS/VENEER	SLAB	
LF-446	RES.	N	143415	1384.20	1384.00	1385.37	1386.06	FRAME	BLOCK	1537
LF-458	RES.	N	143864	1389.50	1381.80	1389.65	1390.10	FRAME	BLOCK	986
LF-464	COMM	N	144300	1390.30	1390.30	1392.87	1393.55	FRAME	BLOCK	4900
LF-478	RES.	N	148279	1424.20	1421.90	1425.31	1426.24	FRAME	BLOCK	1176
LF-479A	COMM	N	149494	1432.5	1431.10	1435.20	1436.08	METAL	INHAB. BASEMENT	
LF-479D	COMM	N	148497	1435.1	1418.20	1427.08	1428.01	MAS/VEN	SLAB	
LGBC-005	RES.	Y	4601	1480.34	1476.71	1480.95	1484.13	FRAME	CRAWLSPACE	
LGBC-006	RES.	Y	4452	1477.55	1471.99	1479.37	1482.91	FRAME	CRAWLSPACE	
LGBC-007	RES.	N	4499	1475.74	1475.56	1479.87	1483.29	FR/MAS	SLAB	
LGBC-008	RES.	N	4921	1477.19	1475.08	1484.36	1486.75	FRAME	CRAWLSPACE	
LGBC-009	RES.	Y	5006	1479.92	1477.30	1485.27	1487.45	FRAME	CRAWLSPACE	
LPC-001	RES.	N	258	1086.2	1082.40	1088.35	1090.20	FRAME	CRAWLSPACE	
LPC-002	RES.	N	347	1086.2	1086.30	1088.09	1090.20	FR/MAS VEN	SLAB	
LPC-002A	RES.	N	86441	1093.80	1089.40	1094.38	1090.20	MAS/VEN	NOT INHAB. BASEMENT	
LPC-003	RES.	N	287	1085.6	1082.90	1088.26	1090.20	FRAME	CRAWLSPACE	
LPC-004	RES.	Y	215	1086.7	1083.80	1088.45	1090.20	FRAME	CRAWLSPACE	
LPC-005	RES.	N	352	1084.9	1082.70	1088.08	1090.20	MAS. VEN.	CRAWLSPACE	
LPC-006	RES.	N	341	1087.2	1083.20	1088.11	1090.20	FRAME	CRAWLSPACE	
LPC-032	RES.	N	1288	1107.2	1105.90	1108.59	1111.47	FR/MAS VEN	CRAWLSPACE	
LSFK-007	RES.	N	4978	1000.8	997.70	1002.33	1004.92	FRAME	CRAWLSPACE	
LSFK-008	RES.	Y	5155	1003.8	1001.00	1004.06	1006.85	FRAME	CRAWLSPACE	
LSFK-009	RES.	Y	5356	1004.8	1001.10	1005.88	1008.47	FRAME	CRAWLSPACE	
LSFK-010	RES.	Y	5487	1005.8	1002.30	1007.02	1009.37	FRAME	CRAWLSPACE	
LSFK-011	RES.	N	7027	1018.2	1015.10	1020.51	1023.15	FRAME	CRAWLSPACE	
LSFK-012	RES.	N	7100	1017.4	1014.80	1020.97	1023.56	FRAME	CRAWLSPACE	
LSFK-013	RES.	N	7242	1019.60	1016.1	1021.86	1024.34	FRAME	CRAWLSPACE	
LSFK-014	RES.	Y	7320	1020.1	1017.40	1022.35	1024.78	FRAME	CRAWLSPACE	
LSFK-015	MIXED	N	9126	1032.8	1032.40	1036.13	1039.34	FR./MAS.	SLAB	
LSFK-016	RES.	N	9643	1036.1	1036.40	1040.40	1043.62	FR/MAS VEN	SLAB	
LSFK-019	COMM.	N	10027	1041.4	1039.00	1042.44	1044.78	MASONRY	SLAB	
LSFK-025	MIXED	N	8260	1028.2	1027.70	1030.17	1033.17	FR./MAS.	SLAB	
PPC-01	CHURCH	N	3678	934.44	937.16	938.12	943.01	MASONRY	INHAB. BASEMENT	
PPC-22	RES.	N	15342	1032.68	1031.53	1033.45	1037.02	MAS/VEN	CRAWLSPACE	
RF-34	COMM.	N	39651	1437.6	1436.5	1438.8	1440.2	FRAME	CRAWLSPACE	
RF-35	RES.	N	39736	1433.9	1434.7	1438.9	1440.3	MASONRY	BASEMENT INHABITABLE	
RF-37	RES.	N	42133	1439.8	1439.7	1440.1	1442.4	MASONRY	SLAB	
RF-48	COMM.	N	45170	1445.5	1445.0	1449.2	1450.5	FRAME	SLAB	
RFGC-007	RES.	N	394	1400.7	1399.10	1401.85	1401.43	FRAME	SLAB	
RFGC-009	RES.	N	620	1401.7	1399.40	1403.18	1402.93	FRAME	CRAWLSPACE	
RFGC-019	RES.	N	1233	1406.1	1406.00	1408.00	1407.88	MAS. VEN.	CRAWLSPACE	
RFGC-037	RES.	Y	2454	1421.2	1417.90	1421.48	1420.58	FRAME	CRAWLSPACE	
RFGC-056	RES.	N	4862	1463.6	1463.00	1463.70	1463.47	FRAME	BASEMENT NOT INHABITABLE	
RFGC-057	RES.	Y	5151	1466.2	1463.50	1473.67	1473.41	FRAME	CRAWLSPACE	
RFGC-058	RES.	N	5380	1476.1	1474.00	1480.99	1480.71	MAS. VEN.	CRAWLSPACE	
RFGC-059	RES.	Y	5636	1480.9	1477.60	1483.38	1483.06	FRAME	CRAWLSPACE	
RFGC-060	RES.	Y	5973	1483.1	1479.10	1486.53	1486.16	FRAME	CRAWLSPACE	
RFKC-002	INSTIT	N	1922	1101.5	1101.00	1103.85	1105.40	MASONRY	SLAB	
RLC-01	RES.	N	882	900.30	897.23	903.41	904.38	FRAME	BASEMENT NOT INHABITABLE	
RLC-02	RES.	N	1664	906.34	904.80	909.06	910.74	FRAME	CRAWLSPACE	
RLC-04	COMM.	N	2104	914.88	913.88	915.27	917.48	MASONRY	SLAB	
RLC-06	RES.	N	2487	919.54	918.03	920.67	923.35	FRAME	CRAWLSPACE	
RLC-07	RES.	N	2588	921.83	921.00	922.09	924.90	FR/MAS VEN	BASEMENT NOT INHABITABLE	
RPC-01	RES.	N	2771	1426.33	1422.59	1426.74	1427.09	MAS. VEN.	BASEMENT NOT INHABITABLE	

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
RPC-02	RES.	N	2860	1423.34	1421.88	1427.04	1427.35	FR./MAS.	SLAB	
RPC-03	RES.	Y	2874	1426.53	1423.96	1427.09	1427.39	FRAME	CRAWLSPACE	
RPC-06	RES.	N	3919	1431.79	1428.30	1432.40	1432.00	FR/MAS VEN	CRAWLSPACE	
RPC-08	RES.	N	4832	1437.94	1433.88	1438.10	1437.69	FRAME	CRAWLSPACE	
RPC-09	RES.	N	6263	1445.41	1442.36	1445.99	1445.68	MAS. VEN.	BASEMENT NOT INHABITABLE	
RPC-10	RES.	N	6685	1442.93	1437.98	1447.93	1447.63	FR./MAS.	SLAB	
RPC-11	RES.	Y	6826	1447.69	1444.24	1448.56	1448.26	FRAME	CRAWLSPACE	
RPC-12	RES.	N	7841	1451.07	1450.28	1452.41	1451.96	FRAME	BASEMENT NOT INHABITABLE	
RPC-14	COMM.	N	7993	1451.63	1449.84	1453.01	1452.45	MAS. VEN.	SLAB	
RPC-16	RES.	Y	8234	1454.08	1451.08	1454.62	1453.86	FRAME	CRAWLSPACE	
RPC-17	RES.	Y	9430	1457.62	1454.68	1461.08	1461.14	FRAME	CRAWLSPACE	
RPC-18	RES.	N	9490	1456.24	1454.19	1461.16	1461.21	FRAME	CRAWLSPACE	
RPC-19	RES.	N	9755	1456.69	1454.17	1461.53	1461.54	FRAME	BASEMENT NOT INHABITABLE	
RPC-20	RES.	N	9839	1457.25	1454.94	1461.65	1461.64	FRAME	BASEMENT NOT INHABITABLE	
RPC-21	COMM.	N	9884	1457.30	1455.55	1461.71	1461.70	FRAME	SLAB	
RPC-22	COMM.	N	9941	1458.73	1456.15	1461.79	1461.77	FRAME	CRAWLSPACE	
RPC-23	RES.	N	10085	1456.42	1455.56	1461.99	1461.95	FR/MAS VEN	CRAWLSPACE	
RPC-24	RES.	Y	10318	1458.70	1455.02	1462.31	1462.23	FRAME	CRAWLSPACE	
RPC-25	RES.	N	10481	1457.99	1455.61	1462.58	1462.46	MAS. VEN.	BASEMENT NOT INHABITABLE	
RPC-26	RES.	N	10903	1463.11	1459.95	1463.78	1463.34	FRAME	BASEMENT NOT INHABITABLE	
RPC-32	COMM.	N	13947	1474.21	1468.88	1478.66	1479.36	MASONRY	SLAB	
RPC-33	RES.	Y	14442	1479.66	1475.20	1479.99	1480.89	FRAME	CRAWLSPACE	
SC-005	RES.	N	15051	1156.0	1154.30	1159.89	1160.24	MAS. VEN.	CRAWLSPACE	1287
SC-006	COMM.	N	14932	1154.8	1155.00	1159.43	1159.72	MAS. VEN.	CRAWLSPACE	1600
SC-007	RES.	N	14793	1158.0	1153.80	1158.89	1159.12	FRAME	CRAWLSPACE	2160
SC-008	RES.	N	14803	1154.1	1147.30	1158.93	1159.16	FRAME	PT. BASE NOT INHAB. CW SP	1248
SC-009	RES.	N	14631	1153.5	1149.50	1158.27	1158.41	MAS. VEN.	PT. BASE INHABIT., CW SP	1591
SC-010	RES.	N	14591	1155.1	1150.70	1158.12	1158.24	MAS. VEN.	SLAB	1065
SC-011	RES.	Y	14540	1154.1	1150.60	1157.92	1158.02	MASONARY	CRAWLSPACE	1014
SC-012	RES.	N	14496	1152.6	1146.40	1157.75	1157.82	FRAME	PT. BASEMENT NOT INHABIT.	1008
SC-013	RES.	N	14426	1150.80	1146.7	1157.48	1157.52	FRAME	CRAWLSPACE	1476
SC-014	RES.	N	14319	1152.2	1149.90	1157.07	1157.05	FRAME	CRAWLSPACE	648
SC-015	COMM.	Y	14219	1152.0	1149.30	1156.68	1156.62	MAS. VEN.	CRAWLSPACE	1872
SC-016	RES.	N	14178	1150.9	1147.40	1156.52	1156.44	FRAME	CRAWLSPACE	700
SC-017	RES.	N	14072	1150.3	1149.40	1156.11	1155.98	FRAME	CRAWLSPACE	756
SC-018	RES.	N	13857	1148.5	1146.80	1154.17	1154.03	FRAME	CRAWLSPACE	420
SC-019	RES.	N	13746	1149.3	1145.40	1152.23	1152.17	FRAME	CRAWLSPACE	470
SC-020	RES.	N	13652	1148.0	1141.00	1150.59	1150.60	MASONARY	PT. BASE NOT INHABITABLE	1980
SC-021	COMM.	N	13526	1147.1	1139.60	1148.38	1148.50	MAS. VEN.	CRAWLSPACE	1344
SC-022	RES.	N	13515	1144.7	1144.10	1148.19	1148.31	MAS. VEN.	FULL BASEMENT NOT INHABIT.	875
SC-026	RES.	N	13696	1147.5	1146.3	1151.35	1151.34	FRAME	CRAWLSPACE	840
SC-027	RES.	N	13847	1148.1	1146.3	1153.99	1153.86	FRAME	CRAWLSPACE	840
SC-028	RES.	N	13896	1148.2	1145.7	1154.85	1154.68	FRAME	CRAWLSPACE	552
SC-029	RES.	Y	13904	1148.1	1145.7	1154.99	1154.81	FRAME	CRAWLSPACE	924
SC-030	RES.	Y	13934	1147.9	1146.1	1155.51	1155.32	FRAME	CRAWLSPACE	684
SC-031	RES.	N	14229	1150.4	1147.2	1156.72	1156.66	FRAME	CRAWLSPACE	600
SC-032	RES.	N	14284	1152.5	1149.6	1156.93	1156.90	MASONARY	SLAB	400
SC-033	RES.	N	14332	1153.1	1144.7	1157.12	1157.11	FRAME	CRAWLSPACE	1064
SC-034	MIXED	N	14390	1153.7	1150.9	1157.34	1157.36	FRAME	CRAWLSPACE	952
SC-035	RES.	N	14436	1155.4	1151.7	1157.52	1157.56	FRAME	CRAWLSPACE	636
SC-036	COMM.	N	14521	1156.9	1151.3	1157.85	1157.93	FRAME	CRAWLSPACE	612
SC-037	RES.	Y	14605	1155.0	1151.9	1158.17	1158.30	FRAME	CRAWLSPACE	564
SC-038	RES.	Y	14660	1155.5	1152.7	1158.38	1158.54	FRAME	CRAWLSPACE	720
SC-039	RES.	Y	24828	1203.3	1200.0	1205.11	1205.07	FRAME	CRAWLSPACE	624
SC-040	RES.	Y	24828	1203.9	1199.2	1205.11	1205.07	FRAME	CRAWLSPACE	672
SC-041	RES.	Y	24828	1202.9	1199.4	1205.11	1205.07	FRAME	CRAWLSPACE	708
SC-042	RES.	Y	24828	1203.9	1200.4	1205.11	1205.07	FRAME	CRAWLSPACE	732
SC-043	COMM.	N	24828	1204.8	1203.8	1205.11	1205.07	FRAME	CRAWLSPACE	732
SC-071	RES.	Y	24828	1204.4	1201.6	1205.11	1205.07	FRAME	CRAWLSPACE	1022
SC-072	RES.	Y	24828	1204.0	1201.7	1205.11	1205.07	FRAME	CRAWLSPACE	938
SC-073	COMM.	N	24828	1202.0	1201.3	1205.11	1205.07	FRAME	CRAWLSPACE	1008
SC-100	RES.	Y	27058	1215.2	1211.40	1215.69	1216.99	FRAME	CRAWLSPACE	924
SC-101	RES.	Y	27058	1213.4	1212.00	1215.69	1216.99	FRAME	CRAWLSPACE	600
SC-102	RES.	Y	27058	1214.0	1212.10	1215.69	1216.99	FRAME	CRAWLSPACE	938
SC-103	RES.	Y	27058	1215.2	1211.80	1215.69	1216.99	FRAME	CRAWLSPACE	980
SC-137	RES.	Y	27058	1214.5	1211.90	1215.69	1216.99	FRAME	CRAWLSPACE	1150
SC-138	RES.	Y	27058	1214.6	1212.10	1215.69	1216.99	FRAME	CRAWLSPACE	552

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
SC-141	RES.	N	26654	1212.2	1210.7	1213.35	1214.29	MASONARY	PT BASE NOT INHABITABLE	960
SC-142	RES.	N	17264	1168.1	1167.5	1173.51	1173.37	FRAME	CRAWLSPACE	1107
SC-143	RES.	Y	17046	1166.6	1164.2	1171.92	1171.79	MASONARY	CRAWLSPACE	770
SC-144	RES.	N	16964	1165.7	1164.4	1171.20	1171.13	FRAME	CRAWLSPACE	840
SC-145	RES.	Y	16971	1168.1	1165.9	1171.26	1171.18	FRAME	CRAWLSPACE	840
SC-146	RES.	Y	16974	1167.7	1165.2	1171.29	1171.21	FRAME	CRAWLSPACE	545
SC-147	RES.	Y	16977	1168.8	1166.4	1171.31	1171.23	FRAME	CRAWLSPACE	481
SC-148	RES.	N	16915	1166.2	1164.0	1170.77	1170.73	FRAME	CRAWLSPACE	426
SC-149	RES.	Y	16915	1168.0	1163.6	1170.77	1170.73	FRAME	FULL BASE NOT INHABITABLE	392
SC-150	RES.	N	16935	1168.6	1165.6	1170.94	1170.89	MAS. VEN.	CRAWLSPACE	1579
SC-151	RES.	N	17465	1170.5	1168.7	1174.64	1174.65	MASONARY	CRAWLSPACE	3136
SC-153	RES.	Y	17699	1175.0	1170.8	1175.96	1176.14	FRAME	CRAWLSPACE	784
SC-154	RES.	N	17778	1174.6	1170.7	1176.40	1176.65	FRAME	CRAWLSPACE	1863
SC-155	RES.	N	17868	1173.9	1170.4	1176.91	1177.22	FRAME	CRAWLSPACE	980
SC-156	RES.	N	17863	1176.7	1173.2	1176.88	1177.19	MASONARY	FULL BASE NOT INHABITABLE	5073
SC-157	RES.	N	17929	1175.7	1172.8	1177.25	1177.61	FRAME	PT BASE NOT INHABITABLE	563
SC-159	RES.	N	17916	1171.3	1166.1	1177.18	1177.52	FRAME	CRAWLSPACE	896
SC-161	RES.	N	18457	1173.9	1170.4	1178.70	1179.16	FRAME	FULL BASE NOT INHABITABLE	1679
SC-162	RES.	N	18687	1174.4	1171.9	1179.26	1179.77	MASONARY	CRAWLSPACE	2040
SC-163	RES.	N	19021	1177.5	1170.3	1180.56	1180.75	MASONARY	FULL BASE NOT INHABITABLE	930
SC-164	RES.	N	19208	1179.0	1175.4	1181.33	1181.31	FRAME	CRAWLSPACE	910
SC-165	RES.	Y	19321	1180.9	1176.4	1181.80	1181.65	FRAME	FULL BASE INHABITABLE	1920
SC-166	RES.	N	19430	1180.8	1176.6	1182.25	1181.98	MASONARY	FULL BASE INHABITABLE	1701
SC-167	RES.	N	19562	1176.4	1179.5	1182.79	1182.38	MASONARY	SLAB	3720
SC-169	RES.	N	19961	1184.5	1181.1	1184.53	1184.26	MAS. VEN.	CRAWLSPACE	2208
SC-171	RES.	N	20659	1185.7	1181.1	1187.59	1187.69	MAS. VEN.	FULL BASE INHABITABLE	2030
SC-172	RES.	N	20736	1181.1	1180.7	1187.92	1188.07	FRAME	PT BASE NOT INHABITABLE	1620
SC-173	RES.	N	20879	1184.7	1182.3	1188.55	1188.77	MAS. VEN.	FULL BASE INHABITABLE	1053
SC-176	RES.	N	20133	1183.6	1188.7	1185.28	1185.11	FRAME	CRAWLSPACE	648
SC-182	RES.	N	19061	1174.3	1176.8	1180.72	1180.87	MAS. VEN.	CRAWLSPACE	1600
SC-183	RES.	N	18902	1176.9	1175.0	1180.07	1180.39	FRAME	FULL BASE NOT INHABITABLE	464
SC-184	RES.	N	18787	1170.7	1176.9	1179.59	1180.05	FRAME	CRAWLSPACE	784
SC-186	RES.	N	21833	1190.5	1187.3	1192.83	1193.25	MASONARY	CRAWLSPACE	1568
SC-187	RES.	Y	21812	1190.5	1186.6	1192.74	1193.16	MAS. VEN.	PT. BASE NOT INHABIT, CW SP	2637
SC-189	RES.	N	23123	1198.0	1193.9	1198.39	1198.72	MASONARY	CRAWLSPACE	3192
SC-190	RES.	N	23277	1197.4	1196.9	1199.00	1199.36	MASONARY	CRAWLSPACE	3977
SC-191	RES.	N	23374	1197.6	1196.7	1199.38	1199.76	MASONARY	FULL BASE NOT INHABITABLE	2312
SC-209	RES.	N	35527	1281.4	1278.4	1281.79	1282.46	MAS. VEN.	PT. BASE NOT INHABIT. CW. SP	1178
SC-210	RES.	N	35591	1282.1	1281.6	1282.39	1283.11	MASONARY	FULL BASE INHABITABLE	651
SC-236	RES.	N	39036	1316.3	1314.0	1318.35	1318.62	FRAME	CRAWLSPACE	672
SC-241	RES.	Y	39367	1321.0	1318.3	1321.98	1322.58	MASONARY	FULL BASE NOT INHABITABLE	1064
SC-242	RES.	Y	39373	1322.0	1318.5	1322.05	1322.66	MASONARY	CRAWLSPACE	2673
SC-243	RES.	N	39231	1318.8	1318.0	1320.49	1320.95	FRAME	CRAWLSPACE	938
SC-244	RES.	N	39138	1317.8	1313.7	1319.47	1319.84	MAS. VEN.	CRAWLSPACE	1092
SC-247	RES.	Y	39524	1323.0	1320.3	1323.70	1324.47	FRAME	CRAWLSPACE	720
SC-248	RES.	N	39635	1323.2	1321.5	1324.92	1325.80	FRAME	CRAWLSPACE	924
SC-249	RES.	N	39715	1325.5	1323.5	1325.80	1326.76	FRAME	CRAWLSPACE	1064
SC-250	RES.	N	39900	1326.6	1324.8	1327.83	1328.98	FRAME	CRAWLSPACE	672
SC-251	RES.	Y	40231	1327.5	1324.4	1330.97	1331.94	FRAME	CRAWLSPACE	924
SC-253	RES.	N	40275	1330.1	1328.0	1331.38	1332.32	MASONARY	FULL BASE INHABITABLE	2160
SC-254	RES.	Y	40136	1329.4	1326.0	1330.08	1331.11	FRAME	CRAWLSPACE	576
SC-262	RES.	Y	39575	1322.8	1319.4	1324.26	1325.08	FRAME	CRAWLSPACE	816
SC-265	RES.	N	40313	1329.1	1326.5	1331.73	1332.65	MAS. VEN.	SLAB	1320
SC-275	MIXED	N	41671	1341.5	1340.8	1344.59	1344.79	MASONARY	CRAWLSPACE	756
SC-276	COMM.	N	41844	1343.8	1340.0	1346.50	1346.91	MASONARY	CRAWLSPACE	1595
SC-279	COMM.	N	42564	1351.2	1349.8	1353.52	1354.43	FRAME	CRAWLSPACE	924
SC-280	RES.	N	42833	1351.1	1350.1	1355.15	1355.89	MAS. VEN.	CRAWLSPACE	1989
SC-281	RES.	Y	42912	1354.4	1351.0	1355.62	1356.32	FRAME	CRAWLSPACE	924
SC-282	RES.	Y	43027	1352.7	1349.3	1356.32	1356.94	FRAME	CRAWLSPACE	943
SC-283	RES.	N	43137	1352.6	1350.0	1356.98	1357.54	METAL	SLAB	1260
SC-284	RES.	N	43146	1354.7	1347.9	1357.04	1357.59	FRAME	CRAWLSPACE	812
SC-285	RES.	N	43490	1353.7	1347.7	1359.15	1359.50	FRAME	CRAWLSPACE	1110
SC-286	COMM.	N	43579	1355.5	1351.3	1359.69	1360.00	FRAME	CRAWLSPACE	576
SC-287	RES.	N	43675	1356.3	1353.4	1360.29	1360.54	FRAME	CRAWLSPACE	744
SC-288	RES.	N	43800	1359.8	1356.2	1361.06	1361.24	FRAME	CRAWLSPACE	1258
SC-289	RES.	Y	43911	1358.6	1355.6	1361.74	1361.86	FRAME	CRAWLSPACE	1782
SC-290	RES.	Y	43920	1359.0	1355.5	1361.80	1361.91	MAS. VEN.	CRAWLSPACE	1215

Building Number	Use	Mobile Home	RIVER Mile	First Floor Level	Low Ground Elevation	April 1977 Flood Elevation	100 YEAR Flood Elevation	Type of Construction	Type of Foundation	First Floor Area
SC-291	RES.	N	44037	1359.7	1356.8	1362.52	1362.57	FRAME	FULL BASE NOT INHABITABLE	1768
SC-292	RES.	Y	44128	1360.5	1356.9	1363.08	1363.08	FRAME	CRAWLSPACE	672
SC-293	RES.	N	44178	1360.0	1358.4	1363.40	1363.40	FRAME	CRAWLSPACE	956
SC-294	COMM.	N	44245	1359.1	1358.8	1363.82	1363.88	MASONARY	CRAWLSPACE	459
SC-295	RES.	N	44437	1362.8	1360.1	1365.05	1365.23	FRAME	CRAWLSPACE	924
SC-296	RES.	N	44509	1362.7	1361.0	1365.52	1365.73	FRAME	CRAWLSPACE	924
SC-297	RES.	N	44462	1364.1	1361.4	1365.21	1365.40	MASONARY	SLAB	1350
SC-298	RES.	N	44528	1364.4	1360.6	1365.64	1365.87	FRAME	CRAWLSPACE	1485
SC-299	RES.	N	44594	1364.6	1361.8	1366.06	1366.33	MASONARY	FULL BASE NOT INHABITABLE	480
SC-301	RES.	N	44803	1366.7	1363.0	1367.40	1367.80	FRAME	CRAWLSPACE	966
SC-303	RES.	Y	44963	1367.2	1363.7	1368.42	1368.93	FRAME	CRAWLSPACE	406
SC-330	RES.	N	49660	1415.3	1413.5	1422.37	1422.55	FRAME	PT. BASE NOT INHABIT,CW SP	537
SC-337	RES.	N	51590	1428.5	1428.6	1430.28	1431.27	MAS. VEN.	CRAWLSPACE	1710
SC-374	RES.	N	59357	1497.0	1494.2	1500.78	1501.56	MAS. VEN.	FULL BASE NOT INHABITABLE	529
SC-375	RES.	N	59421	1498.6	1493.9	1501.35	1502.17	MASONARY	SLAB	1584
SC-376	RES.	N	59525	1499.5	1493.4	1502.27	1503.16	FRAME	FULL BASE NOT INHABITABLE	609
SC-377	RES.	N	59580	1494.3	1494.3	1502.75	1503.69	MAS. VEN.	CRAWLSPACE	2356
SC-378	RES.	N	59541	1501.5	1498.6	1502.41	1503.32	MAS. VEN.	CRAWLSPACE	1525
SC-379	RES.	Y	59605	1500.7	1498.4	1502.97	1503.93	MAS. VEN.	CRAWLSPACE	1372
SC-380	RES.	N	59739	1502.1	1499.5	1504.15	1505.21	MAS. VEN.	CRAWLSPACE	2108
SC-382	RES.	Y	60127	1506.4	1502.1	1506.76	1507.78	MAS. VEN.	CRAWLSPACE	1625
SC-384	RES.	Y	60225	1507.2	1503.9	1507.33	1508.31	MAS. VEN.	CRAWLSPACE	1891
SC-389	RES.	N	62319	1519.7	1516.7	1521.05	1522.26	MASONARY	PT. BASE NOT INHABITABLE	3366
SC-391	RES.	N	62499	1522.4	1519.3	1522.52	1523.76	FRAME	CRAWLSPACE	1512
SC-394	RES.	N	62526	1521.8	1519.9	1522.73	1523.97	MASONRY	CRAWLSPACE	784
SC-396	RES.	N	62338	1520.8	1517.6	1521.22	1522.43	MAS. VEN.	CRAWLSPACE	1974
SC-406	COMM	N	13219	1140.60	1139.80	1143.53	1143.83	METAL	PT. BASEMENT NOT INHABIT.	455
SC-415	INSTIT	N	24068	1201.00	1200.20	1202.13	1202.52	MASONARY	CRAWLSPACE	1372
SC-416	COMM	N	24369	1200.40	1198.20	1203.31	1203.53	FRAME	CRAWLSPACE	2135
SC-419	RES.	N	14262	1155.50	1151.80	1156.85	1156.81	FRAME	PT. BASEMENT NOT INHABIT.	600
SC-420	RES.	N	14412	1156.10	1152.50	1157.42	1157.46	FRAME	PT. BASEMENT NOT INHABIT.	960
SC-423	COMM	N	21349	1190.60	1190.50	1190.60	1191.08	FRAME	CRAWLSPACE	1148
SC-427	RES.	N	32014	1252.30	1251.80	1253.28	1253.71	FRAME	CRAWLSPACE	1334
SC-428	RES.		32278	1254.60	1253.50	1255.93	1256.41	MAS. VEN.	PT. BASEMENT INHABITABLE	1352
SC-429?	RES.		32419			1257.34	1257.85	FRAME	CRAWLSPACE	1075
TFB-003	CHURCH	N	484	1173.2	1177.80	1174.25	1174.68	MAS. VEN.	BASEMENT INHABITABLE	
TFB-004	CHURCH	N	761	1181.3	1178.10	1182.13	1182.53	FRAME	CRAWLSPACE	
TFB-022	RES.	N	1555	1188.3	1192.40	1191.73	1192.18	MAS. VEN.	BASEMENT INHABITABLE	
TFB-023	RES.	N	1625	1194.3	1192.00	1195.42	1195.53	FRAME	CRAWLSPACE	
TFB-024	RES.	N	1757	1196.2	1193.60	1196.82	1196.93	MAS. VEN.	CRAWLSPACE	
TFB-100	COMM.	N	15924	1443.8	1443.10	1447.29	1447.75	MASONRY	SLAB	
TFB-101	CHURCH	N	15992	1445.0	1445.40	1449.14	1449.41	MASONRY	BASEMENT INHABITABLE	
TFB-51	COMM.	N	4301	1231.3	1230.70	1233.37	1233.50	METAL	SLAB	
TFB-53	CHURCH	N	5509	1247.5	1249.10	1254.12	1254.64	MAS. VERN.	BASEMENT INHABITABLE	
TFB-55	RES.	N	6158	1265.9	1263.60	1266.57	1266.41	FRAME	CRAWLSPACE W 1/2 BSMT	
TFB-56	RES.	N	6365	1268.2	1264.80	1270.37	1270.67	FRAME	CRAWLSPACE	
TFB-57	RES.	Y	6504	1270.7	1267.70	1272.47	1272.64	FRAME	CRAWLSPACE	
TFB-58	RES.	N	6586	1270.0	1266.60	1273.28	1273.59	FRAME	CRAWLSPACE	
TFB-59	RES.	N	6806	1272.5	1270.10	1275.45	1276.14	FRAME	CRAWLSPACE	
TFB-62	COMM.	Y	7237	1281.5	1279.40	1282.58	1282.91	FRAME	CRAWLSPACE	
TFB-63	RES.	N	7327	1281.80	1279.5	1284.51	1284.95	FRAME	CRAWLSPACE	
TFB-64	RES.	Y	7490	1286.6	1283.20	1287.99	1288.64	FRAME	CRAWLSPACE	
TFB-65	RES.	N	7693	1291.1	1290.30	1292.93	1292.76	FRAME	CRAWLSPACE	
TFB-73	RES.	Y	9518	1324.9	1322.10	1326.16	1326.39	FRAME	CRAWLSPACE	
TFB-74	RES.	Y	9625	1325.4	1322.00	1327.70	1328.02	FRAME	CRAWLSPACE	
TFB-75	RES.	N	9729	1327.5	1324.90	1329.20	1329.61	FRAME	CRAWLSPACE	
TFB-76	RES.	N	9836	1330.3	1327.10	1330.74	1331.25	FRAME	CRAWLSPACE	
TFB-78	RES.	N	9994	1332.0	1330.70	1333.06	1333.70	FRAME	CRAWLSPACE	
TFB-81	RES.	N	10438	1337.3	1339.80	1339.93	1340.78	FRAME	BASEMENT INHABITABLE	
TFB-99	MIXED	N	15888	1443.1	1442.40	1446.31	1446.87	MASONRY	SLAB	
WF-01	RES.	N	10205	1477.36	1473.41	1480.58	1481.50	FRAME	CRAWLSPACE	
WF-02	RES.	Y	10907	1481.27	1477.88	1481.49	1482.08	FRAME	CRAWLSPACE	

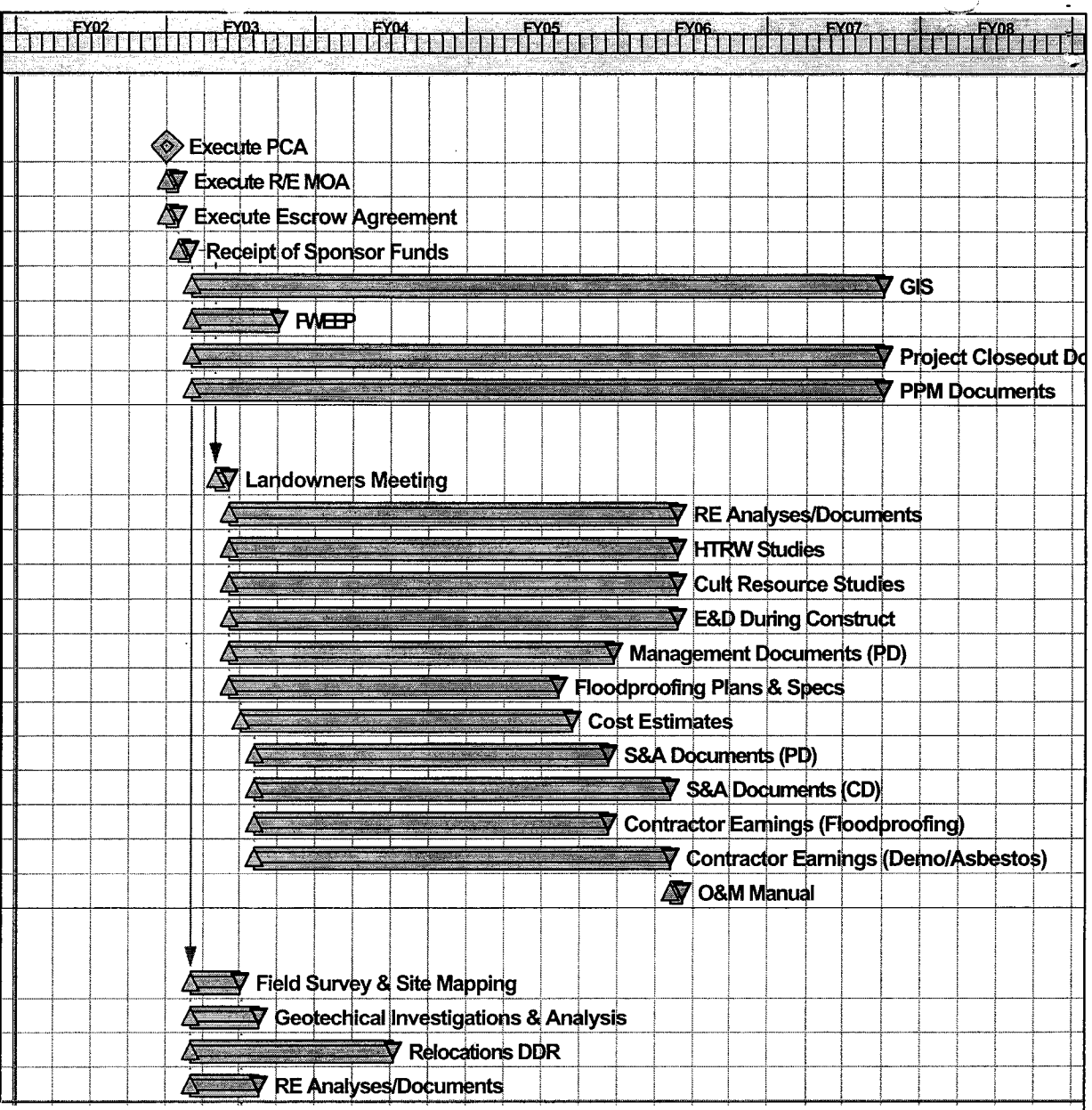
BUCHANAN COUNTY (VA)
NONSTRUCTURAL PROJECT

DETAILED PROJECT REPORT

APPENDIX 2

Project Implementation Schedule

Activity ID	Activity Description	Early Start	Early Finish
PROJECT MANAGEMENT			
K0000	Execute PCA	30SEP02*	
KD000	Execute R/E MOA	30SEP02	01NOV02
KE000	Execute Escrow Agreement	30SEP02	30OCT02
KE010	Receipt of Sponsor Funds	31OCT02	29NOV02
WH000	GIS	02DEC02	06JUL07
WHF00	FWEEP	02DEC02	03JUL03
Y0000	Project Closeout Documents	02DEC02	06JUL07
Z0000	PPM Documents	02DEC02	06JUL07
FLOODPROOFING/ACQUISITION			
PROJECT IMPLEMENTATION			
WC0003	Landowners Meeting	31JAN03	03MAR03
WC000C	RE Analyses/Documents	04MAR03	22FEB06
WE000C	HTRW Studies	04MAR03	22FEB06
WF000C	Cult Resource Studies	04MAR03	22FEB06
WJ000C	E&D During Construct	04MAR03	22FEB06
WN000C	Management Documents (PD)	04MAR03	22SEP05
WA000C	Floodproofing Plans & Specs	05MAR03	12MAY05
WG000C	Cost Estimates	04APR03	13JUN05
WK000C	S&A Documents (PD)	06MAY03	08SEP05
WK000C1	S&A Documents (CD)	06MAY03	08FEB06
WL000C	Contractor Earnings	06MAY03	08SEP05
WL000C1	Contractor Earnings	06MAY03	08FEB06
YCB00C	O&M Manual	09FEB06	10MAR06
RINGWALLS			
Relocations DDR-Hurley & Tecnology Career Ceter			
TAA00Q	Field Survey & Site Mapping	02DEC02	04APR03
TAE00Q	Geotechical Investigations &	02DEC02	16MAY03
TAG00F	Relocations DDR	02DEC02	06APR04
TC000Q	RE Analyses/Documents	02DEC02	16MAY03



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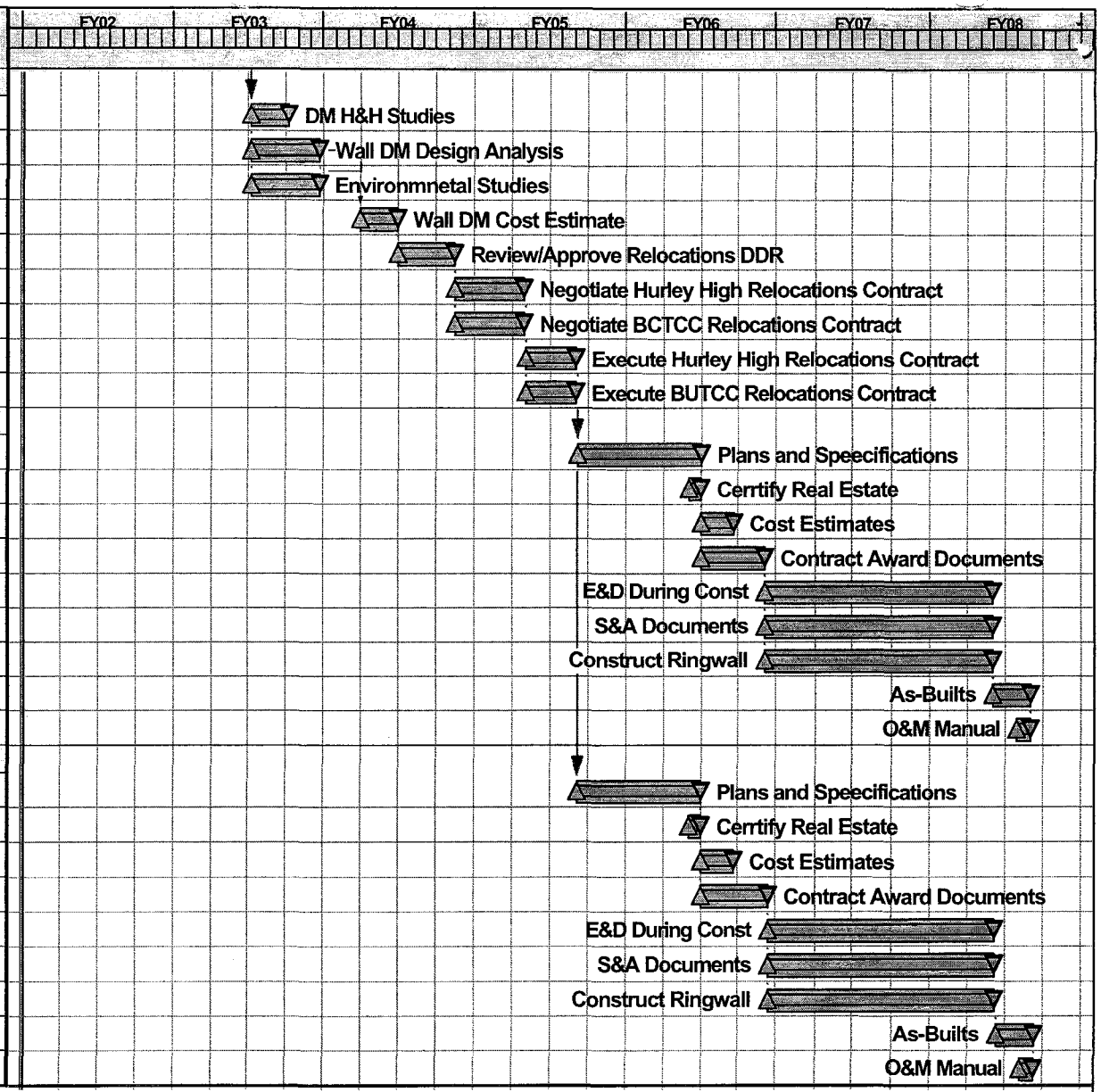
U.S. Army Corps of Engineers

Buchanan County - NonStructural Project

Buchanan Co - Nonstructural

Date	Revision	Checked	Approved
13SEP01			

Activity ID	Activity Description	Early Start	Early Finish
Relocations DDR- Hurley & Tecnology Career Ceter			
TAC00Q	DM H&H Studies	07APR03	07JUL03
TAD00Q	Wall DM Design Analysis	07APR03	19SEP03
TD000Q	Environmnetal Studies	07APR03	19SEP03
TG000Q	Wall DM Cost Estimate	30DEC03	31MAR04
TG000Q10	Review/Approve Relocations DDR	01APR04	13AUG04
TG000Q20	Negotiate Hurley High Relocations	16AUG04	28JAN05
TG000Q40	Negotiate BCTCC Relocations	16AUG04	28JAN05
TG000Q30	Execute Hurley High Relocations	31JAN05	03JUN05
TG000Q50	Execute BUTCC Relocations	31JAN05	03JUN05
Hurley High School			
WA000F	Plans and Speecifications	06JUN05	04APR06
WCP00F	Cerrtify Real Estate	06MAR06	04APR06
WG000F	Cost Estimates	05APR06	20JUN06
WI000F	Contract Award Documents	05APR06	05SEP06
WJ000F	E&D During Const	06SEP06	29FEB08
WK000F	S&A Documents	06SEP06	29FEB08
WL000F	Construct Ringwall	06SEP06	29FEB08
YAC00F	As-Builts	03MAR08	02JUN08
YCB00F	O&M Manual	02MAY08	02JUN08
Buchanan County Technology Career Center			
WA00G	Plans and Speecifications	06JUN05	04APR06
WCP00G	Cerrtify Real Estate	06MAR06	04APR06
WG00G	Cost Estimates	05APR06	20JUN06
WI00G	Contract Award Documents	05APR06	12SEP06
WJ00G	E&D During Const	13SEP06	07MAR08
WK00G	S&A Documents	13SEP06	07MAR08
WL00G	Construct Ringwall	13SEP06	07MAR08
YAC00G	As-Builts	10MAR08	09JUN08
YCB00G	O&M Manual	09MAY08	09JUN08



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U.S. Army Corps of Engineers

Buchanan County - NonStructural Project

Buchanan Co - Nonstructural

Date	Revision	Checked	Approved
13SEP01			

US Army Corps
of Engineers
Huntington District

January 2002

Section 202 General Plan Nonstructural Project
Appendix U
Buchanan County, Virginia
Levisa Fork Basin

Volume 1
Detailed Project Report

Volume 2
Real Estate Plan

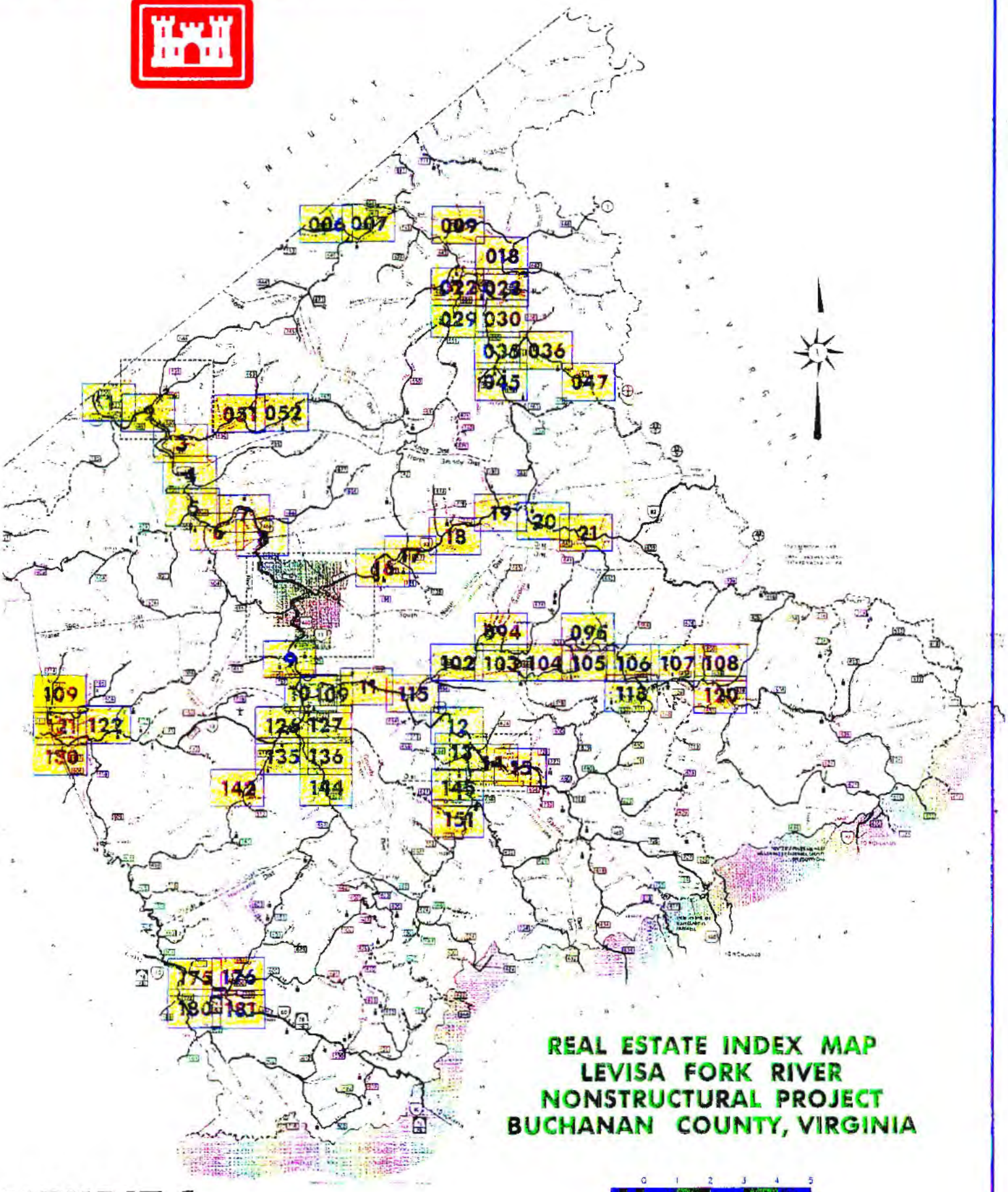
Volume 3
Engineering Technical Appendix

Volume 4
Baseline Cost Estimate

Volume 5
Project Management Plan

Volume 6
Final Environmental Assessment

S. ARMY CORPS OF ENGINEERS



REAL ESTATE INDEX MAP
LEVISA FORK RIVER
NONSTRUCTURAL PROJECT
BUCHANAN COUNTY, VIRGINIA

0 1 2 3 4 5
SCALE IN MILES

EXHIBIT A

REAL ESTATE PLAN
(REP)

BUCHANAN COUNTY NONSTRUCTURAL FLOOD DAMAGE REDUCTION PROJECT

I N D E X

EXHIBITS

REAL ESTATE PLAN
FOR THE
BUCHANAN COUNTY NONSTRUCTURAL FLOOD DAMAGE REDUCTION PROJECT

1. PROJECT DESCRIPTION.

This Real Estate Plan (REP) covers the lands involved in the Buchanan County Nonstructural Flood Damage Reduction Project. This cost shared nonstructural project is a strictly voluntary program consisting of either acquiring eligible structures and relocating occupants to a flood safe site or floodproofing structures in place. There are 730 structures covered by this report of which 408 structures are identified as eligible for acquisition, the other 322 for floodproofing. The most common method of floodproofing is raising structures in place. Other floodproofing methods include ringwalls, veneer walls, and moving structures to higher elevations on contiguous property. Of the structures identified for acquisition, over 60% are residential structures, with single family homes predominating. Most non-residential structures are relatively small commercial structures dispersed throughout the project area.

Section 103m of the Water Resources Development Act of 1986 (Public Law 99-662, paragraph 2.2) required that all future flood control projects be cost shared with a local sponsor. The Buchanan County Board of Supervisors has been identified as the cost-sharing non-Federal sponsor.

Buchanan County is Virginia's top coal producing county. The topography is rugged with narrow valleys surrounded by steep ridges. This rugged topography has limited most development in the county to the floodplain. The Levisa Fork River is tightly flanked in many areas by highways, railroads, and coal mining infrastructure, as well as commercial and residential structures. The steep slopes of the channel produce hazardous flooding conditions during severe storm events.

The lands eligible for this project are widely dispersed throughout Buchanan County (see map titled "Exhibit A"). The downstream limit of the study area begins on the Levisa Fork at the Kentucky/Virginia state line and extends upstream to Grundy, Virginia. There is a separate flood control project currently underway in Grundy. On the easterly side of the town, the Buchanan County project starts up again where the Grundy project ends, and runs up the Levisa River to Keen Mountain. Another leg

of the project starts at Grundy and runs up Slate Creek past Slate, Virginia, to near the Virginia/West Virginia state line. In northern Buchanan County there are eligible structures on Pawpaw Creek, Left Fork, Lester Fork, Laurel Fork, Knox Creek, and Straight Fork. In south and southwestern Buchanan County, on the Dickenson County Line, there are eligible structures on Greenbrier Creek, Little Greenbrier Creek, Hurricane Creek, Indian Creek, and several other minor tributaries. There are small pockets of isolated eligible structures that are not geographically near other eligible structures.

The project area is typical of the central Appalachian Region. Narrow river and stream valleys form branch-like patterns separated by high ridges and knobs. Elevations from stream beds to ridgetops can vary by as much as 1,200 feet or more. Due to this topography, most of the level developable land is located in flood prone areas. Consequently, most development is threatened by recurring floods. All structures included in this report are located in the floodplain at or below the April 1977 flood elevation.

The project will be implemented over a six-year time period. The table below shows the breakout of eligible structures:

Table 1

	ACQUISITION STRUCTURES	FLOODPROOF STRUCTURES	PUBLIC FAC RELO/FLDPF	**TOTAL**
Residential	273	275	0	548
Churches	12	9	0	21
Commercial	105	26	0	131
Institutional	7	3	3	13
Mixed Use	11	6	0	17
TOTAL	408	319	3	730

2. PROJECT AUTHORIZATION.

2.1 Public Law 96-367

In April 1977, the Big Sandy Basin, including the area covered by this report, was devastated by the flood of record. Total losses caused by that flood were an estimated $684,900,000 (1995 price level). As a direct result of this flooding, Congress enacted Section 202 of the Energy and Water Development Appropriation Act of 1981 (P.L. 96-367). This Act directed the Secretary of the Army, acting through the Chief of Engineers, to

design and construct, at full federal expense, flood control measures on the Levisa and Tug Forks of the Big Sandy River and on the Cumberland River. This law provides for a level of protection against flooding at least sufficient to prevent future losses to the communities from flooding such as that which occurred in April 1977.

In May 1984, Buchanan County was again hit by a major flood event. In response to this flood, Congress appropriated $21 million in the Supplemental Appropriations Act of 1984 (P.L. 98-332), to "implement immediately nonstructural flood control measures such as relocation sites, floodproofing and floodplain acquisition and evacuation..."

In response to this and the previous legislation, several fully federally funded flood protection/reduction projects have already been initiated in the Tug Fork Basin.

The structural projects are the West Williamson Floodwall in Mingo County, West Virginia (construction completed); the Williamson CBD Floodwall, Mingo County, West Virginia (construction completed); the Matewan Structural Project in Mingo County, West Virginia (construction completed); and the South Williamson Structural Project in Pike County, Kentucky (under construction). Snagging and clearing of the Tug Fork has been accomplished in the Williamson and South Williamson areas.

2.2 Public Law 99-662

Section 103 of the Water Resources Development Act of 1986 (P.L. 99-662), required that all future flood control projects be cost-shared with a local sponsor. Projects are currently being implemented in accordance with this legislation. In West Virginia, the Lower Mingo County, Nonstructural Flood Control Project and the Upper Mingo County, Nonstructural Flood Control Project, in Mingo County, West Virginia are both near completion. In Kentucky, we have the Pike County Nonstructural Project, in Pike County, Kentucky and the Martin County Nonstructural Project, in Martin County, Kentucky. In Virginia, the Grundy Nonstructural Flood Control Project is being implemented under this legislation. The project proposed in this report will be the second nonstructural project to be implemented in the Commonwealth of Virginia.

In response to Public Law 96-367 and subsequent legislation, and in accordance with Chapter 12 of ER 405-1-12, this Real Estate Plan (REP) is being submitted as Volume 2 of the Detailed Project Report (DPR) for approval. This REP is to be considered tentative in nature and for planning purposes only. Both the

final real property acquisition line and the estimate of cost are subject to change, even after this report is approved.

3. GENERAL DESCRIPTION AND MAPS OF THE AREA.

3.1 Topographic Maps

The enclosed topographic maps show the location and extent of land covered by this report. Such features as state and county boundaries, railroads, state and federal roads, airport, affected structures, preliminary property lines, rivers, streams and creeks are shown. Individual tract boundaries with acreages, assigned structure numbers, floodway line, river mile markers and red/green (acquisition/floodproofing) designations show the scope of work to be performed.

3.2 General Description of the Project

Most previous flood control projects of this magnitude were performed in phases. At team meetings, and in coordination with the local sponsor, it has been determined that there will be only one phase. Based on participation, the project will be prioritized into geographic areas. This determination will be made based on public response after the public meeting.

3.3 Access and Roads

The local road access pattern generally follows the streams in the valley bottoms. As is typical throughout the region, the best roads are located along the longer, broader, main valleys. Some lateral routes in the valleys of principal tributaries are rock base and maintained in good year-round condition. Access in the minor tributaries is, for the most part, poorly maintained.

The paved arterial routes on the Federal, State and Secondary State Routes system, such as U.S. Route 460; State Route 83, and Secondary State Routes 3, 700, 638, and 652 are paved and maintained in good condition. U.S. Route 460 is the principal access route in the area, connecting the county seat, Grundy, with Pikeville, Kentucky to the west and Bluefield, Virginia to the east.

The Norfolk Southern Railway has extensive facilities in the area with its main tracks running along Levisa Fork River and several of the creeks. There is one airport in the area, the Grundy Municipal Airport with a 2,200' runway. The largest community in the area is Grundy, the county seat, with an estimated 1990 population of approximately 1,300. Buchanan County had an estimated population of 26,978 in 2000.

3.4 Maps of the Area

Attached is an exhibit designated "Exhibit A" which is a general area map which shows an overview of the area covered by this report. Also attached are 66 topographical maps showing the location of the individual structures included in this project.

3.5 Landowners' Attitudes

While no recent formal study has been conducted as to the attitudes of landowners in the project area toward a voluntary nonstructural flood protection plan, reaction to other voluntary projects in the basin has been favorable. The voluntary nature of these projects has virtually eliminated opposition to them.

4. GOVERNMENT- OR SPONSOR-OWNED LAND.

There is no known Government owned land within the project area. There is currently no known eligible Sponsor owned land within the project area. However, the Sponsor has indicated that the Buchanan County School Board is contemplating conveying certain lands to the Sponsor. Should this occur, the Sponsor can receive credit for the fair market value of the lands eligible for, and provided as part of the project. These lands are not part of the School Board properties identified in this report as being eligible for relocation as public facilities.

5. NAVIGATIONAL SERVITUDE.

The issue of navigational servitude is not applicable to this project.

6. FACILITIES TO BE RELOCATED.

6.1 Public Schools

There are two public schools in the project which will receive top priority. They are Hurley High School and the Buchanan County Technology and Career Center. These schools have qualified for floodproofing by ringwall. Preliminary cost comparisons indicate that ringwalls are the least expensive option.

These two public facilities are eligible to be relocated. Preliminary Attorney's Opinions of Compensability have been prepared and preliminary investigations show that the public entities owning these facilities have compensable interests. Final Attorney's Opinions will be prepared before entering into negotiations with the owners of the respective facilities.

Any conclusion or categorization contained in this report that an item is a utility or facility relocation to be performed by the non-Federal sponsor as part of its LERRD responsibilities is preliminary only. The Government will make a final determination of the relocations necessary for the construction, operation, or maintenance of the project after further analysis and completion and approval of Final Attorney's Opinions of Compensability for each of the impacted utilities and facilities.

Cemeteries within the project area will remain, including any necessary access thereto.

The acquisition does not constitute a town relocation.

7. ACQUISITION CRITERIA.

7.1 Estates to be acquired.

To accomplish the Buchanan County Nonstructural Flood Damage Reduction Project, it is proposed to acquire the standard fee estate, as set forth in Chapter 5 of ER 405-1-12. Minerals will normally be acquired with the surface; however, mineral interests found to be in third parties will be left outstanding. For structures floodproofed, owners must enter into a floodproofing agreement as required by Paragraph 5-4 of CEORDR 1105-2-4.

7.2 Lands, Easements, Rights-of-Ways, Relocations and Disposal of Lands (LERRD)

As mentioned previously, this would be the second nonstructural project to be implemented in the Levisa Fork Basin. Typically, acquisition of lands, easements, rights-of-ways, relocations and disposal lands (LERRD) are the responsibility of the non-federal sponsor. However, the sponsor, the Buchanan County Board of Supervisors, has indicated that it wishes the Corps to perform the acquisitions on its behalf. No determination as to the County Commission's land acquisition experience or ability has been made. Following execution of the Project Cooperation Agreement (PCA), a Memorandum of Agreement (MOA) will be entered into between the Corps and the Board of Supervisors which will provide for this acquisition service. Generally, all project lands will be acquired in the name of the Board of Supervisors. The Board will contribute cash to cover its cost-share portion of the total expected obligations and expenditures for each fiscal year. The non-federal sponsor's cost share has been determined to be five percent in accordance with Section 103m of the Water Resources Development Act of 1986 (Public Law 99-662).

7.3 Project Phases

As indicated in Paragraph 3.2, there will be only one phase, and if participation exceeds expectations, the project could be broken into geographic areas. This determination will be made after the public meeting. The Board of Supervisors requested and the Corps has agreed that the public schools will get top priority. The project has been planned to be implemented over a 6 year period (72 months over 6 fiscal years). A landowners meeting will be held, immediately after which applications will be accepted for floodproofing/acquisition.

7.4 Structures Eligible for Acquisition

7.4a Category

Structures eligible for acquisition fall into one of the following two sub-categories:

1. Residential or non-residential structures which cannot be floodproofed due to their condition, the depth of flooding experienced during the April 1977 flood, location in the floodway, or because there is insufficient room for floodproofing are shown in red on the map exhibits. The floodway and floodplain are shown on the exhibits. Any structures inside the floodway are precluded from any other consideration than acquisition due to FEMA (Federal Emergency Management Administration) regulations.

2. Residential or nonresidential structures that preliminary cost estimates of floodproofing versus acquisition indicated it would be more economical to acquire than to floodproof are also shown in red on the map exhibits.

7.5 Condemnation

In this voluntary program, condemnation procedures will be used if voluntary floodplain acquisition participants ask to have price disagreements settled by the courts or in cases where owners cannot convey clear title. Under the current plan, condemnation would be initiated by, and title would be taken in the name of the United States. Title would then be quitclaimed to the Board of Supervisors at the earliest practical date.

7.6 Buy-Up to Floodproof Option

For those structures which originally qualified for floodproofing, but for which the floodproofing versus acquisition cost comparison indicated acquisition was the least costly alternative, the owner may pay the cost difference between

acquisition and floodproofing in order to have the structure floodproofed. However, when floodproofing is the least costly alternative, owners cannot buy up to acquisition. This second case is based on the assumption that such a condition would amount to paying something less than fair market value for the property and relocation benefits as required by Public Law 91-646.

7.7 Structure/Land Eligibility

Eligibility of structures and properties will be based on the date of the execution of the PCA. The scope of the project is currently identified as 730 residential and nonresidential structures located within the floodplain of the April 1977 flood in the Buchanan County project area that received significant damages to habitable living space from the April 1977 flood, or a recurrence of a flood equal in magnitude. To be eligible, the structure must have been flood prone on the date of the execution of the PCA. If an eligible structure is removed and replaced thereafter by the owner, the replacement structure will not become eligible. Tracts in the project area which do not contain eligible structures are not eligible for the program. Eligible tracts will be acquired in their entirety, including all contiguous unimproved land. The only exceptions to this are: (1) Eligible and ineligible structures co-located on a single tract; (2) tracts containing large areas of contiguous unimproved land located entirely out of the floodplain. In these situations owners may be required or allowed to retain portions supporting the ineligible structures or portions located out of the floodplain if they waive any severance damages. Each case will be looked at individually as to access, utility and fulfillment of project objectives. For the purpose of this report ineligible structures and large unimproved portions of eligible tracts having access and located out of the floodplain have been disregarded. Past experience has indicated that the majority of owners choose to retain these lands.

7.8 Replacement Housing/ DSS

If homeowners elect to participate in the acquisition program and receive replacement housing benefits, they must relocate out of the floodplain of the April 1977 flood, or the 100 year floodplain, whichever is higher. Housing in the floodplain is not considered decent, safe and sanitary (DSS) and allowing people to relocate into areas eligible for the project would frustrate project purposes.

7.9 Demolition/ Restoration

Immediately after acquisitions are completed and floodplain residents have been relocated, acquired structures and appurtenant facilities will be removed. The floodplain area will be restored by seeding and grading to a natural appearance. While the Corps will perform the work as part of project cost, operation and maintenance of these lands immediately becomes the responsibility of the non-federal sponsor upon acquisition.

7.10 Recycled Tracts.

Acquired and cleared tracts containing areas suitable for home sites located out of the floodway and of suitable ground elevation may be used as recycled lots or resettlement sites on an as-needed basis. The Government will designate the lots or blocks of lots which could be utilized. The non-Federal sponsor will convey this land for project use as determined necessary by the Government.

7.11 Structures Eligible for Floodproofing

7.11a Category

These are structures for which floodproofing was the least costly identified alternative and which can be floodproofed by raising in place, replacement on site, making alterations to the structure, or moving the structure to a higher elevation on contiguously owned property. Eligibility for floodproofing an individual structure is governed by factors including the location of the structure in the floodplain, the depth of flooding experienced during the April 1977 flood, and the condition of the structure. Any structures (including mobile homes) located within the regulatory floodway are not eligible for floodproofing. The regulatory floodway is marked on the enclosed mapping. Structures requiring a first floor raise exceeding twelve feet above low ground elevation (that cannot be moved to a higher elevation) and structures in dilapidated or unsound condition are also determined ineligible for floodproofing. Additionally, a cost comparison will be made to assure that floodproofing was the least costly alternative as compared to acquisition.

7.11b Structure Type

The non-federal sponsor, the Buchanan County Board of Supervisors, has indicated that it wishes the Corps to perform the floodproofing on its behalf. There are 332 structures eligible for floodproofing (shown in green on the enclosed maps).

7.12 Sponsor Floodproofing Agreements

Floodproofing agreements will be executed for each eligible participant in the name of the Buchanan County Board of Supervisors.

8. P.L. 91-646 RELOCATION DATA.

a. Public Law 91-646, Title II, authorizes payment of relocation benefits to persons displaced from their homes, businesses or farms by federal and federally assisted programs. Those benefits are separate from and in addition to the acquisition payments for real property. Estimated benefits for residential displacements include moving expenses and replacement housing. Owner-occupants and tenant-occupants of mobile homes will be accorded the same benefits as occupants of conventional dwellings with respect to P.L. 91-646. Relocation benefits for non-residential displacements are limited to moving and related expenses, including search expenses, and, if applicable, re-establishment expenses.

A replacement housing survey was completed in October of 2001. The conclusion of that survey was that: The turnover in the general housing market in the project area of Buchanan County is such that there may be concern in finding suitable, flood safe housing for persons to be displaced by the project. It is anticipated that the market will increase as the project progresses, however, and more dwellings will become available to accommodate the displacees. Also, the increased difference between the cost of available DSS dwellings and the projected acquisition cost of many of the displaced dwellings is anticipated to exceed the maximum replacement housing payment authorized by Section, 203, Public Law 91-646 at $22,500. It is anticipated that the last resort housing provisions of Section 206, Public Law 91-646 will be applicable.

Accordingly, approval of this report will authorize the District to implement last resort housing on a case-by-case basis project wide. Last resort housing provisions of Section 206, P.L. 91-646 will be implemented as necessary, utilizing the most feasible cost effective method. This could include making payments in excess of those authorized by Sections 203 and 204, P.L. 91-646. The real estate cost estimate includes the estimated cost of these excess payments under the P.L. 91-646 payments section of the estimate.

b. Estimated benefits were based on the following

assumptions:

> This is a non-structural project with 100 percent participation anticipated.

> Non-residential displacements are mostly owner-operated. Those displacees will relocate within the area and it is anticipated that some may elect to discontinue operations.

> A 25 percent contingency allowance has been applied to the estimate of benefits to cover possible changes in moving costs, unknown multi-family occupancies, financial hardship cases, etc.

9. HAZARDOUS, TOXIC, OR RADIOACTIVE WASTE (HTRW)

9.1 Explanation of the Types of HTRW Investigations Conducted

Phase I HTRW Investigations are intended to include the review of any conditions that would be within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and other environmental laws and regulations. These investigations are based on the generally accepted standard practices provided in ASTM E 1527, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and ASTM E 1528, *Standard Practice for Environmental Site Assessments: Transaction Screening Process*. Activities for the Phase I HTRW assessment consist of, but are not limited to, a record search (ownership histories from the courthouse, appropriate regulatory agencies, etc.), an onsite field investigation, discussions with current and past owners to determine the history of the properties' past land use, and interviews with local, state, and regulatory officials. The intent of the Phase I HTRW Investigations is to identify the potential for any environmental concerns on the properties investigated and determine the necessity for additional HTRW investigations, including Phase II(a) HTRW Investigations.

Phase II(a) HTRW Investigations are designed to determine conclusively the presence or non-presence of environmental contamination and include limited sampling and testing. Rights-of-Entry are required from the property owner in order to conduct any Phase II(a) HTRW Investigations.

9.2 HTRW Investigations Conducted to Date for Buchanan County

In accordance with ER 1165-2-132 and CEORD-DL-P memorandum dated 9 September 2001, Phase I HTRW Investigations were initiated for eligible non-residential properties within the

Buchanan County project area. Prior to the completion of all of the Phase I HTRW Investigations for these non-residential properties, CECW-PM memorandum dated 2 May 2001, was implemented.

This memorandum recommended the deferral of HTRW Investigations on individual structures until the post-DPR implementation phase. This memorandum does not apply to properties on which dry floodproofing alternatives (e.g. veneer walls, ringwalls, relocation, etc.) are proposed. Phase I HTRW Investigations are still required for all properties on which dry floodproofing alternatives are proposed.

Prior to the implementation of the recommendations presented in the CECW-PM memorandum and in accordance with established Corps of Engineers HTRW policies, Phase I HTRW Investigations were conducted on over ninety (90) non-residential properties eligible for participation in the Buchanan County Nonstructural Project. Phase I HTRW Investigations were also conducted on sites potentially eligible for ringwalls or relocation. These sites include Hurley High School (RFKC-002) and The Buchanan County Technology and Career Center (SC-415).

9.3 Findings, Recommendations and Future Investigations Required

The aforementioned CECW-PM memorandum recommended the deferral of HTRW investigation on individual structures until implementation. This recommendation was implemented prior to completion of the Phase I HTRW investigations on all of the eligible non-residential properties within the Buchanan County Nonstructural Project. While Phase I HTRW investigations have been performed on some non-residential properties, Phase I HTRW investigations are still required on the remainder of the non-residential properties. During implementation, Phase I HTRW investigations will be conducted on the remainder of the non-residential properties in addition to the residential properties. In addition, a re-evaluation of the existing Phase I HTRW investigation on the non-residential properties will be performed. The findings and recommendations of HTRW investigations on specific properties (both residential and non-residential) will be made and evaluated at that time.

RFKC-002 - Hurley High School - The Phase I HTRW investigation for RFKC-002 was completed by USACE, Huntington District, and results are presented in the Phase I HTRW Investigation Report dated September 2001. Currently there is an above ground storage tank (AST), an underground storage tank (UST), and a wastewater treatment system located on the property. Based on the Phase I HTRW investigation, it appears this UST system is registered and is in compliance with applicable Virginia Department of Environmental Quality (VADEQ) regulations. If the final alternative selected for this property will interfere with the ASTs and USTs, the tanks should be relocated and/or removed. In

addition, work in the area of the wastewater treatment system should be avoided. No additional HTRW investigations are currently recommended for this property.

SC-415 - Buchanan County Technology and Career Center - The Phase I HTRW investigation for SC-415 was completed by USACE, Huntington District, and results are presented in the Phase I HTRW Investigation Report dated September 2001. This property is the current location of the Buchanan County Career and Technology Center. Auto engine repair, auto body repair, diesel equipment repair, and small engine repair classroom shops are located on-site. Spent solvents/degreasers are generated from these activities, stored on-site, and periodically shipped off-site for recycling/disposal. A water quality lab is located on-site. Lab chemicals are stored on-site. Previously, a wastewater treatment (WWT) system was located on-site. The WWT tank (closed & filled with pea gravel in accordance with VA DOH procedures) remains in place. If the spent solvents/degreasers, acetylene tanks, oxygen tanks, lab chemicals are located within CWLs or, if these materials will interfere with floodproofing activities, they should be moved to a different location. The location of the closed WWT tank should be determined. If historical information is not available for this determination, the location of the WWT tank should be determined by geophysical techniques, such as Ground Penetrating Radar (GPR) or an electromagnetic (EM) survey. If, after the location of the tank is verified, it is determined that the tank will interfere with floodproofing activities, the tank should be removed.

10. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

In the overall public interest regarding the Buchanan County Nonstructural Flood Damage Reduction Project, an environmental assessment was conducted. Areas of evaluation were cultural resources, fish and wildlife resources, socio-economic resources, HTRW, and water quality.

The Buchanan County Nonstructural Flood Damage Reduction Project was planned in accordance with authorization provided by Section 202 of Public Law 96-367, as amended, and under guidelines provided by the Final Environmental Assessment (FEA). The FEA has been reviewed and a Finding of No Significant Impact (FONSI) has been established. The project is in compliance with all existing project management plans and National Environmental Policy Act (NEPA) guidance.

11. ACQUISITION ESTIMATE AND SCHEDULE

Following approval of the Buchanan County DPR, execution of the PCA and acquisition MOA, the first landowners meeting will be conducted. Acquisition of project lands is scheduled to commence immediately thereafter. It is proposed to acquire/floodproof the 730 structures over a period of 72 months through six fiscal years.

Estimated 01 Costs by FY and Account Code
BUCHANAN COUNTY NONSTRUCTURAL FLOOD DAMAGE REDUCTION PROJECT
01 ACCOUNT - REAL ESTATE

TASK	FY03 25 Tracts	FY04 55 Tracts	FY05 63 Tracts	FY06 64 Tracts	FY07 55 Tracts	FY08 25 Tracts	**TOTAL 287 Tracts**
A-PROJECT PLANNING	115,755	231,510	277,820	277,815	231,510	115,755	1,250,165
B-ACQUISITION	140,920	281,840	338,210	338,210	281,840	140,920	1,521,940
C-CONDEMNATION	10,065	20,130	24,160	24,160	20,130	10,065	108,710
E-APPRAISAL	40,260	80,525	96,635	96,635	80,525	40,260	434,840
F-RELOCATIONS ASSISTANCE	35,230	70,460	84,550	84,555	70,460	35,230	380,485
G-TEMPORARY PERMITS	15,100	30,200	36,230	36,235	30,200	15,100	163,065
H-AUDITS	10,065	20,130	24,160	24,160	20,130	10,065	108,710
J-ENCROACHMENTS	0	0	0	0	0	0	0
K-DISPOSAL	0	0	0	0	0	0	0
53 900 R/E ADMIN	135,905	271,780	326,110	326,105	271,780	135,905	1,467,585
ADMIN TOTALS	503,300	1,006,575	1,207,875	1,207,875	1,006,575	503,300	5,435,500
R3-Land Payments	3,342,200	6,684,330	8,020,550	8,020,550	6,684,330	3,342,200	36,094,160
R2-91-646 Payments	699,640	1,399,270	1,679,810	1,679,810	1,399,270	699,640	7,557,440
R-9 Contingencies	1,010,460	2,020,925	2,425,065	2,425,065	2,020,925	1,010,460	10,912,900
R-TOTALS	5,052,300	10,104,525	12,125,425	12,125,425	10,104,525	5,052,300	54,564,500
GRAND TOTALS	5,555,600	11,111,100	13,333,300	13,333,300	11,111,100	5,555,600	**$60,000,00**

CORPS OF ENGINEERS

U.S. ARMY

PRELIMINARY

PROJECT MAP

DEPT. OF THE

USING SERVICE

LOCATION OF PROJECT

STATE

COUNTY

DIVISION

DISTRICT

ARMY AREA

MILES OF

MILES OF

TRANSPORTATION FACILITIES

RAILROADS

STATE ROADS

FEDERAL ROADS

AIR LINES

ACQUISITION

TOTAL ACRES ACQUIRED

FEE

PUBLIC DOMAIN — WITHDRAWAL / USE PERMIT

USE PERMIT (OTHER THAN P.D.)

TRANSFER

LEASE

LESSER INTERESTS

DISPOSAL

TOTAL ACRES DISPOSED OF

SOLD

PUBLIC DOMAIN — WITHDRAWAL / USE PERMIT

USE PERMIT (OTHER THAN P.D.)

TRANSFERRED

LEASES TERMINATED

LESSER INTERESTS TERM

REASSIGNED

OTHER

LEGEND

EXCEPT FOR THE SPECIAL SYMBOLS SHOWN BELOW MAP SYMBOLS ARE STANDARD IN ARMY MAP SERVICE TECHNICAL MANUAL NO. 23

RESERVATION LINE

RESERVATION LINE (ACTUAL SURVEY)

TRACT BOUNDARY LINE

TRACT NUMBER

CONTOUR LINE

DISPOSAL

EXTENDED OWNERSHIP LINE

LEGEND

STATE INDEX

ACQUISITION AUTHORIZATION

EXHIBIT 1

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY JVS

CHECKED BY JSR

SUBMITTED BY

CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY

APPROVED BY

CHIEF, REAL ESTATE DIVISION
OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

CO., CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE

INSTALLATION OR PROJECT NO.

SCALE IN FEET: 200 0 200 400

SHEET OF DRAWING NO.

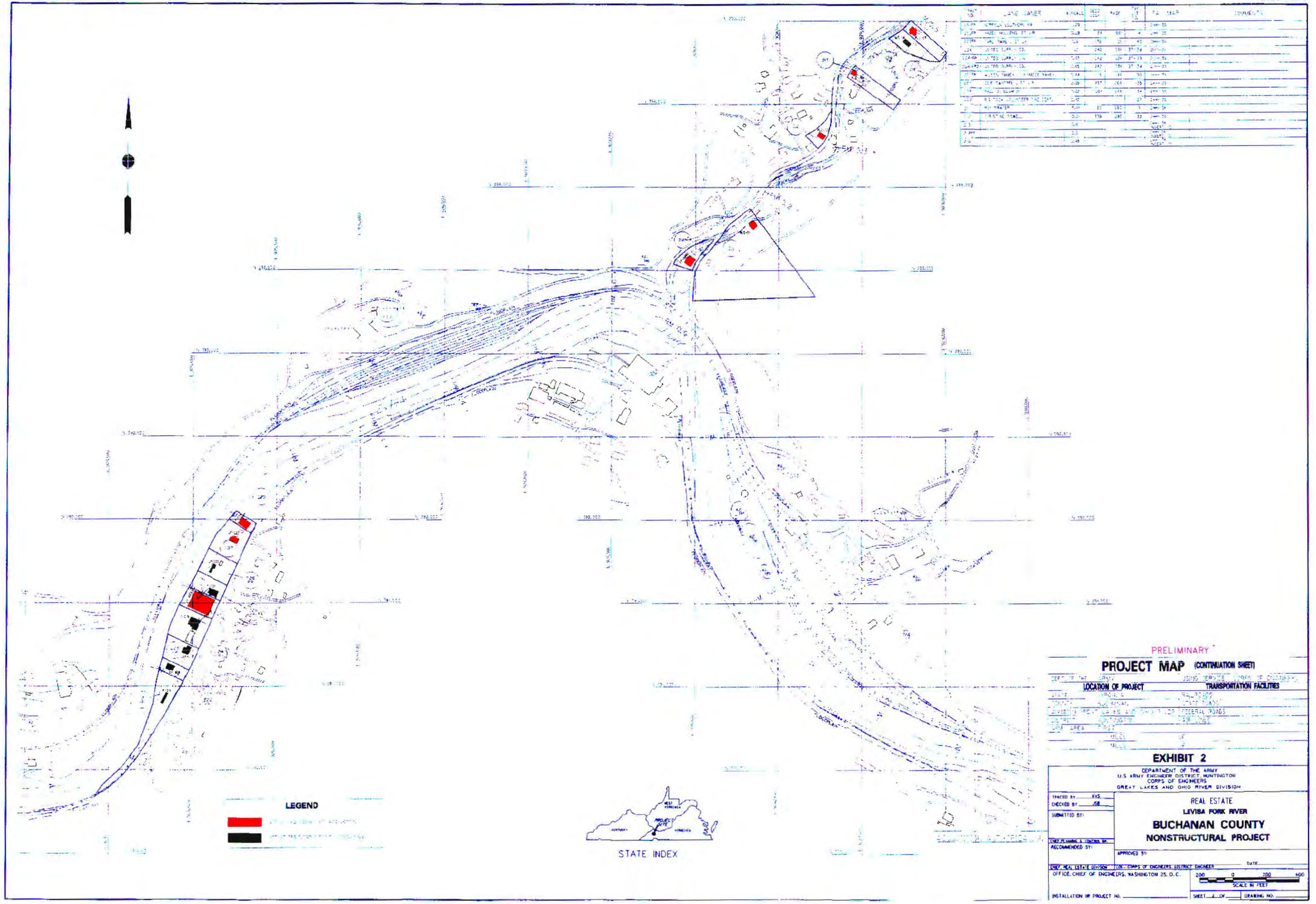
REAL ESTATE

LEVISA FORK RIVER

BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

CORPS OF ENGINEERS

U.S. ARMY



STATE INDEX

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT

TRANSPORTATION FACILITIES

EXHIBIT 2

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: RVS
CHECKED BY: JSB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION
FOR: CORPS OF ENGINEERS DISTRICT ENGINEER
DATE:

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

200 0 200 400
SCALE IN FEET

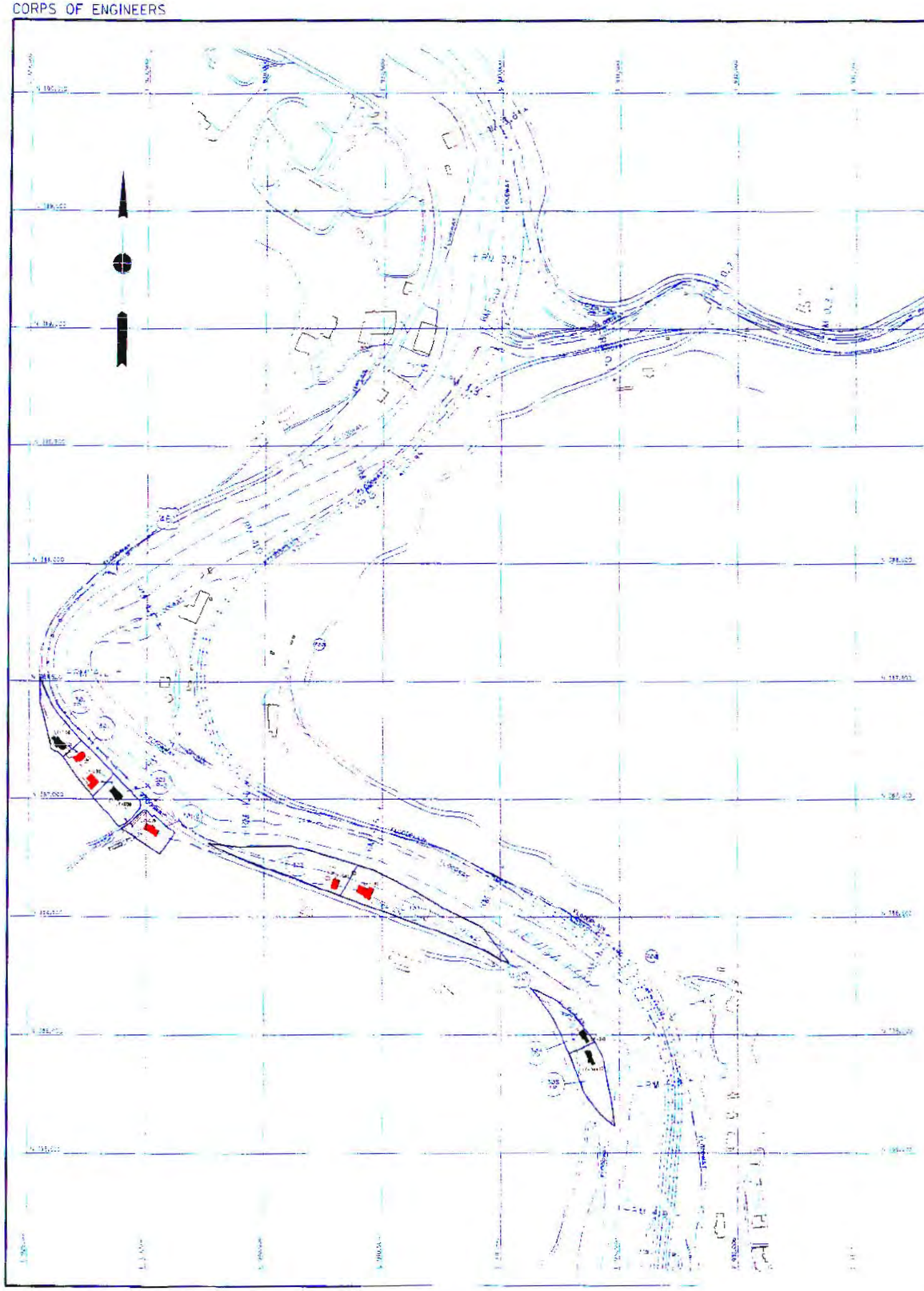
INSTALLATION OR PROJECT NO.

SHEET 2 OF

DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY



TRACT NO.	LAND OWNER	ACREAGE	DEED DESC	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
1014-	NORFOLK SOUTHERN RR	0.10				244-237	
1014-	NORFOLK SOUTHERN RR	0.16				244-237	
1014-1.1	NORFOLK SOUTHERN RR	0.05				244-237	
1014-2	NORFOLK SOUTHERN RR	0.47				244-237	
902	ARVIN BROWN	.35	36	74	45	244-237	
903	MARY ANN DAVIS	.33	404	205	18	244-17	
1047A		0.05				244-17.2	
1056A		0.15				244-18	
						182-18.3	

PRELIMINARY *

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY — CIVIL SERVICE — CORPS OF ENGINEERS

LOCATION OF PROJECT

STATE: VIRGINIA

COUNTY: BUCHANAN

DIVISION: GREAT LAKES AND OHIO RIVER

DISTRICT: HUNTINGTON

ARMY AREA: FIRST

MILES ____ OF ____

MILES ____ OF ____

TRANSPORTATION FACILITIES

- RAILROADS
- STATE ROADS
- FEDERAL ROADS
- AIR LINES

EXHIBIT 3

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: KVS
CHECKED BY: JSB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY:
DATE
CHIEF, REAL ESTATE DIVISION
COL, CORPS OF ENGINEERS, DISTRICT ENGINEER
OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.
SHEET 3 OF
DRAWING NO.

LEGEND

STRUCTURES SUBJECT FOR ACQUISITION

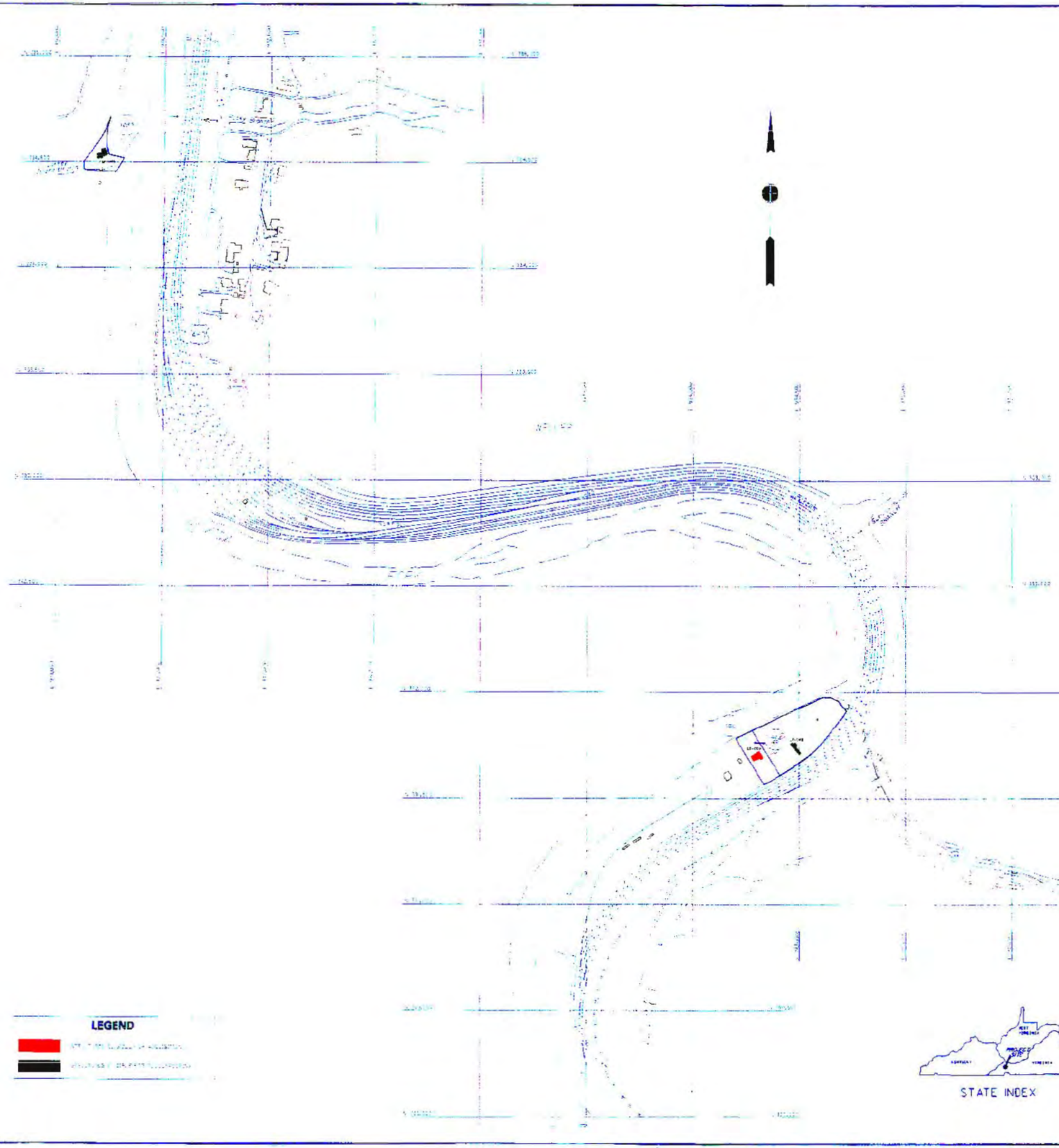
STRUCTURES ELIGIBLE FOR FLOODPROOFING

STATE MAP

LOCATION OF PROJECT

CORPS OF ENGINEERS

U.S. ARMY



STATE INDEX

LEGEND

PRELIMINARY*

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT	TRANSPORTATION FACILITIES

EXHIBIT 4

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: EVS
CHECKED BY: SB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION — COL, CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE:

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

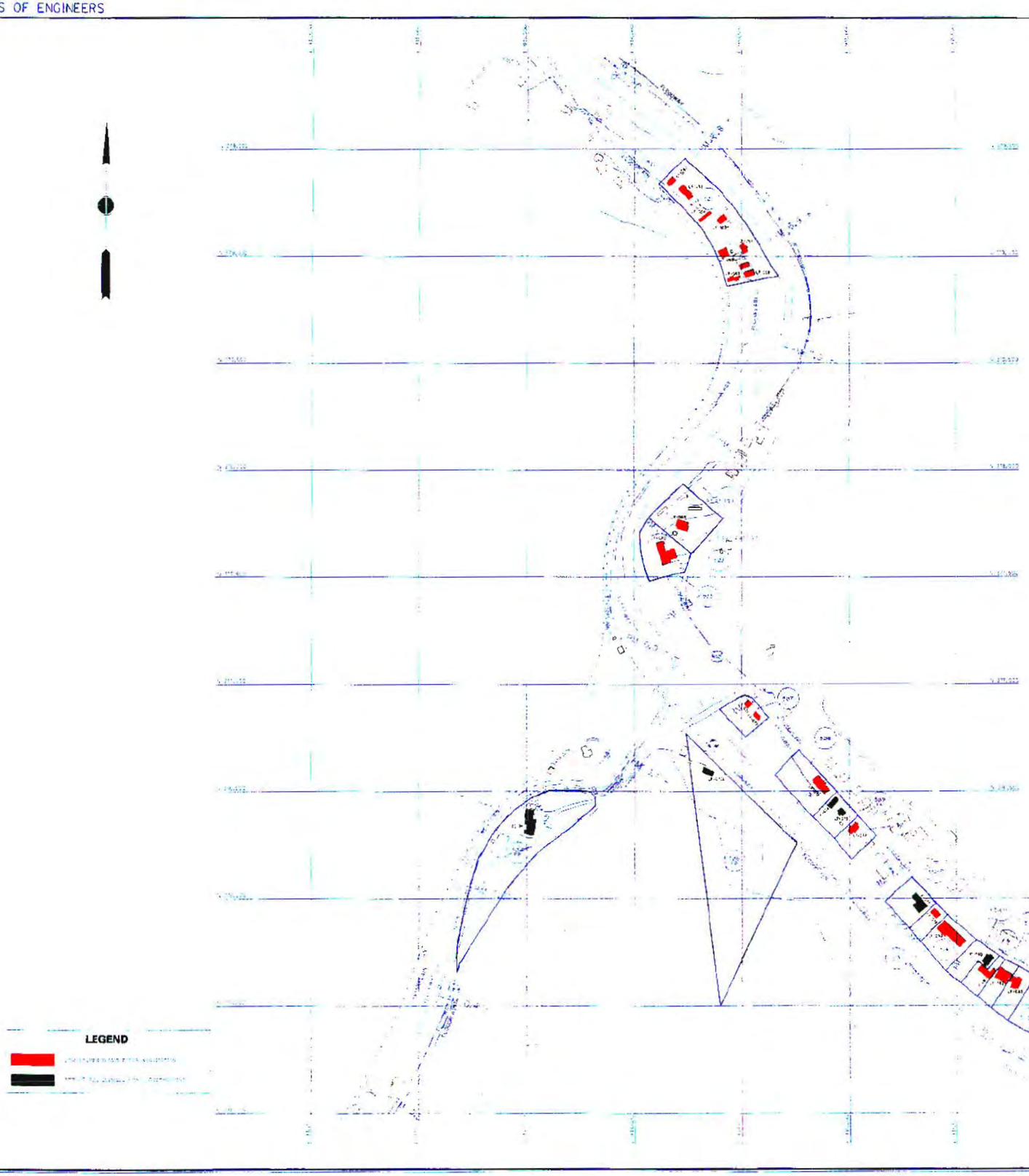
200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.

SHEET 4 OF ____ DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY



STATE INDEX

LEGEND

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT

TRANSPORTATION FACILITIES

EXHIBIT 5

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY KS
CHECKED BY JB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION, U.S. CORPS OF ENGINEERS, DISTRICT ENGINEER DATE

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

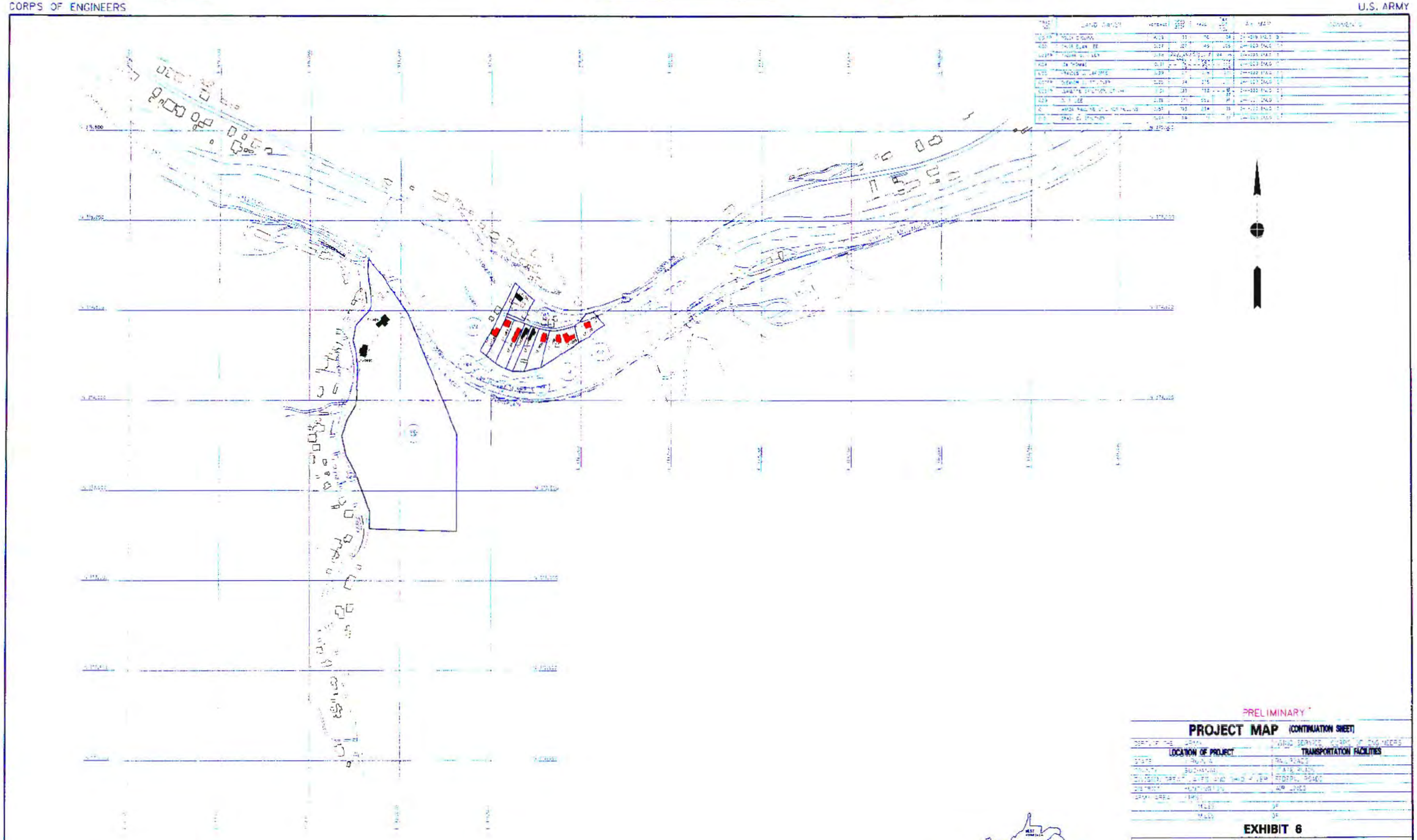
200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.

SHEET 1 OF DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY



LEGEND

STATE INDEX

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY — CORPS OF ENGINEERS

LOCATION OF PROJECT — TRANSPORTATION FACILITIES

STATE: VIRGINIA — NEAREST TOWN: GARDEN

COUNTY: BUCHANAN — NEAREST RAILROAD: CLINCH VALLEY

STREAM, RIVER, LAKES AND WATERWAYS AFFECTED: LEVISA FORK — NEAREST PORT: ---

NEAREST LARGE CITY: HUNTINGTON, WV — NEAREST AIRFIELD: ELKHORN CITY

EXHIBIT 6

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: AVS
CHECKED BY: DB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
CHIEF, REAL ESTATE DIVISION

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY:
COL., CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

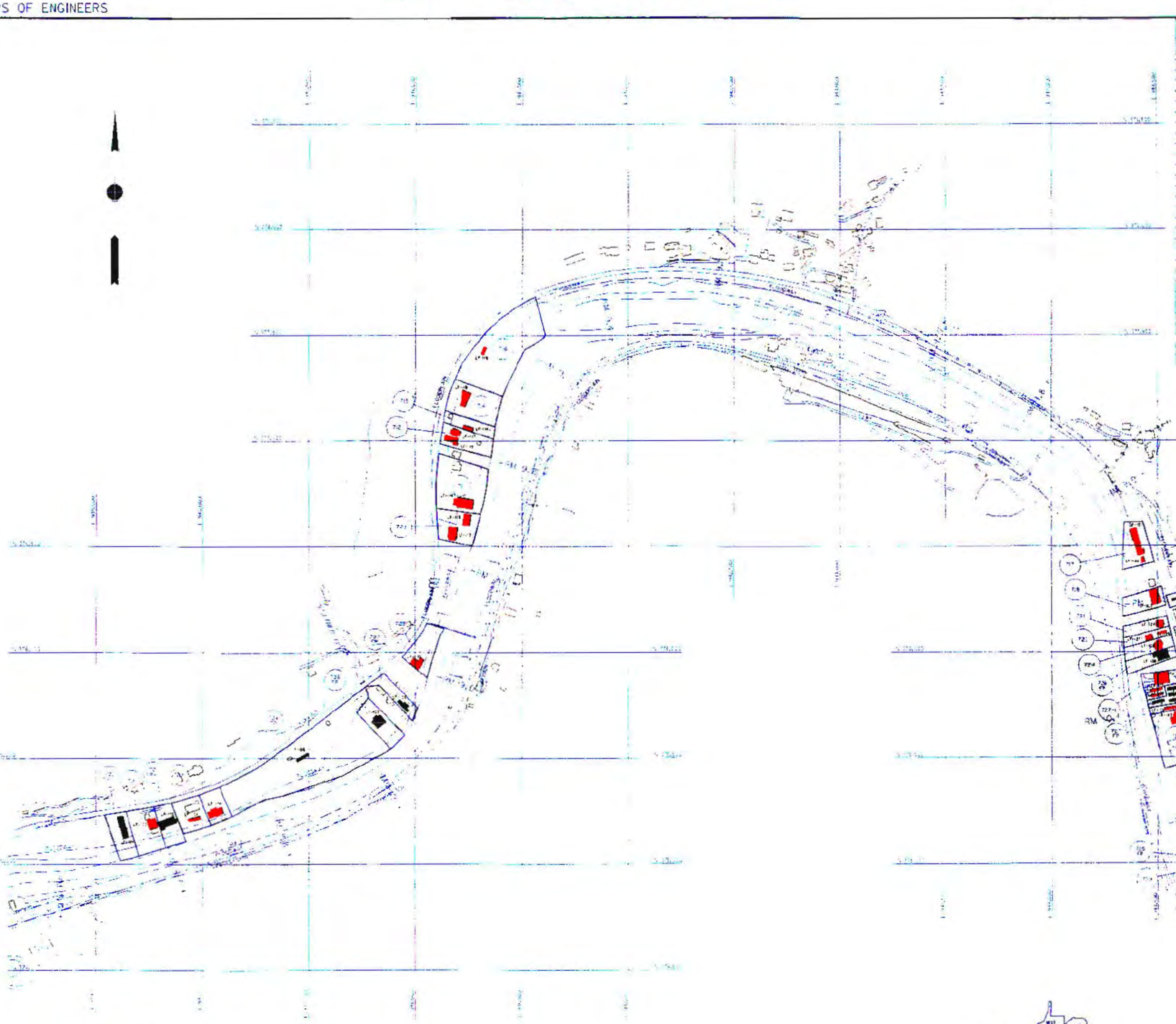
INSTALLATION OR PROJECT NO.

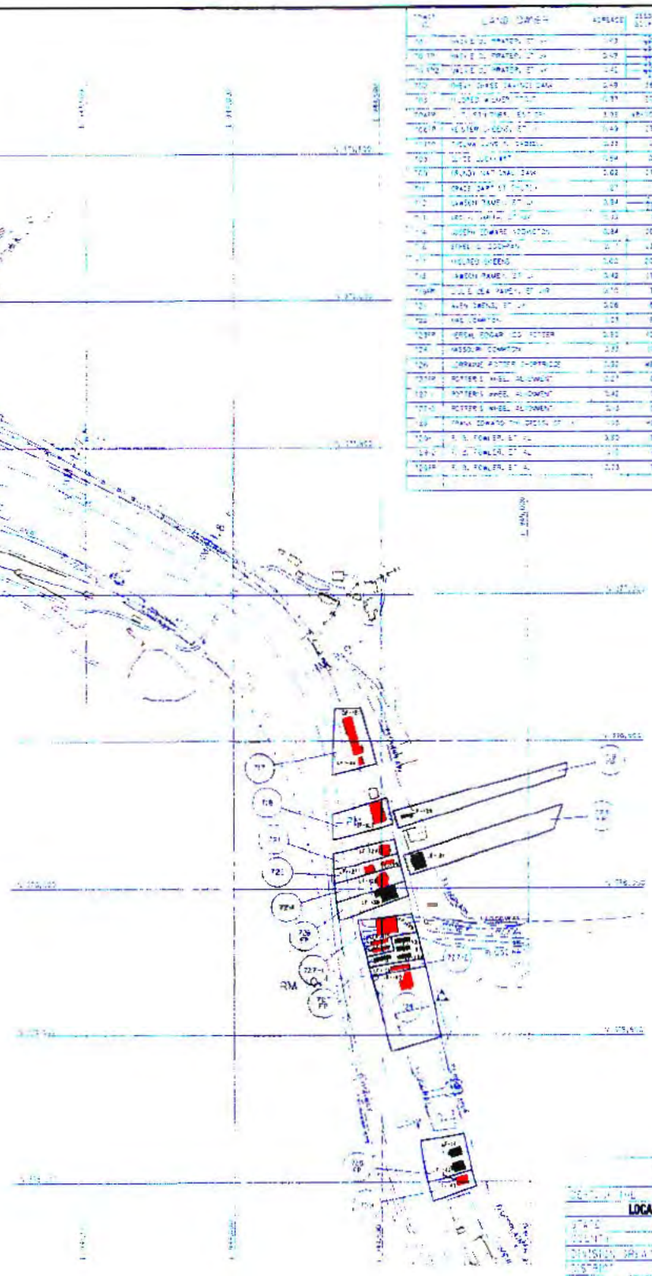
200 0 200 400
SCALE IN FEET

SHEET 5 OF — DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY





STATE INDEX

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT

TRANSPORTATION FACILITIES

EXHIBIT 7

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

REAL ESTATE

LEVISA FORK RIVER

BUCHANAN COUNTY

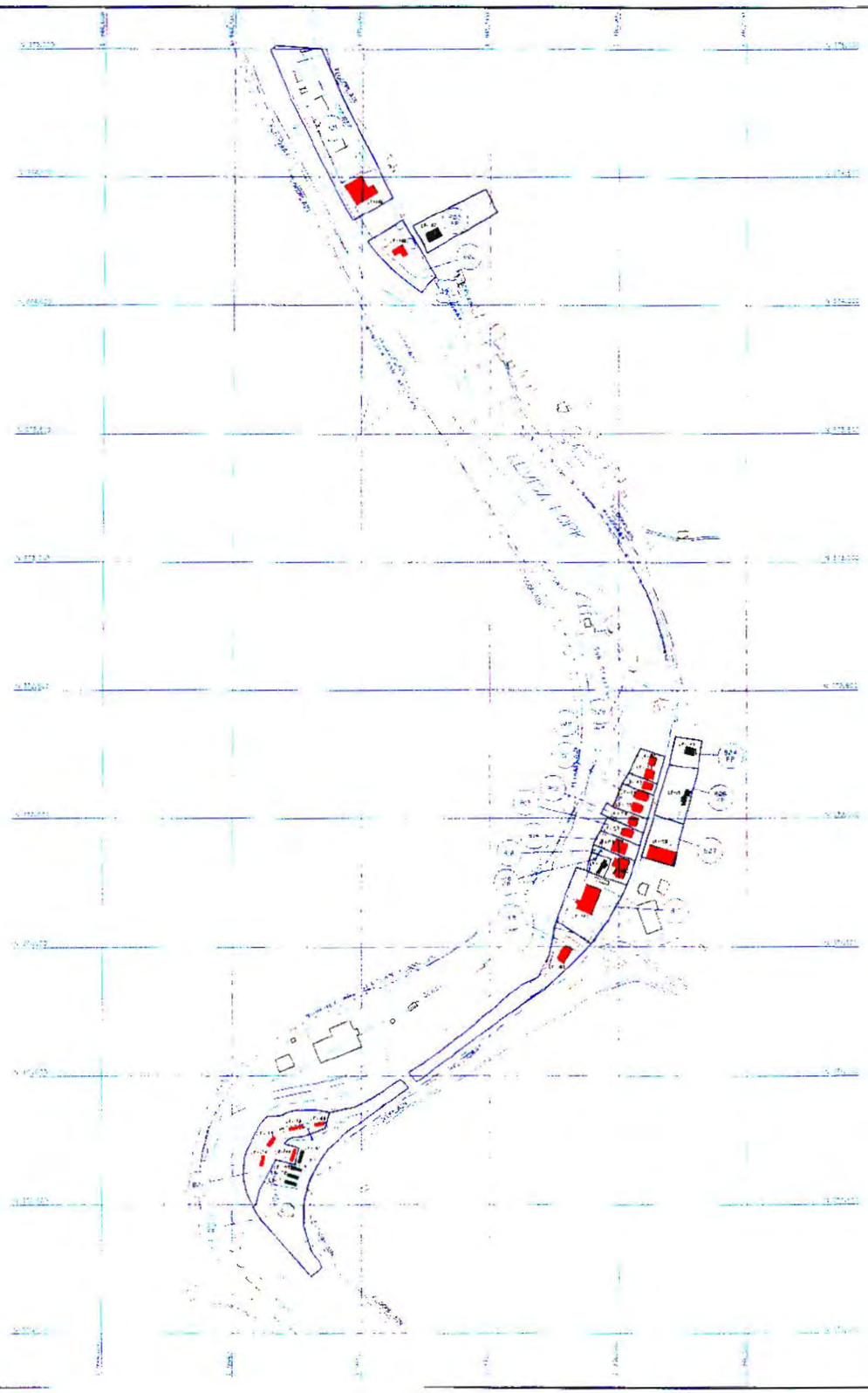
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

SCALE IN FEET

CORPS OF ENGINEERS

U.S. ARMY



STATE INDEX

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT

TRANSPORTATION FACILITIES

EXHIBIT 8

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: KVS
CHECKED BY: JSB
SUBMITTED BY:
CHIEF, ENGR. & CONTROL BR.
RECOMMENDED BY:

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY:
CHIEF, REAL ESTATE DIVISION, LGL. CORPS OF ENGINEERS, DISTRICT ENGINEER DATE

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

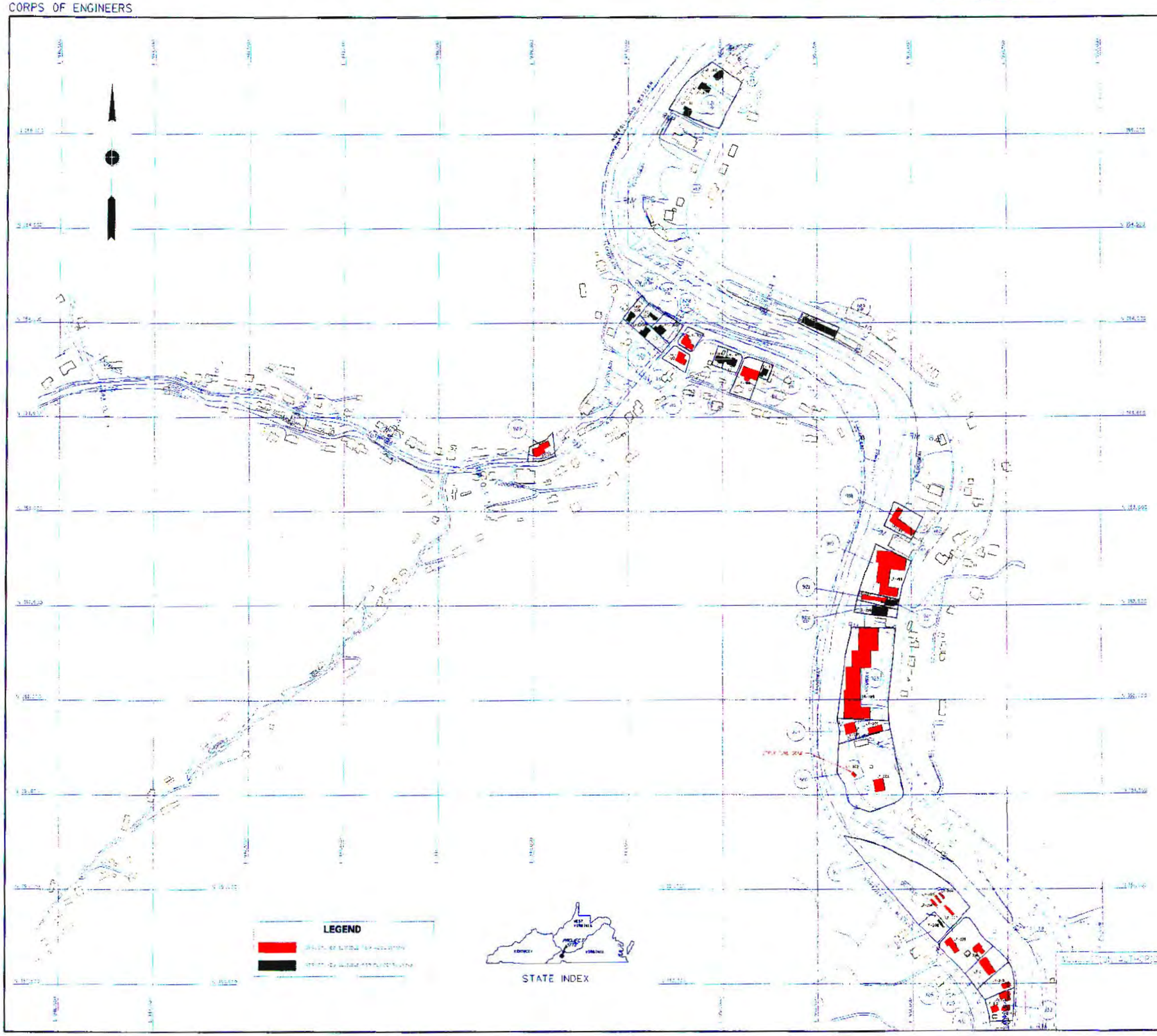
200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.

SHEET 8 OF DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY



LEGEND

STATE INDEX

PRELIMINARY *

PROJECT MAP (CONTINUATION SHEET)

DEPARTMENT OF THE ARMY — CORPS OF ENGINEERS, CIVIL WORKS

LOCATION OF PROJECT

STATE: VIRGINIA

COUNTY: BUCHANAN

DRAINAGE AREA: LEVISA FORK

DISTRICT: HUNTINGTON

ARMY AREA: OHIO

TRANSPORTATION FACILITIES

RAILROADS

STATE HIGHWAYS

FEDERAL ZONES

AIR LINES

EXHIBIT 9

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: EVS
CHECKED BY: CA
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION — COL, CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE:

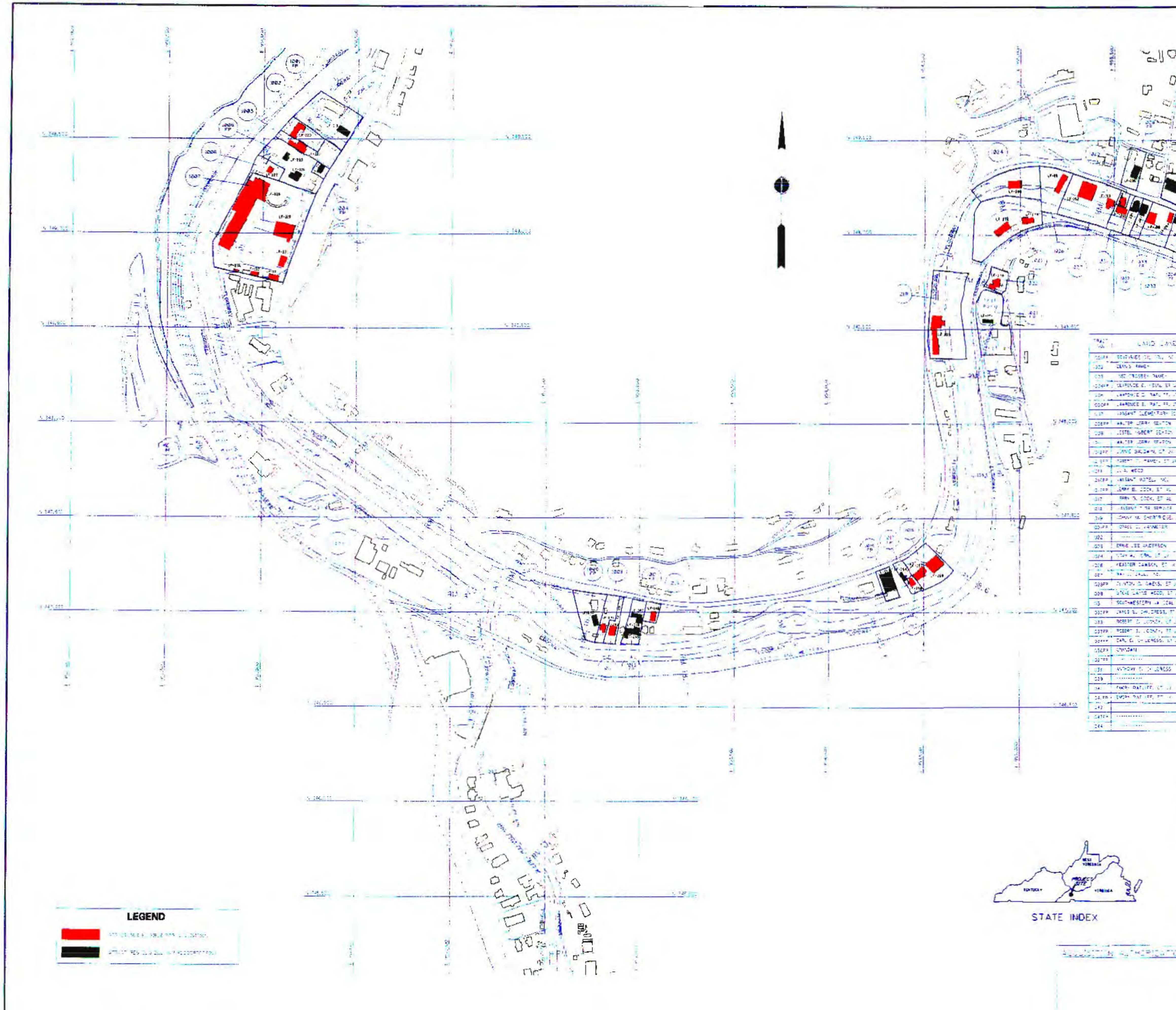
REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

INSTALLATION OR PROJECT NO.:

200 0 200 400
SCALE IN FEET

SHEET 9 OF — DRAWING NO.:



TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
[illegible]	SOUTHSIDE OIL CO., INC.	[illegible]	401	213	96	[illegible]	
202	DENNIS RAMEY	0.44	215	147	95	[illegible]	
203	[illegible] CROSBEY RAMEY	[illegible]	223	435	94	[illegible]	
204FP	LAWRENCE E. [illegible], ET UX	[illegible]	24	192	93	[illegible]	
[illegible]	LAWRENCE E. RATLIFF, JR.	0.22			92	[illegible]	ACCESS PROBLEM
[illegible]	LAWRENCE E. RATLIFF, JR.	[illegible]			[illegible]	[illegible]	
[illegible]	[illegible] ELEMENTARY SCHOOL	4.70			41	[illegible]	
208FP	WALTER LARRY SEXTON	0.72	186	265	27	[illegible]	
209	LISTEL HUBERT SEXTON	0.26	224	493	26	[illegible]	
210	WALTER LARRY SEXTON	0.21	101	797	25	[illegible]	
212FP	[illegible] BALDWIN, ET UX	[illegible]	207	545	22	[illegible]	
[illegible]	ROBERT [illegible] RAMEY, ET UX	0.28	70	23	27	[illegible]	
214	[illegible] WOOD	[illegible]	7	275	19	[illegible]	
215FP	[illegible] MOTEL, INC.	0.29	236	495	9	[illegible]	
[illegible]	JERRY E. COOK, ET AL	0.2	438	727	59	[illegible]	ACCESS PROBLEM
217	JERRY E. COOK, ET AL	0.2	439	732	59	[illegible]	
218	[illegible]	0.90	383	441	[illegible]	[illegible]	
219	JOHNNY M. SHORTRIDGE, JR., ET UX	.87	[illegible]	[illegible]	[illegible]	[illegible]	
220FP	GRACE [illegible]	[illegible]			6	[illegible]	
222	----------	0.29				[illegible]	
223	ERNIE LEE ANDERSON	1.85	221	74	[illegible]	[illegible]	
224	[illegible]	.24	[illegible]	[illegible]	[illegible]	[illegible]	
226	HEASTER DAWSON, ET UX	0.73	[illegible]	[illegible]	15	[illegible]	
227	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
228FP	CLINTON D. OWENS, ET UX	0.42	54	317	13	[illegible]	
[illegible]	STEVE [illegible] WOOD, ET UX	[illegible]	451	504	[illegible]	[illegible]	
[illegible]	SOUTHWESTERN VA. COAL CORP	[illegible]	220	27	[illegible]	[illegible]	
231FP	JAMES E. CHILDRESS, ET UX	0.24	[illegible]	231	17	[illegible]	
233	ROBERT E. LOONEY, ET UX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	ROBERT E. LOONEY, ET UX	0.24				[illegible]	
[illegible]	CARL E. CHILDRESS, ET UX	0.24	64	456	6	[illegible]	
236FP	UNKNOWN	0.41			45	[illegible]	
[illegible]	----------	0.49				[illegible]	
[illegible]	ANTHONY [illegible] CHILDRESS	[illegible]	229	263	20	[illegible]	
239	----------	0.70				[illegible]	
241	EMORY RATLIFF, ET UX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
241FP	EMORY RATLIFF, ET UX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
243		0.72				[illegible]	
243FP	----------	0.32				[illegible]	
244	----------	0.49				[illegible]	

PRELIMINARY *

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY — USING SERVICE CORPS OF ENGINEERS

LOCATION OF PROJECT		TRANSPORTATION FACILITIES
STATE	VIRGINIA	RAILROADS
COUNTY	BUCHANAN	STATE ROADS
DIVISION	GREAT LAKES AND OHIO RIVER	FEDERAL ROADS
DISTRICT	HUNTINGTON	AIR LINES
ARMY AREA	FIRST	
	MILES	OF
	MILES	OF

EXHIBIT 10

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY EVS
CHECKED BY JSB
SUBMITTED BY:

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

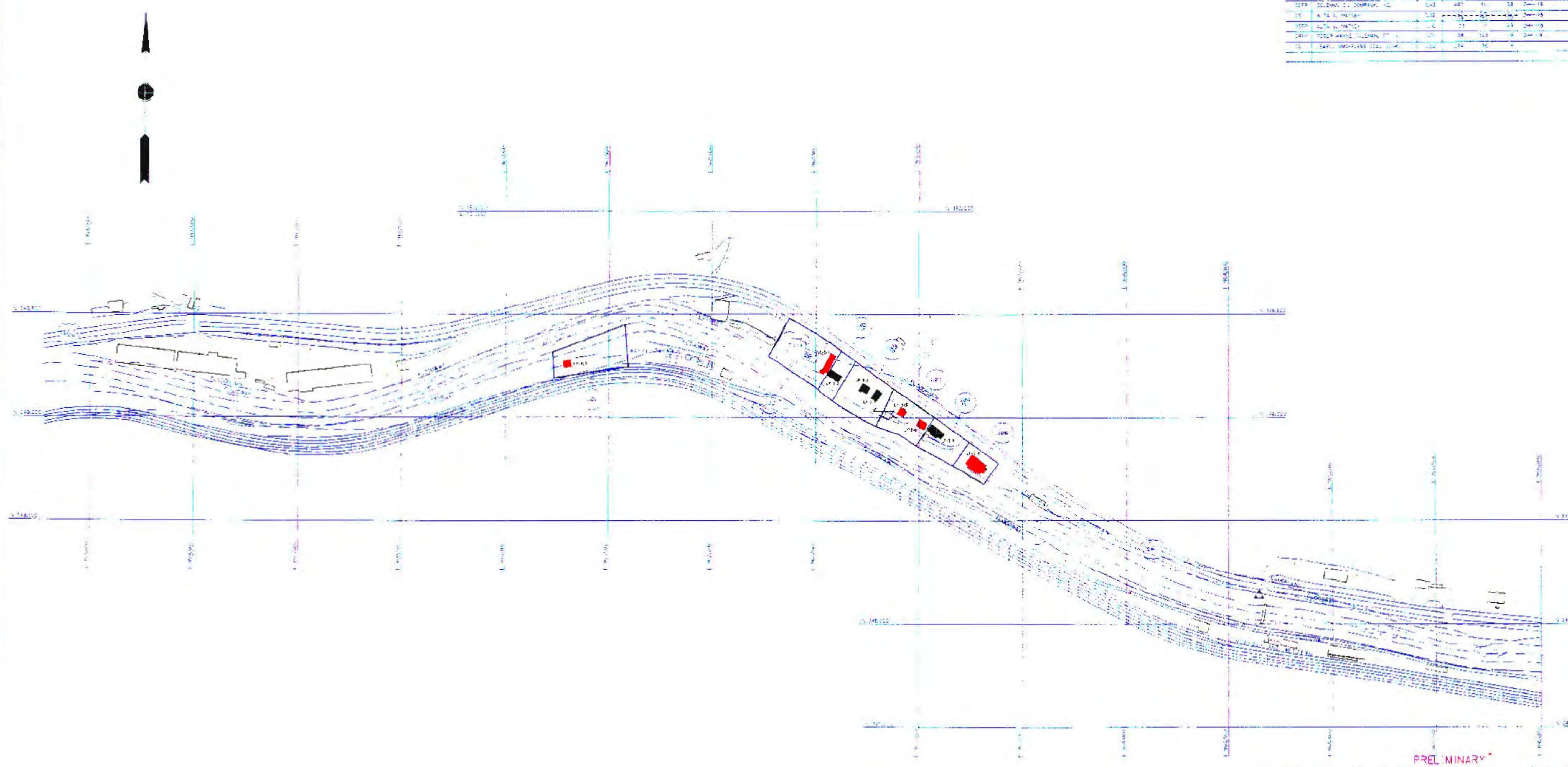
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION — CO., CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

200 0 200 400 SCALE IN FEET

INSTALLATION OR PROJECT NO. ____ SHEET 10 OF ____ DRAWING NO. ____

TRACT NO.	LAND OWNER	ACREAGE	[illegible]	[illegible]	TAX MAP NO.	TAX MAP
[illegible]	[illegible]	[illegible]				[illegible]
[illegible]	COLEMAN OIL COMPANY, INC.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	COLEMAN OIL COMPANY, INC.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	



LEGEND

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT		TRANSPORTATION FACILITIES
DEPT. OF THE	ARMY	[illegible] CORPS OF ENGINEERS
STATE	VIRGINIA	RAILROADS
COUNTY	BUCHANAN	STATE ROADS
DIVISION	GREAT LAKES AND OHIO RIVER	FEDERAL ROADS
DISTRICT	HUNTINGTON	AIR LINES
ARMY AREA	[illegible]	
	MILES	OF
	MILES	OF

EXHIBIT 11

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: WS
CHECKED BY: SB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
CHIEF, REAL ESTATE DIVISION

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY:
COL., CORPS OF ENGINEERS, DISTRICT ENGINEER
DATE

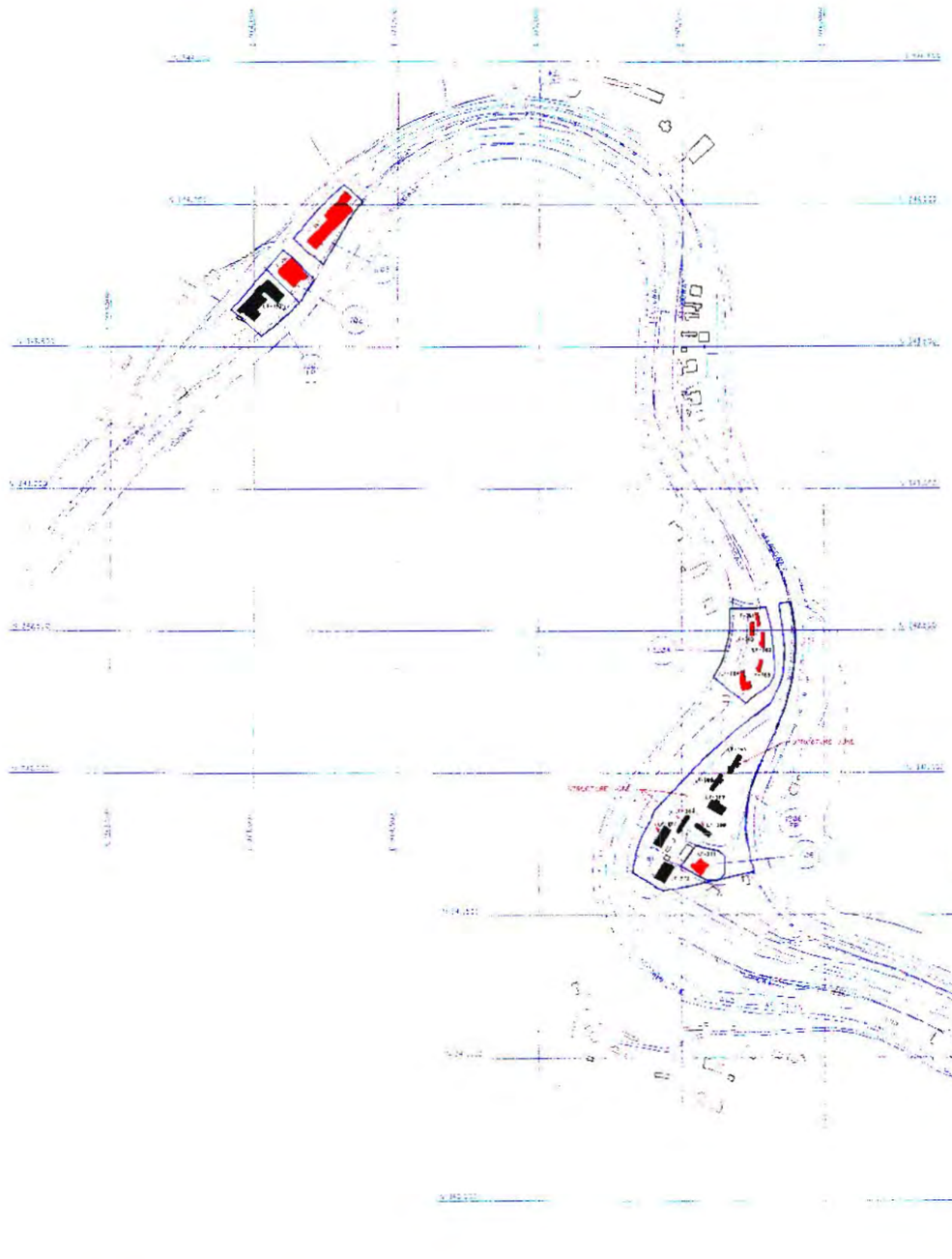
OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO. ____ SHEET ____ OF ____ DRAWING NO. ____

CORPS OF ENGINEERS

U.S. ARMY



STATE INDEX

LEGEND

PRELIMINARY*

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT

TRANSPORTATION FACILITIES

RAILROADS

STATE ROADS

EXHIBIT 12

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: VVS
CHECKED BY: JSB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY: DATE:

CHIEF, REAL ESTATE DIVISION COL. CORPS OF ENGINEERS, DISTRICT ENGINEER

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

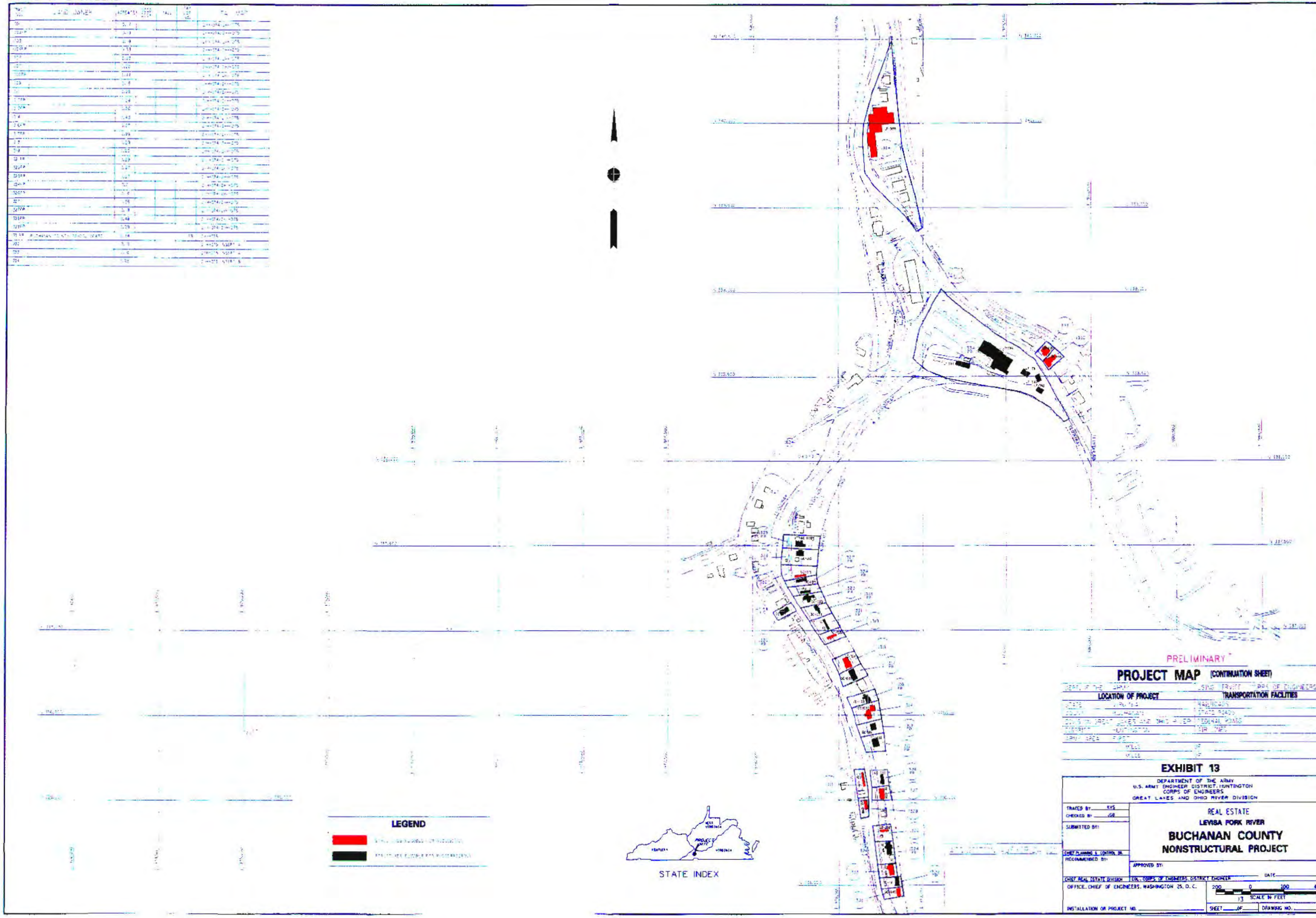
200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.

SHEET 12 OF

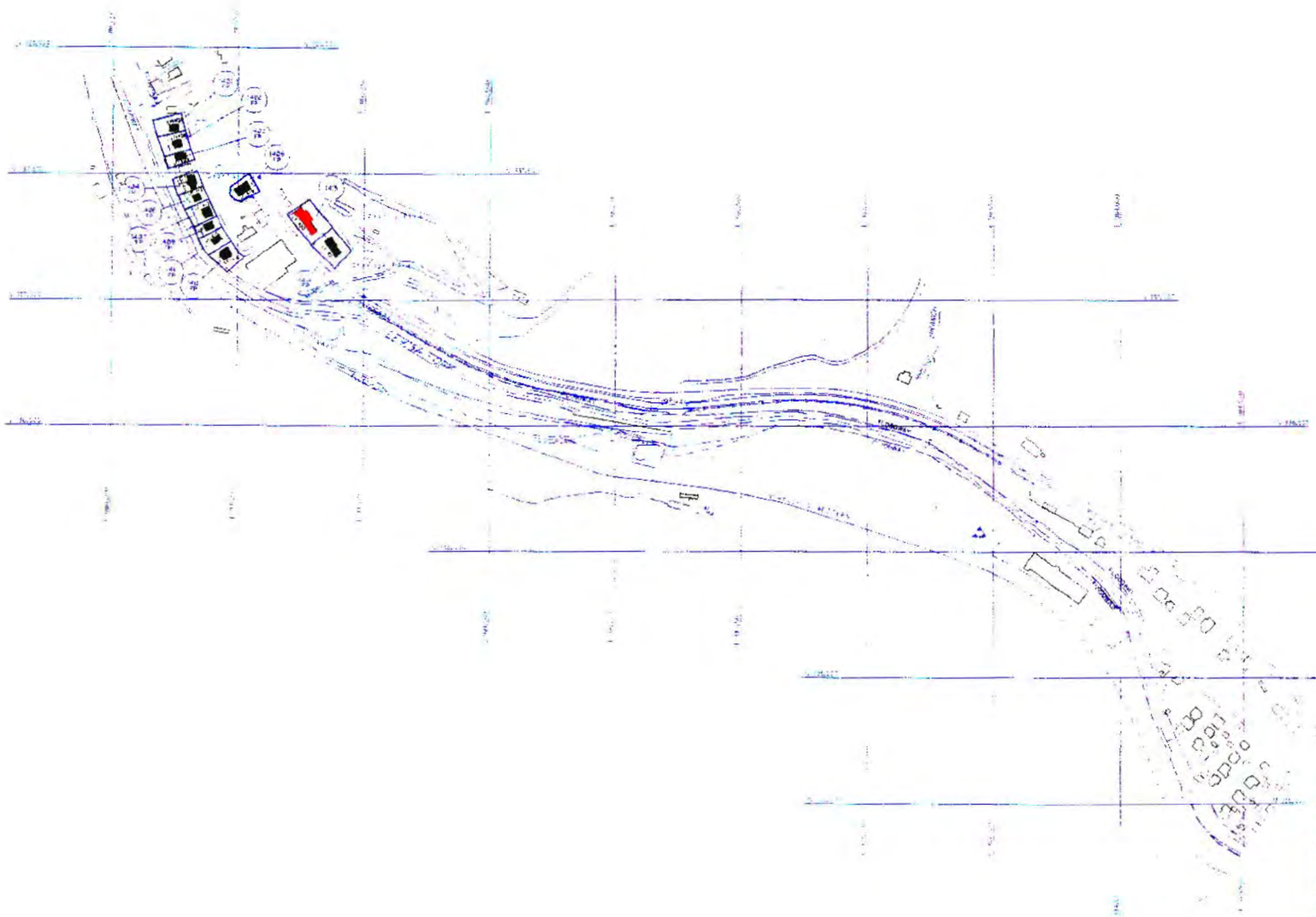
DRAWING NO.

CORPS OF ENGINEERS U.S. ARMY



CORPS OF ENGINEERS

U.S. ARMY



LEGEND

STATE INDEX

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT

TRANSPORTATION FACILITIES

RAILROADS

STATE ROADS

FEDERAL ROADS

EXHIBIT 14

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: EVS
CHECKED BY: JDB
SUBMITTED BY:
CHIEF, LOWER R. BRANCH
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION
COL, CORPS OF ENGINEERS, DISTRICT ENGINEER
DATE

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.

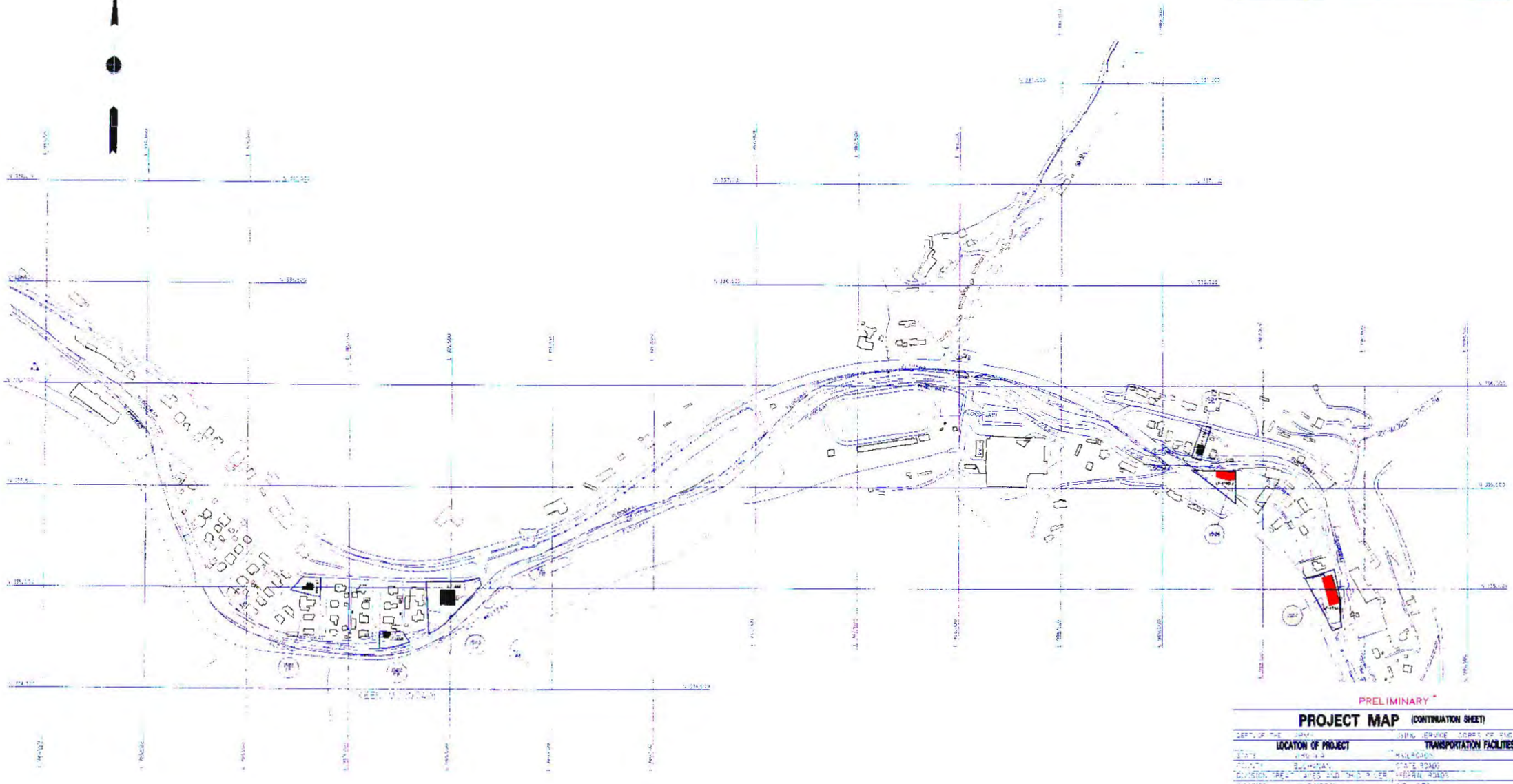
SHEET 1 OF

DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY

TRACT NO.	LAND AND/OR	ACREAGE	DEED BOOK	PAGE	TAX MAP



LEGEND

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

DEPT OF THE ARMY — CORPS OF ENGINEERS

LOCATION OF PROJECT

STATE VIRGINIA

COUNTY BUCHANAN

DIVISION GREAT LAKES AND OHIO RIVER

DISTRICT HUNTINGTON

ARMY AREA FIRST

MILES OF

MILES OF

TRANSPORTATION FACILITIES

RAILROADS

STATE ROADS

FEDERAL ROADS

U.S. DAMS

EXHIBIT 15

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: KVS
CHECKED BY: JGB
SUBMITTED BY:
CHIEF PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION, FOR: CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

200 0 200 400
SCALE IN FEET

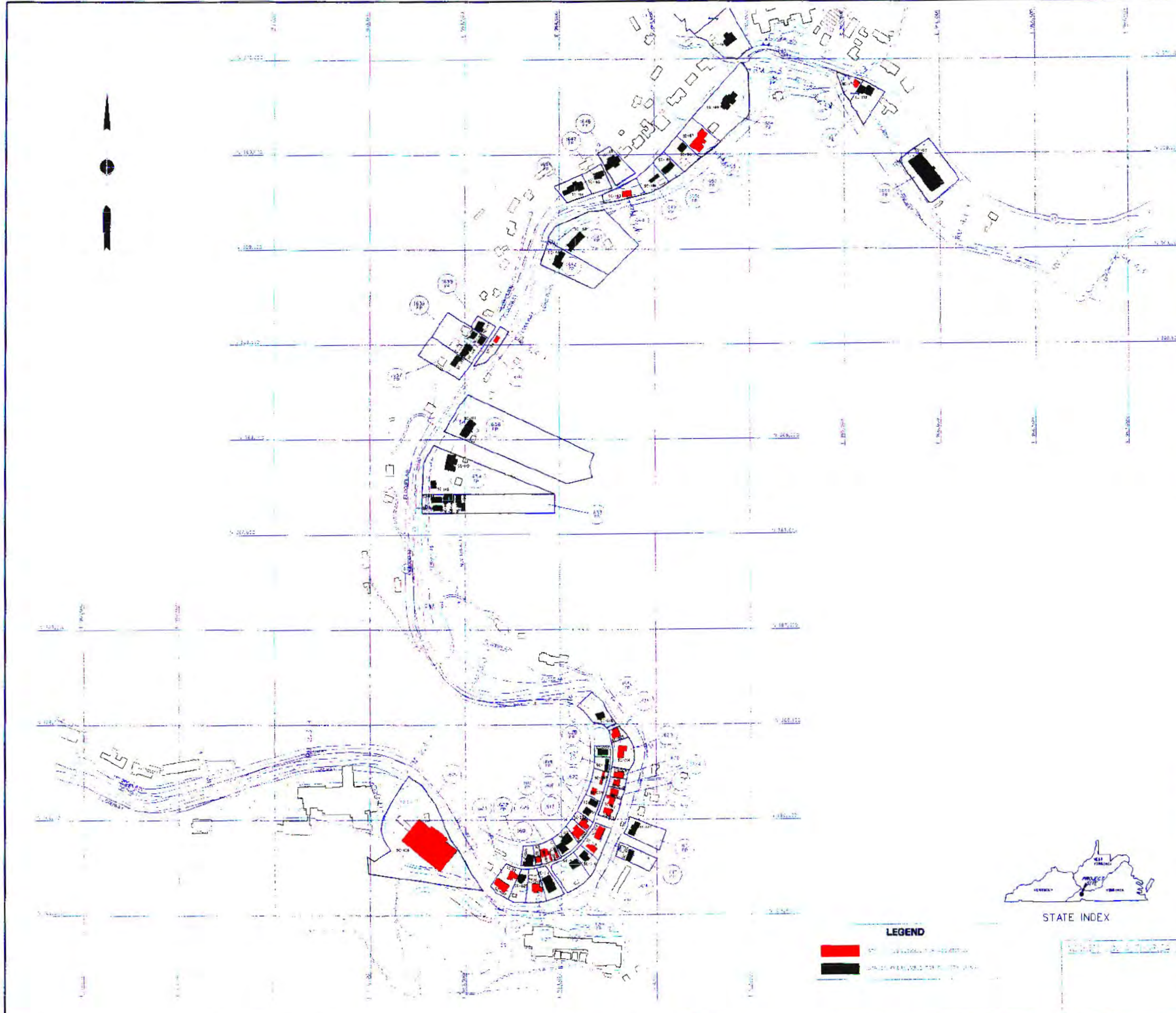
INSTALLATION OR PROJECT NO.

SHEET 15 OF

DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY



TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP
[illegible]	BUCHANAN COUNTY [illegible]	6.29			78,79	[illegible]
[illegible]	[illegible]	[illegible]	33	[illegible]	66	[illegible] INSERT [illegible]
[illegible]	[illegible]	[illegible]	55	581	75	[illegible] INSERT F
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT F
[illegible]	[illegible], ET UX	[illegible]	324	[illegible]	65	[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT F
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible] INSERT [illegible]
[illegible]	[illegible], ET UX	[illegible]	[illegible]	[illegible]	67	[illegible] INSERT [illegible]
[illegible]	[illegible], ET UX	[illegible]	56	124	55	[illegible] INSERT [illegible]
[illegible]	CLIFFORD [illegible], ET UX	[illegible]	324	86	65	[illegible] INSERT [illegible]
[illegible]	HELEN CHILDRESS MATNEY	[illegible]	259	[illegible]	72	[illegible] INSERT [illegible]
[illegible]	[illegible] CHILDRESS, ET UX	[illegible]	264	[illegible]	69	[illegible] INSERT [illegible]
[illegible]	[illegible], ET UX	[illegible]	353	[illegible]	184	[illegible] ENLG [illegible] SHEET
[illegible]	[illegible], ET UX	[illegible]	358	[illegible]	70	[illegible] INSERT [illegible]
[illegible]	ROBERT [illegible], ET UX	[illegible]	65	199	49	[illegible] INSERT [illegible]
[illegible]	JAMES [illegible] CRABTREE, ET UX	[illegible]	[illegible]	343	[illegible]	[illegible] ENLG [illegible] SHEET
[illegible]	DELLAH [illegible] CHILDRESS	3.25	263	[illegible]	[illegible]	[illegible] INSERT [illegible]
[illegible]	RONALD LEE [illegible], ET UX	[illegible]	328	593	48	[illegible] INSERT [illegible]
624	KEISTER STACY	[illegible]	[illegible]	499	47	[illegible] INSERT [illegible]
626	DOUGLASS WADE CHILDRESS	[illegible]	188	[illegible]	46	[illegible] INSERT [illegible]
[illegible]	WILLARD [illegible], ET UX	[illegible]	[illegible]	[illegible]	73	[illegible] INSERT [illegible]
[illegible]	[illegible] JAMES [illegible]	[illegible]	[illegible]	[illegible]	74	[illegible] INSERT [illegible]
[illegible]	ERNEST [illegible], ET UX	[illegible]	[illegible]	[illegible]	43,44,45	[illegible] INSERT [illegible]
[illegible]	DEBORAH [illegible] MATNEY	[illegible]	[illegible]	[illegible]	42	[illegible] INSERT [illegible]
[illegible]	CAROLYN [illegible]	[illegible]	27	[illegible]	41	[illegible] INSERT [illegible]
[illegible]	[illegible] LESTER [illegible]	[illegible]	66	[illegible]	28	[illegible] ENLG [illegible] SHEET
[illegible]	[illegible] ERNEST HORN	[illegible]	[illegible]	[illegible]	26,27	[illegible] ENLG [illegible] SHEET
[illegible]	[illegible] HORN	[illegible]	[illegible]	[illegible]	23,24	[illegible] ENLG [illegible] SHEET
[illegible]	BETTY ANN [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ENLG [illegible]
[illegible]	[illegible] HORN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ENLG [illegible]
[illegible]	[illegible] STACEY, ET AL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ENLG [illegible]
[illegible]	[illegible] COAL CORP.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ENLG [illegible] SHEET 2
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]		[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	[illegible], ET UX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ENLG [illegible] SHEET 2
[illegible]	WILLIAM [illegible], ET UX	[illegible]	[illegible]	309	[illegible]	[illegible] ENLG [illegible] SHEET 2
[illegible]	RONALD [illegible] PHILLIPS, ET UX	[illegible]	355	[illegible]	[illegible]	[illegible] ENLG [illegible] SHEET 2
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	----------------	[illegible]	----------------			[illegible] INSERT [illegible]
[illegible]	ROBERT [illegible], ET UX	[illegible]	65	[illegible]	49	[illegible]
657	DOUGLASS WADE CHILDRESS	[illegible]	[illegible]	[illegible]	46	[illegible]
[illegible]	DOUGLASS WADE CHILDRESS	[illegible]	[illegible]	[illegible]	46	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

LOCATION OF PROJECT		TRANSPORTATION FACILITIES
STATE	VIRGINIA	RAILROADS
COUNTY	BUCHANAN	STATE ROADS
DIVISION	GREAT LAKES AND OHIO RIVER	FEDERAL ROADS
DISTRICT	HUNTINGTON	AIR LINES
ARMY AREA	FIRST	

EXHIBIT 16

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY EVS
CHECKED BY [illegible]
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
CHIEF, REAL ESTATE DIVISION

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY:
COL., CORPS OF ENGINEERS, DISTRICT ENGINEER
DATE

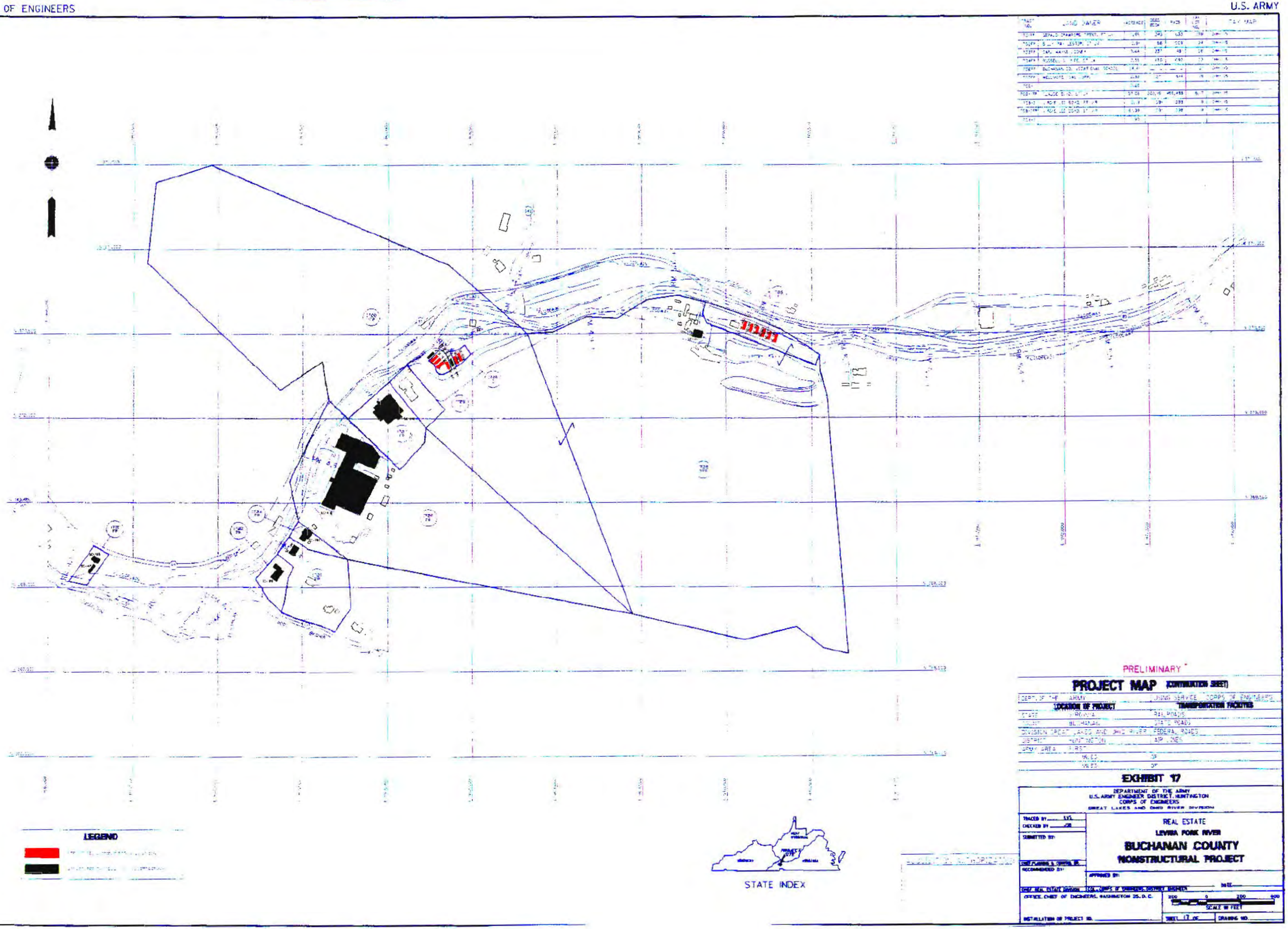
OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

200 0 200 400
SCALE IN FEET

INSTALLATION OR PROJECT NO.
SHEET 16 OF
DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY



PRELIMINARY *

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY — CIVIL WORKS — CORPS OF ENGINEERS

LOCATION OF PROJECT — TRANSPORTATION FACILITIES

STATE: VIRGINIA — RAILROADS

COUNTY: BUCHANAN — STATE ROADS

DIVISION: GREAT LAKES AND OHIO RIVER — FEDERAL ROADS

DISTRICT: HUNTINGTON — AIR LINES

ARMY AREA: FIRST

MILES OF

MILES OF

EXHIBIT 17

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: EVS
CHECKED BY: JCR
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION FOR CHIEF OF ENGINEERS, DISTRICT ENGINEER — DATE
OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.
INSTALLATION OR PROJECT NO.

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

200 0 200 400
SCALE IN FEET

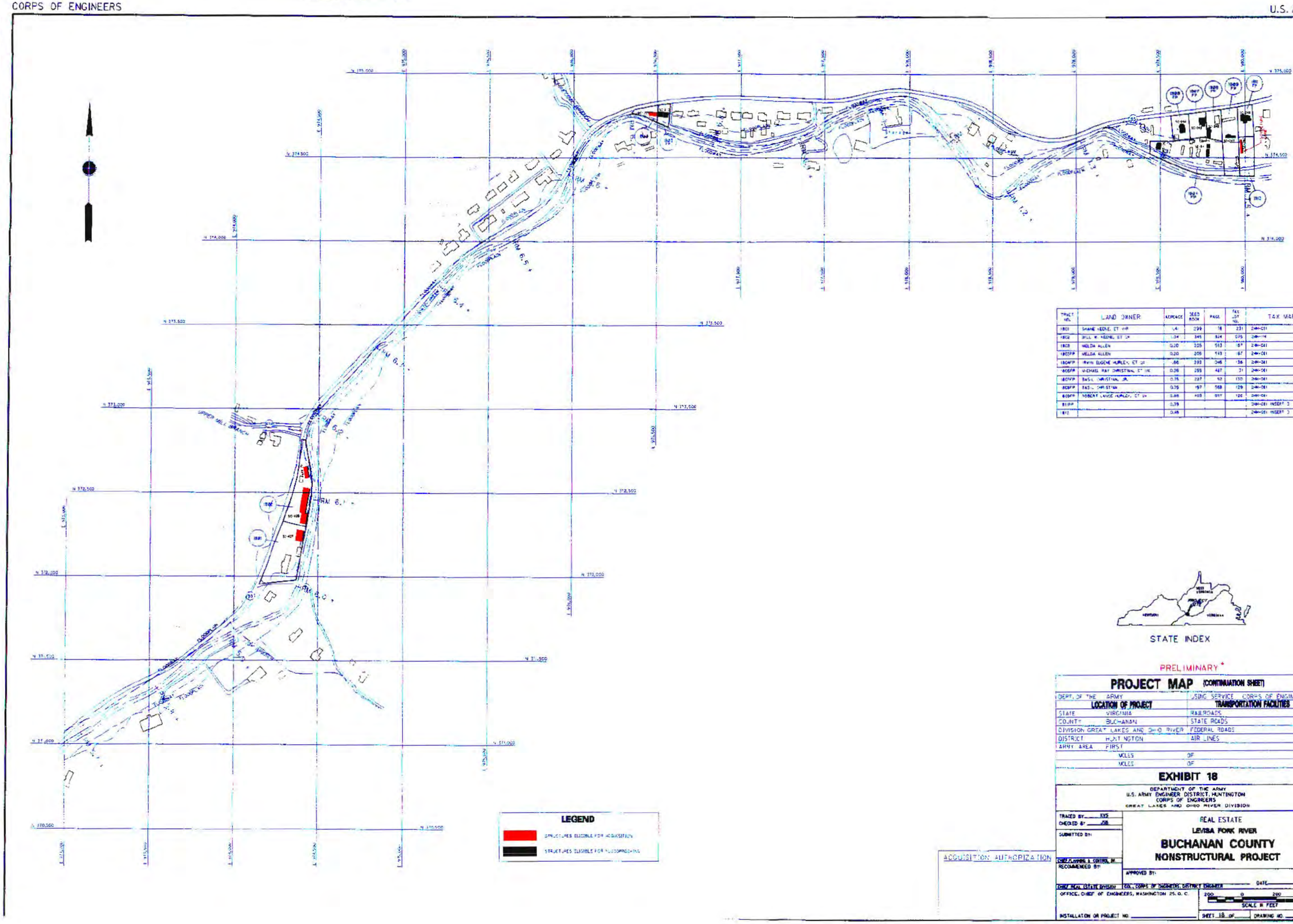
SHEET 17 OF — DRAWING NO.

LEGEND

STATE INDEX

CORPS OF ENGINEERS

U.S. ARMY



TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP
1801	SHANE KEENE, ET VIR	1.41	299	18	231	249-001
1802	BILL W. KEENE, ET UX	1.04	345	824	075	249-114
1803	MELDA ALLEN	0.20	205	533	167	249-001
1803FP	MELDA ALLEN	0.20	205	533	167	249-001
1804FP	IRVIN EUGENE HUBLEY, ET UX	.66	393	046	136	249-001
805FP	MICHAEL RAY CHRISTIAN, ET UX	0.26	255	427	31	249-001
807FP	BASIL CHRISTIAN, JR.	0.35	227	93	130	249-001
808FP	BASIL CHRISTIAN	0.35	197	568	129	249-001
809FP	NORDAY LANCE HUBLEY, ET UX	0.66	403	997	126	249-001
811FP		0.39				249-001 INSERT 3
812		0.48				249-001 INSERT 3

LEGEND

STRUCTURES ELIGIBLE FOR ACQUISITION

STRUCTURES ELIGIBLE FOR FLOODPROOFING

STATE INDEX

PRELIMINARY *

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY — CORPS OF ENGINEERS

LOCATION OF PROJECT

STATE VIRGINIA

COUNTY BUCHANAN

DIVISION GREAT LAKES AND OHIO RIVER

DISTRICT HUNTINGTON

ARMY AREA FIRST

MILES OF

MILES OF

USING SERVICE — CORPS OF ENGINEERS

TRANSPORTATION FACILITIES

RAILROADS

STATE ROADS

FEDERAL ROADS

AIR LINES

EXHIBIT 1B

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY: KVS
CHECKED BY: JSB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
CHIEF, REAL ESTATE DIVISION

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

APPROVED BY:
COL, CORPS OF ENGINEERS, DISTRICT ENGINEER
DATE

ACQUISITION AUTHORIZATION

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

INSTALLATION OR PROJECT NO.

200 0 200 400
SCALE IN FEET

SHEET 18 OF

DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY

TRACT NO.	LAND OWNER	ACRES	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP
1901		0.28				2HH-08I INSERT B
1902		0.33				2HH-08I INSERT B
1903		0.35				2HH-08I INSERT B
1904		0.62				2HH-08I INSERT C
1908		0.39				2HH-08I INSERT C
1907	MAX LEWIS, ET UX	0.80	307	191	90	2HH-08I
908	LUTHER BURTON FLETCHER	46.75	348	412	72	2HH-08I
908FP	LUTHER B. FLETCHER	1.46	348	488	728	2HH-08I
911FP	ROBERT F. MATHER ENTERPRISES, INC.	0.49	99	387	89	2HH-08I
912FP	DAVID WAYNE SIZZLE	0.73	393	342	85	2HH-08I INSERT A
913FP	CLIFFORD EARL COOPER, ET UX	0.28			64	2HH-08I INSERT A
914	LONZO LESTER, ET UX	0.43	336	645	83	2HH-08I INSERT A
916	LUTHER B. FLETCHER, ET UX	3.10	159	497	68	2HH-08I
917	JOHN STARNISKI, ET AL	0.44	502	656	80	2HH-08I INSERT A
918	W. H. OSBORNE	0.27	93	183	58	2HH-08I
918FP	MAVIS JEAN HOWINS	15.09	241	537	52	2HH-08I
921	BILLIE RAY WARD	0.28	195	173	55	2HH-08I
922FP	JULIA WARD	0.12			54	2HH-08I
923	MAVIS JEAN HOWINS, ET UX	0.24	142	375	50	2HH-08I
924FP	JEANNIE WARD, ET UX	6.43	25	537	51	2HH-08I
925		0.73				2HH-08I SKETCH A
926		0.1				2HH-08I SKETCH A
927		0.1				2HH-08I SKETCH A
928FP		0.18				2HH-08I SKETCH A
929FP		0.12				2HH-08I SKETCH A
933FP		0.43				
1930FP	HERMAN LEE MATHEY, ET UX	0.14	245	31	010	2HH-08I
933	ALBERT CECIL SMITH	1.40	278	449	008	2HH-08I

STACY

LEGEND

STRUCTURES ELIGIBLE FOR ACQUISITION

STRUCTURES ELIGIBLE FOR FLOODPROOFING

STATE INDEX

ACQUISITION AUTHORIZATION

PRELIMINARY

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY	USING SERVICE CORPS OF ENGINEERS
LOCATION OF PROJECT	TRANSPORTATION FACILITIES
STATE VIRGINIA	RAILROADS
COUNTY BUCHANAN	STATE ROADS
DIVISION GREAT LAKES AND OHIO RIVER	FEDERAL ROADS
DISTRICT HUNTINGTON	AIR LINES
ARMY AREA FIRST	
MILES	OF
MILES	OF

EXHIBIT 19

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY SYS
CHECKED BY JSB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION COL, CORPS OF ENGINEERS, DISTRICT ENGINEER DATE

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D.C.

INSTALLATION OR PROJECT NO.

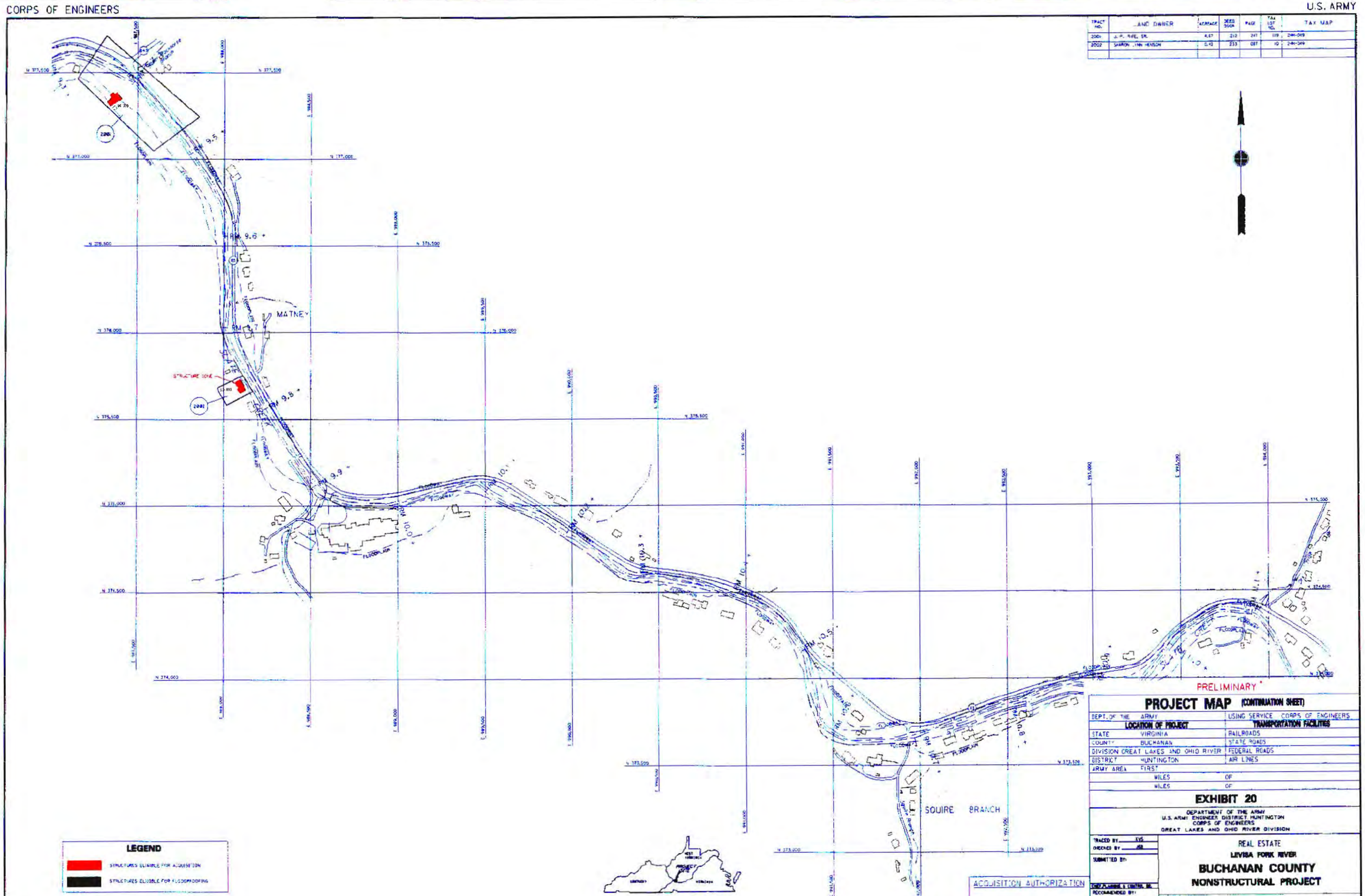
200 0 200 400
SCALE IN FEET

SHEET 19 OF DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY

TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP
2001	J. P. RIFE, SR.	4.67	212	247	119	244-049
2002	SHARON LYNN HENSON	0.43	233	087	10	244-049



PRELIMINARY

LEGEND

- STRUCTURES ELIGIBLE FOR ACQUISITION
- STRUCTURES ELIGIBLE FOR FLOODPROOFING

STATE INDEX

ACQUISITION AUTHORIZATION

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY	USING SERVICE CORPS OF ENGINEERS
LOCATION OF PROJECT	TRANSPORTATION FACILITIES
STATE VIRGINIA	RAILROADS
COUNTY BUCHANAN	STATE ROADS
DIVISION GREAT LAKES AND OHIO RIVER	FEDERAL ROADS
DISTRICT HUNTINGTON	AIR LINES
ARMY AREA FIRST	
MILES	OF
MILES	OF

EXHIBIT 20

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

TRACED BY EVS
CHECKED BY JSB
SUBMITTED BY:
CHIEF, ENGINEERING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION, LRH, CORPS OF ENGINEERS, DISTRICT ENGINEER — DATE

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.
INSTALLATION OR PROJECT NO.

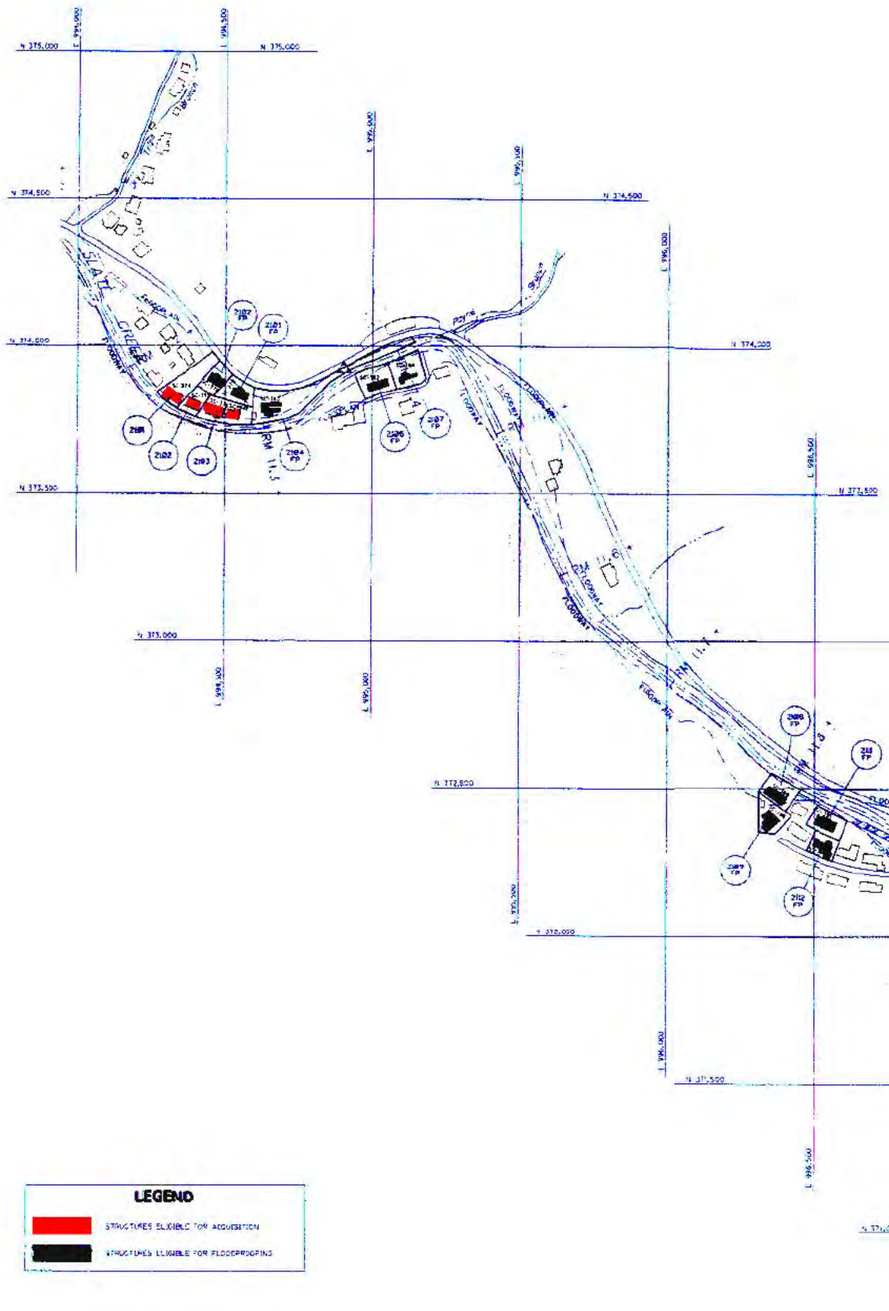
200 0 200 400
SCALE IN FEET

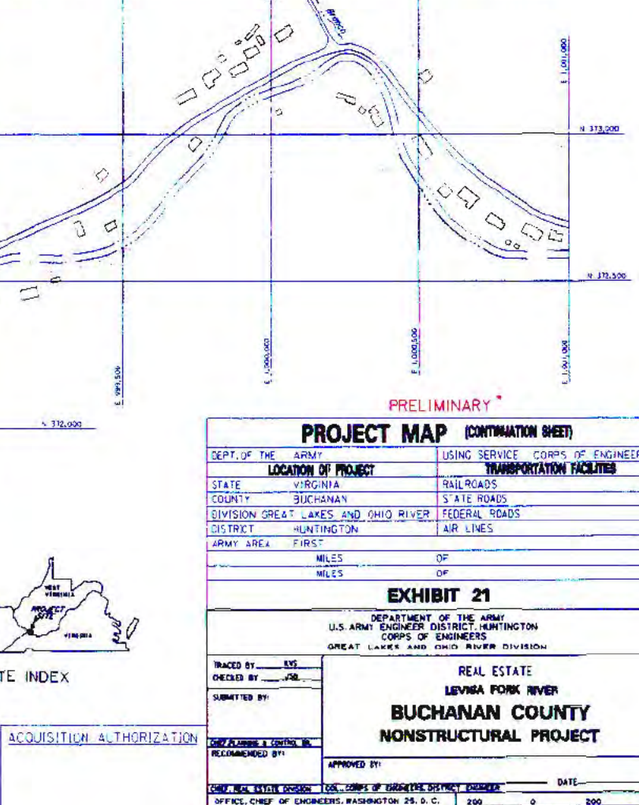
SHEET 20 OF
DRAWING NO.

CORPS OF ENGINEERS

U.S. ARMY

TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP
2101		0.32				2HH-049 INSERT B
2102		0.14				2HH-049 INSERT B
2102FP		0.16				2HH-049 INSERT B
2103		0.20				2HH-049 INSERT B
2103FP		0.30				2HH-049 INSERT B
2104FP		0.88				2HH-049 INSERT B
2106FP	ARTHUR ESTEP, ET UX	0.24	321	283	3	2HH-049 INSERT A
2107FP	RODNEY BOYD, ET UX	0.25	321	310	2	2HH-049 INSERT A
2108FP	FAYE ASAD HAMAM, ET UX	0.22	281	428	137	2HH-014
2109FP	EZRA L. DAVIS, ET UX	0.22	423	188	138	2HH-014
2110FP	VADIA DELMON OWENS, ET UX	0.21	296	314	133	2HH-014
2135FP	JAMES CARL OWENS, ET UX	0.16	341	554	132	2HH-014





LEGEND

STRUCTURES ELIGIBLE FOR ACQUISITION

STRUCTURES ELIGIBLE FOR FLOODPROOFING

STATE INDEX

ACQUISITION AUTHORIZATION

PRELIMINARY *

PROJECT MAP (CONTINUATION SHEET)

DEPT. OF THE ARMY	USING SERVICE CORPS OF ENGINEERS
LOCATION OF PROJECT	**TRANSPORTATION FACILITIES**
STATE VIRGINIA	RAILROADS
COUNTY BUCHANAN	STATE ROADS
DIVISION GREAT LAKES AND OHIO RIVER	FEDERAL ROADS
DISTRICT HUNTINGTON	AIR LINES
ARMY AREA FIRST	
MILES	OF
MILES	OF

EXHIBIT 21

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HUNTINGTON
CORPS OF ENGINEERS
GREAT LAKES AND OHIO RIVER DIVISION

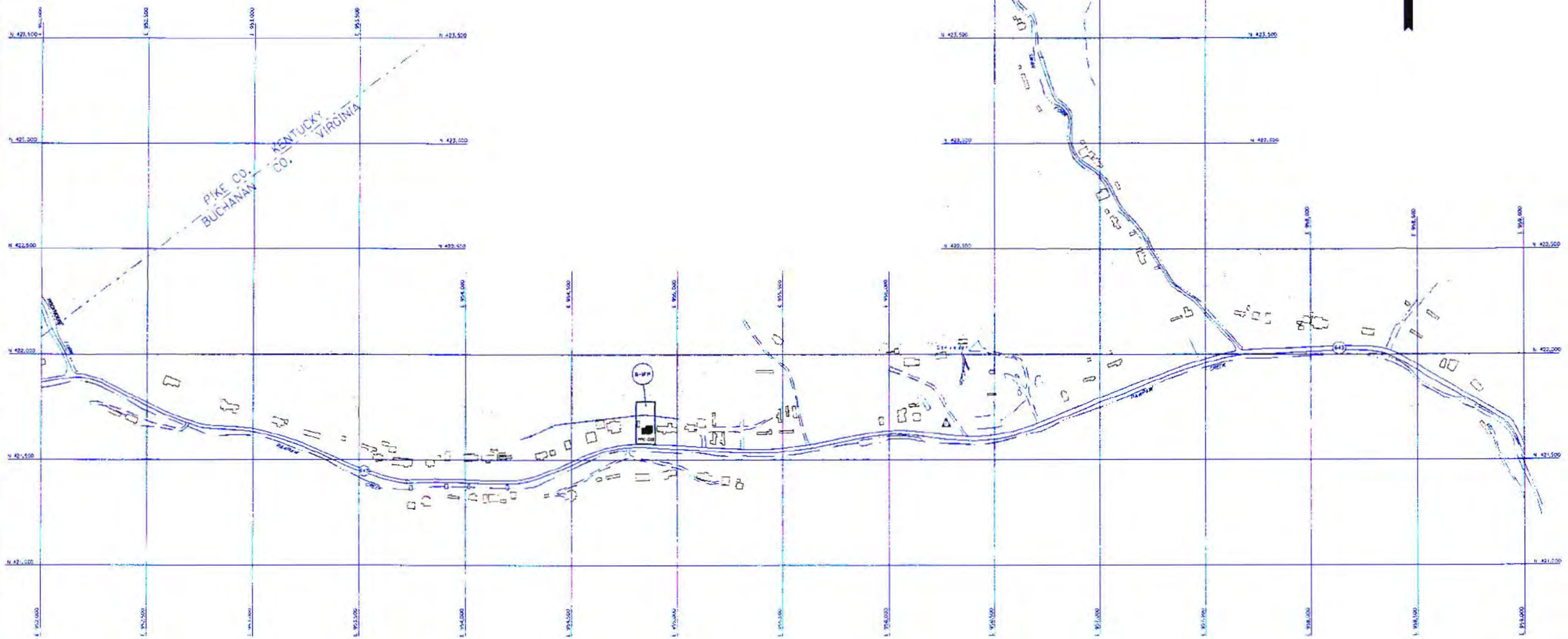
TRACED BY RVS
CHECKED BY JSB
SUBMITTED BY:
CHIEF, PLANNING & CONTROL BR.
RECOMMENDED BY:
APPROVED BY:
CHIEF, REAL ESTATE DIVISION
COL., CORPS OF ENGINEERS, DISTRICT ENGINEER
DATE
OFFICE, CHIEF OF ENGINEERS, WASHINGTON 25, D. C.

REAL ESTATE
LEVISA FORK RIVER
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

200 0 200 400
SCALE IN FEET

INSTALLATION OF PROJECT NO.
SHEET 28 OF
DRAWING NO.

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TM LOT NO	TAX MAP	COMMENTS
B-1P	DANNY PAUL ESTEP, ET UX	0.40	270	749	21	21H-172	



TOPO 006

LEVISA FORK RIVER

BUCHANAN COUNTY

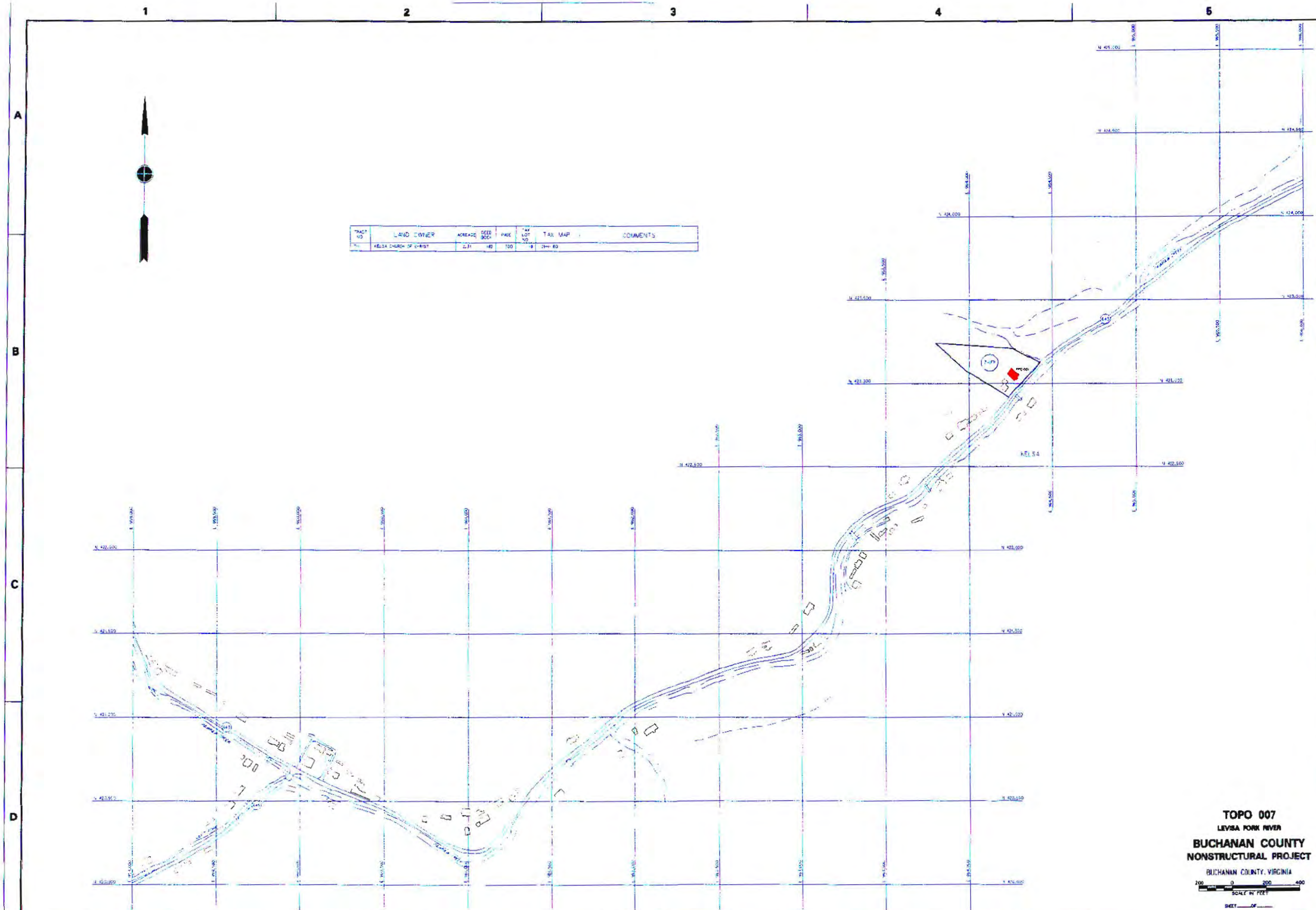
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
7-1	KELSA CHURCH OF CHRIST	2.31	182	700	19	2HH 60	

TOPO 007

LEVISA FORK RIVER

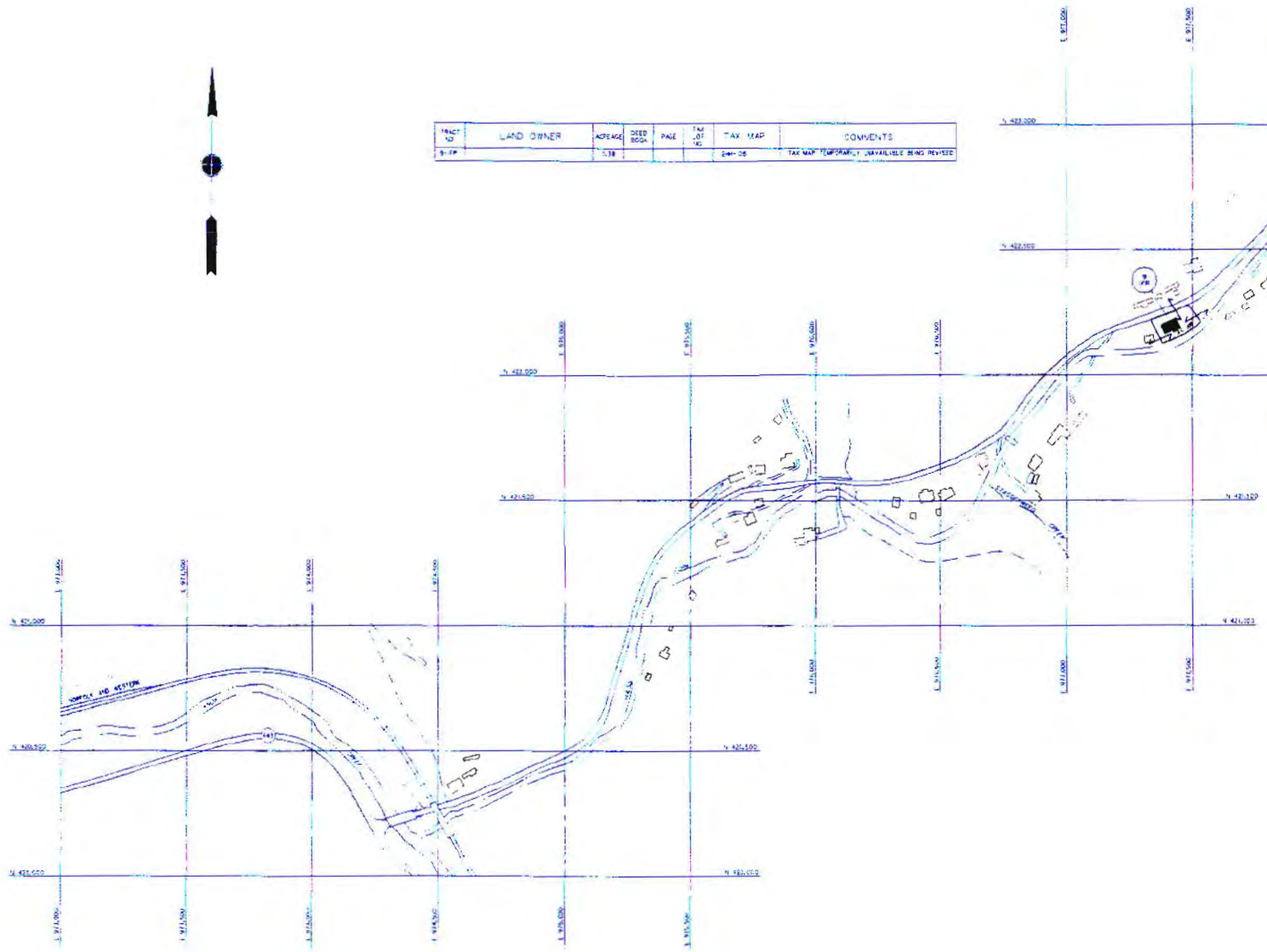
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ____ OF ____

TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
9-EP		5.38				2441-06	TAX MAP TEMPORARILY UNAVAILABLE BEING REVISED



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LEVISA FORK RIVER

BUCHANAN COUNTY

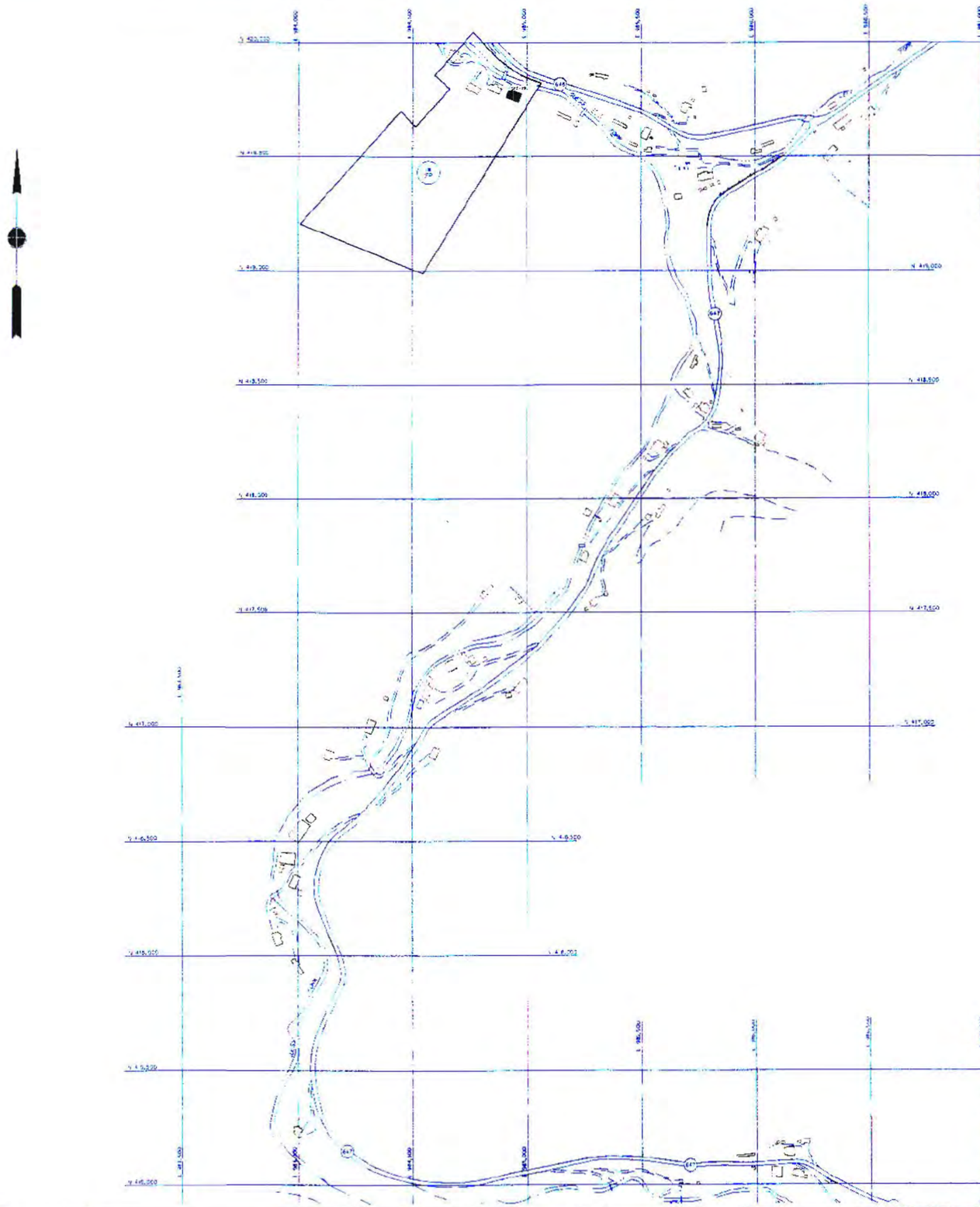
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
18-7FH	REBECCA MC FORD	10.88	355	436		34H 38B	

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LEVISA FORK RIVER

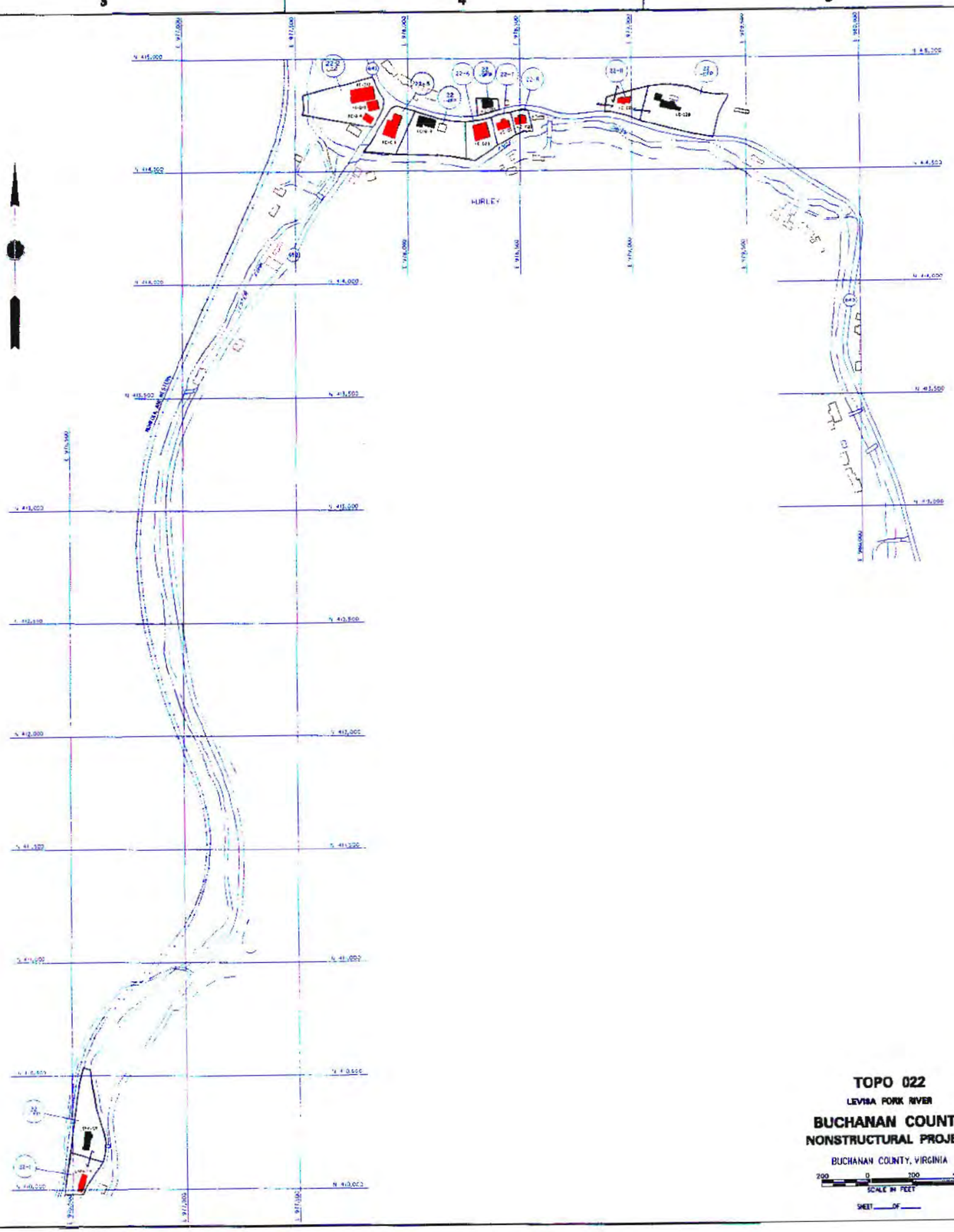
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
22-1	GREGORY JAMES HICKMEY	0.44	343	347	48	264-087	
22-1A*	GREGORY JAMES HICKMEY	0.69	749	512	48	264-087	
22-2	BUCHANAN COUNTY	.124	385	182	20	264-087	
22-3	PEARLOUS EDWARDS	2.68	36	182	18	264-087	
22-4**	JESSIE RUTH ADKINS	.105	232	591	7	264-087	
22-5		0.49			12	264-087	
22-7	LAURA LESTER	0.25	083	103	13	264-087	
22-8	TIMOTHY E. COX	0.17	420	262	11	264-087	
22-9**	ANITA SUE RIFE, ET UX	0.14	749	355	58	264-089	
22-11	WILLIS COLLINS, ET UX	0.46	117	117	59	264-088	
22-11A*	WILLIS COLLINS, ET UX	1.42	117	117	59	264-088	



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LEVISA FORK RIVER

BUCHANAN COUNTY

NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
23-1	BUCHANAN COUNTY SCHOOL BOARD	0.22			88	24H-087	
23-1FP	ETHEL MAE MULLINS	0.17	180	477	94	24H-087	
23-1FP	JIMMY RAY LAYNE, ET UX	0.27	431	909	105	24H-087	
23-1FP	JIMMY LAYNE, ET UX	0.06	339	400	106	24H-087	
23-6	JAMES CLEVENGER, ET UX	2.69	181	517	156	24H-087	
23-7	CHARLES HAROLD JUSTUS, ET UX	0.29	88	539	157	24H-087	

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LEVISA FORK RIVER

BUCHANAN COUNTY

NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 100 400

SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
29-1	VAN CREEK COAL	0.29			75A	244-109	
29-2	CLARENCE SMITH	0.49	20	464	73	244-108	
29-3PT	LORETTA LYNN JUSTUS, ET VIR	0.26	235	645	-	244-108	
29-4PT	RUSSELL BAUGHERTY, ET UX	1.31	45	121	20	244-108	
29-5	JOSEPH MAEL JUSTUS	0.41	430	384	3	244-109	
29-6	VAN CREEK MEDICAL AID	0.44	218	0.8	2	244-108	
29-8	[illegible]	2.6	030	124	4	244-108	

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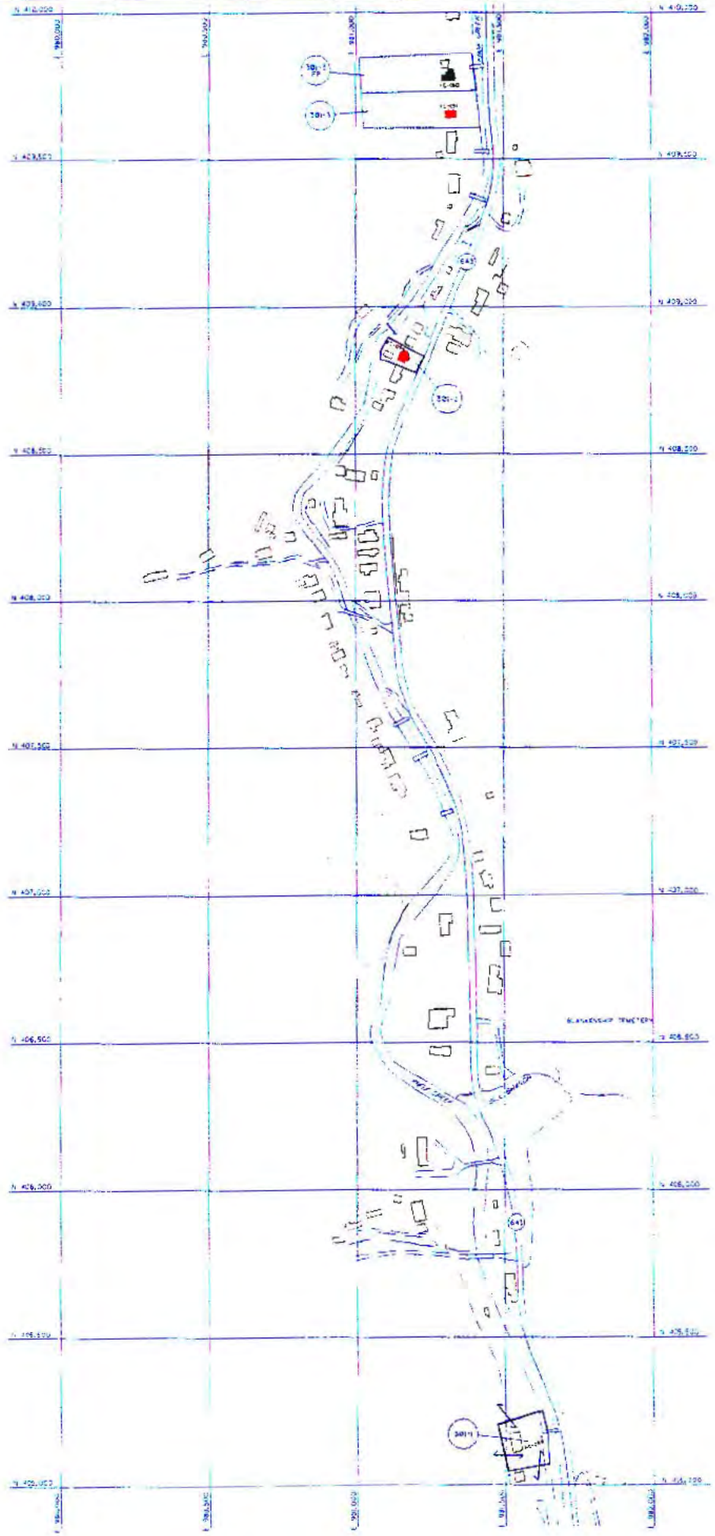
LEVISA FORK RIVER

BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ___ OF ___



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT ID	TAX MAP	COMMENTS
30H-1	[illegible]	0.59	181	517	156	[illegible]	
30H-1	[illegible]	0.02	238	040	161	[illegible]	
30H-1	JAMES CLEVENGER, ET UX	0.5	276	654	21	[illegible]	
30H-1PT	JAMES CLEVENGER, ET UX	.08	276	654	21	[illegible]	

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LEVISA FORK RIVER

BUCHANAN COUNTY

NONSTRUCTURAL PROJECT

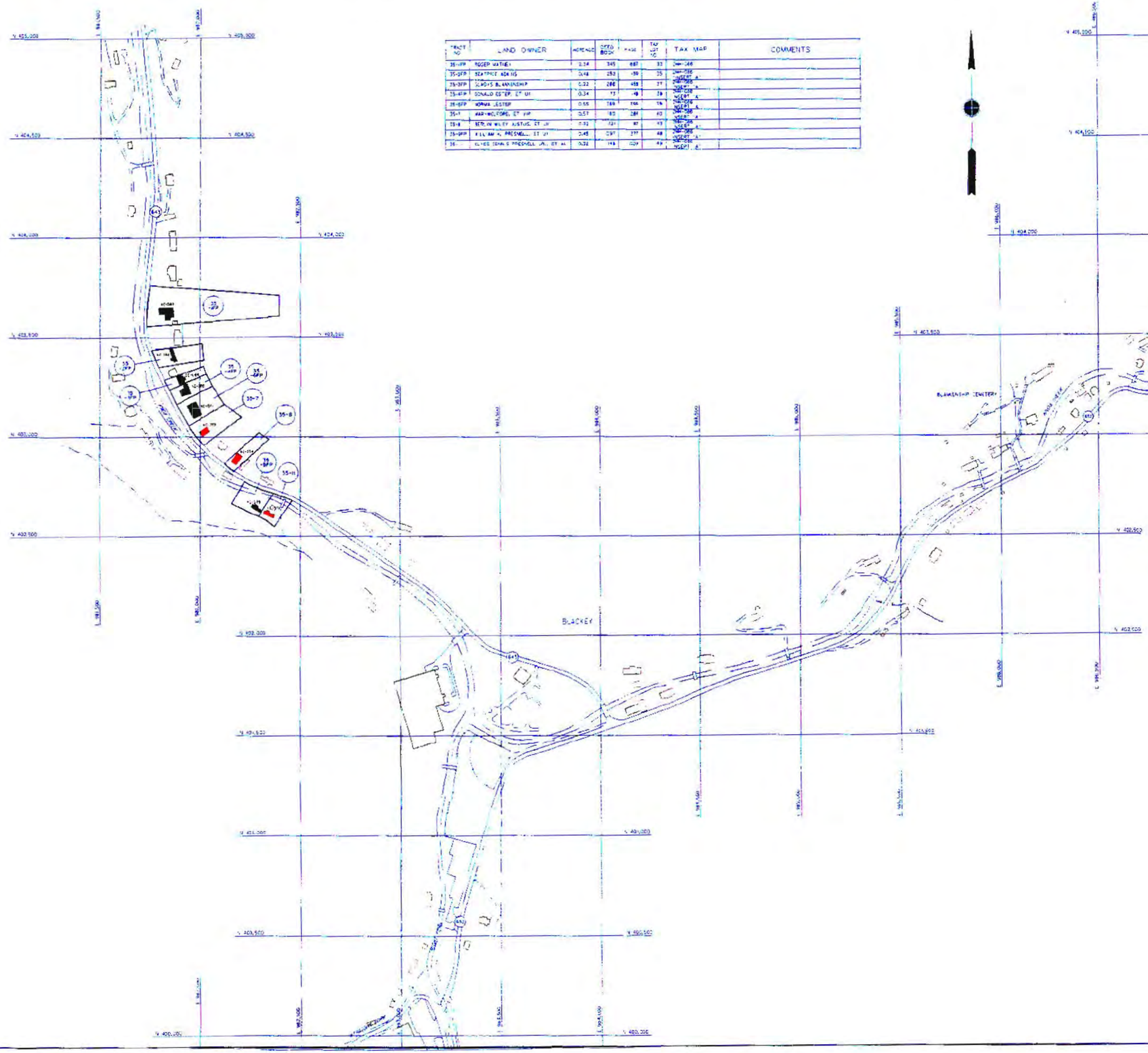
BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
35-1FP	ROGER MATHEY	2.24	345	687	33		
35-2FP	BEATRICE ADKINS	0.48	252	159	35		
35-3FP	ALBOYS BLANKENSHIP	0.22	286	458	37		
35-4FP	DONALD ESTEP, ET UX	0.34	93	48	38		
35-5FP	NORMA ESTEP	0.55	289	166	36		
35-1	MARVIN L. FORE, ET UX	0.57	185	284	40		
35-6	BERLIN WILEY AUSTUS, ET UX	0.32	321	82	43		
35-9FP	WILLIAM H. PRESNELL, ET UX	0.45	297	277	48		
35-	CHAS. EDWARD PRESNELL JR., ET AL	0.32	145	029	49		



TOPO 035

LEVISA FORK RIVER

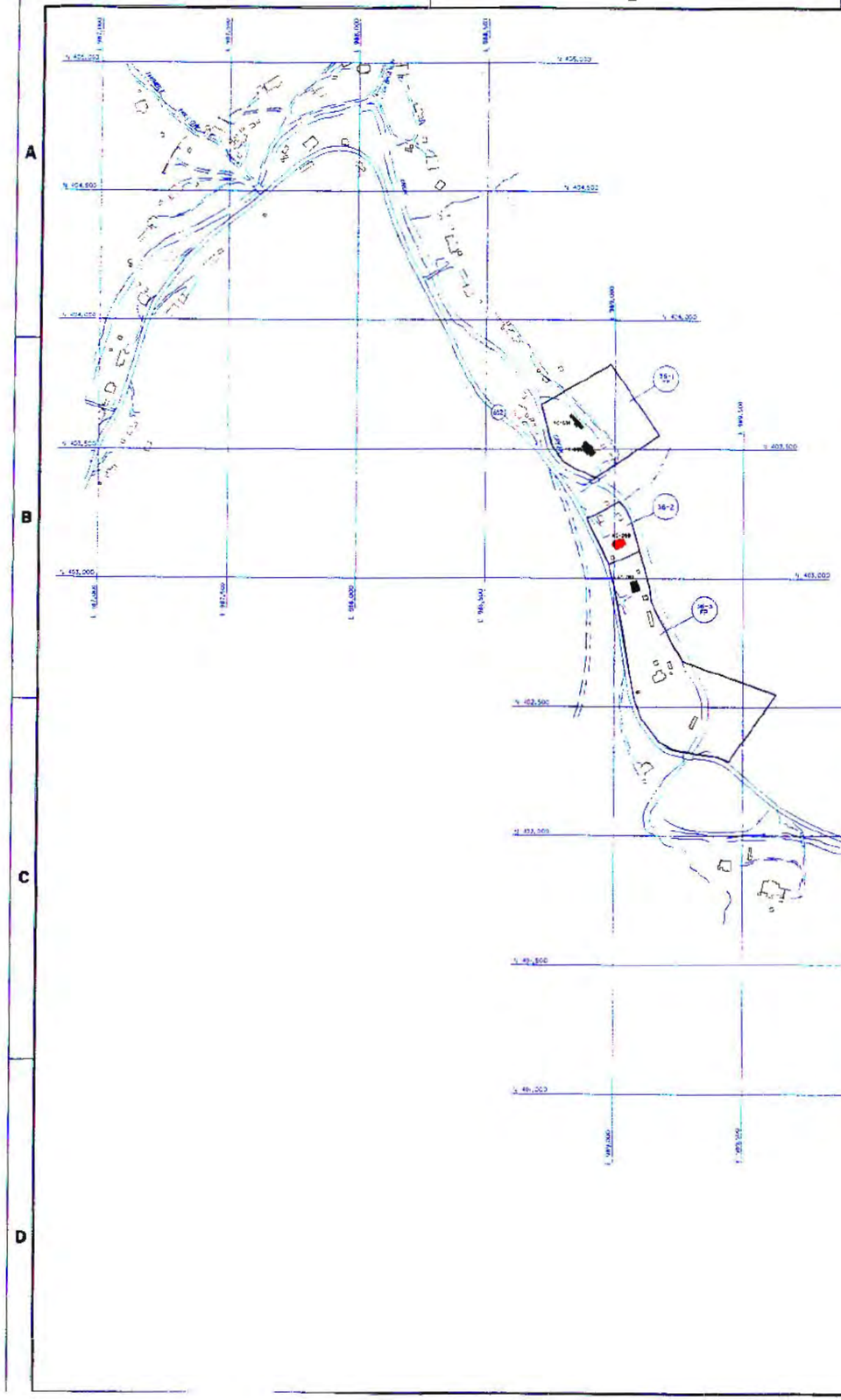
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ___ OF ___

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
36-1FP	SAMANTHA ENDICOTT	1.70	328	458	1	26H-(A)-44	
36-2	MATTIE ELIZABETH STURGILL	6.67	220	395	34	26H-(A)-44	
36-3FP	DESSIE ANN ASH*	6.78	288	09	35	26H-(A)-44	
36-4	LEONARD BLANKENSHIP	3.52	146	27	49	26H-(A)-44	



TOPO 036

LEVISA FORK RIVER

BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

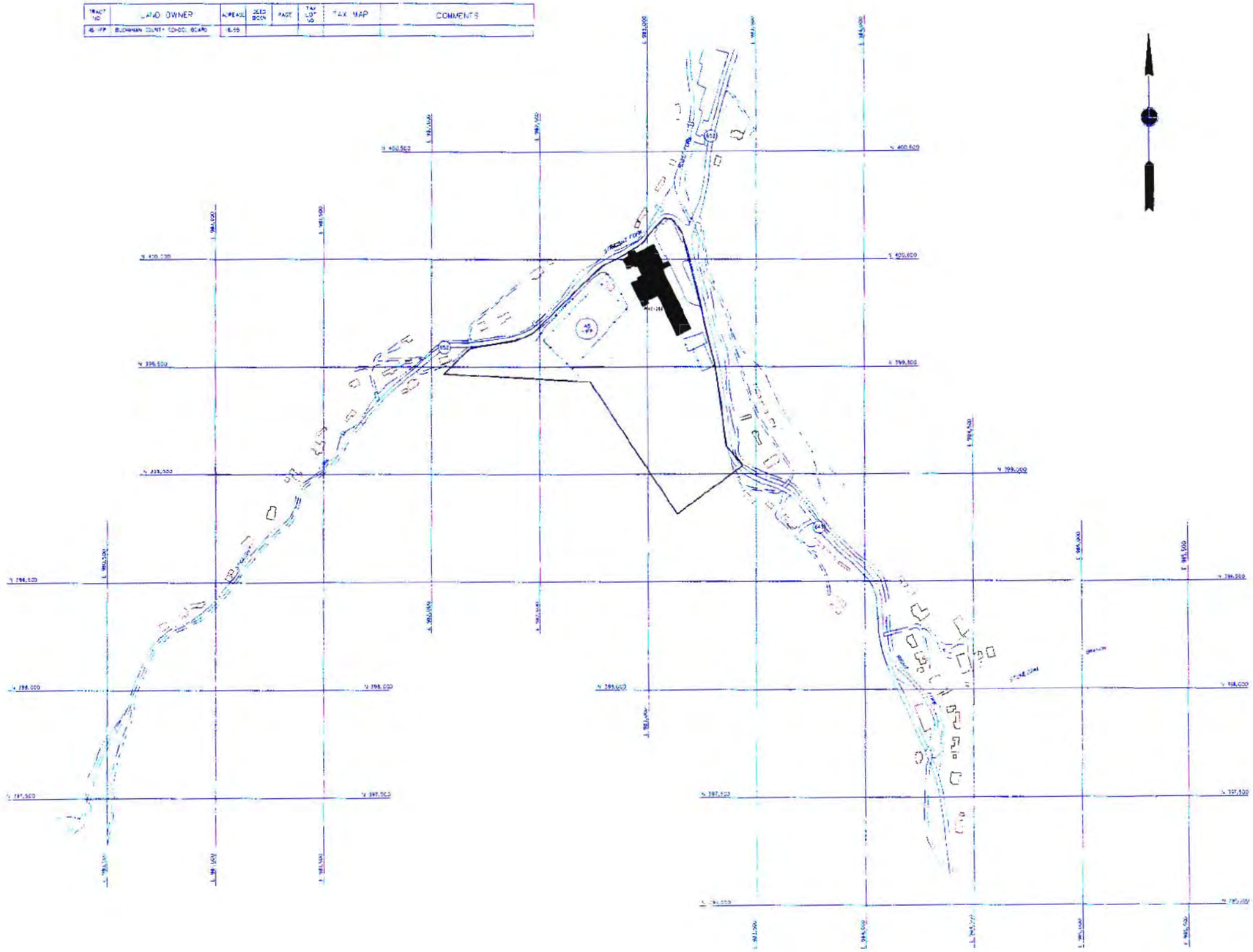
BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____

TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
45 FEE	BUCHANAN COUNTY SCHOOL BOARD	6.55					



TOPO 045

LEVISA FORK RIVER

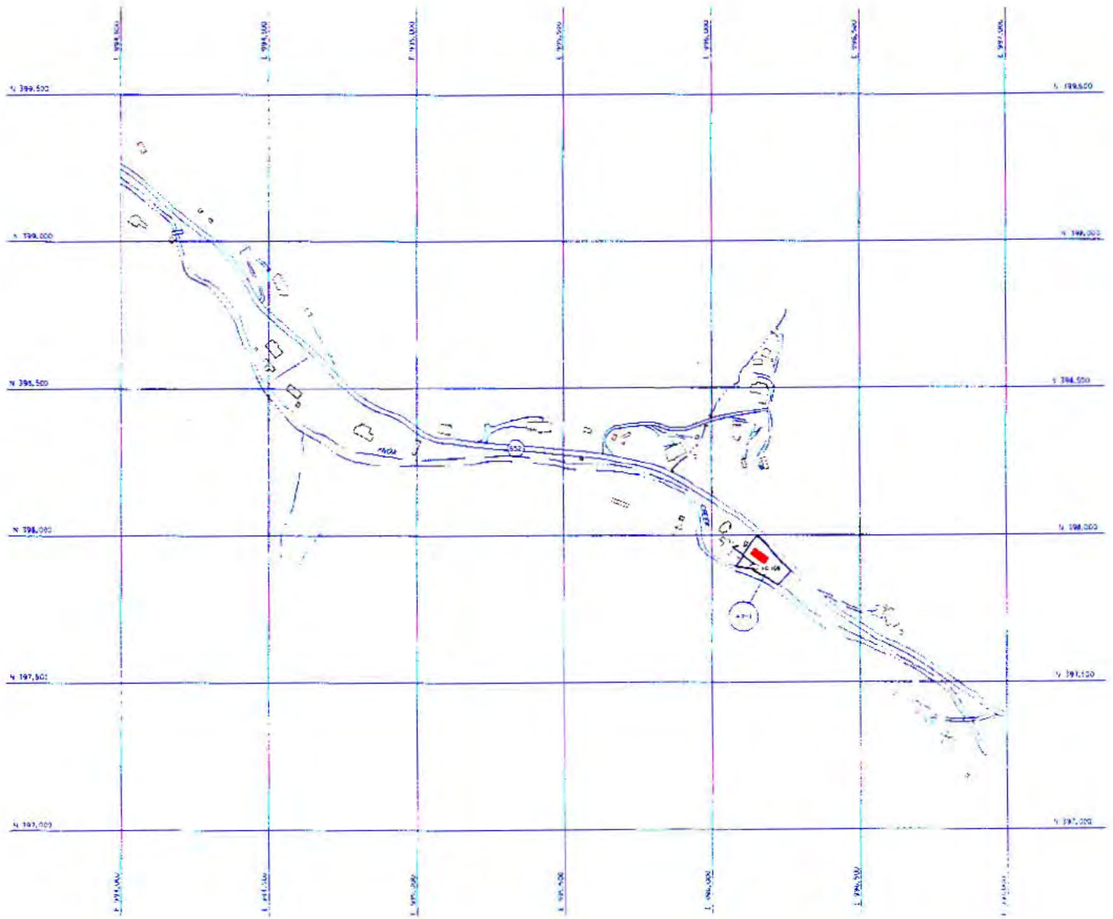
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
AT	LEWIS DONALD PETERSON	0.32	20	04	14	21H-1-45	-



TOPO 047

LEVISA FORK RIVER

BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

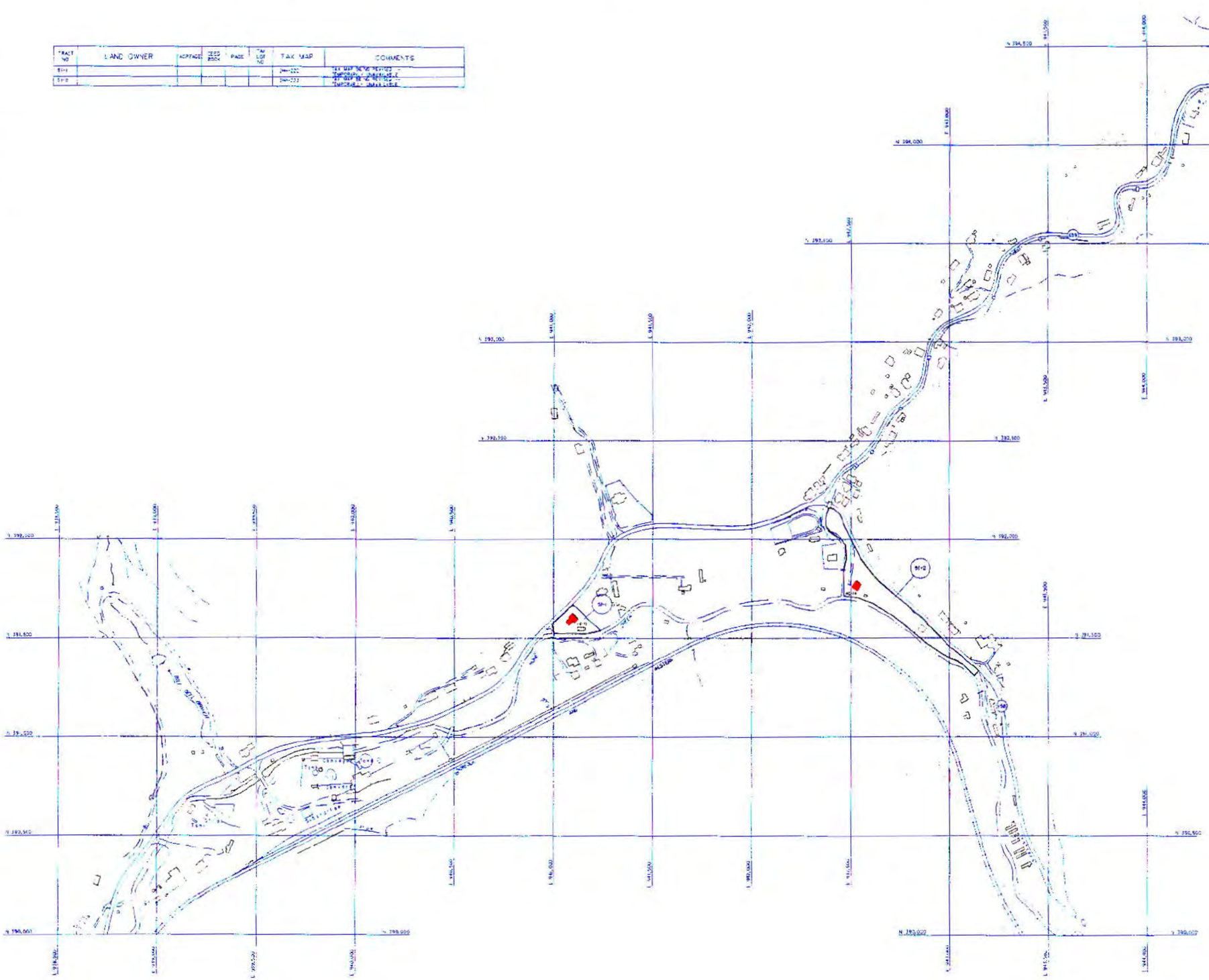
BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
B1-1						[illegible]	[illegible]
B1-2						[illegible]	[illegible]



TOPO 051

LEVISA FORK RIVER

BUCHANAN COUNTY

NONSTRUCTURAL PROJECT

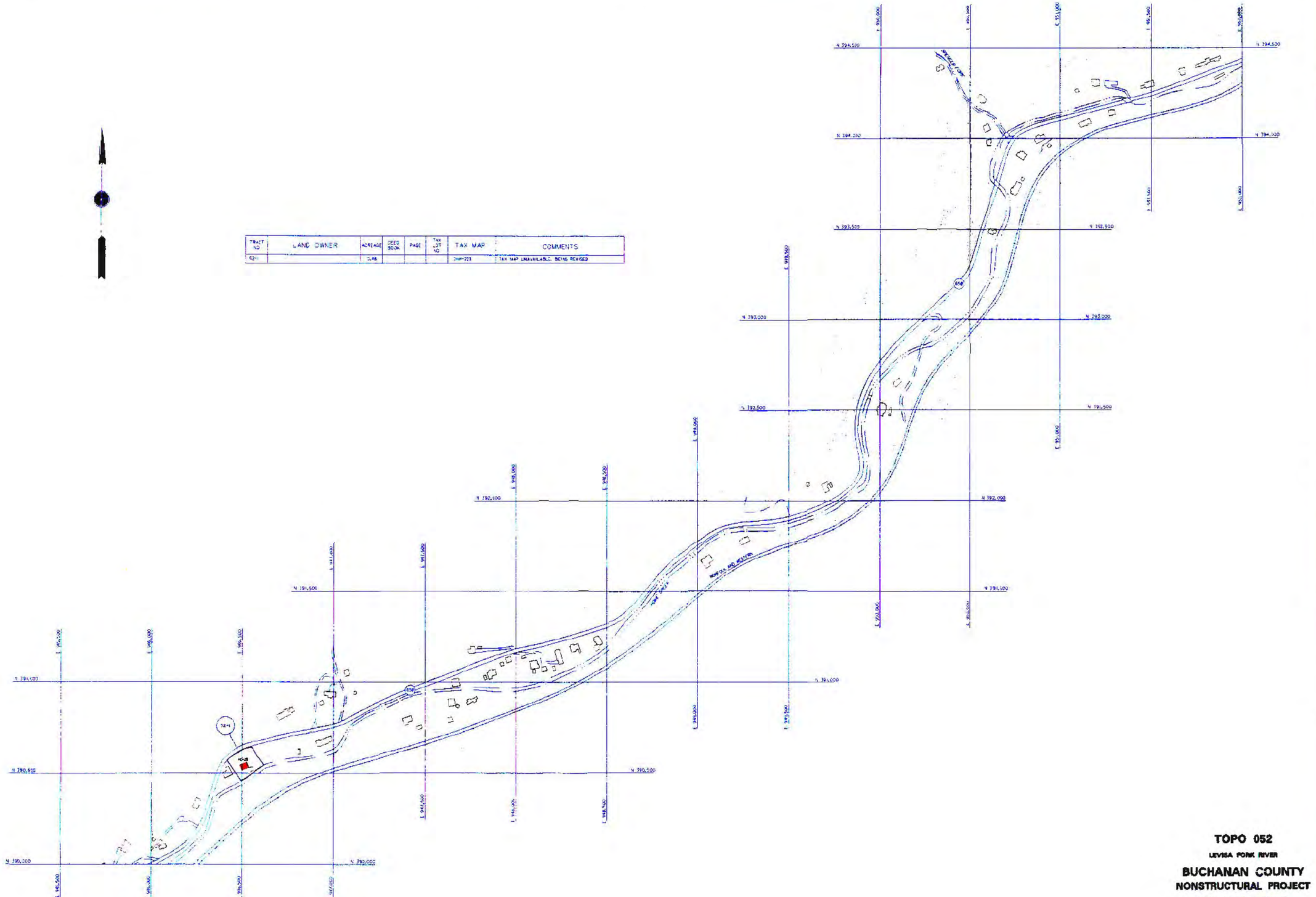
BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
52-1		0.48				2HH-223	TAX MAP UNAVAILABLE, BEING REVISED



TOPO 052

LEVISA FORK RIVER

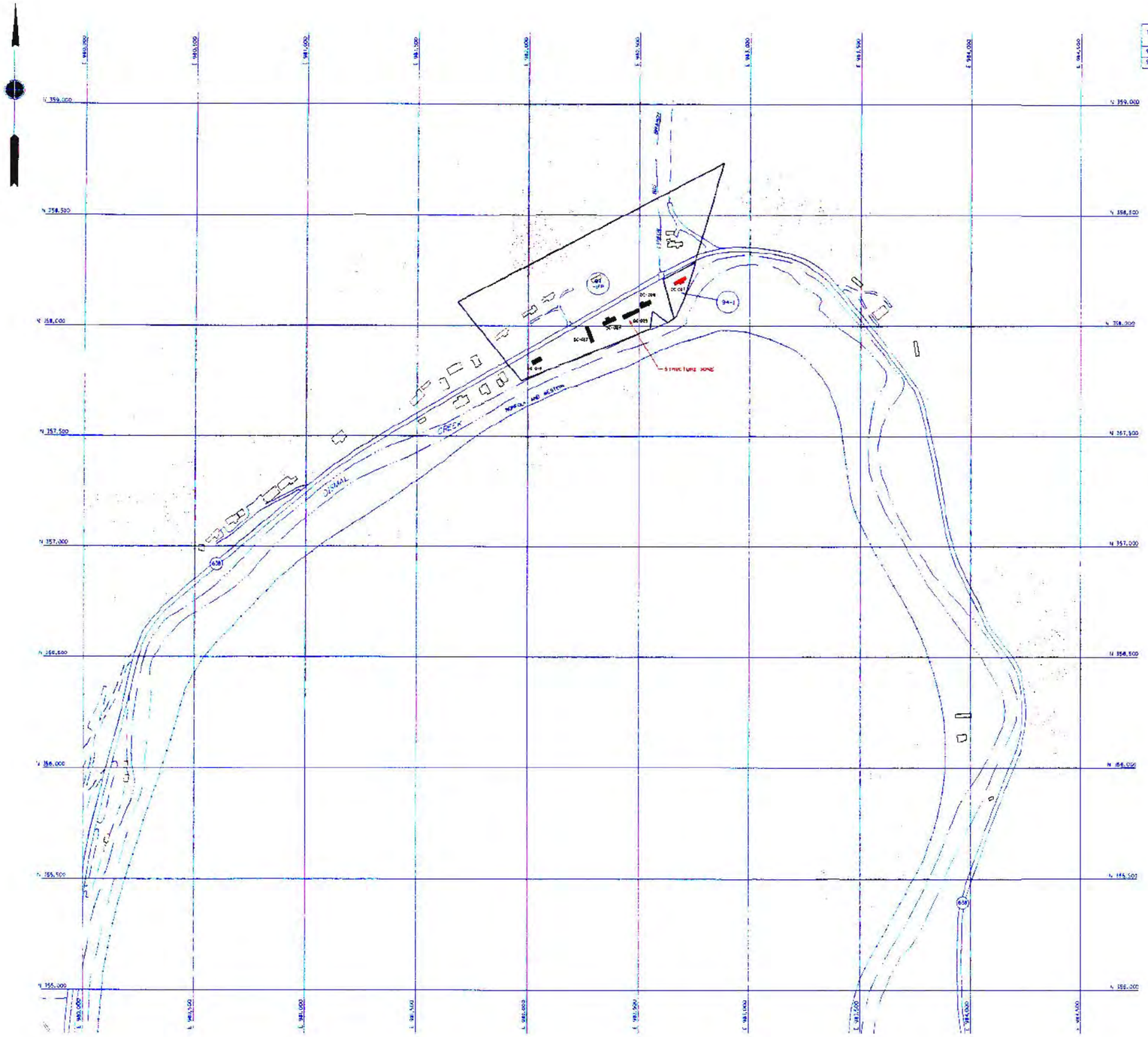
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
94-1	VIRGINIA HOLDING CORP.	0.38	087	129	18	244-078	
94-1FP	VIRGINIA HOLDING CORP.	1.30	087	129	18	244-078	



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LEVISA FORK RIVER

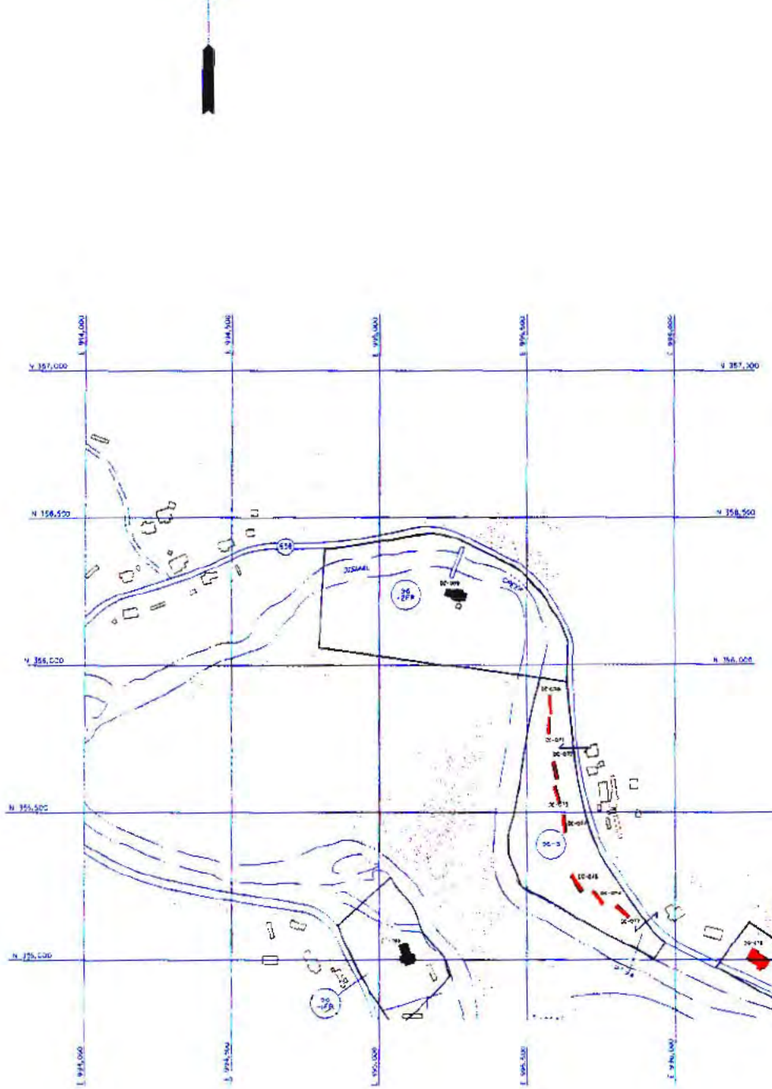
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

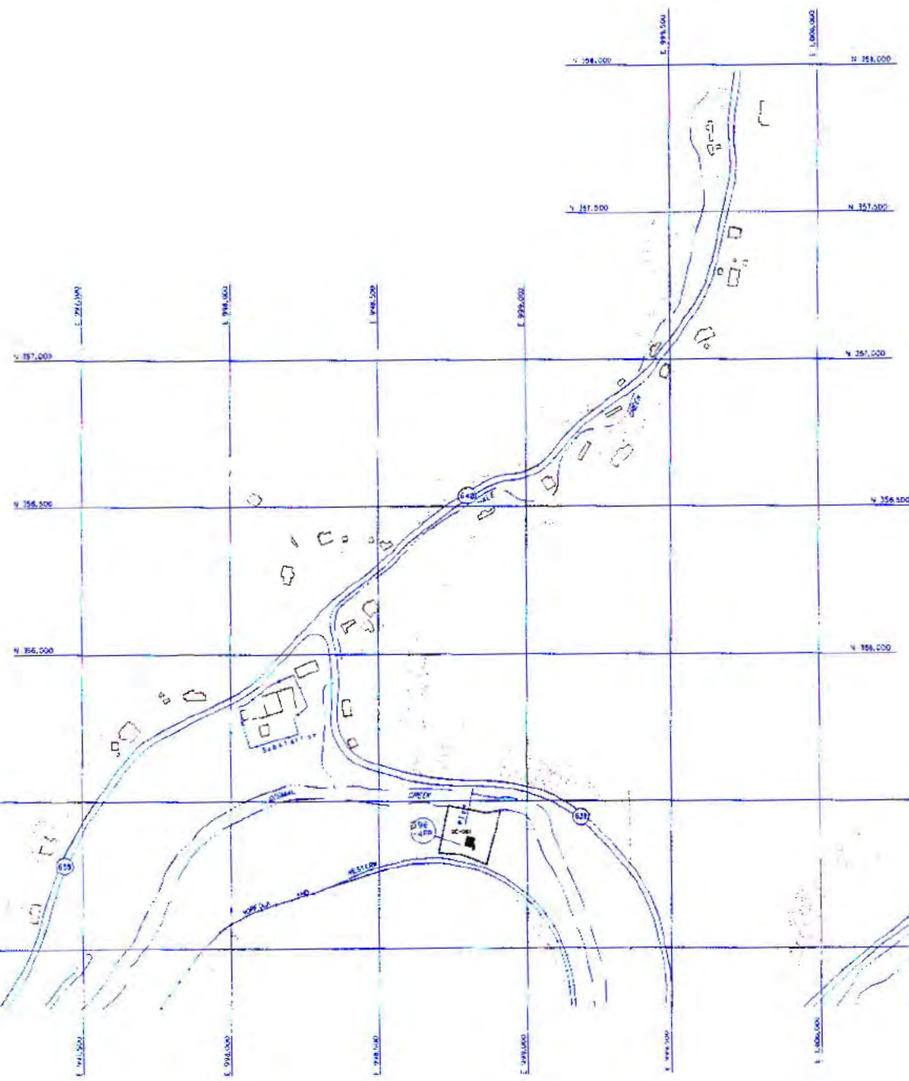
BUCHANAN COUNTY, VIRGINIA

100 0 200 400
SCALE IN FEET

SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
96-1PP	HORLEY STANFORD, ET UX	2.78	236	81	70	244-262	
96-2PP	WILLIAM A. TAYLOR AND MARY RITE	7.05	249	574	68	244-052	
96-1	ORVILLE SHORT	4.52	57	183		244-052	NO PARCEL NUMBER
96-1-2	ORVILLE SHORT	.62	57	183		244-052	NO PARCEL NUMBER
96-4PP	BOYD COLE	2.83	076	172	73,78	244-311	





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LEVISA FORK RIVER

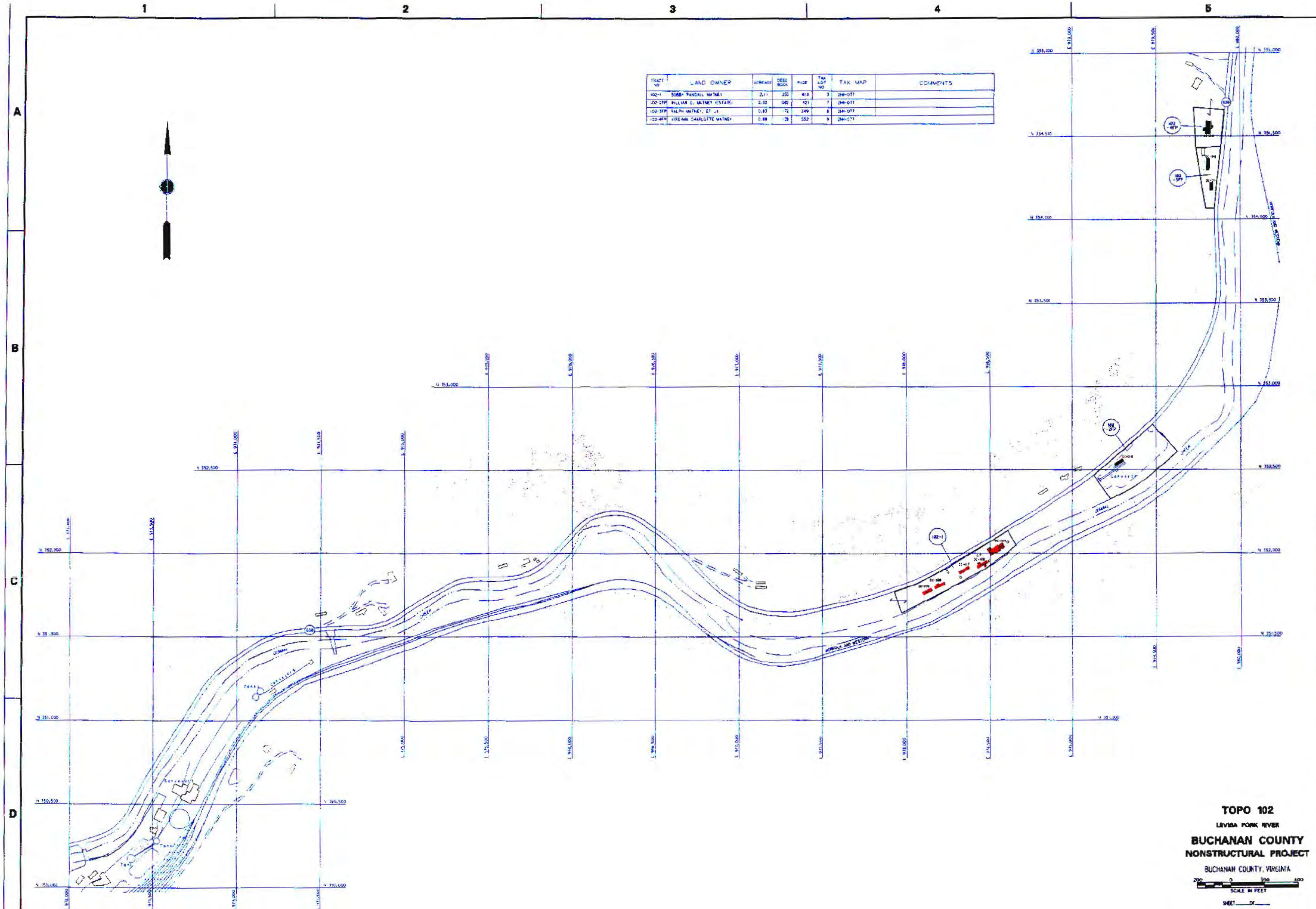
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET ___ OF ___

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
102-1	BOBBY RANDALL MATNEY	2.11	253	613	3	2HH-077	
102-2FP	WILLIAM G. MATNEY (ESTATE)	2.32	062	421	7	2HH-077	
102-3FP	RALPH MATNEY, ET UX	0.03	172	349	8	2HH-077	
102-4FP	VIRGINIA CHARLOTTE MATNEY	0.88	139	552	9	2HH-077	



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LEVISA FORK RIVER

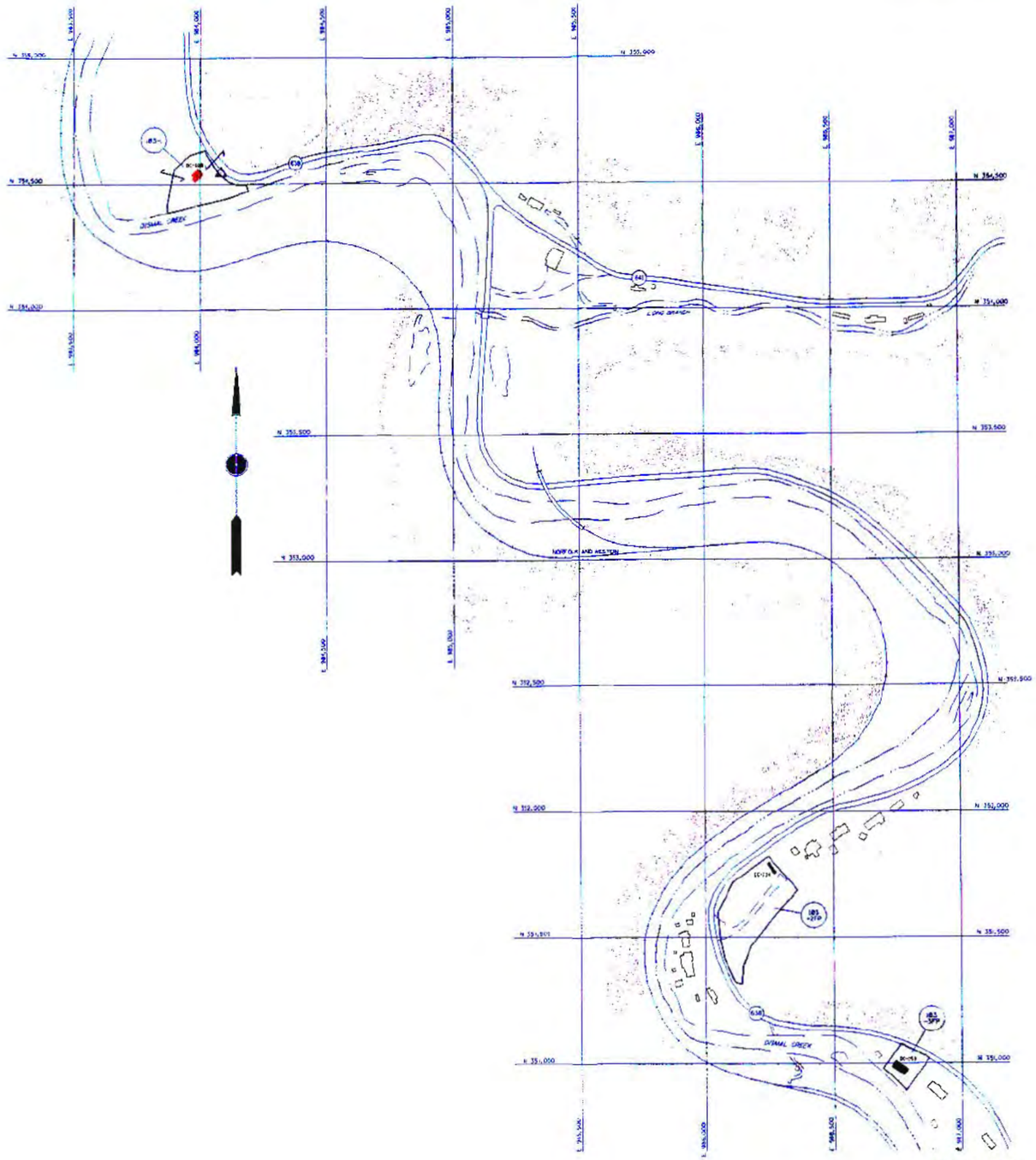
BUCHANAN COUNTY
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400
SCALE IN FEET

SHEET____OF____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
103-1		0.95			31	26H-07A	
103-3FP	HAROLD L. TAYLOR	1.72	348	479	84	26H-06J	
103-3FP	PATSY BETTY LOU JUSTUS	0.39	323	238	106	26H-052	



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LEVISA FORK RIVER

BUCHANAN COUNTY

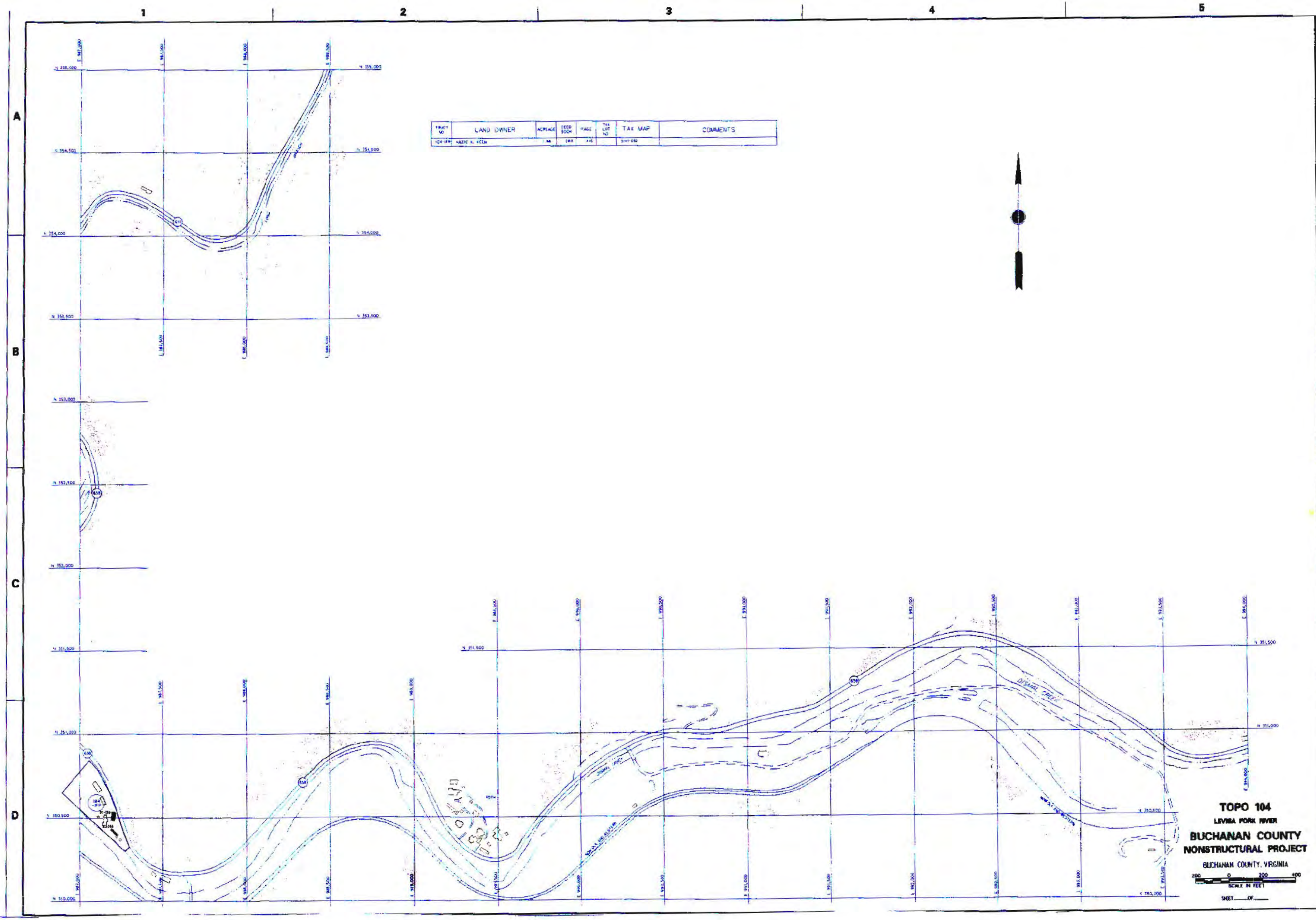
NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

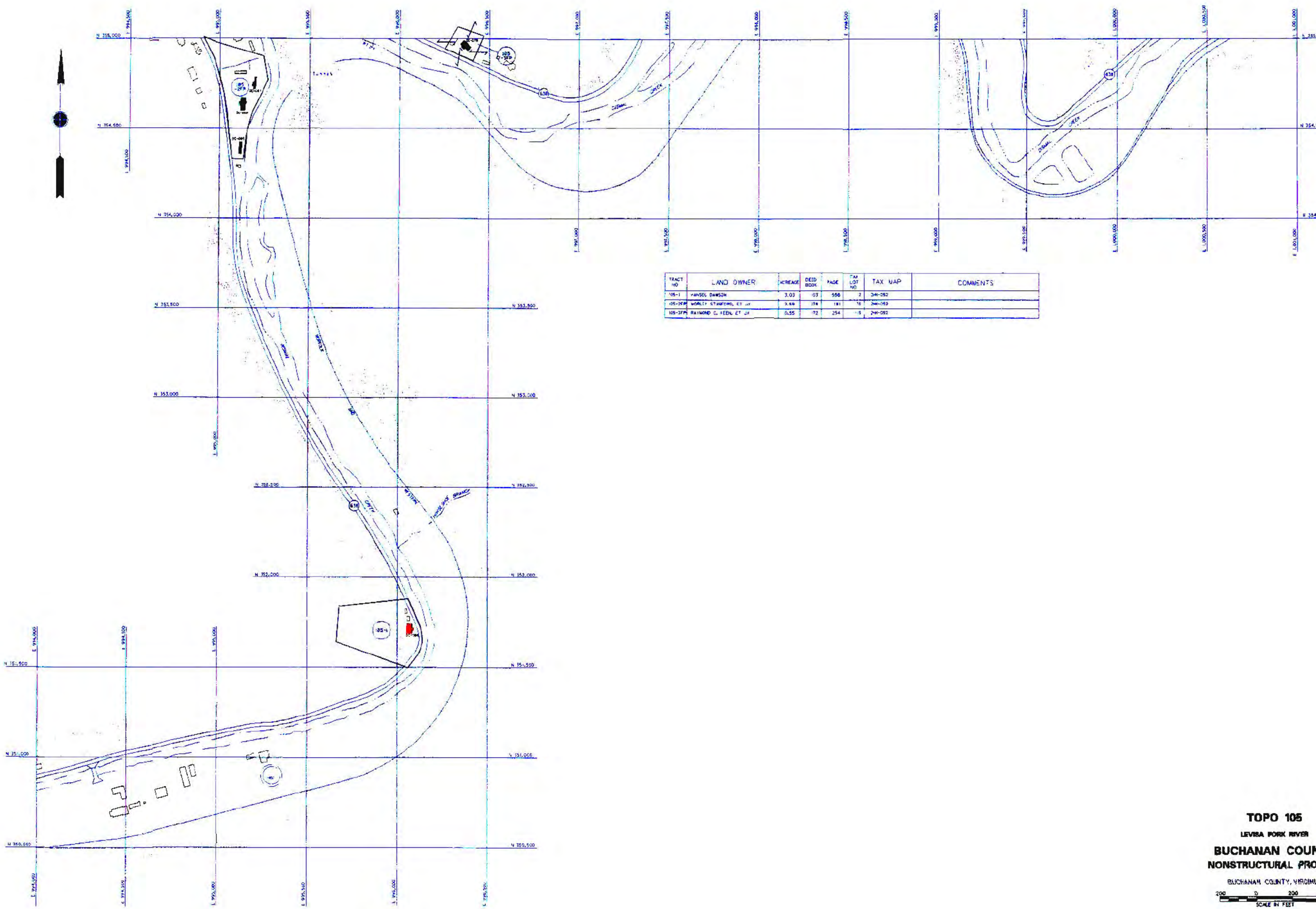
200 0 200 400

SCALE IN FEET

SHEET ____ OF ____



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
104-IFP	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
105-1	HANSEL DAWSON	3.03	103	556	2	3HH-052	
105-2FP	WORLEY STANFORD, ET UX	2.59	178	181	78	2HH-052	
105-3FP	RAYMOND C. KEEN, ET UX	0.55	172	254	15	2HH-052	

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LEVISA FORK RIVER

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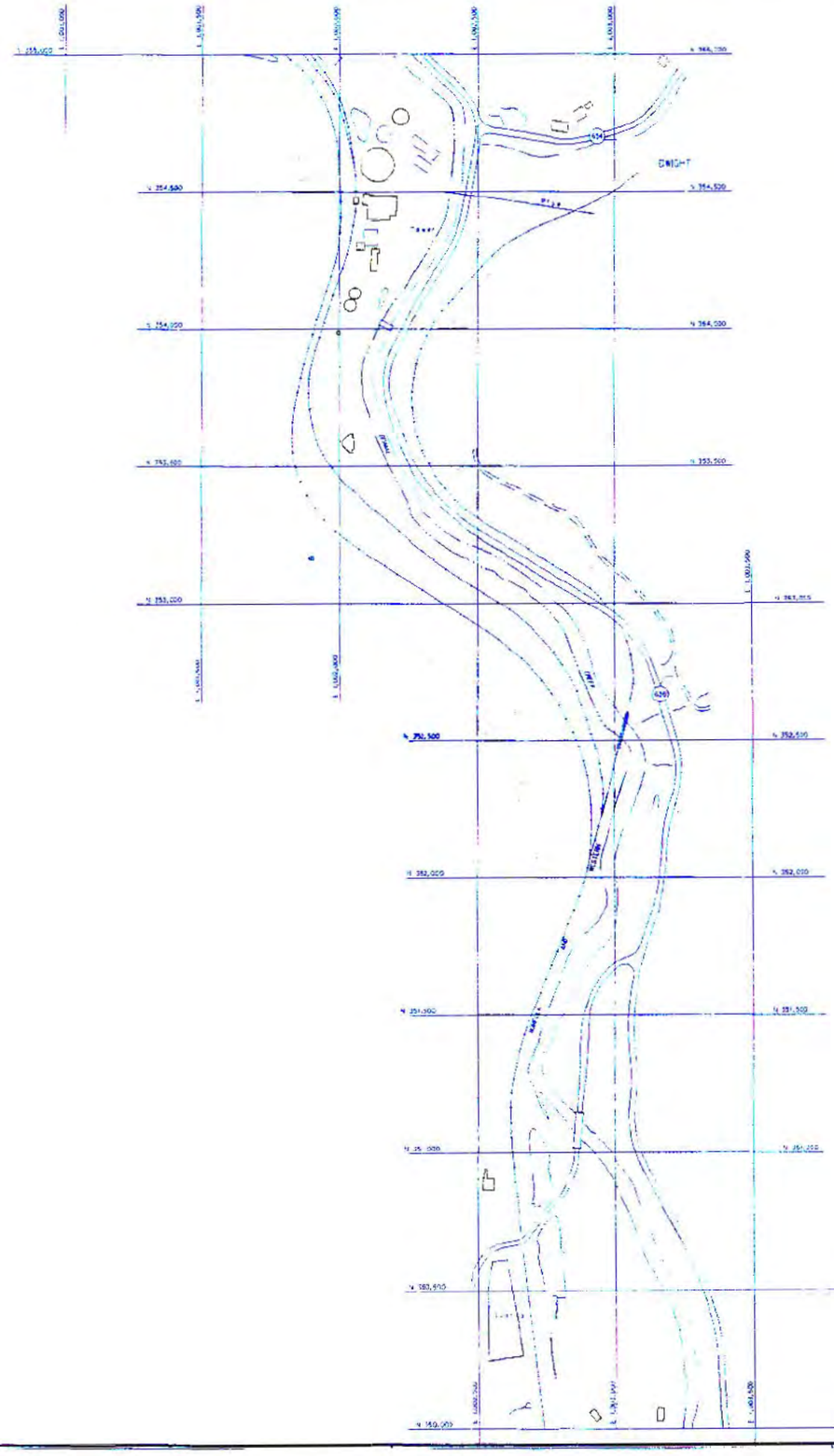

TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX MAP 01 10	TAX MAP	COMMENTS
106-1FP	RUFUS KEEN, ET UX	0.12	175	35	20	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-2FP	MARY JANE HE, ET AL	0.18	386	375	29	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-3FP	R. M. RICHARDSON	0.51	385 375	349 288	30 31	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-4	STEWART MFG. ET UX	0.26	372	321	32	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-6FP	CAROLINE KEEN	0.44	232	180	34	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-7	VIRGIL DORIS AND ALENE BROWN	0.28	85	346	38	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-8FP	JOSEPH A. WARD, ET UX	0.22	167	21	41	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-9	HESTER M. LESTER	0.55	382	821	42	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-11	NELSON RYE	0.16	219	504	43	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY
106-1FP	NELSON RYE	0.25	219	504	43	244-(10)- INSERT B	SUBDIVISION OF THE ... B. WARD PROPERTY

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BUCHANAN COUNTY, VIRGINIA

200 0 200 400
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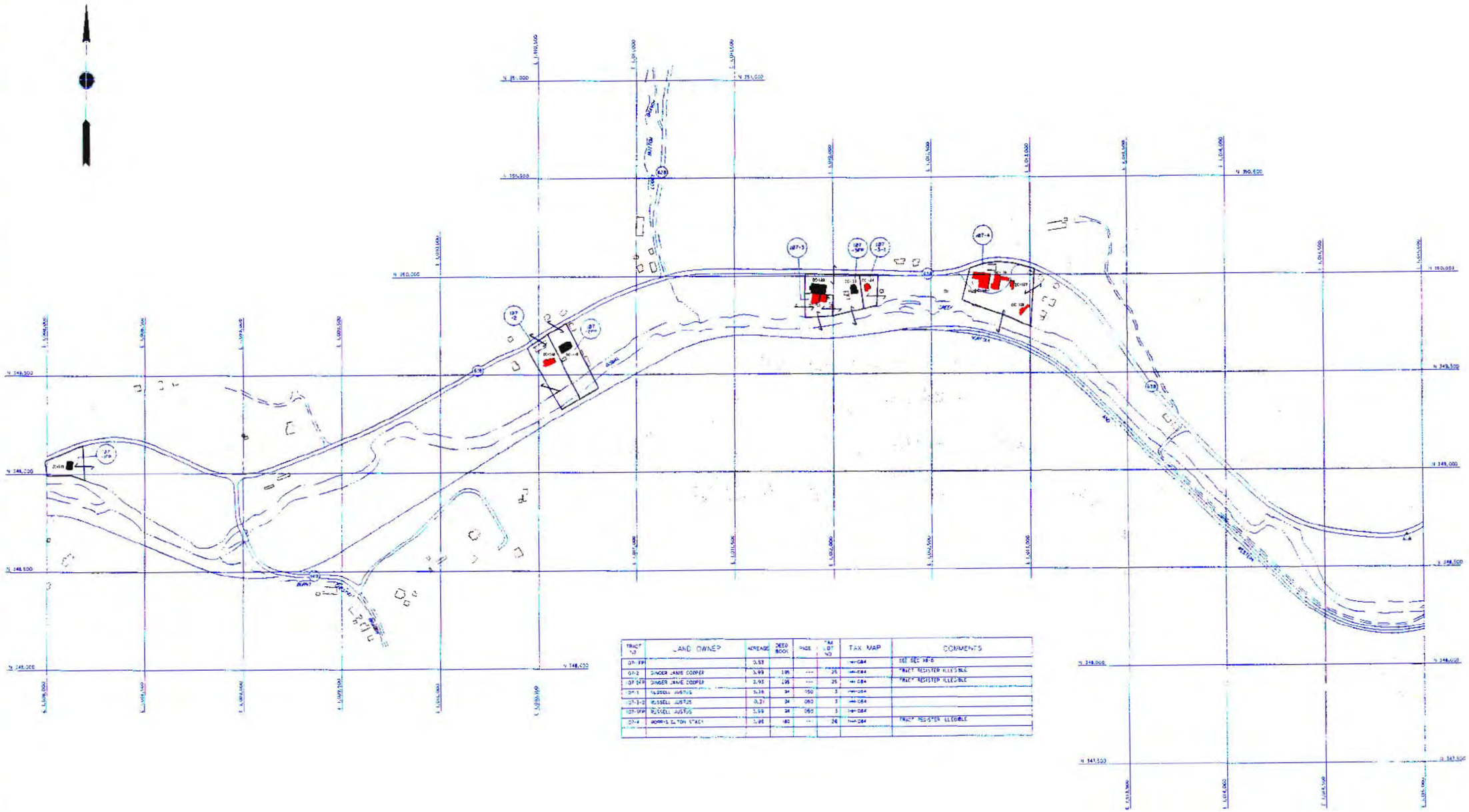

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX MAP LOT NO	TAX MAP	COMMENTS
DT-FP1		0.63				[illegible]-084	SEE SEC 98-6
DT-2	SINGER JANIE COOPER	3.99	195	---	25	[illegible]-084	TRACT REGISTER ILLEGIBLE
DT-2FP	SINGER JANIE COOPER	2.95	195	---	25	[illegible]-084	TRACT REGISTER ILLEGIBLE
DT-3	RUSSELL JUSTUS	3.38	34	150	3	[illegible]-084	
DT-3-2	RUSSELL JUSTUS	0.31	34	060	3	[illegible]-084	
DT-3FP	RUSSELL JUSTUS	2.99	34	060	3	[illegible]-084	
DT-4	MORRIS ELTON STACY	3.95	40	---	26	[illegible]-084	TRACT REGISTER ILLEGIBLE

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BUCHANAN COUNTY, VIRGINIA

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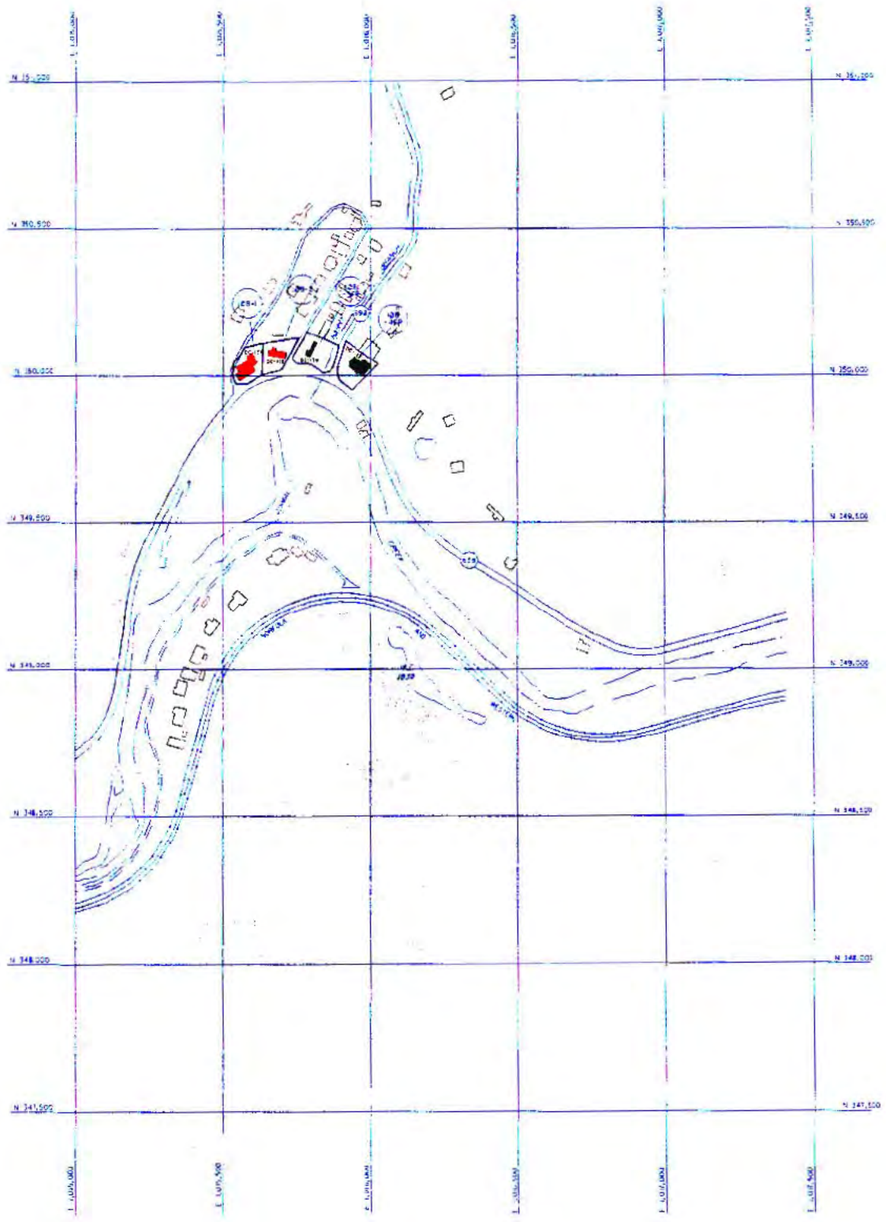
SCALE IN FEET

SHEET ___ OF ___



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
CB-1		0.14			37	HH-84 ENLG A	TRACT PROPERTY ILLEGIBLE
CB-2		0.22			38	HH-84 ENLG A	TRACT PROPERTY ILLEGIBLE
CB-3PR		0.31			43,44	HH-84 ENLG A	TRACT PROPERTY ILLEGIBLE
CB-4PR		0.26			45	HH-84	TRACT PROPERTY ILLEGIBLE

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BUCHANAN COUNTY, VIRGINIA

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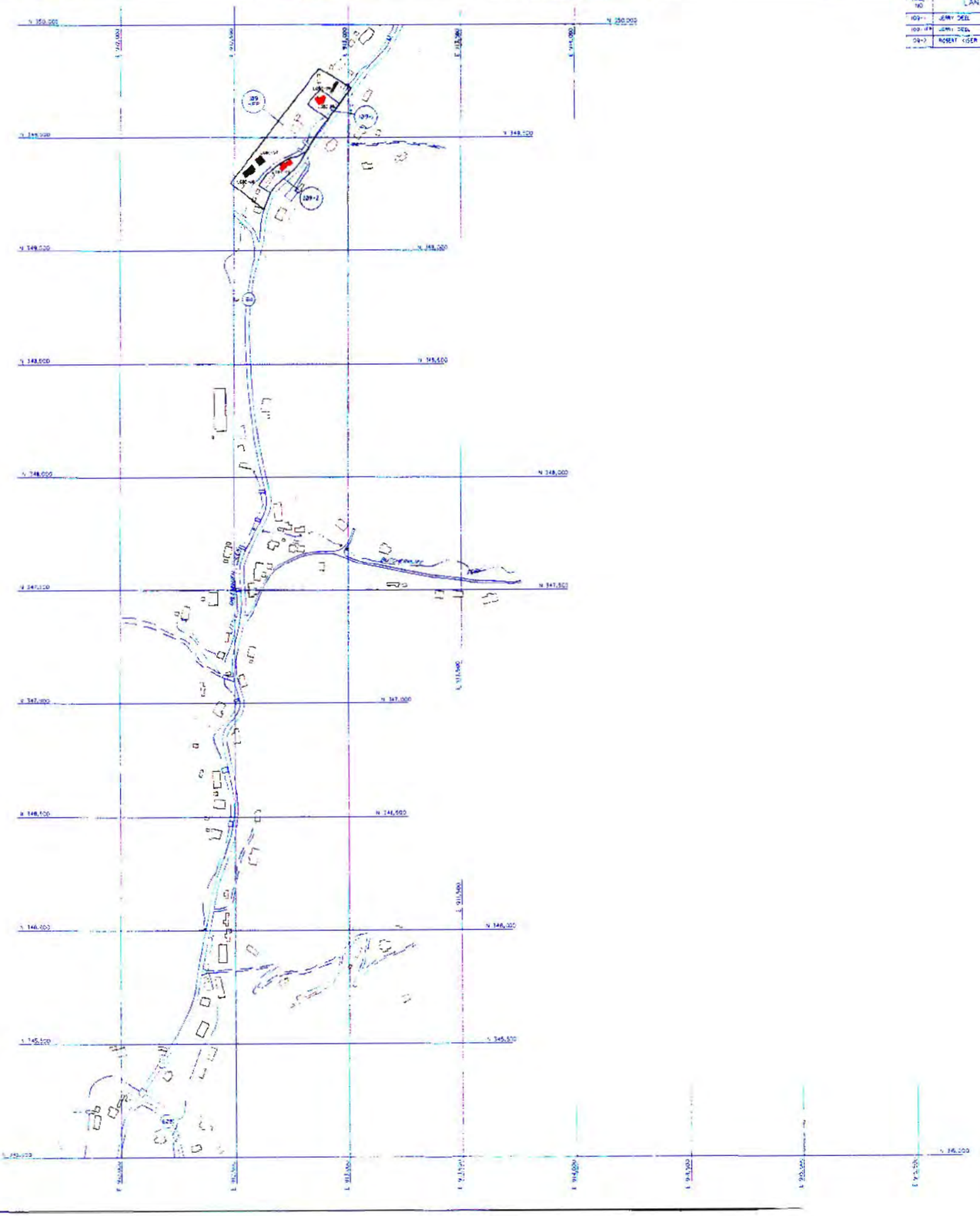
SCALE IN FEET

SHEET ___ OF ___

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
109-	JERRY SEEL	0.29	234	242	78	244-274	ACCESS PROBLEMS
109-1R	JERRI SEEL	2.08	234	242	78	244-274	
04-2	ROBERT KISER	0.28	376	385	12	244-274	



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BUCHANAN COUNTY, VIRGINIA

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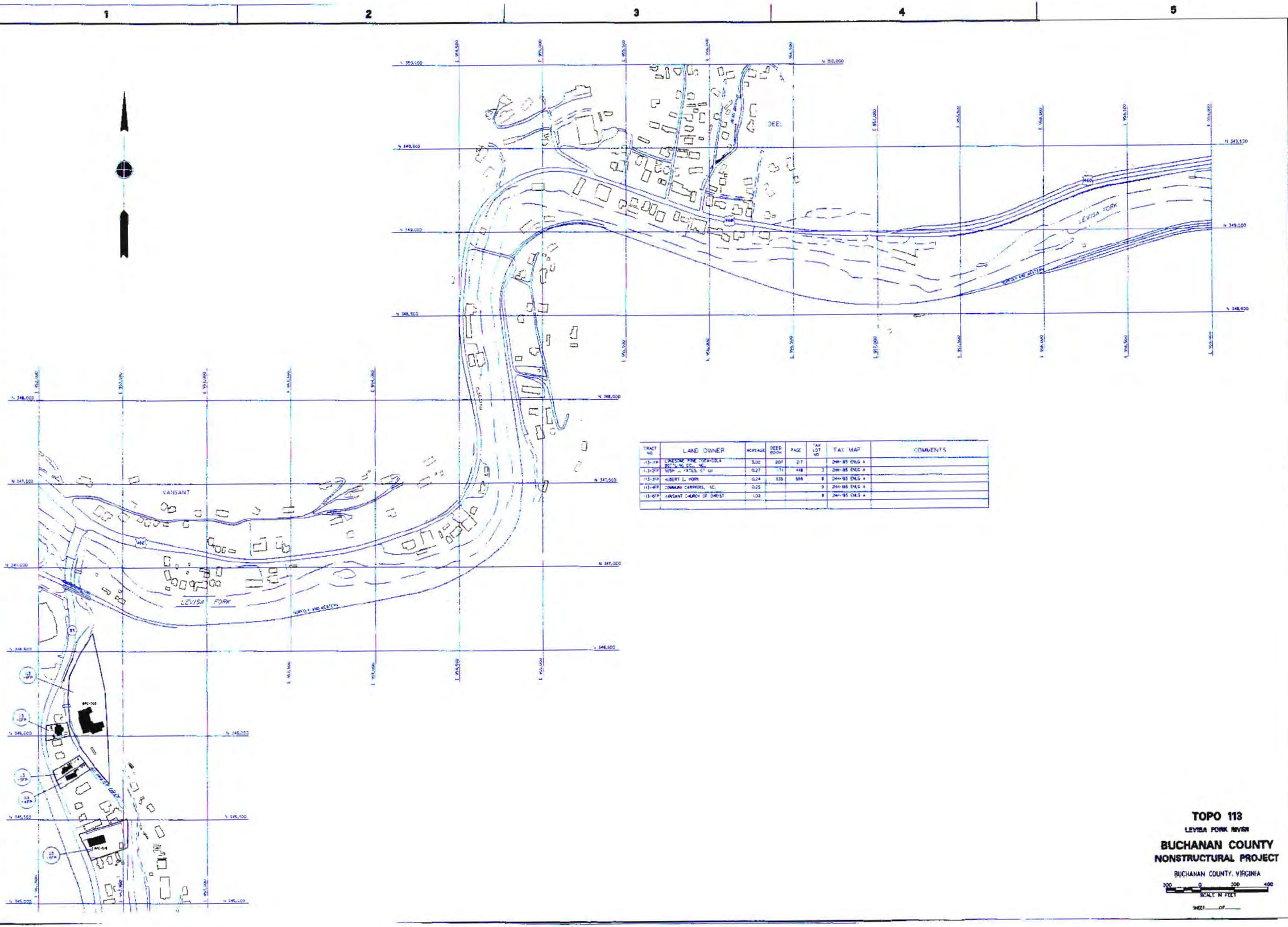

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
113-1FP	[illegible]	3.32	207	217		244-85 ENG A	
113-2FP	[illegible]	0.27	171	448	3	244-85 ENG A	
113-3FP	ALBERT E. HORN	0.24	335	588	8	244-85 ENG A	
113-4FP	DONAHUE CARRIERS, INC.	0.25			9	244-85 ENG A	
113-5FP	VANSANT CHURCH OF CHRIST	1.02			8	244-85 ENG A	

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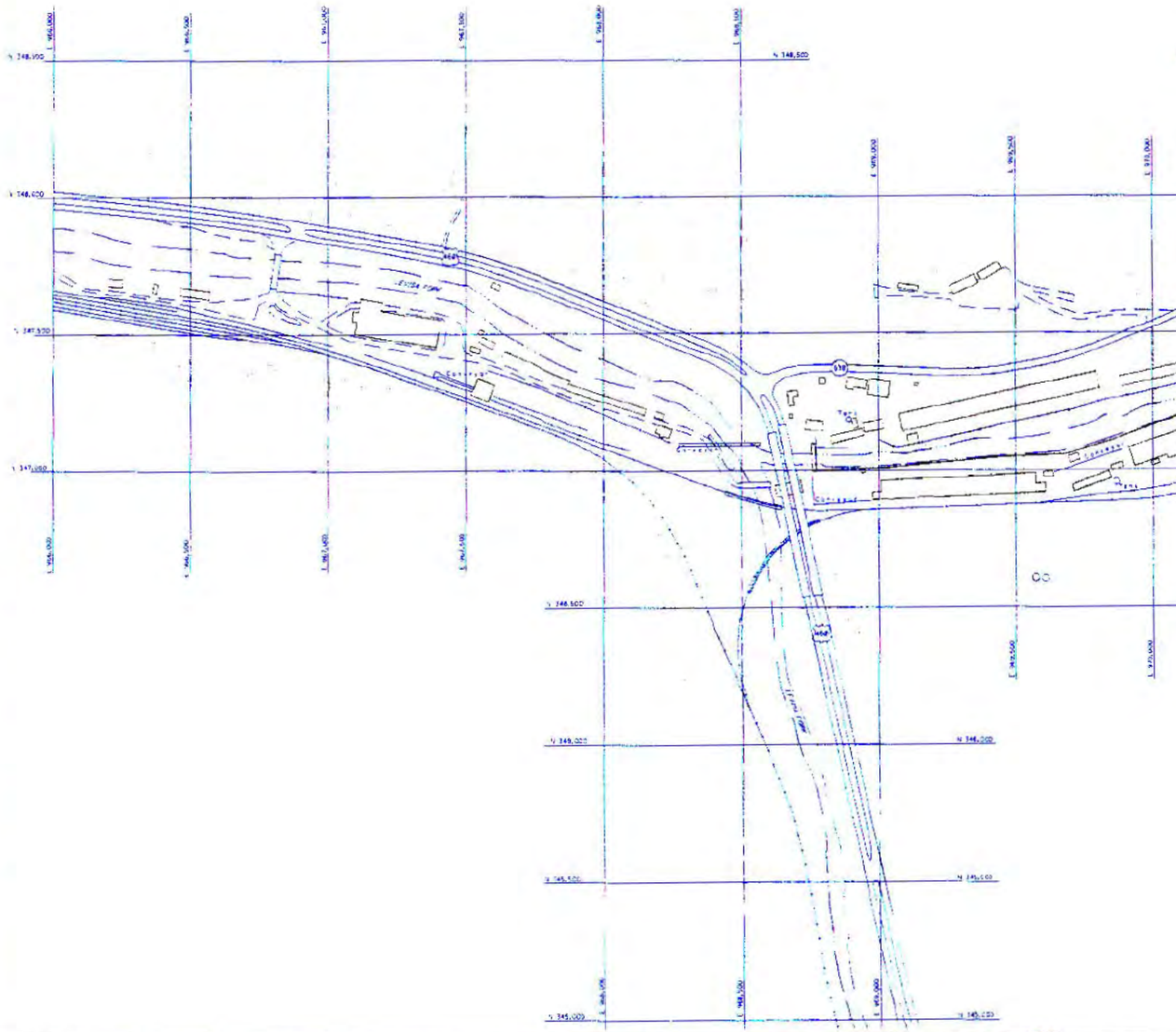
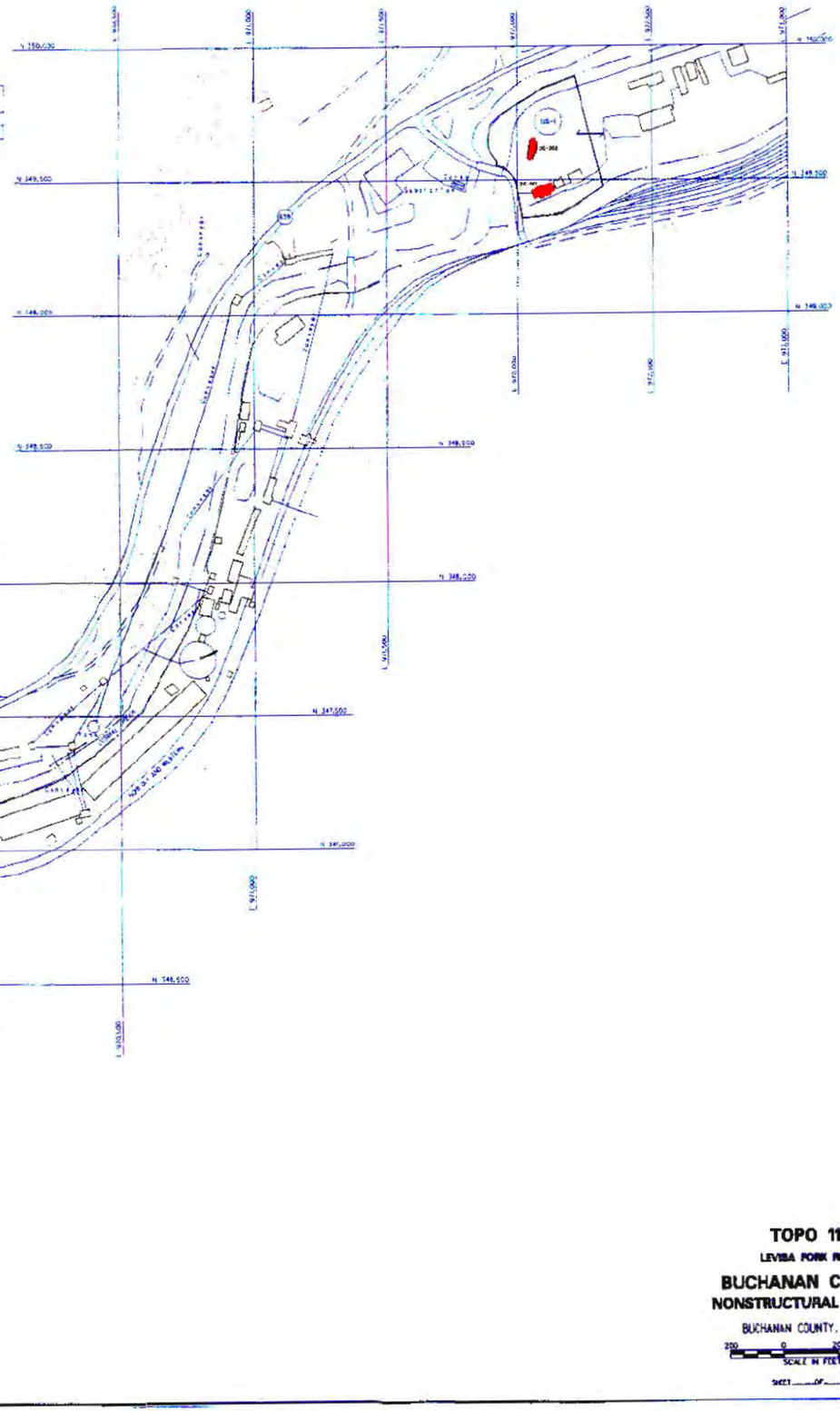
TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
115-1	U. S. X COAL CO.	3.35				244-119	





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BUCHANAN COUNTY

NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

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SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
118-	LYDIA STEVENSON	0.83	329	238	7	244-010	
118-SFP	GILBERT JACKSON, JR., ET UX	.01	185	219	48	244-010	
118-SFP	GILBERT JACKSON, JR.	0.83	193	159	49	244-010	
118-MFP	JAMES E. MILLER	0.45	267	332	65	244-010	
118-8	BOBBY TAYLOR, ET UX	0.21	285	238	63	244-084	
118-8FP	BOBBY TAYLOR, ET UX	0.66	285	238	63	244-084	
118-7	WILLIAM STACY, ET UX	2.67	215	346	65	244-084	
118-6	ELSIE MAE STACY, ET VIR	1.04	399	469	66	244-084	
118-9	DOUGLAS LEE STACY	0.97	317	59	73	244-084	
118-9FP	EVELYN STACY	1.19	238	815	66	244-084	
118-10	HIGH SCHOOL	0.85				244-084	

PILGRIMS KNOB

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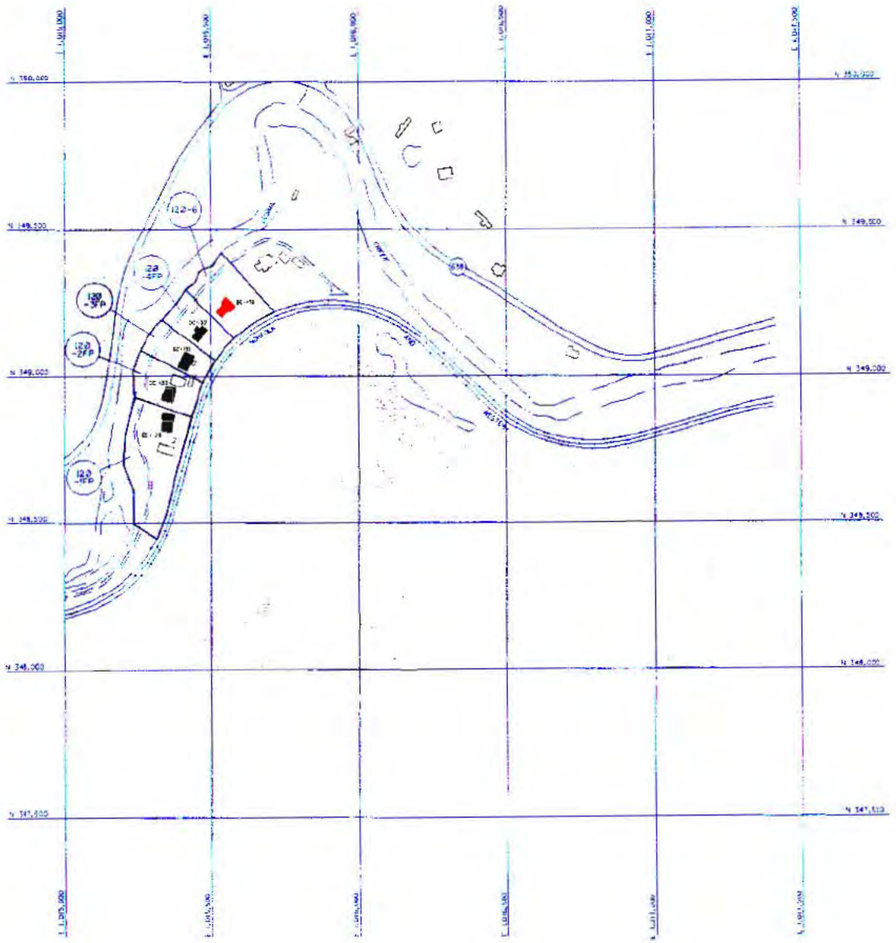
TRACT NO.	LAND OWNER	ACRES ACRE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
120-49P		1.60			49	HH-384	TRACT REGISTER ILLEGIBLE
120-28P		3.74			48	HH-384	TRACT REGISTER ILLEGIBLE
120-39P		3.58			47	HH-384	TRACT REGISTER ILLEGIBLE
120-47P		2.59			50	HH-384	TRACT REGISTER ILLEGIBLE
120-6		9.28			46	HH-384	TRACT REGISTER ILLEGIBLE



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BUCHANAN COUNTY

NONSTRUCTURAL PROJECT

BUCHANAN COUNTY, VIRGINIA

200 0 200 400

SCALE IN FEET

SHEET ___ OF ___

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
121-1	TRULA GOLDEN	0.34	334	200	47	2M+273	
121-2PT	DOUGLAS DEEL	0.75	345	720	54	2M+273	
121-3	BOBBY GENE LOMPTON, ET UX	0.42	61	418	78	2M+272	
121-4	BETTY BLANKENSHIP	0.43	337	208	108	2M+272	
121-6PT	JAMES GREGORY MILLER, ET UX	0.18	428	338	07	2M+272	

BUCHANAN CO.
DICKENSON CO.

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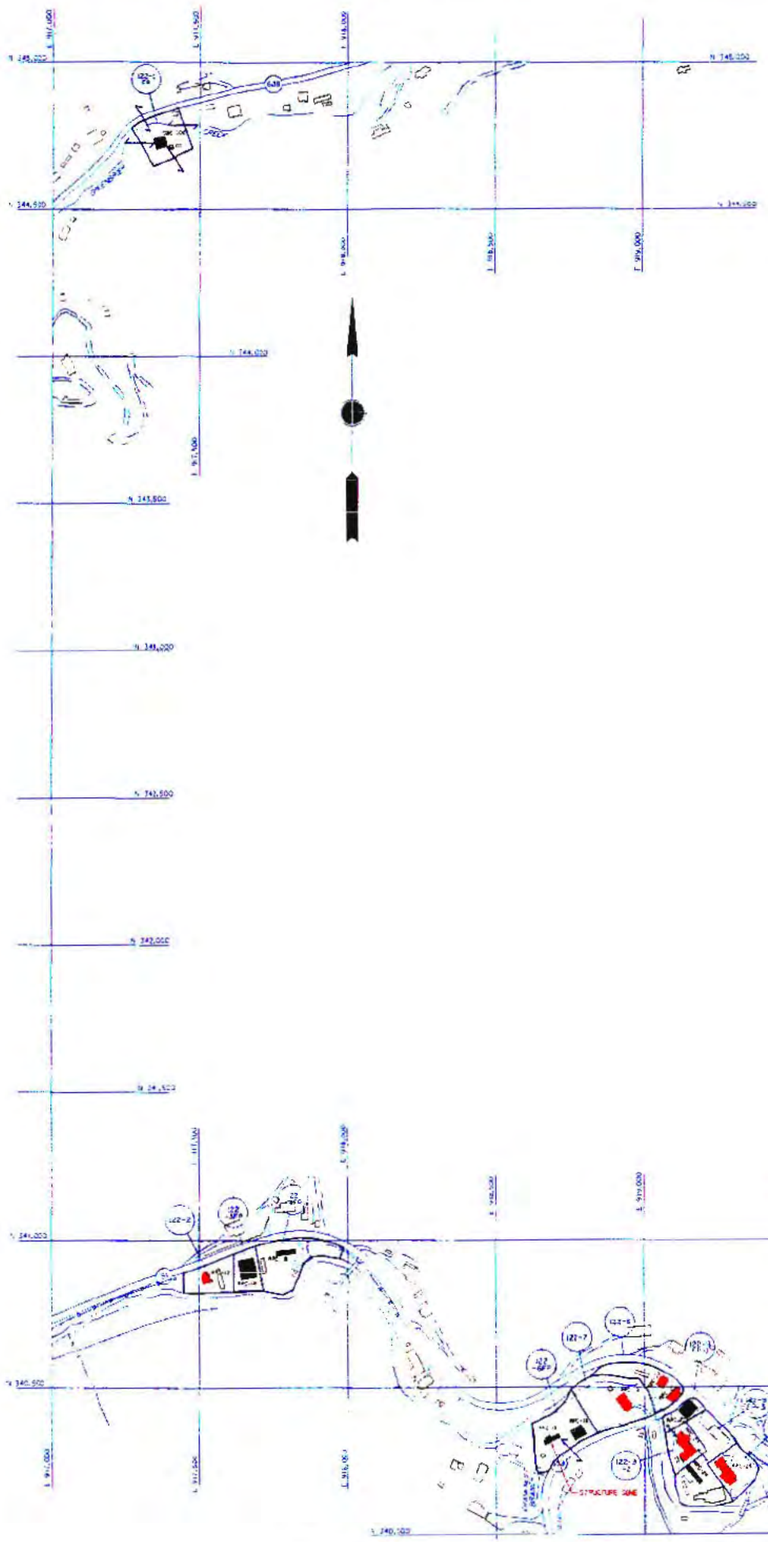
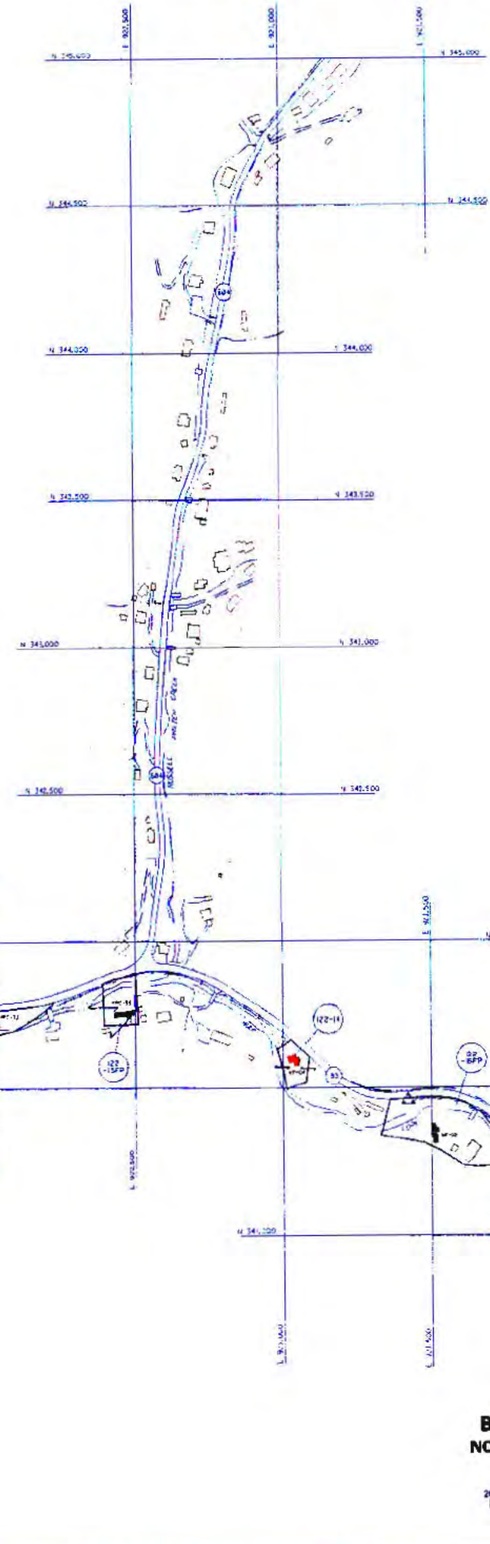
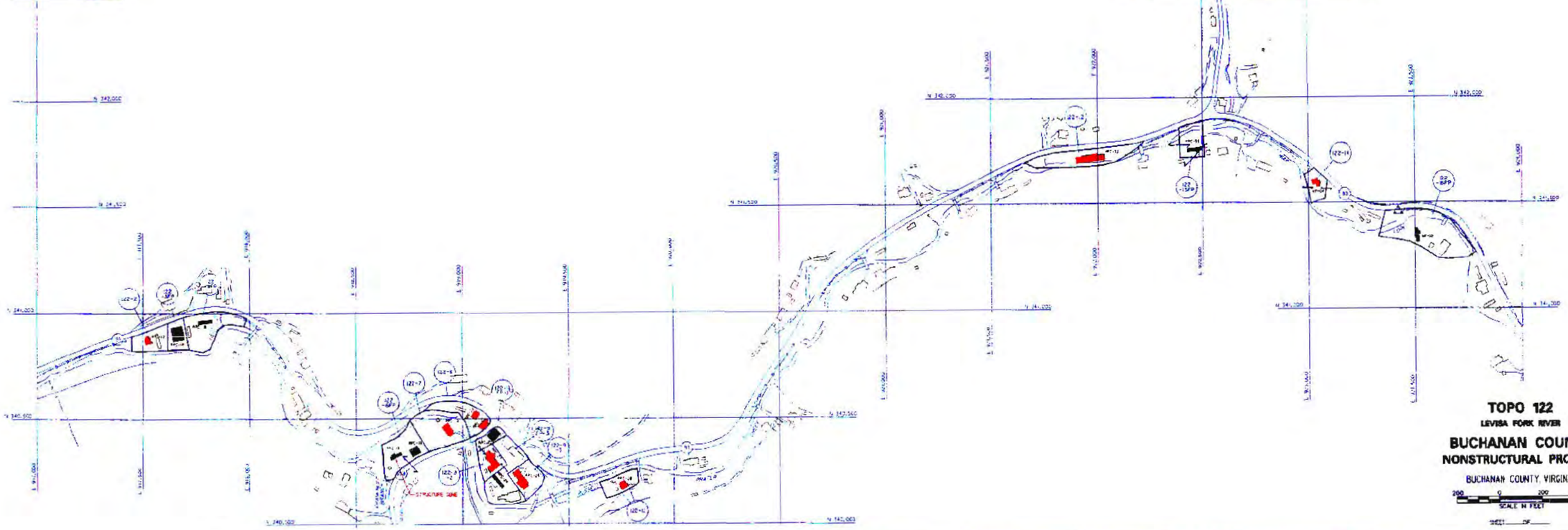
SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
122-FP	CHAR. E.A. YATES	0.56	105	533	71	244-272	
122-2	PUGH PAUL D.(ADM. ET AL	0.38	358	209	69	244-272	
122-SFP	ELANCE ALLENE DEC.	0.78	293	342	51	244-272	
122-6FP	PEAR, OWENS	0.72	42	397	57	244-272	
122-6FP	BILLY YATES, ET UX	0.69	76	298	4	244-272	
122-7	MELSTER OWENS	0.85	405	477	416	244-272	
122-8	ARNOLD BAILEY, ET UX	0.49	339	765	40	244-272	
122-9-FP	WILLARD HENDERSON	0.18	424	163	39	244-272	
122-9-2	WILLARD HENDERSON	0.33	424	163	39	244-272	
122-9-3	WILLARD HENDERSON	0.41	424	163	39	244-272	
122-9-TFP	WILLARD HENDERSON	0.84	54	93	95	244-272	
122-11	HENDERSON TRUCKING CO.	0.33	406	673	125	244-272	
122-12	PAUL MYERS	0.58	195	588	3	244-272	
122-SFP	SALLIE RAINS	0.42	280	097	144	244-245	
122-4	EARL EUGENE RAINES AND CATHY MEADORS	0.26	218	221	43	244-245	
122-10FP	SIM D. DAVIS, ET UX	1.52	427	229	142	244-245	







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BUCHANAN COUNTY, VIRGINIA
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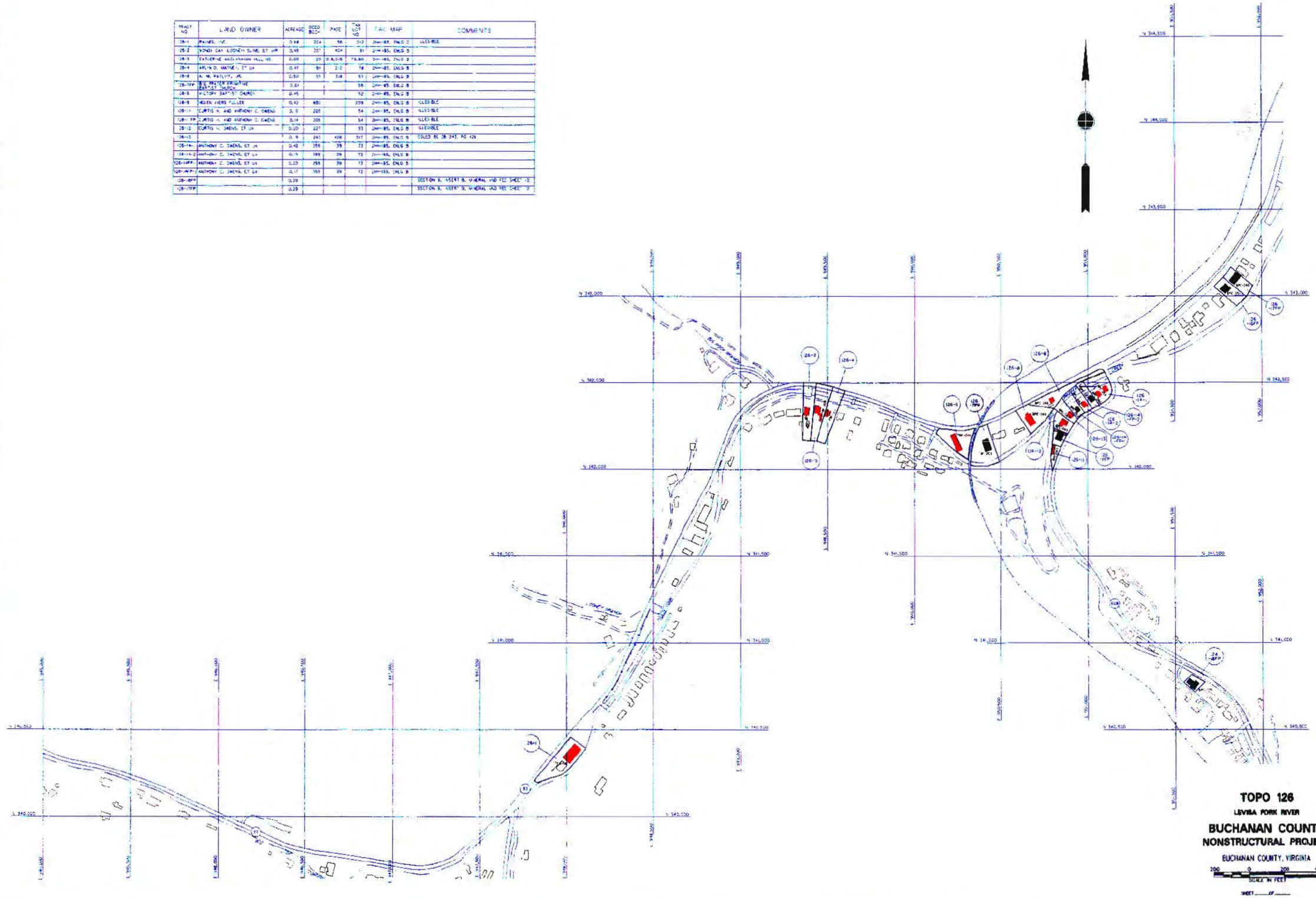
SHEET ___ OF ___

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	FAIR MAP	COMMENTS
126-1	PAINES, INC.	0.68	304	166	312	2nd-85, ENG D	ILLEGIBLE
126-2	WANDA CAY LOONEY& SLONE, ET VIR	0.46	357	404	81	2nd-85, ENG B	
126-3	CATHERINE MACFARLAN HALL HS	0.00	29	B.B.D/S	79,80	2nd-85, ENG B	
126-4	ARLIN D. MATHER, ET UX	0.47	84	210	78	2nd-85, ENG B	
126-5	A. M. MULLINS, JR.	0.50	55	348	53	2nd-85, ENG B	
126-TPP	B.V. HEDRICK GRAVEL & CONSTRUCTION CO.	0.61			56	2nd-85, ENG B	
126-5	VICTORY BAPTIST CHURCH	0.45			52	2nd-85, ENG B	
126-9	HELEN VIERS FULLER	0.42	481		309	2nd-85, ENG B	ILLEGIBLE
126-11	CURTIS H. AND ANTHONY C. OWENS	3.0	205		54	2nd-85, ENG B	ILLEGIBLE
126-11 TP	CURTIS H. AND ANTHONY C. OWENS	0.14	206		54	2nd-85, ENG B	ILLEGIBLE
126-12	CURTIS H. OWENS, ET UX	0.20	227		53	2nd-85, ENG B	ILLEGIBLE
126-13		0.9	243	426	317	2nd-85, ENG B	DEED BK 38 243, PG 426
126-14	ANTHONY C. OWENS, ET UX	0.42	356	39	73	2nd-85, ENG B	
126-14-2	ANTHONY C. OWENS, ET UX	0.19	389	39	73	2nd-155, ENG B	
126-14PP	ANTHONY C. OWENS, ET UX	0.23	356	39	73	2nd-85, ENG B	
126-14PP-2	ANTHONY C. OWENS, ET UX	0.17	389	39	73	2nd-155, ENG B	
126-BFP		0.29					SECTION B, INSERT B, MINERAL AND FEE SHEET 12
126-TPP		0.29					SECTION B, INSERT B, MINERAL AND FEE SHEET 12



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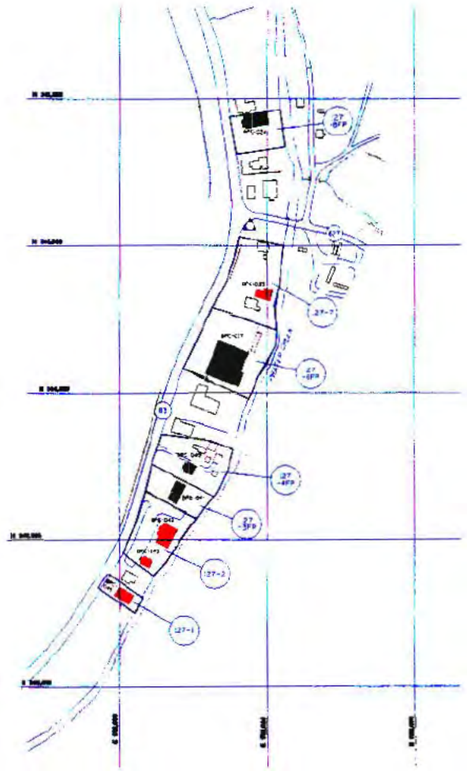
SHEET ____ OF ____



TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
127-	JOE BLEVINS, ET UX	0.10	65	188	39	244-A5 ENG. B	
127-2	EARL DILLINGER, ET UX	0.65	135		37	244-A5 ENG. A	ILLEGIBLE
127-3PR	THEODORE RAINES, ET UX	0.46	108		35	244-A5 ENG. A	ILLEGIBLE
127-4PR	CLARENCE BOYD, JR., ET UX	3.83	189		34	244-A5 ENG. A	ILLEGIBLE
127-NEW	ISLAND CREEK COAL CO.	1.35	189		29	244-A5 ENG. A	ILLEGIBLE
127-1	RALPH L. MATNEY, ET UX	1.10	358	351	28	244-A5 ENG. A	
127-4PR	PARSANT BAPTIST CHURCH	0.49			24	244-A5 ENG. A	

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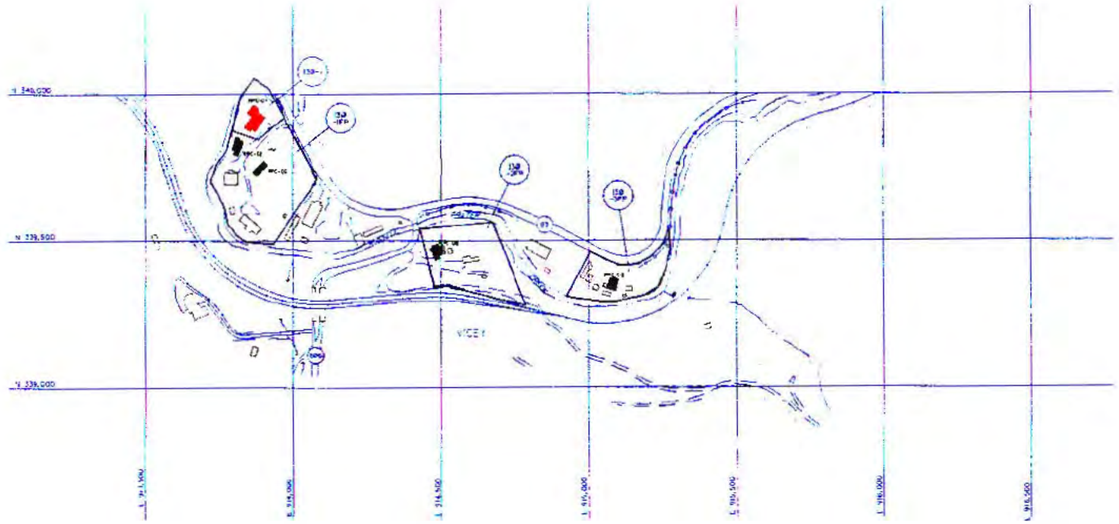
TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
130-	KALE MEMBERS	2.50	125	232	18	244-272	
130-1EM	KALE MEMBERS	2.22	125	232	18	244-272	
130-2EM	DAVID DEEL, ET AL	1.49	126	149	91	244-272	
130-3EM	GARY A. RASNAKE, ET AL	5.83	146	96	83	244-272	



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TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
135-1	LOONEY'S CHAPEL METHODIST CHURCH	0.83			7-B	244-1-85 ENG E	
135-2FP	NELLIE D. CONWAY	0.30	310	418	235	244-1-85 ENG E	
135-3	RUBY CHURCH, ET AL	0.25			242	244-1-85 ENG E	
135-4		0.29				244-1-85 ENG E	AS MAP LEGIBLE
135-6	NOAH REYNOLDS	0.18	442	560	244	244-1-85 ENG E	
135-7	WILLIAM R. RUNYON, ET UX	0.19	219	01	245	244-1-85 ENG E	
135-8	CARL LOONEY	0.33	37		264	244-1-85 ENG E	ILLEGIBLE
135-8FP	CARL LOONEY	0.6	37		264	244-1-85 ENG E	ILLEGIBLE
135-9FP	CLARENCE DAVID JR, ET UX	1.08	413		265	244-1-85 ENG E	ILLEGIBLE
135-11		0.25				244-1-85	
135-11FP		0.30				244-1-85	
135-12FP		0.88				244-1-85	
135-13		0.56				244-1-85	

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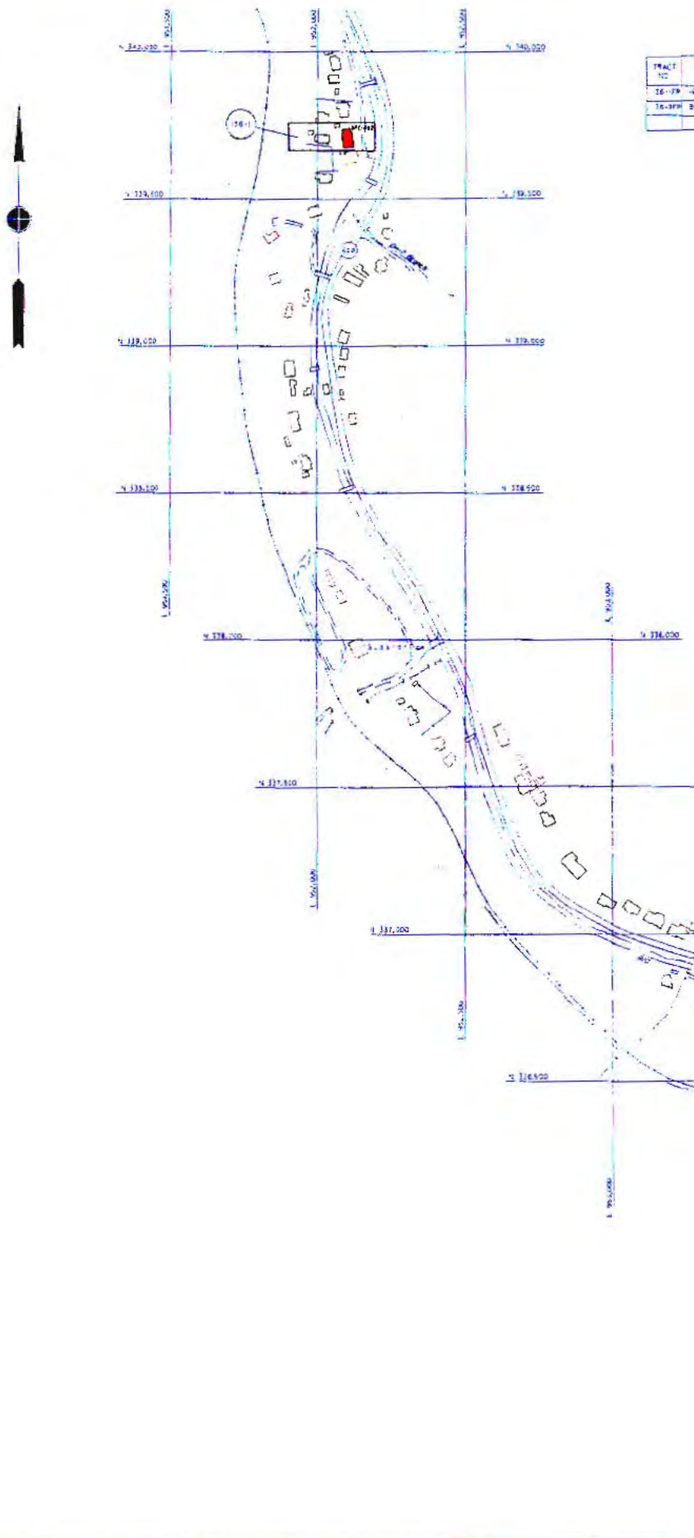
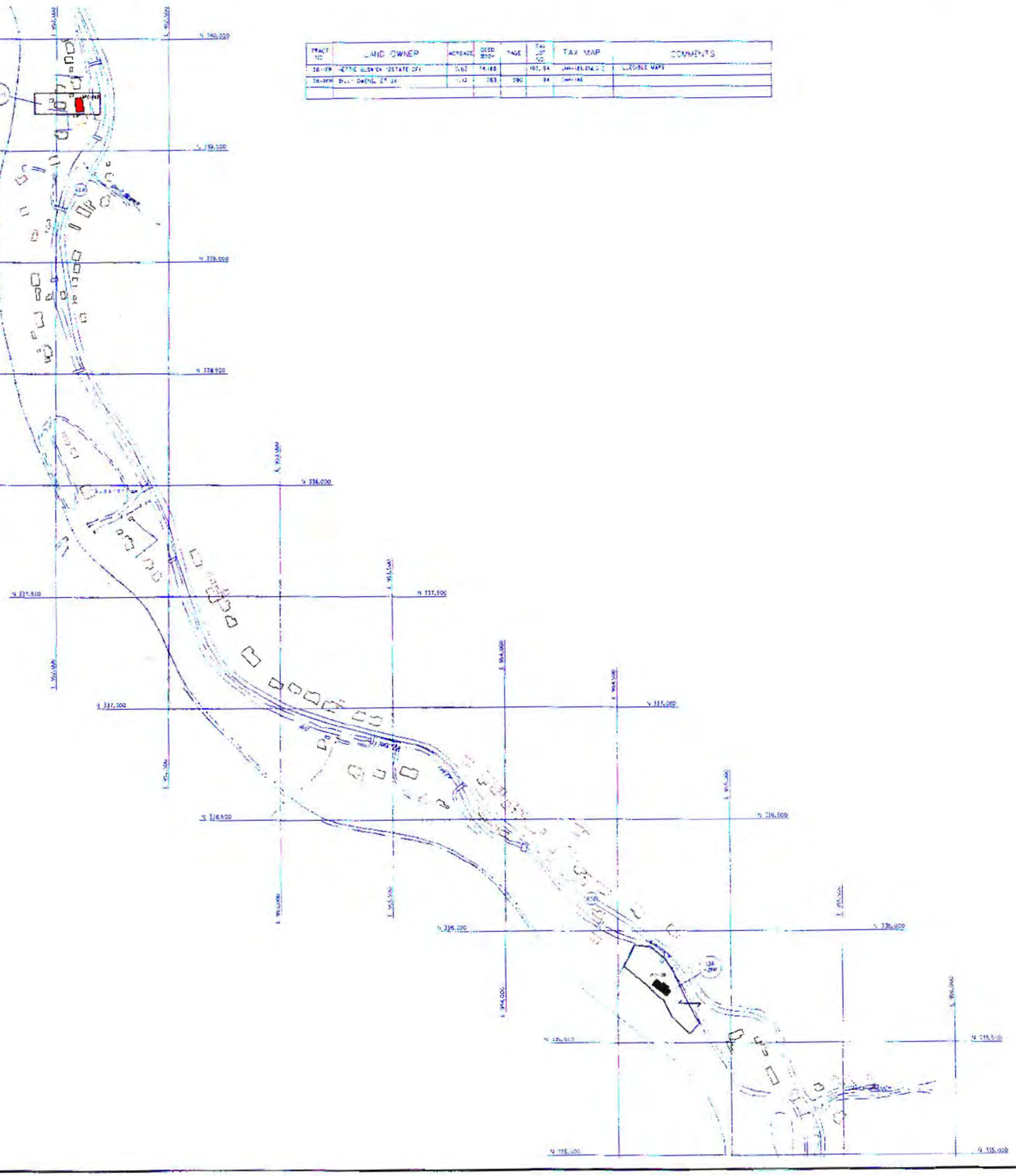
TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX I.D. NO.	TAX MAP	COMMENTS
36-139	HETTIE GLENN ESTATE ET	0.62	74	488		161.54	LEGIBLE MAPS
36-34M	BILLY DARNELL ET UX	1.12	263	390		94	





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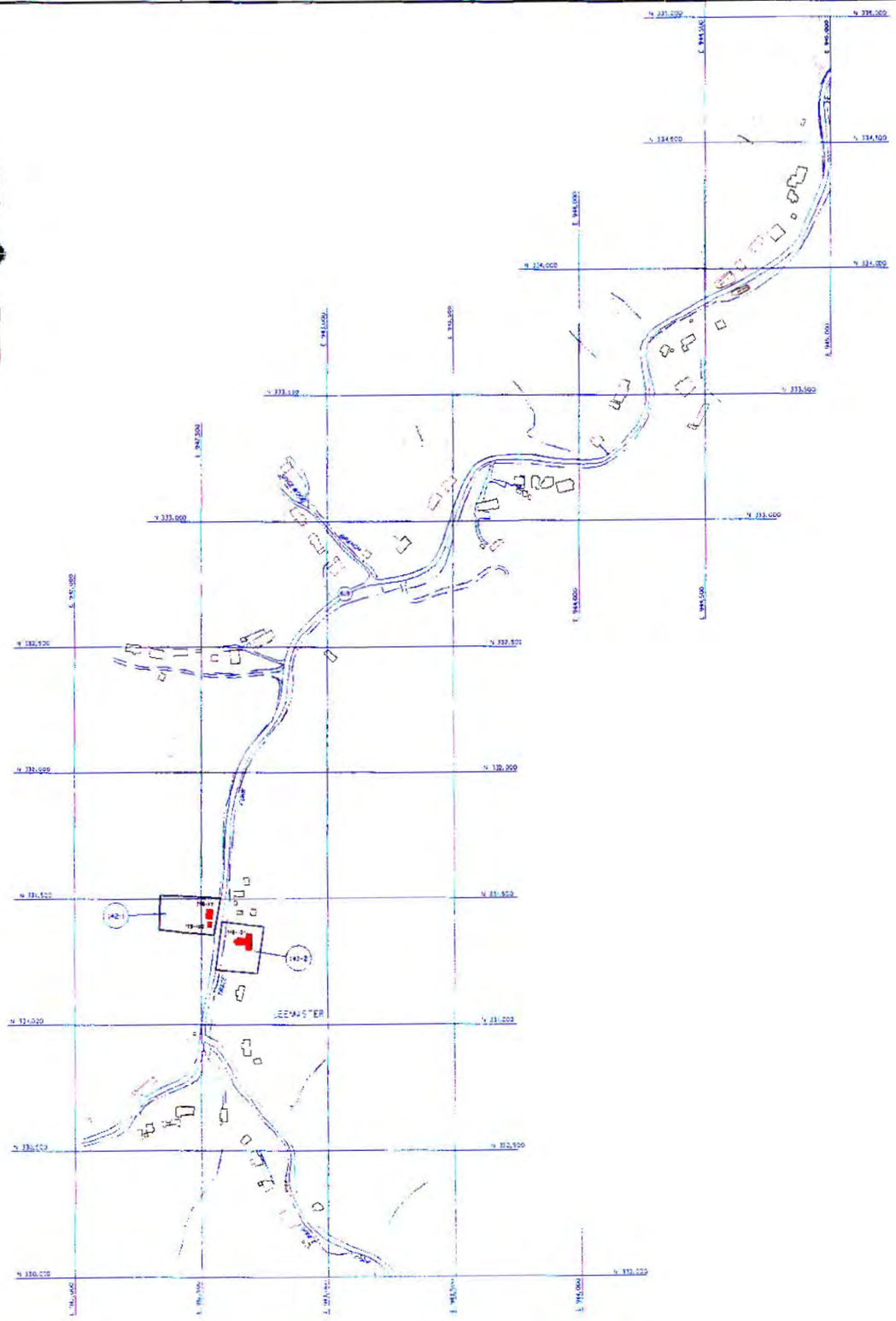
TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
142		0.18				216-1-88	TAX MAPS ILLEGIBLE
142-3		0.72				216-1-88	TAX MAPS ILLEGIBLE



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200 0 200 400

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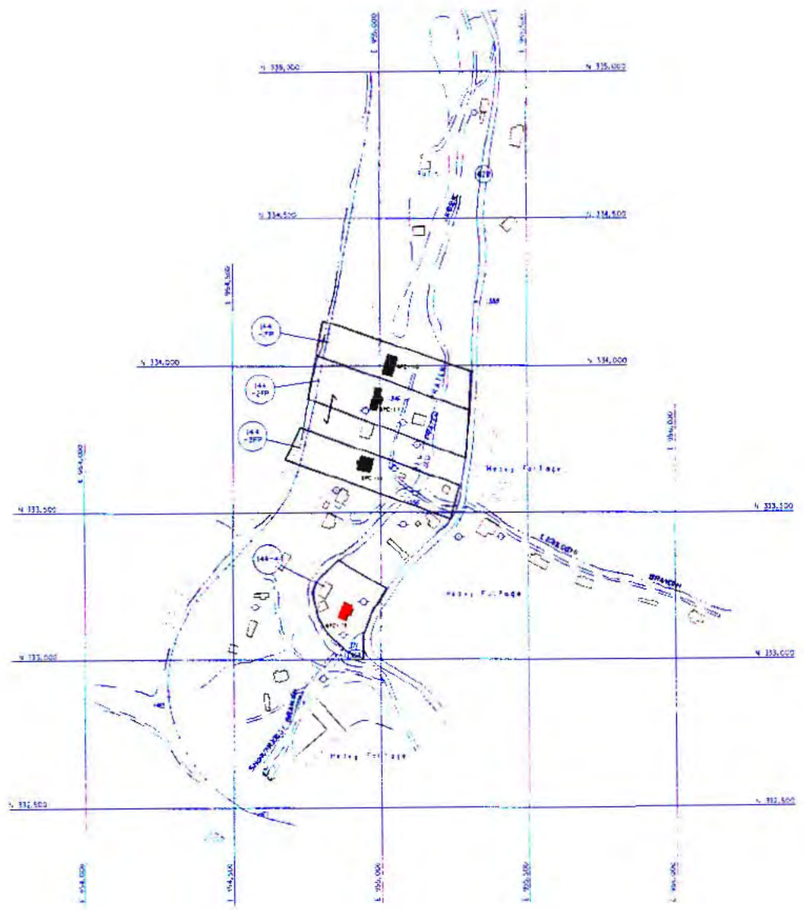
SHEET ____ OF ____

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
144-17P	JAMES ARTHUR COPENHAVER, ET AL	.53	271	663	27	2HH145	
144-27P	EDWARD A. STURGILL, ET AL	.93	396	572	28	2HH145	
144-29P	RAY FAMILY, ET AL	.58	361	00	29	2HH145	
144-4	CLEO SMITH AND LINDA DAVIS	1.08	427	15	30	2HH145	



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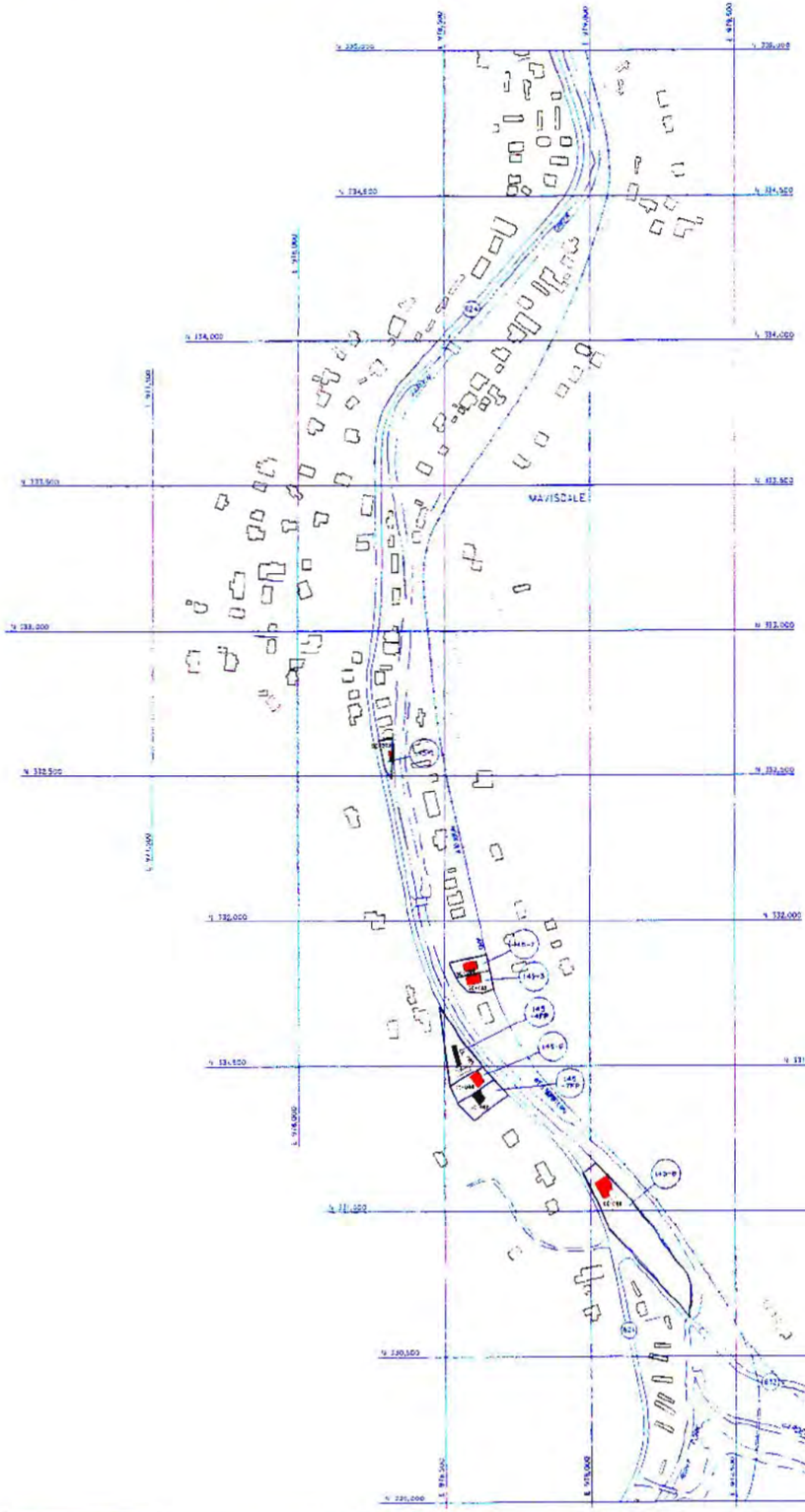

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
145-1	GLENN R. HALL, ET UX	0.39	231	734	191	244-074 ENLG A	
145-2	JOHN STREET, ET UX	0.6	209	231	90	244-074 ENLG A	
145-3	JOHN W. STREET, ET UX	0.45	274	382	91	244-074 ENLG A	
145-4PP	BELL PAT, ET	0.37	74	290	38	244-074 ENLG A	
145-5	DONALD STREET, ET UX	0.20	57	39	36	244-074 ENLG A	
145-7PP	BUCHANAN INVESTMENT CO.	0.35	287	739	37	244-074 ENLG A	
145-8	A. A. STREET FAMILY TRUST	1.28			42	244-074 ENLG A	

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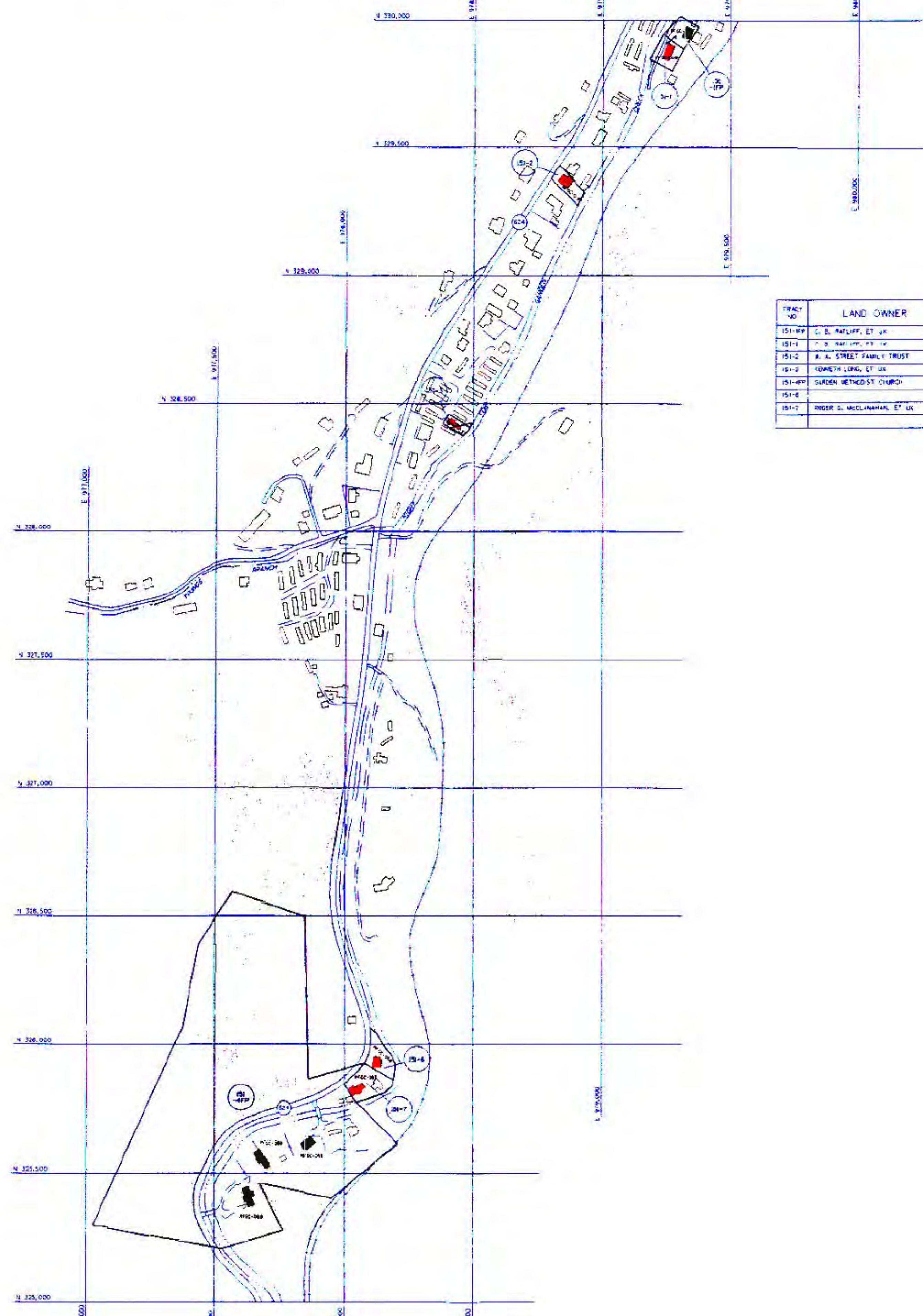

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
151-1FP	C. B. RATLIFF, ET UX	0.21	179	180	14	2HH-074 ENLG A	
151-1	C. B. RATLIFF, ET UX	[illegible]	22	176	[illegible]	[illegible]	
151-2	A. A. STREET FAMILY TRUST	0.19			42	2HH-073 ENLG A	
151-3	KENNETH LONG, ET UX	0.09	244	665	64	2HH-073 ENLG A	
151-4FP	GARDEN METHODIST CHURCH	19.15	105	414	32	2HH-074	
151-6		0.18				2HH-073	MAP ILLEGIBLE
151-7	ROGER G. McCLANAHAN, ET UX	0.18	274	443	61	2HH-074	

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TRACT NO.	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO.	TAX MAP	COMMENTS
175-	Elvis D. GIBSON	0.71	(4) (4)	583 158	L.2	266-208	
175-2		0.42				266-208	See Sec. 59-2, larger mineral tract
175-3	ROSEVELT SULLIVAN	1.17			14	266-207	

DICKENSON CO.

BUCHANAN CO.

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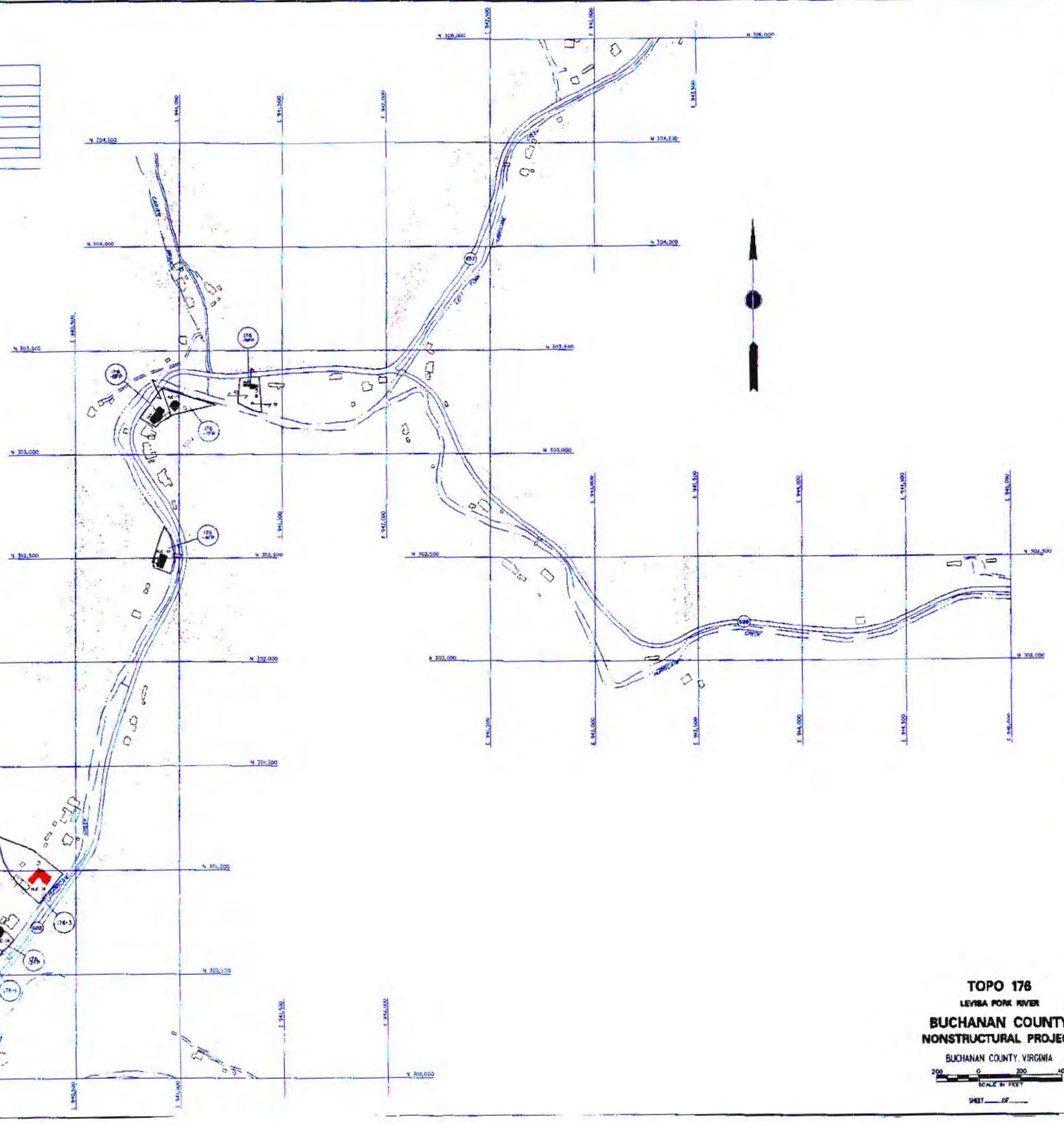
TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
176-	WILLIAM BREEDING	0.27	222	423	68	244-207	
176-2PP	TYCO BREEDING, ET UX	0.25	229	224	67	244-207	
176-3PP	RONALD BREEDING, ET UX	1.0	303	671	66	244-207	
176-4PP	MURL PRESLEY JACKSON, ET VIR	0.34	206	224	70	244-207	
176-5PP	MISSENE WILLIAMS	0.2	153	157	99	244-207	
176-7PP	ERVIN LANE COMPTON	0.25	380	620	21	244-207	Deed book found on 386
176-8PP		0.36				244-16	Needs tax map
176-9	CLAIR AND BEULAH MAE BREEDING	0.44	212	262	17	244-207	



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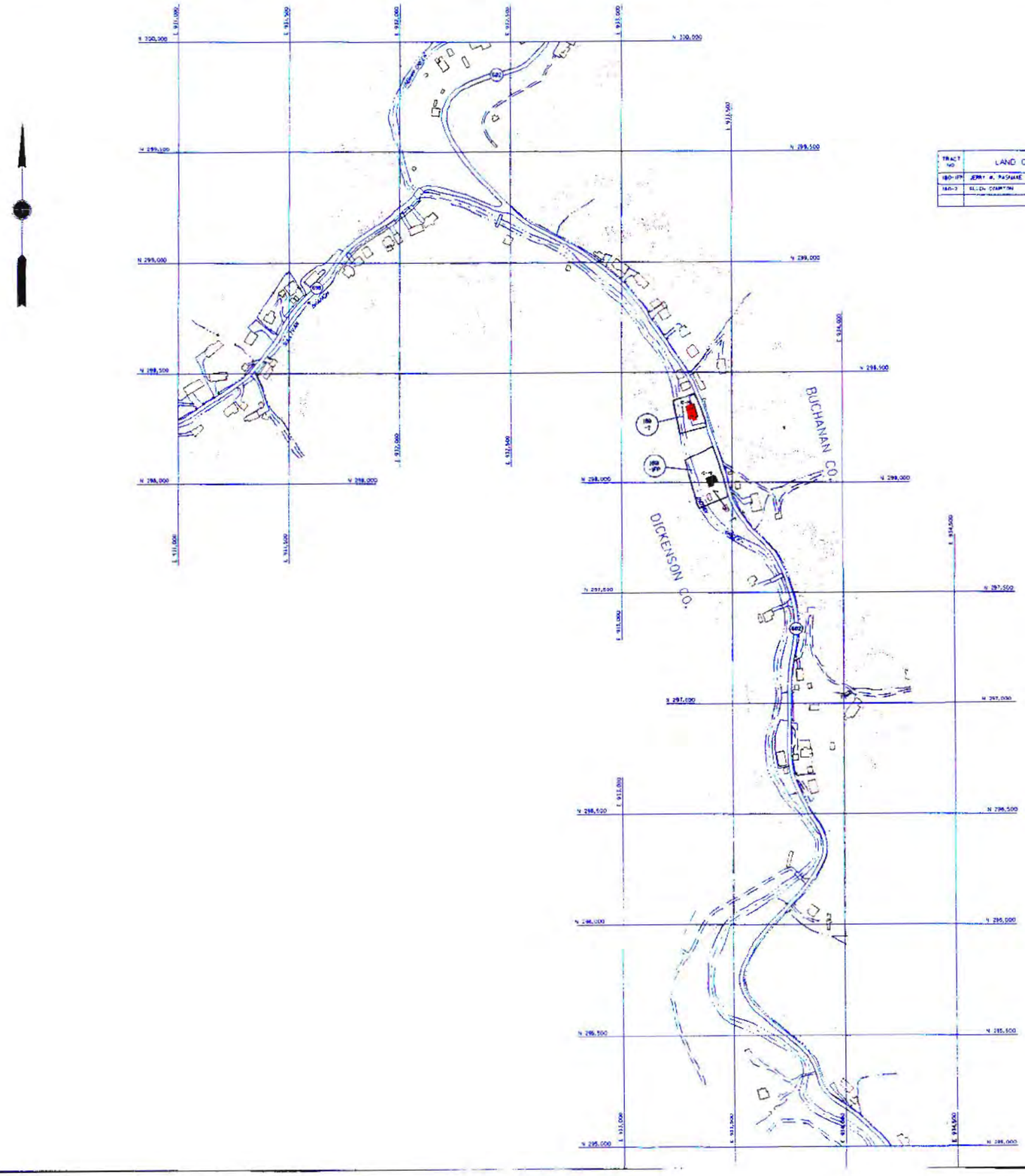

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
180-179	JERRY W. PASHAKE	0.75	298	582	22	244-201	
180-3	ELLEN COMPTON	0.41	488	180	12	244-201	

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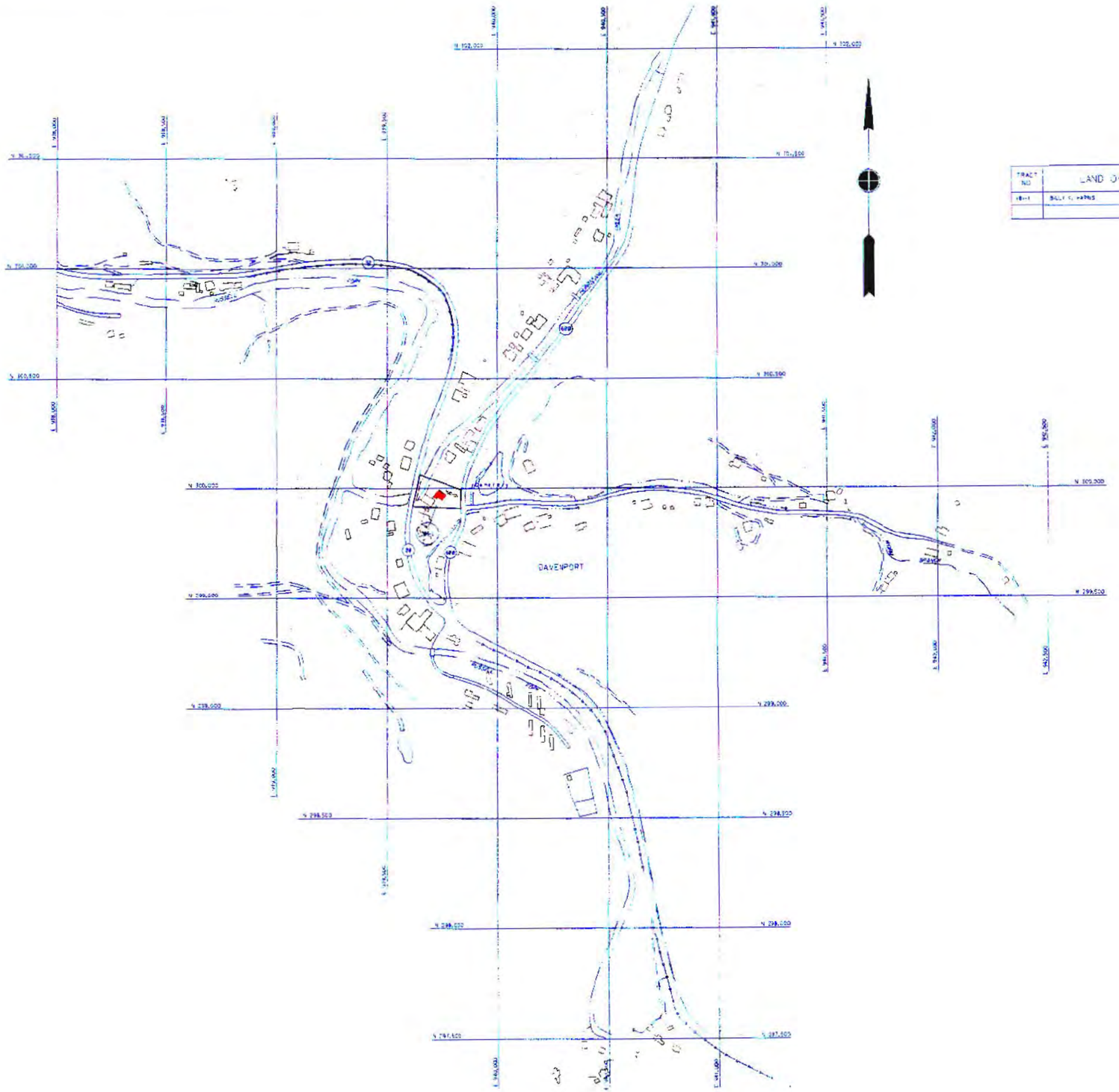

TRACT NO	LAND OWNER	ACREAGE	DEED BOOK	PAGE	TAX LOT NO	TAX MAP	COMMENTS
181	SALLY C. HAYNES	0.94	98	291	57	DM-207	Deed book could be 158

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