

APPENDICES

- Appendix A – Critical Facilities List and References
- Appendix B – Participation in the Planning Process
- Appendix C – 2011 Mitigation Actions
- Appendix D – Data Sources and Reference List
- Appendix E – Risk Assessment Data
- Appendix F – Online Citizen Survey Questions
- Appendix G – Online Citizen Survey Results Summary
- Appendix H – Edits and Changes to HMP from Draft to Final Draft
- Appendix I – 2011 Recommendations for Improvements
- Appendix J – Draft Review Meeting Sign-in Sheet, Agenda, and Invites
- Appendix K – Local Mitigation Plan Review Guide
- Appendix L – Repetitive Loss and Severe Repetitive Loss Structures
- Appendix M – County Economic Profiles
- Appendix N – HAZUS Reports, Floodplain & Topographic Maps & Aerial Photographs (appendices G and H from 2011 HMP)

APPENDIX A: CRITICAL FACILITIES LIST AND REFERENCES

Critical Facilities List

Critical facilities identified by the MOVRC in Roane, Tyler, Wirt, and Wood Counties were determined in or out of the floodplain by utilizing the WV Flood Tool.

2016 Regional Hazard Mitigation Plan Critical Facilities Chart

Name and Title: Kathryn Wood 991/OES Director (preparer)
County: Calhoun

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
Town of Grantsville Water Plant	351 Industrial Park Dr. Grantsville, WV	304-354-7316	Yes	No
Town of Grantsville Sewer Plant	1239 Northside Rd Grantsville, WV	304-354-7804	Yes	No
Calhoun Co. E911 Center	511 Alan B Mollohan Rd Mt. Zion, WV	304-354-9271	No	No
Little Kanawha Bus Company	6162 S Calhoun Hwy Mt. Zion, WV	304-354-6212	No	No
Grantsville VFD	341 S Calhoun Hwy Grantsville, WV	304-354-6566	No	No
Upper West Fork VFD	101 Red Roof Lane Chloe, WV	304-655-7491	No	No
Arnoldsburg VFD	1320 Arnoldsburg Rd Arnoldsburg, WV	304-655-9907	Yes	No
Pleasant Hill Elementary School	3254 N Calhoun Hwy Grantsville, WV	304-354-6022	No	No
Calhoun -Gilmer Career Center	5260 E Little Kanawha Hwy Grantsville, WV	304-354-6151	No	No
Calhoun Co. Middle/High School	50 Underwood Circle Mt. Zion, WV	304-354-6148	No	No
Arnoldsburg Elementary School	90 Spring Run Rd Arnoldsburg, WV	304-655-8616	No	No
Broomstick Tower Site	686 Lovada Rd Grantsville, WV		No	No

Mule Knob Tower Site	(Nearest Address) Glenn Siers 379 Walnut Rd Chloe, WV		No	No
Minnie Hamilton Health Center	186 Hospital Dr Grantsville, WV	304-354-9244	No	No
Calhoun County Park	380 Park Place Grantsville, WV		No	No
Mt. Zion Park	5801 S Calhoun Hwy Mt. Zion, WV		No	No
West Fork Community Park	1280 Arnoldsburg Rd. Arnoldsburg, WV		Yes	No
Upper West Fork Park	88 Red Roof Lane Chloe, WV		Yes	No
Sheriff's Office	511 Alan B Mollohan Rd Mt. Zion, WV		No	
State Police Detach	2400 South Calhoun Highway Grantsville, WV 26147	304-654-6334		
Health Department	2			
Grantsville Police Department	229 Court Street Grantsville, WV 26147	304-354-6400	No	
Aging with Grace	334 Main Street Grantsville, WV 26147	304-354-6008		

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: Walter Smittle, OES Director (preparer)
County: Jackson

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
Deer Run Emergency Shelter	West Community Church, 15 Slate Rd. Wally, WV 45789	(xxx)-xxx-xxxx	Y/N	Y/N
911 Center	100 Maple Street, Ripley, WV 25271	304-373-2208	N	N
Court House	100 Court Street, Ripley, WV 25271	304-373-2220	N	N
Ripley City Bldg	203 South Church St., Ripley, WV 25271	304-372-3482	Y	N
Ravenswood City Building	212 Walnut St., Ravenswood, WV	304-273-2621	N	N
Ravenswood Fire Dept.	331 Virginia St., Ravenswood, WV	304-532-9117	N	N

Ripley Fire Department	337 W Main Street, Ripley, WV 25271	304-372-9271	N	N
Cottageville Fire Department	15 Fire House Ln., Cottageville, WV 25239	304-372-5959	N	N
Silverton Fire Department	3562 Greenhills Rd., Ravenswood, WV 26164	304-273-5510	N	N
So. Jackson Fire Department (South Station)	9015 Charleston Rd., Ripley, WV 25271	304-372-4106	N	N
So. Jackson Fire Department (North Station)	4888 Charleston Rd., Ripley, WV 25271	304-372-4106	N	N
Jackson General Hospital	122 Pinnell St., Ripley, WV 25271	304-372-2730	N	N
Ravenswood Village	200 Ritchie Ave., Ravenswood, WV 26164	304-273-9385	N	N
Ravenswood Care Center	1113 Washington St., Ravenswood, WV 26164	304-273-9482	N	N
Eldercare	107 Miller Dr., Ripley, WV 25271	304-372-5115	N	N
Jackson County Health Department	504 S. Church St., Ripley, WV 25271	304-372-2634	N	N
Walmart	200 Academy Dr., Ripley, WV 25271	304-372-4482	N	N
Krogers	106 McGraw St., Ripley, WV 25271	304-372-8821	N	N
Foodfair	423 Washington St., Ravenswood, WV 26164	304-273-9404	N	N
Cottageville PSD	7861 Ripley Rd., Cottageville, WV 25239	304-372-4317	N	N
Northern Jackson PSD	39 Gilmore Dr., Sandyville, WV 25275	304-273-9621	N	N
Southern Jackson PSD	5927 Charleston Rd., Ripley, WV 25271	304-372-2622	N	N
Jackson County Sheriff Department	98 N. Maple St., Ripley, WV 25271	304-373-2290	N	N
Jackson County EMS 401	97 Division St., Ravenswood, WV 26164	304-373-2337	N	N
Jackson County EMS 402	100 N. Maple St., Ripley, WV 25271	304-373-2217	N	N
Jackson County EMS 403	9017 Charleston Rd., Ripley, WV 25271	304-372-1654	N	N
Constellium	859 Century Rd., Millwood, WV 25262	304-273-6300	N	N
Ritchie Bridge	Washington St., Ravenswood, WV 26164		Y	N

National Guard Armory	8832 Point Pleasant Rd., Millwood, WV 25262	304-273-0824	N	N
Calvary UM Church	205 N. Court St., Ripley, WV 25271	304-372-3203	N	N
Ripley Baptist Temple	320 Charleston Dr., Ripley, WV 25271	304-372-3413	N	N
Ripley High School	2 E. School St., Ripley, WV 25271	304-372-7355	N	N
Ripley Middle School	1 W. School St., Ripley, WV 25271	304-372-7350	N	N
Ripley Grade School	404 2nd Ave., Ripley, WV 25271	304-372-7345	N	N
Kenna Elementary	275 Business Park Dr., Kenna, WV 25248	304-372-2262	N	N
Fairplain Elementary	51 Pather Dr., Ripley, WV 25271	304-372-7340	N	N
Cottageville Elementary	270 2nd St., Cottageville, WV 25239	304-372-7342	N	N
Gilmore Elementary	7412 Parkersburg Rd., Sandyville, WV 25275	3014-273-3511	N	N
Evans Elementary	205 School House Dr., Evans, WV 25241	304-372-7317	N	N
Henry J. Kaiser Elementary	803 Kaiser Ave., Ravenswood, WV 26164	304-273-2692	N	N
Ravenswood Elementary	1 Grade School Rd., Ravenswood, WV 26164	304-273-5391	N	N
Ravenswood Middle School	409 Sycamore St., Ravenswood, WV 26164	304-273-5480	N	N
Ravenswood High School	100 Plaza Dr., Ravenswood, WV 26164	304-273-9301	N	N
Roane Jackson Tech School	9450 Spencer Rd., Leroy, WV 25252	304-372-7335	Y	N
State Police	1700 Ripley Road Ripley, WV 25271	304-372-7850	N	
Ravenswood Police Department	333 Virginia Street Ravenswood, WV 26164	304-273-3500	N	
Ripley Police Department	203 S. Church Street Ripley, WV 25271	304-372-4711	N	
Heritage Christian Academy	Ravenswood, WV 26164	304-273-9463	N	

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: Stephen Knight, OES Director (preparer)
County: Pleasants

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
Jim Spence Center,	605 Cherry Street	304-684-7525	N	N
Emergency Shelter	St. Marys, WV 26170			
Pleasants County Senior Center	209 2nd Street, St. Marys, WV 26170	304-6849243	Y	N
Pleasants County Emergency Squad	3rd Street, St. Marys, WV 26170	304-684-3810	N	N
St. Marys VFD	209 Clay Street, St. Marys, WV 26170	304-684-7122	N	N
St. Marys High School	North Pleasants Highway			
Emergency Shelter	St. Marys, WV 26170	304-684-2421	N	N
1st Baptist Church Rec Bldg	425 Barkwill Street, St. Marys, WV 26170	304-684-2873	N	N
Emergency Shelter				
Belmont VFD	218 Main Street, Belmont WV, 26134	304-665-7401	N	N
Belmont VFD Training Building	512 Triplett Street, Belmont, WV 26134	304-665-7401	N	N
St. Marys PD	2nd Street, St. Marys, WV 26170	304-684-2401	N	N
St. Marys Water Plant	North Pleasants Highway	304-684-2401	N	N
St. Marys Sewer Plant	Creel Street, St. Marys, WV 26170	304-684-7037	Y	N
Belmont Water Plant	Riverview Dr, Belmont, WV 26134	304-665-2011		N
Belmont Sewer Plant	Patti Street, Belmont, WV 26134	304-665-2110		N
Carehaven of Pleasants Nursing Home	506 Riverview Dr, Belmont, WV 26134	304-665-2065	N	N
The Heritage Assisted Living	Rt 2 Box 230, St. Marys, WV 26170	304-684-3200	N	N
State Police	1313 Second Street St. Marys, WV 26170-1252	304-684-7101	N	
St. Marys Correctional Center	2880 N. Pleasants Highway St. Marys, WV 26170	304-684-5500	Y	
St. Marys Police Department	418 2nd St. Marys, WV 26170	304-684-7011	Y	

Belmont Elementary School	512 Riverview Drive Belmont, WV26134	304-299-5274	N	
St. Marys Elementary	317 Washington Street St. Marys, WV 26170	304-684-3510	N	
Pleasants County Middle School	510 Riverview Drive Belmont, WV 26134	304-299-5275	N	
Mid-Ohio Valley Technical Institute	2134 North Pleasants Highway St. Marys, WV 26170	304-684-2464	N	
St. Marys Apostolic School	712 6th Street St Marys, WV 26170	304-684-7675		

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: James White, OEM Director (preparer)
County: Ritchie

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
North Bend State Park	Rt 1, Box 221 Cairo, WV 26337	304-643-2931	N	N
Ritchie County Primary Care	135 S. Penn Ave Harrisville, WV 26362	304-643-4005	N	N
Pineview Continuous Care	400 McKinley Av Harrisville, WV 26362	304-643-2704	N	N
Harrisville VFD	612 Main Street Harrisville, WV 26362	304-643-2330	N	N
Pennsboro VFD	208 Kimball Pennsboro, WV 26415	304-659-2245	N	N
Ellenboro VFD	103 Washington ST Ellenboro, WV 26346	304-869-3244	N	N
Cairo VFD	44 McGregor ST Cairo WV 26337	304-628-3312	N	N
Smithville VFD	Staunton Turnpike Smithville, WV 26178	304-477-3423	N	N
Ritchie County EMS 41	Myles Ave Pennsboro, WV 26415	304-643-2369	N	N
Ritchie County EMS 42	1610 Harrisville, WV 26362	304-643-2369	N	N
Ritchie County EMS 43	Staunton Turnpike Smithville, WV 26178	304-643-2369	N	N
Central Communications	4317 Lamberton Rd Pennsboro, WV 26415	304-659-3770	N	N

Cairo Community Building	Cairo, WV	304-628-3843	N	N
Smithville Community Building	Staunton Turnpike Smithville, WV 26178	304-477-3423	N	N
Auburn Community Building	P.O. Box 37 Auburn, WV 26325	304-349-2524	N	N
Ritchie County Middle School	201 Ritchie County School Rd. STE 2 Ellenboro, WV 26346	304-869-3512	N	
Ritchie County High School	201 Ritchie County School Rd. STE 1 Ellenboro, WV 26346	304-869-3526	N	
Harrisville Elementary School	1201 East Main St. Harrisville, WV 26362	604-643-2220	N	
Smithville Elementary School	State Route 47 Smithville, WV 26178	304-477-3273	N	
Creed Collins Elementary School	512 Collins Ave, Pennsboro, WV 26415	304-659-2140	N	
Ellenboro Elementary School	100 School Street Ellenboro, WV 26346	304-869-3306	N	
State Police	32 Ford Street Harrisville, WV 26362	304-643-2101	N	
Sheriff's Office	109 East North Street Harrisville, WV 26362	304-643-2262	N	
Pennsboro Police Department	422 Main Street Pennsboro, WV 26415	304-659-2377	N	
Ritchie County Office of Emergency Management	4317 Lamberton Rd Pennsboro, WV 26415			
Harrisville Police Department	1501 E Main Street, Harrisville, WV	304-643-2669	N	

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: MOVRC (preparer)
County: Roane

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
State Police	100 Triplett Road Spencer, WV 25276-9112	304927-0950	N	
EOC	205 East Main Street Spencer, WV 25276	304-927-0918	Y	
County Commission	200 Main Street Spencer, WV 25276	304-927-0078	N	
Sheriff's Office	200 Main Street Spencer, WV 25276	304-927-2540	N	
Spencer Police Department	116 Court St Spencer, WV 25276	304-927-5616	Y	
Gearry Elementary/Middle School	9538 Clay Road, Left Hand, WV 25251	304-565-3721		
Ready Elementary School	66 Roosevelt St Reedy, WV 25270	304-927-6433	N	
Roane County High School	1 Raider Way Spencer, WV 25276	304-927-6420	N	
Spencer Elementary School	85 Clay Road Spencer WV 25276	304-927-6428	N	
Spencer Middle School	102 Chapman Ave Spencer, WV 25276	304-927-6415	Y	
Walton Elementary/Middle School	90 School Drive Walton, WV 25286	304-577-6731	Y	
Clover-Roane VFD	3909 Clay Road Spencer, WV 25276	304-927-1299	N	
Gandeeville-Harmony VFD	58 Civic Drive	304-577-6037	N	
Newton VFD	1207 Clay Road Newton, WV	304-565-4866		
Spencer Roane Co VFD	East Main Street Spencer, WV	304-927-1099		
Walton VFD	7113 Charleston Rd Walton, WV	304-577-6229	N	
Miletree Center Nursing home	825 Summit Street Spencer, WV 25276	304-927-1007	N	
Roane General Hospital	200 Hospital Drive Spencer, WV 25276	304-927-4444	N	

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: MOVRC (preparer)
County: Tyler

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
State Police	7223 Veterans Highway New Martinsville, WV 26155	304927-0950		
EOC	121 Court Street Middlebourne, WV 26149	304-758-5155	N	
Sheriff's Office	121 Court Street Middlebourne, WV 26149	304-758-2911	N	
County Commission	121 Main Street Middlebourne, WV 26149	304-758-2102	N	
Sistersville Police Department	200 Diamond St Sistersville, WV 26175	304-652-1570		
Paden City Police Department	208 W Main Street, Paden City, WV 26159	304-337-2281	N	
Arthur I Boreman Elementary	51 Boreman School Road Middlebourne, WV 26149	304-758-2152	N	
Sistersville Elementary School	651 Sistersville Elementary School Road Sistersville, WV 26175	304-652-2601	N	
Tyler Consolidated High School	1993 Silver Knight Drive, Sistersville, WV 26175	304-758-9000	Y	
Tyler Consolidated Middle School	1993 Silver Knight Drive, Sistersville, WV 26175	304-758-9000	Y	
Alma VFD		304-758-4066		
Middlebourne/Tyler County VFD	217 Main Street Middlebourne, WV	304-758-4344	N	
Shirley VFD		304-758-2391		
Sistersville VFD	121 Maple Lane Sistersville, WV	304-652-7131	N	
Sistersville Center Nursing Home	201 Wood Street Sistersville, WV 26175	304-652-1032	N	
Sistersville General Hospital	314 South Wells Street Sistersville, WV 26175	304-652-2611	Y	
Judges Private Care Assisted Living Residence	212 Fair Street Middlebourne, WV 26149	304-758-4397	N	

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: MOVRC (preparer)

County: Wirt

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
State Police		304927-0950	N	
EOC	1 Court Street Elizabeth, WV 26143	401-212-0843	N	
Sheriff	1 Court Street Elizabeth, WV 26143	304-275-4222	N	
County Commission	1 Court Street Elizabeth, WV 26143	304-275-4271	N	
Wirt County Primary Center	438 Schoolview Street Elizabeth, WV 26143	304-275-4263	Y	
Wirt County Middle School	426 Schoolview Street Elizabeth, WV 26143	304-275-3977	Y	
Wirt County High School	431 Mulberry Street Elizabeth, WV 26143	304-275-4241	Y	
Elizabeth-Wirt VFD	91 Schoolview Street Elizabeth, WV 26143	304-275-6511	N	

**2016 Regional Hazard Mitigation Plan
Critical Facilities Chart**

Name and Title: MOVRC (preparer)

County: Wood

Facility Name	Facility Physical Address	Contact Phone	In Floodplain	Past FEMA claims
State Police	3828 Staunton Turnpike Parkersburg, WV 26104	304-420-4600	N	
EOC	911 Core Road Parkersburg, WV 26104	304-420-0911	N	
Sheriff's Office	401 2nd Street Suite 11 Parkersburg, WV 26101	304-424-0197	N	
Health Department	211 6th Street Parkersburg, WV 26101		N	

County Commission	1 Court Street Suite 203 Parkersburg WV 26101	304-424-1984	N	
Parkersburg Police Department	1 Government Square Parkersburg, WV 26101	304-424-8440	N	
Vienna Police Department	604 29th Street Vienna, WV 26105	304-485-8501	N	
Williamstown Police Department	100 W 5th Street Williamstown, WV 26187	304-375-4935	N	
Blennerhassett Elementary School	448 Jewell Rd Parkersburg, WV 26101	304-863-5128	N	
Criss Elementary	2800 22nd Street Parkersburg, WV 26104	304-420-9522	N	
Emerson Elementary	1605 36th St Parkersburg, WV 26104	304-420-9528	N	
Fairplains Elementary	615 Broadway Ave. Parkersburg, WV 26101	304-420-9531	N	
Franklin Elementary	1511 Division Street Parkersburg, WV 26101	304-420-9534	N	
Gihon Elementary	2000 Belmont Road Parkersburg, WV 26101	304-420-9539	N	
Greenmont	209 58th Street Vienna, WV 26105	304-420-9544	N	
Jefferson Elementary	1103 Plum Street Parkersburg, WV 26101	304-420-9554	N	
Kanawha Elementary	6465 Staunton Tpke Davisville, WV 26142	304-420-9557	N	
Lubeck Elementary	206 Lubeck Road Parkersburg, WV 26101	304-863-3321	N	
Madison Elementary	1426 32nd Street Parkersburg, WV 26104	304-420-9563	N	
Martin Elementary	1301 Hillcrest Street Parkersburg, WV 26101	304-420-9625	N	
McKinley Elementary	1130 19th Street Parkersburg, WV 26101	304-420-9581	N	

Mineral Wells Elementary	1776 Elizabeth Pike Mineral Wells, WV 26150	304-489-1670	N	
Neale Elementary	2305 Grand Central Ave Vienna, WV 26105	304-420-9587	N	
Vienna Elementary	700 41st Street Vienna WV26105	304-420-9648	N	
Waverly Elementary	422 Virginia Ave Waverly, WV 26184	304-464-4250	Y	
Williamstown Elementary	418 Williams Ave Williamstown, WV 26187	304-375-7675	N	
Worthington Elementary	2500 36th Street Parkersburg, WV 26104	304-420-9660	N	
Blennerhassett Middle	444 Jewel Road Parkersburg, WV 26101	304-863-3356	N	
Edison Middle	1201 Hillcrest St Parkersburg, WV 26101	304-420-9525	N	
Hamilton Middle	3501 Cadillac Dr. Parkersburg, WV 26104	304-420-9547	N	
Jackson Middle	1601 34th Street Vienna, WV 26105	304-420-9551	N	
Van Devender Middle	918 31st Street Parkersburg, WV 26101	304-420-9645	N	
Parkersburg High	2101 Dudley Ave Parkersburg, WV 26101	304-420-9595	N	
Parkersburg South High	1511 Blizzard Drive Parkersburg, WV 26101	304-420-9610	N	
Williamstown High	219 West 5th Street Williamstown, WV 26187	304-375-6151	N	
Blennerhassett VFD	5711 Dupont Rd Washington, WV 26101	304-863-3103	N	
Deerwalk VFD	9382 Deerwalk Hwy Walker, WV 26180	304-679-3925	N	
East Wood VFD		304-422-4410		
Lubeck VFD	1340 Harris Hwy Parkersburg, WV 26101	304-863-8722	N	

Mineral Wells VFD	224 Sugarcamp Rd Mineral Wells, WV 26150	304-489-2340	y	
Pond Creek VFD	6096 Pond Creek rd. Belleville, WV 26133	304-863-5280	Y	
Vienna VFD	609 28th Street Vienna, WV 26105	304-295-5652	N	
Washington Bottom VFD		304-861-0145		
Waverly Volunteer Fire CO	15425 Emerson Ave Waverly, WV 26187	304-464-4320	Y	
Waverly Volunteer Fire Co Station 2	63 Valley mills road Parkersburg, WV			
Parkersburg Fire Department	1 Government Square Parkersburg, WV 26101	304-424-8470	N	
Parkersburg Station 1	3rd and Avery Street Parkersburg, WV 26101	304-424-8471	N	
Parkersburg Station 2	16th & Covert Streets Parkersburg, WV 26101	304-424-8472	N	
Parkersburg Station 3	13th & Liberty Streets Parkersburg, WV 26101	304-424-8473	N	
Parkersburg Station 4	WV & Emerson Aves Parkersburg, WV 26101	304-424-8474	N	
Parkersburg Station 5	1715 Blizzard Drive Parkersburg, WV 26101	304-424-8475	N	
Parkersburg Station 6	2311 Camden Ave Parkersburg, WV 26101	304-424-8476	N	
Williamstown VFD	411 West Fifth Street Williamstown, WV 26187	304-375-3960	N	
Westbrook Health Services, Incorporated	2008 36th Street Parkersburg, WV 26101	304-485-1721		
Westbrook Health Services, Incorporated Behavioral Health Center	1011 Mission Drive Parkersburg, WV 26101	304-485-1721		
Camden-Clark Memorial hospital	800 Garfield Ave Parkersburg, WV 26101	304-424-2111	N	

Cedar Grove Assisted Living	110 Nicolette Rd Parkersburg, WV 26104	304-424-6023	N	
Parkersburg Acquisition, LLC Nursing Home	1600 27th Street Parkersburg, WV 26101	304-485-6476	N	
Westbrook Health Services, Incorporated	3313 Emerson Avenue Parkersburg, WV 26101	304-485-1721	N	
Westbrook Health Services, Incorporated Behavioral Health Center	1458 1/2 36th Street Parkersburg, WV 26101	304-485-1721	N	
Westbrook Health Services, Inc. Behavioral Health Services	1460 36th Street Parkersburg, WV 26101	304-485-1721	N	
Westbrook Health Services, Inc. Behavioral Health Services	1505 16th Street Parkersburg, WV 26101	304-485-1721	N	
Intermediate Care Facilities for Individuals with Intellectual Disabilities	2240 Gihon Road Parkersburg, WV 26101	304-485-0482	N	
Healthsouth Western Hills Regional Rehab Hospital	3 Western Hills Drive Parkersburg, WV 26105	304-420-1300	N	
Horizons center for independent living	934 Williams Street Parkersburg, WV 26101	304-428-7799	N	
Lakeview group home	826 Lakeview Drive Parkersburg, WV 26101	304-422-5359	N	
Love and Care, Inc. Assisted Living Residence	5368 Dupont Road Parkersburg, WV 26102	304-863-8950	N	
New Day Crisis residence unit details	2121 seventh street Parkersburg, WV 26101	304-485-1721	N	
Ohio Valley Health Care Nursing Home	222 Nicolette Road Rout 5 Parkersburg, WV 26104	304-485-5137		
Parkersburg Center Nursing Home	1716 Gihon Road Parkersburg, WV 26101	304-485-5511	N	

Sixteenth Street Group Home Details	2126 16th Street Parkersburg, WV 26101	304-485-0478	N	
Spring Street Group Home	1615 Spring Street Parkersburg, WV 26101	304-485-0476	N	
Westbrook Health Services, Inc. Behavioral Health Services	4609 Stella Street Parkersburg, WV 26104	304-485-1721	N	
Westbrook Health Services, Inc. Behavioral Health Services	4607 Stella Street Parkersburg, WV 26104	304-485-1721	N	
Westbrook Health Services, Inc. Behavioral Health Services	910 Virginia Avenue Parkersburg, WV 26101	304-485-1721	N	
Westbrook Health Services, Inc. Behavioral Health Services	997 Access Road Williamstown, WV 26187	304-485-1721	N	
Willows Center Nursing Home	723 Summers Street Parkersburg, WV 26101	304-428-5573	N	
Woodridge Assisted Living, LLC	3810 Grand Central Ave Vienna, WV 26105	304-295-4884	N	
Worthington Nursing & Rehabilitation Center	2675 36th Street Parkersburg, WV 26104-8024	304-485-7447		
Wyngate Senior Living Comm of Parkersburg Assisted Living Residence	1 Wyngate Drive Parkersburg, WV 26105	304-428-2004	N	
Parkersburg Catholic Elementary School	810 Juliana St. Parkersburg, WV 26101	304-422-6694	N	
Parkersburg Catholic High School	3201 Fairview Avenue Parkersburg, WV 26104	304-485-6341	N	
Parkersburg Christian School	1093 Core Road Parkersburg, WV 26104	304-485-6654	N	
Lighthouse Baptist Christian	7200 Grand Central Ave Parkersburg, WV 26105	304-295-9687		

North Christian School	3109 Emerson Ave Parkersburg, WV 26104	304-485-0241	N	
Wood County Christian School	113 W. 9th Street Williamstown, WV 26187	304-375-2000	N	

Critical Facilities References

- Bureau of Alcohol Tobacco Firearms and Explosives. (2015). *West Virginia Field Offices*. Retrieved from <https://www.atf.gov/louisville-field-division/west-virginia-field-offices>
- Federal Bureau of Investigation. *FBI Offices*. Retrieved from <https://www.fbi.gov/contact-us/field>
- Federal Bureau of Prisons. *Our Locations*. Retrieved from <https://www.bop.gov/locations/map.jsp>
- Parkersburg Fire Department. (2012). *Fire Stations*. Retrieved from <http://onlyminutesaway.com/wp/about/fire-stations/>
- Parkersburg Police Department. (2012) *Contact Info*. Retrieved from <http://pkbpolice.com/wp/home/>
- Pleasants County Schools. (2016). Retrieved from <http://www.pleasantcountyschools.com/>
- Roane County Schools. (2016). Retrieved from <http://www.roanecountyschools.com/schools>
- Tyler County Schools. (2016). *Schools*. Retrieved from <http://www.tylercountypublicschools.com/>
- U.S. Citizenship and Immigration Services. (2015). *West Virginia*. Retrieved from <https://www.uscis.gov/about-us/find-uscis-office/field-offices/west-virginia>
- U.S. Customs and Border Protection. *Locate a Port of Entry*. Retrieved from <https://www.cbp.gov/contact/ports/wv>
- U.S. Immigration and Customs Enforcement. *Contact ICE*. Retrieved from <https://www.ice.gov/contact/field-offices>
- USA COPS. *West Virginia Police Departments*. Retrieved from <http://www.usacops.com/wv/p26147/index.html>
- Vienna Police Department. (2015). *Contact Information*. Retrieved from <http://www.viennapolice.com/portal/about/contact-information/>
- West Virginia Department of Health & Human Resources. (2013). *Office of Health Facility Licensure & Certification*. Retrieved from <http://ohflac.wv.gov/Lookup/FacilitySearch>
- WV Regional Jail & Correctional Facility Authority. (2016). *Facility Information*. Retrieved from <http://www.rja.wv.gov/facilityinfo/Pages/default.aspx>
- WV Division of Corrections. (2007-2016) *Prisons and Facilities; Saint Marys Correctional Center*. Retrieved from <http://www.wvdoc.com/wvdoc/PrisonsandFacilities/SaintMarysCorrectionalCenter/ta/bid/56/Default.aspx>

- WV State Police. (2016). *Detachment Contact Information*. Retrieved from <http://www.wvsp.gov/contactus/detachmentContactInfo/Pages/default.aspx>
- West Virginia Fire Commission. *Find a Fire Department* Retrieved from <http://www.firemarshal.wv.gov/Documents/FIRE%20DEPT.pdf>
- West Virginia State Treasurer. (2016). *Volunteer Fire Departments; 1st quarter 2016 Volunteer Fire Department State Distribution*. Retrieved from <http://www.wvtreasury.com/Banking-Services/Revenue-Distributions/Volunteer-Fire-Departments>
- West Virginia. *West Virginia Counties*. Retrieved from <http://www.wv.gov/local/Pages/counties.aspx?county=Wood>
- Wirt County School. *Schools*. Retrieved from <http://www.edline.net/pages/WirtBOE>
- Wood County Schools. *School List*. Retrieved from <http://woodcountyschoolswv.com/District/Schools/>

Resources for Citizen, Local Officials, and Emergency Operations Personnel for manmade hazards.

Substance Abuse

- The Governor’s Initiative on Substance Abuse www.wvsubstancefree.org
- 1-844-Help4WV www.help4wv.com

Hazardous Materials

- 2013 State Hazard Mitigation Plan (all hazards plan): Section 3.17 “Hazardous Materials” www.dhsem.wv.gov
- WV Emergency Operations Plan 2016: Emergency Support Function 10 “Oil and hazardous Materials Response” www.dhsem.wv.gov

APPENDIX B: PARTICIPATION IN THE PLANNING PROCESS

This chart below details how each municipality and County Government participated in the completion of this HMP. The following documents provide evidence of jurisdiction participation in the planning process. The documents include public meeting sign in sheets, agendas, & notes, letters from jurisdictions indicating their review of the plan, and a blank copy of the NFIP survey completed by the jurisdictions indicated in the chart below.

Jurisdiction	Participation
Calhoun County	As a representative of Calhoun County, Commissioner Chip Westfall attends monthly MOVRC board meetings. At each of these monthly meetings over the last year the MOVRC community development staff has provided an update of the Plans status and opened up the floor to questions and suggestions regarding the plan. The Commissioner Westfall indicated in a letter that all of his questions, comments, or concerns regarding the plan were addressed or taken under consideration by MOVRC staff after they provided an update on the plan during each board meeting.
Town of Grantsville	The Town of Grantsville has participated in the planning process by completing and returning the NFIP survey. Citizens of Grantsville have repeatedly expressed concern about the repetitive flooding of houses within in the Town. The MOVRC is currently working with the Mayor of the Town of Grantsville to organize possible flood mitigation project.
Jackson County	Jackson County Commissioner Dick Waybright attended and participated in the HMP public meeting held in Jackson County on March 21, 2016.
City of Ravenswood	The Mayor of Ravenswood had the opportunity to review the draft of the HMP submitted to the State for review and had no further comments or changes to suggest. This was indicated in a letter from the Mayor to the MOVRC dated June 16, 2016.
City of Ripley	The City of Ripley had a representative attend and participate in the HMP public meeting held in Jackson County on March 21, 2016. Additionally, the Mayor of the City had the opportunity to review the plan and had

	no further comments or changes to suggest as she indicated in a letter to the MOVRC dated July 14, 2016.
Pleasants County	Pleasants County Commissioner Jay Powell attended and participated in the HMP public meeting held in Pleasants County on February 28, 2016. Pleasants County also completed and returned the NFIP survey used in the completion of this plan.
City of St. Marys	The Mayor of the City of St. Marys had the opportunity to review the draft HMP submitted to the state for review and had not comments or changes to suggest. This was indicated in a letter from the mayor dated July 11, 2016. The NFIP survey was completed for the City of St. Marys and returned to MOVRC planners to be used in the completion of this plan.
City of Belmont	The mayor of the City of Belmont had the opportunity to review the draft HMP submitted to the State for review. As indicated in a letter from July, the mayor had nothing further to contribute or suggest regarding the HMP. The NFIP survey was completed for the City of Belmont and returned to MOVRC planner to be used in the completion of this plan.
Ritchie County	Ritchie County Commissioner Floyd Hodge attended and participated in the HMP public meeting held in Ritchie County on February 23, 2016.
Town of Auburn	In reviewing the draft document, the Mayor of the Town of Auburn indicated that the threat of flooding was compounded within the Town because of blocked streams, insufficient storm drains, and blocked culverts along the road side. This was taken into consideration when completing the final draft of the HMP.
Town of Cairo	The Mayor of Cairo had the opportunity to review the draft of the HMP submitted to the State for review and had no further comments or changes to suggest. This was indicated in a letter from the Mayor to the MOVRC dated August 24, 2016.
Town of Ellenboro	The Mayor of the Town of Ellenboro had the opportunity to review the draft of the plan submitted to the State for review and had no further comments or changes to suggest. This was indicated in a letter from the mayor to the MOVRC dated. August 24, 2016.
Town of Harrisville	The Mayor of Harrisville had the opportunity to review the draft of the HMP submitted to the State for review and had no further comments or changes to suggest.

	This was indicated in a letter from the Mayor to the MOVRC dated June 28, 2016.
City of Pennsboro	As a representative of the City, the Mayor of Pennsboro attends monthly MOVRC board meetings. At each of these monthly meetings over the last year the MOVRC community development staff has provided an update of the Plans status and opened up the floor to questions and suggestions regarding the plan. The Mayor of Pennsboro indicated in a letter that all of his questions, comments, or concerns regarding the plan were addressed or taken under consideration by MOVRC staff after they provided an update on the plan during each board meeting.
Town of Pullman	In phone conversation, the Mayor of the Town of Pullman indicated that of all the hazards addressed in the plan, flooding presented the biggest issue for the Town. Particularly with high water on the west side of town in the Left Fork of Slab Creek. The Mayor did indicate however that since the construction of Pullman dam the risk of flooding has decreased significantly along with the impact of flooding.
Roane County	After review of the draft plan, the Roane County Commission expressed in a letter their concern with the phrasing “eliminated risk” used in the draft plan. Additionally, the Roane County Clerk participated by phone in the final draft review meeting.
Town of Reedy	In a phone conversation with the Mayor of Reedy and the Town Clerk, discussed their concerns about flooding in within the Town. They indicated that flooding has a long history in Reedy and in the past stream dredging seems to have been helpful in lessening the impact of flood events. They did not express any other specific issue related to other hazard types.
City of Spencer	On October 22, 2015 members of the HMP planning team met with the City of Spencer’s marketing director and Mayor Terry Williams to discuss a myriad of upcoming projects in the City. During this meeting the City identified locations along Bell and Reynolds Streets within the City that have prolonged issues with stream blockages and flooding issues. Also, during this meeting representatives of the City indicated that several citizens of Spencer had expressed interest in pursuing possible flood mitigation opportunities. Currently, because of this discussion there is a flood

	mitigation project in development in the City of Spencer.
Tyler County	County Commissioner Eric Vincent attended and participated in the HMP public meeting held in Tyler County on March 3, 2016. Also, the floodplain Manager for Tyler County completed and returned the NFIP survey.
Town of Friendly	In a phone conversation with the Mayor of Friendly she indicated that the Town has issues with backwater flooding along the Ohio River. The Town is located along route 2 and the banks of the Ohio River. Additionally, the Mayor mentioned that when during heavy rain and flooding events the Town has issues with stormwater sewer back up due to a malfunctioning drainage system. The poor drainage system allows for water to pool in peoples' yards and along roadsides. The pooling water takes weeks to dissipate and when it does dissipate it transforms in to a marshy mess that is infested with mosquitos and other types of bacteria.
Town of Middlebourne	The Mayor of the Town attended and participated in the HMP public meeting held in Tyler County on March 3, 2016.
City of Paden City	The City of Paden City participated in the hazard mitigation planning process by completing and returning the NFIP survey.
City of Sistersville	The Mayor of Sistersville the opportunity to review the draft of the HMP submitted to the State for review and had no further comments or changes to suggest. This was indicated in a letter from the Mayor to the MOVRC which is included in this appendix.
Wirt County	On March 1, 2016 the Wirt County Commission took a pause during a regularly scheduled commission meeting to hold a public meeting to discuss HM planning and to gain public input in for the HMP. Also, the Wirt County Commission reviewed the draft of the HMP submitted to the State for review and had no further comments or changes to suggest.
Town of Elizabeth	The Mayor of Elizabeth the opportunity to review the draft of the HMP submitted to the State for review and had no further comments or changes to suggest. This was indicated in a letter from the Mayor to the MOVRC which is included in this appendix.

Wood County	Wood County Commissioner Steve Gainer attended and participated in the HMP public meeting held in Wood County on February 10, 2016.
Town of North Hills	The Mayor of the Town of North Hills indicated in an email that he had reviewed the draft hazard mitigation plan and had no further comments or concerns. Additionally, the Mayor along with the governing board of North Hills reviewed the citizen survey as a group and provided collective comment in hard copy. The Mayor of North Hills also included a critique of how the Town was affected by 2012 derecho which has been included in this appendix.
City of Parkersburg	The City of Parkersburg completed and returned the NFIP survey used in the development of this plan. Also, as a representative of the City of Parkersburg, Director of Development for the City Rickie Yeager attended the majority of MOVRC Board meetings over the past year. At each of these monthly meetings over the last year the MOVRC community development staff has provided an update of the Plans status and opened up the floor to questions and suggestions regarding the plan.
City of Vienna	Vienna was represented at the HMP public meeting by a City employee held in Wood County on February 10, 2016. The Mayor of Vienna attended the final draft review meeting held June 29, 2016. Additionally, the mayor of Vienna reviewed the draft document and had no further comments or changes to suggest. The floodplain manager for the City of Vienna completed and returned the NFIP survey which was used in the completion of this plan.
City of Williamstown	The City had two representatives attend and participate in the HMP public meeting held in Wood County on February 10, 2016. The floodplain manager competed and returned the NFIP survey which was used in the completion of this plan.

Calhoun County
2016 Hazard Mitigation Plan Update Public Meeting
February 16, 2016 Arnoldsburg Community Center 5pm

Name	Organization/Public	Email Address
1 <i>Meganne Robinson</i>	<i>MOURC</i>	<i>meganne.robinson@mourc.org</i>
2 <i>Mark Kerns</i>	<i>EMS Director MHS</i>	
3 <i>Julie Sears</i>	<i>Calhoun OES, Flood Plain Mgr.</i>	<i>calhouomaps@yahoo.com</i>
4 <i>Betty L. Price</i>		
5 <i>Bill Ellis</i>	<i>REGION V THREAT PREPAREDNESS</i>	<i>bill.ellis@mhcc.com</i>
6 <i>Kathy Reed</i>	<i>Calhoun DEM</i>	<i>calhoungis@earthlink.net</i>
7 <i>Besie Pierce</i>	<i>Public</i>	<i>FLORIDA BSM @ Live .com</i>
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

CALHOUN COUNTY PUBLIC MEETING - 2/16/16 - 5:00 PM

Hosted by Calhoun Local Emergency Planning Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Special Needs Population – Who coordinates?
- Flood Mitigation – Wood County action – Grantsville
- Emergency Alert /WARN/ Reverse 911 – Calhoun Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators
- Stream Dredging and Clean-up – identify Calhoun Co. project
- Severe Winds Impact – anchor mobile homes, debris clean up
- Topo/Floodplain map improvements – Calhoun Co. Contact?

4) Questions?

MOVRC
Mid-Ohio Valley Regional Council

Luke Peters
Project Coordinator
luke.peters@movrc.org

P.O. Box 247 • 531 Market Street
Parkersburg WV 26101
Phone: 304-422-4993 • Fax: 304-422-4998
www.movrc.org

Calhoun County Public Meeting

Arnoldsburg VFD/Community Center –LEPC

February 16th, 2016 5pm

Vulnerable Populations

Calhoun uses a reverse 911. For recent Storm Jonas they sent out a message urging preparation and asking for only necessary travel.

They post emergency tips and news on Facebook and get lots of sharing that way. The school can also call parents homes. CODE RED is used as well and it reaches Cell, Text, Email, and is managed by the 911 Center.

Flood Mitigation

Buyouts could be an option in some areas of Southern Calhoun along the Little Kanawha. Also the Lower/and Upper West Fork in Altizer and Stinson. Julie Spears is the Floodplain manager.

Bridges

Many places in Calhoun get cut off by high water and there are a series of islands formed. Henry's Fork is one low water bridge (Altizer) that could be replaced.

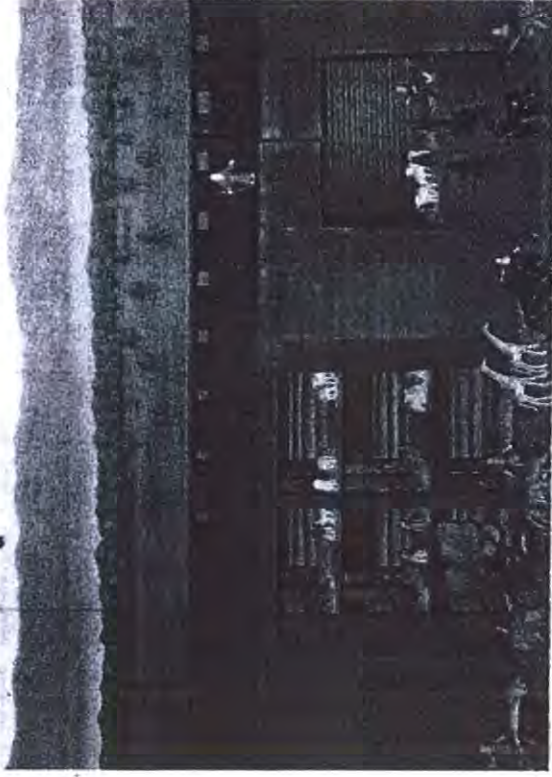
Shelter

Volunteers- issues are broad. Not reliable because when the emergency happens they stay home too or can't travel. Maintaining a facility is a big expense when hardly anyone would use it. Ask Todd Wines at Red Cross about providing more volunteers. Can Grants help fund a critical needs shelter?

Lessons of Preparation focus on the first 72 hours.

Along Rt.33/119 there are about 10 houses that need Flood Insurance, 3 on the West Fork have applied for LOMA's

and me are modeling safe, signs in your relationship or healthy relationships for their (Continued on Page 2)



Noah's Ark To Be Presented

First Baptist Church will introduce Noah's Ark to Calhoun County on Sunday, Feb. 21.

Bobby O'Conner (right) will present the program at Sunday School, 10 a.m., and at morning worship, 11 a.m. Each service will present different information.

O'Conner is a retired airline employee and resides in Jackson County. He has been involved in the ark ministry since 1998. The 10-foot long ark took seven months to build and is transported on a trailer to each location. He will also have fossils and other related materials.

The audience will discover why the flood and the Ark of Genesis are foundations of faith. Learn why the flood and the



Bobby O'Conner

ark point to important truths in our lives today.

Everyone is welcome.

by Gary Knight
WVU Extension agent and project liaison Jamie Mullins told the Star Park Work Group on Thursday that she has been able to make connections with local schools and Glenville State College for their participation in developing Calhoun County Park as a Dark-Sky site.

"We have some groups there

who are interested in helping with outreach in publicizing, including developing a website and a registration page for campers and astronomers, who would like to use the park on particular nights," said Mullins.

Roger Jarvis reported that GSC, with two observatories of its own, is excited about the project and eager to assist: "A

GSC astronomy professor sa he would definitely be interest in collaborating."

The Star Park group, consisting of Calhoun County Park board members, Star Park committee members, and personnel from various state agencies, combining skills and resources in conjunction with University of Tennessee and Fairmont State University toward attaining an International Dark-Sky Association sanction for the park.

Goals discussed by the group include preparation of a written project plan, inclusion of the local community in planning and development, establishment of clear goals and priorities, installation of restrooms, show electricity, construction of some sort of lighting ordinance, enlargement of the community center, bringing attention to the park, securing fiber optic internet service, website development, grant quests, and providing the needs of guest astronomers.

Mullins said that she had sent the UT team a copy of the Feb. 21 issue of the Chronicle, where the Star Park committee goals were defined: "They said they were really glad to see that a lot of their goals are falling in line with what our goals are."

Mullins said that she expects the UT team to travel to Fairmont sometime in February to create an economic impact statement for the Star Park project: "I

Meeting To Discuss Hazard Mitigation Plan Is Tuesday

Calhoun Local Emergency Planning Committee chairman Kathy Wood invites the public to attend a meeting on Tuesday, Feb. 16, 5 p.m., at Arnoldsburg Community Building.

Those attending may participate in a discussion about the Mid-Ohio Valley Regional Hazard Mitigation Plan. The purpose is to identify and assess communities' natural hazard risks and determine activities that can be undertaken before natural hazards occur, in order to minimize property damage, risk of life, and the costs that are shared by all.

Upon completion, it will represent a comprehensive multi-jurisdictional hazard mitigation plan for the eight-county region.

MOVRC is under agreement with W.Va. Division of Homeland Security and Emergency Management to complete a regional plan by August that should be adopted by Calhoun, Jackson, Pleasants, Ritchie, Roane, Tyler, Wirt and Wood counties, and all towns and cities in their borders.

The plan will outline the health and safety of citizens. (Continued on Page 3)

You are my 'all' in fall, and you are the 'win' of winter. In every season of life, you are my all."

derful husband. I love you always and forever."

Meeting To Discuss Hazard--

(Continued from Page 1)

steps that communities can take to mitigate for future natural hazards and adoption of the plan will ensure that communities remain eligible for certain federal mitigation grant programs.

Federal Disaster Mitigation Act of 2000 requires all localities to develop and adopt a hazard mitigation plan, or participate in and adopt a regional plan, in order to be eligible for funding through FEMA's Hazard Mitigation grant program and Pre-Disaster Mitigation grant program.

MOVRC will coordinate or hold public information meetings in each county. Most of the meetings will be hosted or held in conjunction with each

county's LEPC.

Residents, business owners, local officials and community leaders are invited to attend and offer ideas for minimizing the damage that occurs and the costs that are borne by the region's communities.

An internet-based survey has been developed to solicit public input or prioritize risk reduction activities by community. Consider taking the survey, even if you cannot attend the public information meeting. The survey can be found at www.surveymonkey.com/r/MOVRC-RiskReduction2016.

For information, call Luke Peters, 422-4993, ext. 123, or email luke.peters@movrc.org.

Minnich Florist

Established by
Jake & Jessie Minnich

*Continuing to serve
Calhoun County for
over 50 years, and
still family owned!*



Week of Valentine's

Day Hours:

Mon. Feb. 8 Thru Sat. Feb. 13; 9 a.m. to 5 p.m.
OPEN SUNDAY Feb. 14, 9 a.m. to 4 p.m.

Check out our Valentine Assortment!

**ROSES - ARRANGEMENTS,
STUFFED ANIMALS, BALLOONS,
AND OTHER GIFT IDEAS**

366 Main Street, Grantsville ♥ 304-354-7915

in securing adequate internet service at the park.

"I have worked my way through the maze at Frontier and I am to speak with one of their engineers sometime this week. One of the things I need to be able to tell them is what kind of capacity and speed we need. He will be able to get a cost on what it will take to provide service," said Rader

The group explored ways of providing internet registration for astronomers coming in and utilizing the park's facilities.

"What we are running into is that issue of, we never know when there are going to be people here," said Mullins.

The need for a larger facility to accommodate all the necessities of the proposed project was also addressed.

Enlargement of the park barn and the addition of more restroom/shower facilities were discussed. Sanitary dumping stations for campers was also a consideration.

Mid-Ohio Valley Health Dept. representative John Dennis outlined some of the state requirements for establishing such a station, which include a restrictive application fee that may, at times, serve to discourage application. He could not say whether the fee is refundable.

Rader suggested establishing a dump site somewhere within closer proximity to the Grantsville municipal sewage treatment plant.

Park security, including police patrols, was discussed.

Board member John Snider said that the sheriff's department has indicated it would be willing to run patrols when people are in the park.

Jarvis added that, despite some isolated incidents of vandalism over the years, "It's a pretty safe place. I don't think there have been any muggings or anything like that."

Possible spring events discussed included basket bingo, cross-country races, and star parties.

Dennis, an amateur astronomer and veteran of numerous star parties, told the group, "Star

observat

Denn weekend for astr and desc the few eyes to a degree anywhere

"In p see a gl light ye eyeball,

A lig light wi per secc

Denn on the M features objects, once, to mers o' time.

Denr binocul come o power ulars ar to view can get

get star "The are wor just a m people Dennis.

Also meeting Peter C and Mic

Hig

High offered Feb. 23 Glenvil Center. the beg the cov coverin

Ther people course.

It i individ and co produc and pr most p

RSV calling daisy.fi



[Click To Go Back
To Main Page](#)

[Page Two](#)
[Obits](#)
[Opinions
& Comments](#)
[People
Humor & History](#)
[Photo of the Day](#)
[We Get Letters](#)
[Events](#)
[Columns](#)
[Weather](#)
[Submit News Tip](#)
[About Us](#)
[Sunny Cal Scenes](#)
[Wirt From
The Road](#)
[Contact Us](#)
[Links](#)
[Guest Book](#)
[Marketplace](#)
[Sports](#)
[Moments in Time](#)
[Games](#)
[Archives](#)
[Search](#)

MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN - Public Meetings Scheduled By County

(02/10/2016)

The June 2012 “derecho”, Superstorm Sandy, and 2015 spring and summer flooding, severe storms and mudslides are examples of recent events that caused severe damage in the Mid-Ohio Valley region and resulted in Federal disaster declarations.

Flooding, heavy snow, wind, and downed power lines cause damage to property, disrupt our daily routines, close our schools and businesses, and jeopardize the health and safety of citizens. What can be done to minimize our vulnerabilities to natural hazards? The eight counties and 22 municipalities of the Mid-Mid-Ohio Valley Region are taking part in updating the Regional Hazard Mitigation Plan.

The purpose of this Plan is to identify and assess our communities’ natural hazard risks and determine activities that can be undertaken before natural hazards occur in order to minimize property damage, risk of life, and the costs that are shared by all. Upon completion, the Plan will represent a comprehensive multi-jurisdictional Hazard Mitigation Plan for the eight-county region.

The Mid-Ohio Valley Regional Council is under agreement with the West Virginia Division of Homeland Security and Emergency Management to complete a regional plan which by August 2016 should be adopted by Calhoun, Jackson, Pleasants, Ritchie, Roane, Tyler, Wirt, and Wood counties, and all towns and cities in their borders.

The plan will discuss the occurrence and consequences of floods, winter storms, tornadoes, hurricanes and tropical storms, thunderstorms, landslides, wildfires, earthquakes, dam failures and other natural hazards. The plan will outline the steps that communities can take to mitigate for future natural hazards and plan adoption will ensure that communities remain eligible for certain federal mitigation grant programs.

The Federal Disaster Mitigation Act of 2000 requires all localities to develop and adopt a hazard mitigation plan, or participate in and adopt a regional plan, in order to be eligible for funding through the Federal Emergency Management Agency’s Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program.

In order to gain input to the hazard mitigation plan MOVRC will coordinate or hold public information meetings in each county during the months of February or March (see schedule below) Most of these meetings will be hosted or held in conjunction with each county's Local Emergency Planning Committee, or LEPC. All residents, business owners, and local officials and community leaders are invited to attend and offer ideas for minimizing the damage that occurs and the costs that are borne by our regions communities.

An internet-based survey has been developed to solicit public input or prioritize risk reduction activities by community. Please consider taking the survey even if you cannot attend the public information meeting. This survey can be found at www.surveymonkey.com/r/MOVRC-RiskReduction2016

Help us get feedback by sharing this survey with friends, co-workers, neighbors and family.

For more information, please contact Luke Peters, Project Coordinator at the Mid-Ohio Valley Regional Council at 304-422-4993 ext. 123 or email luke.peters@movrc.org

LEPC/Public Meetings for Hazard Mitigation Plan 2016

Listed by: County - Date - Time - Location

Wood - February 10th - Noon - Parkersburg City Hall – Exec. Conf. Room

Calhoun - February 16th - 5 PM - Arnoldsburg Community Center

Roane - February 17th - Noon - Roane VFD building

Ritchie - February 23rd - 7 PM - 911 Building, Pennsboro

Wirt - March 1st - 10 AM - Wirt County Commission Room

Tyler - March 3rd - 10 AM - Tyler Senior/OES bldg (9AM LEPC Breakfast)

Jackson - March 21st - 6 PM - Ripley Fire Department

Hur Herald[®] from Sunny Cal

The information on these pages, to the extent the law allows, remains the exclusive property of Bob Weaver and The Hur Herald. All information may be freely used but must not be sold or used in any type of commercial endeavor, or used on a web site without the express permission of the owner. ©Hur Herald Publishing, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016

Jackson County
 2016 Hazard Mitigation Plan Update Public Meeting
 March 21, 2016, Ripley, WV 6pm

Name	Organization/Public	Email Address
1 Meganne Robinson	MOVRC	meganne.robinson@movrc.org
2 Wanda Smittle	Jackson Co. O&S/911	os@jacksoncountywv.com
3 CHAD WALTERS	Jackson Co. 911/DES	CHAD.WALTERS@JACKSONCOUNTYWV.COM
4 Kelli Skeens	Jackson Co. 911/OB	kskeens@jacksoncountywv.com
5 Dick Waybright	Jackson Co. Com.	dick.waybright@jacksoncountywv.com
6 Patsy Hauht	Northern Jackson County PSD	njcpd1@frontier.com
7 Michelle Dallessandro	USEPA START, TECH LAW, INC.	mdallessandro@techlawinc.com
8 JOE ALBERT	US EPA - SEE	ALBERT.JOSEPH.A@EPA.GOV
9 Ed OSBORNE	J.C.A.R.C.	EDTURKEY@FRONTIER.COM
10 Jani Payne	Jackson Gen. Hospital	J.Payne@jackson.com
11 Neil Reed	WV DOW Dist. 3	s.neil.reed@wv.gov
12 Robert Franz	CERT / Citizen member Com. ctr of Gov	robert-e-franz@hotmail.com
13 Scott Chinn	Ripley Fire Dept	JScottChinn@gmail.com
14 Craig Blackhart	Kavenswood Fire Dept	rcblackhart@comcast.net
15 DAVE SKEEN	CITY OF RIPLEY	mappers@cityofripley.org
16 Lori Pierson	So. Jackson Co VFD / Haz-Tech Environmental	
17 Luke Petess	MOVRC	luke.peterse@movrc.org
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

JACKSON COUNTY PUBLIC MEETING - 3/21/16 - 6:00 PM

Hosted by Jackson County Local Emergency Planning Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Special Needs Population – Who coordinates?
- Flood Mitigation – any problem areas – bank slippage?
- Emergency Alert /Code Red/ Reverse 911 – Jackson Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators?
- Stream Dredging and Clean-up – identify Jackson Co. project
- Severe Winds Impact – anchor mobile homes, debris clean-up plan?
- Topo/Floodplain map improvements – Possible MOVRC program

4) Questions?

Jackson County LEPC

March 21st – 6pm Ripley VFD

Problem Flooding/High Water

Evans area experiences some flash flood conditions which can isolate populations due to roads being covered

In Kenna, the PSD, the EMS, and the VFD can all be effectively cut off by high water

Sandyville was mentioned as having some of the same issues

Sycamore road/ Sycamore Creek- area closest to Ripley that still has flooding issues. Watershed projects and retention have really improved the flooding issues that used to plague Ripley. Grand Central Ave. and Jackson Ave. still have some street flooding but it's not frequent.

When the Ohio River levels are high, water backs up Little Sandy Creek

Slips and road issues

DOH – Said they fixed 35 slips in the past year in Jackson County

A slip along the Jackson/Kanawha county line caused flooding when it obstructed the water way, Utah Road near Ravenswood is also a problem.

DOH says the project threshold was raised to \$121,500 on projects they can get reimbursed for.

Communication

WARN system – Notifies landlines, IPAWS sends out to cell phones that are in Jackson County.

An attempt was made to list vulnerable populations

Generators

3 of 5 fire stations have generators

Shelters

Church shelters are equipped pretty well, but volunteers don't want to leave their own homes in emergencies, Red Cross uses the armory in Millwood, last time only sent one person. People who could use shelters also don't want to leave their homes to go there.

Fuel availability can be an issue. The gas stations don't want the cost of purchasing generators and haven't responded to the OES request to make contingency plans for equipment leases.

Pleasants County
 2016 Hazard Mitigation Plan Update Public Meeting
 January 28, 2016, St. Mary's, West Virginia 6pm

Name	Organization/Public	Email Address
1 Mike Shook	WV DHEM	William.M.Shook@WV.GOV
2 Ken HARRIS	WOOD CO EMER COMMUNICATIONS	WABLLM@YAHOO.COM
3 James Rose	Mid Ohio Valley Health Department	jim.z.rose@wv.gov
4 ALTON Glatfelter	PLEASANT CERT	gglat2766@Frontier.com
5 Holly West	Pleasants Co CERT, Coord.	WitchoftheWest@hotmail.com
6 Jan Rose	County Commission (Pleasants)	roseandjan.pamel@aol.com
7 Keith Meyer	Mountain Joke	mekeyer@creeds.net
8 Mike Cokely	FirstEnergy - Pleasants Power Station	mcokely@firstenergycorp.com
9 Steve Knight	PLECS	knight94@frontier.net
10 JOHN STEINMAN	SM VFD - LEPC CHAIR	SMVBC1@YAHOO.COM
11 WAYNE WILSON	PC SHERIFF	dwilson@sheriff.STATE.WV.US
12 Larry Gasbhart	PC Commission	lgasbhart@gmail.com
13 Ronald Ray	PC BOE	racox@K12WV.US
14 Priscilla Boylen	LEPC	ppf807@hotmail.com
15 Tina Oldfield	Floodplain/911	tinaoldfield@yahoo.com
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

PLEASANTS COUNTY PUBLIC MEETING -1/28/16 - 6:00 PM

Hosted by Pleasants Local Emergency Planning Commission/MOVRC

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available tonight)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed?
Regional Priorities from 2011
 - Database of Special Needs Population – Pleasants Comm. On Aging
 - Flood Mitigation – Pleasants County Action?
 - Emergency Alert /WARN/ Reverse 911 – Pleasants Capability
 - Floodplain Ordinance/Building Codes – changes/challenges?
 - Improve Shelter Plans/Equip with generators
 - Stream Dredging and Clean-up – identify Pleasants project
 - Severe Winds Impact – anchor mobile homes, debris clean up
 - Topo/Floodplain map improvements – Pleasants Contact? Progress?
- 4) Data review
- 5) Questions?

Pleasants County

January 28th, 2016 LEPC Meeting

Public Meeting Minutes

Floodplain

The issue with correcting maps is homeowner expense. 60% of businesses in downtown St. Mary's are in the floodplain according to current maps.

Vulnerable Populations

Senior Watch – program carried out by CERT, been in place 1 ½ years. Anyone can sign up, do welfare checks around expected events. Volunteer based, mostly to do phone calls. 911 equipment upgrade is underway.

Everbridge (mass notification app) can be used in partner with Wood and Washington (OH) Counties.

The BOE school call list is used for water emergencies. Social media is not currently active but Facebook and Twitter are being considered by the county for emergencies. The Police do use Facebook now for public messages and updates.

Poor cell coverage is an issue.

Shelters

Jim Spence Center is the main shelter and has a generator. Red Cross needs updated because they still list old SMHS as a shelter. Belmont VFD, training building rear of the middle school Triplett St. is another staging/emergency shelter, last used extensively for the 1994 Blizzard. The new school has generators.

Creeks and Dredging

Cow Creek-dredging, Sled Fork, and the Left Fork of French Creek

Pleasants LEPC Meets Jan. 28

Public Meetings for Hazard Mitigation Plan

The Mid-Ohio Valley Regional Council is under agreement with the West Virginia Division of Homeland Security and Emergency Management to complete a regional plan which will be adopted by Calhoun, Jackson, Pleasants, Ritchie, Roane, Tyler, Wirt, and Wood counties, and all towns and cities in their borders.

The plan adoption is due by August 2016.

The plan will discuss the occurrence and consequences of floods, winter storms, tornadoes, hurricanes and tropical storms, thunderstorms, landslides, wildfires, earthquakes, dam failures and other natural hazards.

In addition, the plan will outline the steps that communities can take to mitigate future natural hazards and adoption of the plan will ensure that communities remain eligible for certain federal mitigation grant programs.

Some examples of recent events that have caused severe damage in the Mid-Ohio Valley area resulting in Federal disaster declarations were the June 2012 "derecho," Superstorm Sandy, and 2015 spring and summer flooding including severe storms and mudslides.

Flooding, heavy snow, wind, and downed power lines cause damage to property, disrupt our daily routines, close our schools and businesses, and jeopardize the health and safety of citizens.

The eight counties and 22

municipalities of the Mid-Mid-Ohio Valley Region are taking part in updating the Regional Hazard Mitigation Plan.

The purpose of this plan is to identify and assess our communities' natural hazard risks and determine activities that can be undertaken before natural hazards occur in order to minimize property damage, risk of life, and the costs that are shared by all.

Upon completion, the plan will represent a comprehensive multi-jurisdictional Hazard Mitigation Plan for the eight-county region.

The Federal Disaster Mitigation Act of 2000 requires all localities to develop and adopt a hazard mitigation plan, or participate in and adopt a regional plan, in order to be eligible for funding through the Federal Emergency Management Agency's Hazard Mitigation Grant Program.

In order to gain input to the hazard mitigation plan, MOVRC will coordinate or hold public information meetings in each county during the months of February or March. Most of these meetings will be hosted or held in conjunction with each county's Local Emergency Planning Committee, or LEPC.

All residents, business owners, and local officials and community leaders are invited to attend and offer ideas for minimizing the damage that occurs and the costs that are borne by our regions communities.

An internet-based survey is being developed to solicit public input or prioritize risk reduction activities by community. Please consider taking the survey when it becomes available even if you cannot attend the public information meeting. This survey's web site will be made available as soon as it is finished.

For more information, please contact Luke Peters, Project Coordinator at the Mid-Ohio Valley Regional Council at 304.422.4993 ext. 123 or luke.peters@movrc.org.

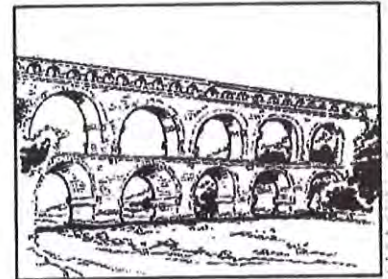
Pleasants County LEPC chairman John Strimer invites the public to come participate in a discussion about the plan and mitigation priorities based on their perception of natural hazards to Pleasants County. The public meeting will be Jan. 28 at 6 p.m. at the Pleasants Christian Outreach Center, 219 Second St., St Marys.

One's destination is never a place but a new way of seeing things.

—Henry Miller

An injury is much sooner forgotten than any insult.

—Lord Chesterfield



An aqueduct is a bridge that is designed to carry water. One famous aqueduct, the Pont du Gard in the south of France, was built by the Romans nearly 2,000 years ago.

Ritchie County
 2016 Hazard Mitigation Plan Update Public Meeting
 February 23, 2016, Pennsboro, WV 7 p.m.

Name	Organization/Public	Email Address
1 Steve Parks	Ritchie Cty Economic Development Authority	rceda@zoominternet.net
2 Erin Hodge	Ritchie Co. Commissioner	PH116373K@Yahoo.com
3 Luke Peters	MOVRC	luke.peters@movrc.org
4 James White	Ritchie Co. OEM	Jim white 801 @ yahoo.com
5 Bill Bayless	Ritchie Co. LEPC Chair / Emergency Mgmt	bbayless@zoominternet.net
6 Jason Brewer	WVSP	jlbrewer18@gmail.com
7 Bryan Davis	Ritchie Co. Sheriff's Office	bcdavis05@hotmail.com
8 Jeff Fox	Ritchie Co. Ambulance	rcaambulance@zoominternet.net
9 David Weekley	Ritchie Board of Education	dweekley@tr.wv.us
10 Pat Beard	RITCHIE BOARD OF EDUCATION	Pbeard@k12.wv.us
11 Angie Lipscomb	Doddridge / Ritchie 911	angiel@central911.com
12 John Dotson	Doddridge / Ritchie 911	jdotson@central911.com
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

RITCHIE COUNTY PUBLIC MEETING - 2/23/16 - 7:00 PM

Hosted by Ritchie Local Emergency Planning Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Special Needs Population – Who coordinates?
- Flood Mitigation – any problem areas – bank slippage?
- Emergency Alert /Code Red/ Reverse 911 – Ritchie Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators?
- Stream Dredging and Clean-up – identify Ritchie Co. project
- Severe Winds Impact – anchor mobile homes, debris clean up plan?
- Topo/Floodplain map improvements – Ritchie Co. Contact?

- 4) Questions?

**Ritchie County LEPC Meeting
Pensboro February 23, 2016**

Data Base Vulnerability

- Issues with this because they found that the information can change weekly
- They tried to get this information from healthcare providers and were not able to
- They feel that they usually know who to check on in case of an emergency because they often help them or they just know them.
- They are trying to get the Warn system or reverse 911. They previously had one of these systems but their provider went out of business.
- Half of the county does not have cell phone services so text alert options are not a great service for them.
- They do utilize Facebook every day and they have a very active audience in that respect

Repeated Flooding

- Not really a huge issue for them
- Cairo does have an issue with creek backing up, this can cause a big problem for transportation. Downtown Cairo sees the most problems.

Slips

- The Hughes River creates a problem with slips under the road. Particularly along route 47, there is a slip that has altered the flow of traffic and created a one lane road
- In the northern part of the county the integrity of the roads has been completely diminished due to oil and gas traffic

Floodplain

- Their biggest issue is that people are setting up campers in the flood plain due to oil boom.
- The County does have a flood plain ordinance for all five of its municipalities.
- There is a floodplain permit in the county

Shelters

- They deal with the red cross when there is a need for a shelter
- They have a problem with getting volunteers to man the shelters, they used to have a strong volunteer presence but they have all moved on.

Stream clean up

- There have been some stream cleanup efforts in the county undertaken by the Little Kanawha Soil Conservation group.

Anchoring mobile homes-

- Not a big issue for the county

Floodplain

- County does have a lot of issue with the current revised floodplain. One family even lost their home because it was listed in the floodplain, but wasn't really, and they couldn't afford the insurance costs.

REALLY
304-643-4000
 www.smalltownreality.org

SEE OUR CURRENT LISTINGS



Buddy Hodges, Owner/Broker
 Office: 304-643-4000
 Cell: 304-834-0212
 buddy@smalltownreality.org
 2479 Ellenboro Rd, Suite C
 Harrisville, WV 26352




are you?



You're the new model. Remember that when you visit our website, it's always using a virtual or your own work. Being like you should be a fun. Save time, stop your stress.

The Journal of the West Virginia Teachers' Union
 at 1-877-266-3754




Family Restaurant
 902 E. Main Street, Harrisville
304-643-2675

Sunday CLOSED
 Mon-Thur. - 11:00 a.m. - 8:00 p.m.
 Fri.-Sat. - 11:00 a.m. - 9:00 p.m.
Dine In or Carry Out

www.pizzahousefamilyrestaurant.com

Comics

National Weather Service

Parkersburg, Wo...

Outlook/State...
 Updated 8:40 AM EST

Current Conditions

Parkersburg, Mid-Ohio Valley Regional Airport
 Updated: 23 Feb 07:53 am EST

40 °F
 Wind N 3 MPH
 Dew Point 26 °F
 (55% RH)

Business Directory

HAPPENING NOW

02.22.16	Ritchie County BOE	02.23.16	Local Emergency Planning Committee
6:00 p.m.	Daisy Westfall Cokeley Bldg	7:00 p.m.	Doddridge-Ritchie 911 Call Center
02.22.16	Ellenboro VFD	02.25.16	WV Freshwater Mussels
6:00 p.m.	Ellenboro Fire Hall	6:30 p.m.	NBSP Lodge
02.22.16	Narcotics Anonymous	02.25.16	HHS Alumni Assoc.
7:00 p.m.	Ritchie County Library Harrisville	7:00 p.m.	Harrisville Municipal Bldg

USATODAY - News Top Stories

USATODAY - News Top Stories

02/23/2016 03:06 AM

Obama to announce Guantanamo plan this morning

WASHINGTON — President Obama will announce his plan for the future of the prison at Guantanamo Bay, Cuba, Tuesday morning, the White House said.

Like

Ritchie Online
is on Facebook.

To connect with Ritchie Online, sign up for Facebook today.

Sign Up

Log In



Ritchie Online
Media/News/Publishing

Timeline

About

Likes

Reviews

More ▾

4 for posts on this Page



2,575 likes

19 visits



ritchieonline.net/



Ritchie Online

Yesterday at 3:12am



Harrisville VFD snapped this photo Wed. of the house fire on Smithville Rd when they arrived - now the community is helping the homeless family. And 3 hours later a house fire on Pearl St. in Harrisville leaves a 97-yr-old woman deceased. Sleep Inn had its official ribbon cutting ceremony. county officials would like public input on a Regional Hazard Mitigation Plan to address disasters that affect their community - and more at ritchieonline.net



Roane County
 2016 Hazard Mitigation Plan Update Public Meeting
 February 17, 2016 Spencer VFD 12pm

Name	Organization/Public	Email Address
1 <i>Woody Wilson</i>	<i>American Red Cross</i>	<i>wewilson@hughes.net</i>
2 <i>Ken Carr</i>	<i>Armacell LLC</i>	<i>Kenneth.e.carr@armacell.com</i>
3 <i>Jerry Garner</i>	<i>Roane County Schools</i>	<i>jgarner@k12.wv.us</i>
4 <i>DANNY CROWIN</i>	<i>ROANE CO. EMERGENCY SQUAD</i>	<i>DANNYCROWIN@ROANEEMS.COM</i>
5 <i>Joe Woolweaver</i>	<i>LITTLE KENAWHA CD</i>	<i>jwoolweaver@Frontier.com</i>
6 <i>Melissa Gilbert</i>	<i>Roane Co 911/OES</i>	<i>roane911@Frontier.com</i>
7 <i>RAY DIETZ</i>	<i>LEPC</i>	<i>climages1@Frontier.com</i>
8 <i>Matt Cooper</i>	<i>(RCSO) LEPC</i>	<i>MWCooper.SpencerPd@gmail.com</i>
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

ROANE COUNTY PUBLIC MEETING - 2/17/16 - 12:00 PM

Hosted by Roane County Local Emergency Planning Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Vulnerable Population – Who coordinates?
- Flood Mitigation – Bens Run, Spring Creek, Alvord
- Emergency Alert /WARN/ Reverse 911 – Roane Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators
- Stream Dredging and Clean-up – identify Roane Co. project
- Severe Winds Impact – anchor mobile homes, debris clean-up plan
- Topo/Floodplain map improvements – Roane Co. Contact?

- 4) Questions?

Roane County LEPC meeting

Roane VFD – February 17th

Flooding

2013 Flooding in Spencer mostly affected Rentals – how would FEMA buyouts be done?

Vulnerable Populations

EMS is aware of persons with special medical needs

Facebook gets more success in public contact than reverse 911

Floodplain Issues

3x Floods have affected homes no in the floodplain on maps – LOMA needs done to qualify for NFIP, this is on Big Sandy Road in Newton

Ordinances

Mobile home issues – permit requirements are ignored. Many issues. Trailers brought in at night or on weekends. No paid code enforcement for county. Sheriff can only deal with what they see on the road. Trailer delivery companies don't follow law. People piggy back utilities. Calls for state enforcement have not yielded any improvements.

Trailer tie downs – 1 instance of wind knocking a trailer off its foundation

Stream Cleanup

Waterway at Speed has 80% blockage. Needs clean up.

Melissa Gilbert said that there are some issues with a DOH dump site near Rt. 33 in the flood zone. She had contacted state agencies but felt she got the runaround.

At Reynolds Street in the stream around the Council on Aging, the City has attempted to do some stream management. This is a potential Flood Mitigation project. There is also a related sewer back up at the Market Street Bridge which is slated for paving. The culvert narrows significantly there.

The bridge to Wal-mart is undersized, too low, and contributes to a flooding issue where water can infiltrate the 911 Center. Water also flows over the bridge.

The bridge at the junction of Rt. 33 and Rt. 14 contributes to flooding, it is to be replaced soon.

Critical Facilities

Reedy VFD can flood, as mentioned the Spencer EMS and 911 Center can flood and is in the floodplain

DOH has many claims but that doesn't include private bridges.

Shelters

The Committee on Aging stores 80-100 cots, but it can flood. The Armory, Middle School, Reedy VFD, and Walton PSD could use generators. There is a mobile trailer at the armory with a generator. The EMS and Hospital Staff coordinate care if any persons at shelters need special treatment.

Tyler County
2016 Hazard Mitigation Plan Update Public Meeting
March 3, 2016, 10 am

Name	Organization/Public	Email Address
1 AJ Tuttle	Tyler SAR/CERT Volunteer	aetuttle@hughes.net
2 JACOB DARRAH	BLUE MOUNTAIN INC	j.darrah@bluemtninc.com
3 Jonathan Efew	Blue Mountain Incorporated	j.efew@bluemtninc.com
4 JOE DIAZ	BLUE MOUNTAIN INC	J.DIAZ@BLUEMOUNTAININC.COM
5 CHARLIE DECAWDER	TOWN OF MIDDLEBOURNE	TOWNOFMIDDLEBOURNE@WVHOSPITALS.org
6 Mark Hawkins	Wetzel-Tyler Health Dept	Mark.C.Hawkins@wv.gov
7 J Brent Grumble	Wetzel-Tyler Health Dept	jbrumt@65@gmail.com
8 Greg Hutchison	Reel Allog	greg.hutchison@reelallog.com
9 David Smith	Tyler SAR	smithdk68005@yahoo.com
10 Troy Smith	Tyler BOE	tlsmith@k12.wv.us
11 Sandy Wilcox	Shirley VFD	
12 Tina Lancaster	Tyler County PSD	tinapsd@frontier.com
13 CRAIG LANDIS	WILLIAMS	Craig.Landis@williams.com
14 Robin Daquila	Tyler County Schools	rdaquila@k12.wv.us
15 Mike Northcraft	MVFD	MNorthcraft@gmail.com
16 Jason Maissey	Middlebourne VFD	Jasonmaissey@yahoo.com
17 Jim Wade	Shirley VFD	shirleyofd@yahoo.com
18 Jim Padden	Tyler OEM	
19 Matt Cooper	Momentive	matthew.cooper@momentive.com
20 Don Callaway	DYE LEPC	
21 Laura Cox	Blue River Midstream / New Martinsville UFA	lcox@blueriver-midstream.com
22 Mark Smith	Tyler Co. OEM	00smith1220@yahoo.com
23 Sarah Smith	Tyler Co CERT	sjsmith1952@yahoo.com
24 George Eidel	Doddridge County OEM	doddridgecountyfpm@gmail.com
25 Neal Romain	Doddridge Co. Ambulance Authority	N.Romain@draa.co
26 Anyssa Core	WV DHEM	anyssa.m.Core@wv.gov
27 DAVID MARKLE	STATOIL	DMARKLE@STATOIL.COM
28 PAT MCANAREWS	STATOIL	PMCAN@STATOIL.COM
29 Mitch Corley	Tyler County Sheriff Office	Spd212@Live.com
30 Greg Datsen	Eureka Midstream	gdatsen@eurekamidstream.com
31 Camron Stover	Eureka Midstream	Cstover@eureka.midstream.com
32 Alex King	Public	alexking@outlook.com
33 Paul Walsh	Professional / UFA	pa.walsh@frontier.com
34 Tom Cooper	Tyler OEM	TJCOOPER@frontier.com
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

TYLER COUNTY PUBLIC MEETING – 03/03/16 - 10:00 AM

Hosted by Tyler Local Emergency Planning Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRTC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Vulnerable Population – Who coordinates?
- Flood Mitigation – 2000 HUD Demo, recurring flooding
- Emergency Alert /WARN/ Reverse 911 – Tyler Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators
- Stream Dredging and Clean-up – identify Tyler Co. project
- Severe Winds Impact – anchor mobile homes, debris clean-up plan
- Topo/Floodplain map improvements – Regional Surveyor \$ Pool

- 4) Questions?

Tyler County Hazard Mitigation Public Meeting

March 3rd 10AM – Tyler Senior Center

Flood Mitigation – at first mention was not felt to be a frequent problem, some mentioned specific localized flooding issues in

-Lima; 5 to 6 houses along Indian Creek

-Middle Island Creek

-Last Ohio River flooding instance of 2004 caused the relocation of some trailers and flooded camping areas

Flood Insurance and Mapping – adds cost to mortgages, in elevation modeling, the county has found a 100 foot difference in elevation between actual house base elevation and flood map elevation that affect that home

Tyler OES received a \$35,000 Hazard Mitigation Grant to work on floodmaps

The Corning Building in Paden City is where OES will be storing their equipment now, the lower part of the foundation of the building is 2 inches below flood stage and so the whole 400,000 sf building needs flood insurance

Bridge problems, low water, etc. – Indian Creek, Shirley, Rt. 23, Sellers Run Road, Stewarts Run, Elk Fork, Muddy Creek, Little Sancho, Meadville; these low bridges may be responsible for up to 60% of school cancellations because busses can't get through and there are no feasible alternative routes.

Slips – major slip on Cowhouse Run Road was just repaired, creek below had deteriorated edge or roadway

Sellers Run Road, ½ mile from 18, the road is half out due to a slip

Emergency Alert – School Messenger in use – call lists must be pre loaded – Tyler Schools comes up on ID which can make some people without school kids think it's not for them

-no reverse 911

-“One Call” is used for Middlebourne water emergencies

Shelters – Good volunteer force, don't use Red Cross because there are more volunteers locally than through the RC – still could use some assistance with keeping volunteer staff trained and fresh

OES has mobile generators

Tyler PSD has generators at WWTP and the water pump stations are cable ready for generation

The only gas station in Middlebourne has a generator and helps the Fire and Rescue when fuel needed

DOH fuel tank is also available for emergency vehicles – other gas stations= quick plug ins are complicated and expensive. Not a great option for everywhere. Businesses need to plan ahead with a lease and delivery of generators.

Droughts can affect Power?

he Eastern
apter 146
ervice at 8
t the funer-

ntributions
Hadi
Staff
und.
e to attend
dolence to
ww. Boultr-
alHome.

THORN
on Thorn,
VV, passed
21, 2016,
ded by his

November
ndly, WV,
e Gordon
Thorn.

a retired
lock layer
was a Unit-
y veteran
rean War.
his parents,
d in death
: Joseph in
2004, and

ed by his
s, Frances
f Shiloh,
r, Lisa
yaich of
son, Brent
lsons,
Jason
u Craig
shadyside,
nieces,
eat-nieces

be Thurs-
at Myers
ith Pastor
fficiating.
: Wednes-
1 and 6-8
Funeral
will be at
y.

may be
sfuneral-

In addition to her parents,
she was preceded in death by
her husband, Walter "Nook"
Smittle, Jr. two sisters, Gene-
va Rawe and Madelyn
"Mack" Harman; brother,
K.W. Calvert, Jr. and son-in-
law, Glenn Fitzgerald.

Surviving are three sons,
Walter (Barbara) Smittle, III
of Ripley, WV, Lance (Pam)
Smittle of Paden City, WV
and Jan Keith (Linda) Smittle
of New Martinsville, WV;
daughter Barbara Fitzgerald
of New Martinsville, WV;
two grandsons, Walter
Matthew (Debbie) Smittle
and Jonathan Glenn (Nicole)
Smittle; four granddaughters,
Stacey (Mike) Lanham,
Sunni Marie (Eric) Daniel-
son, Leslie Leann (Jon) Kelly
and Lucy Jane (Chris Hen-
thorn) Knight; eleven great
grandchildren, Kaleb Daniel-
son, Laney Worzalla, Wes
Kelly, Rylee Knight, Sidney
Knight, Kelsey Smittle,
Jonah Smittle, Samuel Smit-
tle, Britney (Brad) Ross,
Derek Ratledge and Corey
(Michele) Lanier; three great
great grandchildren, Conner
Lanier, Cooper Lanier and
Bryce Ross and several
nieces, nephews and cousins.

Friends received 2-4 and
6-8 p.m., Tuesday, February
23, 2016 at the Jarvis-
Williams Funeral Home in
Paden City. Funeral service
will be held 11 a.m.,
Wednesday, February 24,
2016 at Paden City Christian
Church with Jeff White offi-
ciating.

Interment in the West Vir-
ginia National Cemetery in
Grafton, WV at the conven-
ience of the family.

Memorial contributions
may be made, in Eileen's
name to Paden City Flag
Fund, P.O. Box 233, Paden
City, WV 26159.

Expression of sympathy
may be made
www.jarvisfuneral
homes.com.

team in their early years.

He enjoyed spending time
with his family and friends,
singing karaoke, collecting
and building model cars,
gardening, and going to car
shows with the Road
Knights car club, Street
Rodding USA car club, and
the Ritchie County car club.
He was an avid mechanic
and had a special love for
Mopars.

Harold took great pride in
being a hard worker. He
was a jack of all trades as
there was never a project
that he couldn't complete
once he put his mind to it.
Most of all, Harold enjoyed
spending time on the family
farm where he stayed busy
and greatly enjoyed the
flowers and the birds.

He is survived by his chil-
dren, Melissa Daugherty
(Terry) of Harrisville, WV
and Brian McClaskey
(Maranda) of Harrisville,
WV; grandchildren, Ryan
Daugherty, Emily Daugherty,
Samantha McClaskey,
and Brylon McClaskey and
his special companion, Patsy
Barley of St. Marys, WV.

In accordance with
Harold's wishes, he will be
cremated and a private ser-
vice will be held at the con-
venience of the family on
the family farm.

Raiguel Funeral Home,
Harrisville, WV is assisting
the family with the arrange-
ments.

Online condolences may
be expressed to the family at
www.mcculloughraiguel.
com.

Mid-Ohio Valley Regional Hazard Mitigation Plan

The June 2012 "dere-
cho", Superstorm Sandy, and
2015 spring and summer
flooding, severe storms and
mudslides are examples of
recent events that caused
severe damage in the Mid-
Ohio Valley region and
resulted in Federal disaster
declarations. Flooding,
heavy snow, wind, and
downed power lines cause
damage to property, disrupt
our daily routines, close our
schools and businesses, and
jeopardize the health and
safety of citizens. What can
be done to minimize our vul-
nerabilities to natural haz-
ards? The eight counties and
22 municipalities of the
Mid-Mid-Ohio Valley
Region are taking part in
updating the Regional Haz-
ard Mitigation Plan. The
purpose of this Plan is to
identify and assess our com-
munities' natural hazard
risks and determine activities
that can be undertaken
before natural hazards occur
in order to minimize prop-
erty damage, risk of life, and
the costs that are shared by
all. Upon completion, the
Plan will represent a com-
prehensive multi-jurisdic-
tional Hazard Mitigation
Plan for the eight-county
region.

The Mid-Ohio Valley
Regional Council is under
agreement with the West
Virginia Division of Home-
land Security and Emergency
Management to complete a
regional plan which by
August 2016 should be
adopted by Calhoun, Jack-
son, Pleasants, Ritchie,
Roane, Tyler, Wirt, and
Wood counties, and all towns
and cities in their borders.

The plan will discuss the
occurrence and consequences
of floods, winter storms, tor-
nadoes, hurricanes and tropi-
cal storms, thunderstorms,
landslides, wildfires, earth-
quakes, dam failures and
other natural hazards. The
plan will outline the steps that
communities can take to miti-
gate for future natural hazards
and plan adoption will ensure
that communities remain eli-
gible for certain federal miti-
gation grant programs. The
Federal Disaster Mitigation
Act of 2000 requires all
localities to develop and
adopt a hazard mitigation
plan, or participate in and
adopt a regional plan, in order
to be eligible for funding
through the Federal Emer-
gency Management Agency's
Hazard Mitigation Grant Pro-
gram and Pre-Disaster Miti-
gation Grant Program.

13-year-old stu-
bama, led h
Peabody Instit
then on to conc
out the world.

ArtsLink wi
to St. Ann's
Church in New
Tuesday, Marc
p.m.

Mark gradu
Cum Laude fro
State Universi
Program, and re
ated with a Ma
in Guitar Perf
Guitar Pedago
Peabody Institu
studying with a
ship with Guita
Chair, Julian (1
1998, Edwards
32 top prizes in
States, Canada
many and Tha
Edwards has be
the Montgomer
as a player who
another zone,
strumming, pl
picking a variety
masterpieces wit

Edwards is al
to outreach to th
community, whe
a community sc
main purpose is
music lessons to
leged children
promise. His th
"for Moonlight,"
This," and "Giv
features the mu
more compos
Amrhein.

Annie's Project Returns to West Virginia for Six V

Annie's Project is returning to
West Virginia this spring through a
six-week course.

Annie's Project provides training,
resources and networking opportuni-
ties to help West Virginia women
build viable, efficient and sustainable
farm businesses.

The course covers everything from
business planning, finances and mar-
keting to food safety and insurance.

Annie's Project is a popular pro-
gram that provides risk management
education for women in agriculture
and is brought to counties through
the state by the West Virginia Exten-
sion Service.

The course will be offered in Wet-
zel County every Thursday from
March 31-May 5. The six-week
course will be open to the first 15
participants to sign up in Wetzel and

surrounding counties. The fee for the
course is \$25 and will include materi-
als and refreshments.

Topics for the Annie's Project
workshops will include: Week One
- Risk assessment, enterprise bud-
gets and record keeping; Week Two
- Financial statements and inter-
preting financial data; Week Three
- Creating business plans and mak-
ing realistic marketing and financial
plans; Week Four - Farm and food
safety and determining your insur-
ance needs; Week Five - Network-
ing and partnering with fellow farm-
ers; and Week Six - Participant
selected topics and graduation.

The courses are customized to
meet the needs in each region, pro-
vide a unique peer-learning environ-
ment and help ensure every class is a
valuable learning experience.

The course is designed to
everyone including aspir-
ing or life-long farmer
involved in any agricult
prise are welcome. Reg
skill level, there is someth
through Annie's Project.

The program will be of-
fered at West Virginia Northern C
College campus in New M
each Thursday beginning
and running through May
at 5:30 p.m.

Registration deadline is
and pre-registration is requ
Contact Mollie Toppe at
Virginia University Exten
ice office in Wetzel Coun
ter or with any questions
Annie's Project by calling
1314 or by email
lie.toppe@mail.wvu.edu

UH?
we can help that.
Learning Screening
BY APPOINTMENT ONLY
-3277 or 740-449-2371
Beltone
audiology and Hearing Aids
SVILLE | ST. CLAIRSVILLE, OH
rsday | 62171 National Rd. STE. 8
(Across from the Health Plan)

Floral Bow-K
RANGEMENTS
OSSES

Myers Funeral Home
600 MAIN STREET, SISTERSVILLE, WV 26175

JARVIS-WILLIAM'S FUNERAL HOME
Neighbors helping Neighbors Locally O

my "cases of one sort or another; the most qualified judge should have substantial experience in actually presenting his case to a jury." Artimez said trial experience to an attorney is much like surgery is to a doctor. "Just as a family practitioner could not be expected to supervise heart transplant surgery, a judge with minimal trial experience cannot be expected to preside over complex cases at trial," he said. Any experienced

UP early, "and the end result of make sure the end result of my work is something I can be proud to put my name on. My parents taught me that actions have consequences, and a person can't escape the result of his actions just because of where he lives or who he knows."

531 Third Street, New Martinsville, WV 26133

ESTIMATES

SERVING THE COMMUNITY FOR OVER 12 YEARS

Owner: Rodney Schnuppach

- Viruses • Spyware • Hard Drive Crashes
- Internet Problems • Maintenance

304-455-6798 • 304-771-1399

SCHOOLHOUSE CRAFT AND ANTIQUES SHOPPES

Mound St., Sardis, OH

Feb. Hours: Thurs.-Sat. 10-3



PUBLIC NOTICE

Weather Hazards in Tyler County: Flooding, Heavy Snow, High Winds, Severe Storms, Extreme Temperatures...

Are you prepared? How can your community or neighborhood decrease property damage and reduce risk?

FEMA and the West Virginia Division of Homeland Security and Emergency Management, in conjunction with the Mid-Ohio Valley Regional Council want your input, your weather experiences, and your project ideas to include in the

2016 Regional Hazard Mitigation Planning

Please attend a public meeting and forum, to follow the monthly Tyler County Local Emergency Planning Committee Meeting at the Council of Senior Tyler Countians, in the basement conference/lunch room.

Thursday, March 3rd, 10:00 AM

If you can attend in person or not, we ask you to give us valuable feedback through a short online survey at this link:

<http://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

Call Luke Peters at the MOVRC at (304) 422-4993 ext. 123 if you have comments or questions.

Myra's Arts & Crafts

10:00 a.m. - 5:00 p.m.
Saturday or by Appointment

774 DANSER LN
FRIENDLY, WV, 26146

- Crafts • Jewelry
- Wreaths • Quilts
- Art Work
- Candles
- Quilt Bears
- Table Toppers
- Vintage Linens
- Handmade Cards & Much...



1 • 304 • 758 • 4693

Directions: From Rt. 2 turn onto Friendly Hill Rd. Go approx. 7 miles to Middle Island Bridge at Little. Continue on and go 1 mile on Danser Ln. Sign at end of driveway, Myra's Arts & Crafts

Wirt County
 2016 Hazard Mitigation Plan Update Public Meeting
 March 1, 2016, Elizabeth, West Virginia 10 am

Name	Organization/Public	Email Address
1 <i>Meganne Robinson</i>	<i>MURK</i>	<i>meganne.robinson@murk.org</i>
2 <i>ROBERT LOWE</i>	<i>WIRT Co. Commission</i>	
3 <i>Robert Low</i>	<i>WIRT Co. Commission</i>	
4 <i>John Armstrong</i>	<i>Wirt Co. Journal</i>	
5 <i>Shellen Calhoun</i>	<i>Wirt County Clerk</i>	
6 <i>BO WRIGHT</i>	<i>CITIZEN</i>	<i>bowright@hotmail.com</i>
7 <i>Don Williams</i>	<i>CITIZEN</i>	<i>n8nws@hotmail.com</i>
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

WIRT COUNTY PUBLIC MEETING – 03/01/16 - 10:00 AM

Hosted by Wirt County Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Vulnerable Population – Who coordinates?
- Flood Mitigation – Little Kanawha River at Newark & Elizabeth and Hughes River/Little Kanawha at Greencastle?
- Emergency Alert /WARN/ Reverse 911 – Wirt Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators
- Stream Dredging and Clean-up – identify Wirt Co. project
- Severe Winds Impact – anchor mobile homes, debris clean-up plan
- Topo/Floodplain map improvements – Wirt Co. Contact?

4) Questions?

Wirt County Commission Meeting
Wirt County Court House 3/1/2016

Vulnerability Checks

- The fire department informally handles this, usually they rely on the check your neighbor system.
- Talk of a big O2 supply for the county
- The Volunteer fire department may be able to complete a safety check but usually it is just neighbors taking care of neighbors.

When a hazard occurs they usually fix it on their own and don't wait for FEMA money because it takes way too long.

- The process is too convoluted to receive aid in a timely manner
- There are too many hoops to jump through when you're already hurting
- WVBOA and an Amish group provide Volunteer aid
- The County Spent \$10,000 of its own money to clean up
- It's hard for a private citizen to qualify for aid because of the thresholds set by FEMA

Flood

- Newark area around the Wirt/Wood line floods quickly and goes down quickly but it can block the road on 47, it's the little Kanawha Hughes river confluence
- Newark and Boy Scout rt 43 floods, blocks off Wirt Co/ VFD and EMS, back up water like ¼ of a mile
- Garfield Road in Southern part of the county fixed part of the road that had
-

Shelters

- Clinic, Churches, Court House
- The VFD has a generator
- Possibly use the new nursing home as a shelter (35 beds + 11)
- Elizabeth Baptist Church serves as a red cross shelter
- Shelter was open 1 night during the derecho and no one showed up

Warn System

- They have been looking into Nixle as an early warning system and ipause early warning which is around \$8,000.00.
- Wirt is not on the Wood County Reverse 911
- Also Wirt does not get the same tv channels as wood County

Floodplain

- They have issues with inaccuracy
- Concerns about industrial flood plain ordinance
- Big issues for infrastructure.

Wind

- There was lots of clear up after derecho
- They walked every line
- They didn't have accurate maps
- GIS map of power poles
- Local people had to help them locate everything.

Wood County
2016 Hazard Mitigation Plan Update Public Meeting
February 10, 2016 Parkersburg, West Virginia 12 pm

Name	Organization/Public	Email Address
1 Luke Peters	MOVRC	luke.peters@movrc.org
2 Meggan Robinson	MOVRC	meggan@robinsongroup.org
3 Rick Woodward	WOOD 911	rwoodward@woodcountywv.com
4 GEORGE YOUNG	VIENNA PD	YOUNG@VIENNA-POLICE.COM
5 Mike Shook	WV DHEM	William.M.Shook@WV.gov
6 Ed Hupp	Wood County OEM	ehupp@woodcountywv.com
7 Alan L. Gates	Williamstown	williamstownwater@hotmail.com
8 Bob Seuling	Williamstown	williamstownwv@frontier.com
9 CRAIG MEZ	CITY OF VIENNA	CM@VIENNA-WV.COM
10 C.M. Monty CRAIG	UNITED METHODIST MEN	
11 Karen Elliott	DuPont	Karen.N.Elliott@dupont.com
12 Mambeth Jeffers	Wood/Wirt LEPC	mbyeffers@woodcountygov.com
13 Terry Moore	LEPC	mooreth53@hotmail.com
14 Steve Mahaffey	LKD United Methodist Men	steve_south70@yahoo.com
15 KEN HARRIS	Wood Co EMER COMMUNICATIONS	WABLLM@YAHOO.COM
16 DIT HARRIS	" " " "	KCBHAZ@YAHOO.COM
17 Jeff Dimick	Ohio Valley University	jeffrey.dimick@ovu.edu
18 STEVE GAINER	County Commission	SGAINER@GMAIL.COM
19 Jeff McDougle	Mid Ohio Valley Regional Airport	jeffmcdougle@plymov.com
20 Eric Burgardner	Parkersburg Utility Board	eric.burgardner@pubwv.com
21 Lise Sibicky	Burgess & Niple, Inc.	lise.sibicky@burgessniple.com
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

2016 MID-OHIO VALLEY REGIONAL HAZARD MITIGATION PLAN

WOOD COUNTY PUBLIC MEETING - 2/10/16 - 12:00 PM

Hosted by Wood & Wirt Local Emergency Planning Commission

- Please record your attendance on the Sign-In Sheet
- Please take our online survey! (Paper copies available today)

<https://www.surveymonkey.com/r/MOVRC-RiskReduction2016>

- 1) Thanks for Attending and Why are we here?
 - Wirt County Public Meeting March 1st at 10 AM- CC Room
- 2) Federal Emergency Management Agency and WV Dept. of Military Affairs and Public Safety, Div. of Homeland Security and Emergency Management have oversight, plan funded by Hazard Mitigation Grant Program.
- 3) The 2011 Plan – 5 year shelf life – what has changed? Data review.

Regional Priorities from 2011

- Database of Special Needs Population – Who coordinates?
- Flood Mitigation – Wood County action - Happy Valley
- Emergency Alert /WARN/ Reverse 911 – Wood Capability
- Floodplain Ordinance/Building Codes – changes/challenges?
- Improve Shelter Plans/Equip with generators
- Stream Dredging and Clean-up – identify Wood Co. project
- Severe Winds Impact – anchor mobile homes, debris clean up
- Topo/Floodplain map improvements – Wood Co. Contact? Progress?

4) Questions?



Luke Peters
Project Coordinator
luke.peters@movrc.org

P.O. Box 247 • 531 Market Street
Parkersburg WV 26101
Phone: 304-422-4993 • Fax: 304-422-4998
www.movrc.org

Wood County

LEPC February 10, 2016

Wood County has a very active Emergency communications radio network, they cover all counties except Jackson and Tyler. Operated through the Community Emergency Response Team

They have back up generators

The Are you Okay check system

The flood map has not changed much in wood county

There is a primitive culvert at the golf course that can cause some flooding issues.

Officials to update hazard mitigation plan

From staff reports

PARKERSBURG — Events that caused severe damage in the area and resulted in federal disaster declarations range from the June 2012 derecho, Superstorm Sandy, and 2015 spring and summer flooding, severe storms and mudslides.

Flooding, heavy snow, wind and downed power lines cause damage to property, disrupt our daily routines, close schools and businesses, and jeopardize the health and safety of citi-

zens. What can be done to minimize our vulnerabilities to natural hazards?

To decrease risks, the eight counties and 22 municipalities of the Mid-Ohio Valley are taking part in updating the Regional Hazard Mitigation Plan.

A public meeting to discuss the plan will be held at noon Wednesday in the Parkersburg Municipal Building's executive conference room.

Identifying and assessing the communities' natural hazard risks and determining activities that can be

AT A GLANCE

- Public meetings for the Hazard Mitigation Plan 2016 will be:
- Wood County, noon, Feb. 10, Parkersburg Municipal Building — executive conference room
 - Calhoun County, 5 p.m., Feb. 16, Arnoldsburg Community Center
 - Roane County, noon, Feb. 17, Roane VFD building
 - Ritchie County, 7 p.m. Feb. 23, 911 Building, Pennsboro
 - Wirt County, 10 a.m. March 1, Wirt County Commission room
 - Tyler County, 10 a.m. March 3, Tyler Senior/OES building (9 a.m. LEPC Breakfast)
 - Jackson County, 6 p.m., March 21, Ripley Fire Department.

undertaken before natural hazards occur in order to minimize property damage, risk of life, and the costs that are shared by all is the pur-

pose of the plan, officials said. Upon completion, the plan will represent a comprehensive multi-jurisdictional Hazard Mitigation

Plan for the eight-county region, officials said.

The Mid-Ohio Valley Regional Council is under agreement with the West Virginia Division of Homeland Security and Emergency Management to complete a regional plan, which by August 2016 should be adopted by Calhoun, Jackson, Pleasants, Ritchie, Roane, Tyler, Wirt and Wood counties, and all towns and cities in their borders.

The plan will discuss the occurrence and consequences of floods, winter storms, tornadoes, hurricanes and tropical storms, thunderstorms, landslides, wildfires, earthquakes, dam failures and other natural hazards.

The plan will outline the steps that communities can take to mitigate for future natural hazards and plan adoption will ensure that communities remain eligible for certain federal mitigation grant programs. The Federal Disaster Mitigation

Act of 2000 requires all localities to develop and adopt a hazard mitigation plan, or participate in and adopt a regional plan, to be eligible for funding through the Federal Emergency Management Agency's Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program.

In order to gain input to the hazard mitigation plan, the MOVRC will coordinate or hold public information meetings in each county during February and March. Most meetings will be hosted or held in conjunction with each county's Local Emergency Planning Committee, or LEPC.

All residents, business owners, and local officials and community leaders are invited to attend and offer ideas for minimizing the damage and the costs borne by local communities.

An Internet-based survey has been developed to solicit public input or prioritize risk reduction activities by community. Residents are asked to consider taking the survey even if they cannot attend the public information meeting. This survey can be found at surveymonkey.com/r/MOVR-RiskReduction2016.

For more information, contact Luke Peters, project coordinator at the Mid-Ohio Valley Regional Council, at 304-422-4993, Ext. 123 or email to luc.peters@movrc.org.

WELCOME NEW ADDITIONS

PHOTO DEADLINE
FEB. 24
PUBLICATION
MARCH 2

The Parkersburg News and Sentinel and The Marietta A.M. will showcase all the babies born in 2015 in the Mid-Ohio Valley's New Additions that will be part of the Pride of the Mid-Ohio Valley edition on March 2. Mail or drop off your photo with completed form and \$20 payment.

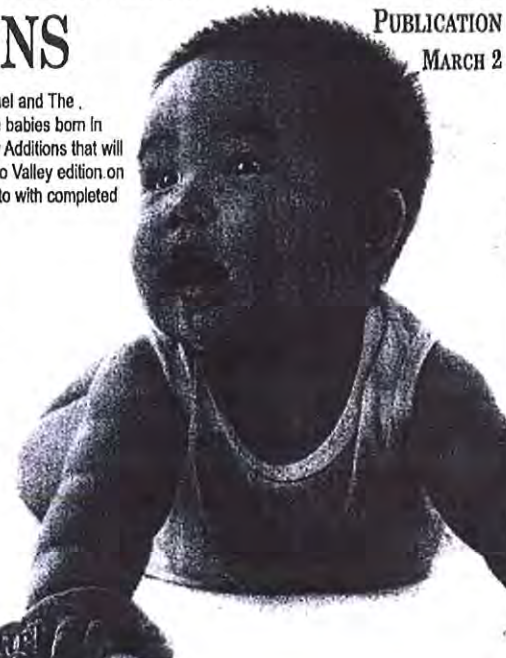
Your name: _____
 Address: _____
 City: _____
 State: _____
 ZIP: _____
 Phone: _____
 Child's name: _____
 Parent's names: _____

Include this information along with \$20 payment and send or bring to:

The Parkersburg News and Sentinel
 Attention Amy Hupp
 519 Juliana Street
 Parkersburg, WV
 26101

- Put the child's name on the back of the photo.
- Include a self-addressed stamped envelope if you would like the photo returned.

The Parkersburg News and Sentinel



Nominations being accepted for W.Va. ag hall of fame

CHARLESTON (AP) — The deadline is approaching for nominations to the West Virginia Agriculture and Forestry Hall of Fame.

The deadline for nominations is Feb. 16, and honorees will be enshrined July 16 at Jackson's Mill.

The Department of Agriculture says the honor is awarded to individuals,

businesses, organizations, institutions and foundations that have a long history of making outstanding contributions to the agriculture or forestry industries, or family life.

Nomination forms can be downloaded from the state Department of Agriculture's website at www.wvagriculture.org.

West Virginia

Officials to update hazard mitigation plan

From staff reports

PARKERSBURG — What can be done to minimize our vulnerabilities to natural hazards? To decrease risks, the damage in the area and eight counties, and 22 declarations in federal disaster municipalities of the Mid-Ohio Valley are taking part in updating the Regional Hazard Mitigation Plan.

A public meeting to discuss the plan will be held at noon Wednesday in the Parkersburg Municipal Building's executive conference room.

Identifying and assessing the communities' natural hazard risks and determining activities that can be undertaken before natural hazards occur in order to minimize property damage, plan will represent a comprehensive multi-jurisdictional Hazard Mitigation

Act of 2000 requires all localities to develop and adopt a hazard mitigation plan, or participate in and adopt a regional plan, to be eligible for funding through the Federal Emergency Management Agency's Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program.

In order to gain input to the hazard mitigation plan, the MOVRC will coordinate or hold public information meetings in each county during February and March. Most meetings will be hosted or held in conjunction with each county's Local Emergency Planning Committee, or LEPC.

All residents, business owners, and local officials and community leaders are invited to attend and offer ideas for minimizing the damage and the costs borne by local communities.

An Internet-based survey has been developed to solicit public input or prioritize risk reduction activities by community. Residents are asked to consider taking the survey even if they cannot attend the public information meeting. This survey can be found at surveymonkey.com/h/MOVRC-RiskReduction2016.

For more information, contact Luke Peters, project coordinator at the Mid-Ohio Valley Regional Council at 304-422-4993.

AT A GLANCE

Public meetings for the Hazard Mitigation Plan 2016 will be:

- Wood County, noon, Feb. 10, Parkersburg Municipal Building — executive conference room
- Calhoun County, 5 p.m., Feb. 16, Arnoldsburg Community Center
- Roane County, noon, Feb. 17, Roane VFD building
- Ritchie County, 7 p.m. Feb. 23, 911 Building, Pennsboro
- Wirt County, 10 a.m. March 1, Wirt County Commission room
- Tyler County, 10 a.m. March 3, Tyler Senior/OES building (9 a.m. LEPC Breakfast)
- Jackson County, 6 p.m., March 21, Ripley Fire Department.

undertaken before natural hazards occur in order to minimize property damage, plan will represent a comprehensive multi-jurisdictional Hazard Mitigation

Plan for the eight-county region, officials said.

The Mid-Ohio Valley Regional Council is under agreement with the West Virginia Division of Homeland Security and Emergency Management to complete a regional plan, which by August 2016 should be adopted by Calhoun, Jackson, Pleasants, Ritchie, Roane, Tyler, Wirt and Wood counties, and all towns and cities in their borders.

WELCOME NEW ADDITIONS

The Parkersburg News and Sentinel and The Marietta A.M. will showcase all the babies born in 2015 in the Mid-Ohio Valley's New Additions that will be part of the Pride of the Mid-Ohio Valley edition on March 2. Mail or drop off your photo with completed form and \$20 payment.

Your name: _____
 Address: _____
 City: _____
 State: _____
 ZIP: _____
 Phone: _____

PHOTO DEADLINE
 FEB. 24
 PUBLICATION
 MARCH 2



CALHOUN COUNTY COMMISSION

P.O. Box 230

Grantsville, West Virginia 26147

Phone: 304-354-6725 Fax: 304-354-6447

Scottie Westfall II, President
Kevin Helmick
Robert Weaver

Jean Simers, County Clerk
calhounclerk@gmail.com

August 17, 2016

Luke Peters
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

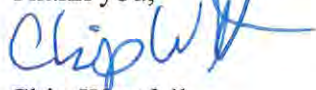
RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

I have had the opportunity to contribute to the Hazard Mitigation planning process as a representative of the of the Calhoun County Commission attending the Mid-Ohio Valley Regional Council's monthly board meetings. All of my questions, comments, or concerns regarding the plan were addressed or taken under consideration by MOVRC staff after they provided an update on the plan during each board meeting.

At this time, as a representative of the Calhoun County Commission I have no further comments or changes to suggest. Please take this into account in your final plan edits.

Thank you,



Chip Westfall
Calhoun County Commission

The City of Ravenswood
212 Walnut Street
Ravenswood, WV 26164



June 15, 2016

Luke Peters
MOVRC
P.O. Box 247
531 Market Street
Parkersburg, WV 26101

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Dear Mr. Peters:

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor of the City of Ravenswood, I have no further comments or changes to suggest.

Respectfully yours,

Mayor Michael Ihle



City of Ripley

203 South Church Street

Ripley, WV 25271

(304) 372-3482

Fax: (304) 372-6693

Website: www.cityofripley.org

Mayor

Carolyn Rader

July 14, 2016

Recorder

David J. Gasto

Council

John McGintley

Ed Moore

Bryan Thompson

Ray Anderson

Carolyn Waybright

Dear Mr. Peters:

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of the City of Ripley. I have no further comments or changes to suggest.

Thank you very much for your consideration in this matter.

Thank you,

Carolyn Rader

Carolyn Rader

Mayor

City of St. Marys

418 Second Street

ST. MARYS, WEST VIRGINIA 26170

Phone: (304) 684-2401

Fax: (304) 684-2463

Monday, July 11, 2016

Luke Peters
MOVRC
PO Box 247
531 Market Street

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor of the city of St. Marys, I have no further comments or changes to suggest.

Thank you,



Mr. Paul Ingram,
Mayor, City of St. Marys

(TOWN/COUNTY LETTERHEAD)

SAMPLE/DRAFT RESPONSES

Luke Peters
MOVRC
PO Box 247
531 Market Street

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

1)

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor/president of the (Town/City) of Belmont (County Commission), I have no further comments or changes to suggest.

2)

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor/president of the (Town/City) of _____ (County Commission), I feel that (for example):

- the threat of flooding to our downtown was underrepresented.
- the need for a slip repair on Route 5 above Smithtown should have been emphasized.
- the fact that the county has passed new ordinances on mobile homes should be mentioned.

Please take this into account in your final plan edits.

Thank you,

Name, Title

 MAYOR

-Please feel free to call or email MOVRC staff to ask questions about the plan, the contents, and what was and wasn't included.

TOWN OF AUBURN

Luke Peters

MOVRC

PO Box 247

531 Market Street

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor of the Town of Auburn, I feel that flash flooding and insufficient storm drains are a concern that needs addressed in the plan. I appreciate MOVRC attending our August 9th council meeting to discuss the plan with the Town Council.

The threat of flooding to our downtown was underrepresented, and we suffered from flooding in July 2016 which could be less severe if streams like Bone Creek and others entering the town were dredged or widened and culverts cleaned along the roads.

Please take this into account in your final plan edits.

Thank you,

A handwritten signature in blue ink, appearing to read "Robert Lowther".

Robert Lowther, Mayor

August 24, 2016

Meganne Robinson
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

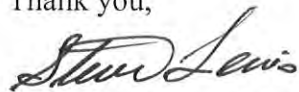
RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Ms. Robinson,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of Ellenboro, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,

A handwritten signature in cursive script that reads "Steve Lewis".

Steve Lewis
Mayor, Town of Ellenboro

TOWN OF HARRISVILLE

1501 E. Main Street
P.O. Box 243
Harrisville WV 26362

Telephone: (304) 643-2719
Fax: (304) 643-4059
Email: tohvv@zoominternet.net

June 28, 2016

Luke Peters
MOVRC
PO Box 247
531 Market Street
Parkersburg WV 26101

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of the Town of Harrisville, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,



Alan R. Haught, Mayor
Town of Harrisville



Roane County Commission

200 Main Street
Spencer, WV 25276
304 927-0078



www.roanewv.com

Melissa O'Brien, President
Gary A. Mace *Merlin Shamblin*

June 30, 2016

Luke Peters, MOVRC
PO Box 247
Parkersburg, WV 26101

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

My staff has had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. I would like to commend the author(s) of this document; the data that was collected and analyzed seems very accurate, timely and important and can be used by all counties in the region, for many projects in addition to this hazard mitigation plan.

As President of the Roane County Commission, I feel that the term "eliminated risk" when describing the hazards that score a 9.0 or lower in section 3.5.10 on pages 54 and 55 should be changed to "very low risk" also change the term "eliminated risk" on all tables and other references to these hazards. As was discussed in the Draft Review meeting, no hazard risks can be completely eliminated.

Please take this into account in your final plan edits.

Sincerely,

Melissa O'Brien / jjr

Melissa O'Brien
Commission President



WIRT COUNTY COMMISSION

P.O. Box 53 Elizabeth, West Virginia 26143

Robert E. Lowe J, President

Robert L. Gunnoe, Jr.

Charles R. Murray

Phone 304-275-4271

Fax 304-275-3418



Luke Peters
MOVRC
P.O. Box 247
531 Market Street

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As president of the Wirt County Commission, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,

Robert E. Lowe, Jr.

President of the Wirt County Commission

TOWN OF ELIZABETH
P.O. Box 478 Elizabeth, WV 26146
73 Town Hall Lane
(304) 275-3200

August 24, 2016

Meganne Robinson
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

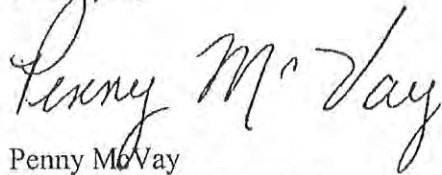
RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Ms. Robinson,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of Elizabeth, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,



Penny McVay
Mayor, Town of Elizabeth



Luke Peters
MOVRC
PO Box 247
531 Market Street

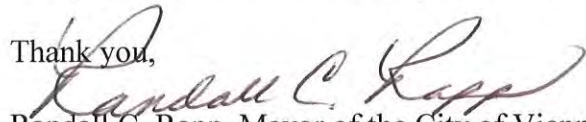
RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor of the City of Vienna, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,


Randall C. Rapp, Mayor of the City of Vienna

Mayor
Randall C. Rapp

Recorder
Cathy Smith

City Council
Roger Bibbee
Jim Miracle
Bruce Rogers
Steve Stephens
Tom Azinger



THE CITY OF SISTERSVILLE

200 DIAMOND STREET
SISTERSVILLE, WEST VIRGINIA 26175-1349



August 24, 2016

Meganne Robinson
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Ms. Robinson,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of Sistersville, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,

Bill Rice
Mayor, City of Sistersville

August 24, 2016

Meganne Robinson
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Ms. Robinson,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of Cairo, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,



Gary Haugh
Mayor, Town of Cairo

City of Pennsboro

Incorporated 1885

City Building - 422 Main Street
Pennsboro, WV 26415
Email: cityofpennsboro@zoominternet.net

Telephone: (304) 659-2377
Fax: (304) 659-3309

August 15, 2016

Luke Peters
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

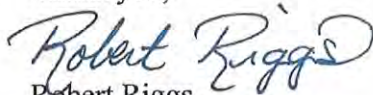
RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

I have had the opportunity to contribute to the Hazard Mitigation planning process as a representative of the of the City of Pennsboro attending the Mid-Ohio Valley Regional Council's monthly board meetings. All of my questions, comments, or concerns regarding the plan were addressed or taken under consideration by MOVRC staff after they provided an update on the plan during each board meeting.

At this time, as mayor of the City of Pennsboro I have no further comments or changes to suggest. Please take this into account in your final plan edits.

Thank you,


Robert Riggs
Mayor, City of Pennsboro

Historical Registered Landmarks: "The Old Stone House" - Built in 1810
"The Old B & O Depot" - Built in 1883

This institution is an equal opportunity provided and employer.

August 24, 2016

Meganne Robinson
Project Coordinator, MOVRC
531 Market Street
Parkersburg, WV 26101

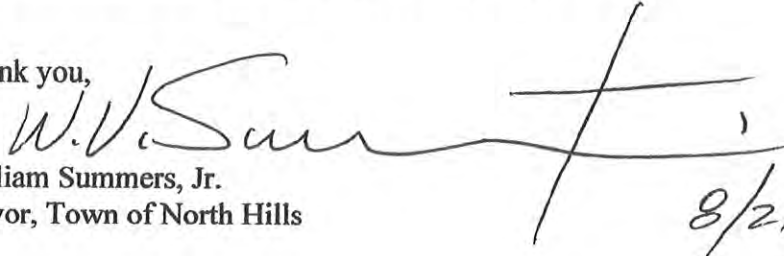
RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Ms. Robinson,

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As Mayor of North Hills, I have no further comments or changes to suggest.

Please take this into account in your final plan edits.

Thank you,


William Summers, Jr.
Mayor, Town of North Hills

8/24/16

* Please see attachments
WJS
* reviewed at council on 8/25/16.
WJS



2016 Mid-Ohio Valley Public Risk Reduction Survey

Please give your input to the formation of the 2016 Regional Hazard Mitigation Plan!

Thank you for participating in our survey. Your feedback is important in our understanding of how residents of your county think about, plan for, and react to natural hazards and weather emergencies. Working together, citizens, elected officials, and local, state and federal agencies can make choices and investments aimed at reducing the public and private costs of disasters. Certain federal funding will be directed toward Hazard Mitigation projects around West Virginia, but those projects must be included in the plan to be eligible. Survey responses are anonymous, however if you would like to be contacted with further information about opportunities to review or comment on the draft plan for your community please provide contact information in the last question of this survey. Thank you again for your time and thoughts in strengthening hazard mitigation efforts in our region.



2016 Mid-Ohio Valley Public Risk Reduction Survey

*** 1. In which county do you reside?**

- Calhoun
- Jackson
- Pleasants
- Ritchie
- Roane
- Tyler
- Wirt
- Wood
- Other (please specify)

2. Have you ever experienced or been impacted by a disaster?

- Yes
- No

If "Yes" then explain.

HURRICANES in Louisiana (lived there 5 years) AND
TO A MUCH LESSER DEGREE, 2012 WOOD COUNTY DEZEEN.

3. How concerned are you about the possibility of your community being impacted by a disaster?

- Extremely concerned
- Somewhat concerned
- Not concerned

4. Please select the one hazard you think is the highest threat to your neighborhood:

- Drought
- Extreme Cold
- Excessive Heat
- Flooding
- Hail
- High Wind
- Heavy Rain
- Lightning
- Tornado
- Wildfire
- Winter Weather
- Landslide

5. Please select the one hazard you think is the second highest threat to your neighborhood:

- Drought
- Extreme Cold
- Excessive Heat
- Flooding
- Hail
- High Wind
- Heavy Rain
- Lightning
- Tornado
- Wildfire
- Winter Weather
- Landslide

6. Is there another hazard not listed above that you think is a wide-scale threat to your neighborhood?

Yes

No

If "Yes", please explain.

7. Would you have concerns, in the case of a disaster, about the accessibility, safety, or viability of a critical facility (hospital, 911 center, school, nursing home, medical facility, EMS, fire department, police department, emergency shelter) which serves your county/neighborhood?

Yes

No

If "Yes", please specify and explain your concern.

8. Is your home located in a floodplain?

Yes

No

I don't know.

9. Do you have flood insurance?

Yes

No

I don't know.

10. If you do not have flood insurance, why not?

Not located in a floodplain

Too expensive

Not necessary because it never floods

Not necessary because my home is elevated or otherwise protected

Never really considered it

Other (please specify)

11. Have you taken any actions to make your home or neighborhood more resistant to hazards?

- Yes
- No

If "Yes", please explain.

SEE ATTACHMENT (DEIR/ECNO CRITIQUE); Aggressive tree removal, infrastructure improvement, communication ability.

12. What is your level of disaster preparedness at your residence? (consider you and your family's needs for medicine, food, water, heat, and emergency communication)

- Very Prepared
- Somewhat Prepared
- Unprepared

13. When you think of the natural hazards you face, or most likely would face where you live, what types of projects or steps do you feel your local government could take to reduce or eliminate the risk of hazard damages in your neighborhood?

SEE ATTACHMENT
• Ability to communicate across county (radio stations)
• Fuel availability (back up generators @ service stations)
• Focused leadership across impacted area

14. Are there any specific concerns or issues you can identify related to risk reduction and hazard mitigation activities in your neighborhood or community (i.e. cost to taxpayers or local government, increased utility bills, loss of housing or historical structures, endangering or changing natural habitats, interference with private property, etc.)

• Radio communication or lack of.
• Availability of fuel.

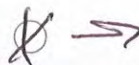
15. A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each one is for your community to consider pursuing.

Very Important

Somewhat Important

Not Important

Prevention -
Regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.



Property Protection -
Actions that involve the modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, or protecting critical components like A/C or heat.



Natural Resource Protection -
Actions that help in minimizing hazard losses by restoring or keeping the protective functions of nature. Examples include: floodplain protection, tree and habitat preservation, slope stabilization, and riparian buffers.



Structural Projects -
Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, retention basins, channel modification, retaining walls and storm sewers.



Very Important

Somewhat Important

Not Important

Emergency Services -
Actions that protect
people and property
during and
immediately after a
hazard event.

Examples include
warning systems,
evacuation planning,
emergency response
training, and protection
of critical facilities or
systems.



Public Education and
Awareness - Actions to
inform citizens about
hazards and
techniques they can
use to protect
themselves and their
property. Examples
include outreach
projects, school
education programs,
library materials and
demonstration events.



16. If you would like to be notified of upcoming meetings, new surveys, or workshops related to the Mid-Ohio Valley Regional Hazard Mitigation Plan, please leave your name, email, and phone number. Thank you for your time.

W.V. Summers Jr.
304-488-6068

WV SUMMERS JR @ Gmail.com

WV Summers Jr.
9/25/14

TOWN OF NORTH HILLS
CRITIQUE OF POWER OUTAGE EVENT
2012 DERECHO EVENT

MEASUREABLES

- * No injuries to residents.
- * No major property damage to homes.
- * Power returned to majority of town in a reasonable time (four days) considering magnitude of the event across the state.
- * Oakwood Place power availability lagged but was returned once extent was understood by repair crews plus some good legwork by the governing body.
- * Three residential homes on NHDr were without power for an extended time (almost 10 days) beyond the rest of town. The delay in resolving power availability for these families was probably the most negative event for the town.
- * Appearance of town recovered very quickly.
- * Mood of 98 pct of residents was excellent across the event.
- * Many instances observed of neighbors helping neighbor during the recovery.
- * No reports of vandalism or theft.

INITIAL RESPONSE

- * Five roads were blocked in aftermath of windstorm; residents responded immediately using chainsaws having four roads cleared even before the rain stopped.
- * Many senior citizens were contacted by fellow residents as to status and assisted where needed. Oakwood and Tanglewood Place folks were very attentive and caring for circumstances involving recent surgeries.
- * Members of the governing body never saw one deputy sheriff's car in town during the entire outage.
- * Wood County ERC was helpful initially and via phone but failed to conduct periodic or daily meetings to update leadership.
- * Blair Couch's leadership was evident to the town; drive thru inspections and daily updates to the mayor.
- * Subsequent cleanup by residents of downed trees, debris, etc was excellent.

COMMUNICATION

*** No Wood County radio station was broadcasting updates; initial information was gleaned from St. Marys station in Pleasants county. Major failure of emergency notification system.**

*** Newspaper failed to update daily critical information, services, and key activities in the area. Major deficiency.**

*** Cell phone communication was severely limited (AT&T) for duration within the Town and north on RT 2.**

*** Governor gave a good update for the state of the state at the airport for local leaders.**

*** Signs posted at town entrances seemed to have spread the word on critical information; this was backed up by “drive around communication“.**

*** Signs posted in the specific yards of continuing power outages were helpful in gaining resolution.**

SUPPORT FROM SERVERS

*** UWPSD did a tremendous job of preventing a major sewage spill, overall sewer operation, maintaining water flow and availability, and communication with mayor on status.**

*** Power company did an “outstanding” job of getting repair crews into the area. Subsequent interface and status update with Wood County ERC not known.**

*** Specific County Commission members insured that Town of North Hills was not a forgotten entity. Mayor was involved in emergency activities and known status from day one.**

*** No sheriffs presence noted at any time during entire outage.**

*** Waverly VFD toured area for issues and maintained communication with mayor.**

*** Scott’s Landscaping initiated contact for assistance and responded accordingly and quickly for removal of debris from town properties.**

*** The super effort by those food providers who had power and were able to operate and serve the community was greatly appreciated (**

Paneras, Arbys, Hardys, Foodland, for example).

IMPROVEMENT POTENTIAL

*** Trees should not be removed from electrical lines by residents for safety reasons and to visibly alert responders that issues remain in the town.**

*** Wood County ERC needs to hold periodic updates for town leaders during extended outages or emergency declarations.**

*** Mayor should have had a daily update with council as outage began to lengthen.**

*** Town needs a storage building located centrally for emergency cones and street blockades.**

*** Radio station need and newspapers need coached regards lack of ability to communicate and quality of information provided.**

OTHER

*** The idea to open the pool as a “cool down” was well received and supported by the NHSRC board.**

*** The “big barbeque” on Wedgewood Drive was a morale booster for all in that area; such events needed to become more widespread.**

*** The playing of baseball “under lights” at Jackson Park during a declared state emergency and when so many local homes were without power was not well received or appreciated by local residents who were without power.**

WVSummers, 7/26/12

Draft Final Review Meeting
 2016 Hazard Mitigation Plan Update
 June 29, 2016 1-3 PM, MOVRC Conference Room, Parkersburg, WV

Name	Organization/Public	Email Address
1 <i>N. Smith</i>	<i>JACKSON Co. OES</i>	<i>oes@jacksoncountywv.com</i>
2 <i>C. WALTERS</i>	<i>JACKSON Co. 911 Comm.</i>	<i>chad.walters@jacksoncountywv.com</i>
3 <i>Luke Peters</i>	<i>MOVRC</i>	<i>luke.peters@movrc.org</i>
4 <i>CARL METZ</i>	<i>CITY OF VIENNA</i>	<i>CM@VIENNA-WV.COM</i>
5 <i>RANDY RAPP</i>	<i>CITY OF VIENNA</i>	<i>RANDY.RAPP@VIENNA-WV.COM</i>
6 <i>Meganne Robinson</i>	<i>MOVRC</i>	<i>Meganne.robinson@movrc.org</i>
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

Final Draft Review Meeting

2016 Mid-Ohio Valley Regional Hazard Mitigation Plan

*Wednesday June 29, 2016 1 – 3 PM MOVRC Offices
531 Market Street, Parkersburg, WV 26101
(304) 422 – 4993*

PURPOSE

To provide Local Governments and Local Emergency Directors an overview of the completed draft and offer an additional opportunity to provide feedback and further review of the submitted draft regional Hazard Mitigation Plan.

AGENDA/OUTLINE

1. Brief Overview of Planning Activities to this point.
 - a. Purpose of plan
 - b. Local public meetings with LEPC
 - c. Submission of a **DRAFT** to West Virginia Division of Homeland Security and Emergency Management's (WVDHSEM) Mitigation Staff.
 - d. WVDHSEM's comments and edits.
2. Overview of the Draft Document
 - a. Chapter 1 Introduction
 - b. Chapter 2 Planning Process
 - c. Chapter 3 Hazard Identification, Risk Assessment and Vulnerability Analysis
 - d. Chapter 4 Mitigation Strategy
 - e. Chapter 5 Monitoring, Maintenance & Revision
 - f. Appendices
3. Discussion, Suggestions, and Questions
 - a. The largest portion of the meeting will be spent answering questions, listening to suggested edits, and providing any clarification necessary.
4. The Next Steps
 - a. Using information gained to complete final draft
 - b. Resubmission to the WVDHSEM and then to FEMA
 - c. Adoption of final plan by each municipality and county

If you have any questions prior to the meeting on June 29, 2016 or are unable to attend and have comments please feel free to contact Luke Peters or Meganne Robinson of the MOVRC's Community Development Program.

Luke Peters, Project Coordinator, luke.peters@movrc.org, (304) 422 – 4993 Ext. 123

Meganne Robinson, Project Coordinator, meganne.robinson@movrc.org, (304) 422-4993, Ext. 105

Composite Hazard Level of Risk

Natural Hazard	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood
Avalanche	3	4	3.5	3	3	3	3	6.5
Coastal Erosion	3	4	3.5	3	3	3	3	6.5
Dam Failure	3	8	4.5	5.5	5.5	4	3	8.5
Drought	6.5	9	7	6.5	8	6.5	7.5	14
Earthquake	4.5	6.5	4.5	4	4.5	4	4.5	10.5
Excessive Heat	9.5	10.5	12	9.5	9.5	9.5	9.5	14
Expansive Soils	3	4	3.5	3	3	3	3	6.5
Extreme Cold/Wind Chill	12	12	13.5	13	14	11	11	17.5
Flooding	20.5	22.5	19.5	20	21	21	20	24
Hail	12.5	14.5	12.5	12.5	13.5	12.5	13.5	18
Heavy Rain	8.5	10.5	10.5	11.5	11.5	9.5	9.5	14
High Wind	17.5	20.5	17.5	17.5	18.5	16.5	16.5	24.5
Hurricane	5	6	5.5	5	5	5	5	8.5
Land Subsidence	5	6	5.5	5	5	5	5	8.5
Landslides	12.5	10.5	9.5	9.5	9.5	9.5	12.5	11.5
Lightening	11	13	10.5	10	14	10	11	16.5
Natural Resource Extraction	7	7	6.5	7	5	5	4	7.5
Tornado	11	13.5	12.5	11	9	9	9	16.5
Tsunami	3	4	3.5	3	3	3	3	6.5
Volcanos	3	4	3.5	3	3	3	3	6.5
Wildfire	10	11	10.5	10	14	10	11	16.5
Winter Weather	15.5	20	16	15	17.5	16	15.5	18
Table Key								
Eliminated Risk				0 – 9.0				
Low				9.5 – 11.5				
Medium – Low				12.0 – 14.0				
Medium				14.5 – 16.5				
Medium – High				17.0 – 19.0				
High				19.5 ≤				
<i>Table 3.13 Composite Hazard Ranking by County and Table Key</i>								

Mitigation Actions and Priority Level

Goal One: <i>Improve Regional Resilience</i>	
2011-10	
Description:	Develop emergency access to shelters plans and establish criteria for community use. Continue to coordinate emergency shelter plans with the American Red Cross.
Priority:	High
2011-15	
Description:	To prepare for the efficient and cost effective removal of debris in the wake of a severe wind event or flood event. Work with County Emergency Services, Solid Waste Authority, and state agencies to develop a protocol for debris disposal.
Priority:	High
2016-01	
Description:	Ensure that all public utilities, specifically water and sewer operations have generators that will allow them to Operate when power outages occur.
Priority:	High
2016-02	
Description:	Continue updates, upgrades, and maintenance to existing and new power lines to provide resilience to power outages. Establish communication and relationships between local governments and utilities so that there is good communication during hazard events.
Priority:	High
2016-03	
Description:	Ensure that Emergency response organizations such as Volunteer Fire Departments, OES, and 911 centers are equipped with generators so that emergency operations are uninterrupted during power outages.
Priority:	High
2016-04	
Description:	Insure that there are more training opportunities and resources in the region for individuals wishing to become Volunteer Firemen, EMS personnel, and/or Police Officers.
Priority:	High
2016-05	
Description:	Obtain a warning system program or programs for each county. To provide a reliable means of warning communication for residents in identified high hazard areas and to insure that all special populations in identified risk areas are provided with the means to reliably communicate with emergency services. Currently Ritchie, Roane, and Wirt Counties do not have a formal system of communication with the public during hazard events. Some utilize Facebook however this is insufficient because it does not reach all citizens, and is inoperable during a power outage.

	These systems can warn of potential hazards as well as communicate vital information during and after a hazard event.
Priority:	High
2011-07	
Description:	Each Local jurisdiction will continue to enforce and update existing floodplain ordinances. To develop regulations, standards, and ordinances within local jurisdictions consistent with documented national standards and regulations.
Priority:	Medium
2016-20	
Description:	Upgrade emergency operation equipment so that responders are more able to easily reach those in need in more rural locations.
Priority:	Medium
2016-21	
Description:	Establish capability to obtain fuel for emergency vehicles during power outages in each county.
Priority:	Medium
2016-22	
Description:	Update existing and establish more cell phone towers and improve broadband throughout the region to improve cell phone reception for communication purposes. Portions of each County in the region are without cell phone service and have poor broadband connectivity; this is a hindrance to communication during hazard events.
Priority:	Medium
2016-23	
Description:	Improve and upgrade the snow removal equipment and supplies in each of the Region's Counties.
Priority:	Medium
2011-08	
Description:	Establish new or reinforce existing building codes and code enforcement within those jurisdictions where it is deemed appropriate, especially where new developments are being planned whether or not the developments are in identified flood zones. Use IBC as a standard. To develop regulations, standards, and ordinances within local jurisdictions consistent with documented national standards and regulations.
Priority:	Low
2016-28	
Description:	Conduct tree trimming and the removal of fallen/broken branches in public right-of-ways to limit the possibility of damage caused by limbs blowing or floating around. This includes trees and down limbs along public utility lines, along public roads and public buildings, and along areas of public stream access.
Priority:	Low
Goal Two: <i>Protect Life and Property</i>	
2011-02	

Description:	To provide an equitable buy-out program to interested owners of those properties located in the identified floodplain that have experienced recurrent damages.
Priority:	High
2016-06	
Description:	Establish a formalized safety check system for vulnerable members of the population in each county. The system will be completely voluntary and there will be no eligibility requirements to be included in the check. Presently, only Pleasants County has one such system in place. Designate, equip, and train local emergency responders for the purpose of maintaining lifelines for residents with special needs. Require home alert providers to register at the 911 Service; review and update the list annually.
Priority:	High
2016-07	
Description:	Execute flood mitigation activities in Calhoun County: <ol style="list-style-type: none"> 1. Explore possible buy outs, in southern Calhoun County along the Upper West Fork in Altizer and Stinson. 2. Replace and correct the low water bridge at Henry's Fork in Altizer to correct backups and flooding. 3. Repair, replace, and/or reconstruct low-lying roadways to prevent parts of the county from being cut off from the others during flooding events. Currently during flood events many places in Calhoun get cut off by high water and a series of islands forms which causes isolation and can make it difficult for citizen travel and even emergency responders to navigate the county.
Priority:	High
2016-08	
Description:	Execute flood mitigation activities in Jackson County: <ol style="list-style-type: none"> 1. Mitigate flash floods in the Evans Area where water covers the road and can isolate the area. 2. Repair, replace, and/or reconstruct low-lying roadway in Kenna area that when flooded cuts off the PSD, EMS and the VFD. 3. Repair, replace, and/or reconstruct low-lying roadway in Sandyville area that when flooded may cut off the PSD, EMS and the VFD. 4. Complete activities on Sycamore Road along Sycamore Creek to prevent flooding. 5. Complete activities in the Grand Central Ave area in Ripley to negate flooding.
Priority:	High
2016-09	
Description:	Execute flood mitigation activities in Pleasants County: <ol style="list-style-type: none"> 1. Conduct stream cleaning in along Cow Creek, Sled Fork, and the Left Fork of French Creek to decrease flooding potential.

	2. Conduct all other necessary mitigation activities along Cow Creek, Sled Fork, and the Left Fork of French Creek to further reduce flooding.
Priority:	High
2016-10	
Description:	Execute flood mitigation activities in Ritchie County: <ol style="list-style-type: none"> 1. Perform flood mitigation in downtown Cairo to prevent flooding in the downtown area which can currently impede transportation. 2. Develop a position in Ritchie County to enforce the County's existing floodplain permit and correct the current issue of campers that are being set up and lived in by people in the established floodplain.
Priority:	High
2016-11	
Description:	Execute flood mitigation activities in Roane County: <ol style="list-style-type: none"> 1. The Roane County 911/OES and EMS Centers are currently located in a floodplain and were flooded to the point of evacuation 2012. The Center needs to be relocated to a more secure location. 2. Evaluate and formulate action plan to conduct flood mitigating buyouts for repeatedly flooded single family properties located in Spencer and conduct 3. Relocate the Reedy VFD as it is susceptible to flooding. 4. Replace the bridge at Wal-Mart in Spencer with a structure better suited to accommodate the volume of potential flood waters that may flow through the stream. Currently the bridge is too low and water can flow over the top of the bridge. Also the opening under the bridge is structured in a way that impedes the flow of water and debris during flood events. 5. Replace the bridge at the junction of Rt. 33 and Rt. 14 as its current condition contributes to flooding.
Priority:	High
2016-12	
Description:	Execute flood mitigation activities in Tyler County: <ol style="list-style-type: none"> 1. There are possible buyout mitigation projects in Lima along Indian Creek and also along Middle Island Creek. 2. Replace, repair, and/or reconstruct low bridges along Indian Creek, in Shirley, Rt. 23, Sellers Run Road, Stewarts Run, Elk Fork, Muddy Creek, Little Sancho, and Meadville. These low bridges may be responsible for up to 60% of school cancellations because buses can't get through and there are no feasible alternative routes.
Priority:	High
2016-13	
Description:	Execute flood mitigation activities in Wirt County:

	<ol style="list-style-type: none"> 1. Take steps to mitigate flooding the Newark area at the confluence of the Little Kanawha and Hughes Rivers. This are floods quickly and can block portions of Rt. 47. 2. Take steps to mitigate flooding near Newark and Boy Scout road. This flooding blocks off the Wirt County VFD and EMS. 3. Take steps to mitigate flooding along Garfield road in the southern part of Wirt County.
Priority:	High
2016-14	
Description:	<p>Execute flood mitigation activities in Wood County:</p> <ol style="list-style-type: none"> 1. Replace or repair the primitive culvert located in Little Tygart Creek near the Woodridge Golf Club in Wood County which floods and disrupts transportation.
Priority:	High
2016-24	
Description:	<p>Landslide or slips/slide have presented a problem along the roadways of the Mid-Ohio Valley Region resulting in disrupted transportation caused by blocked or washed out roads. This can be corrected and prevented from happening again in the future if properly attended to by the WVDOH as resources become available. The process of correcting the issue is carried out by WVDOH frequently and involves installing beams into the ridge of the creek bank to prevent future slips.</p> <ul style="list-style-type: none"> • Along route 47 in Ritchie County, the Hughes River there has been a slip underneath the road resulting in the closure of one lane. There are now stop signs on each side of the road to facilitate alternating traffic. • There has been a slip under Sellers Run Road, route 24, caused by flooding in Middle Island Creek. The slip is located about a half mile from route 18 and has resulted in one lane of the road being closed and has disrupted travel. • Utah Road in Jackson County near Ravenswood has had slip issues. <p>This is in no way a complete list and other areas of the region may presently require or in the future require these types of corrections.</p>
Priority:	Medium
2016-25	
Description:	<p>Preform stream cleaning activities to mitigate flooding in areas where debris collects. Rivers and streams across the region, which are in need, should be cleaned in a manner that is in compliance with WV DEP and US EPA standards. Some specific areas in need of stream dredging/clean up identified through the planning process include:</p> <ul style="list-style-type: none"> • Along Cow Creek, Sled Fork, and the Left fork of French Creek in Pleasants County.

	<ul style="list-style-type: none"> • Ben's Run, which flows between Bell and Reynolds Street in the City of Spencer. • The area of Spring Creek flowing under the Market Street Bridge in the City of Spencer. • The bridge at the junction of Rt. 33 and Rt. 14 in Spencer along Tanner Run. • Provide opportunities and incentives for local groups and organizations to participate and work with government agencies in community stream clean-ups. <p>While these specific place have been identified, this is not a complete list and stream dredging/cleaning should not be limited to these areas alone.</p>
Priority:	Medium
2011-14	
Description:	To encourage compliance with West Virginia regulations that require anchoring for mobile homes. Work with utilities to require proof of proper installation prior to utility hook-ups.
Priority:	Low
2016-29	
Description:	Establish position in Roane County to enforce permit requirements for mobile homes to ensure that they are not established in flood plains and are installed or anchored correctly to prevent damage during wind events.
Priority:	Low
Goal Three: <i>Improve Understanding of Risk and Vulnerability for Planning Purposes</i>	
2016-15	
Description:	Expand upon data from the National Inventory of Dams to more accurately identify the risk level presented by dams in the region. The data needed is not currently available broken down to the county level and is not specific to individual dams. This will enable for more comprehensive planning regarding mitigating dam failure in the Mid-Ohio Valley Region.
Priority:	High
2016-16	
Description:	Complete GIS Mapping in all of the region's counties that do not currently have it, to better identify the risk to life and property presented by flooding which will be used in the future with TEIF software. Work with County Assessors to identify the actual location and value of properties in each county to assess the value of the property and the risk presented by flooding.
Priority:	High
Goal Four: <i>Bolster Understanding and Preparedness</i>	
2011-04	
Description:	Encourage acquisition of radios for residents in identified areas. To provide a reliable means of warning communication for residents in identified high hazard areas and to insure that all

	special populations in identified risk areas are provided with the means to reliably communicate with emergency services.
Priority:	High
2016-17	
Description:	<p>Create opportunities for public education regarding risks presented by natural hazards, specifically; how to prepare for hazard events, identification of risks presented, actions to take during a hazard event, and how to recover after a hazard events. Additionally, make citizens aware of the resources available to them during a hazard event and how to utilize those resources. Some specific activity may include:</p> <ul style="list-style-type: none"> • Disaster drills • Neighborhood action plans for hazard events • Inform citizens of the location of shelters and their availability <p>This is in no way an exhaustive list and other relevant activities should be completed.</p>
Priority:	High
2016-18	
Description:	<p>Ensure that each county has committed and established emergency shelters and that the locations and amenities of each shelter are public knowledge. (this is a more prevalent issue in some counties than in others)</p> <ul style="list-style-type: none"> • Provide basic stores and supplies at each community shelter • Recruit and train more committed Volunteers to staff and operate emergency shelters in all counties during hazard events. • <p>Provide electric generators at each community shelter. Install and maintain electric generators at each shelter location for lighting, communication, cooking, and heating.</p>
Priority:	High
Goal Five: <i>Improve Citizen Access to Aid After Hazard Events</i>	
2016-19	
Description:	Bolster citizen knowledge and awareness of the process for applying for disaster relief funds after hazard events. Make the process as streamlined as possible for citizens that need aid after hazard events.
Priority:	High
2016-26	
Description:	The FEMA flood maps in all of the region's counties have been recently updated; all updates were completed between 2004 and 2014. Citizens have identified issues with the newly established flood zones; particularly some areas included in the flood zone should be excluded and conversely some currently excluded areas should be included. This issue has been identified through public meetings and also through the online citizen survey. It is an issue

	because it requires some citizen to purchase flood insurance at an inflated cost, and does not require some citizens to have flood insurance when it is necessary. To correct mapping issues citizens must hire a surveyor and report the results to FEMA. The region's counties will work together to form a plan to develop a pool of funds that will be available for citizens to offset the cost of correcting the flood map containing their home. These problems were particularly voiced in Calhoun, Pleasants, Ritchie, Roane, Tyler and Wirt Counties.
Priority:	Medium
2016-27	
Description:	Establish loan program for citizens to access to conduct precautionary tree removal as a hazard mitigating action.
Priority:	Medium

Tentative Schedule for Monitoring, Evaluating, and Updating

Task	Responsibility	Time Frame
1. Refine Planning Process and timeline for new plan development	WVDHSEM, MOVRC	Ongoing
2. Complete GIS Mapping in all of the region's counties to better identify the risk to life and property presented by flooding.	State and Local Governments, WVDHSEM	Ongoing
3. Expand upon data from the National Inventory of Dams (NID) to pinpoint local level information to better assess the level of risk presented to each county by dam failure.	NID, WVDHSEM, State and Local Governments	Ongoing
4. Work to expand and refine data base to better conduct risk assessment for future plan updates.	MOVRC	Ongoing
5. Continue to match available HMGP funds to priority projects, especially to mitigate severe repetitive and repetitive loss structures.	WVDHSEM, MOVRC	Ongoing
6. Continue working with local governments and state contacts on plan implementation	WVDHSEM, MOVRC, Local Governments	Ongoing
7. Convene local governments and/or LEPC members to discuss and evaluate future risk assessment possibilities	Local Governments, MOVRC	August, 2017 August, 2018 August, 2019 August, 2020 August, 2021
8. Assess progress on strategies and projects identified in the 2016 HMP annually.	Local Governments, LEPCs, MOVRC	August, 2017 August, 2018 August, 2019 August, 2020 August, 2021
9. Review current regulatory requirements for plan revision.	MOVRC	Ongoing
10. Initiate review and revision of the 2016 hazard risk assessment and analysis.	MOVRC	July 1, 2020
11. Review and update of 2016 Mitigation Goals and Strategies	MOVRC	April 1, 2021
12. Draft Review by WV Division of Homeland Security and Emergency	MOVRC	May 1, 2021
13. Draft Review by FEMA	MOVRC	June 1, 2021
14. Submit new Revised Regional Hazard Mitigation to FEMA	MOVRC	July 1, 2021

Table 5.1 Projected Schedule for Monitoring, Evaluating, and Updating the HMP

June 10, 2016

TO: Region 5 Municipalities and County Commissions

RE: MOVRC Regional Hazard Mitigation Plan

- Request for letters indicating feedback on draft plan
- Final Review Meeting 6/29/16 1:00 PM – 3:00 PM at the MOVRC office

Dear local official:

The MOVRC has completed a draft version of the 2016 Hazard Mitigation Plan for the Mid-Ohio Valley Region. Each unit of local government must adopt the updated plan in order to be eligible for FEMA disaster recovery grant funds. The 2011 plan will expire August 22nd, 2016. MOVRC staff will be making arrangements to present the plan for adoption at your official meetings in the near future.

Each local government in the region is required to have input and participation in forming the Hazard Mitigation Plan. Though public meetings were held in each county during February and March 2016, many local governments did not have a representative in attendance. Each county's Office of Emergency Management/Services has had some involvement or input to the plan, and we met with each Local Emergency Planning Commission, and these individuals likely do represent the interests of each community. However, it is our desire to record a response from each unit of local government which conveys additional feedback or satisfaction with the plan ahead of when it will undergo final edits and then move toward adoption by local governments.

The current draft version of the Regional Hazard Mitigation Plan is posted on the MOVRC website at www.movrc.org, with the link at the lower right hand corner. Electronic copies of the plan can also be emailed by request, but the large file size could be an issue for some recipients. Upon review, or if you have already satisfactorily contributed to the planning process personally or through a surrogate, we request that you provide written feedback through email (luke.peters@movrc.org) or letter to MOVRC. Two types of basic form letters are provided with this letter to help you in replying. Feedback and discussion is also encouraged by attendance at a Final Draft Plan Review Meeting to be held at MOVRC on June 29th, 2016 from 1PM to 3PM. Please provide your written responses by June 29th so that information can be considered in plan additions, revisions, and recording the participation of your community.

Please contact me if you have any questions and to RSVP for the meeting.

Sincerely,


Meganne Robinson

Meganne Robinson

From: Meganne Robinson
Sent: Friday, June 24, 2016 4:29 PM
To: chipw@frontiernet.net; Eric Vincent (ehvcmv@yahoo.com); mitch.morrison@jacksoncountywv.com; 'heritagestmarys@suddenlinkmail.com'; Bob Tebay (bobtebay@woodcountywv.com); samuelrogers459@gmail.com; 'MACEG@nationwide.com'; Steve Lewis (ellmayor@hotmail.com); townofcairo@gmail.com; mayorrader@cityofripley.org; Alan Haught (hmayor26362@yahoo.com); 'roblee63@yahoo.com'; Bill Rice (cityofsistersvillemayor@gmail.com); tawilliams2@suddenlinkmail.com; John Hopkins (mayor@padencitywv.org); elizwv@suddenlinkmail.com; Charles Delauder (townofmiddlebourne@vvhotspot.us); Jimmy Colombo (mayor@parkersburgwv.gov); willcity@suddenlinkmail.com; William V. Summers Jr. (wvsummersjr@gmail.com); randy.rapp@vienna-wv.com; Zachary R. Hupp (townofgrantsville@yahoo.com); 'townofauburn@yahoo.com'; cityrecorder@frontiernet.net
Cc: Luke Peters
Subject: Reminder Hazard Mitigation Plan Final Draft Review Meeting
Attachments: Local Government Sample Response Letter.docx; Meeting agenda.docx

Dear Local Elected Official:

Thank you for your support and participation in the 2016 Hazard Mitigation planning process thus far. At this point the MOVRC has completed a **draft** version of the 2016 Plan and submitted it to the WV Division of Homeland Security and Emergency Management (WVDHSEM) for initial review. A downloadable version of the **draft** plan can be found at the following link: www.movrc.org. **This email is to serve as a reminder of the 2016 Mid-Ohio Valley Regional Hazard Mitigation Final Draft Review meeting which will take place Wednesday, June 29, 2016 in the MOVRC Offices from 1 – 3 PM.** Please see the attached meeting agenda included in this email.

The MOVRC has completed a draft version of the 2016 Plan, and we are seeking further input and/or comments from each municipality and county government within the region. As required by FEMA, each unit of local government must adopt the updated plan in order to be eligible for FEMA disaster recovery grant funds and must have participated in the planning process. We are holding the Final Draft Review meeting to provide an additional opportunity for participation in the planning process. If you are unable to attend and have comments please submit them in writing to Luke Peters or myself by email or via written letter. **Even if you do not have comments or edits we are asking that you please respond in writing stating that you have reviewed the plan and find it acceptable in its current form by June 29, 2016.** One of the attached documents contains a sample response letter.

MOVRC truly appreciates the assistance and time you have given in helping with the Regional Hazard Mitigation Plan for 2016. We hope to hear from you or see you at the June 29th Final draft Review Meeting. If you have any questions or would like any further information please feel free to contact Luke Peters or I at the MOVRC offices.

All Best,

Meganne Robinson, MPA
Project Coordinator
Mid-Ohio Valley Regional Council
(304) 422-4993, Ext. 105

Final Draft Review Meeting

2016 Mid-Ohio Valley Regional Hazard Mitigation Plan

*Wednesday June 29, 2016 1 – 3 PM MOVRC Offices
531 Market Street, Parkersburg, WV 26101
(304) 422 – 4993*

PURPOSE

To provide Local Governments and Local Emergency Directors an overview of the completed draft and offer an opportunity to provide feedback after review of the submitted draft.

AGENDA/OUTLINE

1. Brief Overview of Planning Activities to this point.
 - a. Purpose of plan
 - b. Local public meetings with LEPC
 - c. Submission of a **DRAFT** to West Virginia Division of Homeland Security and Emergency Management's (WVDHSEM) Mitigation Staff.
2. Overview of the Draft Document
 - a. Chapter 1 Introduction
 - b. Chapter 2 Planning Process
 - c. Chapter 3 Hazard Identification, Risk Assessment and Vulnerability Analysis
 - d. Chapter 4 Mitigation Strategy
 - e. Chapter 5 Monitoring, Maintenance & Revision
 - f. Appendices
3. Discussion, Suggestions, and Questions
 - a. The largest portion of the meeting will be spent answering questions, listening to suggested edits, and providing any clarification necessary.
4. The Next Steps
 - a. Using information gained to complete final draft
 - b. Resubmission to the WVDHSEM and then to FEMA
 - c. Adoption of final plan by each municipality and county

If you have any questions prior to the Meeting on June 29, 2016 or are unable to attend and have comments please feel free to contact Luke Peters or Meganne Robinson of the MOVRC's Community Development Program.

Luke Peters, Project Coordinator, luke.peters@movrc.org, (304) 422 – 4993 Ext. 123

Meganne Robinson, Project Coordinator, meganne.robinson@movrc.org, (304) 422-4993, Ext. 105

(TOWN/COUNTY LETTERHEAD)

SAMPLE/DRAFT RESPONSES

Luke Peters
MOVRC
PO Box 247
531 Market Street

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

1)

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor/president of the (Town/City) of _____ (County Commission), I have no further comments or changes to suggest.

2)

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor/president of the (Town/City) of _____ (County Commission), I feel that (for example):

- the threat of flooding to our downtown was underrepresented.
- the need for a slip repair on Route 5 above Smithtown should have been emphasized.
- the fact that the county has passed new ordinances on mobile homes should be mentioned.

Please take this into account in your final plan edits.

Thank you,

Name, Title

-Please feel free to call or email MOVRC staff to ask questions about the plan, the contents, and what was and wasn't included.

Meganne Robinson

From: Meganne Robinson
Sent: Friday, June 10, 2016 4:00 PM
To: 'calhounoes@frontiernet.net'; 'oes@jacksoncountywv.com'; 'knight914@frontiernet.net'; 'JimWhite801@yahoo.com'; 'roaneco911@frontier.com'; 'tjcooper@frontier.com'; 'wirtcooes@yahoo.com'; 'rwoodyard@woodcountywv.com'
Cc: Luke Peters
Subject: Regional Hazard Mitigation Plan Draft Review
Attachments: 2016-Draft-Regional-Hazrd-Mitigation-Plan-Document.pdf; 2016-Draft-Regional-Hazrd-Mitigation-Plan-Appendices.pdf

Regional OES directors,

MOVRC truly appreciates the assistance and time you've given in helping with the Regional Hazard Mitigation Plan for 2016. A draft of the Regional Hazard Mitigation Plan has been submitted to the State for review. One of the attachments to this email contains a PDF version of the draft Regional Hazard Mitigation Plan, and the second attachment contains the appendices to the draft plan. Also, a downloadable version of the draft that was submitted to the state for review, can be found at the following link www.movrc.org. The downloadable version is located in the lower right corner of the home page and is titled *2016 Draft Regional Hazard Mitigation Plan*. The Plan's appendices can be found in the same location titled *2016 Draft Regional Hazard Mitigation Plan – Appendices*.

Now that a draft of the plan is complete, prior to the adoption of a finalized plan by local governments, the MOVRC is seeking review of the plan to be sure we did not neglect any certain hazards or projects that should be included. Please join us at the MOVRC for a final plan review meeting on June 29th from 1PM to 3PM in our office at 531 Market Street, Parkersburg, WV 26101. Please let us know if you are planning to attend or are unable to attend. If you are unable to attend and have comments or revisions to the plan you can submit them in writing by mail or email to luke.peters@movrc.org.

We have contacted each mayor and county commission president with a similar request. We hope to have provided an opportunity for participation and feedback since we didn't see many municipalities at the public meetings in February and March.

If you have any questions please let me know.

Thanks,

Luke Peters

Luke Peters, MPA
Project Coordinator
Mid-Ohio Valley Regional Council
304.422.4993 Ext. 123

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) SURVEY

MUNICIPALITY: TYLER COUNTY

1. FLOODPLAIN IDENTIFICATION AND MAPPING			
Requirement	Recommended Action	Yes/No	Comments
a. Does the municipality maintain accessible copies of an effective Flood Insurance Rate Map (FIRM)/Digital Flood Insurance Rate Map (DFIRM)? Does the municipality maintain accessible copies of the most recent Flood Insurance Study (FIS)?	Place these documents in the local libraries or make available publicly.	Yes	FIRM maps are stored in the EOC Floodplain office
b. Has the municipality adopted the most current DFIRM/FIRM and FIS?	State the date of adoption, if approved.	Yes	
c. Does the municipality support request for map updates?	If yes, state how.	No	
d. Does the municipality share with Federal Emergency Management Agency (FEMA) any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data?	If yes, specify how.	No	
e. Does the municipality provide assistance with local floodplain determinations?	If yes, specify how.	Yes	The floodplain manager takes care of this.
f. Does the municipality maintain a record of approved Letters of Map Change?	If yes, specify the responsible office.	Yes	OEM/Floodplain Office

2. FLOODPLAIN MANAGEMENT

Requirement

Recommended Action

Yes/No

Comments

<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
<p>a. Has the municipality adopted a compliant floodplain management ordinance that, at a minimum, regulates the following:</p>	<p>If yes, answer questions (1) through (4) below.</p>	<p>Yes</p>	
<p>(1) Does the municipality issue permits for all proposed development in the Special Flood Hazard Areas (SFHAs)?</p>	<p>If yes, specify the office responsible.</p>	<p>Yes</p>	
<p>(2) Does the municipality obtain, review, and utilize any Base Flood Elevation (BFE) and floodway data, and/or require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres?</p>	<p>If yes, specify the office responsible.</p>	<p>Yes</p>	
<p>(3) Does the municipality identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the BFE, including anchoring, using flood-resistant materials, and designing or locating utilities and service facilities to prevent water damage?</p>	<p>If yes, specify the office responsible.</p>	<p>Yes</p>	
<p>(4) Does the municipality document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures?</p>	<p>If yes, specify the office responsible.</p>	<p>Yes</p>	<p>OEM/Floodplain Office</p>
<p>b. If a compliant floodplain ordinance was adopted, does the municipality enforce the ordinance by monitoring compliance and taking remedial action to correct violations?</p>	<p>If yes, specify how.</p>	<p>Yes</p>	<p>We monitor compliance</p>

2. FLOODPLAIN MANAGEMENT

<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
<p>c. Has the municipality considered adopting activities that extend beyond the minimum requirements? Examples include:</p> <ul style="list-style-type: none"> • Participation in the Community Rating System • Prohibition of production or storage of chemicals in SFHA • Prohibition of certain types of structures, such as hospitals, nursing homes, and jails in SFHA • Prohibition of certain types of residential housing (manufactured homes) in SFHA • Floodplain ordinances that prohibit any new residential or nonresidential structures in SFHA 	<p>If yes, specify activities.</p>	<p>No</p>	

3. FLOOD INSURANCE

<i>Requirement</i>	<i>Recommended Action</i>	<i>Yes/No</i>	<i>Comments</i>
a. Does the municipality educate community members about the availability and value of flood insurance?	If yes, specify how.	Yes	We have handouts available
b. Does the municipality inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates?	If yes, specify how.	No	
c. Does the municipality provide general assistance to community members regarding insurance issues?	If yes, specify how.	Yes	We answer all related calls

APPENDIX C: 2011 MITIGATION ACTIONS

This appendix provides an update to the status of all mitigation actions identified in the 2011 Mid-Ohio Valley Region Hazard Mitigation Plan. The chart below lists the goal/objective identified in the 2011 plan and then explains the goal/objective’s status as of June 2016. The following pages depict how the mitigation actions appeared in the 2011 plan.

	Description
2011 Project Area 1: Database of Special Needs Populations	To insure that all citizens and critical populations can be readily provided for during emergency events. To insure that all “shut-ins”, special care, and elderly residents in identified risk areas are either evacuated or provided with required care and necessary equipment prior to and during emergency events.
June 2016 Status:	This mitigation action is ongoing. Currently, Pleasants County has had the most success in maintaining a special needs database and completing safety checks. Their Community Emergency Response Team (CERT) members along with other community volunteers have been developing and operating a program they call Senior watch for nearly two years. Other counties have not had the same amount of success; many have hit road blocks due to privacy issues. As there has been some limited success in implementing this action but it has not yet been fully successful, this action has been rephrased and included in the 2016 HMP as mitigation action 2016-14. To further the implementation of this action with more success in other counties the approach to this action will be altered. In all of the public planning meetings that this action was discussed, LEPC members discussed different approaches to making this action more successful. Particularly, re-phasing special needs population to vulnerable populations and stressing it as a service safety check for citizens who want it. Additionally, some counties indicated that this was already happening in some counties in an informal way. The revamped 2016 mitigation suggests using a more formalized procedure.
2011 Project Area 2: Mitigate damage to buildings located in	Remove or elevate structures that have significant risk of damage due to flooding. To provide an equitable buy-out program to interested owners of

<p>areas subject to flooding either through acquisitions /demolitions or elevation.</p>	<p>those properties located in the identified floodplain that have experienced recurrent damages. To elevate structures which have experienced damages and have a potential for being refurbished to become more resistant to flooding.</p>
<p>June 2016 Status:</p>	<p>This action is on-going. Since 2011 in the MOV has administered three funding cycles of flood mitigation grants in the Happy Valley area of Wood County. Round 3 in 2011 mitigated 5 properties for the amount of \$975,000, Round 4 in 2012 mitigated 3 properties for the amount of \$324,000, and Round 5 in 2014 for the amount of \$521,000. As this plan undergoes adoption, the MOVRC is working with communities on several new RL mitigation projects. On in the Town of Grantsville, one in the southern part of Calhoun County, one in the City of Spencer, one in Greater Roane County, and one in the Happy Valley area and along Nicolet Rd in Wood County.</p>
<p>2011 Project Area 3: Emergency Alert System</p>	<p>To insure that residents can be readily alerted to impending or on-going emergency events. To provide a reliable means of warning communication for residents in identified high hazard areas and to insure that all special populations in identified risk areas are provided with the means to reliably communicate with emergency services.</p>
<p>June 2016 Status:</p>	<p>This mitigation action is on-going. Thus far Calhoun, Jackson, Pleasants, Roane, and Wood Counties have some form of reliable mass notification mechanism in place. The remaining counties are exploring the possibility of implementing a notification system or are using other unconventional means. Section 2.2 contains more specific information regarding each county’s selection of a notification system. This mitigation action has been updated and included in this plan as mitigation action 2016-13.</p>
<p>2011 Project Area 4: Floodplain Ordinance and Building Codes</p>	<p>Is to insure that all building and dwellings meet FEMA, IBC and Insurance regulations regarding structure location and structure construction. To develop regulations, standards, and ordinances within local jurisdictions consistent with documented national standards and regulations.</p>
<p>June 2016 Status:</p>	<p>This mitigation action is ongoing, and has been included in this 2016 plan update as mitigation actions 2011-07 and 2011-08. Using the action</p>

	<p>prioritizing process outlined in section 4.1.2 this actions was evaluated as a low priority in the Mid-Ohio Valley. This is largely due to the rural and economic nature of the MOV. Code enforcement and zoning is a largely unpopular topic socially in the region, in most counties the administrative staff does not exist to coordinate and lead the efforts, is politically unfavorable, and funding for the most part is nonexistent. However, from a hazard mitigation standpoint, MOVRC planners recognize the benefits, and its importance to disaster preparedness. Currently all 8 of the region’s counties do have a floodplain ordnance. However, only the Cities of Parkersburg and Vienna have any kind of building code enforcement program that operates in full capacity. As this is an important issue, it has been carried into the 2016 plan update with the intention of taking further action when the social, administrative, political, and economic climate is more receptive.</p>
<p>2011 Project Area 5: Community Shelters in the identified areas that become isolated by Winter Storms or Floods</p>	<p>Is to insure that local community shelters are capable of providing comfort and shelter to local residents for extended periods of time during Winter Storms and Floods. Provide electric generators at each community shelter. Develop emergency access to shelters plans and establish criteria for community use. Provide basic stores and supplies at each community shelter.</p>
<p>June 2016 Status:</p>	<p>This mitigation action is on-going. For the 2016 plan update this mitigation actions have been divide into multiple actions, specifically: 2011-10, 2016-09, 2016-11, and 2016-42. After all of the public planning meetings and discussion with citizens, it be cam apparent to MOVRC planners that establishing and maintaining shelters was a different issue than ensuring that shelters and emergency response facilities have generators. Through the public meetings it became evident that while most counties have emergency shelters in place, they are very loosely organized, under staffed due to lack of volunteers, and very seldom utilized. The shelters exist, they just need organized and publicized. For these reasons mitigation action 2011-10 was updated and carried forward in this plan. Additionally, In the</p>

	<p>wake of the 2012 derecho that left areas of the MOV without power for several days, shelters and emergency response facilities became very aware of the need and importance of generators. While there are still some without generators, the majority have since obtained them. To aid the remaining facilities that do not have generators, mitigation actions 2016-09, 2016-11, and 2016-42 were formed.</p>
<p>2011 Project Area 6: Stream Dredging and Clean-up</p>	<p>Is to clean and clear all streams that repeatedly flood or become blocked in order to prevent local flood event intensification. To remove all abandon structures and equipment in and around stream and creek banks. To clean and dredge streams whose flow channels have been partially blocked or re-routed by past events.</p>
<p>June 2016 Status:</p>	<p>This mitigation action is on-going. Stream clean-up/dredging has taken place independently throughout the region without a centralized regional effort particularly in Ritchie County. For example, the town of Auburn conducted stream clean-up activities in bone creek which runs through the middle of the Town. The Town was able to able to clean a lot of the creek which has added in mitigating flooding; however, their permit expired before they were able to completely finish the project. Additionally, in the Ritchie County public meeting members of the LEPC indicated that the Little Kanawha Soil Conservation group had conducted some stream clean-up efforts however specifics were not given. While some stream clearing and dredging has taken place, the process is continual; it is not a one-time fix it must be an ongoing effort over time. It is for this reason that 2016-55 was developed using the primus for this 2011 mitigation action. 2016-55 lists specific locations along creeks and streams in the MOV that are in need of stream cleaning that will be targeted under this mitigation action.</p>
<p>2011 Project Area 7: Severe winds impact mitigation</p>	<p>To reduce impact from severe wind events. To encourage compliance with West Virginia regulations that require anchoring for mobile homes. To prepare for the efficient and cost effective removal of debris in the wake of a severe wind event.</p>
<p>June 2016 Status:</p>	<p>This mitigation activity is on-going. At this point there has not been a collective regional effort to mitigate debris after a severe wind event. This was a</p>

	<p>particular issue after the 2012 derecho. In an effort to better fulfill this mitigation action it has been split into the following mitigation actions: 2011-14, 2011-15, 2016-59, 2016-10, and 2016-57. The 2016 MOVRC planners felt that this mitigation from 2011 encompassed too many aspects to be properly executed in a successful way. The action was too broad and could not be narrowed down to specific actions. Splitting this action into smaller, more specific mitigation actions makes the mitigation result more attainable.</p>
<p>2011 Project Area 8: Accurate Elevation and Topographical Data Mapping</p>	<p>Provide accurate and detailed mapping and information regarding the 100-year floodplain. Updated flood insurance rate maps.</p>
<p>June 2016 Status:</p>	<p>This mitigation action is still ongoing. While arcuate maps detailing the value of the property at risk do not currently exist, there have been some big strides in completing this mitigation action. Currently the WV Flood Tool which is online and easily assessable contains some values however it is difficult to pinpoint properties and it has not been completed for the entire state making it an incomplete tool. Additionally, the TEIF tool developed by FEMA is a step in the right direction however due to inaccurate or non-existing county mapping, the TEIF estimates were identified to be inaccurate by MOVRC planners. It is for this reason that this updated plan includes mitigation action 2016-40 which calls for completion of GIS mapping across the region in order to accurately map the amount of property value at risk from flooding. Planners will be working with county assessors to accurately map values in the floodplain in order to complete a more accurate assessment of risk in the 2022 plan update.</p>

Project Area 1: Database of Special Needs Population

Status: Ongoing

Goal: To insure that all citizens and critical populations can be readily provided for during emergency events.

Objective: To insure that all “shut-ins”, special care, and elderly residents in identified risk areas are either evacuated or provided with required care and necessary equipment prior to and during emergency events.

Strategy:

1. Designate, equip, and train local emergency responders for the purpose of maintaining lifelines for residents with special needs.
 - a. Require home alert providers to register at the 911 Service.
 - b. Review and update list annually.

Implementation

Assigned Activities	
County Coordinating Agency/Person	Emergency Services Director
Start Date	1/15/11
Complete Date	Ongoing
Follow-up Intervals	Annually
Follow-up Agency/Person	Emergency Services Director

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: Varies by jurisdiction and solution.
<input checked="" type="checkbox"/> Other (explain below)	Resources: Local, OES, 911 Service, grants

Wood County will coordinate with the ARC of Wood County. Pleasants County is coordinating with the Committee on Aging. Tyler County OES is developing its own database with funding from a multi-county grant. Other counties have informal programs based on local knowledge, but have not developed a formal mechanism to continuously update the information.

Project Area 2: Mitigate damage to buildings located in areas subject to flooding either through acquisition/demolition or elevation.

Priority will be based on benefit/cost ratio. An exception will be made for areas that have an area-wide acquisition and reuse plan, such as the current Happy Valley plan. In those areas properties with lower benefit/cost ratios may be included in a buy-out program in order to provide complete projects.

Status: Ongoing

Goal: Remove or elevate structures that have significant risk of damage due to flooding.

Objectives:

1. To provide an equitable buy-out program to interested owners of those properties located in the identified floodplain that have experienced recurrent damages.
2. To elevate structures which have experienced damages and have a potential for being refurbished to become more resistant to flooding.

Strategies:

1. Provide relocation assistance during construction and or rebuilding of dwellings located in the identified flood plain.
2. Provide equitable alternatives to land owners located in the identified flood plain.

Implementation

Assigned Activities	
County Coordinating Agency/Person	OES, County Commission
Start Date	7/1/10
Complete Date	On-going
Follow-up Intervals	Annually
Follow-up Agency/Person	OES Director

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input checked="" type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: \$6,200,000
<input type="checkbox"/> Other (explain below)	Resources: WVDMAPS, FEMA, HUD DRI

Update: A buyout program is currently being implemented in two counties. Four properties have been acquired in the Happy Valley area. Funding has been obtained to acquire six properties in Calhoun County. An application is pending to acquire an additional fifteen properties in the Happy Valley area. Previous projects have occurred in Reedy, Jackson County, Tyler County, and Grantsville.

Project Area 3: Emergency Alert System

Status: Ongoing

Goal: To insure that residents can be readily alerted to impending or on-going emergency events .

Objectives:

1. To provide a reliable means of warning communication for residents in identified high hazard areas and to insure that all special populations in identified risk areas are provided with the means to reliably communicate with emergency services.

Strategies:

1. Encourage acquisition of radios for residents in identified areas.
2. Implement reverse 911 notification system.
3. Review needs and concerns every 12 months.

Implementation

Assigned Activities	
County Coordinating Agency/Person	OES, County Commission, 911 Center
Start Date	7/1/10
Complete date	Varies by county
Follow-up Intervals	annually
Follow-up Agency/Person	OES Director

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input checked="" type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input checked="" type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: \$20,000 plus per county.
<input type="checkbox"/> Other (explain below)	Resources: Local, OES, grants

Update: Wood County is implementing a reverse 911 notification system to alert residents of flash floods and other emergency events. Public service announcements encouraging procurement of NOAA radios and an educational campaign are planned throughout the region. Wirt County participates in the Wood County 911 system. Tyler County is also implementing a reverse 911 system. Jackson County has similar capabilities through the WARN system.

Project Area 4: Floodplain Ordinance and Building Codes

Status: Ongoing

Goal: Is to insure that all building and dwellings meet FEMA, IBC and Insurance regulations regarding structure location and structure construction.

Objectives:

1. To develop regulations, standards, and ordinances within local jurisdictions consistent with documented national standards and regulations.

Strategies:

1. Each local jurisdiction will continue to enforce and update existing floodplain ordinances.
2. Establish new or reinforce existing building codes and code enforcement within those jurisdictions where it is deemed appropriate, especially where new developments are being planned whether or not the developments are in identified flood zones. Use IBC as a standard.

Implementation

Assigned Activities	
County Coordinating Agency/Person	Local governments
Start Date	7/1/10
Complete Date	On-going
Follow-up Intervals	Annually
Follow-up Agency/Person	Emergency services director

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input checked="" type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: No additional funding required.
<input type="checkbox"/> Other (explain below)	Resources: FEMA, WVDMAPS for training

Wood County Commission recently adopted floodplain regulations that are above and beyond FEMA standards. The Town of North Hills and the Town of Harrisville have low or no risk of flooding and therefore do not participate in the NFIP. Other building codes are covered under state building codes and are enforced by state officials such as the Fire Marshall, Dept. of Labor, the Health Dept., etc. In addition, a few of the municipalities have their own building inspectors.

The Town of Pullman and the Town of Auburn rely on the Ritchie County floodplain manager to enforce the Town floodplain ordinance. Both communities have less than two hundred residents.

Project Are 5: Community Shelters in the identified areas that become isolated by Winter Storms or Floods

Status: Ongoing

Goal: Is to insure that local community shelters are capable of providing comfort and shelter to local residents for extended periods of time during Winter Storms and Floods.

Objectives:

1. Provide electric generators at each community shelter.
2. Develop emergency access to shelters plans and establish criteria for community use.
3. Provide basic stores and supplies at each community shelter.

Strategies:

1. Continue to coordinate emergency shelter plans with the American Red Cross
2. Install and maintain electric generators at each shelter location for lighting, communication, cooking, and heating.

Implementation

Assigned Activities	
County Coordinating Agency/Person	Emergency Services Director
Start Date	1/1/11
Complete Date	12/31/14
Follow-up Intervals	Annually
Follow-up Agency/Person	Emergency Services Director

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: Varies by local situation.
<input type="checkbox"/> Other (explain below)	Resources: WVDMAPS, Local

Funding for emergency generators is an on-going need in many jurisdictions. While this is fundamentally a preparedness activity rather than a mitigation activity, it is nonetheless a priority throughout the region

Project Area 6: Stream Dredging and Clean-up

Status: Deferred

Goal: Is to clean and clear all streams that repeatedly flood or become blocked in order to prevent local flood event intensification.

Objectives:

1. To remove all abandon structures and equipment in and around stream and creek banks.
2. To clean and dredge streams whose flow channels have been partially blocked or re-routed by past events.

Strategies:

1. Provide opportunities and incentives for local groups and organizations to participate and work with government agencies in community stream clean-ups.
2. Provide the public education, training, and access to all information.
3. Review needs and concerns annually.

Implementation

Assigned Activities	
County Coordinating Agency/Person	OES, Wood County Commission, DNR
Start Date	04/01/09
Complete Date	On-going
Follow-up Intervals	Annually
Follow-up Agency/Person	OES Director

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount:
<input type="checkbox"/> Other (explain below)	Resources: DNR, NRCS, Department of Highways

There are competing regulatory agencies that make it difficult when dealing with stream dredging and clean-up. However Wood County is currently working on cleaning up Pond Creek, a recurring problem stream in the area. Other focus streams in Wood County include Walker Creek, Tygart Creek, Bull Creek, Lee Creek, Slate Creek, and Worthington Creek.

The Town of Auburn considers Bone Creek a priority, while the City of Pennsboro is concerned with Bunnells Run. Other include: Ellenboro – Hurshers Run; Spencer – Spring Creek; Reedy – Reedy Creek; and Calhoun County – West Fork Little Kanawha.

Project Area 7: Severe winds impact mitigation

Status: On-going

Goal: To reduce impact from severe wind events.

Objectives:

1. To encourage compliance with West Virginia regulations that require anchoring for mobile homes.
2. To prepare for the efficient and cost effective removal of debris in the wake of a severe wind event.

Strategies:

1. Work with utilities to require proof of proper installation prior to utility hook-ups.
2. Work with the County Emergency Services, Solid Waste Authority, and state agencies to develop a protocol for debris disposal.

Implementation

Assigned Activities	
County Coordinating Agency/Person	ES Director, Code enforcement , SWA
Start Date	1/1/10
Complete Date	On-going
Follow-up Intervals	Annually
Follow-up Agency/Person	ES

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: No additional funding required.
<input type="checkbox"/> Other (explain below)	Resources: Utilities, SWA, WV DOH

This is an ongoing activity that appears to be successful in ensuring that new installations are according to code.

Project Area 8: Accurate Elevation and Topographical Data Mapping

Status: On-going

Goal: Provide accurate and detailed mapping and information regarding the 100 year floodplain.

Objectives:

1. Updated flood insurance rate maps.

Strategies:

1. Encourage FEMA to complete updating of flood insurance rate maps for those jurisdictions that have not been updated.

Implementation

Assigned Activities	
County Coordinating Agency/Person	Emergency Services Directors, floodplain managers
Start Date	1/1/11
Complete Date	12/31/14
Follow-up Intervals	Annually
Follow-up Agency/Person	Emergency Services Directors

Re-evaluation Criteria (Check all that apply at time of review)	Funding Resources
<input type="checkbox"/> Recent Related Events	<input type="checkbox"/> Federal
<input type="checkbox"/> New Technology	<input type="checkbox"/> State
<input type="checkbox"/> New Leadership	<input type="checkbox"/> Local
<input type="checkbox"/> Risk Eliminated	<input type="checkbox"/> Private
<input checked="" type="checkbox"/> Original Goals and Objectives	Amount: To be determined by FEMA
<input type="checkbox"/> Other (explain below)	Resources: FEMA

Updated mapping has been completed in Jackson County. FEMA has a schedule for updating mapping.

Project Summary Table

Project	Hazard	How Identified	Why Identified
1.	Special Needs Database	Core team and public input Review of past disaster events	Frequent need to assist “shut-ins” 911 inquiries by family members
2.	Buy-Out Program	Core Team Public/Property Owner input	Frequent flooding Extensive property damage
3.	Emergency Warning	Core team and public input Past events in County	Events have occurred involving a very localized areas within county Local residents have called 911 after event that no one else was aware of.
4.	Flooding – Building Codes	Core team and public input	Regulatory requirement
5.	Community Shelters	Core team and public input Community Associations repeated requests	Local community buildings exist but are not equipped to provide shelter during storm events
6.	Stream Clean-Up	Core team and public input	Events have occurred where stream blockage has intensified flooding.
7.	Severe winds response	Core team and public input	History of severe wind damage
8.	Mapping	Core team.	Many local floodplain maps were developed in the 1980’s and do not provide adequate information.

APPENDIX D: DATA SOURCES AND REFERENCE LIST

References:

- Department of Commerce National Oceanic & Atmospheric Administration National Weather Service. (August 17, 2007). *National Weather Service Instruction; Storm Data Preparation*. Retrieved from <http://www.ncdc.noaa.gov/stormevents/pd01016005curr.pdf>
- Edwards, R. (2016). *The Online Tornado FAQ; Frequently Asked Questions about Tornadoes*. Retrieved from <http://www.spc.noaa.gov/faq/tornado/index.html#f-scale3>
- Federal Emergency Management Agency. (2015). *Floodway*. Retrieved from <http://www.fema.gov/floodway>
- Federal Emergency Management Agency. (2016). [Illustration of floodplain in St. Marys, WV]. *FEMA Flood Map Service Center: Search By Address*. Retrieved from <http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=18147912&IFIT=1>
- Map West Virginia. (2010). [Graph illustrations of rivers in each county located March 2016]. *WV Flood Tool*. Retrieved from <http://www.mapwv.gov/flood/map/>
- Mid-Ohio Valley Regional Council. (2011). *Hazard Mitigation Plan for the Mid-Ohio Valley Region*. Parkersburg, WV: MOVRC Office.
- National Climatic Data Center. (2015). *Snow Cover Maps*. Retrieved from <http://www.ncdc.noaa.gov/snow-and-ice/snow-cover/us/20150101-20151231>
- National Drought Mitigation Center. (2016). *Drought Basics*. Retrieved from <http://drought.unl.edu/droughtbasics/whatisdrought.aspx>
- National Hurricane Center. [Map depicting Hurricane History in the Pacific from 1949 and in the Atlantic from 1851 through 2013 Retrieved January 2016]. *Tropical Cyclone Climatology: High Resolution History Maps*. Retrieved from <http://www.nhc.noaa.gov/climo/>
- National Hurricane Center. Saffir-Simpson Hurricane Wind Scale. Retrieved from <http://www.nhc.noaa.gov/aboutsshws.php>
- National Inventory of Dams. [Graph illustration of all dams located in the Mid-Ohio Valley Region Retrieved February 2016]. *Corps Map: West Virginia*. Retrieved from http://nid.usace.army.mil/cm_apex/f?p=838:3:0::NO::P3_STATES:WV
- National Inventory of Dams. [Graph illustration of Dams by Hazard Potential, Number of High Hazard Potential Dams with EAP, Number of Significant Hazard Potential Dams with EAP, Dams by Height, Dams by Primary Owner Type, Dams by Primary Type, Dams by Primary Purpose, Dams by Completion Date, Retrieved February

- 2016]. *Corps Map: West Virginia*. Retrieved from http://nid.usace.army.mil/cm_apex/f?p=838:3:0::NO::P3_STATES:WV
- National Interagency Fire Center. *Fire Information*. Retrieved from http://www.nifc.gov/fireInfo/fireInfo_main.html
- National Interagency Fire Center. [Graph depicting number of human-caused fires in the U.S. retrieved March 2016]. *Human-caused Fires*. Retrieved from https://www.nifc.gov/fireInfo/fireInfo_stats_human.html
- National Oceanic and Atmospheric Administration National Climatic Data Center. (2015). [Graphs depicting average temperatures from 1950-2015 in West Virginia for each month Retrieved February 2016]. *National Temperature Index*. Retrieved from <http://www.ncdc.noaa.gov/temp-and-precip/national-temperature-index/>
- National Oceanic and Atmospheric Administration National Climatic Data Center. (2010). [Graph displaying Tornado Time of Occurrence – Entire U.S. Retrieved March 2016]. *Historical Records and Trends*. Retrieved from http://www1.ncdc.noaa.gov/pub/data/cmb/images/tornado/clim/US_nationa_timeofday.png
- National Oceanic and Atmospheric Administration National Climatic Data Center. (2010). [Graph displaying Tornado Time of Occurrence-Northeast Climate Region Retrieved March 2016]. *Historical Records and Trends*. Retrieved from http://www1.ncdc.noaa.gov/pub/data/cmb/images/tornado/clim/NE_region_timeofday.png
- National Oceanic and Atmospheric Administration National Climatic Data Center. (2010). [Graph illustration of average Annual Number of Tornadoes retrieved March 2016]. *U.S. Tornado Climatology*. Retrieved from <https://www.ncdc.noaa.gov/climate-information/extreme-events/us-tornado-climatology>
- National Oceanic and Atmospheric Administration National Climatic Data Center. (2010). [Graph illustration of average number of tornadoes each month in WV Retrieved March 2016]. *Historical Records and Trends*. Retrieved from <https://www.ncdc.noaa.gov/climate-information/extreme-events/us-tornado-climatology/trends>
- National Oceanic and Atmospheric Administration National Climatic Data Center. *U.S. Tornado Climatology*. Retrieved from <https://www.ncdc.noaa.gov/climate-information/extreme-events/us-tornado-climatology>
- National Oceanic and Atmospheric Administration National Hurricane Center. (2012). [Map depicting all hurricanes within the region since 1851 January, 2016]. Retrieved from <http://www.nhc.noaa.gov/data/>
- National Oceanic and Atmospheric Administration National Hurricane Center. (2012). *Saffir-Simpson Hurricane Wind Scale*. Retrieved from <http://www.nhc.noaa.gov/aboutsshws.php>

- National Oceanic and Atmospheric Administration's/National Weather Service. (2016). [Graph illustration of the previous 40 tsunamis that have occurred in the world February, 2016]. *National Tsunami Warning Center*. Retrieved from <http://ntwc.arh.noaa.gov/>
- National Oceanic and Atmospheric Administration's National Weather Service. (2016). *Tsunami.gov*. Retrieved from <http://www.tsunami.gov/info.php>
- National Oceanic and Atmospheric Administration Satellite and Information Service National Climatic Data Center. (2016). *NOAA Severe Weather Data Inventory*. [All Hail Signatures from NEXRAD (Level-III Hail Product)]. Retrieved from <http://www.ncdc.noaa.gov/swdi/#TileSearch>
- National Oceanic and Atmospheric Administration Satellite and Information Service National Climatic Data Center. (2016). *NOAA Severe Weather Data Inventory*. [All Storm Cells from NEXRAD (Level-III Storm Structure Product)]. Retrieved from <http://www.ncdc.noaa.gov/swdi/#TileSearch>
- National Oceanic and Atmospheric Administration Satellite and Information Service National Climatic Data Center. (2016). *NOAA Severe Weather Data Inventory*. [Tornado signatures from NEXRAD (Level-III TVS Product)]. Retrieved from <http://www.ncdc.noaa.gov/swdi/#TileSearch>
- National Park Service U.S. Department of the Interior. *Fire and Aviation Management; Fire In-Depth*. Retrieved from <https://www.nps.gov/fire/wildland-fire/learning-center/fire-in-depth/fire-behavior.cfm>
- National Severe Storms Laboratory. *Severe Weather 101; Damaging Winds Basics*. Retrieved from <http://www.nssl.noaa.gov/education/svrwx101/wind/>
- National Severe Storms Laboratory. *Severe Weather 101; Lightning Basics*. Retrieved from <http://www.nssl.noaa.gov/education/svrwx101/lightning/>
- National Snow & Ice Data Center. (2016). *Avalanche Awareness*. Retrieved from <http://people.uwec.edu/jolhm/EH3/Group4/references/nsidc.htm>
- National Weather Service Weather Forecast Office. (2015) [Chart explaining heat classifications and the effects on the body Retrieved March 2016]. *What is the heat index?*. Retrieved from <http://www.srh.noaa.gov/ama/?n=heatindex>
- National Weather Service National Oceanic and Atmospheric Administration. *Flood Related Hazards*. Retrieved from <http://www.floodsafety.noaa.gov/hazards.shtml>
- National Weather Service National Oceanic and Atmospheric Administration. [Graph illustration of Annual Mean Total Snowfall retrieved March 2016]. *Winter Safety*. Retrieved from <http://www.nws.noaa.gov/om/winter/snow.shtml>
- National Weather Service National Oceanic and Atmospheric Administration. [Graph illustration of NOAA image depicting the formation of hail retrieved March 2016]. *Hail Awareness*. Retrieved from <http://www.weather.gov/cae/hail.html>

- National Weather Service National Oceanic and Atmospheric Administration. [Graph illustration of NWS Windchill Chart retrieved March 2016]. *Winter Safety*. Retrieved from <http://www.nws.noaa.gov/om/winter/windchill.shtml>
- National Weather Service National Oceanic and Atmospheric Administration. [Graph illustrating the NWS Heat Index Retrieved March 2016]. *Heat Safety*. Retrieved from http://www.nws.noaa.gov/os/heat/heat_index.shtml
- National Weather Service National Oceanic and Atmospheric Administration. *Hail Awareness*. Retrieved from <http://www.weather.gov/cae/hail.html>
- National Weather Service National Oceanic and Atmospheric Administration. *Heat Safety*. Retrieved from http://www.nws.noaa.gov/os/heat/heat_index.shtml
- National Weather Service National Oceanic and Atmospheric Administration. *Wind Safety*. Retrieved from <http://www.nws.noaa.gov/om/wind/>
- Olive, W. W., Chleborad, A. F., Frahme, C. W., Shlocker, J. Schneider, R. R., & Schuster, R. L. (1989). [Map illustrates swelling clays map of the conterminous United States, January, 2016]. *Swelling clays map of the conterminous United States*. Retrieved from http://ngmdb.usgs.gov/Prodesc/proddesc_10014.htm
- Ready. *Drought*. Retrieved from <https://www.ready.gov/drought>
- Ready. *Extreme Heat*. Retrieved from <https://www.ready.gov/heat>
- Ready. *Floods*. Retrieved from <https://www.ready.gov/floods>
- Ready. *Hurricanes*. Retrieved from <https://www.ready.gov/hurricanes>
- Ready. *Landslides & Debris Flow*. Retrieved from <https://www.ready.gov/landslides-debris-flow>
- Ready. *Thunderstorms & Lightning*. Retrieved from <https://www.ready.gov/thunderstorms-lightning>
- Ready. *Tornadoes*. Retrieved from <https://www.ready.gov/tornadoes>
- Ready. *Wildfires*. Retrieved from <https://www.ready.gov/wildfires>
- Ready. *Winter Storms & Extreme Cold*. Retrieved from <https://www.ready.gov/winter-weather>
- United States Drought Monitor. (2016). [Graph illustration of drought events in West Virginia from 2002-2015 Retrieved February 2016]. *U.S. Drought Monitor Map Archive*. Retrieved from <http://droughtmonitor.unl.edu/MapsAndData/MapArchive.aspx>
- United States Drought Monitor. (2016). [Graph illustration of drought severity classification Retrieved February 2016]. *U.S. Drought Monitor Classification Scheme*. Retrieved from <http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>

- United States Geologic Survey. (2016). *Earthquake Hazards Program*. Retrieved from <http://earthquake.usgs.gov/learn/topics/>
- United States Geological Survey. (2015). [Graph displaying Average Annual Precipitation Retrieved March 2016]. *Precipitation: The Water Cycle*. Retrieved from <http://water.usgs.gov/edu/watercycleprecipitation.html>
- United States Geological Survey. (2014). [Graph illustration depicting likely-hood of landslide in the region Retrieved March 2016]. *Landslide Overview Map of the Conterminous United States*. Retrieved from <http://landslides.usgs.gov/hazards/nationalmap/images/central.gif>
- United States Geological Survey. (2016). *Landslide Hazard Program: Landslides 101*. Retrieved from <http://landslides.usgs.gov/learn/l101.php>
- United States Geologic Survey. [Map depicting previous earthquake events in the Region January, 2016]. *Search Earthquake Archives*. Retrieved from <http://earthquake.usgs.gov/earthquakes/search/>
- United States Geologic Survey. (2012). [Map depicting principal karst Aquifers of the United States]. *USGS Groundwater Information*. Retrieved from <http://water.usgs.gov/ogw/karst/aquifers>
- United States Geologic Survey Earthquake Hazards Program. (2014). [Map depicting the central and eastern U.S. Hazard and seismicity map since 1974 through 2014 January, 2016]. *Urban Seismic Hazards*. Retrieved from <http://earthquake.usgs.gov/hazards/products/urban/images/ceus-seis-haz.pdf>
- United States Geological Survey. (2015). *Precipitation: The Water Cycle*. Retrieved from <http://water.usgs.gov/edu/watercycleprecipitation.html>
- United States Geologic Survey. (2016). [2014 Seismic Hazard Map January, 2016]. *Earthquake Hazards Program*. Retrieved from http://earthquake.usgs.gov/earthquakes/states/west_virginia/hazards.php
- United States Geologic Survey. (2012). *USGS Groundwater Information: Karst and the USGS*. Retrieved from <http://water.usgs.gov/ogw/karst/index>
- United States Geologic Survey Volcano Hazards Program. (2016). *Education = Preparedness, Safety, and Resiliency*. Retrieved from <http://volcanoes.usgs.gov/vhp/education.html>
- United States Geologic Survey Volcano Hazards Program. (2016). [Map depicts U.S. Volcanoes and Current Activity Alerts January, 2016]. *U.S. Volcanoes and Current Activity Alerts*. Retrieved from <http://volcanoes.usgs.gov/index.html>
- West Virginia Department of Environmental Protection. (2016). *Dam Safety monitoring and Emergency Action Plans*. Retrieved from <http://www.dep.wv.gov/WWE/ee/ds/services/Pages/dseap.aspx>

- West Virginia Department of Environmental Protection. (2016). *West Virginia Definition of a Dam – Exemptions*. Retrieved from <http://www.dep.wv.gov/WWE/ee/ds/Documents/Definition%20of%20a%20Dam-v4.pdf>
- West Virginia Division of Forestry. (2016). [Illustration of summary of Spring Fire Season data in West Virginia March 14, 2016]. *Latest Forest Fire Report*. Retrieved from <http://www.wvforestry.com/Fire%20Report.pdf>
- West Virginia Division of Forestry. (2001) *Wildfire Control*. Retrieved from http://www.wvforestry.com/fire_prev.cfm?menucall=fire
- West Virginia Division of Homeland Security and Emergency Management. (2013). *West Virginia Statewide Standard Hazard Mitigation Plan Update* (Completed by Dewberry). Retrieved from <http://www.dhsem.wv.gov/MitigationRecovery/Pages/Hazard-Mitigation-Planning.aspx>
- West Virginia Geological & Economic Survey. (2014). [Geologic map of West Virginia depicting the geologic makeup of the region January, 2016]. *Geologic Maps of West Virginia*. Retrieved from <http://www.wvgs.wvnet.edu/www/maps/geomap.htm>
- West Virginia Geological & Economic Survey. (2007). *Homeowner's Guide to Geologic Hazards*. Retrieved from <http://www.wvgs.wvnet.edu/www/geohaz/geohaz3.htm>
- West Virginia Geological & Economic Survey. (2016). *Home Page*. Retrieved from <http://www.wvgs.wvnet.edu/>
- West Virginia Geological & Economic Survey. [Map depicts all underground and surface mining activity in the Mid-Ohio Valley Region]. *Underground and Surface Coal Mines*. Retrieved from http://www.wvgs.wvnet.edu/GIS/CBMP/all_mining.html
- West Virginia Geological and Economic Survey. (2016). [Map depicts Oil, Gas, and Combination wells located in the region]. *Oil and Gas Wells of West Virginia*. Retrieved from <http://ims.wvgs.wvnet.edu/WVOG/viewer.htm>

APPENDIX E: RISK ASSESSMENT DATA ANALYSIS

Population Density

	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood
Population	7,513	29,126	7,634	10,011	14,664	9,098	5,845	86,237
Area	279.25	464.35	130.1	451.99	483.56	256.29	232.51	366.26
	26.9	62.72	58.68	22.15	30.33	35.5	25.14	235.45
		26.9	0.5	1	1.5			1 0-49
		62.72	0.5	1.5	2			1.5 50-99
		58.68	0.5	1.5	2			2 100-149
		22.15	0.5	1	1.5			2.5 150-199
		30.33	0.5	1	1.5			3 200-249
		35.5	0.5	1	1.5			3.5 250-299
		25.14	0.5	1	1.5			4 300 =or <
		235.45	0.5	3	3.5			

The population of each County was divided by each County's total area to identify the County's population density.

Population Vulnerability

County	1990	2000	2010	2014 (Estimate)
Calhoun	7,885	7,582	7,627	7,513
Jackson	25,983	28,000	29,211	29,126
Pleasants	7,546	7,514	7,605	7,634
Ritchie	10,233	10,343	10,449	10,011
Roane	15,120	15,446	14,926	14,664
Tyler	9,796	9,592	9,208	9,098
Wirt	5,192	5,873	5,717	5,845
Wood	86,915	87,986	89,956	86,237
Mid-Ohio V	168,670	172,336	174,699	170,128

2014 census population projections for each county were divided by the total population for the region and multiplied to get the percentage.

2014			
County	Percent of Region's Population		Scale
Calhoun	4.42%	1	1 0-14
Jackson	17.12%	1.5	1.5 15-29
Pleasants	4.49%	1	2 30-44
Ritchie	5.88%	1	2.5 45-59
Roane	8.62%	1	3 60-74
Tyler	5.35%	1	3.5 75-89
Wirt	3.44%	1	4 90<
Wood	50.69%	2.5	

Recorded Natural Hazard Events

Drought					Scale
Calhoun	9	19	0.47	1.5	1 .01-.3
Jackson	15	19	0.79	2	1.5 .31-.6
Pleasants	9	19	0.47	1.5	2 .61-.9
Ritchie	9	19	0.47	1.5	2.5 .91-1.2
Roane	12	19	0.63	2	3 1.21-1.5
Tyler	9	19	0.47	1.5	3.5 1.51-1.8
Wirt	9	19	0.47	1.5	4 1.81-2.1
Wood	9	19	0.47	1.5	

Extreme Cold				
Calhoun	26	19	1.37	3
Jackson	26	19	1.37	3
Pleasants	27	19	1.42	3
Ritchie	27	19	1.42	3
Roane	26	19	1.37	3
Tyler	27	19	1.42	3
Wirt	27	19	1.42	3
Wood	27	19	1.42	3

The total number of recorded events was divided by the total number of years the event had been recorded. This data came from the NCDC database unless otherwise specified.

Excessive Heat				
Calhoun	19	19	1	2.5
Jackson	20	19	1.05	2.5
Pleasants	19	19	1	2.5
Ritchie	19	19	1	2.5
Roane	20	19	1.05	2.5
Tyler	19	19	1	2.5
Wirt	19	19	1	2.5
Wood	19	19	1	2.5

Flooding					
Calhoun	31	19	1.63	3.5	
Jackson	42	19	2.21	4	
Pleasants	19	19	1	2.5	1 .01-.3
Ritchie	27	19	1.42	3	1.5 .31-.6
Roane	39	19	2.05	4	2 .61-.9
Tyler	39	19	2.05	4	2.5 .91-1.2
Wirt	16	19	0.84	2	3 1.21-1.5
Wood	32	19	1.68	3.5	3.5 1.51-1.8
					4 1.81-2.1

Hail

Calhoun	27	60	0.45	1.5
Jackson	58	60	0.97	2.5
Pleasants	13	60	0.22	1
Ritchie	22	60	0.37	1.5
Roane	32	60	0.53	1.5
Tyler	21	60	0.35	1.5
Wirt	10	60	0.17	1
Wood	78	60	1.3	3

High Wind

Calhoun	55	60	0.92	2.5
Jackson	101	60	1.68	3.5
Pleasants	51	60	0.85	2
Ritchie	76	60	1.27	3
Roane	78	60	1.3	3
Tyler	63	60	1.05	2.5
Wirt	53	60	0.88	2
Wood	128	60	2.13	4

Heavy Rain

Calhoun	8	19	0.42	1.5
Jackson	11	19	0.58	1.5
Pleasants	5	19	0.26	1
Ritchie	8	19	0.42	1.5
Roane	11	19	0.58	1.5
Tyler	6	19	0.32	1.5
Wirt	5	19	0.37	1.5
Wood	7	19	0.36	1.5

Lightning

Calhoun		19	0	0
Jackson	1	19	0.05	1
Pleasants		19	0	0
Ritchie		19	0	0
Roane	1	19	0.05	1
Tyler		19	0	0
Wirt		19	0	0
Wood	8	19	0.42	1

Tornado

Calhoun		65	0	0
Jackson	2	65	0.03	1
Pleasants	2	65	0.03	1
Ritchie	1	65	0.02	1
Roane	1	65	0.02	1
Tyler	1	65	0.02	1
Wirt	1	65	0.02	1
Wood	8	65	0.12	1

Wildfire

Calhoun		19	0	1	
Jackson		19	0	1	
Pleasants		19	0	1	
Ritchie		19	0	1	0 if the even has not occurred
Roane	1	19	0.05	1	1 .01-.3
Tyler		19	0	1	1.5 .31-.6
Wirt		19	0	1	2 .61-.9
Wood		19	0	1	2.5 .91-1.2

Winter Weather

Calhoun	39	19	2.05	4	3 1.21-1.5
Jackson	35	19	1.84	4	3.5 1.51-1.8
Pleasants	32	19	1.68	3.5	4 1.81-2.1
Ritchie	40	19	2.1	4	
Roane	38	19	2	4	
Tyler	36	19	1.89	4	
Wirt	38	19	2	4	
Wood	33	19	1.74	3.5	

Earthquakes

Calhoun		65	0	0	earthquake center
Jackson	1	65	0.02	1	
Pleasants		65	0	0	
Ritchie		65	0	0	
Roane		65	0	0	
Tyler		65	0	0	
Wirt		65	0	0	
Wood	1	65	0.02	1	

Hurricane

nation hurricane center

Calhoun	5	164	0.03	1
Jackson	5	164	0.03	1
Pleasants	5	164	0.03	1
Ritchie	5	164	0.03	1
Roane	5	164	0.03	1
Tyler	5	164	0.03	1
Wirt	5	164	0.03	1
Wood	5	164	0.03	1

Land slides

Used major disaster declarations

Calhoun	9	18	0.5	1.5	0 if the even has not occurred
Jackson	10	18	0.55	1.5	1 .01-.3
Pleasants	3	18	0.17	1	1.5 .31-.6
Ritchie	7	18	0.39	1.5	2 .61-.9
Roane	10	18	0.55	1.5	2.5 .91-1.2
Tyler	8	18	0.44	1.5	3 1.21-1.5
Wirt	9	18	0.5	1.5	3.5 1.51-1.8
Wood	4	18	0.22	1	4 1.81-2.1

Annualized Property Damage

Hail	Total damage	years recor	yearly expense		
Calhoun	\$8,429.56	60	\$140.49	1	
Jackson	\$83,428.84	60	\$1,390.48	1	
Pleasants	\$3,021.25	60	\$50.35	1	
Ritchie	\$93,901.05	60	\$1,565.02	1	
Roane	\$9,097.37	60	\$151.62	1	1 \$0.00 - \$25,000.00
Tyler	\$21,654.28	60	\$360.90	1	1.5 \$25,000.01 - \$50,000.00
Wirt	\$36,352.30	60	\$605.87	1	2 \$50,000.01 - \$75,000.00
Wood	\$1,720,702.29	60	\$28,678.37	1.5	2.5 \$75,000.01 - \$100,000.00
					3 \$100,000.01 - \$125,000.00
					3.5 \$125,000.01 - \$150,000.00
					4 \$150,000.01 - \$175,000.00 or <
Tornado					
Calhoun		65	\$0.00	1	
Jackson	\$1,961,413.40	65	\$30,175.59	1.5	
Pleasants	\$656,867.87	65	\$10,105.66	1	
Ritchie	\$15,017.80	65	\$231.04	1	
Roane	\$0.00	65	\$0.00	1	
Tyler	\$116,994.45	65	\$1,799.91	1	
Wirt	\$81,521.60	65	\$1,254.18	1	
Wood	\$3,544,387.78	65	\$54,529.04	2	
Lightning					
Calhoun		19	\$0.00	0	
Jackson	29534.83	19	\$1,554.46	1	
Pleasants		19	\$0.00	0	
Ritchie		19	\$0.00	0	
Roane	13323.31	19	\$701.23	1	
Tyler		19	\$0.00	0	
Wirt		19	\$0.00	0	
Wood	304065.02	19	\$16,003.42	1	
High Wind					
Calhoun	\$1,186,224.23	60	\$19,770.40	1	1 \$0.00 - \$25,000.00
Jackson	\$4,435,669.70	60	\$73,927.83	2	1.5 \$25,000.01 - \$50,000.00
Pleasants	\$865,423.23	60	\$14,423.72	1	2 \$50,000.01 - \$75,000.00
Ritchie	\$2,122,857.27	60	\$35,380.95	1.5	2.5 \$75,000.01 - \$100,000.00
Roane	\$2,494,723.32	60	\$41,578.72	1.5	3 \$100,000.01 - \$125,000.00
Tyler	\$1,063,978.75	60	\$17,732.98	1	3.5 \$125,000.01 - \$150,000.00
Wirt	\$1,619,374.78	60	\$26,989.58	1.5	4 \$150,000.01 - \$175,000.00 or <
Wood	\$6,823,637.18	60	\$113,727.19	4	

The total amount of recorded property damage was first adjusted for inflation to the year 2015 and was then divided by the total number of years the event had been recorded in the NCDC database resulting in the annualized amount of property damaged caused by each hazard.

Extreme Cold/Wind Chill

Calhoun	\$45,053.41	19	\$2,371.23	1
Jackson	\$45,053.41	19	\$2,371.23	1
Pleasants	\$45,053.41	19	\$2,371.23	1
Ritchie	\$45,053.41	19	\$2,371.23	1
Roane	\$45,053.41	19	\$2,371.23	1
Tyler	\$45,053.41	19	\$2,371.23	1
Wirt	\$45,053.41	19	\$2,371.23	1
Wood	\$247,757.03	19	\$13,039.84	1

Flooding

Calhoun	\$3,319,029.83	19	\$174,685.78	4
Jackson	\$3,748,078.52	19	\$197,267.29	4
Pleasants	\$2,783,038.93	19	\$146,475.73	3.5
Ritchie	\$4,494,817.51	19	\$236,569.34	4
Roane	\$16,356,529.43	19	\$860,869.97	4
Tyler	\$4,076,290.44	19	\$214,541.60	4
Wirt	\$3,454,125.55	19	\$181,796.08	4
Wood	\$11,843,683.20	19	\$623,351.75	4

Heavy Rain

Calhoun		19		1
Jackson	\$32,037.98	19	\$1,686.21	1
Pleasants		19		1
Ritchie	\$9,553.12	19	\$502.80	1
Roane	\$22,095.68	19	\$1,162.93	1
Tyler		19		1
Wirt		19		1
Wood		19		1

- 0 if the event has not occurred
- 1 \$0.00 - \$25,000.00
- 1.5 \$25,000.01 - \$50,000.00
- 2 \$50,000.01 - \$75,000.00
- 2.5 \$75,000.01 - \$100,000.00
- 3 \$100,000.01 - \$125,000.00
- 3.5 \$125,000.01 - \$150,000.00
- 4 \$150,000.01 - \$175,000.00 or <

Winter Weather

Calhoun	\$542,873.94	19	\$28,572.31	1.5
Jackson	\$4,536,095.13	19	\$238,741.85	4
Pleasants	\$75,454.63	19	\$3,971.30	1
Ritchie	\$86,502.47	19	\$4,552.76	1
Roane	\$2,631,510.93	19	\$138,658.47	3.5
Tyler	\$75,454.63	19	\$3,971.30	1
Wirt	\$542,873.94	19	\$28,572.31	1.5
Wood	\$128,813.59	19	\$6,779.66	1
	\$8,619,579.26		\$453,819.96	

Annualized Crop Damage

Hail			
Calhoun			
Jackson			
Pleasants			
Ritchie			
Roane	94 5000	\$7,996.52	1
Tyler			
Wirt	98 25000	\$36,352.30	1.5
Wood			
		\$44,348.82	

Flooding			
Calhoun			
Jackson	97 25000	\$36,918.54	1.5
Pleasants			
Ritchie			
Roane			
Tyler			
Wirt	97 5000	\$7,383.71	1
Wood			
		\$44,302.25	

The total amount of crop damage caused by each natural hazard as identified in the NCDC database was identified, adjusted for inflation to the year 2015 and then divided by the total number of years the event had been recorded resulting the annualized amount of crop damage caused by each natural hazard.

- 1 \$0.00 - \$25,000.00
- 1.5 \$25,000.01 - \$50,000.00
- 2 \$50,000.01 - \$75,000.00
- 2.5 \$75,000.01 - \$100,000.00
- 3 \$100,000.01 - \$125,000.00
- 3.5 \$125,000.01 - \$150,000.00
- 4 \$150,000.01 - \$175,000.00 or <

Deaths and Injuries

	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood	Ranking
Drought									1
Excessive Heat									1
Extreme Cold/Wind									
Chill									
Flooding	1 Death	1d 2i			2 D 1l				19
Hail	3i								60
Heavy Rain				4D					
Heavy Wind		11i			2i			16i	60
Lightning								5i	
Tornado			3i					1d 11i	
Wildfire									0.48
Winter Weather									0.26
									0.23

The number of deaths or injuries caused by each natural hazard identified in the NCDC database were identified by each county. If a death or injury occurred in a county as a result of a natural hazard, the county scored 4 points. If there were not any recorded deaths or injuries recored the county scored a 1 for that hazard.

Geographic Extent

earth quake USGS two earthquakes in the region, wood county 1974 and bottom of Jackson county 2014

High Wind (and Hail and Lighting) NCDC Storm Events Data, NOAA's National Weather Service Storm Prediction Center

Tornado

Geographic extent required other data sources for each natural hazard. Specifics can be found in Chapter 3 in each hazard's risk assessment section. A full list of data sources is also included in Appendix D

Flooding WV Flood Tool

Coastal Erosion/Coastal Storm

According to NCDC, NOAA definitions, these events happen in Coastal areas which are defined as "Those portions of coastal land zones (Coastal county/parish) adjacent to the waters and bays of the oceans." Farther inland these events become floods and flash foods.

Due to the Geographic location of the Mid-Ohio Valley, over 200 miles from any coastal area this storm event does not happen in our region.

Tsunami

"A series of very long waves generated by any rapid, large-scale disturbance of the sea (underwater earthquake, landslide, or volcanic eruption) resulting in a fatality, injury or damage."

[p. 87](#)

NCDC, NOAA data

Due to the Geographic location of the Mid-Ohio Valley, over 200 miles from any coastal area this storm event does not happen in our region.

Wildfire

In the Spring of 2015, wildfires in the MOV accounted for 5% of the total fires in WV. And 127 acres were burned. 127 acres of the extended region's 3,322.53 acres were burned, meaning 3.82% of the region. These numbers were se to a scale

- 1= 0-10
- 1.5= 11-20
- 2= 21-30
- 2.5= 31-40
- 3= 41-50
- 3.5= 51-60
- 4= 60 <

Volcano

According to the USGS US Volcanoes and Current Activity Alerts there are no volcanoes in the Mid Ohio Valley Region or the entire state of West Virginia.

Land Slide	USGS Landslide Overview Map Of the Conterminous U.S.	
Calhoun	High (Greater than 15% or area involved	1=0 4
Jackson	High (Greater than 15% or area involved	2 low less than 1.5% 4
Pleasants	High (Greater than 15% or area involved	3= Moderate 1.5%-15% of area involved 4
Ritchie	High (Greater than 15% or area involved	4= Greater than 15% involved 4
Roane	High (Greater than 15% or area involved	4
Tyler	High (Greater than 15% or area involved	4
Wirt	High (Greater than 15% or area involved	4
Wood	High (Greater than 15% or area involved	4

Earthquake	USGS Earthquake hazards program	
Calhoun		1.5
Jackson		1.5 1= 0-8
Pleasants		1 1.5= 8-16
Ritchie		1 2=16-24
Roane		1.5 2.5=24-32
Tyler		1 3=32-40
Wirt		1.5 3.5=40-48
Wood		1 4=8<

Land subsidence (karst)		
	This MOV is not located on top of one of the US's principal karst Aquifers which reduces the risk of this type of event. The closest aquifer is the Valley Ridge, Piedmont, and Blue Ridge aquifer area which is located in eastern West Virginia.	
	Karst is a terrain with distinctive landforms and hydrology created from the dissolution of soluble rocks, principally limestone and dolomite. Karst terrain is characterized by springs, caves, sinkholes, and a unique hydrogeology that results in aquifers that are highly productive but extremely vulnerable to contamination. In the United States, about 40% of the groundwater used for drinking comes from karst aquifers.	

avalanches

Most occur on slopes of 30-45 degrees

The MOV is located on the Appalachian plateau and does not have the required physical characteristics to create avalanches.

Expansive Soils

Counties in the MOV appear to have "areas are underlain by soils with little to no clays with swelling potential" and "less than 50 percent of these areas are underlain by soils with abundant clays of slight to moderate swelling potential."

Dam Failure

Calhoun	0	0 to 1
Jackson	4	1 2 to 3
Pleasants	1	1.5 4 to 5
Ritchie	2.5	2 6 to 7
Roane	2.5	2.5 8 to 9
Tyler	1	3 10 to 11
Wirt	0	3.5 12 to 13
Wood	2	4 14-15

Hurricane

According to research from the national hurricane center around 5 hurricanes have made a path through the MOV since 1851. However by the time they reach this far inland they have weaken significantly. It is for this reason that all county have been ranked .5 because the possibility exists however it is very rare. Inland offices which experience high winds/damage associated with tropical cyclones will document such winds under the Tropical Storm or hurricane/ Typhoon category, as appropriate, not under the High Wind category

Excessive heat

These standards/thresholds are set locally. Excessive Heat results from a combination of high temperatures (well above normal) and high humidity. These events take place in larger areas thus when it takes place in one county it usually affects multiple counties.

Drought

From 2010-2015 the drought extent of a drought in the right has not gotten more than abnormally dry. This is based on the source provided by climate.gov. This information was set to scale to account for the geographic extent of droughts in the mid-Ohio valley region.

Calhoun

d1

2

Jackson

d2

3

Pleasants

d1

2

Ritchie

d1

2

Roane

d2

3

Tyler

d1

2

Wirt

d2

3

Wood

d2

3

saved the picture from the national hurricane center

* NOAA pdf definitions

1

1.5

2

2.5

3

3.5

4

164 years there have been 5

1

1.5

2

2.5

3

3.5

0

1

2

3

4

No Drought

Abnormally dry

Moderate Drought

Severe Drought

Extreme Drought

Exceptional Drought

3-Sep-02

2

3

2

2

3

2

3

3

3

Tornado

The average number of tornados per 10,000 square miles in west Virginia from 1991-2010 is .9

0-2	1
3-4=	1.5
5-6=	2
7-8=	2.5
9-10=	3
11-12=	3.5
13-14	4

Natural resources extraction

Source is the WV Geological and Economic Survey

Calhoun	4
Jackson	3
Pleasants	3
Ritchie	4
Roane	2
Tyler	2
Wirt	1
Wood	1

used the map detailing oil and gas wells, there were 1= 0-1/4 no per square mile coverage figures Available this 1.5= was done by analyzing by sight. For example if the 2= 1/4-1/2 county was 3/4-4/4 covered by oil and gas wells then 2.5= it received a ranking of 4. 3=1/2-3/4 3.5= 4=3/4-4/4

According to the WV Geological data map used in this study there are no existing coal mines in the region.

Lightning

NOAA's Severe Weather Data Inventory

This data set lists lightening strikes and storm cells that have occurred since 1996.

They may not be included in the storm events database because of their lesser magnitude. However there is a mapping feature that lists all of the lighting strikes.

Strom cells are present over the years across all of the counties. Therefore the geographic extent for each county has been ranked 4 before being weighted for each county.

Hail

NOAA's Severe Weather Data Inventory

This data set lists filtered hail signatures and also all hail signatures that have occurred since 1996. They may not be included in the storm events database because of their lesser magnitude. However there is a mapping feature that lists all of the lightning strikes. Storm cells are present over the years across all of the counties. Therefor the geographic extent for each county has been ranked 4 before being weighted for each county.

Strong Wind

NOAA's Severe Weather Data Inventory

This data set lists filtered storm Cells that have occurred since 1996. They may not be included in the storm events database because of their lesser magnitude. However there is a mapping feature that lists all of the lightning strikes. Strom cells are present over the years across all of the counties. Therefor the geographic extent for each county has been ranked 4 before being weighted for each county.

These storm cells include those contained Thunderstorm Winds.

Heavy Rain

NOAA's Severe Weather Data Inventory

Unusually Large amount of rain which does not cause a flash flood or flood, but causes damage, roof collapse or other human/economic impact.

	Average annual precipitation	
Calhoun	1000 mm, 40 inches	4
Jackson	1001 mm, 40 inches	3.5
Pleasants	1002 mm, 40 inches	3
Ritchie	1003 mm, 40 inches	2.5
Roane	1004 mm, 40 inches	2
Tyler	1005 mm, 40 inches	1.5
Wirt	1006 mm, 40 inches	
Wood	1007 mm, 40 inches	

Winter Weather

Flooding

Calhoun	Grantsville
Jackson	Ravenswood
	Ripley
Pleasants	Belmont
	St. Mary's
Ritchie	Auburn
	Cairo
	Ellenboro
	Harrisville
	Pennsboro
	Pullman
Roane	Reedy
	Spencer
	Walton
Tyler	Friendly
	Middlebourne
	Paden City
	Sistersville
Wirt	Elizabeth
Wood	North Hills
	Parkersburg
	Williamstown
	Vienna

WV Flood Tool

yes
yes
yes
yes
yes
yes
yes
yes
no
yes
yes
yes
yes
no
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes

Roadways

yes
yes
yes
yes
yes
yes
yes
yes
yes

Local Input

One Point if the hazard is mention in a public meeting, two points if mentioned as biggest concern, one point if mentioned as second biggest concern in online survey.

Public Meeting Questions:

What Hazards affect your County?

	Flooding	landslides	Winter Weatl	Wind
16-Feb Calhoun	1	1	1	1
21-Mar Jackson	1	1	1	1
28-Jan Pleasants	1	1	1	1
23-Feb Ritchie	1	1		
17-Feb Roane	1	1		1
3-Mar Tyler	1	1	1	
1-Mar Wirt	1	1	1	1
10-Feb Wood	1		1	1

Identified in online citizen Survey as the Biggest Concern

	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood
Drought								2
Extreme Cold/Wind Chill			2		2	2		2
Excessive Heat			2					
Flooding	2	2	2		2	2	2	2
Hail								
High Wind	2	2	2		2	2	2	2
Heavy Rain			2		2	2	2	2
Lightning						2		
Tornado	2	2	2		2			2
Wildfire						2		2
Winter We	2	2	2		2	2	2	2
Landslide	2							2
Earthquakes								2

Identified as Second Biggest concern in online citizen survey

	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood
Drought								1
Extreme Cc	1					1		1
Excessive Heat								1
Flooding	1		1		1	1	1	1
Hail								
High Wind	1	1	1		1	1	1	1
Heavy Rain	1	1	1		1	1		1
Lightning	1							1
Tornado	1	1	1					1
Wildfire						1		1
Winter We	1	1	1		1	1	1	1
Landslides	1							1

Analysis

	Population Density	Population Vulnerability
Calhoun	1.5	1
Jackson	2	2
Pleasants	2	1
Ritchie	1.5	1
Roane	1.5	1.5
Tyler	1.5	1
Wirt	1.5	1
Wood	3.5	4

Hail	Population	Population Number of Property D.	Crop Dama Deaths and Geographic Exten	Local Input	Total
Calhoun	1	1.5	1	4	12.5
Jackson	1.5	2.5	1	4	14.5
Pleasants	1.5	1	1	4	12.5
Ritchie	1	1.5	1	4	12.5
Roane	1	1.5	1	4	13.5
Tyler	1	1.5	1	4	12.5
Wirt	1	1	1.5	4	13.5
Wood	3	3	1.5	4	18

Drought	Population	Population Number of Property D.	Crop Dama Deaths and Geographic Exten	Local Input	Total
Calhoun	1	1.5	0	2	6.5
Jackson	1.5	2	0	3	9
Pleasants	1.5	1.5	0	2	7
Ritchie	1	1.5	0	2	6.5
Roane	1	2	0	3	8
Tyler	1	1.5	0	2	6.5
Wirt	1	1.5	0	3	7.5
Wood	3	2.5	1.5	3	14

Extreme Cold	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	3	1	0	1	12
Jackson	1.5	3	1	0	1	12
Pleasants	1.5	3	1	0	1	13.5
Ritchie	1	3	1	0	1	13
Roane	1	3	1	0	1	14
Tyler	1	3	1	0	1	11
Wirt	1	3	1	0	1	11
Wood	3	3	1	0	1	17.5

Excessive Heat	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	2.5	0	0	1	9.5
Jackson	1.5	2.5	0	0	1	10.5
Pleasants	1.5	2.5	0	0	1	12
Ritchie	1	2.5	0	0	1	9.5
Roane	1	2.5	0	0	1	9.5
Tyler	1	2.5	0	0	1	9.5
Wirt	1	2.5	0	0	1	9.5
Wood	3	2.5	0	0	1	14

Flooding	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	3.5	4	0	4	20.5
Jackson	1.5	4	4	1.5	3	22.5
Pleasants	1.5	2.5	3.5	0	3	19.5
Ritchie	1	3	4	0	3	20
Roane	1	4	4	0	3	21
Tyler	1	4	4	0	3	21
Wirt	1	2	4	1	3	20
Wood	3	3.5	4	0	3	24

High Wind	Population	Number of Property D: Crop Dama Deaths	Geographic Exten	Local Input			
Calhoun	1	2.5	1	0	4	4	17.5
Jackson	1.5	3.5	2	0	4	4	20.5
Pleasants	1.5	2	1	0	4	4	17.5
Ritchie	1	3	1.5	0	4	4	17.5
Roane	1	3	1.5	0	4	4	18.5
Tyler	1	2.5	1	0	4	4	16.5
Wirt	1	2	1.5	0	4	4	16.5
Wood	3	4	4	0	4	4	24.5

Heavy Rain	Population	Number of Property D: Crop Dama Deaths	Geographic Exten	Local Input			
Calhoun	1	1.5	0	0	4	3	11.5
Jackson	1.5	1.5	1	0	4	3	13.5
Pleasants	1.5	1	0	0	4	3	13.5
Ritchie	1	1.5	1	0	4	3	14.5
Roane	1	1.5	1	0	4	3	14.5
Tyler	1	1.5	0	0	4	3	12.5
Wirt	1	1.5	0	0	4	3	12.5
Wood	3	2.5	0	0	4	3	17

Lightening	Population	Number of Property D: Crop Dama Deaths	Geographic Exten	Local Input			
Calhoun	1	0	0	0	4	4	11
Jackson	1.5	1	1	0	4	4	13
Pleasants	1.5	0	0	0	4	4	10.5
Ritchie	1	0	0	0	4	4	10
Roane	1	1	1	0	4	4	14
Tyler	1	0	0	0	4	4	10
Wirt	1	0	0	0	4	4	11
Wood	3	2.5	1	1	4	4	16.5

Tornado	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input
Calhoun	1	0	1	4	3
Jackson	1.5	1	1.5	4	3
Pleasants	1.5	1	1	4	3
Ritchie	1	1	1	4	2
Roane	1	1	1	4	0
Tyler	1	1	1	4	0
Wirt	1	1	1	4	0
Wood	3	1	2	4	3

Wildfire	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input
Calhoun	1	0	0	4	0
Jackson	1.5	0	0	4	0
Pleasants	1.5	0	0	4	0
Ritchie	1	0	0	4	0
Roane	1	1	0	4	3
Tyler	1	0	0	4	0
Wirt	1	0	0	4	1
Wood	3	0	0	4	3

Winter Weather	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input
Calhoun	1	4	1.5	1	3
Jackson	1.5	4	4	1	4
Pleasants	1.5	3.5	1	1	4
Ritchie	1	4	1	1	3
Roane	1	4	3.5	1	3
Tyler	1	4	1	1	4
Wirt	1	4	1.5	1	3
Wood	3	3.5	1	1	3

Coastal Erosion/C	Population	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input
Calhoun	1	1	0	0	1	0
Jackson	1.5	1.5	0	0	1	0
Pleasants	1.5	1	0	0	1	0
Ritchie	1	1	0	0	1	0
Roane	1	1	0	0	1	0
Tyler	1	1	0	0	1	0
Wirt	1	1	0	0	1	0
Wood	3	2.5	0	0	1	0

3

4

3.5

3

3

3

3

3

6.5

Tsunami	Population	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input
Calhoun	1	1	0	0	1	0
Jackson	1.5	1.5	0	0	1	0
Pleasants	1.5	1	0	0	1	0
Ritchie	1	1	0	0	1	0
Roane	1	1	0	0	1	0
Tyler	1	1	0	0	1	0
Wirt	1	1	0	0	1	0
Wood	3	2.5	0	0	1	0

3

4

3.5

3

3

3

3

3

6.5

Volcanoes	Population	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input
Calhoun	1	1	0	0	1	0
Jackson	1.5	1.5	0	0	1	0
Pleasants	1.5	1	0	0	1	0
Ritchie	1	1	0	0	1	0
Roane	1	1	0	0	1	0
Tyler	1	1	0	0	1	0
Wirt	1	1	0	0	1	0
Wood	3	2.5	0	0	1	0

3

4

3.5

3

3

3

3

3

6.5

Landslides	Population	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	1	1.5	0	1	4	12.5
Jackson	1.5	1.5	1.5	0	1	4	10.5
Pleasants	1.5	1	1	0	1	4	9.5
Ritchie	1	1	1.5	0	1	4	9.5
Roane	1	1	1.5	0	1	4	9.5
Tyler	1	1	1.5	0	1	4	9.5
Wirt	1	1	1.5	0	1	4	12.5
Wood	3	2.5	1	0	1	4	11.5

Earthquakes	Population	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	1	0	0	1	1.5	4.5
Jackson	1.5	1.5	1	0	1	1.5	6.5
Pleasants	1.5	1	0	0	1	1	4.5
Ritchie	1	1	0	0	1	1	4
Roane	1	1	0	0	1	1.5	4.5
Tyler	1	1	0	0	1	1	4
Wirt	1	1	0	0	1	1.5	4.5
Wood	3	2.5	1	0	1	1	10.5

Land subsidence	Population	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	1	0	0	1	2	5
Jackson	1.5	1.5	0	0	1	2	6
Pleasants	1.5	1	0	0	1	2	5.5
Ritchie	1	1	0	0	1	2	5
Roane	1	1	0	0	1	2	5
Tyler	1	1	0	0	1	2	5
Wirt	1	1	0	0	1	2	5
Wood	3	2.5	0	0	1	2	8.5

Avalanche	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	0	0	1	0	3
Jackson	1.5	0	0	1	0	4
Pleasants	1.5	0	0	1	0	3.5
Ritchie	1	0	0	1	0	3
Roane	1	0	0	1	0	3
Tyler	1	0	0	1	0	3
Wirt	1	0	0	1	0	3
Wood	3	2.5	0	1	0	6.5

Expansive Soils	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	0	0	1	0	3
Jackson	1.5	0	0	1	0	4
Pleasants	1.5	0	0	1	0	3.5
Ritchie	1	0	0	1	0	3
Roane	1	0	0	1	0	3
Tyler	1	0	0	1	0	3
Wirt	1	0	0	1	0	3
Wood	3	2.5	0	1	0	6.5

Dam Failure	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten	Local Input	
Calhoun	1	0	0	1	0	3
Jackson	1.5	0	0	1	4	8
Pleasants	1.5	0	0	1	1	4.5
Ritchie	1	0	0	1	2.5	5.5
Roane	1	0	0	1	2.5	5.5
Tyler	1	0	0	1	1	4
Wirt	1	0	0	1	0	3
Wood	3	2.5	0	1	2	8.5

Hurricane	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten:	Local Input		
Calhoun	1	1	0	1	2	0	6
Jackson	1.5	1	0	1	2	0	7
Pleasants	1.5	1	0	1	2	0	6.5
Ritchie	1	1	0	1	2	0	6
Roane	1	1	0	1	2	0	6
Tyler	1	1	0	1	2	0	6
Wirt	1	1	0	1	2	0	6
Wood	3	2.5	1	1	2	0	9.5

Natural Resource	Population	Number of Property D.	Crop Dama Deaths	and Geographic Exten:	Local Input		
Calhoun	1	0	0	1	4	0	7
Jackson	1.5	0	0	1	3	0	7
Pleasants	1.5	0	0	1	3	0	6.5
Ritchie	1	0	0	1	4	0	7
Roane	1	0	0	1	2	0	5
Tyler	1	0	0	1	2	0	5
Wirt	1	0	0	1	1	0	4
Wood	3	2.5	0	1	1	0	7.5

Eliminated 0-9
low 9.5-11.5
Medium - L 12.0-14.0
Medium 14.5-16.5
Medium - H 17-19
High 19.5+

* * *

	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood	
Natural Haza									
Avalanche	3	4	3.5	3	3	3	3	6.5	29
Coastal Ero	3	4	3.5	3	3	3	3	6.5	29
Dam Failur	3	8	4.5	5.5	5.5	4	3	8.5	42
Drought	6.5	9	7	6.5	8	6.5	7.5	14	65
Earthquake	4.5	6.5	4.5	4	4.5	4	4.5	10.5	43
Excessive H	9.5	10.5	12	9.5	9.5	9.5	9.5	14	84
Expansive S	3	4	3.5	3	3	3	3	6.5	29
Extreme Co	12	12	13.5	13	14	11	11	17.5	104
Flooding	20.5	22.5	19.5	20	21	21	20	24	168.5
Hail	12.5	14.5	12.5	12.5	13.5	12.5	13.5	18	109.5
Heavy Rain	11.5	13.5	13.5	14.5	14.5	12.5	12.5	17	109.5
High Wind	17.5	20.5	17.5	17.5	18.5	16.5	16.5	24.5	149
Hurricane	6	7	6.5	6	6	6	6	9.5	53
Land Subsid	5	6	5.5	5	5	5	5	8.5	45
Landslides	12.5	10.5	9.5	9.5	9.5	9.5	12.5	11.5	85
Lightening	11	13	10.5	10	14	10	11	16.5	96
Natural Res	7	7	6.5	7	5	5	4	7.5	49
Tornado	11	13.5	12.5	11	9	9	9	16.5	91.5
Tsunami	3	4	3.5	3	3	3	3	6.5	29
Volcanos	3	4	3.5	3	3	3	3	6.5	29
Wildfire	10	11	10.5	10	14	10	11	16.5	93
Winter We	15.5	20	16	15	17.5	16	15.5	18	133.5

* indicates that we need a map showing the risk level in each county

APPENDIX F: ONLINE CITIZEN SURVEY QUESTIONS



2016 Mid-Ohio Valley Public Risk Reduction Survey

Please give your input to the formation of the 2016 Regional Hazard Mitigation Plan!

Thank you for participating in our survey. Your feedback is important in our understanding of how residents of your county think about, plan for, and react to natural hazards and weather emergencies. Working together, citizens, elected officials, and local, state and federal agencies can make choices and investments aimed at reducing the public and private costs of disasters. Certain federal funding will be directed toward Hazard Mitigation projects around West Virginia, but those projects must be included in the plan to be eligible. Survey responses are anonymous, however if you would like to be contacted with further information about opportunities to review or comment on the draft plan for your community please provide contact information in the last question of this survey. Thank you again for your time and thoughts in strengthening hazard mitigation efforts in our region.



2016 Mid-Ohio Valley Public Risk Reduction Survey

*** 1. In which county do you reside?**

- Calhoun
- Jackson
- Pleasants
- Ritchie
- Roane
- Tyler
- Wirt
- Wood
- Other (please specify)

2. Have you ever experienced or been impacted by a disaster?

- Yes
- No

If "Yes" then explain.

3. How concerned are you about the possibility of your community being impacted by a disaster?

- Extremely concerned
- Somewhat concerned
- Not concerned

4. Please select the one hazard you think is the highest threat to your neighborhood:

- Drought
- Extreme Cold
- Excessive Heat
- Flooding
- Hail
- High Wind
- Heavy Rain
- Lightning
- Tornado
- Wildfire
- Winter Weather
- Landslide

5. Please select the one hazard you think is the second highest threat to your neighborhood:

- Drought
- Extreme Cold
- Excessive Heat
- Flooding
- Hail
- High Wind
- Heavy Rain
- Lightning
- Tornado
- Wildfire
- Winter Weather
- Landslide

6. Is there another hazard not listed above that you think is a wide-scale threat to your neighborhood?

- Yes
- No

If "Yes", please explain.

7. Would you have concerns, in the case of a disaster, about the accessibility, safety, or viability of a critical facility (hospital, 911 center, school, nursing home, medical facility, EMS, fire department, police department, emergency shelter) which serves your county/neighborhood?

- Yes
- No

If "Yes", please specify and explain your concern.

8. Is your home located in a floodplain?

- Yes
- No
- I don't know.

9. Do you have flood insurance?

- Yes
- No
- I don't know.

10. If you do not have flood insurance, why not?

- Not located in a floodplain
- Too expensive
- Not necessary because it never floods
- Not necessary because my home is elevated or otherwise protected
- Never really considered it
- Other (please specify)

11. Have you taken any actions to make your home or neighborhood more resistant to hazards?

Yes

No

If "Yes", please explain.

12. What is your level of disaster preparedness at your residence? (consider you and your family's needs for medicine, food, water, heat, and emergency communication)

Very Prepared

Somewhat Prepared

Unprepared

13. When you think of the natural hazards you face, or most likely would face where you live, what types of projects or steps do you feel your local government could take to reduce or eliminate the risk of hazard damages in your neighborhood?

14. Are there any specific concerns or issues you can identify related to risk reduction and hazard mitigation activities in your neighborhood or community (i.e. cost to taxpayers or local government, increased utility bills, loss of housing or historical structures, endangering or changing natural habitats, interference with private property, etc.)

15. A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each one is for your community to consider pursuing.

Very Important

Somewhat Important

Not Important

Prevention -
Regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.

Property Protection -
Actions that involve the modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, or protecting critical components like A/C or heat.

Natural Resource Protection - Actions that help in minimizing hazard losses by restoring or keeping the protective functions of nature. Examples include: floodplain protection, tree and habitat preservation, slope stabilization, and riparian buffers.

Structural Projects -
Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, retention basins, channel modification, retaining walls and storm sewers.

Very Important

Somewhat Important

Not Important

Emergency Services -
Actions that protect
people and property
during and
immediately after a
hazard event.
Examples include
warning systems,
evacuation planning,
emergency response
training, and protection
of critical facilities or
systems.

Public Education and
Awareness - Actions to
inform citizens about
hazards and
techniques they can
use to protect
themselves and their
property. Examples
include outreach
projects, school
education programs,
library materials and
demonstration events.

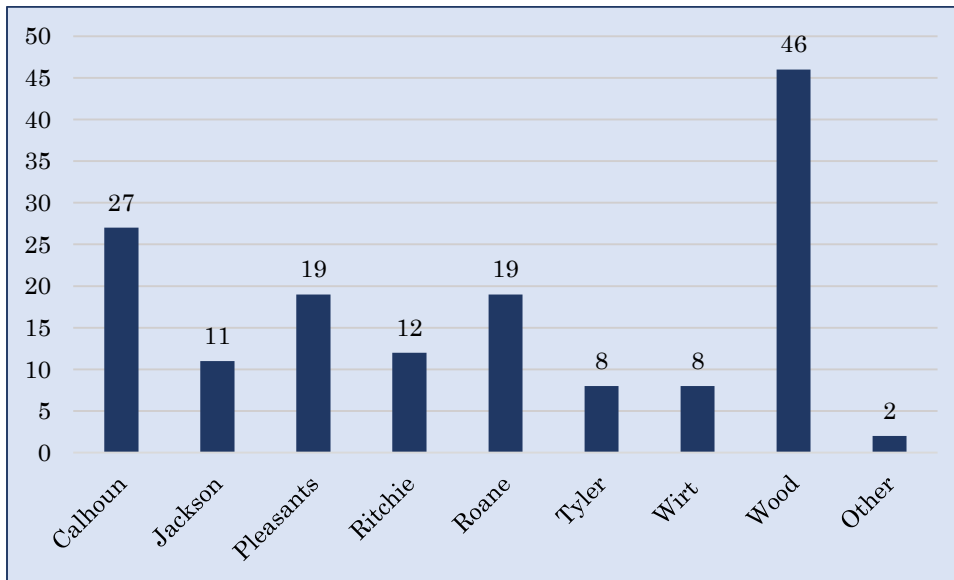
16. If you would like to be notified of upcoming meetings, new surveys, or workshops related to the Mid-Ohio Valley Regional Hazard Mitigation Plan, please leave your name, email, and phone number. Thank you for your time.

APPENDIX G: CITIZEN SURVEY RESULTS SUMMARY

This appendix includes summary statistics gathered through the online citizen survey. This summary analyzes results from all 152 survey responses and covers only the questions with quantifiable responses.

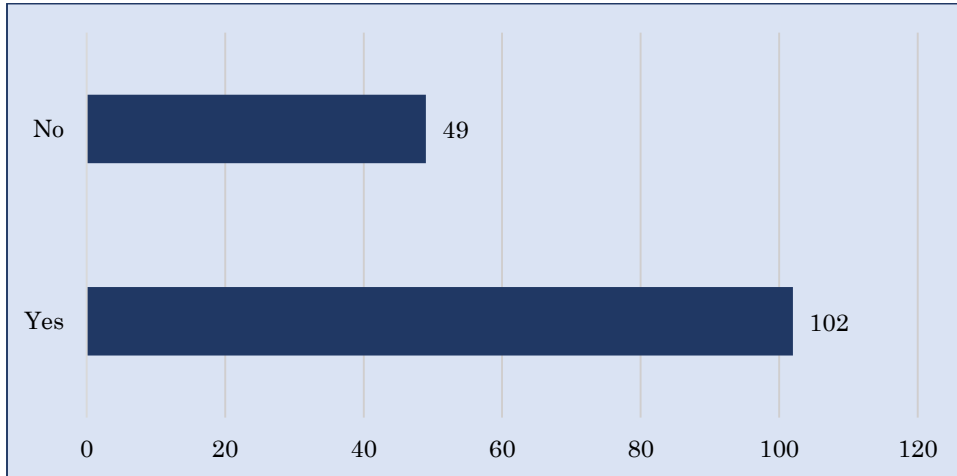
Question 1:

In what County do you reside?



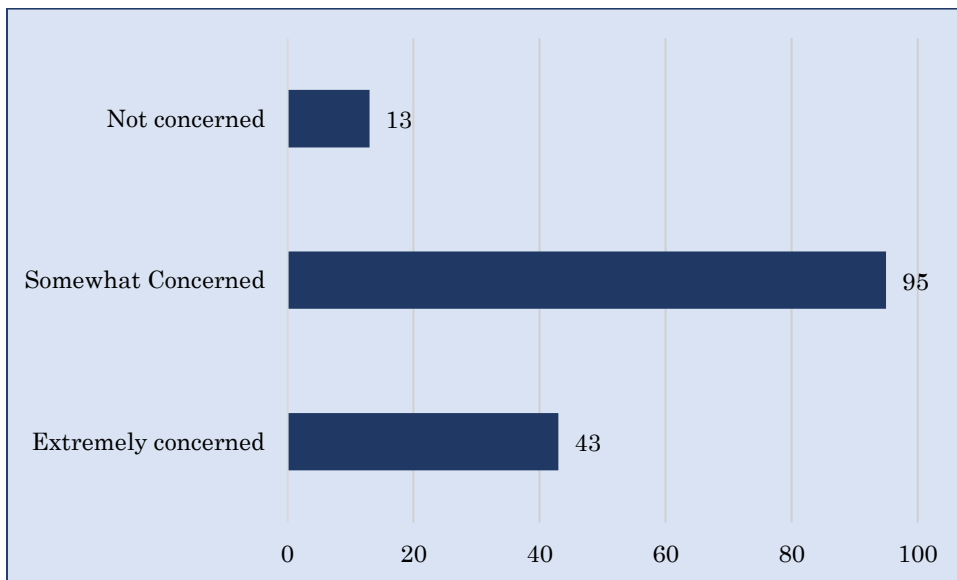
Question 2:

Have you ever experienced or been impacted by a disaster?



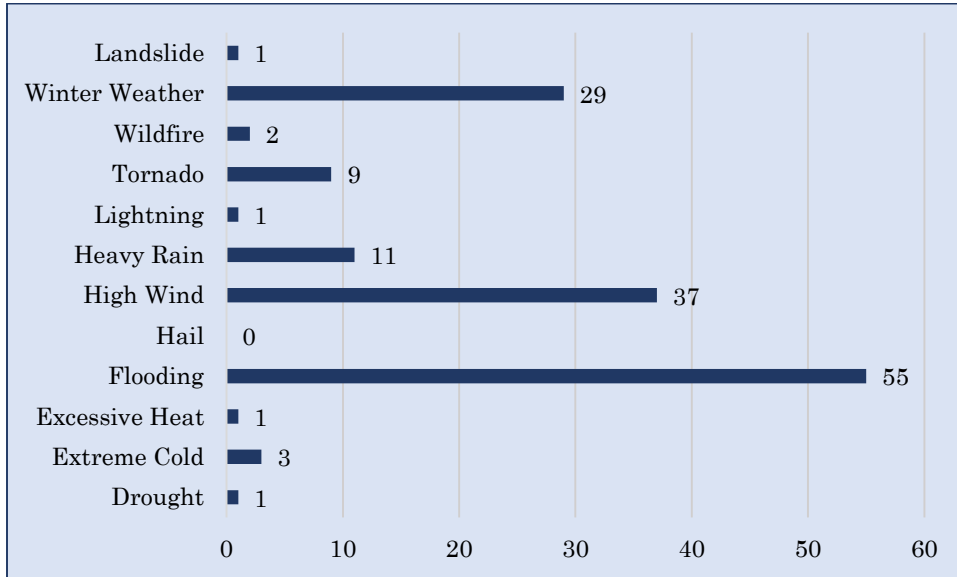
Question 3:

How concerned are you about the possibility of your community design impacted by a disaster?



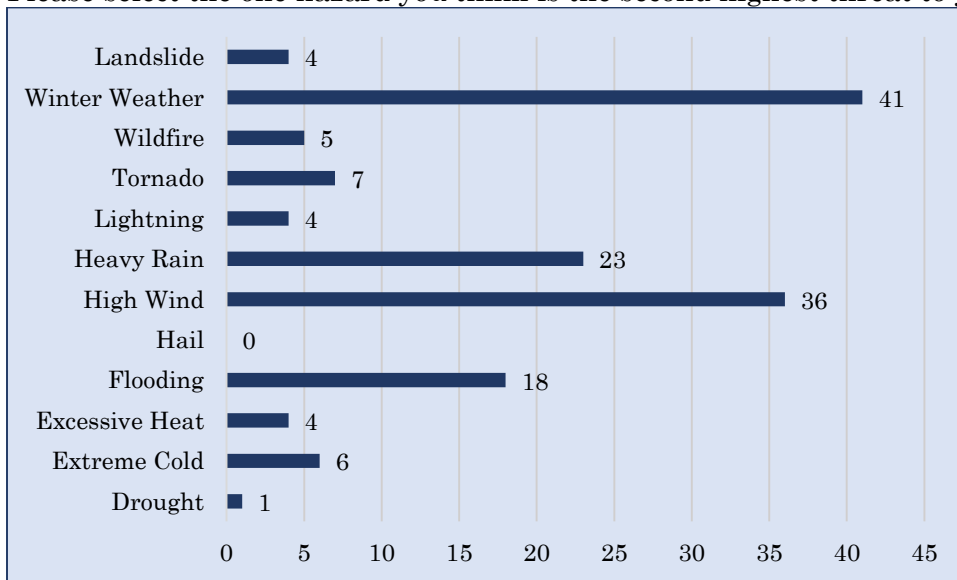
Question 4:

Please select the one hazard you think is the highest threat to your neighborhood?



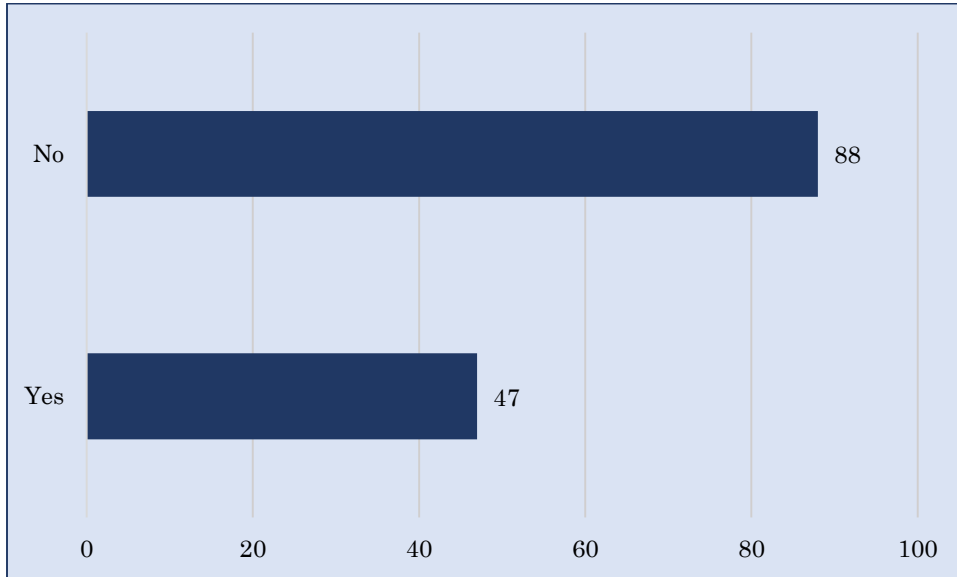
Question 5:

Please select the one hazard you think is the second highest threat to your neighborhood?



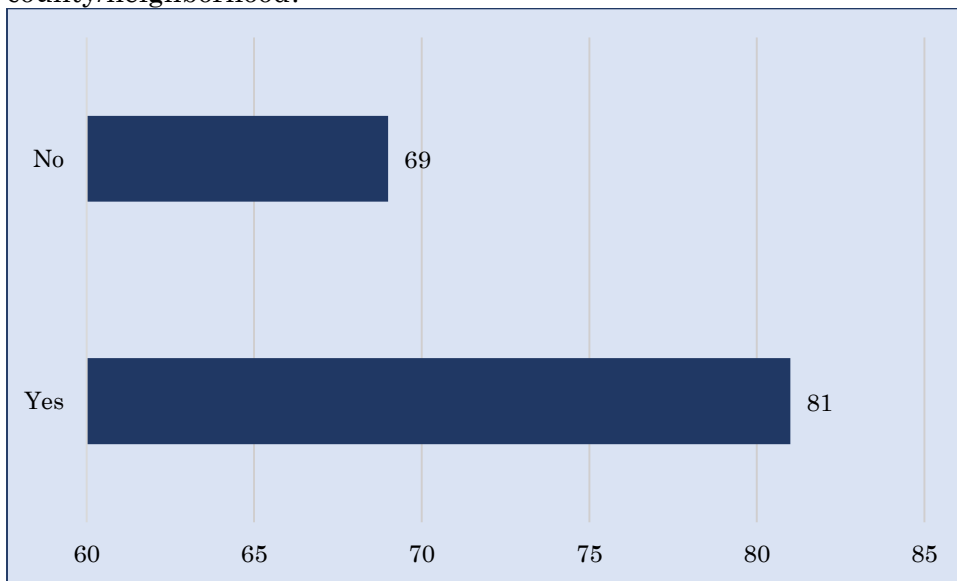
Question 6:

Is there another hazard not listed above that you think is a wide-scale threat to your neighborhood?



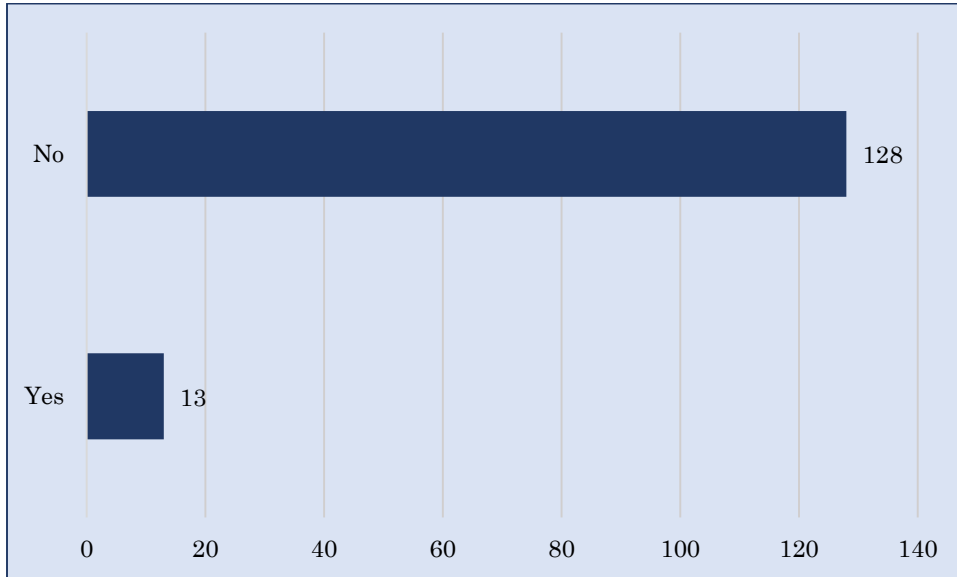
Question 7:

Would you have concerns, in the case of a disaster, about the accessibility, safety, or viability of a critical Facility (hospital, 911 center, school, nursing home, medical facility, EMS, fire department, police department, emergency shelter) which serves your county/neighborhood?



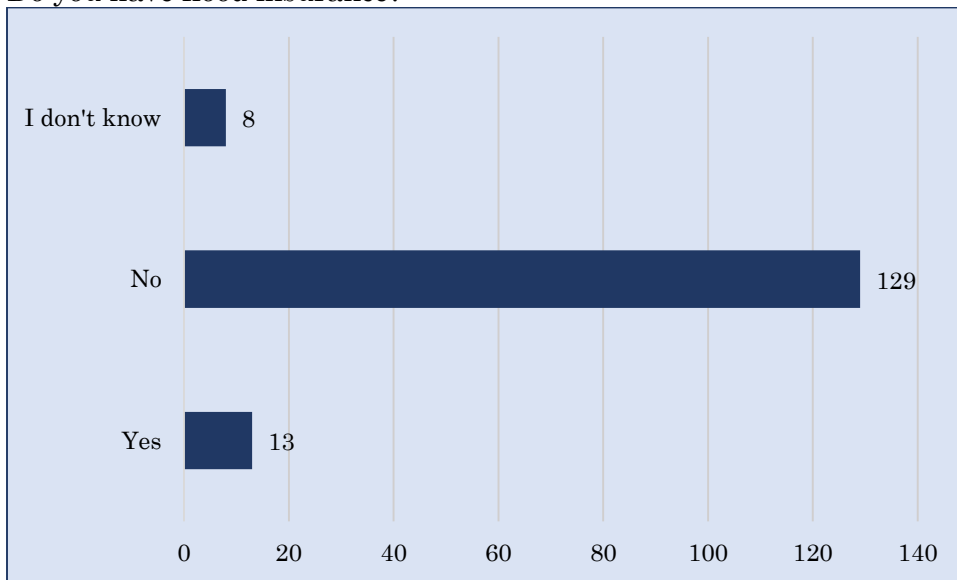
Question 8:

Is your home located in a floodplain?



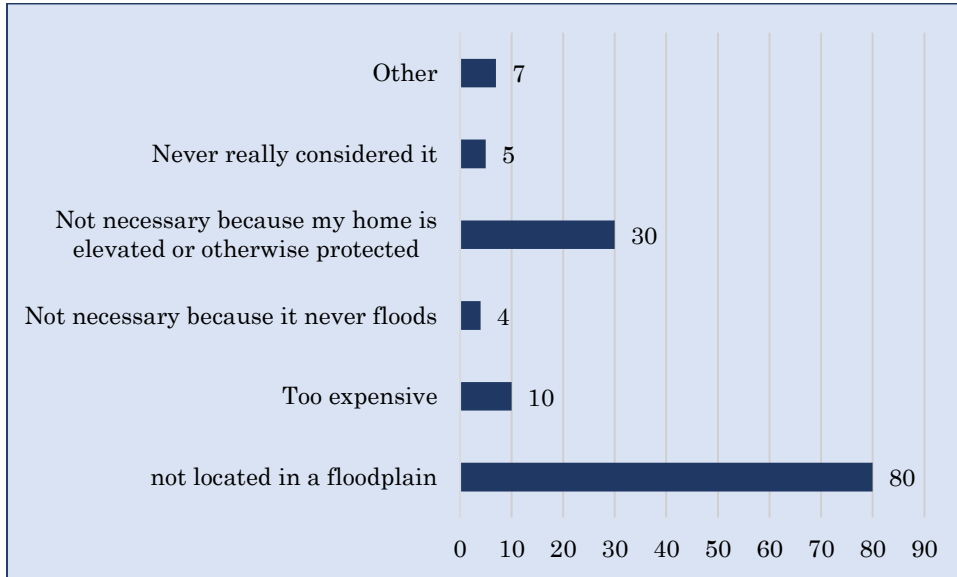
Question 9:

Do you have flood insurance?



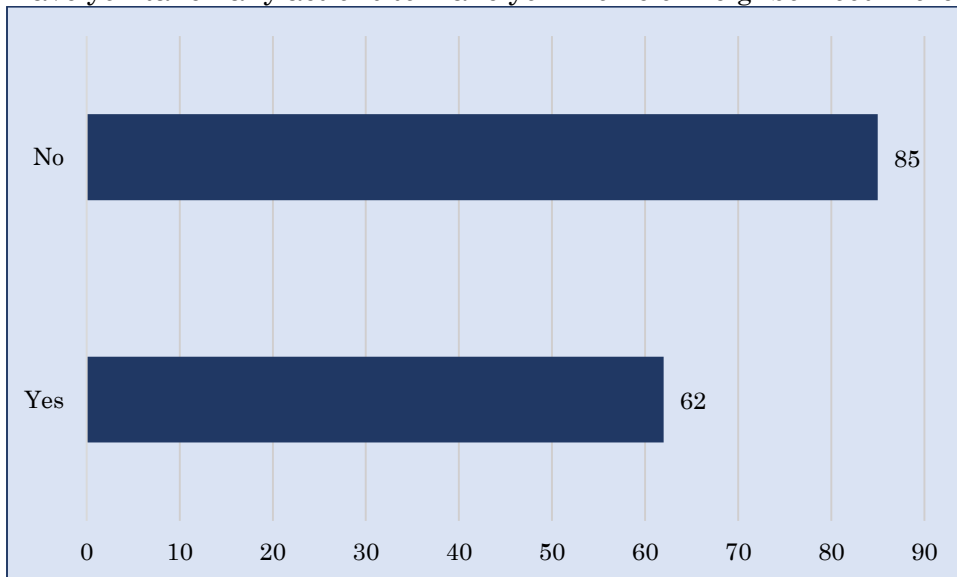
Question 10:

If you do not, have flood insurance, why not?



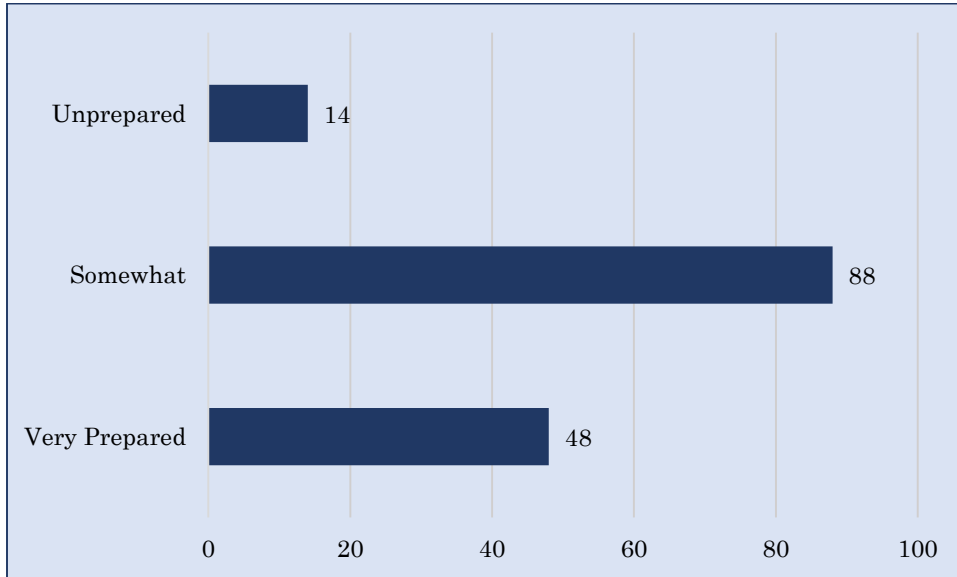
Question 11:

Have you taken any actions to make your home or neighborhood more resistant to hazards?



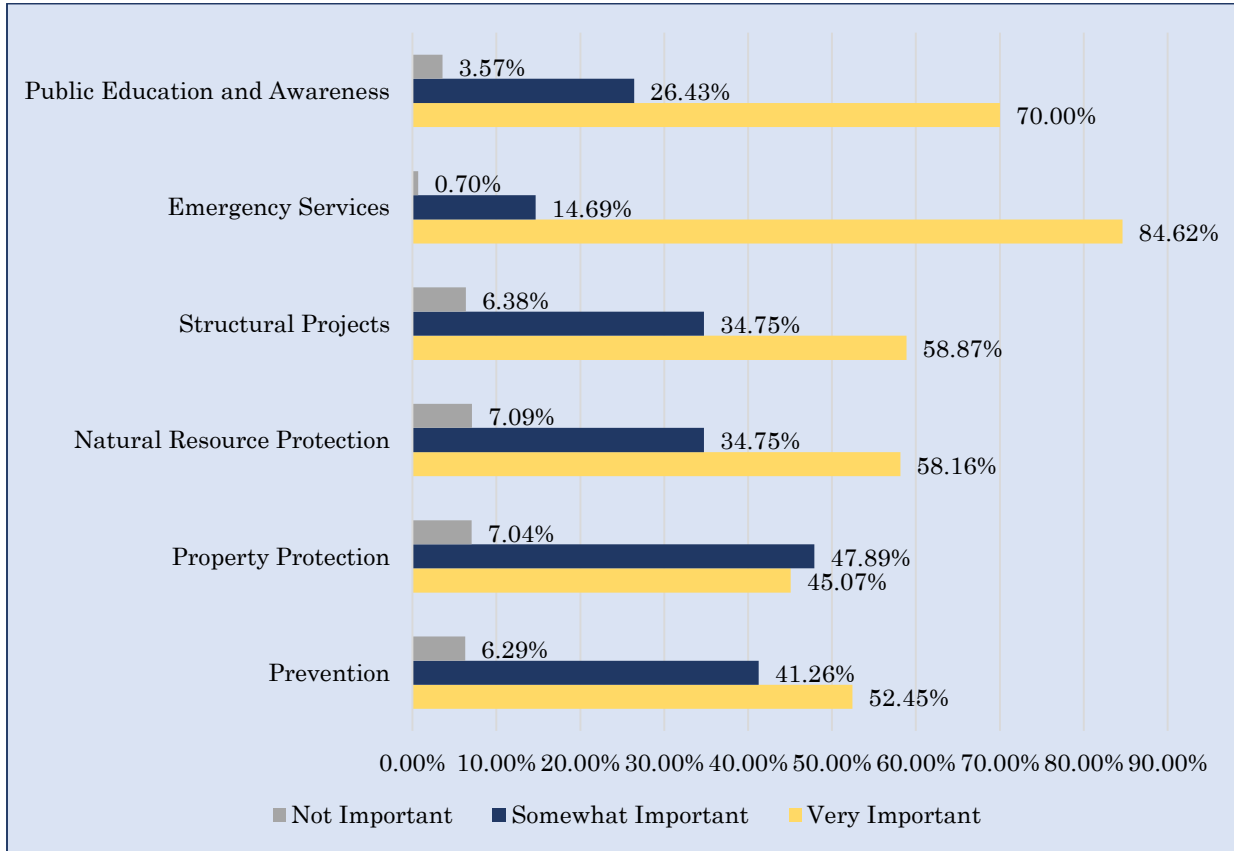
Question 12:

What is your level of disaster preparedness at your residence? (Consider you are your family's needs for medicine, food, water, heat, and emergency communication)



Question 15:

A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each one is for your community to consider pursuing.



APPENDIX H: EDITS AND CHANGES TO HMP FROM DRAFT TO FINAL DRAFT

This appendix is to serve as a log of major changes to the draft HMP that was submitted to the state in order to form this final draft. This is not an exhaustive list as some minor changes such as spelling and grammar adjustments were not recorded.

1. Change the description of calculating the population density to accurately reflect the calculation. Appendix E Risk Assessment, Population Density Page.
2. Added page numbers to all of the appendices, when possible
3. Included the Local Mitigation Plan Review Tool in Appendix K of the application
4. The page numbers on the plan review tool were updated to reflect the changes in page numbers due to edits.
5. Included Recommendation for Improvements from FEMA in Appendix I. Created a table similar to the Local Mitigation Plan Review Tool which detailed the recommendations. The page numbers where each item is addressed is included in the table.
6. Added review of Recommendations for improvement to the list of the planning process located in section 2.3.
7. Fixed the formatting suggestions indicated by the State in their initial review of the plan.
8. In section 3.2.2 Demographics, we expanded on the cause of the decrease of 4,571 persons in the region's population. Added language to explain the decrease.
9. Changed the colors used in the pie charts on sections 2.1 and 3.2.2 to make the slivers more distinguishable.
10. Updated the information in section 2.2 to accurately reflect community participation in FEMA's NFIP. North Hills does not participate in the program and the first draft of the plan was incorrect in that.
11. Section 2.4, updated the language to state Mitigation staff of the West Virginia DHSEM instead of simply WV DHSEM.
12. Corrected the spelling of Wirt in Section 3.6.2
13. Removed the chart in section 3.7.2 due to lack of significance.
14. Added series labels to the final chart in Appendix G
15. Expanded section 2.5.2 to summarize the activities of the final draft review meeting held on June 29, 2016.
16. Added Appendix J which contains the sign in sheet, agenda, and notifications from the final draft review meeting.
17. Moved the section dedicated to critical facilities from section 3.4 to section 3.3 to improve the flow of the document.
18. Moved the section dedicated to declared disasters from section 3.3 to section 3.4 to improve the flow of the document.
19. Added an improved flooding hazards ranking map, the previous one was a little

blurry, Section 3.6.3

20. Added a dam failure hazard ranking map, section 3.18.3. Somehow this was left out of the initial draft submission.
21. Added language clarifying that dam failure is not an eliminated risk, but that there is a lack of data to perform a proper risk assessment. In section 3.18.3. The section states that dam failure is a risk that must be considered for residents of all counties.
22. Created Section 3.19 “Potential Risks with Limited Regional Precedent for natural hazards that do not often occur in the Mid-Ohio Valley Region but the potential for their occurrence does exist. This section includes and fully profiles Earthquakes (section 3.19.1) Hurricanes (section 3.19.2) and Natural Resource Extraction (section 3.19.3).
23. Moved Eliminated Hazards to section 3.20, these hazards are eliminated based on location.
24. Updated the appendices summary on page 224 to reflect the added appendices.
25. The entire plan was read through again to locate spelling and grammar mistakes.
26. Added Appendix B to include letters from local governments and municipalities indicating that they had reviewed the plan.
27. Section 2.1 language was added to discuss sending the survey takers notification that the draft was available for download and review.
28. Added this Appendix H to provide a log of edits made to this plan from the first draft to the final draft.
29. The figure and table labels were redone to reflect changes due to edits.
30. Corrected a miscalculation in the hurricane risk assessment data. This is reflected in Appendix E and has been changed in the composite score chart in section 3.5.10
31. Changed the language in Section 2.2 changed general assembly to WV Legislature.
32. Added language in section 3.13.3 to explain that tornados are not an eliminated risk for any county even though they scored low through the risk assessment.
33. Added language in section 3.14.3 to explain that heavy rain cannot an eliminated risk for any county even though it scored low through the risk assessment.
34. Added language in section 3.17.3 to explain that droughts are not an eliminated risk for any county even though they scored low through the risk assessment.
35. Updated the table of contents to reflect changes in the plan and its page numbers
36. Updated all page numbers to reflect changes in the plan.
37. Combined sections 3.5.8 and 3.5.10 to avoid repetition making them section 3.5.9 and moving the previous section 3.5.9 to section 3.5.8 (limitations of ranking)
38. Added language in section 3.5.9 to explain the phrase eliminated risk
39. Added paragraph in Chapter 1 section 1.1 explaining why this plan does not cover manmade hazards, and noting the importance of substance abuse and hazardous material transportation to the region.
40. Added resources for substance abuse and hazardous materials transportation to the Critical facilities reference list.

After FEMA's initial Review, the MOVRC responded to their comments in the following way.

1. At the beginning of Appendix B a matrix was created listing all of the Region's jurisdictions and a description of how each jurisdiction participated in the planning process.
2. Additional letters indicating participation have been included in this final draft appendix.
3. A blank copy of the NFIP survey completed by some jurisdictions in the region has been included in Appendix B.
4. A Final copy of the plan will be added to the MOVRC webpage when it is approved by FEMA. Currently the draft plan is on the webpage.
5. MOVRC IT staff is exploring adding a comment box.
6. Eliminated risk is extensively explained in Section 3.5. 3.5.9, 3.14.3, 3.17.3, 3.18.3 and 3.19
7. All of the maps identified above have been corrected.
8. On every map in Chapter 3 the region's counties were labeled by their name or the region has been circled in red or black.
9. Appendix N was added to this plan and it contains appendices G&H from the 2011 plan. Appendix N now contains HAZUS Reports as well as Topographical and Floodplain maps, and Aerial Photography of the entire region.
10. Section 3.1.2 "2011 HAZUS Data" has also been added to this plan to explain the HAZUS data, limited development in the region, and the region's economic situation.
11. In the Historic Occurrence section of every hazard profile a section titled "Hazard Extreme in the Mid-Ohio Valley." These sections recall the possible worst-case scenario for the hazard. It describes an actual event that has occurred in the MOV.
12. Section 3.18 begins with an explanation of the limits of the available data for dams.
13. Additionally, in section 4.2.2 which lists the mitigation actions for the plan contains mitigation action 2016-39 which addresses the need for better data for dams. This mitigation action is included to ensure that better resources will be developed for analysis during the 2022 plan update.
14. Section 3.13 which discusses wildfire has been clarified.
15. There has been a table added in each hazard profile displaying the average annual number of events for each hazard.
16. In the historic occurrence section of each hazard profile a section titled "Hazard's Impact on Region" has been added. This section explains how the hazard impacts the region; what happens in the region during the hazard event.
17. Section 3.1.2 was added to explain the inclusion of HAZUS data and the limited development in the region due to its aging population and economic status.
18. Appendix N was added to the plan which contains appendices G&H from the 2011 plan: HAZUS reports as well as topographical & floodplain maps and aerial photography.
19. Section 3.3.2 explains that appendix A which contains a list of all critical facilities in the region also lists each facilities floodplain determination according to the WV Flood Tool.
20. An explanation of the WV Flood Tool's use has been included in Section 3.6.1
21. Table 3.21 displays 100-year floodplains as identified by the WV Flood Tool which has been indicated.

22. The Tool is also mentioned in appendix A as it was used to identify the floodplain determinations for critical facilities.
23. Included PDC planning activities in the list of authorities, policies, programs and resources. (CEDs, RDP, LRTP, and SWP)
24. Included description of planning at the county and municipal level.
25. Disseminated the NFIP survey to all the jurisdictions in the Region and asked them to complete and return it.
26. Added section 2.2.1 to discuss and explain the results of the NFIP survey.
27. Added discussion of RL and SRL in the region.
28. Added mitigation actions 2016-01-2016-08 to included standard acquisition/Demolition, Relocation and Evaluation mitigation strategy. These actions contain the language provided by FEMA on the subject and there is an individual action for each county.
29. Mitigation actions that contained multiple specific mitigation issues have been broken down so that there is a mitigation action for each mitigation issue. The plan now contains 68 mitigation actions.
30. A discussion of LRTP and SWP plans as resources for mitigation planning has been included in Chapter 5 following the discussion of CEDs and RDP.
31. Section 3.1.1 has been added to the plan to explain the nature of development in the Mid-Ohio valley
32. In Appendix C before the listing of the 2011 mitigation actions, a matrix has been included this discusses the status of each mitigation action today.

APPENDIX I: 2011 RECOMMENDATIONS FOR IMPROVEMENTS

The following is a chart detailing the location in the plan where all of the recommendations for improvements issued by FEMA in 2011 are addressed. If the plan has not addressed the recommendation in a specific section the page number has an * next to it and a further explanation is provided below.

Recommendations for Improvements	Location in Plan
1. When the plan is updated next, a committee of local officials, nonprofit agencies and others needs to be formed to provide a broad local perspective to the regional planning effort.	Ch. 2 p. 52-55
2. The most recent population statistics should be added when the plan is updated in five years.	Table 3.2 p. 62, Ch. 2 p. 62-64
3. When the plan is next updated, additional information should be included to provide thorough documentation of how the plan was updated.	Ch. 2 p. 51-56 Ch. 3 p. 58-59
4. The 2010 updated State of West Virginia State Hazard Mitigation Plan should be accessed to obtain more in depth description of natural hazards.	Ch. 3 p. 89-195
5. The Wood County Happy Valley report notes that bank/slope instability is a hazard, yet the plan does not include a description or discussion of this hazard. Please include this as a natural hazard and fully profile the hazards when the plan is updated next.	Ch. 3 p. 148-152
6. Natural gas wells are not noted as a hazard in the plan, yet press articles from the area indicate that it is a hazard; the committee should include a complete profile of this as a hazard when the plan is updated next.	Ch. 3 p. 182-187
7. County names should be added to all maps in the plan.	Updated throughout plan.
8. The state plan indicates that there are more dams in the PDC 5 region than the PDC 5 plan indicates, please reference the recently updated state plan for any additional dams that should be noted as a hazard.	Ch. 3 p. 165-171
9. The state plan also ranks deficient dams, three counties are not noted as having a high ranking of deficient dams, and this should be addressed when the plan is updated.	Ch. 3 p. 165-171
10. Dam inspection reports should be summarized and included in the plan when it is updated next.	Ch. 3 p. 165-171
11. The HAZUS reports should be compared to local information concerning the types and numbers of vulnerable facilities to obtain a more	*Ch. 3 p. 65-68, 89-100,

accurate number of vulnerable structures. Critical facilities should also be compared.	Ch. 4 p. 214 & Appendix A
12. Additional goals should be added when the plan is updated next.	Ch. 4 p. 197-198
13. The plan should address if any other factors are considered in the prioritization of projects.	Ch. 4 p. 198-199
14. Progress reports on the success of mitigation projects that were implemented during the life of the plan needs to be included when the plan is updated.	Ch. 2 p. 46-51

11. To complete this hazard mitigation and risk assessment for flooding, planners utilized the WV Flood tool explained in section 3.6.3. The TEIF tool provided to the MOVRC by FEMA while helpful, did not accurately reflect structures’ values for most of the region because GIS mapping has not been completed due to the region’s rural natural. In chapter 4 action 2016-16 states “Complete GIS Mapping in all of the region’s counties that do not currently have it, to better identify the risk to life and property presented by flooding which will be used in the future with TEIF software. Work with County Assessors to identify the actual location and value of properties in each county to assess the value of the property and the risk presented by flooding.” This has been listed as a mitigation action specifically to improve the analysis of structure vulnerability for the next update.

APPENDIX J: DRAFT REVIEW MEETING SIGN-IN SHEET, AGENDA, AND INVITES

Draft Final Review Meeting
 2016 Hazard Mitigation Plan Update
 June 29, 2016 1-3 PM, MOVRC Conference Room, Parkersburg, WV

Name	Organization/Public	Email Address
1 <i>No. Smith</i>	<i>JACKSON CO. OES</i>	<i>oes@jacksoncountywv.com</i>
2 <i>C. WALTERS</i>	<i>JACKSON Co. 911 Comm.</i>	<i>chad.walters@jacksoncountywv.com</i>
3 <i>Luke Peters</i>	<i>MOVRC</i>	<i>luke.peters@movrc.org</i>
4 <i>CARL METZ</i>	<i>CITY OF VIENNA</i>	<i>CM@VIENNA-WV.COM</i>
5 <i>RANDY RAPP</i>	<i>CITY OF VIENNA</i>	<i>RANDY.RAPP@VIENNA-WV.COM</i>
6 <i>Meganne Robinson</i>	<i>MOVRC</i>	<i>Meganne.robinson@movrc.org</i>
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

Final Draft Review Meeting

2016 Mid-Ohio Valley Regional Hazard Mitigation Plan

*Wednesday June 29, 2016 1 – 3 PM MOVRC Offices
531 Market Street, Parkersburg, WV 26101
(304) 422 – 4993*

PURPOSE

To provide Local Governments and Local Emergency Directors an overview of the completed draft and offer an additional opportunity to provide feedback and further review of the submitted draft regional Hazard Mitigation Plan.

AGENDA/OUTLINE

1. Brief Overview of Planning Activities to this point.
 - a. Purpose of plan
 - b. Local public meetings with LEPC
 - c. Submission of a **DRAFT** to West Virginia Division of Homeland Security and Emergency Management's (WVDHSEM) Mitigation Staff.
 - d. WVDHSEM's comments and edits.
2. Overview of the Draft Document
 - a. Chapter 1 Introduction
 - b. Chapter 2 Planning Process
 - c. Chapter 3 Hazard Identification, Risk Assessment and Vulnerability Analysis
 - d. Chapter 4 Mitigation Strategy
 - e. Chapter 5 Monitoring, Maintenance & Revision
 - f. Appendices
3. Discussion, Suggestions, and Questions
 - a. The largest portion of the meeting will be spent answering questions, listening to suggested edits, and providing any clarification necessary.
4. The Next Steps
 - a. Using information gained to complete final draft
 - b. Resubmission to the WVDHSEM and then to FEMA
 - c. Adoption of final plan by each municipality and county

If you have any questions prior to the meeting on June 29, 2016 or are unable to attend and have comments please feel free to contact Luke Peters or Meganne Robinson of the MOVRC's Community Development Program.

Luke Peters, Project Coordinator, luke.peters@movrc.org, (304) 422 – 4993 Ext. 123

Meganne Robinson, Project Coordinator, meganne.robinson@movrc.org, (304) 422-4993, Ext. 105

Composite Hazard Level of Risk

Natural Hazard	Calhoun	Jackson	Pleasants	Ritchie	Roane	Tyler	Wirt	Wood
Avalanche	3	4	3.5	3	3	3	3	6.5
Coastal Erosion	3	4	3.5	3	3	3	3	6.5
Dam Failure	3	8	4.5	5.5	5.5	4	3	8.5
Drought	6.5	9	7	6.5	8	6.5	7.5	14
Earthquake	4.5	6.5	4.5	4	4.5	4	4.5	10.5
Excessive Heat	9.5	10.5	12	9.5	9.5	9.5	9.5	14
Expansive Soils	3	4	3.5	3	3	3	3	6.5
Extreme Cold/Wind Chill	12	12	13.5	13	14	11	11	17.5
Flooding	20.5	22.5	19.5	20	21	21	20	24
Hail	12.5	14.5	12.5	12.5	13.5	12.5	13.5	18
Heavy Rain	8.5	10.5	10.5	11.5	11.5	9.5	9.5	14
High Wind	17.5	20.5	17.5	17.5	18.5	16.5	16.5	24.5
Hurricane	5	6	5.5	5	5	5	5	8.5
Land Subsidence	5	6	5.5	5	5	5	5	8.5
Landslides	12.5	10.5	9.5	9.5	9.5	9.5	12.5	11.5
Lightning	11	13	10.5	10	14	10	11	16.5
Natural Resource Extraction	7	7	6.5	7	5	5	4	7.5
Tornado	11	13.5	12.5	11	9	9	9	16.5
Tsunami	3	4	3.5	3	3	3	3	6.5
Volcanos	3	4	3.5	3	3	3	3	6.5
Wildfire	10	11	10.5	10	14	10	11	16.5
Winter Weather	15.5	20	16	15	17.5	16	15.5	18
Table Key								
Eliminated Risk	0 – 9.0							
Low	9.5 – 11.5							
Medium – Low	12.0 – 14.0							
Medium	14.5 – 16.5							
Medium – High	17.0 – 19.0							
High	19.5 ≤							
<i>Table 3.13 Composite Hazard Ranking by County and Table Key</i>								

Mitigation Actions and Priority Level

Goal One: <i>Improve Regional Resilience</i>	
2011-10	
Description:	Develop emergency access to shelters plans and establish criteria for community use. Continue to coordinate emergency shelter plans with the American Red Cross.
Priority:	High
2011-15	
Description:	To prepare for the efficient and cost effective removal of debris in the wake of a severe wind event or flood event. Work with County Emergency Services, Solid Waste Authority, and state agencies to develop a protocol for debris disposal.
Priority:	High
2016-01	
Description:	Ensure that all public utilities, specifically water and sewer operations have generators that will allow them to Operate when power outages occur.
Priority:	High
2016-02	
Description:	Continue updates, upgrades, and maintenance to existing and new power lines to provide resilience to power outages. Establish communication and relationships between local governments and utilities so that there is good communication during hazard events.
Priority:	High
2016-03	
Description:	Ensure that Emergency response organizations such as Volunteer Fire Departments, OES, and 911 centers are equipped with generators so that emergency operations are uninterrupted during power outages.
Priority:	High
2016-04	
Description:	Insure that there are more training opportunities and resources in the region for individuals wishing to become Volunteer Firemen, EMS personnel, and/or Police Officers.
Priority:	High
2016-05	
Description:	Obtain a warning system program or programs for each county. To provide a reliable means of warning communication for residents in identified high hazard areas and to insure that all special populations in identified risk areas are provided with the means to reliably communicate with emergency services. Currently Ritchie, Roane, and Wirt Counties do not have a formal system of communication with the public during hazard events. Some utilize Facebook however this is insufficient because it does not reach all citizens, and is inoperable during a power outage.

	These systems can warn of potential hazards as well as communicate vital information during and after a hazard event.
Priority:	High
2011-07	
Description:	Each Local jurisdiction will continue to enforce and update existing floodplain ordinances. To develop regulations, standards, and ordinances within local jurisdictions consistent with documented national standards and regulations.
Priority:	Medium
2016-20	
Description:	Upgrade emergency operation equipment so that responders are more able to easily reach those in need in more rural locations.
Priority:	Medium
2016-21	
Description:	Establish capability to obtain fuel for emergency vehicles during power outages in each county.
Priority:	Medium
2016-22	
Description:	Update existing and establish more cell phone towers and improve broadband throughout the region to improve cell phone reception for communication purposes. Portions of each County in the region are without cell phone service and have poor broadband connectivity; this is a hindrance to communication during hazard events.
Priority:	Medium
2016-23	
Description:	Improve and upgrade the snow removal equipment and supplies in each of the Region's Counties.
Priority:	Medium
2011-08	
Description:	Establish new or reinforce existing building codes and code enforcement within those jurisdictions where it is deemed appropriate, especially where new developments are being planned whether or not the developments are in identified flood zones. Use IBC as a standard. To develop regulations, standards, and ordinances within local jurisdictions consistent with documented national standards and regulations.
Priority:	Low
2016-28	
Description:	Conduct tree trimming and the removal of fallen/broken branches in public right-of-ways to limit the possibility of damage caused by limbs blowing or floating around. This includes trees and down limbs along public utility lines, along public roads and public buildings, and along areas of public stream access.
Priority:	Low
Goal Two: <i>Protect Life and Property</i>	
2011-02	

Description:	To provide an equitable buy-out program to interested owners of those properties located in the identified floodplain that have experienced recurrent damages.
Priority:	High
2016-06	
Description:	Establish a formalized safety check system for vulnerable members of the population in each county. The system will be completely voluntary and there will be no eligibility requirements to be included in the check. Presently, only Pleasants County has one such system in place. Designate, equip, and train local emergency responders for the purpose of maintaining lifelines for residents with special needs. Require home alert providers to register at the 911 Service; review and update the list annually.
Priority:	High
2016-07	
Description:	Execute flood mitigation activities in Calhoun County: <ol style="list-style-type: none"> 1. Explore possible buy outs, in southern Calhoun County along the Upper West Fork in Altizer and Stinson. 2. Replace and correct the low water bridge at Henry's Fork in Altizer to correct backups and flooding. 3. Repair, replace, and/or reconstruct low-lying roadways to prevent parts of the county from being cut off from the others during flooding events. Currently during flood events many places in Calhoun get cut off by high water and a series of islands forms which causes isolation and can make it difficult for citizen travel and even emergency responders to navigate the county.
Priority:	High
2016-08	
Description:	Execute flood mitigation activities in Jackson County: <ol style="list-style-type: none"> 1. Mitigate flash floods in the Evans Area where water covers the road and can isolate the area. 2. Repair, replace, and/or reconstruct low-lying roadway in Kenna area that when flooded cuts off the PSD, EMS and the VFD. 3. Repair, replace, and/or reconstruct low-lying roadway in Sandyville area that when flooded may cut off the PSD, EMS and the VFD. 4. Complete activities on Sycamore Road along Sycamore Creek to prevent flooding. 5. Complete activities in the Grand Central Ave area in Ripley to negate flooding.
Priority:	High
2016-09	
Description:	Execute flood mitigation activities in Pleasants County: <ol style="list-style-type: none"> 1. Conduct stream cleaning in along Cow Creek, Sled Fork, and the Left Fork of French Creek to decrease flooding potential.

	2. Conduct all other necessary mitigation activities along Cow Creek, Sled Fork, and the Left Fork of French Creek to further reduce flooding.
Priority:	High
2016-10	
Description:	Execute flood mitigation activities in Ritchie County: <ol style="list-style-type: none"> 1. Perform flood mitigation in downtown Cairo to prevent flooding in the downtown area which can currently impede transportation. 2. Develop a position in Ritchie County to enforce the County's existing floodplain permit and correct the current issue of campers that are being set up and lived in by people in the established floodplain.
Priority:	High
2016-11	
Description:	Execute flood mitigation activities in Roane County: <ol style="list-style-type: none"> 1. The Roane County 911/OES and EMS Centers are currently located in a floodplain and were flooded to the point of evacuation 2012. The Center needs to be relocated to a more secure location. 2. Evaluate and formulate action plan to conduct flood mitigating buyouts for repeatedly flooded single family properties located in Spencer and conduct 3. Relocate the Reedy VFD as it is susceptible to flooding. 4. Replace the bridge at Wal-Mart in Spencer with a structure better suited to accommodate the volume of potential flood waters that may flow through the stream. Currently the bridge is too low and water can flow over the top of the bridge. Also the opening under the bridge is structured in a way that impedes the flow of water and debris during flood events. 5. Replace the bridge at the junction of Rt. 33 and Rt. 14 as its current condition contributes to flooding.
Priority:	High
2016-12	
Description:	Execute flood mitigation activities in Tyler County: <ol style="list-style-type: none"> 1. There are possible buyout mitigation projects in Lima along Indian Creek and also along Middle Island Creek. 2. Replace, repair, and/or reconstruct low bridges along Indian Creek, in Shirley, Rt. 23, Sellers Run Road, Stewarts Run, Elk Fork, Muddy Creek, Little Sancho, and Meadville. These low bridges may be responsible for up to 60% of school cancellations because buses can't get through and there are no feasible alternative routes.
Priority:	High
2016-13	
Description:	Execute flood mitigation activities in Wirt County:

	<ol style="list-style-type: none"> 1. Take steps to mitigate flooding the Newark area at the confluence of the Little Kanawha and Hughes Rivers. This are floods quickly and can block portions of Rt. 47. 2. Take steps to mitigate flooding near Newark and Boy Scout road. This flooding blocks off the Wirt County VFD and EMS. 3. Take steps to mitigate flooding along Garfield road in the southern part of Wirt County.
Priority:	High
2016-14	
Description:	<p>Execute flood mitigation activities in Wood County:</p> <ol style="list-style-type: none"> 1. Replace or repair the primitive culvert located in Little Tygart Creek near the Woodridge Golf Club in Wood County which floods and disrupts transportation.
Priority:	High
2016-24	
Description:	<p>Landslide or slips/slide have presented a problem along the roadways of the Mid-Ohio Valley Region resulting in disrupted transportation caused by blocked or washed out roads. This can be corrected and prevented from happening again in the future if properly attended to by the WVDOH as resources become available. The process of correcting the issue is carried out by WVDOH frequently and involves installing beams into the ridge of the creek bank to prevent future slips.</p> <ul style="list-style-type: none"> • Along route 47 in Ritchie County, the Hughes River there has been a slip underneath the road resulting in the closure of one lane. There are now stop signs on each side of the road to facilitate alternating traffic. • There has been a slip under Sellers Run Road, route 24, caused by flooding in Middle Island Creek. The slip is located about a half mile from route 18 and has resulted in one lane of the road being closed and has disrupted travel. • Utah Road in Jackson County near Ravenswood has had slip issues. <p>This is in no way a complete list and other areas of the region may presently require or in the future require these types of corrections.</p>
Priority:	Medium
2016-25	
Description:	<p>Preform stream cleaning activities to mitigate flooding in areas were debris collects. Rivers and streams across the region, which are in need, should be cleaned in a manner that is in compliance with WV DEP and US EPA standards. Some specific areas in need of stream dredging/clean up identified through the planning process include:</p> <ul style="list-style-type: none"> • Along Cow Creek, Sled Fork, and the Left fork of French Creek in Pleasants County.

	<ul style="list-style-type: none"> • Ben's Run, which flows between Bell and Reynolds Street in the City of Spencer. • The area of Spring Creek flowing under the Market Street Bridge in the City of Spencer. • The bridge at the junction of Rt. 33 and Rt. 14 in Spencer along Tanner Run. • Provide opportunities and incentives for local groups and organizations to participate and work with government agencies in community stream clean-ups. <p>While these specific place have been identified, this is not a complete list and stream dredging/cleaning should not be limited to these areas alone.</p>
Priority:	Medium
2011-14	
Description:	To encourage compliance with West Virginia regulations that require anchoring for mobile homes. Work with utilities to require proof of proper installation prior to utility hook-ups.
Priority:	Low
2016-29	
Description:	Establish position in Roane County to enforce permit requirements for mobile homes to ensure that they are not established in flood plains and are installed or anchored correctly to prevent damage during wind events.
Priority:	Low
Goal Three: <i>Improve Understanding of Risk and Vulnerability for Planning Purposes</i>	
2016-15	
Description:	Expand upon data from the National Inventory of Dams to more accurately identify the risk level presented by dams in the region. The data needed is not currently available broken down to the county level and is not specific to individual dams. This will enable for more comprehensive planning regarding mitigating dam failure in the Mid-Ohio Valley Region.
Priority:	High
2016-16	
Description:	Complete GIS Mapping in all of the region's counties that do not currently have it, to better identify the risk to life and property presented by flooding which will be used in the future with TEIF software. Work with County Assessors to identify the actual location and value of properties in each county to assess the value of the property and the risk presented by flooding.
Priority:	High
Goal Four: <i>Bolster Understanding and Preparedness</i>	
2011-04	
Description:	Encourage acquisition of radios for residents in identified areas. To provide a reliable means of warning communication for residents in identified high hazard areas and to insure that all

	special populations in identified risk areas are provided with the means to reliably communicate with emergency services.
Priority:	High
2016-17	
Description:	<p>Create opportunities for public education regarding risks presented by natural hazards, specifically; how to prepare for hazard events, identification of risks presented, actions to take during a hazard event, and how to recover after a hazard events. Additionally, make citizens aware of the resources available to them during a hazard event and how to utilize those resources. Some specific activity may include:</p> <ul style="list-style-type: none"> • Disaster drills • Neighborhood action plans for hazard events • Inform citizens of the location of shelters and their availability <p>This is in no way an exhaustive list and other relevant activities should be completed.</p>
Priority:	High
2016-18	
Description:	<p>Ensure that each county has committed and established emergency shelters and that the locations and amenities of each shelter are public knowledge. (this is a more prevalent issue in some counties than in others)</p> <ul style="list-style-type: none"> • Provide basic stores and supplies at each community shelter • Recruit and train more committed Volunteers to staff and operate emergency shelters in all counties during hazard events. • <p>Provide electric generators at each community shelter. Install and maintain electric generators at each shelter location for lighting, communication, cooking, and heating.</p>
Priority:	High
Goal Five: <i>Improve Citizen Access to Aid After Hazard Events</i>	
2016-19	
Description:	Bolster citizen knowledge and awareness of the process for applying for disaster relief funds after hazard events. Make the process as streamlined as possible for citizens that need aid after hazard events.
Priority:	High
2016-26	
Description:	The FEMA flood maps in all of the region's counties have been recently updated; all updates were completed between 2004 and 2014. Citizens have identified issues with the newly established flood zones; particularly some areas included in the flood zone should be excluded and conversely some currently excluded areas should be included. This issue has been identified through public meetings and also through the online citizen survey. It is an issue

Tentative Schedule for Monitoring, Evaluating, and Updating

Task	Responsibility	Time Frame
1. Refine Planning Process and timeline for new plan development	WVDHSEM, MOVRC	Ongoing
2. Complete GIS Mapping in all of the region's counties to better identify the risk to life and property presented by flooding.	State and Local Governments, WVDHSEM	Ongoing
3. Expand upon data from the National Inventory of Dams (NID) to pinpoint local level information to better assess the level of risk presented to each county by dam failure.	NID, WVDHSEM, State and Local Governments	Ongoing
4. Work to expand and refine data base to better conduct risk assessment for future plan updates.	MOVRC	Ongoing
5. Continue to match available HMGP funds to priority projects, especially to mitigate severe repetitive and repetitive loss structures.	WVDHSEM, MOVRC	Ongoing
6. Continue working with local governments and state contacts on plan implementation	WVDHSEM, MOVRC, Local Governments	Ongoing
7. Convene local governments and/or LEPC members to discuss and evaluate future risk assessment possibilities	Local Governments, MOVRC	August, 2017 August, 2018 August, 2019 August, 2020 August, 2021
8. Assess progress on strategies and projects identified in the 2016 HMP annually.	Local Governments, LEPCs, MOVRC	August, 2017 August, 2018 August, 2019 August, 2020 August, 2021
9. Review current regulatory requirements for plan revision.	MOVRC	Ongoing
10. Initiate review and revision of the 2016 hazard risk assessment and analysis.	MOVRC	July 1, 2020
11. Review and update of 2016 Mitigation Goals and Strategies	MOVRC	April 1, 2021
12. Draft Review by WV Division of Homeland Security and Emergency	MOVRC	May 1, 2021
13. Draft Review by FEMA	MOVRC	June 1, 2021
14. Submit new Revised Regional Hazard Mitigation to FEMA	MOVRC	July 1, 2021

Table 5.1 Projected Schedule for Monitoring, Evaluating, and Updating the HMP



P.O. Box 247 • 531 Market Street • Parkersburg WV 26101
Phone: (304) 422-4993 • Fax: (304) 422-4998
www.movrc.org

June 10, 2016

TO: Region 5 Municipalities and County Commissions

RE: MOVRC Regional Hazard Mitigation Plan

- Request for letters indicating feedback on draft plan
- Final Review Meeting 6/29/16 1:00 PM – 3:00 PM at the MOVRC office

Dear local official:

The MOVRC has completed a draft version of the 2016 Hazard Mitigation Plan for the Mid-Ohio Valley Region. Each unit of local government must adopt the updated plan in order to be eligible for FEMA disaster recovery grant funds. The 2011 plan will expire August 22nd, 2016. MOVRC staff will be making arrangements to present the plan for adoption at your official meetings in the near future.

Each local government in the region is required to have input and participation in forming the Hazard Mitigation Plan. Though public meetings were held in each county during February and March 2016, many local governments did not have a representative in attendance. Each county's Office of Emergency Management/Services has had some involvement or input to the plan, and we met with each Local Emergency Planning Commission, and these individuals likely do represent the interests of each community. However, it is our desire to record a response from each unit of local government which conveys additional feedback or satisfaction with the plan ahead of when it will undergo final edits and then move toward adoption by local governments.

The current draft version of the Regional Hazard Mitigation Plan is posted on the MOVRC website at www.movrc.org, with the link at the lower right hand corner. Electronic copies of the plan can also be emailed by request, but the large file size could be an issue for some recipients. Upon review, or if you have already satisfactorily contributed to the planning process personally or through a surrogate, we request that you provide written feedback through email (luke.peters@movrc.org) or letter to MOVRC. Two types of basic form letters are provided with this letter to help you in replying. Feedback and discussion is also encouraged by attendance at a Final Draft Plan Review Meeting to be held at MOVRC on June 29th, 2016 from 1PM to 3PM. Please provide your written responses by June 29th so that information can be considered in plan additions, revisions, and recording the participation of your community.

Please contact me if you have any questions and to RSVP for the meeting.

Sincerely,


Meganne Robinson

Meganne Robinson

From: Meganne Robinson
Sent: Friday, June 24, 2016 4:29 PM
To: chipw@frontiernet.net; Eric Vincent (ehvcmv@yahoo.com); mitch.morrison@jacksoncountywv.com; 'heritagegmarys@suddenlinkmail.com'; Bob Tebay (bobtebay@woodcountywv.com); samuelrogers459@gmail.com; 'MACEG@nationwide.com'; Steve Lewis (ellmayor@hotmail.com); townofcairo@gmail.com; mayorrader@cityofripley.org; Alan Haught (hmayor26362@yahoo.com); 'roblee63@yahoo.com'; Bill Rice (cityofsistersvillemayor@gmail.com); tawilliams2@suddenlinkmail.com; John Hopkins (mayor@padencitywv.org); elizwv@suddenlinkmail.com; Charles Delauder (townofmiddlebourne@wvhotspot.us); Jimmy Colombo (mayor@parkersburgwv.gov); willcity@suddenlinkmail.com; William V. Summers Jr. (wvsummersjr@gmail.com); randy.rapp@vienna-wv.com; Zachary R. Hupp (townofgrantsville@yahoo.com); 'townofauburn@yahoo.com'; cityrecorder@frontiernet.net
Cc: Luke Peters
Subject: Reminder Hazard Mitigation Plan Final Draft Review Meeting
Attachments: Local Government Sample Response Letter.docx; Meeting agenda.docx

Dear Local Elected Official:

Thank you for your support and participation in the 2016 Hazard Mitigation planning process thus far. At this point the MOVRC has completed a **draft** version of the 2016 Plan and submitted it to the WV Division of Homeland Security and Emergency Management (WVDHSEM) for initial review. A downloadable version of the **draft** plan can be found at the following link: www.movrc.org. **This email is to serve as a reminder of the 2016 Mid-Ohio Valley Regional Hazard Mitigation Final Draft Review meeting which will take place Wednesday, June 29, 2016 in the MOVRC Offices from 1 – 3 PM.** Please see the attached meeting agenda included in this email.

The MOVRC has completed a draft version of the 2016 Plan, and we are seeking further input and/or comments from each municipality and county government within the region. As required by FEMA, each unit of local government must adopt the updated plan in order to be eligible for FEMA disaster recovery grant funds and must have participated in the planning process. We are holding the Final Draft Review meeting to provide an additional opportunity for participation in the planning process. If you are unable to attend and have comments please submit them in writing to Luke Peters or myself by email or via written letter. **Even if you do not have comments or edits we are asking that you please respond in writing stating that you have reviewed the plan and find it acceptable in its current form by June 29, 2016.** One of the attached documents contains a sample response letter.

MOVRC truly appreciates the assistance and time you have given in helping with the Regional Hazard Mitigation Plan for 2016. We hope to hear from you or see you at the June 29th Final draft Review Meeting. If you have any questions or would like any further information please feel free to contact Luke Peters or I at the MOVRC offices.

All Best,

Meganne Robinson, MPA
Project Coordinator
Mid-Ohio Valley Regional Council
(304) 422-4993, Ext. 105

Final Draft Review Meeting

2016 Mid-Ohio Valley Regional Hazard Mitigation Plan

*Wednesday June 29, 2016 1 – 3 PM MOVRC Offices
531 Market Street, Parkersburg, WV 26101
(304) 422 – 4993*

PURPOSE

To provide Local Governments and Local Emergency Directors an overview of the completed draft and offer an opportunity to provide feedback after review of the submitted draft.

AGENDA/OUTLINE

1. Brief Overview of Planning Activities to this point.
 - a. Purpose of plan
 - b. Local public meetings with LEPC
 - c. Submission of a **DRAFT** to West Virginia Division of Homeland Security and Emergency Management's (WVDHSEM) Mitigation Staff.
2. Overview of the Draft Document
 - a. Chapter 1 Introduction
 - b. Chapter 2 Planning Process
 - c. Chapter 3 Hazard Identification, Risk Assessment and Vulnerability Analysis
 - d. Chapter 4 Mitigation Strategy
 - e. Chapter 5 Monitoring, Maintenance & Revision
 - f. Appendices
3. Discussion, Suggestions, and Questions
 - a. The largest portion of the meeting will be spent answering questions, listening to suggested edits, and providing any clarification necessary.
4. The Next Steps
 - a. Using information gained to complete final draft
 - b. Resubmission to the WVDHSEM and then to FEMA
 - c. Adoption of final plan by each municipality and county

If you have any questions prior to the Meeting on June 29 2016 or are unable to attend and have comments please feel free to contact Luke Peters or Meganne Robinson of the MOVRC's Community Development Program.

Luke Peters, Project Coordinator, luke.peters@movrc.org, (304) 422 – 4993 Ext. 123

Meganne Robinson, Project Coordinator, meganne.robinson@movrc.org, (304) 422-4993, Ext. 105

(TOWN/COUNTY LETTERHEAD)

SAMPLE/DRAFT RESPONSES

Luke Peters
MOVRC
PO Box 247
531 Market Street

RE: Mid-Ohio Valley Regional Hazard Mitigation Plan

Mr. Peters,

1)

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor/president of the (Town/City) of _____ (County Commission), I have no further comments or changes to suggest.

2)

I have had the opportunity to review the draft of the 2016 Regional Hazard Mitigation Plan. As mayor/president of the (Town/City) of _____ (County Commission), I feel that (for example):

- the threat of flooding to our downtown was underrepresented.
- the need for a slip repair on Route 5 above Smithtown should have been emphasized.
- the fact that the county has passed new ordinances on mobile homes should be mentioned.

Please take this into account in your final plan edits.

Thank you,

Name, Title

-Please feel free to call or email MOVRC staff to ask questions about the plan, the contents, and what was and wasn't included.

Meganne Robinson

From: Meganne Robinson
Sent: Friday, June 10, 2016 4:00 PM
To: 'calhounoes@frontiernet.net'; 'oes@jacksoncountywv.com'; 'knight914@frontiernet.net'; 'JimWhite801@yahoo.com'; 'roaneco911@frontier.com'; 'tjcooper@frontier.com'; 'wirtcooes@yahoo.com'; 'rwoodyard@woodcountywv.com'
Cc: Luke Peters
Subject: Regional Hazard Mitigation Plan Draft Review
Attachments: 2016-Draft-Regional-Hazrd-Mitigation-Plan-Document.pdf; 2016-Draft-Regional-Hazrd-Mitigation-Plan-Appendices.pdf

Regional OES directors,

MOVRC truly appreciates the assistance and time you've given in helping with the Regional Hazard Mitigation Plan for 2016. A draft of the Regional Hazard Mitigation Plan has been submitted to the State for review. One of the attachments to this email contains a PDF version of the draft Regional Hazard Mitigation Plan, and the second attachment contains the appendices to the draft plan. Also, a downloadable version of the draft that was submitted to the state for review, can be found at the following link www.movrc.org. The downloadable version is located in the lower right corner of the home page and is titled *2016 Draft Regional Hazard Mitigation Plan*. The Plan's appendices can be found in the same location titled *2016 Draft Regional Hazard Mitigation Plan – Appendices*.

Now that a draft of the plan is complete, prior to the adoption of a finalized plan by local governments, the MOVRC is seeking review of the plan to be sure we did not neglect any certain hazards or projects that should be included. Please join us at the MOVRC for a final plan review meeting on June 29th from 1PM to 3PM in our office at 531 Market Street, Parkersburg, WV 26101. Please let us know if you are planning to attend or are unable to attend. If you are unable to attend and have comments or revisions to the plan you can submit them in writing by mail or email to luke.peters@movrc.org.

We have contacted each mayor and county commission president with a similar request. We hope to have provided an opportunity for participation and feedback since we didn't see many municipalities at the public meetings in February and March.

If you have any questions please let me know.

Thanks,

Luke Peters

Luke Peters, MPA
Project Coordinator
Mid-Ohio Valley Regional Council
304.422.4993 Ext. 123

APPENDIX K: LOCAL MITIGATION PLAN REVIEW GUIDE

Local Mitigation Plan Review Guide

October 1, 2011



FEMA

TABLE OF CONTENTS

MITIGATION PLAN REVIEW GUIDE

SECTION 1: INTRODUCTION	1
1.1 Purpose of Local Mitigation Plan Review Guide.....	1
1.2 Organization of Guide.....	2
1.3 Roles & Responsibilities	2
1.4 Mitigation Plan Updates	3
1.5 Flood and Multi-hazard Mitigation Plans	3
 SECTION 2: PLAN REVIEW GUIDING PRINCIPLES.....	5
 SECTION 3: COMPLETING THE PLAN REVIEW TOOL	7
3.1 Regulation Checklist.....	7
3.2 Plan Assessment	8
3.3 Multi-Jurisdiction Summary Spreadsheet.....	11
 SECTION 4: REGULATION CHECKLIST	13
4.1 ELEMENT A: Planning Process.....	14
4.2 ELEMENT B: Hazard Identification and Risk Assessment	18
4.3 ELEMENT C: Mitigation Strategy	22
4.4 ELEMENT D: Plan Review, Evaluation, and Implementation	26
4.5 ELEMENT E: Plan Adoption	28
 SECTION 5: PLAN REVIEW PROCEDURE	31
5.1 Communicating the Review	31
5.2 Mitigation Plan Submittal	32
5.3 Mitigation Plan Review	32
5.4 Mitigation Plan Approval and Adoption	34
 APPENDIX A: LOCAL MITIGATION PLAN REVIEW TOOL	A-1
 SECTION 1: REGULATION CHECKLIST	A-2
 SECTION 2: PLAN ASSESSMENT	A-5
 SECTION 3: MULTI-JURISDICTION SUMMARY SPREADSHEET	A-9

SECTION 1: INTRODUCTION

1.1 PURPOSE OF LOCAL MITIGATION PLAN REVIEW GUIDE

The purpose of this *Local Mitigation Plan Review Guide* is to help Federal and State officials assess Local Mitigation Plans in a fair and consistent manner, and to ensure approved Local Mitigation Plans meet the requirements of the Stafford Act and Title 44 Code of Federal Regulations (CFR) §201.6.¹

The target audience for this Guide is Federal and State officials that complete Local Mitigation Plan reviews. Plan *developers* are directed to the *Local Mitigation Planning Handbook*². The *Local Mitigation Plan Review Guide* (or *Plan Review Guide*) and the *Local Mitigation Planning Handbook* (or *Planning Handbook*) may be used in tandem by plan reviewers and developers so that communities understand the technical requirements, as well as understand the various ways that plans can be developed to meet these requirements. FEMA supports, coordinates and reviews local plans as a means to:

- Foster federal, state, and local partnerships for hazard mitigation;
- Promote more resilient and sustainable communities; and
- Reduce the costs associated with disaster response and recovery by promoting hazard mitigation activities.

This *Local Mitigation Plan Review Guide*, as interpretation and explanation for the Mitigation Planning regulation in 44 CFR Part 201, is the Federal Emergency Management Agency's (FEMA) official source for defining the requirements of original and updated Local Mitigation Plans. The *Guide* represents FEMA's interpretation of a statutory or regulatory requirement. By itself, the *Guide* does not impose legally enforceable rights and obligations, but sets forth a standard operating procedure or agency practice that FEMA employees follow to be consistent, fair, and equitable in the implementation of the agency's authorities. The Guide includes references to specific language in 44 CFR §201.6 and descriptions of the relevant requirement to meet the Mitigation Planning regulation.

¹ Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, 42 U.S.C. 5165, and the National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4001 et seq., 44 Code of Federal Regulations (CFR) Part 201.

² The *Local Mitigation Planning Handbook* is under development; once issued, the *Plan Review Guide* and *Planning Handbook* will supersede the *Local Multi-Hazard Mitigation Planning Guidance* (also known as the "Blue Book").

1.2 ORGANIZATION OF GUIDE

This *Plan Review Guide* has six sections:

- Section 1: Introduction
- Section 2: Plan Review Guiding Principles
- Section 3: Completing the Plan Review Tool
- Section 4: Regulation Checklist
- Section 5: Plan Review Procedure
- Appendix A: Plan Review Tool

Section 1 describes the purpose and organization of the *Plan Review Guide*. Section 2 describes the overall guiding principles for Local Mitigation Plan reviews. Section 3 provides instructions on how FEMA will complete the *Local Mitigation Plan Review Tool*, including the Regulatory Checklist and Plan Assessment. Section 4 provides the detailed guidance on how FEMA interprets the regulation through the Regulatory Checklist for all Local Mitigation Plan reviews. Section 5 describes the Plan Review Procedure from submittal through approval, including methods of communication between FEMA, States and local governments that develop Local Mitigation Plans. Finally, Appendix A includes the *Plan Review Tool* to document the evaluation of any Local Mitigation Plan.

1.3 ROLES & RESPONSIBILITIES

The primary audience for this *Plan Review Guide* is Federal and State officials or staff that complete reviews of Local Mitigation Plans developed to meet FEMA's Mitigation Planning requirement under 44 CFR Part 201. The requirement for plan reviews (44 CFR 201.6(d)(1)), reads:

Plans must be submitted to the State Hazard Mitigation Officer (SHMO) for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. Where the State point of contact for the FMA program is different from the SHMO, the SHMO will be responsible for coordinating the local plan reviews between the FMA point of contact and FEMA.

The State is responsible for the initial review and coordination of the plan between the local government and FEMA. Additional information on the roles of the State official completing the plan review is described in Section 5, *Plan Review Procedure*.

FEMA is responsible for the final review and approval of all Local Mitigation Plans. Once a Local Mitigation Plan is submitted by the State, FEMA is responsible for the overall coordination of plan review, revisions, tracking and approval.

1.4 MITIGATION PLAN UPDATES

Local Mitigation Plans must be updated at least once every five years in order to continue to be eligible for FEMA hazard mitigation project grant funding. Specifically, the regulation at 44 CFR §201.6(d)(3) reads:

A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five (5) years in order to continue to be eligible for mitigation project grant funding.

The *Local Mitigation Plan Review Guide* addresses plan updates within each required Element, and more specifically in Element D, Plan Updates. First, each required Element for Local Mitigation Plans must be met with *current* information. For example, the planning process and public participation that were completed in the previous planning cycle will not meet the requirements for the planning process in the five-year update. Likewise, if the plan update does not include major disaster declarations that occurred since the previous plan was written, FEMA will not approve the plan update. Although several sub-elements (A1, B2 and C6) have explicit guidance for plan updates, all sub-elements must be met with current information for FEMA approval of a plan update. Second, Element D identifies the plan update requirements to “*reflect changes in development, progress in local mitigation efforts, and changes in priorities*” (44 CFR §201.6(d)(3)). Specific guidance on how to meet each of these requirements is included in Element D, Plan Updates.

1.5 FLOOD AND MULTI-HAZARDS MITIGATION PLANS

Some communities choose to develop Local Mitigation Plans that only address flood hazards. In order to receive FEMA approval, flood mitigation plans must meet all Elements identified in the regulation at 44 CFR §201.6 and in the Regulation Checklist for flood hazards. FEMA and State officials that review and approve a flood-only mitigation plan will clearly inform the community that the community’s eligibility is limited to the flood mitigation programs authorized by the National Flood Insurance Act of 1968, as amended, and that the community will not be eligible for other FEMA assistance programs, such as Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP), that require a multi-hazard mitigation plan.

SECTION 2:

PLAN REVIEW GUIDING PRINCIPLES

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning, therefore, is to maintain a process that leads to hazard mitigation actions. Mitigation plans identify the natural hazards that impact communities, identify actions to reduce losses from those hazards, and establish a coordinated process to implement the plan. (44 CFR §201.1(b))

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards (44 CFR 201.2). Hazard mitigation activities may be implemented prior to, during, or after an event. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs.

In 2004, FEMA published mitigation planning guidance with a ‘performance’ based approach, rather than a ‘prescriptive’ approach. This means that the requirements identify, generally, *what* should be done in the process and documented in the plan, rather than specify exactly *how* it should be done. This performance approach continues along with a set of Guiding Principles to assist with the review of all Local Mitigation Plans. This *Local Mitigation Plan Review Guide* also includes a description of the intent specific to each requirement.

The following Guiding Principles will be applied to all plan reviews:

- 1. Focus on Mitigation Strategy.** *Plan reviews will emphasize actions and implementation of the hazard mitigation strategy.* All other sections of the plan contribute to and result in the hazard mitigation strategy and specific hazard mitigation actions. For example, a sound hazard identification and risk assessment is an important part of the plan, but is the basis, in part, for the strategy which is the focus of the Local Mitigation Plan. Submission of a Local Mitigation Plan for FEMA review and approval is not the end state, but is the beginning of implementing hazard mitigation action.
- 2. Review for Intent, as well as Compliance.** *Plan reviews will focus on whether the mitigation plan meets the intent of the law and regulation.* FEMA considers the overall plan and each Element (*for example*, planning process, risk assessment, mitigation strategy), as well as the individual requirements. A comprehensive review of the plan assists FEMA to validate that the plan meets the overall intent of mitigation planning, whereas only a strict interpretation of individual requirements may cause unnecessary revisions.

- 3. Process is as important as the Plan itself.** *FEMA will accept the planning process as defined by the community.* In hazard mitigation planning, as with most other planning efforts, the actual process of planning is as important as the plan itself. Said another way, the plan is only as good as the planning process that people chose to develop it. Bringing together local officials, stakeholders and the public in a community-driven planning process to develop the plan also helps build the community's overall hazard mitigation program. Therefore, FEMA considers the plan as the written record, or documentation, of the planning process. This is why some of the plan requirements ask for a "discussion" or "description" of generally, **what** must be documented in the plan, rather than specify exactly **how** it must be done.
- 4. This is the Community's Plan.** *Plan reviews will recognize the effort and interest of each community that develops a mitigation plan.* To emphasize the importance of the community's ownership of the plan, FEMA will recognize the inherent differences that exist among local governments with respect to size, resources, capability, and vulnerability. FEMA will not penalize communities that have less capability or demonstrate little progress in hazard mitigation efforts over time. In addition, FEMA will not require specific formats (*for example*, stand-alone plan, chapter in emergency operations plan, or integrated into comprehensive plan), and FEMA will not require information above or beyond the requirements to be removed (*for example*, non-natural, climate change). In fact, FEMA acknowledges that some plans will simply "pass" the minimum plan requirements to receive FEMA approval. However, communities of any size, resources or capability that demonstrate a genuine interest in and commitment to hazard mitigation through their planning process will be better positioned to receive FEMA technical and financial assistance to implement their actions or projects.
- 5. Foster Relationships.** *FEMA's relationship with the State and community is as important as the words in the plan.* Although the plan review is a necessary step for FEMA approval, FEMA's role is to provide technical assistance, not to be gatekeepers of plan approval. FEMA will work with States to ensure the plan review is communicated clearly and in a timely manner. FEMA will communicate the requirement through constructive and positive feedback, particularly if clarification or additional documentation is needed. FEMA understands that there is a whole planning process that has already happened, and FEMA's review of the plan is intended to benefit the community's hazard mitigation program.

SECTION 3:

COMPLETING THE PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* (See Appendix A) demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

3.1 REGULATION CHECKLIST (*Completion by FEMA required*)

The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

3.2 PLAN ASSESSMENT (*Completion by FEMA Required*)

The purpose of the Plan Assessment is to offer the local community more comprehensive feedback on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA and is not required from the State. The Plan Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs.

The Plan Assessment is divided into two sections:

- A. Plan Strengths and Opportunities for Improvement
- B. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

Sample Completed Plan Assessment

I. Plan Strengths and Opportunities for Improvement

Element A: Planning Process

Plan strengths

- Public involvement process, as described in the planning process section, comprised of meetings with homeowners associations and public representation on various county boards and councils. A letter included in the Plan also indicates that the Plan was placed in public libraries along with preparedness and other hazard notices; and that comments were received and incorporated.

Sample Completed Plan Assessment (continued)

Opportunities for improvement:

- Consider providing more detail on the planning process. For example, list every meeting conducted and agencies represented at these meetings.
- Provide a list of comments received from all stakeholders, including the public. This information will provide specific direction for the next plan update.
- Consider providing additional information on outreach methods, etc., for additional Community Rating System (CRS) credit. Contact the State CRS coordinator at 234-234-2345 for more information.
- For the next plan update, consider gaining participation from the local media to help increase public awareness and participation. Posting documents on the web will also allow for more citizens to participate.

Element B: Hazard Identification and Risk Assessment

Plan strengths:

- Table 4.1 is an excellent presentation of the actions for each participating jurisdiction and identifies the responsible party, timeframe, hazard, possible funding source, priority, implementation schedule, and impediments to implementation.
- The Plan adequately identifies geographic information system (GIS) data gaps to improve the impact analysis and contains an associated action to acquire additional data for seismic landslide maps.
- The Plan does a good job of describing general development trends. Countywide trends are well described, and some attempt is made to describe trends within each incorporated jurisdiction. The reliance on 1990 and 2000 Census data to highlight these changes is effective in communicating long term trends, but more current data from the 2010 Census, local information, or other sources may bring further clarity to the Plan. Additionally, it may be useful to expand the discussion of development trends to include other agencies that may be represented in the Plan (*for example*, school districts and special districts) since changes in development may greatly impact the vulnerability for these jurisdictions.

Opportunities for improvement:

- Potential dollar losses are not addressed in this version and would be a good addition to the next update. The methodology on how loss estimates are prepared should also be included.
- The maps presented within the Plan provide an excellent perspective on vulnerability for various jurisdictions, but more detail concerning these efforts to analyze hazards through advanced GIS methods would be useful. For instance, it is evident that spatial analysis was conducted to determine if there were dams located in close proximity to structures owned by jurisdictions, but no information concerning the buffer distance (or definition of “close”) is included for this analysis.

Element C: Mitigation Strategy

Plan strengths:

- The Plan contains excellent information on funding sources and resources for implementing mitigation actions. It may also be useful to include contact information for the State Hazard Mitigation Officer and the State Mitigation Management website location among these resources since the State is responsible for coordinating the implementation of many of these programs within the State.

Sample Completed Plan Assessment (continued)

Opportunities for improvement:

- Some linkages between the mitigation strategy and Hazard Identification and Risk Assessment are evident, but could be better explained in future Plan Updates. As more refined information is created for certain hazards (such as dam failure) it may be possible to target mitigation actions more specifically at certain hazard areas likely to be vulnerable to these hazards.
- The Plan does a good job of identifying other resources such as U.S. Department of Agriculture (USDA) and Community Development Block Grant (CDBG) programs that may be useful for mitigation. Linking these programs to mitigation actions could increase the effectiveness of the Plan and make it a more valuable resource for community officials and citizens.

Element D: Plan Update, Evaluation, and Implementation (applicable to plan updates only)

Plan strengths:

- The XXX County Hazard Mitigation Planning Committee was formed to update and revise the plan as a multi-jurisdictional plan. Items covered in this update addressed the annual review process. Section 1.2 states that the Plan will be reviewed and updated annually to monitor the progress of its mitigation strategies and to integrate new technologies.

Opportunities for improvement:

- The Plan documents changes that have occurred in the planning area as well as updates to the HIRA section. A clearer linkage between these updates and changes that have occurred should be included. It may also be useful to provide description of any items that prevented progress on mitigation actions (*for example*, funding, regulations, political issues, authorities, etc.) so that these items may be addressed more fully during the next update.

2. Resources for Implementing Your Approved Plan

- The 2010 State of AAA Hazard Mitigation Plan identifies a number of potential funding resources for various mitigation actions. The grants identified in Chapter 7 of the State Plan are from both Federal and State sources. More information about applying for grants can be obtained from Joe Johns, AAA's State Hazard Mitigation Officer.
- FEMA is currently conducting a Risk MAP project in City of YYY. This project is in its infancy stage (LiDAR will be conducted in Fall 2011). In an effort to capitalize on current data and flood risk information, it is important that, during the Discovery Process, the municipality include representatives from departments that deal with flood risk (*for example*, hazard mitigation planning, emergency planning, and land use and zoning).
- The AAA State Division of Emergency Management mitigation team is available to help identify possible forms of assistance (technical and financial) to improve GIS capabilities, conduct studies and implement projects identified in the Plan.
- The AAA State DNR is currently working to create inundation maps for each high hazard dam in the State. This information will be made available and will assist in creating a more accurate hazard profile for dam failure events within the planning area.
- Benefit cost analysis (BCA) courses are offered through the State Hazard Mitigation Officer at 123-234-3456. As a key component of Hazard Mitigation Assistance (HMA) sub-application development, this course assists communities seeking funding for implementing effective mitigation projects. This course will also provide supplemental material on changes to the Tornado Safe Room program and will be led by State Division of Emergency Management.
- The FEMA Region has expressed interest in direct technical assistance on integrating non-regulatory flood risk products into hazard mitigation plans. The availability of this assistance is limited, but additional information can be found at:
<http://www.fema.gov/library/viewRecord.do?id=4763>.

3.3 MULTI-JURISDICTION SUMMARY SPREADSHEET (*Optional*)

For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

SECTION 4: REGULATION CHECKLIST

This section provides detailed guidance on how FEMA interprets the various requirements of the regulation for all Local Mitigation Plan reviews through a Regulatory Checklist. The guidance is limited only to the minimum requirements of *what* must be in a Local Mitigation Plan, and does not provide guidance on *how* the community should develop a plan. The Regulation Checklist includes the following Elements:

- 4.1 ELEMENT A: Planning Process
- 4.2 ELEMENT B: Hazard Identification and Risk Assessment
- 4.3 ELEMENT C: Mitigation Strategy
- 4.4 ELEMENT D: Plan Review, Evaluation, and Implementation
- 4.5 ELEMENT E: Plan Adoption
- 4.6 ELEMENT F: Additional State Requirements

Many requirements in the Checklist call for the plan to “document” or “describe” information. FEMA does not require specific formats for the plan or its content. Required information to “document” can be provided in the plan through a variety of formats, such as narrative, tables, lists, maps, etc. Examples provided in this *Guide* are samples of one or more approaches to meeting that particular requirement. Examples are not inclusive of all possible solutions to meet a requirement, and they are not necessarily considered “best practices” or exemplary. FEMA will recognize that there are many formats and types of documentation that may meet a particular requirement.

Terms from the regulation are defined in this *Guide*, where necessary. For example, many of the plan requirements ask for a “discussion” or “description.” FEMA considers the plan as the written record, or documentation, of the planning process. Therefore, many of these terms have the same meaning to document *what* was done. In addition, this *Guide* uses the terms “jurisdiction” and “community” interchangeably. For purposes of this *Guide*, these terms are equal to any local government developing a Local Mitigation Plan. This is defined at 44 CFR §201.2 as:

“any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

Finally, an important distinction must be made between the words “shall” and “should” in the Mitigation Planning regulation at 44 CFR Part 201. The Regulation Checklist only includes the requirements where the regulation uses the words “shall” and “must,” and does not include the “should.” When the word “should” is used, the item is strongly recommended to be included in the plan, but its absence will not cause FEMA to disapprove the plan.

4.1 ELEMENT A: PLANNING PROCESS

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:
§201.6(b)(1)	(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
§201.6(b)(2)	(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
§201.6(b)(3)	(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
§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.
§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.
§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.

Overall Intent. The planning process is as important as the plan itself. Any successful planning activity, such as developing a comprehensive plan or local land use plan, involves a cross-section of stakeholders and the public to reach consensus on desired outcomes or to resolve a community problem. The result is a common set of community values and widespread support for directing financial, technical, and human resources to an agreed upon course of action, usually identified in a plan. The same is true for mitigation planning. An effective and open planning process helps ensure that citizens understand risks and vulnerability, and they can work with the jurisdiction to support policies, actions, and tools that over the long-term will lead to a reduction in future losses.

Leadership, staffing, and in-house knowledge in local government may fluctuate over time. Therefore, the description of the planning process serves as a permanent record that explains how decisions were reached and who involved. FEMA will accept the planning process as defined by the community, as long as the mitigation plan includes a narrative

description of the process used to develop the mitigation plan—a systematic account about how the mitigation plan evolved from the formation of a planning team, to how the public participated, to how each section of the plan was developed, to what plans or studies were incorporated into the plan, to how it will be implemented. Documentation of a current planning process is required for both new and updated plans.

ELEMENT	REQUIREMENTS
<p>A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? 44 CFR 201.6(c)(1)</p> <p><i>Intent: To inform the public and other readers about the overall approach to the plan’s development and serve as a permanent record of how decisions were made and who was involved. This record also is useful for the next plan update.</i></p>	<p>a. Documentation of how the plan was prepared must include the schedule or timeframe and activities that made up the plan’s development as well as who was involved. Documentation typically is met with a narrative description, but may also include, for example, other documentation such as copies of meeting minutes, sign-in sheets, or newspaper articles.</p> <p><i>Document means provide the factual evidence for how the jurisdictions developed the plan.</i></p> <p>b. The plan must list the jurisdiction(s) participating in the plan that seek approval.</p> <p>c. The plan must identify who represented each jurisdiction. The Plan must provide, at a minimum, the jurisdiction represented and the person’s position or title and agency within the jurisdiction.</p> <p>d. For each jurisdiction seeking plan approval, the plan must document how they were involved in the planning process. For example, the plan may document meetings attended, data provided, or stakeholder and public involvement activities offered. Jurisdictions that adopt the plan without documenting how they participated in the planning process will not be approved.</p> <p><i>Involved in the process means engaged as participants and given the chance to provide input to affect the plan’s content. This is more than simply being invited (See “opportunity to be involved in the planning process” in A2 below) or only adopting the plan.</i></p> <p>e. Plan updates must include documentation of the current planning process undertaken to update the plan.</p>
<p>A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? 44 CFR 201.6(b)(2)</p>	<p>a. The plan must identify all stakeholders involved or given an opportunity to be involved in the planning process. At a minimum, stakeholders must include:</p> <ol style="list-style-type: none"> 1) Local and regional agencies involved in hazard mitigation activities; 2) Agencies that have the authority to regulate development; and 3) Neighboring communities. <p><i>An opportunity to be involved in the planning process means that the stakeholders are engaged or invited as participants and given the chance to provide input to affect the plan’s content.</i></p>

ELEMENT	REQUIREMENTS
<p><i>Intent:</i> To demonstrate a deliberative planning process that involves stakeholders with the data and expertise needed to develop the plan, with responsibility or authority to implement hazard mitigation activities, and who will be most affected by the plan’s outcomes.</p>	<p>b. The Plan must provide the agency or organization represented and the person’s position or title within the agency.</p> <p>c. The plan must identify how the stakeholders were invited to participate in the process.</p> <p>Examples of stakeholders include, but are not limited to:</p> <ul style="list-style-type: none"> • Local and regional agencies involved in hazard mitigation include public works, zoning, emergency management, local floodplain administrators, special districts, and GIS departments. • Agencies that have the authority to regulate development include planning and community development departments, building officials, planning commissions, or other elected officials. • Neighboring communities include adjacent counties and municipalities, such as those that are affected by similar hazard events or may be partners in hazard mitigation and response activities. • Other interests may be defined by each jurisdiction and will vary with each one. These include, but are not limited to, business, academia, and other private and non-profit interests depending on the unique characteristics of the community.
<p>A3. Does the Plan document how the public was involved in the planning process during the drafting stage? 44 CFR 201.6(b)(1) and 201.6(c)(1)</p> <p><i>Intent:</i> To ensure citizens understand what the community is doing on their behalf, and to provide a chance for input on community vulnerabilities and mitigation activities that will inform the plan’s content. Public involvement is also an opportunity to educate the public about hazards and risks in the community, types of activities to mitigate those risks, and how these impact them.</p>	<p>a. The plan must document how the public was given the opportunity to be involved in the planning process and how their feedback was incorporated into the plan. Examples include, but are not limited to, sign-in sheets from open meetings, interactive websites with drafts for public review and comment, questionnaires or surveys, or booths at popular community events.</p> <p>b. The opportunity for participation must occur during the plan development, which is prior to the comment period on the final plan and prior to the plan approval / adoption.</p>

ELEMENT	REQUIREMENTS
<p>A4. Does the Plan document the review and incorporation of existing plans, studies, reports, and technical information? 44 CFR 201.6(b)(3)</p> <p><i>Intent: To identify existing data and information, shared objectives, and past and ongoing activities that can help inform the mitigation plan. It also helps identify the existing capabilities and planning mechanisms to implement the mitigation strategy.</i></p>	<p>a. The plan must document <i>what</i> existing plans, studies, reports, and technical information were reviewed. Examples of the types of existing sources reviewed include, but are not limited to, the state hazard mitigation plan, local comprehensive plans, hazard specific reports, and flood insurance studies.</p> <p>b. The plan must document <i>how</i> relevant information was incorporated into the mitigation plan.</p> <p><i>Incorporate means to reference or include information from other existing sources to form the content of the mitigation plan.</i></p>
<p>A5. Is there discussion on how the community(ies) will continue public participation in the plan maintenance process? 44 CFR 201.6(c)(4)(iii)</p> <p><i>Intent: To identify how the public will continue to have an opportunity to participate in the plan’s maintenance and implementation over time.</i></p>	<p>a. The plan must describe how the jurisdiction(s) will continue to seek public participation after the plan has been approved and during the plan’s implementation, monitoring and evaluation.</p> <p><i>Participation means engaged and given the chance to provide feedback. Examples include, but are not limited to, periodic presentations on the plan’s progress to elected officials, schools or other community groups, annual questionnaires or surveys, public meetings, postings on social media and interactive websites.</i></p>
<p>A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? 44 CFR 201.6(c)(4)(i)</p> <p><i>Intent: To establish a process for jurisdictions to track the progress of the plan’s implementation. This also serves as the basis of the next plan update.</i></p>	<p>a. The plan must identify how, when, and by whom the plan will be monitored. <i>Monitoring means tracking the implementation of the plan over time. For example, monitoring may include a system for tracking the status of the identified hazard mitigation actions.</i></p> <p>b. The plan must identify how, when, and by whom the plan will be evaluated. <i>Evaluating means assessing the effectiveness of the plan at achieving its stated purpose and goals.</i></p> <p>c. The plan must identify how, when, and by whom the plan will be updated. <i>Updating means reviewing and revising the plan at least once every five years.</i></p> <p>d. The plan must include the title of the individual or name of the department/ agency responsible for leading each of these efforts.</p>

4.2 ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT

Requirement	[The risk assessment shall include a] description of the type, 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.
§201.6(c)(2)(i)	
§201.6(c)(2)(ii)	[The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:
§201.6(c)(2)(ii)(A)	(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
§201.6(c)(2)(ii)(B)	(B) An estimate of the potential dollar losses to vulnerable structures identified in ... this section and a description of the methodology used to prepare the estimate.
§201.6(c)(2)(ii)(C)	(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
§201.6(c)(2)(iii)	For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction’s risks where they vary from the risks facing the entire planning area.

Overall Intent. The risk assessment provides the factual basis for activities proposed in the strategy that will reduce losses from identified hazards. A quality risk assessments makes a clear connection between the community’s vulnerability and the hazard mitigation actions. In other words, it provides sufficient information to enable the jurisdiction(s) to identify and prioritize appropriate hazard mitigation actions.

Local risk assessments do not need to be based on the most sophisticated technology, but do need to be accurate, current, and relevant. During a plan update, local jurisdictions assess current and expected future vulnerability to all hazards and integrate new hazard data such as recent hazard events and new flood studies. In the mitigation plan review, FEMA looks at the quality of the information in the risk assessment, not the quantity of information in the risk assessment.

The Mitigation Planning regulation includes several “optional” requirements for the vulnerability assessment. These are easily recognizable with the use of the term “should” in the requirement (See §201.6(c)(2)(ii)(A-C)). Although not required, these are strongly recommended to be included in the plan. However, their absence will not cause FEMA to disapprove the plan. These “optional” requirements were originally intended to meet the overall vulnerability assessment, and this analysis can assist with identifying mitigation actions.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p>B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction? 44 CFR 201.6(c)(2)(i) and 44 CFR 201.6(c)(2)(iii)</p> <p><i>Intent: To understand the potential and chronic hazards affecting the planning area in order to identify which hazard risks are most significant and which jurisdictions or locations are most adversely affected.</i></p>	<p>a. The plan must include a description of the natural hazards that can affect the jurisdiction(s) in the planning area.</p> <p><i>A natural hazard is a source of harm or difficulty created by a meteorological, environmental, or geological event³. The plan must address natural hazards. Manmade or human-caused hazards may be included in the document, but these are not required and will not be reviewed to meet the requirements for natural hazards. In addition, FEMA will not require the removal of this extra information prior to plan approval.</i></p> <p>b. The plan must provide the rationale for the omission of any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area.</p> <p>c. The description, or profile, must include information on location, extent, previous occurrences, and future probability for each hazard. Previous occurrences and future probability are addressed in sub-element B2.</p> <p>The information does not necessarily need to be described or presented separately for location, extent, previous occurrences, and future probability. For example, for some hazards, one map with explanatory text could provide information on location, extent, and future probability.</p> <p><i>Location means the geographic areas in the planning area that are affected by the hazard. For many hazards, maps are the best way to illustrate location. However, location may be described in other formats. For example, if a geographically-specific location cannot be identified for a hazard, such as tornados, the plan may state that the entire planning area is equally at risk to that hazard.</i></p> <p><i>Extent means the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence on a scientific scale (for example, Enhanced Fujita Scale, Saffir-Simpson Hurricane Scale, Richter Scale, flood depth grids) and/or other hazard factors, such as duration and speed of onset. Extent is not the same as impacts, which are described in sub-element B3.</i></p>

³ DHS Risk Lexicon, 2010 Edition. <http://www.dhs.gov/xlibrary/assets/dhs-risk-lexicon-2010.pdf>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
	<p>d. For participating jurisdictions in a multi-jurisdictional plan, the plan must describe any hazards that are unique and/or varied from those affecting the overall planning area.</p>
<p>B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? 44 CFR 201.6(c)(2)(i)</p> <p><i>Intent: To understand potential impacts to the community based on information on the hazard events that have occurred in the past and the likelihood they will occur in the future.</i></p>	<p>a. The plan must include the history of previous hazard events for each of the identified hazards.</p> <p>b. The plan must include the probability of future events for each identified hazard.</p> <p><i>Probability means the likelihood of the hazard occurring and may be defined in terms of general descriptors (for example, unlikely, likely, highly likely), historical frequencies, statistical probabilities (for example: 1% chance of occurrence in any given year), and/or hazard probability maps. If general descriptors are used, then they must be defined in the plan. For example, “highly likely” could be defined as equals near 100% chance of occurrence next year or happens every year.</i></p> <p>c. Plan updates must include hazard events that have occurred since the last plan was developed.</p>
<p>B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? 44 CFR 201.6(c)(2)(ii)</p> <p><i>Intent: For each jurisdiction to consider their community as a whole and analyze the potential impacts of future hazard events and the vulnerabilities that could be reduced through hazard mitigation actions.</i></p>	<p>a. For each participating jurisdiction, the plan must describe the potential impacts of each of the identified hazards on the community.</p> <p><i>Impact means the consequence or effect of the hazard on the community and its assets. Assets are determined by the community and include, for example, people, structures, facilities, systems, capabilities, and/or activities that have value to the community. For example, impacts could be described by referencing historical disaster impacts and/or an estimate of potential future losses (such as percent damage of total exposure).</i></p> <p>b. The plan must provide an overall summary of each jurisdiction’s vulnerability to the identified hazards. The overall summary of vulnerability identifies structures, systems, populations or other community assets as defined by the community that are susceptible to damage and loss from hazard events. A plan will meet this sub-element by addressing the requirements described in §201.6(c)(2)(ii)(A-C).</p> <p>Vulnerable assets and potential losses is more than a list of the total exposure of population, structures, and critical facilities in the planning area. An example of an overall summary is a list of key issues or problem statements that clearly describes the community’s greatest vulnerabilities and that will be addressed in the mitigation strategy.</p>

ELEMENT	REQUIREMENTS
<p>B4. Does the Plan address NFIP insured structures within each jurisdiction that have been repetitively damaged by floods? 44 CFR 201.6(c)(2)(ii)</p> <p><i>Intent: To inform hazard mitigation actions for properties that have suffered repetitive damage due to flooding, particularly problem areas that may not be apparent on floodplain maps. Information on repetitive loss properties helps inform FEMA hazard mitigation assistance programs under the National Flood Insurance Act.</i></p>	<p>a. The plan must describe the types (residential, commercial, institutional, etc.) and estimate the numbers of repetitive loss properties located in identified flood hazard areas.</p> <p><i>Repetitive loss properties are those for which two or more losses of at least \$1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978.</i></p> <p><i>Severe repetitive loss properties are residential properties that have at least four NFIP payments over \$5,000 each and the cumulative amount of such claims exceeds \$20,000, or at least two separate claims payments with the cumulative amount exceeding the market value of the building.</i></p> <p>Use of flood insurance claim and disaster assistance information is subject to The Privacy Act of 1974, as amended, which prohibits public release of the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance. However, maps showing general areas where claims have been paid can be made public. If a plan includes the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance, the plan cannot be approved until this Privacy Act covered information is removed from the plan.</p>

4.3 ELEMENT C. MITIGATION STRATEGY

Requirement §201.6(c)(3)	[The plan shall include the following:] A <i>mitigation strategy</i> 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.
§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.
§201.6(c)(3)(ii)	[The hazard 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. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction’s participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
§201.6(c)(3)(iii)	[The hazard mitigation strategy shall include an] action plan, describing how the action identified in paragraph (c)(3)(ii) of this section 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.
§201.6(c)(3)(iv)	For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.
§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 improvements, when appropriate.

Overall Intent. The mitigation strategy serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The Stafford Act directs Local Mitigation Plans to describe hazard mitigation actions and establish a strategy to implement those actions.⁴ Therefore, all other requirements for a Local Mitigation Plan lead to and support the mitigation strategy.

⁴ Section 322(b), Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, 42 U.S.C. 5165.

The mitigation strategy includes the development of goals and prioritized hazard mitigation actions. Goals are long-term policy statements and global visions that support the mitigation strategy. A critical step in the development of specific hazard mitigation actions and projects is assessing the community’s existing authorities, policies, programs, and resources and its capability to use or modify local tools to reduce losses and vulnerability from profiled hazards.

In the plan update, goals and actions are either reaffirmed or updated based on current conditions, including the completion of hazard mitigation initiatives, an updated or new risk assessment, or changes in State or local priorities.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p>C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs? 44 CFR 201.6(c)(3)</p> <p><i>Intent: To ensure that each jurisdiction evaluates its capabilities to accomplish hazard mitigation actions, through existing mechanisms. This is especially useful for multi-jurisdictional plans where local capability varies widely.</i></p>	<p>a. The plan must describe each jurisdiction’s existing authorities, policies, programs and resources available to accomplish hazard mitigation.</p> <p>Examples include, but are not limited to: staff involved in local planning activities, public works, and emergency management; funding through taxing authority, and annual budgets; or regulatory authorities for comprehensive planning, building codes, and ordinances.</p>
<p>C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? 44 CFR 201.6(c)(3)(ii)</p> <p><i>Intent: To demonstrate flood hazard mitigation efforts by the community through NFIP activities. Where FEMA is the official administering Federal agency of the NFIP, participation in the program is a basic community capability and resource for flood hazard mitigation activities.</i></p>	<p>a. The plan must describe each jurisdiction’s participation in the NFIP and describe their floodplain management program for continued compliance. Simply stating “The community will continue to comply with NFIP,” will <u>not</u> meet this requirement. The description could include, but is not limited to:</p> <ul style="list-style-type: none"> • Adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs); • Floodplain identification and mapping, including any local requests for map updates; or • Description of community assistance and monitoring activities. <p>Jurisdictions that are currently not participating in the NFIP and where an FHBM or FIRM has been issued may meet this requirement by describing the reasons why the community does not participate.</p>

ELEMENT	REQUIREMENTS
<p>C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? 44 CFR 201.6(c)(3)(i)</p> <p><i>Intent: To guide the development and implementation of hazard mitigation actions for the community(ies). Goals are statements of the community's visions for the future.</i></p>	<p>a. The plan must include general hazard mitigation goals that represent what the jurisdiction(s) seeks to accomplish through mitigation plan implementation.</p> <p><i>Goals are broad policy statements that explain what is to be achieved.</i></p> <p>b. The goals must be consistent with the hazards identified in the plan.</p>
<p>C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? 44 CFR 201.6(c)(3)(ii) and 44 CFR 201.6(c)(3)(iv)</p> <p><i>Intent: To ensure the hazard mitigation actions are based on the identified hazard vulnerabilities, are within the capability of each jurisdiction, and reduce or avoid future losses. This is the heart of the mitigation plan, and is essential to leading communities to reduce their risk. Communities, not FEMA, "own" the hazard mitigation actions in the strategy.</i></p>	<p>a. The plan must include a mitigation strategy that 1) analyzes actions and/or projects that the jurisdiction considered to reduce the impacts of hazards identified in the risk assessment, and 2) identifies the actions and/or projects that the jurisdiction intends to implement.</p> <p><i>Mitigation actions and projects means a hazard mitigation action, activity or process (for example, adopting a building code) or it can be a physical project (for example, elevating structures or retrofitting critical infrastructure) designed to reduce or eliminate the long term risks from hazards. This sub-element can be met with either actions or projects, or a combination of actions and projects.</i></p> <p>The mitigation plan may include non-mitigation actions, such as actions that are emergency response or operational preparedness in nature. These will not be accepted as hazard mitigation actions, but neither will FEMA require these to be removed from the plan prior to approval.</p> <p><i>A comprehensive range consists of different hazard mitigation alternatives that address the vulnerabilities to the hazards that the jurisdiction(s) determine are most important.</i></p> <p>b. Each jurisdiction participating in the plan must have mitigation actions specific to that jurisdiction that are based on the community's risk and vulnerabilities, as well as community priorities.</p> <p>c. The action plan must reduce risk to existing buildings and infrastructure as well as limit any risk to new development and redevelopment. <i>With emphasis on new and existing building and infrastructure means that the action plan includes a consideration of actions that address the built environment.</i></p>

ELEMENT	REQUIREMENTS
<p>C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? 44 CFR 201.6(c)(3)(iii) and 44 CFR (c)(3)(iv)</p> <p><i>Intent: To identify how the plan will directly lead to implementation of the hazard mitigation actions. As opportunities arise for actions or projects to be implemented, the responsible entity will be able to take action towards completion of the activities.</i></p>	<ul style="list-style-type: none"> a. The plan must describe the criteria used for prioritizing implementation of the actions. b. The plan must demonstrate when prioritizing hazard mitigation actions that the local jurisdictions considered the benefits that would result from the hazard mitigation actions versus the cost of those actions. The requirement is met as long as the economic considerations are summarized in the plan as part of the community’s analysis. A complete benefic-cost analysis is not required. Qualitative benefits (<i>for example</i>, quality of life, natural and beneficial values, or other “benefits”) can also be included in how actions will be prioritized. c. The plan must identify the position, office, department, or agency responsible for implementing and administering the action (for each jurisdiction), and identify potential funding sources and expected timeframes for completion.
<p>C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? 44 CFR 201.6(c)(4)(ii)</p> <p><i>Intent: To assist communities in capitalizing on all available mechanisms that they have at their disposal to accomplish hazard mitigation and reduce risk.</i></p>	<ul style="list-style-type: none"> a. The plan must describe the community’s process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms. b. The plan must identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated. <p><i>Planning mechanisms means governance structures that are used to manage local land use development and community decision-making, such as comprehensive plans, capital improvement plans, or other long-range plans.</i></p> <ul style="list-style-type: none"> c. A multi-jurisdictional plan must describe each participating jurisdiction’s individual process for integrating hazard mitigation actions applicable to their community into other planning mechanisms. d. The updated plan must explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts. e. The updated plan must continue to describe how the mitigation strategy, including the goals and hazard mitigation actions will be incorporated into other planning mechanisms.

4.4 ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (Plan Updates Only)

Requirement §201.6(d)(3)	A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit if for approval within 5 years in order to continue to be eligible for mitigation project grant funding.
---------------------------------	--

Overall Intent. In order to continue to be an effective representation of the jurisdiction’s overall strategy for reducing its risks from natural hazards, the mitigation plan must reflect current conditions. This will require an assessment of the current development patterns and development pressures as well as an evaluation of any new hazard or risk information. The plan update is an opportunity for the jurisdiction to assess its previous goals and action plan, evaluate progress in implementing hazard mitigation actions, and adjust its actions to address the current realities.

Where conditions of growth and revisions in priorities may have changed very little in a community, much of the text in the updated plan may be unchanged. This is acceptable as long as it still fits the priorities of their community, and it reflects current conditions. The key for plan readers to recognize a good plan update is documentation of the community’s progress or changes in their hazard mitigation program, along with the community’s continued engagement in the mitigation planning process.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p>D1. Was the plan revised to reflect changes in development? 44 CFR 201.6(d)(3)</p> <p><i>Intent: To ensure that the mitigation strategy continues to address the risk and vulnerabilities to existing and potential development, and takes into consideration possible future conditions that can impact the vulnerability of the community.</i></p>	<p>a. The plan must describe changes in development that have occurred in hazard prone areas and increased or decreased the vulnerability of each jurisdiction since the last plan was approved. If no changes in development impacted the jurisdiction’s overall vulnerability, plan updates may validate the information in the previously approved plan.</p> <p>Changes in development means recent development (<i>for example</i>, construction completed since the last plan was approved), potential development (<i>for example</i>, development planned or under consideration by the jurisdiction), or conditions that may affect the risks and vulnerabilities of the jurisdictions (<i>for example</i>, climate variability, declining populations or projected increases in population, or foreclosures). Not all development will affect a jurisdiction’s vulnerability.</p>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p>D2. Was the plan revised to reflect progress in local mitigation efforts? 44 CFR 201.6(d)(3)</p> <p><i>Intent: To evaluate and demonstrate progress made in the past five years in achieving goals and implementing actions outlined in their mitigation strategy.</i></p>	<p>a. The plan must describe the status of hazard mitigation actions in the previous plan by identifying those that have been completed or not completed. For actions that have not been completed, the plan must either describe whether the action is no longer relevant or be included as part of the updated action plan.</p>
<p>D3. Was the plan revised to reflect changes in priorities? 44 CFR 201.6(d)(3)</p> <p><i>Intent: To ensure the plan reflects current conditions, including financial, legal, and political realities as well as post-disaster conditions.</i></p>	<p>a. The plan must describe if and how any priorities changed since the plan was previously approved.</p> <p>If no changes in priorities are necessary, plan updates may validate the information in the previously approved plan.</p>

4.5 ELEMENT E. PLAN ADOPTION

Requirement §201.6(c)(5)	[The 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.
---------------------------------	---

Overall Intent. Adoption by the local governing body demonstrates the jurisdiction’s commitment to fulfilling the hazard mitigation goals and actions outlined in the plan. Adoption legitimizes the plan and authorizes responsible agencies to execute their responsibilities. Updated plans also are adopted anew to demonstrate community recognition of the current planning process, changes that have occurred within the previous five years, and validate community priorities for hazard mitigation actions.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p>E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? 44 CFR 201.6(c)(5)</p> <p><i>Intent: To demonstrate the jurisdiction’s commitment to fulfilling the hazard mitigation goals outlined in the plan, and to authorize responsible agencies to execute their responsibilities.</i></p>	<p>a. The plan must include documentation of plan adoption, usually a resolution by the governing body or other authority.</p> <p>If the local jurisdiction has not passed a formal resolution, or used some other documentation of adoption, the clerk or city attorney must provide written confirmation that the action meets their community’s legal requirements for official adoption and/or the highest elected official or their designee must submit written proof of the adoption. The signature of one of these officials is required with the explanation or other proof of adoption.</p> <p>Minutes of a council or other meeting during which the plan is adopted will be sufficient if local law allows meeting records to be submitted as documentation of adoption. The clerk of the governing body, or city attorney, must provide a copy of the law and a brief, written explanation such as, “in accordance with section ___ of the city code/ordinance, this constitutes formal adoption of the measure,” with an official signature.</p> <p>If adopted after FEMA review, adoption must take place within one calendar year of receipt of FEMA’s “Approval Pending Adoption.” See Section 5, <i>Plan Review Procedure</i> for more information on “Approvable Pending Adoption.”</p>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p>E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? 44 CFR 201.6(c)(5)</p> <p><i>Intent: To demonstrate the jurisdiction’s commitment to fulfilling the hazard mitigation goals outlined in the plan, and to authorize responsible agencies to execute their responsibilities.</i></p>	<p>a. Each jurisdiction that is included in the plan must have its governing body adopt the plan prior to FEMA approval, even when a regional agency has the authority to prepare such plans.</p> <p>As with single jurisdictional plans, in order for FEMA to give approval to a multi-jurisdictional plan, at least one participating jurisdiction must formally adopt the plan within one calendar year of FEMA’s designation of the plan as “Approvable Pending Adoption.” See Section 5, <i>Plan Review Procedure</i> for more information on “Approvable Pending Adoption.”</p>

SECTION 5: PLAN REVIEW PROCEDURE

5.1 COMMUNICATING THE REVIEW

FEMA will work with State counterparts to establish mutually agreeable methods of communication for Local Mitigation Plan reviews. State officials completing reviews may have their own procedures or preferences for communication with the local government or with FEMA. However, a clear understanding of how information on Local Mitigation Plan reviews will be relayed, and where necessary issues resolved, will foster more positive relationships between all parties and provide for greater understanding of unique local situations.

FEMA: At a minimum, the following communication techniques will be employed by FEMA in coordination with State offices responsible for the review of Local Mitigation Plans:

- FEMA will provide a completed *Plan Review Tool* with the review determination, including a description of the required revisions in the Regulation Checklist, and recommendations in the Plan Assessment.
- FEMA will send copies of all signed correspondence electronically, not just by mail, to reduce the overall review time.

FEMA, States and Local Governments: The following communication techniques may also be employed by FEMA in coordination with State offices responsible for the review of Local Mitigation Plans:

- **Joint Reviews:** FEMA and the State may conduct a joint review by phone or in person to discuss the plan section-by-section, highlighting strengths of the community's mitigation plan, as well as areas where improvements make the plan more effective at reducing risks to known hazards.
- **Involve the Locals:** States may choose to include the local officials in joint reviews, or allow direct contact between FEMA and the local official to reduce review time.
- **Positive First Contact:** When revisions are required, FEMA may contact the State directly by phone to discuss revisions and offer an opportunity for changes prior to issuing a "Required Revisions" letter.
- **Phone First:** When revisions are required, State and/or local officials are encouraged to call FEMA for any clarifications or questions rather than conduct communication in writing.
- **Share Drafts:** Local officials may share drafts of their entire plan, or at least the results of the risk assessment, with the State and/or FEMA well in advance of finalizing the plan. Early feedback from the State and/or FEMA will let the jurisdiction know that it is on the right track, that additional material needs to be

added, or that major revisions need to be made in time to develop and submit an approvable plan by established deadlines.

- **Stay on Schedule:** States and local officials should coordinate with each other on procedures and schedules for State support of local mitigation planning efforts, initial State review of Local Mitigation Plans, and FEMA review and approval in time to meet deadlines.
- **Request Technical Assistance:** States and local officials may request technical assistance from FEMA during the development of the Local Mitigation Plan, not simply contact FEMA at the point of review to ensure the planning process is understood and executed successfully.

5.2 MITIGATION PLAN SUBMITTAL

State: The State is responsible for the initial review and coordination of all Local Mitigation Plans within that State. Once initial review by the State is complete, the State submits the plan to the respective FEMA Regional office requesting a FEMA review (See FEMA Regional office contact information at: <http://www.fema.gov/about/contact/regions.shtm>). This submittal consists of the following:

- a) Transmittal letter or email from the State Hazard Mitigation Officer, Governor’s Authorized Representative, or other delegated State officer;
- b) Local Mitigation Plan document to be reviewed;
- c) *Plan Review Tool* completed by the State; and
- d) If the Plan is already adopted by one or more of the participating local jurisdictions, copies of any adopting resolution(s) or letter(s).

Plans may be submitted electronically or in paper copy, or both. Hard copies may be required for review purposes, and electronic copies may be requested for recordkeeping. If sending a paper copy, the State should include an “ATTENTION:” line on the mailing label with the name of the FEMA Mitigation Planner in the respective FEMA Regional office.

FEMA: Upon receipt, FEMA will provide confirmation to the State either by phone, email or mail.

5.3 MITIGATION PLAN REVIEW

Review Timeframes

FEMA: All Local Mitigation Plans submitted to FEMA will be reviewed by FEMA using this *Local Mitigation Plan Review Guide* and the corresponding *Local Mitigation Plan Review Tool*.

FEMA will work with State officials to ensure plans are reviewed in a timely manner and to prioritize the order of the review of all plans submitted. All Local Mitigation Plans will be reviewed within 45 calendar dates, whenever possible. If FEMA is unable to complete a Local Mitigation Plan review within 45 days of receipt from the State, the FEMA Regional Administrator, or his/her designee will either:

- a) Send a signed letter to be received by the State within 10 calendar days after the end of the 45-day review period. The letter will include an explanation of the cause of any delays in the review of the Local Mitigation Plan and a reasonable projection of the date by which the plan review will be completed. If a completed review is sent to the State within 10 calendar days after the end of the 45-day review period, a signed cover letter will indicate the reason for the delay.

or

- b) Send a monthly status update to each State listing the status of all plans submitted to FEMA for review. This will include, at a minimum, the status of all plans received and currently under review, a reasonable projection of the date by which the plan review will be completed, and the cause for delays for any plans projected to be reviewed more than 45 days after receipt. This monthly update may also include plans approved, plans nearing expiration, or other status categories as deemed appropriate by FEMA.

Upon completion of a Plan review, FEMA will prepare and forward a notification in the form of a "Requires Revisions", "Approvable Pending Adoption (APA)" or "Approval" letter to the State. The notification to the State will include a copy of the *Local Mitigation Plan Review Tool*.

Plan Revisions

FEMA: Local Mitigation Plans that do not meet all of the requirements in 44 CFR 201.6 are returned with a "Requires Revisions." The required revisions are indicated on the Regulation Checklist (in the *Local Mitigation Plan Review Tool*) and sent to the State.

When a plan is not approved upon the first review, and requires revisions to meet 44 CFR Part 201, FEMA will complete subsequent plan reviews within 45 days of receipt from the State, whenever possible. ***Items a and b above, Review Timeframes, apply to these subsequent plan reviews as well.***

The review of a revised Local Mitigation Plan and FEMA's responses included in the *Mitigation Plan Review Tool* will take into consideration:

- a. only those Elements of the Tool where revisions were required in the previous review(s) to meet 44 CFR Part 201;

- b. information in the plan was deleted or changed from its previous version to make the plan no longer meet that Element of the *Local Mitigation Plan Review Tool*; or
- c. the entire plan if received by the Region more than one year after the Region's previous plan review was sent to the State.

State: Unless otherwise agreed upon between the State and FEMA, the State is responsible for forwarding the *Local Mitigation Plan Review Tool* to the local community. The local community may work with the State, jointly with the State and FEMA, or directly with FEMA to make the revisions. The local community resubmits the plan to the State, who is responsible again for initial review before forwarding the plan to FEMA.

5.4 MITIGATION PLAN APPROVAL AND ADOPTION

Approvable Pending Adoption.

Approval Pending Adoption (APA) is a recommended and potentially time-saving process by which jurisdictions submit the final draft Local Mitigation Plan for a review prior to formal jurisdictional adoption by the appropriate officials, agencies, or organizations. If FEMA determines the plan is not approvable, the responsible local agency or office will be able to address deficiencies before taking the plan through adoption, therefore avoiding unnecessary delays in plan approval.

FEMA: If all Elements are met except adoption, FEMA determines that the Local Mitigation Plan is APA. The FEMA Region sends an APA letter to the State who, in turn, forwards the determination to the local community. The jurisdiction can then proceed with the adoption process, knowing the adopted plan will be approved. When the APA plan is adopted by the jurisdiction, and FEMA has received the documentation of adoption, then it will be formally approved through a signed FEMA approval letter.

State: Unless otherwise agreed upon between the State and FEMA, all APA letters from FEMA are sent to the State; the State is responsible for communicating the status of the Plan with the local community.

Local Government: If adopted after FEMA review, adoption must take place within one calendar year of receipt of FEMA's APA letter. If the plan is not adopted within one calendar year of FEMA's APA letter, the jurisdiction must update the entire plan and resubmit it for FEMA review. The plan approval date begins the five-year approval period and sets the expiration date for the plan. The official approval date is indicated on the signed FEMA approval letter. In addition to providing the approval date, it also indicates the expiration date of the plan.

As with single jurisdictional plans, in order for FEMA to approve a multi-jurisdictional plan, at least one participating jurisdiction must formally adopt the plan within one calendar year of FEMA's designation of the plan as APA. Participants of a multi-jurisdictional plan will assume the expiration date five years from the first jurisdiction's approval date regardless of the other participant's subsequent adoption date(s). The five-year approval period does not get "re-set" each time another participating jurisdiction adopts the plan.

For example, if jurisdiction #1 is the first jurisdiction to formally adopt the Blue County Multi-Jurisdictional Hazard Mitigation Plan and receives FEMA's "approval" of the plan on January 15, 2008, the plan will expire on January 15, 2013, exactly five years later. If jurisdiction #2 does not formally adopt the same plan until July 15, 2009, its eligibility would expire on January 15, 2013, the same exact date that Blue County's plan received "approval" when the plan was first approved. Thus, jurisdiction #2 does not benefit from the full five-year approval timeframe, but only 3½ years. FEMA recommends that all participating jurisdictions coordinate the adoption process as soon as the plan has received APA status to ensure that all participants are covered by a plan for the full five years.

Approved

FEMA: Once all Elements are 'Met' and the adoption resolution is received by the FEMA Regional office, FEMA will send an "Approved" letter signed by the Regional Administrator or his/her designee to the State. This designee may be the Regional Mitigation Division Director, Risk Analysis Branch Chief, or other designated official. Correspondence for "Approved" plans will identify, at a minimum, the name of the approved plan, jurisdiction(s) that have adopted the plan, date(s) of plan adoption, date of plan approval, and the expiration date of FEMA's approval of the plan. For multi-jurisdictional plans, this information may be included in the *Local Mitigation Plan Review Tool* or other attachment.

Approval letter(s) for multi-jurisdictional plans will clearly read that the expiration date of FEMA's approval of the plan applies for all participating jurisdictions, regardless of different adoption dates. If the plan is multi-jurisdictional and all participating jurisdiction's adoptions are not received by FEMA at the same time, more than one approval letter will be sent to the State as additional adoptions are received by FEMA. A completed *Local Mitigation Plan Review Tool* will accompany correspondence for all approved Local Mitigation Plans.

State: Unless otherwise agreed upon between the State and FEMA, all approval letters from FEMA are sent to the State; the State is responsible for communicating the approval with the local community.

APPENDIX A:

LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction:	Title of Plan:	Date of Plan:
Local Point of Contact:		Address:
Title:		
Agency:		
Phone Number:		
		E-Mail:

State Reviewer:	Title:	Date:

FEMA Reviewer:	Title:	Date:
Date Received in FEMA Region (insert #)		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

**SECTION 1:
REGULATION CHECKLIST**

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST	Location in Plan		Not
Regulation (44 CFR 201.6 Local Mitigation Plans)	(section and/or page number)	Met	Met
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))			
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))			
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))			
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))			
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))			
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))			
ELEMENT A: REQUIRED REVISIONS			

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))				
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))				
B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))				
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))				
<u>ELEMENT B: REQUIRED REVISIONS</u>				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))				
C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))				
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))				
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))				
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))				
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))				
<u>ELEMENT C: REQUIRED REVISIONS</u>				

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))				
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))				
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))				
<u>ELEMENT D: REQUIRED REVISIONS</u>				
ELEMENT E. PLAN ADOPTION				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))				
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))				
<u>ELEMENT E: REQUIRED REVISIONS</u>				
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)				
F1.				
F2.				
<u>ELEMENT F: REQUIRED REVISIONS</u>				

SECTION 2: PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

How does the Plan go above and beyond minimum requirements to document the planning process with respect to:

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.);*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

- 1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions;*
- 2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
- 3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:

- *Use of best available data (flood maps, HAZUS, flood studies) to describe significant hazards;*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.);*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures;*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

Element C: Mitigation Strategy

How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:

- *Key problems identified in, and linkages to, the vulnerability assessment;*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment;*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development;*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc);*
- *Specific mitigation actions for each participating jurisdictions that reflects their unique risks and capabilities;*
- *Integration of mitigation actions with existing local authorities, policies, programs, and resources; and*
- *Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.*

Element D: Plan Update, Evaluation, and Implementation (Plan Updates Only)

How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:

- *Status of previously recommended mitigation actions;*
- *Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk;*
- *Documentation of annual reviews and committee involvement;*
- *Identification of a lead person to take ownership of, and champion the Plan;*
- *Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards;*
- *An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.);*
- *Discussion of how changing conditions and opportunities could impact community resilience in the long term; and*
- *Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

- *What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?*
- *What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may provide assistance for mitigation activities?*
- *What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?*
- *Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdictions(s)?*
- *What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?*

**SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)**

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were ‘Met’ or ‘Not Met,’ and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/township/village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
1												
2												
3												
4												
5												
6												
7												
8												
9												

MULTI-JURISDICTION SUMMARY SHEET

#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

APPENDIX L: REPETITIVE LOSS & SEVERE REPETITIVE LOSS STRUCTURES

State Name	County Name	Community Name	Comm Nbr	Prop Locatr	Mitigated ?	Insured?	Address Line 1	Address Line 2	City	State	Zip Code
WEST VIRGINIA	CALHOUN COUNTY	GRANTSVILLE, TOWN OF	540021	0069511	NO	NO	RIVER STREET	RIVER ST	GRANTSVILLE	WV	261470000
WEST VIRGINIA	JACKSON COUNTY	JACKSON COUNTY *	540063	0093648	NO	NO	7 MI FROM SILVERTON	AT MEDINA EXIT RR 21	RAVENSWOOD	WV	261641803
WEST VIRGINIA	JACKSON COUNTY	JACKSON COUNTY *	540063	0092498	NO	NO		1ST HOUSE ON LIVERPOOL RD	SANDYVILLE	WV	252750000
WEST VIRGINIA	JACKSON COUNTY	JACKSON COUNTY *	540063	0093639	NO	YES		33 HICKORY LN	EVANS	WV	252410000
WEST VIRGINIA	JACKSON COUNTY	JACKSON COUNTY *	540063	0098295	NO	NO	RR 2 BOX 162	RR 2 BOX 162	SANDYVILLE	WV	252750000
WEST VIRGINIA	JACKSON COUNTY	JACKSON COUNTY *	540062	0125265	NO	NO		RR 2 BOX 92A	SANDYVILLE	WV	25275
WEST VIRGINIA	ROANE COUNTY	REEDY, TOWN OF	540184	0108163	NO	NO		1 ST MOBILE ON RICE	REEDY	WV	252700000
WEST VIRGINIA	ROANE COUNTY	ROANE COUNTY *	540183	0127997	NO	SDF		6982 CHARLESTON RD	WALTON	WV	252868844
WEST VIRGINIA	WOOD COUNTY	PARKERSBURG, CITY OF	540214	0007115	NO	NO		201 DIVISION ST	PARKERSBURG	WV	26101
WEST VIRGINIA	WOOD COUNTY	PARKERSBURG, CITY OF	540214	0024635	NO	YES	E SIDE OF POINT APPRC	FEET NORTH OF I77 407 POINT D	PARKERSBURG	WV	261010000
WEST VIRGINIA	WOOD COUNTY	PARKERSBURG, CITY OF	540214	0135360	NO	YES		1 MURRAY DR	PARKERSBURG	WV	261019408
WEST VIRGINIA	WOOD COUNTY	PARKERSBURG, CITY OF	540214	0093633	NO	YES		2211 4TH AVE	PARKERSBURG	WV	261015636
WEST VIRGINIA	WOOD COUNTY	VIENNA, CITY OF	540215	0137184	NO	YES		6 LAWNDALE VW	VIENNA	WV	261051560
WEST VIRGINIA	WOOD COUNTY	VIENNA, CITY OF	540215	0136563	NO	YES		100 18TH ST	VIENNA	WV	261051147
WEST VIRGINIA	WOOD COUNTY	WILLIAMSTOWN, CITY OF	540216	0088392	NO	SDF		PRIBBLE LN	WILLIAMSTOWN	WV	261870000
WEST VIRGINIA	WOOD COUNTY	WILLIAMSTOWN, CITY OF	540216	0073757	NO	NO		407 W 2ND ST	WILLIAMSTOWN	WV	261871213
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0127440	NO	SDF		405 BUCKEYE ST	PARKERSBURG	WV	261015731
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0080854	NO	NO		100 BROADWAY AVE	PARKERSBURG	WV	261010000
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0135366	NO	YES	ON COUNTY RD 47 3 RR	ON COUNTY RD 47 3 RR 47	PARKERSBURG	WV	261010000
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0132617	NO	NO		189 HAPPY VALLEY LN	PARKERSBURG	WV	261047129
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0075636	NO	NO		128 HAPPY VALLEY RD	PARKERSBURG	WV	261047101
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0080884	NO	NO		211 HAPPY VALLEY RD	PARKERSBURG	WV	261049572
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0135345	NO	NO		701 HAPPY VALLEY RD	PARKERSBURG	WV	261048615
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0000873	NO	NO		754 HAPPY VALLEY RD	PARKERSBURG	WV	261040000
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0089103	NO	NO	ON OLD STAUNTON PIK 1 MILE E OF KANAWHA STA		WOOD COUNTY	WV	26102
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0011670	NO	SDF		329 POINT DR	PARKERSBURG	WV	261019584
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0075654	NO	NO		RR 5 BOX 130	PARKERSBURG	WV	261019570
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0136559	NO	NO		42 W SUNSHINE LN	PARKERSBURG	WV	261047136
WEST VIRGINIA	WOOD COUNTY	WOOD COUNTY *	540213	0044291	NO	NO		103 VALLEY RD	PARKERSBURG	WV	261010000

County Name	Community Name	Comm Nbr	Prop Locatr	Mitigated ?	Insured?	Address Line 1	Address Line 2	City	State	Zip Code
CALHOUN COUNTY	GRANTSVILLE, TOWN OF	540021	0024695	NO	NO		104 SCHOOL ST	GRANTSVILLE	WV	261479719
CALHOUN COUNTY	GRANTSVILLE, TOWN OF	540021	0069511	NO	NO	RIVER STREET	RIVER ST	GRANTSVILLE	WV	261470000
CALHOUN COUNTY	GRANTSVILLE, TOWN OF	540021	0024926	NO	NO		SCHOOL ST	GRANTSVILLE	WV	261470000
JACKSON COUNTY	JACKSON COUNTY *	540063	0107876	NO	NO	2250 DUDDEN FORK RD	2250 DUDDEN FORK RD	KENNA	WV	252480000
JACKSON COUNTY	RAVENSWOOD, CITY OF	540241	0108174	NO	NO		RR 1 BOX 128	RAVENSWOOD	WV	261640000
JACKSON COUNTY	JACKSON COUNTY *	540063	0089341	NO	NO		2550 DUDDEN RD	KENNA	WV	252480000
PLEASANTS COUNTY	PLEASANTS COUNTY *	540225	0047003	NO	NO		STAR RT ARVILLA BENS RUN	PLEASANT CTY W	WV	261040000
ROANE COUNTY	ROANE COUNTY *	540183	0127997	NO	SDF		6982 CHARLESTON RD	WALTON	WV	252868844
ROANE COUNTY	REEDY, TOWN OF	540184	0108163	NO	NO		1 ST MOBILE ON RICE	REEDY	WV	252700000
WOOD COUNTY	PARKERSBURG, CITY OF	540214	0075193	NO	SDF		433 POINT DR	PARKERSBURG	WV	261018620
WOOD COUNTY	WILLIAMSTOWN, CITY OF	540216	0088392	NO	SDF		PRIBBLE LN	WILLIAMSTOWN	WV	261870000
WOOD COUNTY	WOOD COUNTY *	540213	0011673	NO	SDF		782 HAPPY VALLEY RD	PARKERSBURG	WV	261040000
WOOD COUNTY	WOOD COUNTY *	540213	0011670	NO	SDF		329 POINT DR	PARKERSBURG	WV	261019584
WOOD COUNTY	WOOD COUNTY *	540213	0000811	NO	SDF		229 WHITE HEAD DR	PARKERSBURG	WV	261018667
WOOD COUNTY	WOOD COUNTY *	540213	0127440	NO	SDF		405 BUCKEYE ST	PARKERSBURG	WV	261015731
WOOD COUNTY	WILLIAMSTOWN, CITY OF	540216	0073757	NO	NO		407 W 2ND ST	WILLIAMSTOWN	WV	261871213
WOOD COUNTY	WOOD COUNTY *	540213	0088227	NO	NO		409 HAPPY VALLEY LN	PARKERSBURG	WV	261040000
WOOD COUNTY	WOOD COUNTY *	540213	0069463	NO	NO		106 HAPPY VALLEY RD	PARKERSBURG	WV	261019571
WOOD COUNTY	WOOD COUNTY *	540213	0075636	NO	NO		128 HAPPY VALLEY RD	PARKERSBURG	WV	261047101
WOOD COUNTY	WOOD COUNTY *	540213	0092518	NO	NO		139 HAPPY VALLEY RD	PARKERSBURG	WV	261049571
WOOD COUNTY	WOOD COUNTY *	540213	0000873	NO	NO		754 HAPPY VALLEY RD	PARKERSBURG	WV	261040000
WOOD COUNTY	WOOD COUNTY *	540213	0011680	NO	NO		1 OAKWOOD EST	PARKERSBURG	WV	261049706
WOOD COUNTY	WOOD COUNTY *	540213	0075654	NO	NO		RR 5 BOX 130	PARKERSBURG	WV	261019570
WOOD COUNTY	WOOD COUNTY *	540213	0074545	NO	NO		RR 5 BOX 152	PARKERSBURG	WV	261019574
WOOD COUNTY	WOOD COUNTY *	540213	0044291	NO	NO		103 VALLEY RD	PARKERSBURG	WV	261010000
WOOD COUNTY	WOOD COUNTY *	540213	0024921	NO	NO		154 VALLEY RD	PARKERSBURG	WV	261010000
WOOD COUNTY	PARKERSBURG, CITY OF	540214	0007115	NO	NO		201 DIVISION ST	PARKERSBURG	WV	26101
WOOD COUNTY	WOOD COUNTY *	540213	0054446	NO	NO	RR 10	PO BOX 44D	PARKERSBURG	WV	261010000
WOOD COUNTY	WOOD COUNTY *	540213	0092509	NO	SDF		141 HAPPY VALLEY LN	PARKERSBURG	WV	261047129
WOOD COUNTY	PARKERSBURG, CITY OF	540214	0011674	NO	NO		2907 FAIRVIEW AVE	PARKERSBURG	WV	261042238
WOOD COUNTY	PARKERSBURG, CITY OF	540214	0075641	NO	NO		319 POINT DR	PARKERSBURG	WV	261019584
WOOD COUNTY	WOOD COUNTY *	540213	0034508	NO	NO		RT #5 HAPPY VALLEY	PARKERSBURG	WV	261019805
WOOD COUNTY	WOOD COUNTY *	540213	0089103	NO	NO	ON OLD STAUNTON PIKE RD	1 MILE E OF KANAWHA STA	WOOD COUNTY	WV	26102
WOOD COUNTY	WOOD COUNTY *	540213	0136559	NO	NO		42 W SUNSHINE LN	PARKERSBURG	WV	261047136
WOOD COUNTY	WOOD COUNTY *	540213	0080854	NO	NO		100 BROADWAY AVE	PARKERSBURG	WV	261010000
WOOD COUNTY	WOOD COUNTY *	540213	0054981	NO	NO	BOX 361	100 BROADWAY AVE	PARKERSBURG	WV	261010000
WOOD COUNTY	WOOD COUNTY *	540213	0069426	NO	NO		RR 14	WILLIAMSTOWN	WV	261870000

APPENDIX M: COUNTY ECONOMIC PROFIES



COUNTY ECONOMIES 2015

CALHOUN COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

0.9PPS

JOB GROWTH RATE

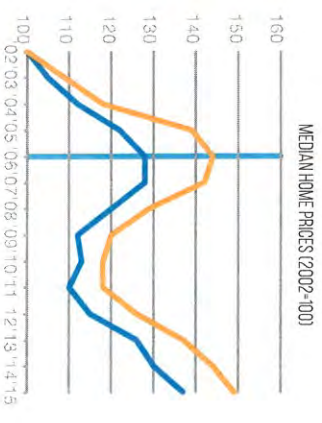
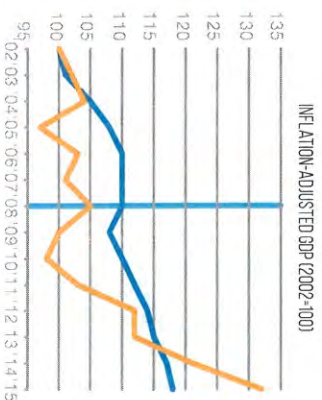
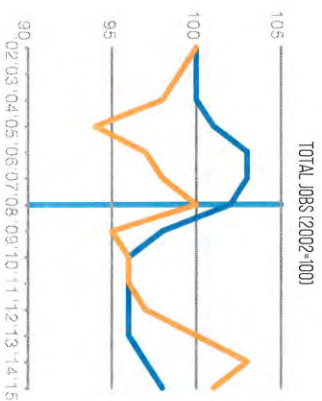
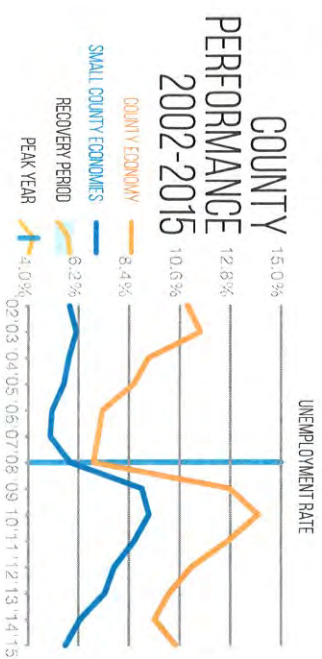
-1.8%

ECONOMIC OUTPUT GROWTH RATE

9.2%

MEDIAN HOME PRICES GROWTH RATE

3.8%



SIZING UP 2015

POPULATION, 2014	7,513
UNEMPLOYMENT RATE, 2015	10.4%
REAL GDP, 2015, IN 2009 DOLLARS	\$168.1 Million
Calhoun County, WV has a county government.	
Calhoun County is a small county not in a metropolitan or micropolitan area.	

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

CONSTRUCTION	- 380 JOBS - 23.0%
EDUCATION & HEALTH	- 340 JOBS - 20.4%
GOVERNMENT	- 310 JOBS - 19.0%
OTHER SERVICES	- 140 JOBS - 8.6%
LOGGING & MINING	- 110 JOBS - 6.5%

MEDIA CONTACT

Brian Namey
 Director of Public Affairs
 202.942.4220 | bnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
 Director of Research and Outreach
 research@naco.org

FINDINGS

www.naco.org/COUNTYECONOMIES

#COUNTYECONOMIES

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)
Economic output (gross domestic product - GDP). Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:
 This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession; 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry/job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014, real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.



COUNTY ECONOMIES 2015

JACKSON COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

0.6PPS

JOB GROWTH RATE

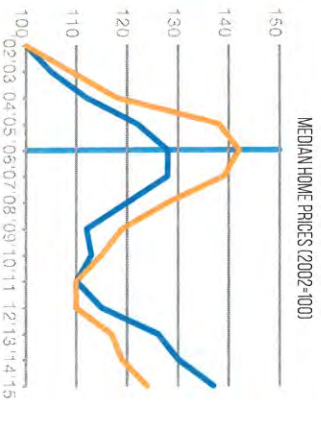
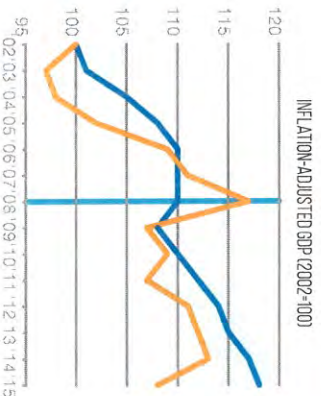
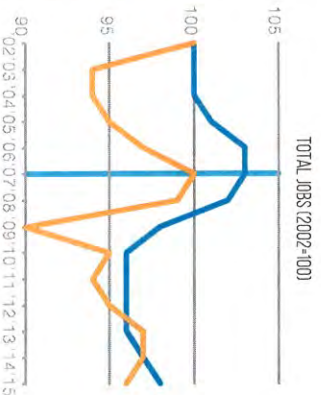
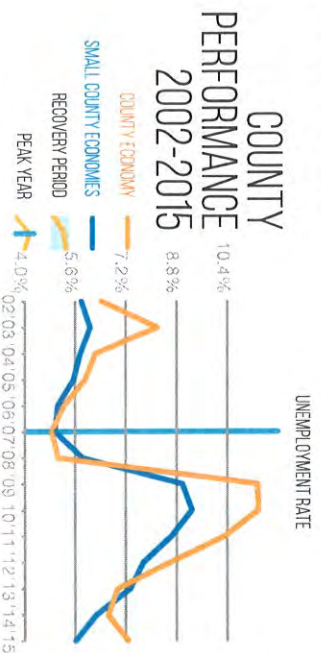
-1.1%

ECONOMIC OUTPUT GROWTH RATE

-3.9%

MEDIAN HOME PRICES GROWTH RATE

4.3%



SIZING UP 2015

POPULATION, 2014	29, 126
UNEMPLOYMENT RATE, 2015	7.3%
REAL GDP, 2015, IN 2009 DOLLARS	\$674.3 Million

Jackson County, WV has a county government.
Jackson County is a small county not in a metropolitan or micropolitan area.

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

TRADE, TRANSPORT & UTILITIES	-1.6 THOUSANDS JOBS - 18.5%
MANUFACTURING	-1.4 THOUSANDS JOBS - 16.3%
OTHER SERVICES	-970 JOBS - 11.0%
LEISURE & HOSPITALITY	-810 JOBS - 9.2%
FINANCIAL ACTIVITIES	-400 JOBS - 4.5%

MEDIA CONTACT

Brian Namey
Director of Public Affairs
202.942.4220 | bnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
Director of Research and Outreach
research@naco.org

FINDINGS

www.naco.org/countyeconomies
#COUNTYECONOMIES

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)

Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:
This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession. 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.



COUNTY ECONOMIES 2015

PLEASANTS COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

0.7PPS

JOB GROWTH RATE

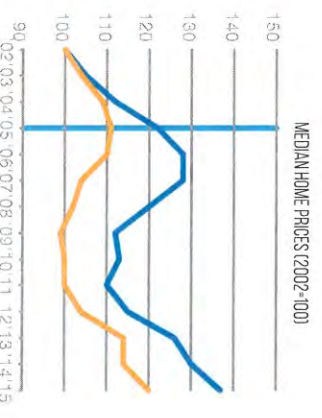
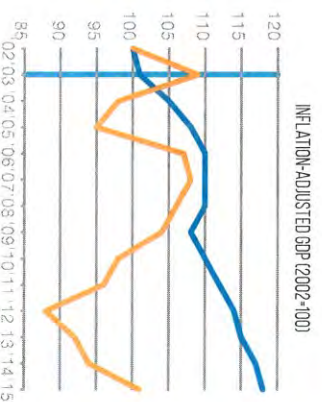
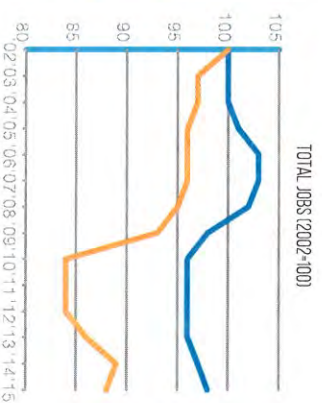
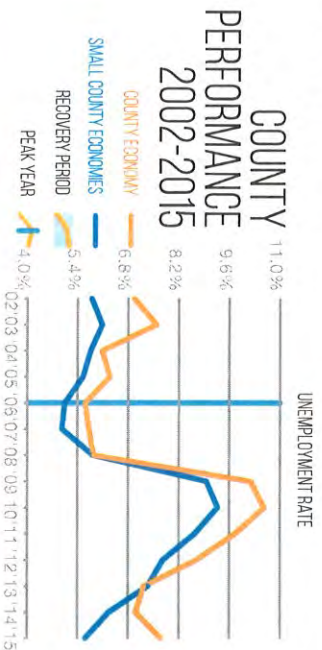
-1.3%

ECONOMIC OUTPUT GROWTH RATE

7.4%

MEDIAN HOME PRICES GROWTH RATE

5.2%



SIZING UP 2015

POPULATION, 2014 **7, 634**

UNEMPLOYMENT RATE, 2015 **7.7%**

REAL GDP, 2015, IN 2009 DOLLARS **\$337.9 Million**

Pleasants County, WV has a county government.

Pleasants County is a small county not in a metropolitan or micropolitan area.

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015



DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)

Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. Jobs: Total wage and salary jobs, whether full or part-time, temporary, or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. Median Home Sales Price: Median sales prices of existing single-family homes in a county economy. Unemployment Rate: The proportion of the civilian labor force that is unemployed.

NOTES:

This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession; 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator; industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.

MEDIA CONTACT

Brian Namey
Director of Public Affairs
202.942.4220 | bnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
Director of Research and Outreach
research@naco.org

FINDINGS

www.naco.org/countyeconomies

#COUNTYECONOMIES



COUNTY ECONOMIES 2015

RITCHIE COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

0.6PPS

JOB GROWTH RATE

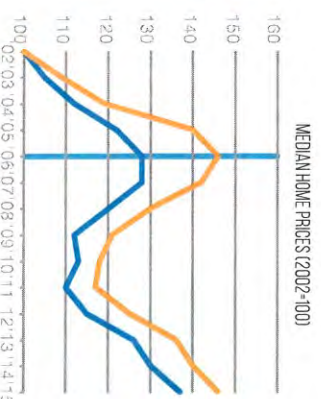
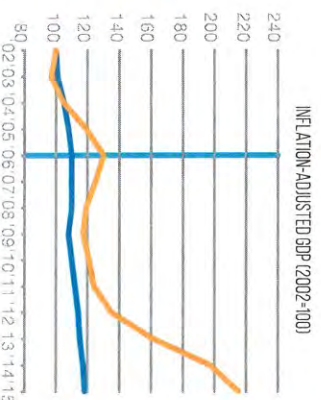
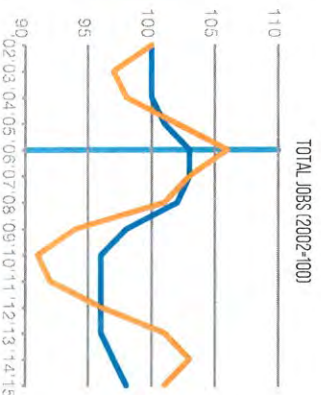
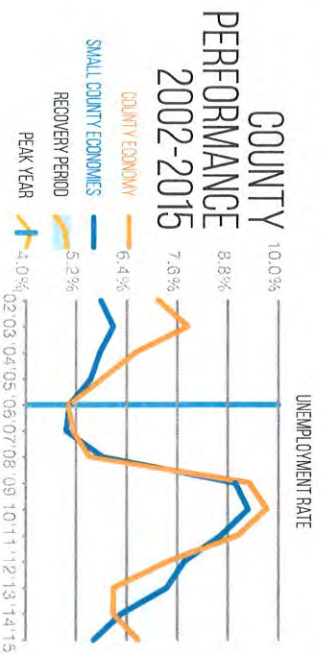
-1.5%

ECONOMIC OUTPUT GROWTH RATE

9.5%

MEDIAN HOME PRICES GROWTH RATE

4.3%



SIZING UP 2015

POPULATION, 2014	10,011
UNEMPLOYMENT RATE, 2015	6.7%
REAL GDP, 2015, IN 2009 DOLLARS	\$560.8 Million
Ritchie County, WV has a county government.	
Ritchie County is a small county not in a metropolitan or micropolitan area.	

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

MANUFACTURING - 910 JOBS - 23.6%
LOGGING & MINING - 790 JOBS - 20.6%
CONSTRUCTION - 190 JOBS - 4.9%
FINANCIAL ACTIVITIES - 130 JOBS - 3.5%
INFORMATION - 40 JOBS - 1.1%

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)

Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:

This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession. 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.

MEDIA CONTACT

Brian Namey
Director of Public Affairs
202.942.4220 | bnamey@nacoco.org

QUESTIONS

Dr. Emilia Istrate
Director of Research and Outreach
research@nacoco.org

FINDINGS

www.nacoco.org/countyeconomies

#COUNTYECONOMIES



COUNTY ECONOMIES 2015

ROANE COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

1.0PPS

JOB GROWTH RATE

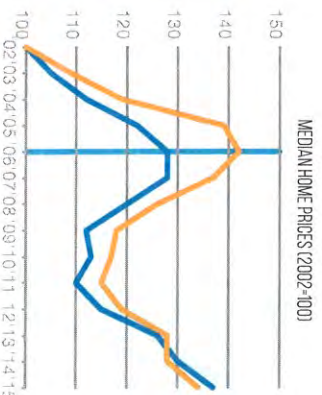
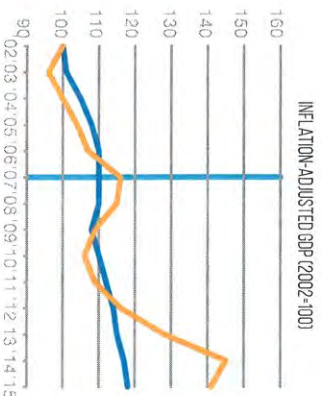
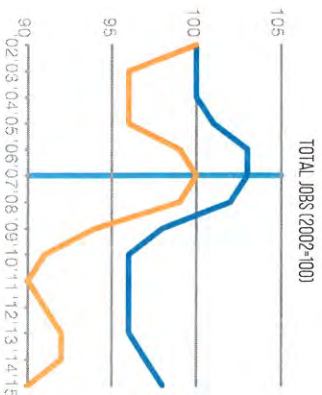
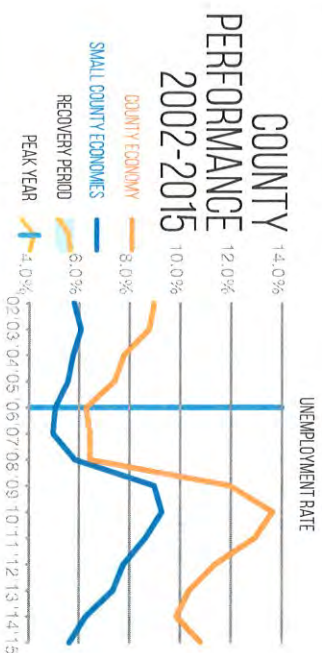
-2.0%

ECONOMIC OUTPUT GROWTH RATE

-2.4%

MEDIAN HOME PRICES GROWTH RATE

5.2%



SIZING UP 2015

POPULATION, 2014	14,664
UNEMPLOYMENT RATE, 2015	10.8%
REAL GDP, 2015, IN 2009 DOLLARS	\$373.3 Million
Roane County, WV has a county government.	
Roane County is a small county not in a metropolitan or micropolitan area.	

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

TRADE, TRANSPORT & UTILITIES	- 710 JOBS - 20.1%
EDUCATION & HEALTH	- 710 JOBS - 20.1%
LOGGING & MINING	- 300 JOBS - 8.5%
CONSTRUCTION	- 210 JOBS - 6.0%
FINANCIAL ACTIVITIES	- 190 JOBS - 5.5%

MEDIA CONTACT

Brian Namey
 Director of Public Affairs
 202.942.4220 | bnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
 Director of Research and Outreach
 research@naco.org

FINDINGS

www.naco.org/countyeconomies

#COUNTYECONOMIES

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)

Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:

This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession. 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state, overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.



COUNTY ECONOMIES 2015

TYLER COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

0.9PPS

JOB GROWTH RATE

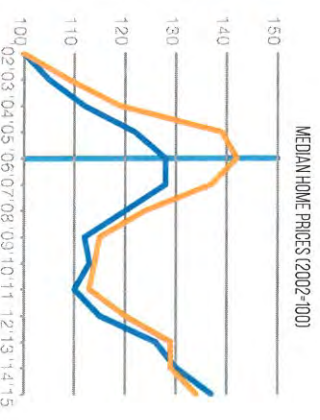
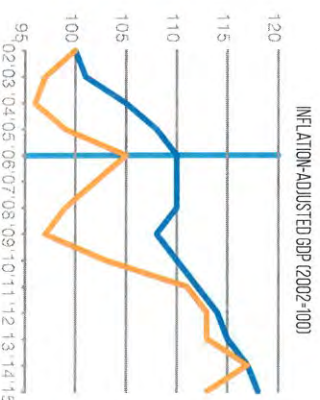
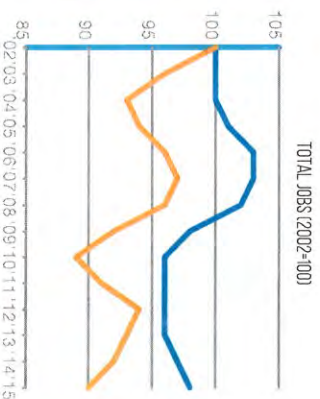
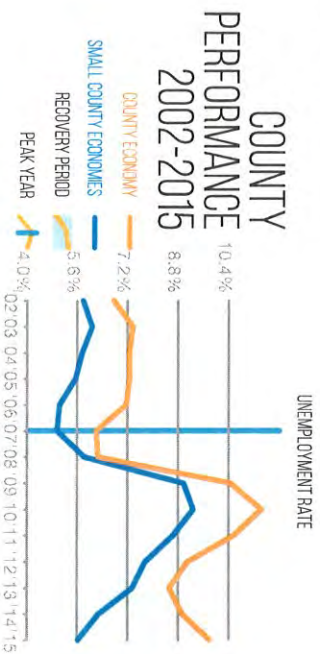
-2.0%

ECONOMIC OUTPUT GROWTH RATE

-3.7%

MEDIAN HOME PRICES GROWTH RATE

3.6%



SIZING UP 2015

POPULATION, 2014	9,098
UNEMPLOYMENT RATE, 2015	9.8%
REAL GDP, 2015, IN 2009 DOLLARS	\$205.5 Million
Tyler County, WV has a county government	
Tyler County is a small county not in a metropolitan or micropolitan area.	

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

GOVERNMENT - 530 JOBS - 20.0%
EDUCATION & HEALTH - 530 JOBS - 19.8%
MANUFACTURING - 490 JOBS - 18.6%
OTHER SERVICES - 310 JOBS - 11.7%
INFORMATION - 30 JOBS - 11%

MEDIA CONTACT

Brian Namey
 Director of Public Affairs
 202.942.4220 | bnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
 Director of Research and Outreach
 research@naco.org

FINDINGS

www.naco.org/countyeconomies

#COUNTYECONOMIES

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)

Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:

This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession, 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000, and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.



COUNTY ECONOMIES 2015

WIRT COUNTY, WV

UNEMPLOYMENT RATE CHANGE

2014-2015

0.8PPS

JOB GROWTH RATE

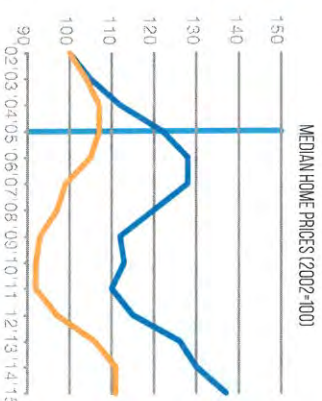
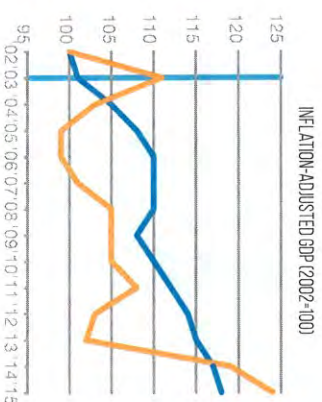
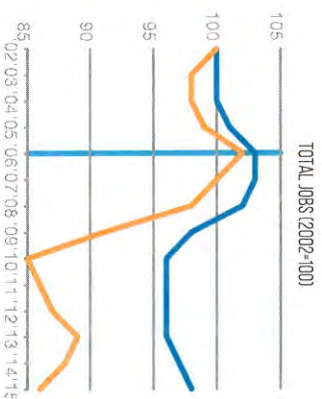
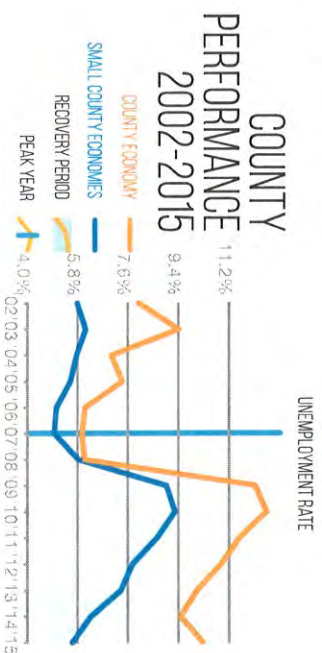
-1.5%

ECONOMIC OUTPUT GROWTH RATE

4.0%

MEDIAN HOME PRICES GROWTH RATE

-0.6%



SIZING UP 2015

POPULATION, 2014	5, 845
UNEMPLOYMENT RATE, 2015	10.3%
REAL GDP 2015, IN 2009 DOLLARS	\$77.7 Million
Wirt County, WV has a county government.	
Wirt County is a small county in the "Parkersburg-Vienna, WV" metropolitan area.	

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

GOVERNMENT - 290 JOBS - 45.3%
MANUFACTURING - 60 JOBS - 8.9%
CONSTRUCTION - 30 JOBS - 5.0%
LOGGING & MINING - 30 JOBS - 4.1%
FINANCIAL ACTIVITIES - 20 JOBS - 3.2%

MEDIA CONTACT

Brian Namey
 Director of Public Affairs
 202.942.4220 | brnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
 Director of Research and Outreach
 research@naco.org

FINDINGS

www.naco.org/countyeconomies

#COUNTYECONOMIES

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)

Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:

This study determines peak and trough values and years separately for each county economy, and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009. 2002 marks the first year after the end of the previous U.S. recession. 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NACCS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.



COUNTY ECONOMIES 2015

WOOD COUNTY, WV

UNEMPLOYMENT RATE CHANGE

JOBS GROWTH RATE

ECONOMIC OUTPUT GROWTH RATE

MEDIAN HOME PRICES GROWTH RATE

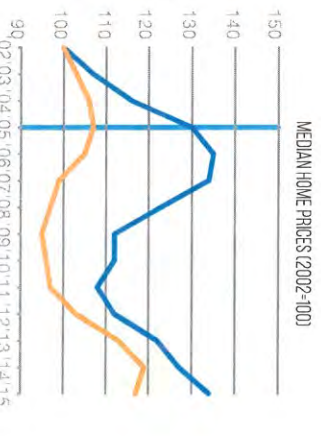
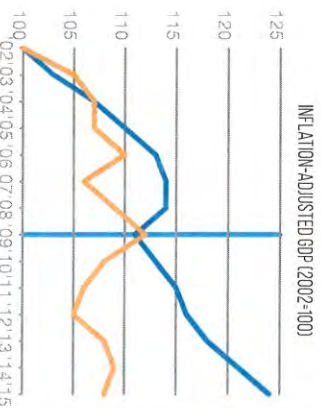
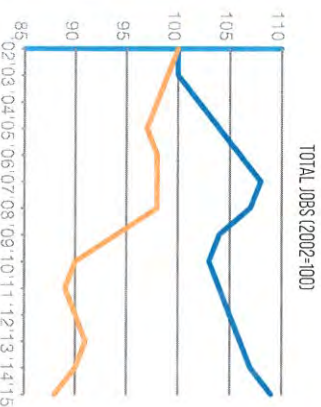
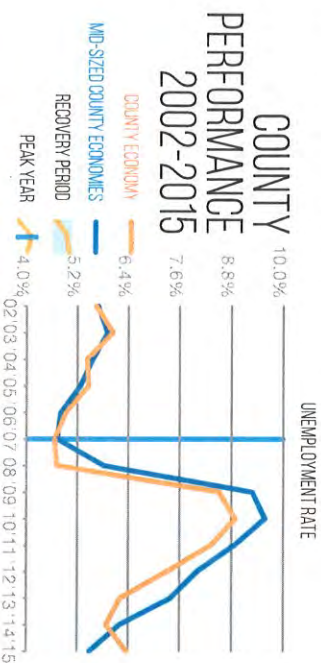
2014-2015

0.5PPS

-1.3%

-0.9%

-1.7%



SIZING UP 2015

POPULATION, 2014	86,237
UNEMPLOYMENT RATE, 2015	6.4%
REAL GDP, 2015, IN 2009 DOLLARS	\$3.4 Billion
Wood County, WV has a county government.	
Wood County is a medium-sized county in the "Parkersburg-Vienna, WV" metropolitan area.	

TOP FIVE SPECIALIZED INDUSTRIES, BY EMPLOYMENT, 2015

"TRADE, TRANSPORT & UTILITIES" - 97 THOUSANDS JOBS - 23.0%
LEISURE & HOSPITALITY - 5.5 THOUSANDS JOBS - 13.1%
MANUFACTURING - 2.9 THOUSANDS JOBS - 6.8%
FINANCIAL ACTIVITIES - 2.1 THOUSANDS JOBS - 5.0%
INFORMATION - 950 JOBS - 2.2%

MEDIA CONTACT

Brian Namey
 Director of Public Affairs
 202.942.4220 | bnamey@naco.org

QUESTIONS

Dr. Emilia Istrate
 Director of Research and Outreach
 research@naco.org

FINDINGS

www.naco.org/countyeconomies

#COUNTYECONOMIES

DEFINITION OF TERMS: (Data Sources: Moody's Analytics and U.S. Census Bureau)
Economic output (gross domestic product - GDP): Total value of goods and services produced by a county economy, also known as GDP. **Jobs:** Total wage and salary jobs, whether full or part-time, temporary or permanent in a county economy. It counts the number of jobs, not employed people, for all employers in a county economy, not only for the county government. **Median Home Sales Price:** Median sales prices of existing single-family homes in a county economy. **Unemployment Rate:** The proportion of the civilian labor force that is unemployed.

NOTES:

This study determines peak and trough values and years separately for each county economy and each indicator. Peak values represent the highest annual value (lowest value for unemployment rate) of a county economy indicator between 2002 and 2009, 2002 marks the first year after the end of the previous U.S. recession. 2009 marks the end of the latest U.S. recession as determined by the National Bureau of Economic Research. Trough values represent the lowest annual value (highest for the unemployment rate) of a county economy indicator between the peak and 2015. It is possible that no recession occurred in a county economy for a specific indicator. Industry employment reflects number of jobs at single or aggregated 2 digit NAICS level. Moody's Analytics does not provide agriculture industry employment data as part of their County Forecast Database. A specialized industry is an industry more concentrated in a particular county compared to the state's overall industry job composition. Industry job numbers below 1,000 are rounded to the closest 10. 2015 data are forecasts. Small, medium-sized and large counties have a population less than 50,000, between 50,000 and 500,000 and greater than 500,000, respectively. County population values come from the U.S. Census Bureau's population estimates, vintage 2014. Real gross domestic product (GDP) is in 2009 chained dollars, as estimated by Moody's Analytics.

**APPENDIX N: HAZUS REPORTS, FLOODPLAIN &
TOPOGRAPHIC MAPS & AERIAL PHOTOGRAPHS
(appendices G and H from 2011 HMP)**

HAZUS-MH: Flood Event Report

Region Name: CalhounCounty

Flood Scenario: 100-YR

Print Date: Tuesday, October 20, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 281 square miles and contains 555 census blocks. The region contains over 3 thousand households and has a total population of 7,582 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 4,410 buildings in the region with a total building replacement value (excluding contents) of 441 million dollars (2006 dollars). Approximately 97.28% of the buildings (and 85.20% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 4,410 buildings in the region which have an aggregate total replacement value of 441 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	375,660	85.2%
Commercial	37,487	8.5%
Industrial	10,150	2.3%
Agricultural	714	0.2%
Religion	6,135	1.4%
Government	3,549	0.8%
Education	7,226	1.6%
Total	440,921	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	226,502	81.0%
Commercial	30,458	10.9%
Industrial	9,824	3.5%
Agricultural	714	0.3%
Religion	5,668	2.0%
Government	3,006	1.1%
Education	3,475	1.2%
Total	279,647	100.00%

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 49 beds. There are 1 school, 2 fire stations, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	CalhounCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 38 buildings will be at least moderately damaged. This is over 23% of the total number of buildings in the scenario. There are an estimated 15 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	1	2.63	11	28.95	3	7.89	8	21.05	15	39.47
Total	0		1		11		3		8		15	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Manuf/Housing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	5	100.00
Masonry	0	0.00	0	0.00	3	50.00	0	0.00	1	16.67	2	33.33
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	1	3.70	8	29.63	3	11.11	7	25.93	8	29.63

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	2	0	0	0
Hospitals	1	0	0	0
Police Stations	3	0	0	0
Schools	1	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 7,459 tons of debris will be generated. Of the total amount, Finishes comprises 22% of the total, Structure comprises 37% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 298 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 130 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 97 people (out of a total population of 7,582) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 34.34 million dollars, which represents 13.90 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 33.71 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 36.52% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	8.07	5.37	0.85	0.68	14.96
	Content	4.46	10.31	1.60	1.95	18.32
	Inventory	0.00	0.21	0.19	0.02	0.42
	Subtotal	12.53	15.89	2.64	2.65	33.71
<u>Business Interruption</u>						
	Income	0.00	0.05	0.00	0.00	0.06
	Relocation	0.01	0.02	0.00	0.00	0.03
	Rental Income	0.00	0.01	0.00	0.00	0.01
	Wage	0.00	0.08	0.00	0.17	0.25
	Subtotal	0.01	0.17	0.00	0.17	0.35
<u>ALL</u>	Total	12.54	16.06	2.64	2.82	34.05

Appendix A: County Listing for the Region

West Virginia
- Calhoun

460

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
West Virginia				
Calhoun	7,582	375,660	65,261	440,921
Total	7,582	375,660	65,261	440,921
Total Study Region	7,582	375,660	65,261	440,921

HAZUS-MH: Flood Event Report

Region Name: JacksonCounty

Flood Scenario: 100-YR

Print Date: Tuesday, October 20, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 466 square miles and contains 1,661 census blocks. The region contains over 11 thousand households and has a total population of 28,000 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 13,727 buildings in the region with a total building replacement value (excluding contents) of 2,079 million dollars (2006 dollars). Approximately 95.29% of the buildings (and 79.70% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 13,727 buildings in the region which have an aggregate total replacement value of 2,079 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,656,902	79.7%
Commercial	225,407	10.8%
Industrial	116,754	5.6%
Agricultural	5,823	0.3%
Religion	36,779	1.8%
Government	12,512	0.6%
Education	24,619	1.2%
Total	2,078,796	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,012,757	78.0%
Commercial	135,706	10.4%
Industrial	99,332	7.6%
Agricultural	4,358	0.3%
Religion	24,758	1.9%
Government	6,347	0.5%
Education	15,693	1.2%
Total	1,298,951	100.00%

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 74 beds. There are 10 schools, 1 fire station, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	JacksonCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 680 buildings will be at least moderately damaged. This is over 14% of the total number of buildings in the scenario. There are an estimated 325 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	1	10.00	4	40.00	3	30.00	2	20.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	5	0.75	92	13.73	62	9.25	186	27.76	325	48.51
Total	0		6		96		65		188		325	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	110	100.00
Masonry	0	0.00	1	0.68	22	14.97	18	12.24	53	36.05	53	36.05
Steel	0	0.00	1	14.29	3	42.86	2	28.57	1	14.29	0	0.00
Wood	0	0.00	4	0.96	71	17.11	45	10.84	133	32.05	162	39.04

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	# Facilities			
	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	1	0	0	0
Police Stations	3	1	0	0
Schools	10	1	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 55,484 tons of debris will be generated. Of the total amount, Finishes comprises 27% of the total, Structure comprises 35% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 2,219 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 1,204 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 2,287 people (out of a total population of 28,000) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 311.59 million dollars, which represents 26.00 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 308.17 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 47.37% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	90.71	20.72	20.66	3.24	135.32
	Content	56.64	45.71	47.73	14.38	164.46
	Inventory	0.00	1.53	6.72	0.14	8.38
	Subtotal	147.35	67.96	75.10	17.75	308.17
<u>Business Interruption</u>						
	Income	0.02	0.26	0.03	0.05	0.35
	Relocation	0.13	0.08	0.02	0.00	0.23
	Rental Income	0.06	0.05	0.01	0.00	0.12
	Wage	0.05	0.30	0.02	0.69	1.06
	Subtotal	0.26	0.69	0.08	0.74	1.76
<u>ALL</u>	Total	147.61	68.65	75.18	18.49	309.93

Appendix A: County Listing for the Region

West Virginia
- Jackson

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Jackson	28,000	1,656,902	421,894	2,078,796
Total	28,000	1,656,902	421,894	2,078,796
Total Study Region	28,000	1,656,902	421,894	2,078,796

472

HAZUS-MH: Flood Event Report

Region Name: PleasantsCounty
Flood Scenario: 100-YR
Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 131 square miles and contains 498 census blocks. The region contains over 3 thousand households and has a total population of 7,514 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 4,031 buildings in the region with a total building replacement value (excluding contents) of 755 million dollars (2006 dollars). Approximately 93.45% of the buildings (and 56.24% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 4,031 buildings in the region which have an aggregate total replacement value of 755 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	424,697	56.2%
Commercial	52,411	6.9%
Industrial	250,937	33.2%
Agricultural	482	0.1%
Religion	12,250	1.6%
Government	6,422	0.9%
Education	8,019	1.1%
Total	755,218	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	266,301	47.4%
Commercial	34,153	6.1%
Industrial	240,832	42.9%
Agricultural	60	0.0%
Religion	10,499	1.9%
Government	3,245	0.6%
Education	6,779	1.2%
Total	561,869	100.00%

Essential Facility Inventory

For essential facilities, there are no hospitals in the region with a total bed capacity of no beds. There are 2 schools, 3 fire stations, 2 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	PleasantsCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 267 buildings will be at least moderately damaged. This is over 5% of the total number of buildings in the scenario. There are an estimated 192 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	100.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	0	0.00	13	4.92	8	3.03	54	20.45	189	71.59
Total	0		0		13		8		54		192	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	44	100.00
Masonry	0	0.00	0	0.00	3	5.26	1	1.75	12	21.05	41	71.93
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	100.00
Wood	0	0.00	0	0.00	10	6.10	7	4.27	42	25.61	105	64.02

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	3	0	0	0
Hospitals	0	0	0	0
Police Stations	2	0	0	0
Schools	2	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 36,295 tons of debris will be generated. Of the total amount, Finishes comprises 17% of the total, Structure comprises 41% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 1,452 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 406 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 697 people (out of a total population of 7,514) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 119.31 million dollars, which represents 22.03 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 117.26 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 50.65% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	38.90	13.73	3.70	4.43	60.76
	Content	21.40	19.13	6.06	8.41	54.99
	Inventory	0.00	0.39	1.11	0.01	1.51
	Subtotal	60.29	33.25	10.87	12.84	117.26
<u>Business Interruption</u>						
	Income	0.02	0.11	0.00	0.03	0.16
	Relocation	0.06	0.04	0.00	0.00	0.10
	Rental Income	0.02	0.02	0.00	0.00	0.04
	Wage	0.04	0.13	0.00	0.65	0.83
	Subtotal	0.13	0.30	0.01	0.68	1.12
<u>ALL</u>	Total	60.43	33.55	10.88	13.53	118.38

Appendix A: County Listing for the Region

- West Virginia
 - Pleasants

482

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Pleasants	7,514	424,697	330,521	755,218
Total	7,514	424,697	330,521	755,218
Total Study Region	7,514	424,697	330,521	755,218

HAZUS-MH: Flood Event Report

Region Name: RitchieCounty
Flood Scenario: 100-YR
Print Date: Monday, January 25, 2010

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 454 square miles and contains 1,236 census blocks. The region contains over 4 thousand households and has a total population of 10,343 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 6,942 buildings in the region with a total building replacement value (excluding contents) of 821 million dollars (2006 dollars). Approximately 96.21% of the buildings (and 83.53% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 6,942 buildings in the region which have an aggregate total replacement value of 821 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	685,930	83.5%
Commercial	57,879	7.0%
Industrial	46,773	5.7%
Agricultural	1,392	0.2%
Religion	9,337	1.1%
Government	8,844	1.1%
Education	11,066	1.3%
Total	821,221	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	312,452	93.0%
Commercial	8,241	2.5%
Industrial	9,083	2.7%
Agricultural	688	0.2%
Religion	2,379	0.7%
Government	3,150	0.9%
Education	107	0.0%
Total	336,100	100.00%

Essential Facility Inventory

For essential facilities, there are no hospitals in the region with a total bed capacity of no beds. There are 5 schools, 1 fire station, 3 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	RitchieCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 49 buildings will be at least moderately damaged. This is over 10% of the total number of buildings in the scenario. There are an estimated 14 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	0	0.00	5	10.20	1	2.04	29	59.18	14	28.57
Total	0		0		5		1		29		14	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	100.00
Masonry	0	0.00	0	0.00	0	0.00	0	0.00	7	87.50	1	12.50
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	0	0.00	5	13.16	1	2.63	22	57.89	10	26.32

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	# Facilities			
	Total	At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	0	0	0	0
Police Stations	3	0	0	0
Schools	5	3	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 8,853 tons of debris will be generated. Of the total amount, Finishes comprises 29% of the total, Structure comprises 32% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 354 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 194 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 68 people (out of a total population of 10,343) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 30.69 million dollars, which represents 9.22 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 30.50 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 87.49% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	17.03	0.12	0.09	0.42	17.65
	Content	9.80	0.29	0.19	2.52	12.80
	Inventory	0.00	0.02	0.04	0.00	0.05
	Subtotal	26.84	0.42	0.31	2.94	30.50
<u>Business Interruption</u>						
	Income	0.00	0.00	0.00	0.01	0.01
	Relocation	0.01	0.00	0.00	0.00	0.01
	Rental Income	0.00	0.00	0.00	0.00	0.00
	Wage	0.00	0.00	0.00	0.06	0.06
	Subtotal	0.01	0.00	0.00	0.07	0.08
<u>ALL</u>	Total	26.85	0.42	0.31	3.00	30.58

Appendix A: County Listing for the Region

- West Virginia
 - Ritchie

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
West Virginia				
Ritchie	10,343	685,930	135,291	821,221
Total	10,343	685,930	135,291	821,221
Total Study Region	10,343	685,930	135,291	821,221

494

HAZUS-MH: Flood Event Report

Region Name: RoaneCounty
Flood Scenario: 100-YR
Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 484 square miles and contains 1,074 census blocks. The region contains over 6 thousand households and has a total population of 15,446 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 8,215 buildings in the region with a total building replacement value (excluding contents) of 1,022 million dollars (2006 dollars). Approximately 95.80% of the buildings (and 83.02% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 8,215 buildings in the region which have an aggregate total replacement value of 1,022 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	848,599	83.0%
Commercial	115,655	11.3%
Industrial	26,253	2.6%
Agricultural	1,979	0.2%
Religion	15,414	1.5%
Government	6,351	0.6%
Education	7,879	0.8%
Total	1,022,130	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	426,870	87.8%
Commercial	35,376	7.3%
Industrial	11,441	2.4%
Agricultural	813	0.2%
Religion	7,316	1.5%
Government	620	0.1%
Education	3,741	0.8%
Total	486,177	100.00%

Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 60 beds. There are 4 schools, 5 fire stations, 2 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	RoaneCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 107 buildings will be at least moderately damaged. This is over 29% of the total number of buildings in the scenario. There are an estimated 9 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	1	0.93	38	35.51	17	15.89	42	39.25	9	8.41
Total	0		1		38		17		42		9	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	7	100.00
Masonry	0	0.00	0	0.00	11	45.83	3	12.50	9	37.50	1	4.17
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	1	1.32	27	35.53	14	18.42	33	43.42	1	1.32

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	5	0	0	0
Hospitals	1	0	0	0
Police Stations	2	0	0	0
Schools	4	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 7,985 tons of debris will be generated. Of the total amount, Finishes comprises 38% of the total, Structure comprises 28% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 319 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 317 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 340 people (out of a total population of 15,446) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 38.98 million dollars, which represents 8.02 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 38.61 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 70.01% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	17.15	1.65	0.82	0.41	20.04
	Content	10.11	4.29	1.95	1.54	17.89
	Inventory	0.00	0.22	0.46	0.01	0.68
	Subtotal	27.26	6.15	3.22	1.97	38.61
<u>Business Interruption</u>						
	Income	0.00	0.02	0.00	0.01	0.03
	Relocation	0.02	0.00	0.00	0.00	0.03
	Rental Income	0.00	0.00	0.00	0.00	0.01
	Wage	0.00	0.03	0.00	0.07	0.09
	Subtotal	0.03	0.05	0.00	0.08	0.15
<u>ALL</u>	Total	27.29	6.21	3.22	2.04	38.76

Appendix A: County Listing for the Region

West Virginia
- Roane

Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
West Virginia				
Roane	15,446	848,599	173,531	1,022,130
Total	15,446	848,599	173,531	1,022,130
Total Study Region	15,446	848,599	173,531	1,022,130

505

HAZUS-MH: Flood Event Report

Region Name: WirtCounty
Flood Scenario: 100-YR
Print Date: Wednesday, October 21, 2009

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 233 square miles and contains 550 census blocks. The region contains over 2 thousand households and has a total population of 5,873 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 3,803 buildings in the region with a total building replacement value (excluding contents) of 407 million dollars (2006 dollars). Approximately 97.53% of the buildings (and 89.66% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 3,803 buildings in the region which have an aggregate total replacement value of 407 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	364,723	89.7%
Commercial	23,106	5.7%
Industrial	3,340	0.8%
Agricultural	1,033	0.3%
Religion	5,454	1.3%
Government	2,658	0.7%
Education	6,460	1.6%
Total	406,774	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	251,360	92.3%
Commercial	11,078	4.1%
Industrial	1,573	0.6%
Agricultural	262	0.1%
Religion	1,397	0.5%
Government	1,328	0.5%
Education	5,375	2.0%
Total	272,373	100.00%

Essential Facility Inventory

For essential facilities, there are no hospitals in the region with a total bed capacity of no beds. There are no schools, 1 fire station, 1 police station and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WirtCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Building Damage

General Building Stock Damage

HAZUS estimates that about 56 buildings will be at least moderately damaged. This is over 15% of the total number of buildings in the scenario. There are an estimated 34 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	1	1.79	9	16.07	2	3.57	10	17.86	34	60.71
Total	0		1		9		2		10		34	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Manuf/Housing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	26	100.00
Masonry	0	0.00	0	0.00	2	25.00	1	12.50	3	37.50	2	25.00
Steel	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Wood	0	0.00	1	4.55	7	31.82	1	4.55	7	31.82	6	27.27

Essential Facility Damage

Before the flood analyzed in this scenario, the region had hospital beds available for use. On the day of the scenario flood event, the model estimates that hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	1	0	0	0
Hospitals	0	0	0	0
Police Stations	1	0	0	0
Schools	0	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 6,744 tons of debris will be generated. Of the total amount, Finishes comprises 26% of the total, Structure comprises 31% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 270 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 149 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 145 people (out of a total population of 5,873) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 21.14 million dollars, which represents 7.90 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 20.95 million dollars. 0% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 87.88% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	11.97	0.43	0.01	0.16	12.57
	Content	6.60	1.18	0.04	0.55	8.36
	Inventory	0.00	0.02	0.01	0.00	0.02
	Subtotal	18.57	1.62	0.06	0.71	20.95
<u>Business Interruption</u>						
	Income	0.00	0.01	0.00	0.00	0.01
	Relocation	0.01	0.00	0.00	0.00	0.01
	Rental Income	0.00	0.00	0.00	0.00	0.00
	Wage	0.00	0.01	0.00	0.06	0.07
	Subtotal	0.01	0.01	0.00	0.07	0.09
<u>ALL</u>	Total	18.58	1.64	0.06	0.77	21.05

Appendix A: County Listing for the Region

West Virginia
- Wirt

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
West Virginia				
Wirt	5,873	364,723	42,051	406,774
Total	5,873	364,723	42,051	406,774
Total Study Region	5,873	364,723	42,051	406,774

HAZUS-MH: Flood Event Report

Region Name: WoodCounty
Flood Scenario: 100-YR
Print Date: Monday, January 25, 2010

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	4
General Building Stock	
Essential Facility Inventory	
Flood Scenario Parameters	5
Building Damage	6
General Building Stock	
Essential Facilities Damage	
Induced Flood Damage	8
Debris Generation	
Social Impact	8
Shelter Requirements	
Economic Loss	9
Building-Related Losses	
Appendix A: County Listing for the Region	10
Appendix B: Regional Population and Building Value Data	11

General Description of the Region

HAZUS is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- West Virginia

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 367 square miles and contains 2,560 census blocks. The region contains over 36 thousand households and has a total population of 87,986 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 43,141 buildings in the region with a total building replacement value (excluding contents) of 7,697 million dollars (2006 dollars). Approximately 93.80% of the buildings (and 75.58% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

HAZUS estimates that there are 43,141 buildings in the region which have an aggregate total replacement value of 7,697 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	5,817,772	75.6%
Commercial	1,198,314	15.6%
Industrial	372,885	4.8%
Agricultural	12,713	0.2%
Religion	155,245	2.0%
Government	58,859	0.8%
Education	81,482	1.1%
Total	7,697,270	100.00%

Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,746,445	64.4%
Commercial	597,029	22.0%
Industrial	255,018	9.4%
Agricultural	6,286	0.2%
Religion	44,149	1.6%
Government	31,179	1.1%
Education	31,782	1.2%
Total	2,711,888	100.00%

Essential Facility Inventory

For essential facilities, there are 3 hospitals in the region with a total bed capacity of 603 beds. There are 34 schools, 4 fire stations, 4 police stations and no emergency operation centers.

Flood Scenario Parameters

HAZUS used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WoodCounty
Scenario Name:	100-YR
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

HAZUS estimates that about 1,808 buildings will be at least moderately damaged. This is over 16% of the total number of buildings in the scenario. There are an estimated 670 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	1	3.13	3	9.38	4	12.50	4	12.50	1	3.13	19	59.38
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	0	0.00	0	0.00	0	0.00	1	12.50	1	12.50	6	75.00
Industrial	0	0.00	4	25.00	5	31.25	3	18.75	3	18.75	1	6.25
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	0	0.00	35	2.00	290	16.54	146	8.33	638	36.39	644	36.74
Total	1		42		299		154		643		670	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	100.00
Manuf-Housing	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	143	100.00
Masonry	0	0.00	6	1.37	75	17.16	35	8.01	180	41.19	141	32.27
Steel	1	2.70	5	13.51	5	13.51	5	13.51	5	13.51	16	43.24
Wood	0	0.00	29	2.46	216	18.31	113	9.58	458	38.81	364	30.85

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 603 hospital beds available for use. On the day of the scenario flood event, the model estimates that 40 hospital beds are available in the region.

Before the flood analyzed in this scenario, the region had 603 hospital beds available for use. On the day of the scenario flood event, the model estimates that 603 hospital beds are available in the region.

Before the flood analyzed in this scenario, the region had 603 hospital beds available for use. On the day of the scenario flood event, the model estimates that 603 hospital beds are available in the region.

Before the flood analyzed in this scenario, the region had 603 hospital beds available for use. On the day of the scenario flood event, the model estimates that 603 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	4	0	2	0
Hospitals	3	1	1	0
Police Stations	4	0	2	0
Schools	34	2	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 201,033 tons of debris will be generated. Of the total amount, Finishes comprises 18% of the total, Structure comprises 43% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 8,041 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 2,467 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 5,304 people (out of a total population of 87,986) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 986.91 million dollars, which represents 38.62 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 966.67 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 32.49% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	201.47	141.47	35.60	22.98	401.52
	Content	118.53	274.30	92.88	55.42	541.13
	Inventory	0.00	6.59	17.05	0.37	24.01
	Subtotal	320.00	422.36	145.53	78.77	966.67
<u>Business Interruption</u>						
	Income	0.03	1.40	0.03	0.11	1.57
	Relocation	0.38	0.50	0.04	0.06	0.97
	Rental Income	0.12	0.29	0.01	0.00	0.42
	Wage	0.08	1.79	0.04	8.12	10.03
	Subtotal	0.61	3.97	0.12	8.29	12.99
<u>ALL</u>	Total	320.61	426.33	145.65	87.06	979.66

Appendix A: County Listing for the Region

- West Virginia
 - Wood

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
West Virginia				
Wood	87,986	5,817,772	1,879,498	7,697,270
Total	87,986	5,817,772	1,879,498	7,697,270
Total Study Region	87,986	5,817,772	1,879,498	7,697,270

APPENDIX N: FLOODPLAIN & TOPOGRAPHIC MAPS & AERIAL PHOTOGRAPHS (appendix H from 2011 HMP)



FIRM Key Map

The City of Grantsville



Plate 1.

Plate 1. Provides a view of a portion of Grantsville South of the Little Kanawha River and the surrounding area. Two streams enter the city within a half-mile radius. The close proximity of the confluences of Simon Run and Philip Run contributes to and further compounds the potential flooding hazards within the city limits.

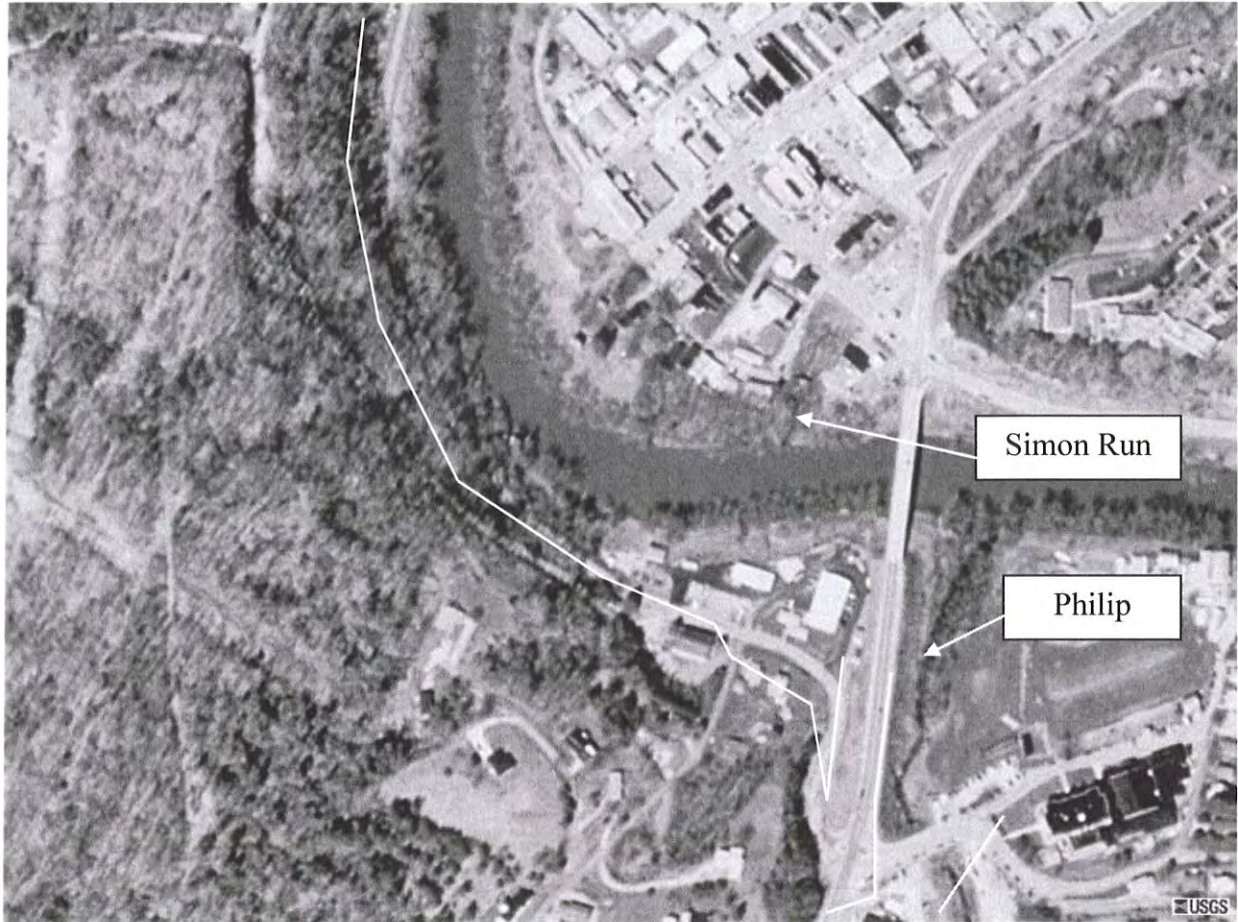


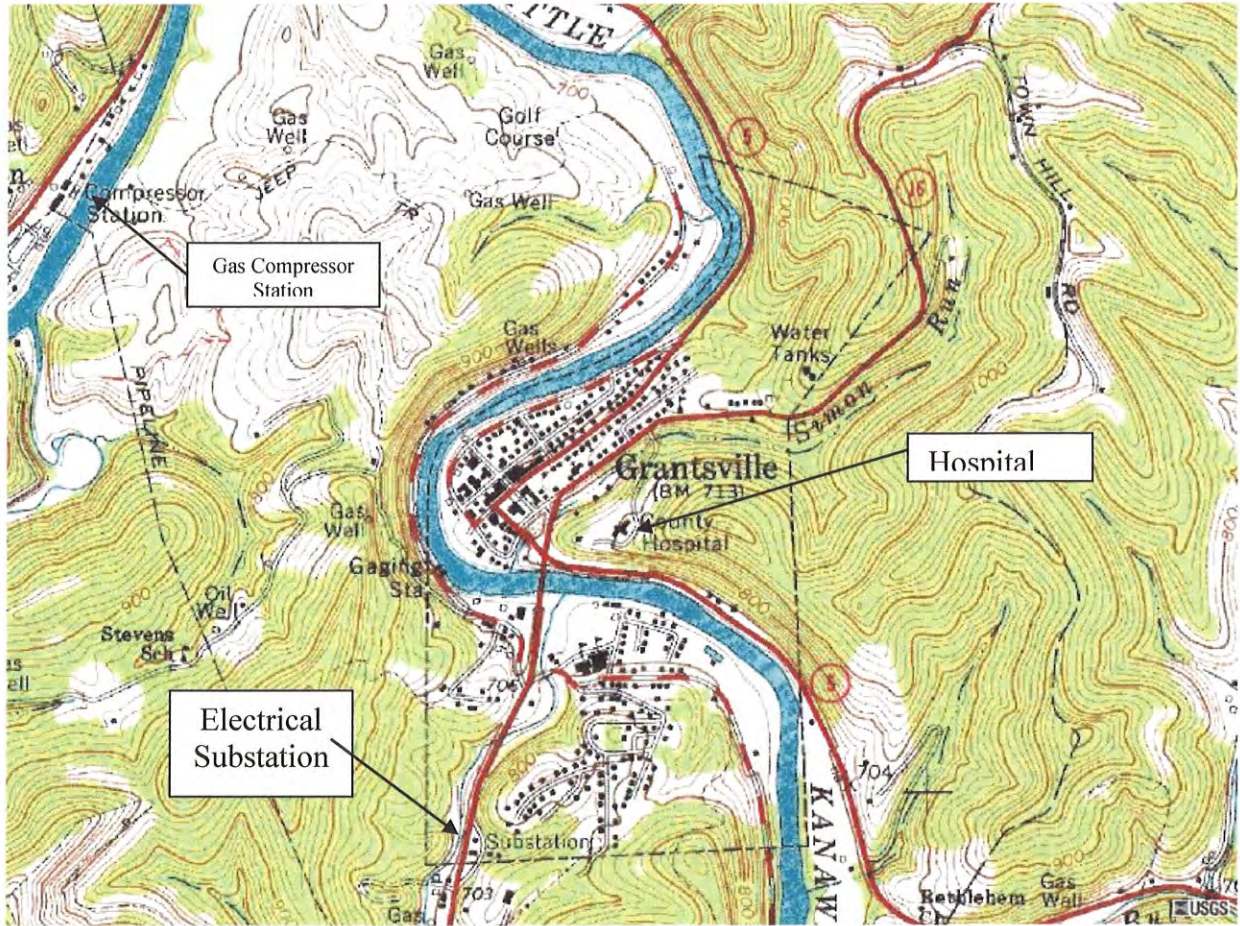
Plate 2.

Plate 2 provides a view of a portion of downtown Grantsville and the WV route 16 Bridge connecting both sides of the Little Kanawha River. The confluence of both Philip Run and Simon Run are both indicated above.



Plate 3.

Plate 3 provides a view of the downstream portion of Grantsville along WV Route 5 and the opposite side of the Little Kanawha River.



Topo 1.

Topo 1. provides the boundary limits of the City of Grantsville as well as infrastructure location for the city and surrounding area.

Areas within Calhoun County



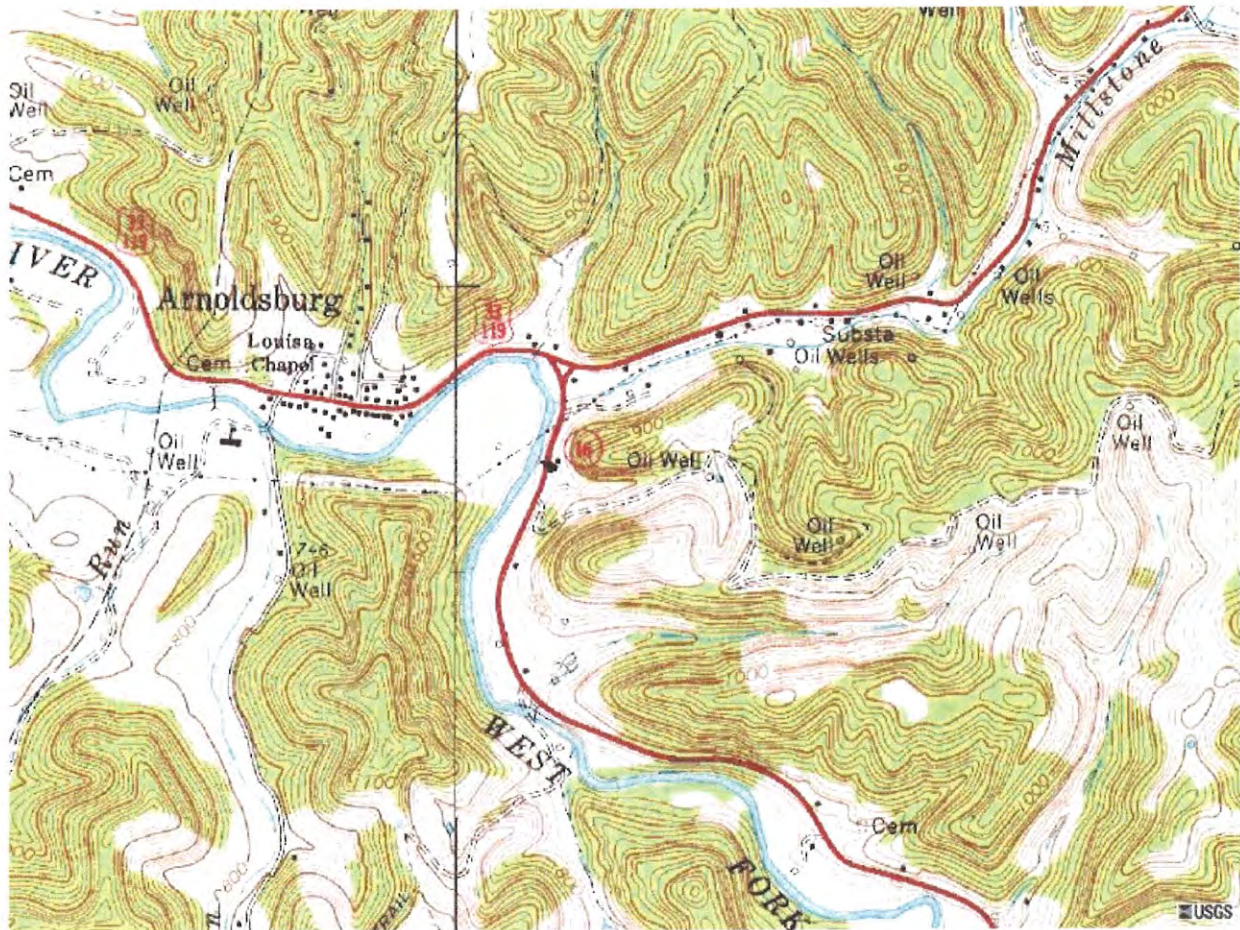
Plate 4.

Plate 4 provides a view of the community of Cabot Station.



Plate 5.

Plate 5 provides a view of the lower (down river) portion of Cabot Station.



Topo 2.

Topo 2 provides a topographical view of the Arnoldsburg area at the confluence of the West Fork of the Little Kanawha River and Millstone Creek.

Ripley, WV

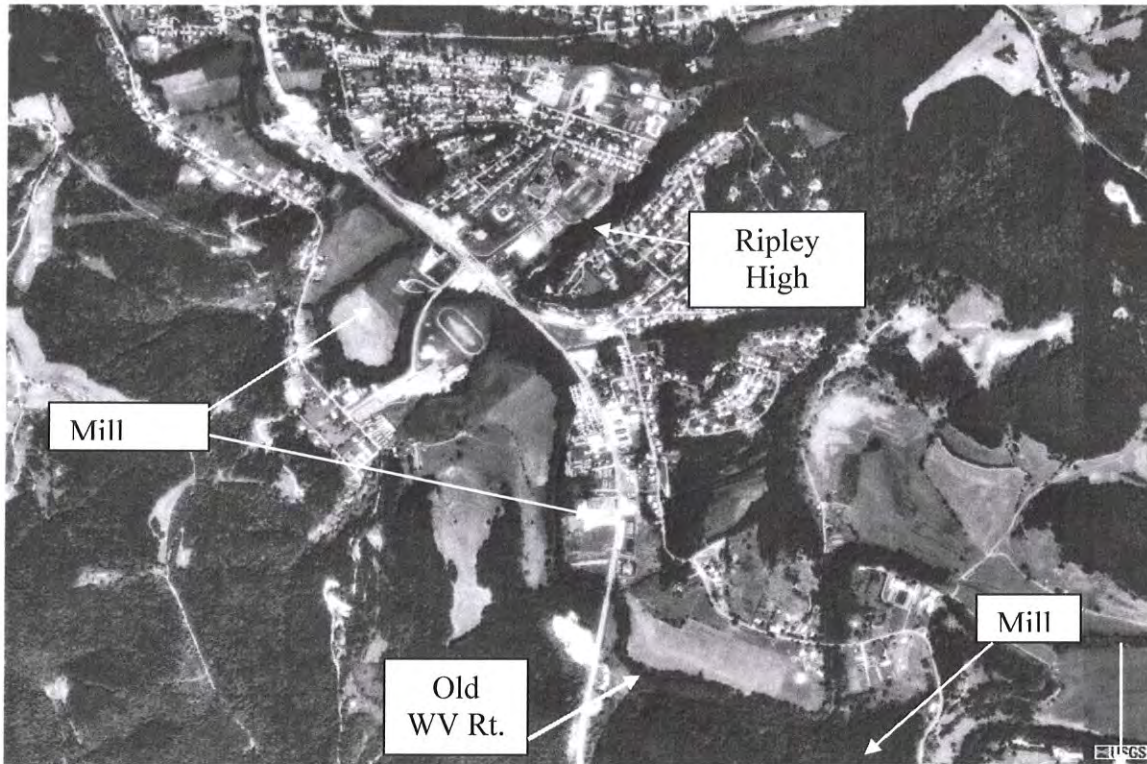
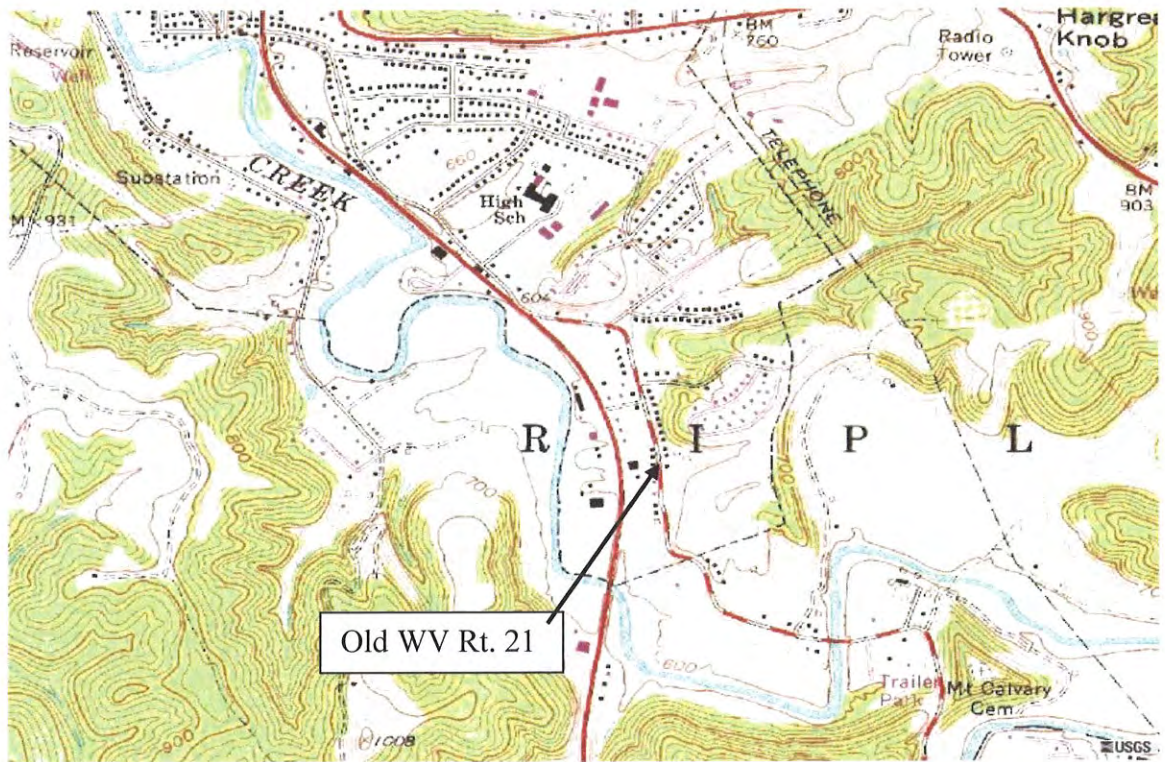


Plate 1.

Plate 1 shows the southern side of Ripley along old WV Rt. 21 and Mill





Topo 1.

Topo 1 represent Plate 1 and gives a better representation of the meanders of Mill Creek through the southern portion of the Ripley community.

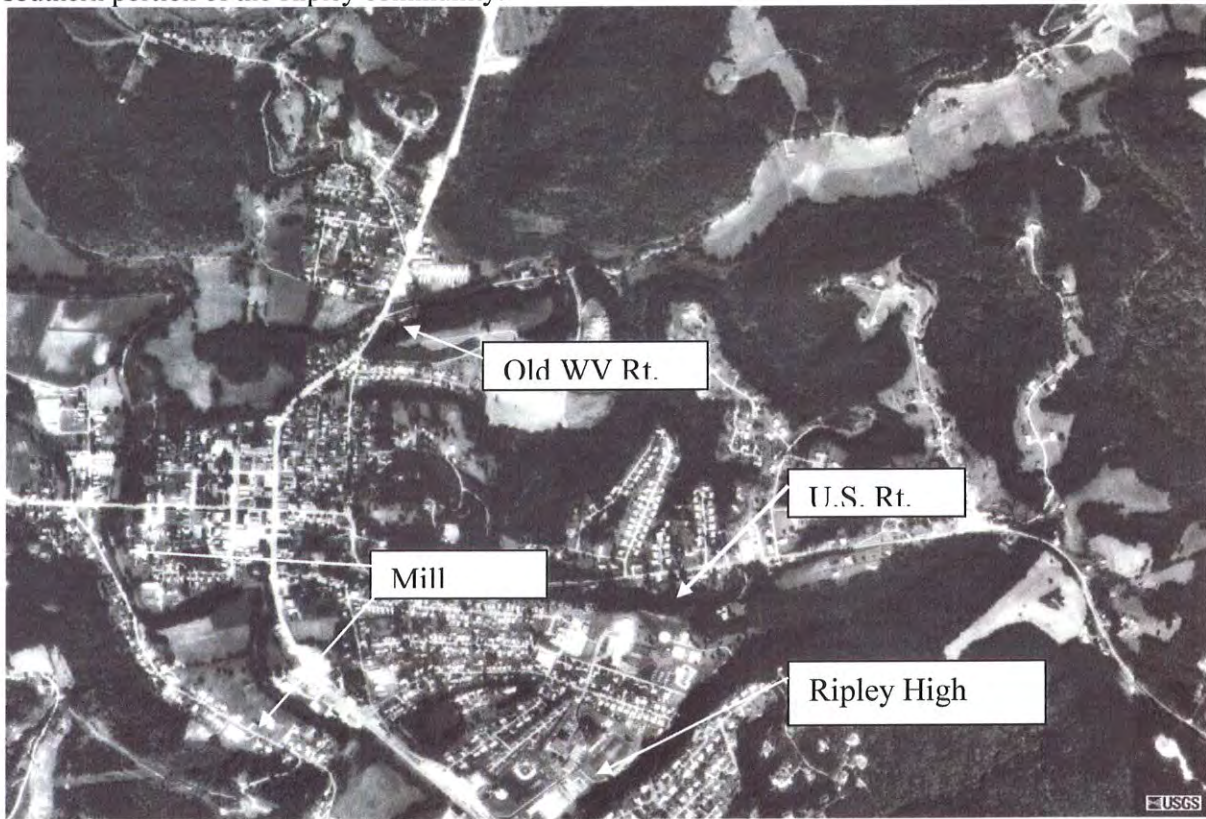
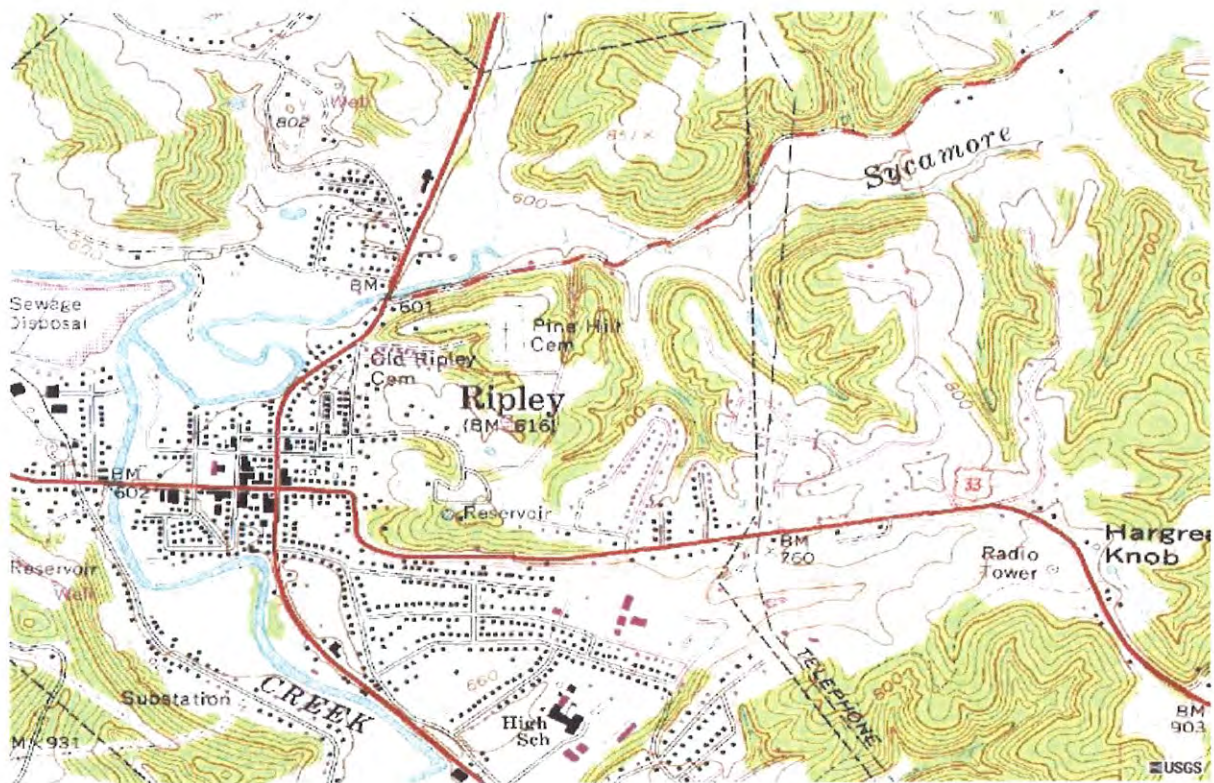


Plate 2.

Plate 2 shows downtown Ripley and the route of Mill Creek.



Topo 2.

Topo represents Plate 2 and shows Mill Creek in relation to downtown Ripley and Old WV Route 21 and U.S. Route 31

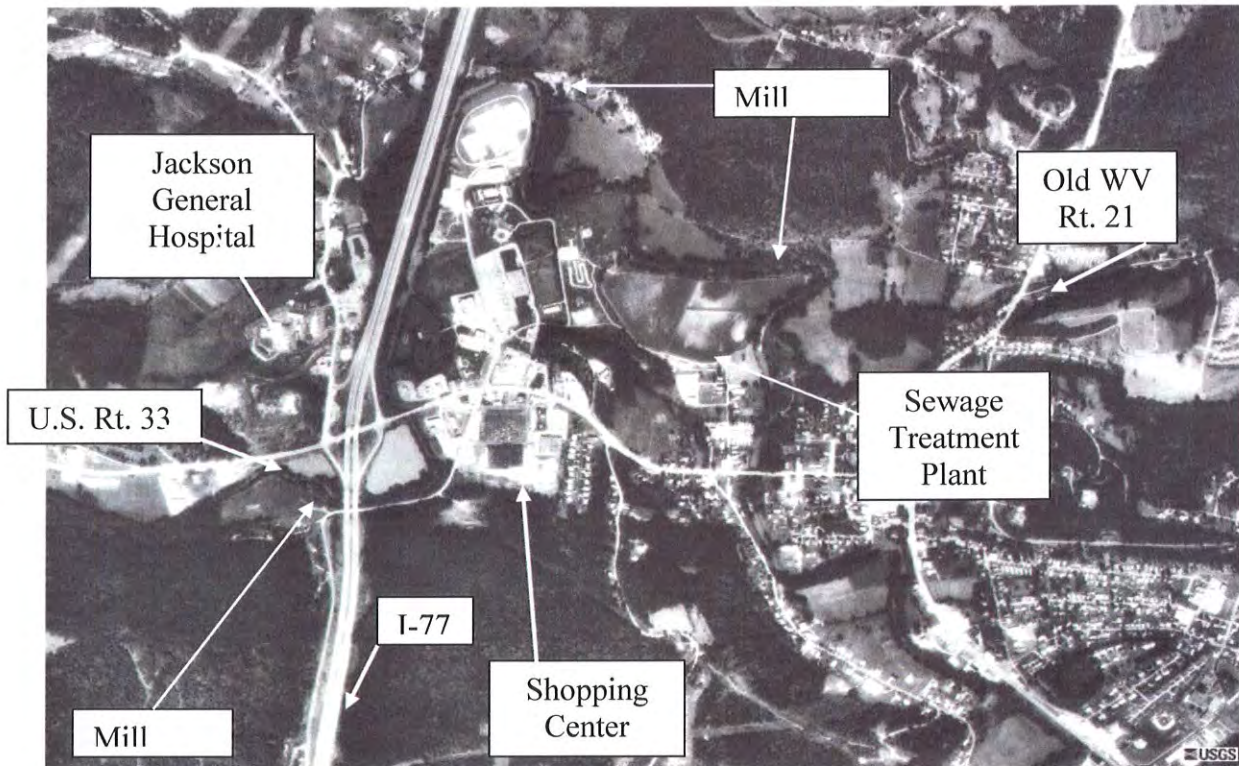
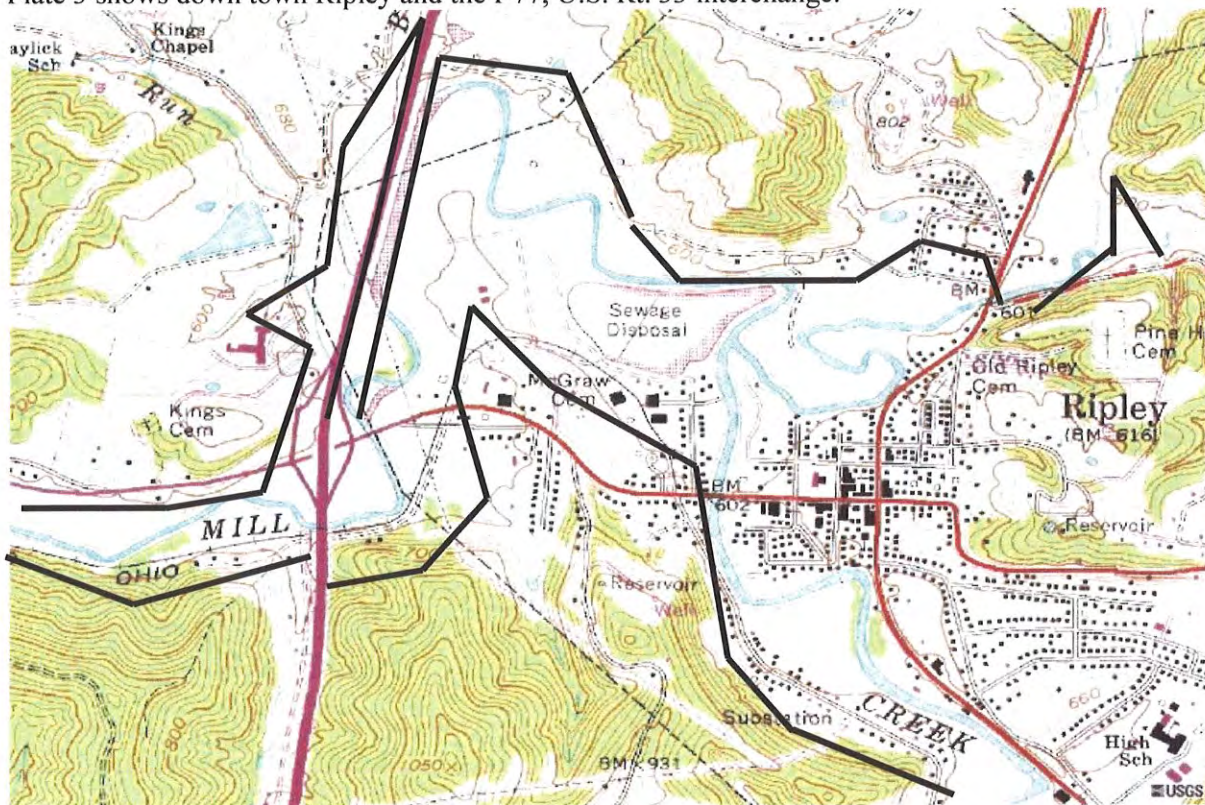


Plate 3.

Plate 3 shows downtown Ripley and the I-77, U.S. Rt. 33 interchange.



Topo 3.

Topo 3 corresponds to Plate 3. Areas within the black lines are not the extent of the most frequent flooding. Areas West of Old WV Rt. 21 (in Ripley) that generally lie below the 600 ft Elevation level should also be considered in the “frequent flooding “ assessment.

Ravenswood, WV



Plate 4.
Plate 4 shows the up river area of Ravenswood.



Plate 5.
Plate 5 shows the down town and main residential section of Ravenswood.

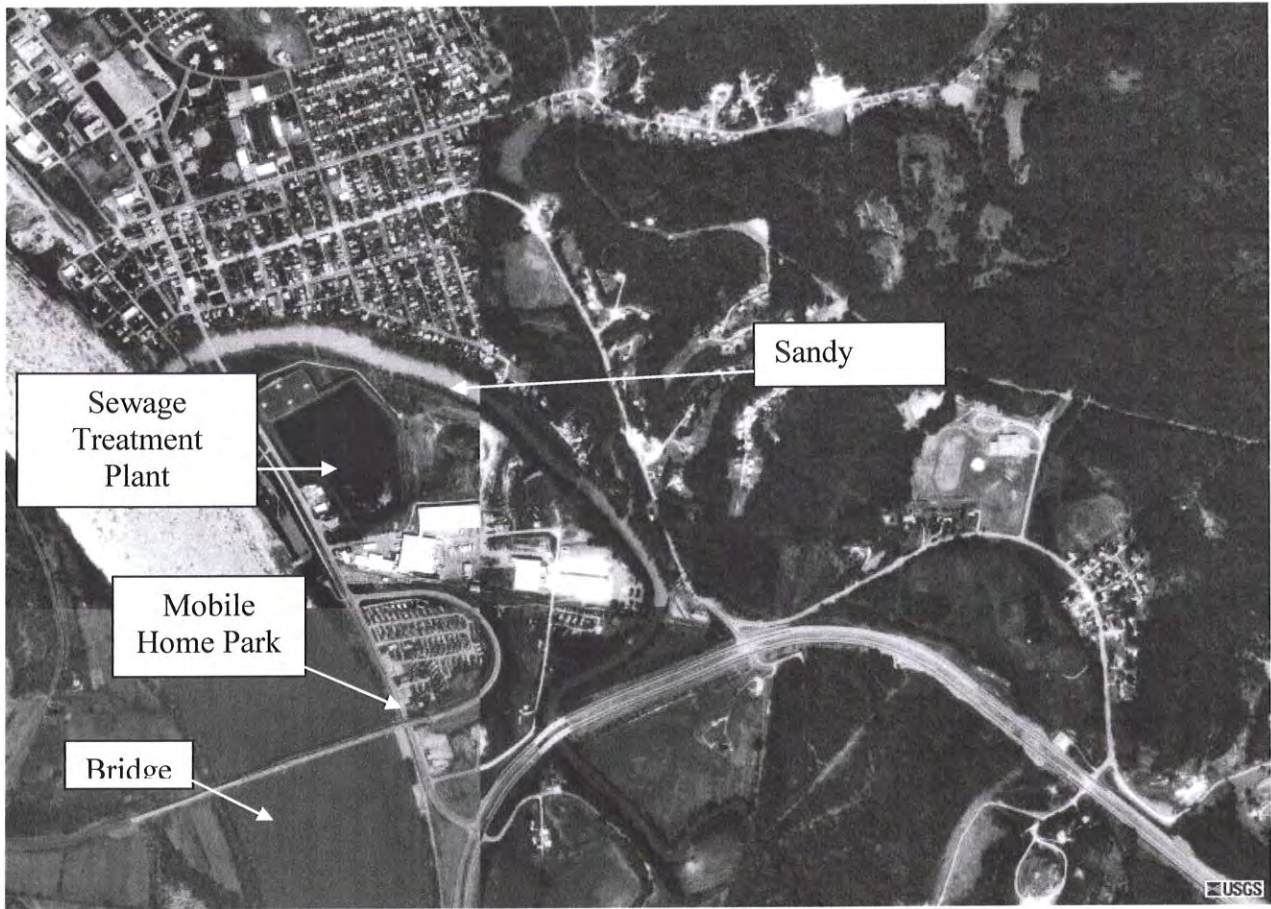


Plate 6.
Plate 6 shows the down river portion of Ravenswood and the bridge crossing the Ohio River.

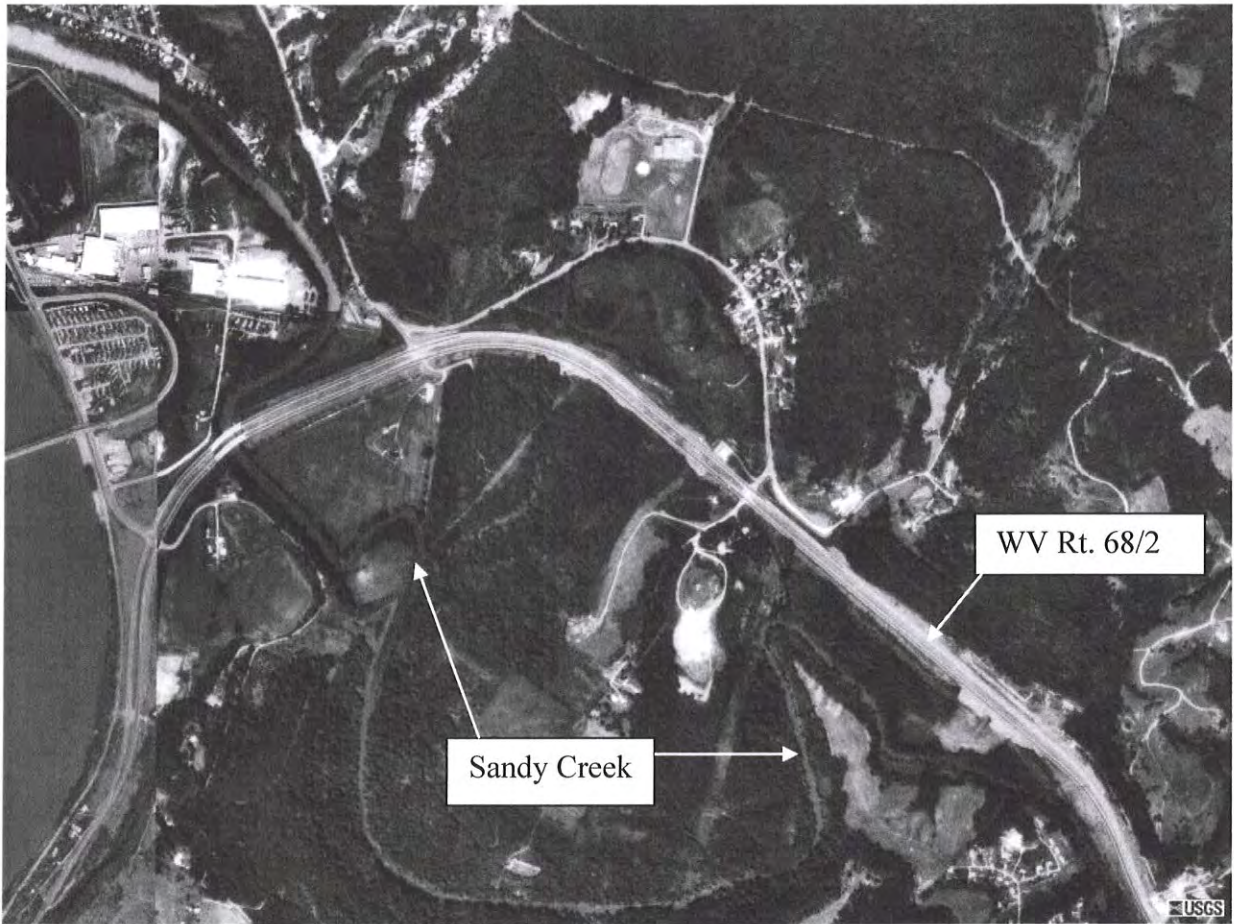
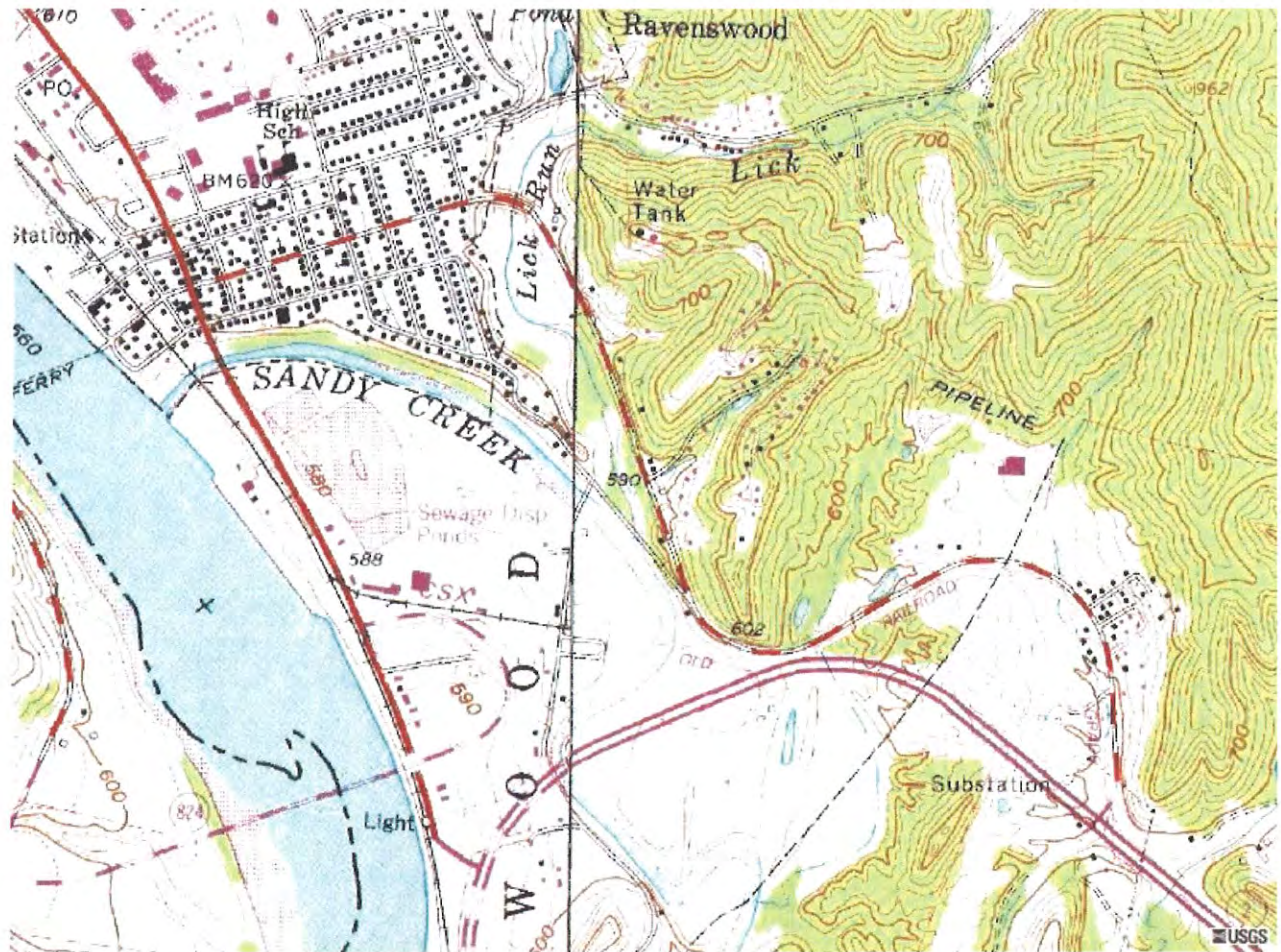


Plate 7.

Plate 7 is similar to Plate 6 but more of Sandy Creek and WV route 68/2 are included in this plate.



Topo 5.

Topo 5 provides a view of lower Ravenswood at the Ohio River Bridge.

Silverton Area

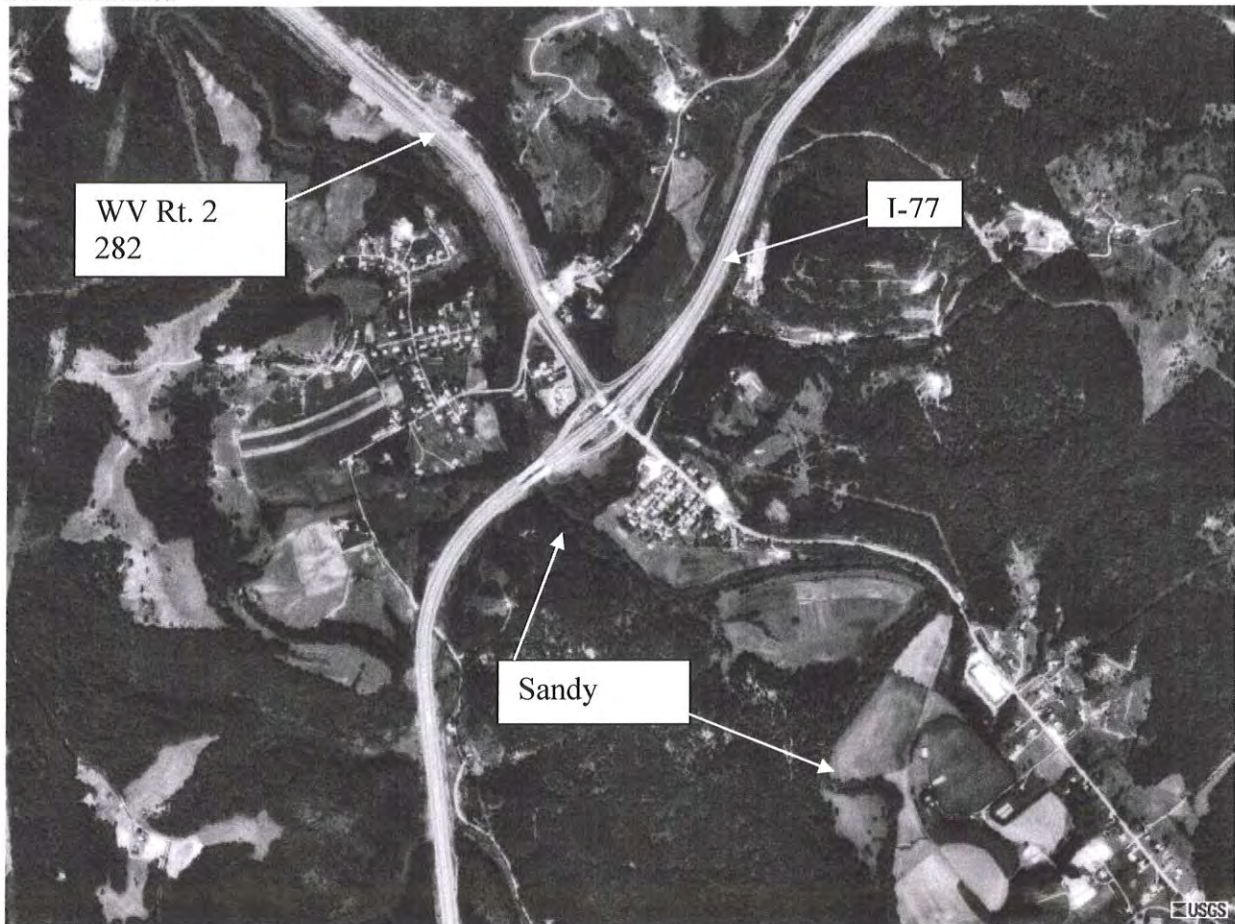
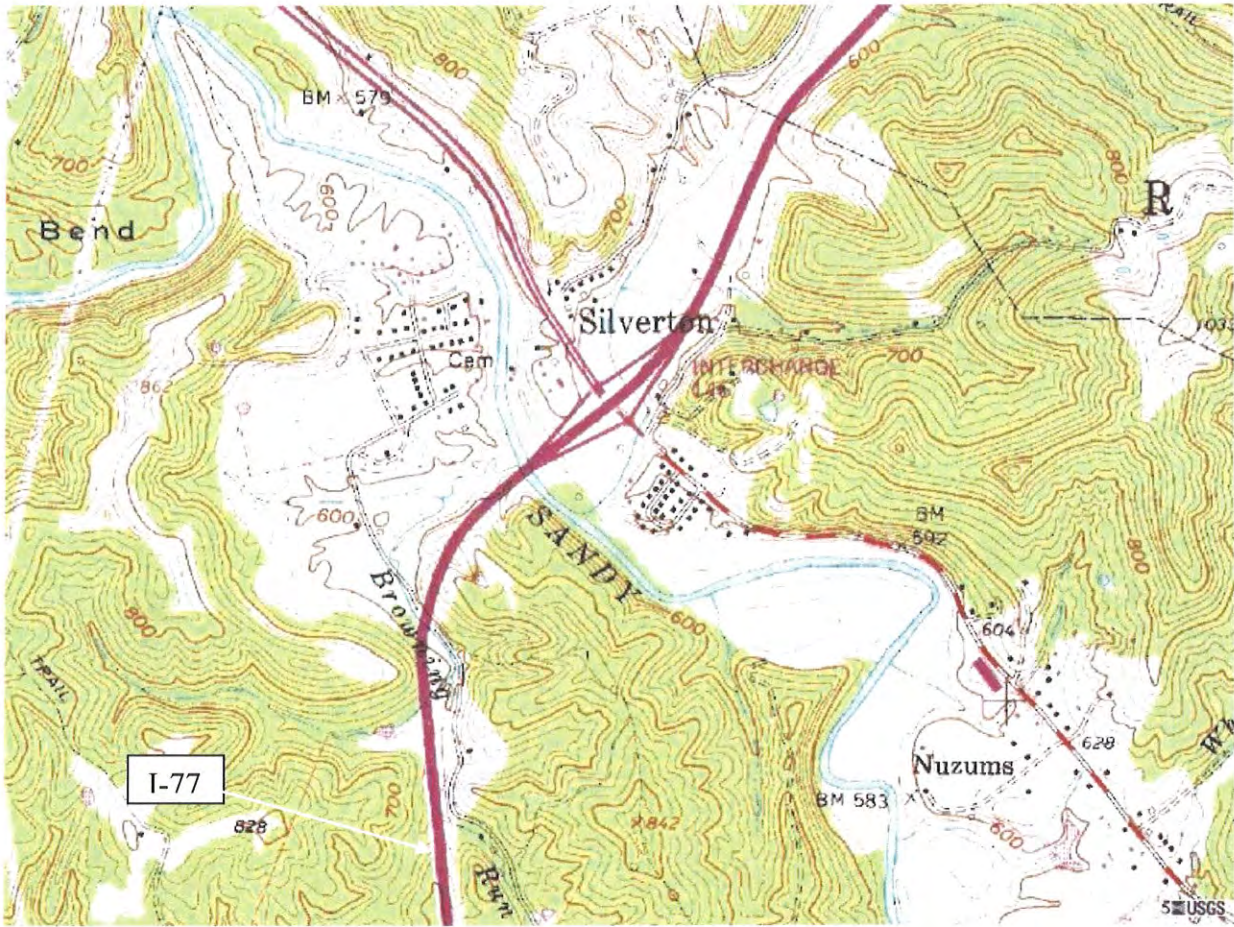


Plate 8.

Plate 8 shows Sandy Creek at the Silverton interchange on I-77.



Topo 6.

Topo 6 corresponds to Plate 8 and gives a better or more defined location of Sandy Creek.

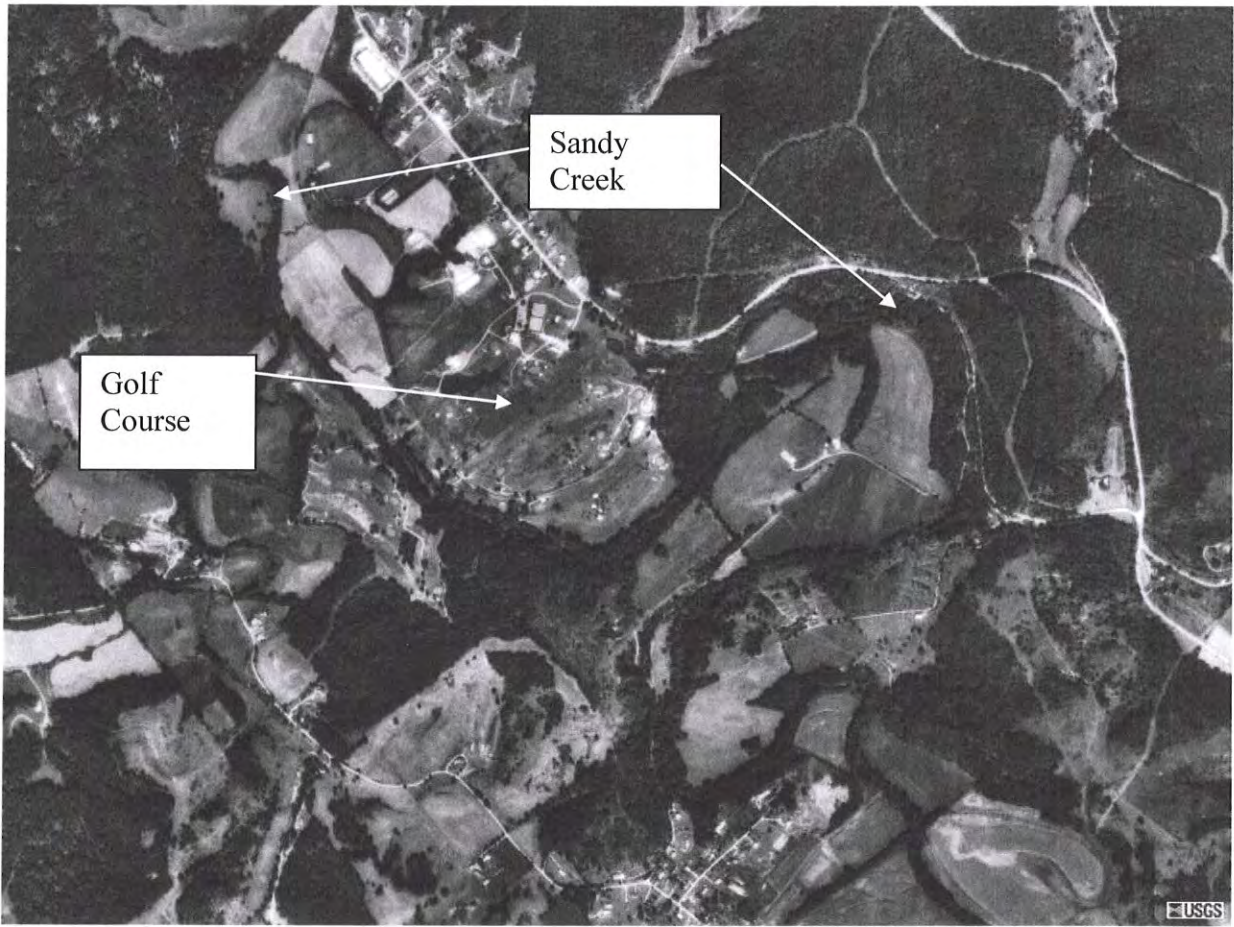
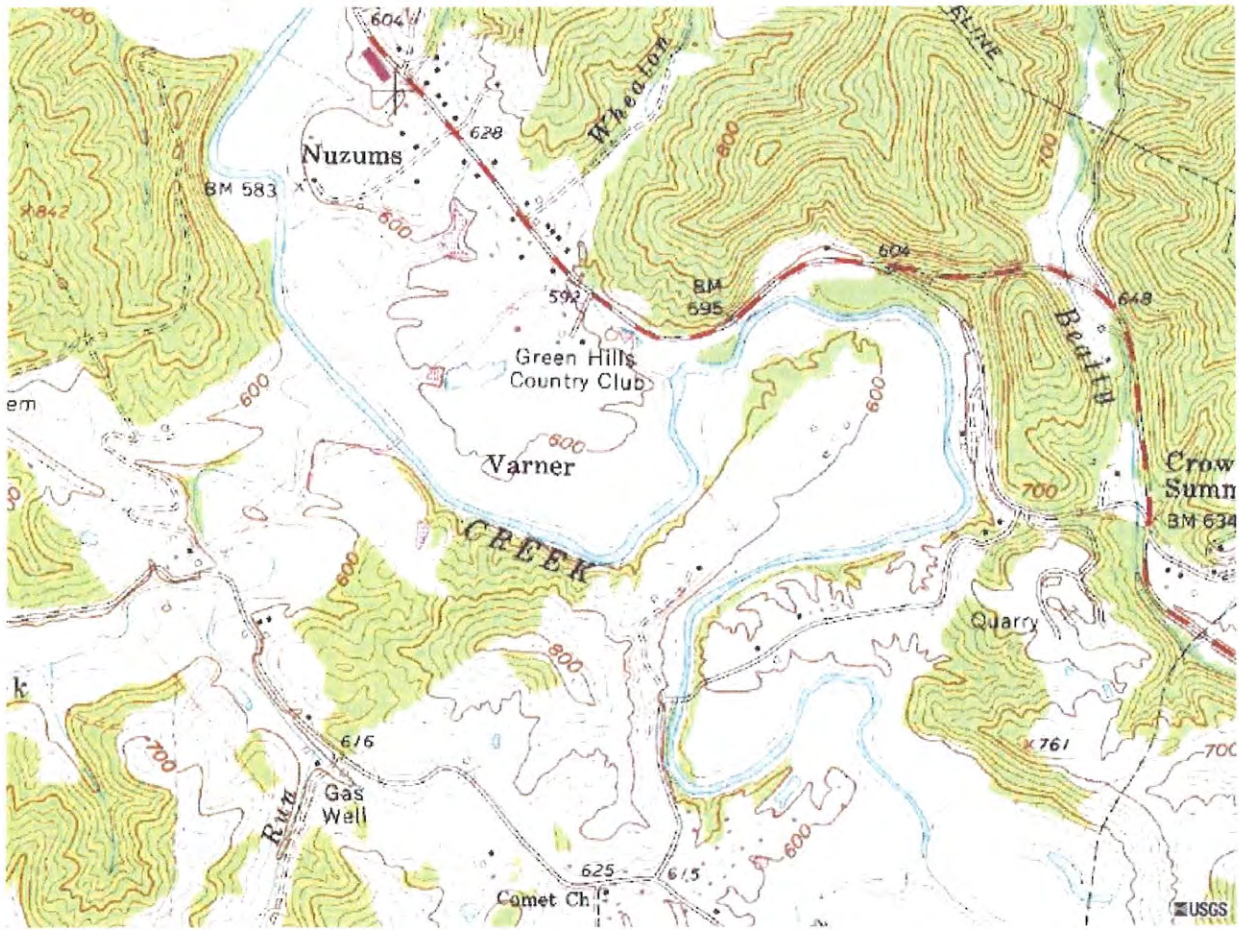


Plate 9.

Plate 9 provides a view of the area along each side of Sandy Creek between I-77 and old WV Route 21 at the “Y” South of Sandyville.



Topo 7.

Topo 7 corresponds to Plate 9 and gives a better graphic of the Sandy Creek's location.

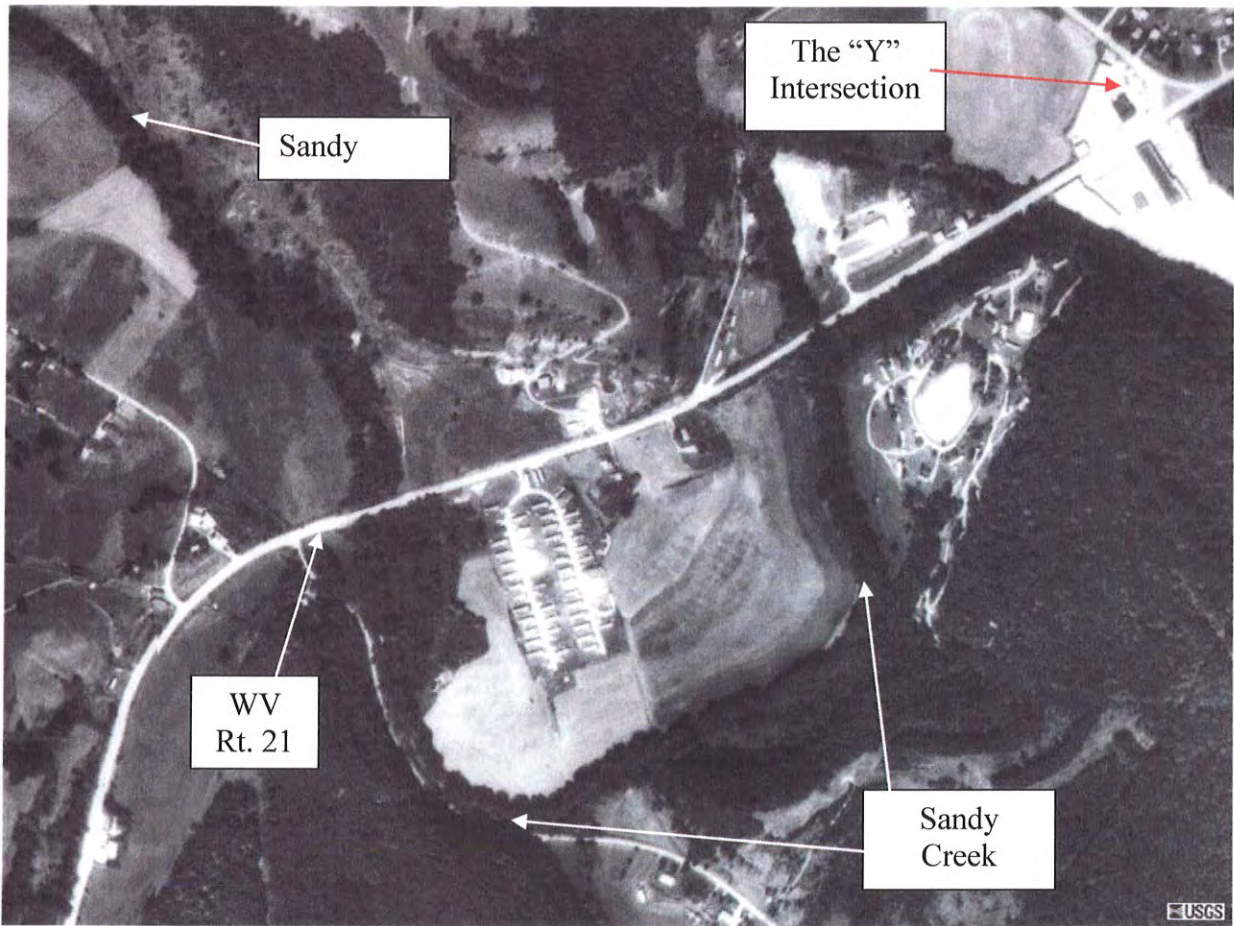
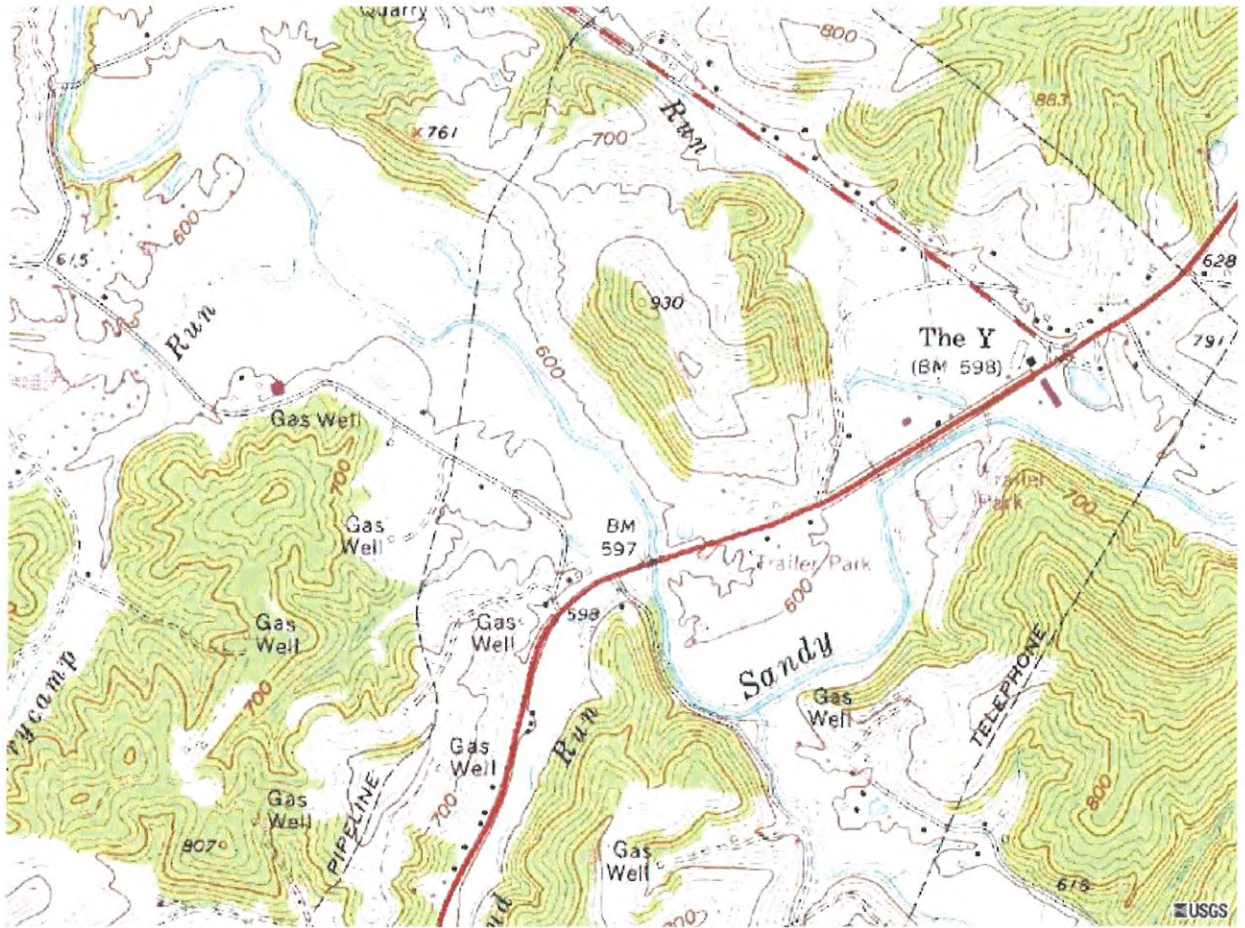


Plate 10.

Plate 10 shows old WV route 21 South of Sandyville and the close proximity of Sandy Creek. Topo 4 (next page) provides a clearer picture of the location of Sandy Creek.

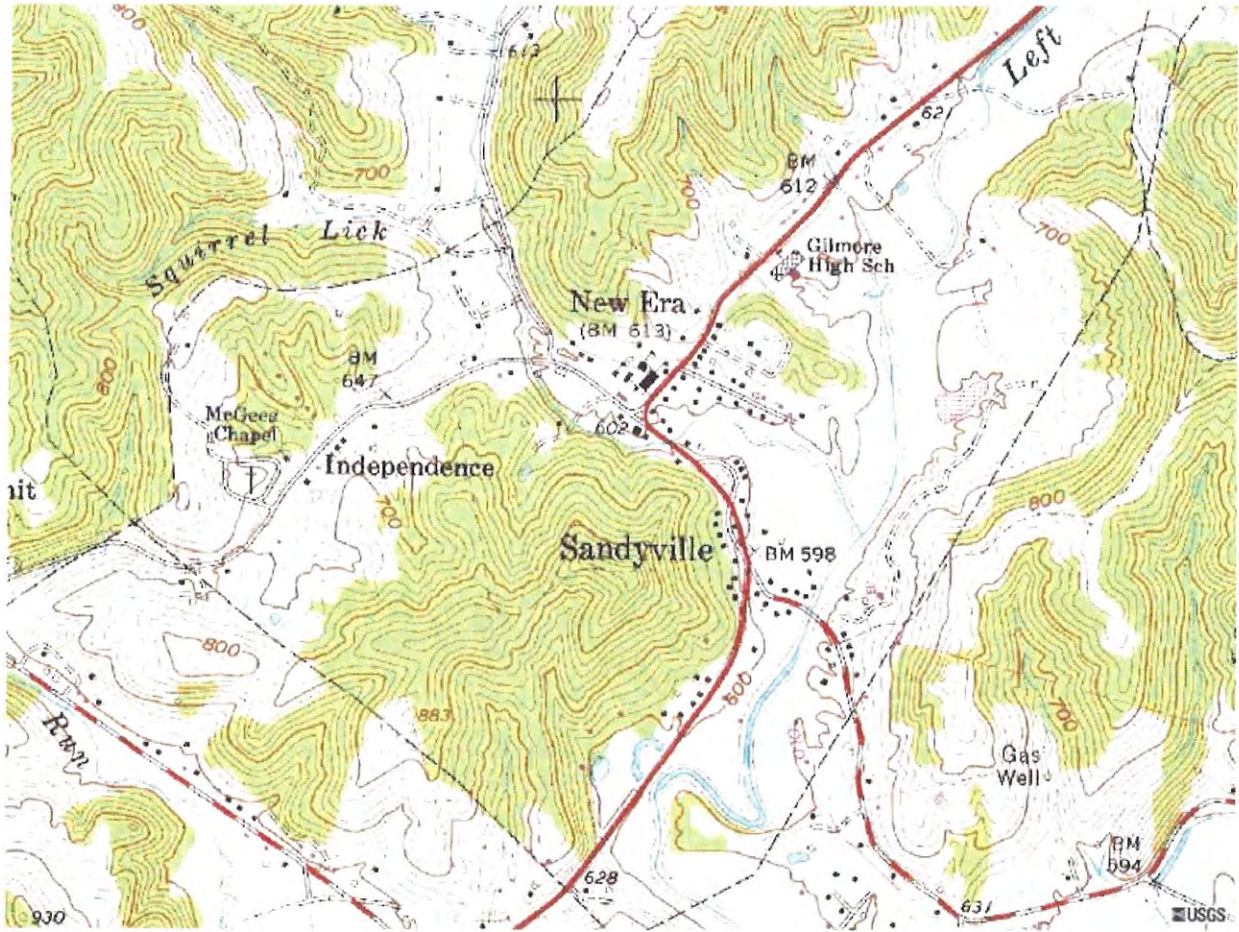


Topo 8.

Sandyville Area

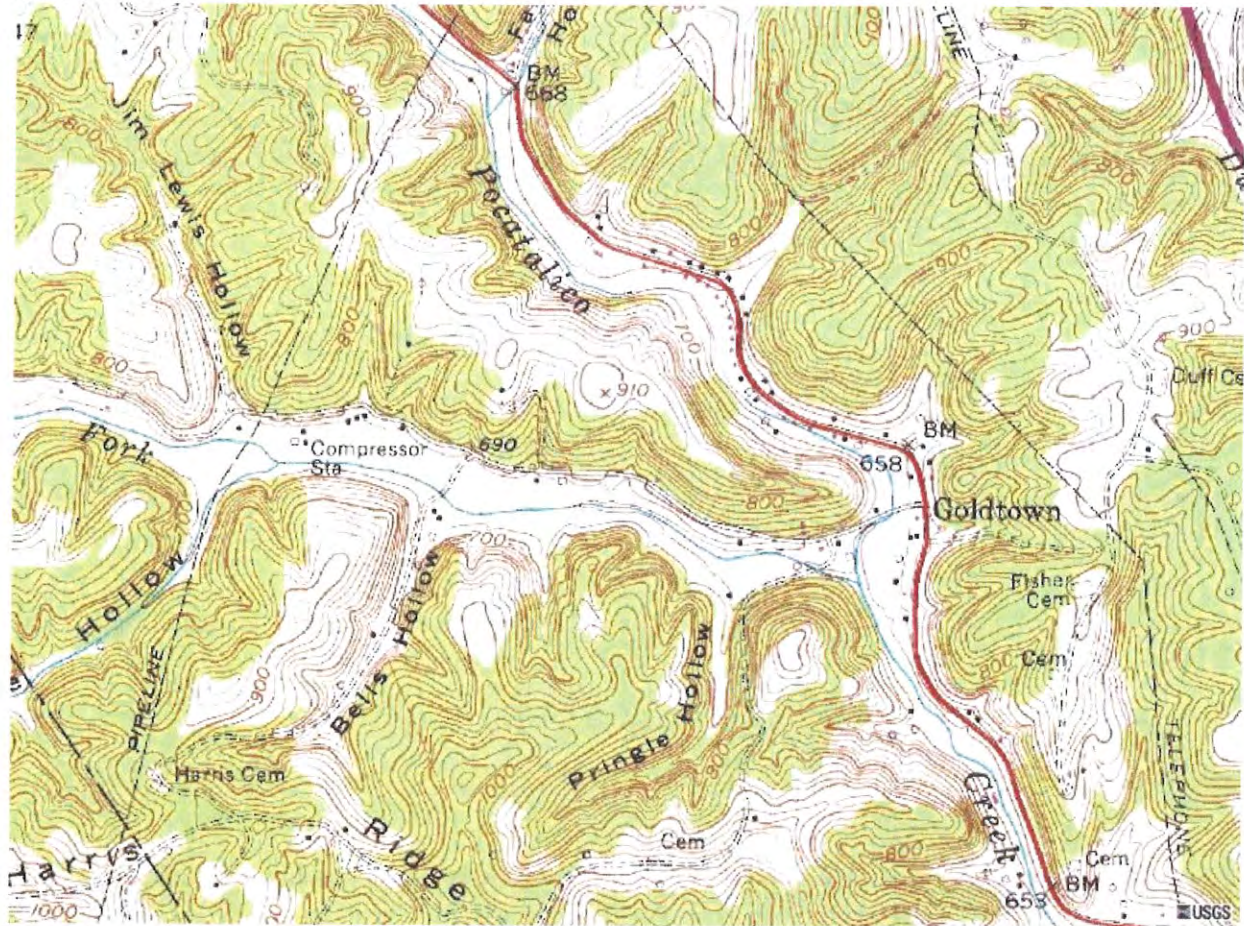


Plate 11.
Plate provides a view of Sandyville West Virginia



Topo 9.

Goldtown Area



Topo 10.

Topo 10 provides a view of Pocatatico Creek in Southwestern Jackson County. This area is susceptible to Flash flooding during heavy rainstorms.



Plate 12.

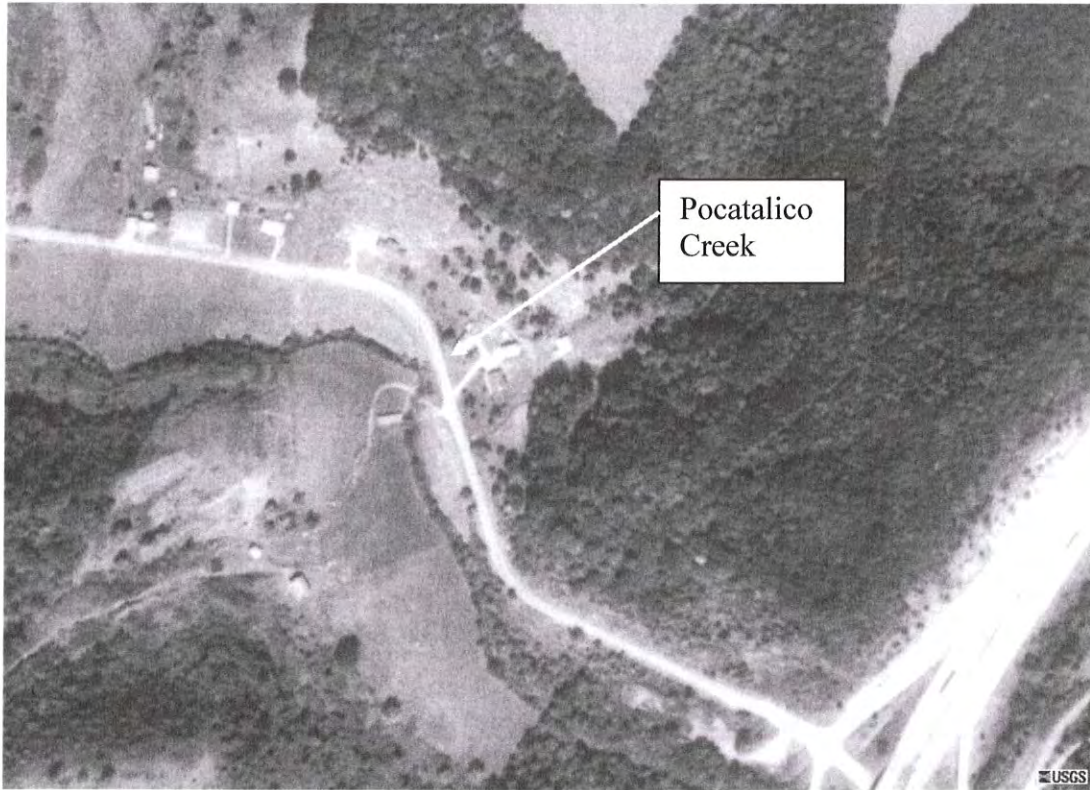


Plate 13.

Plate 13 provides a view of Pocatalico Creek and Pocatalico Creek Road and the I-77 interchange.

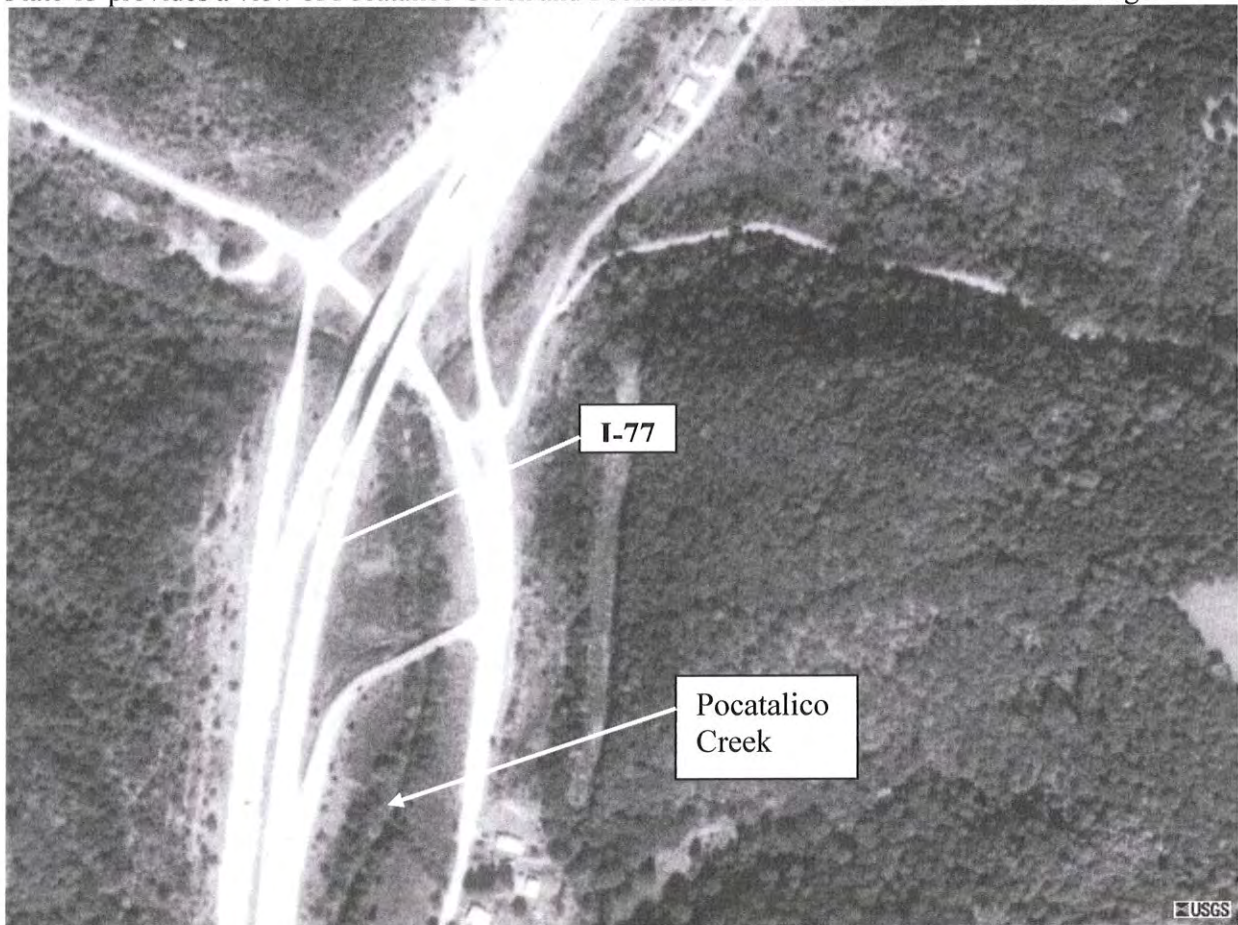


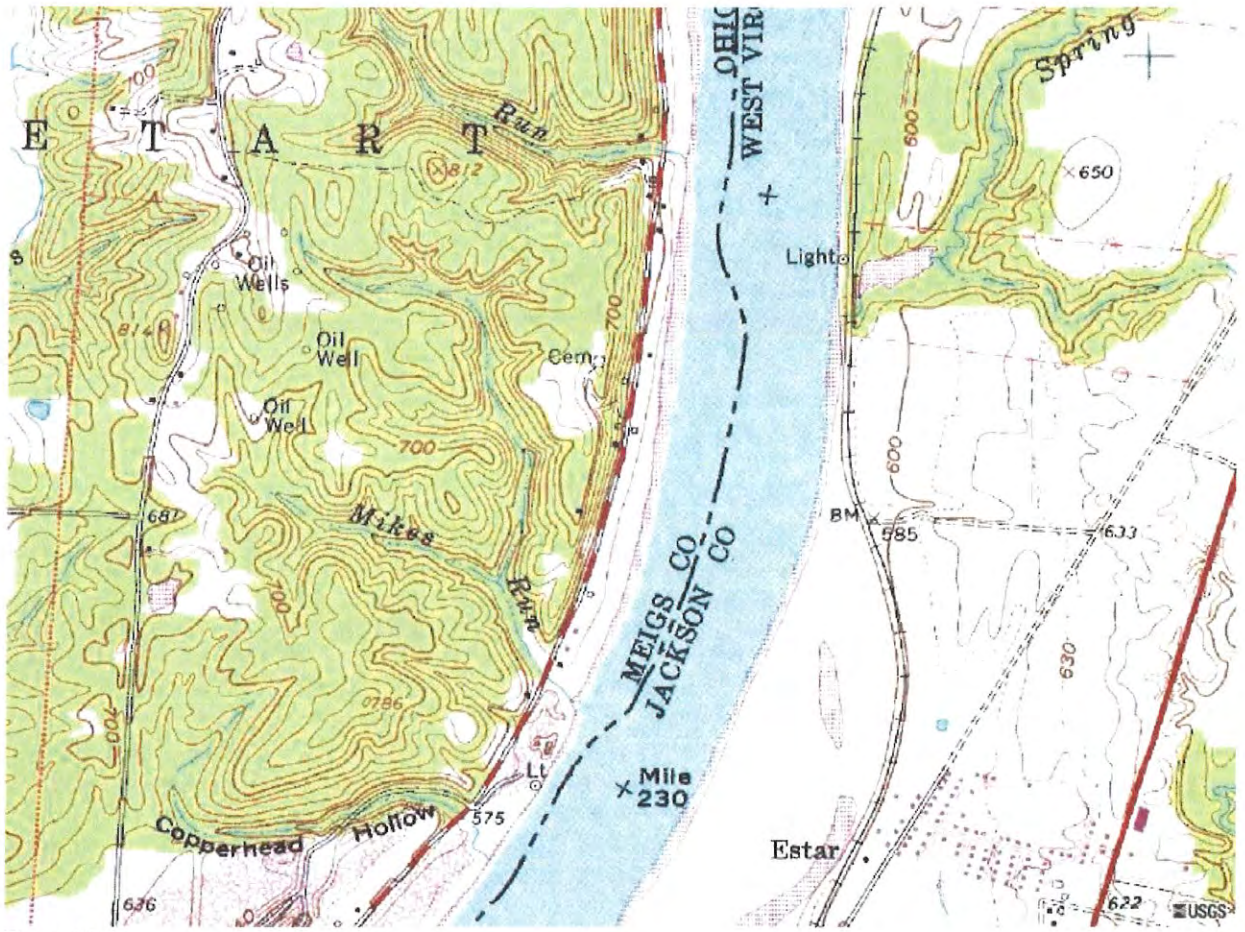
Plate 14.

Plate 14 provides a view of Pocatalico Creek east of I-77

Millwood Area



Plate 15.



Topo 11.

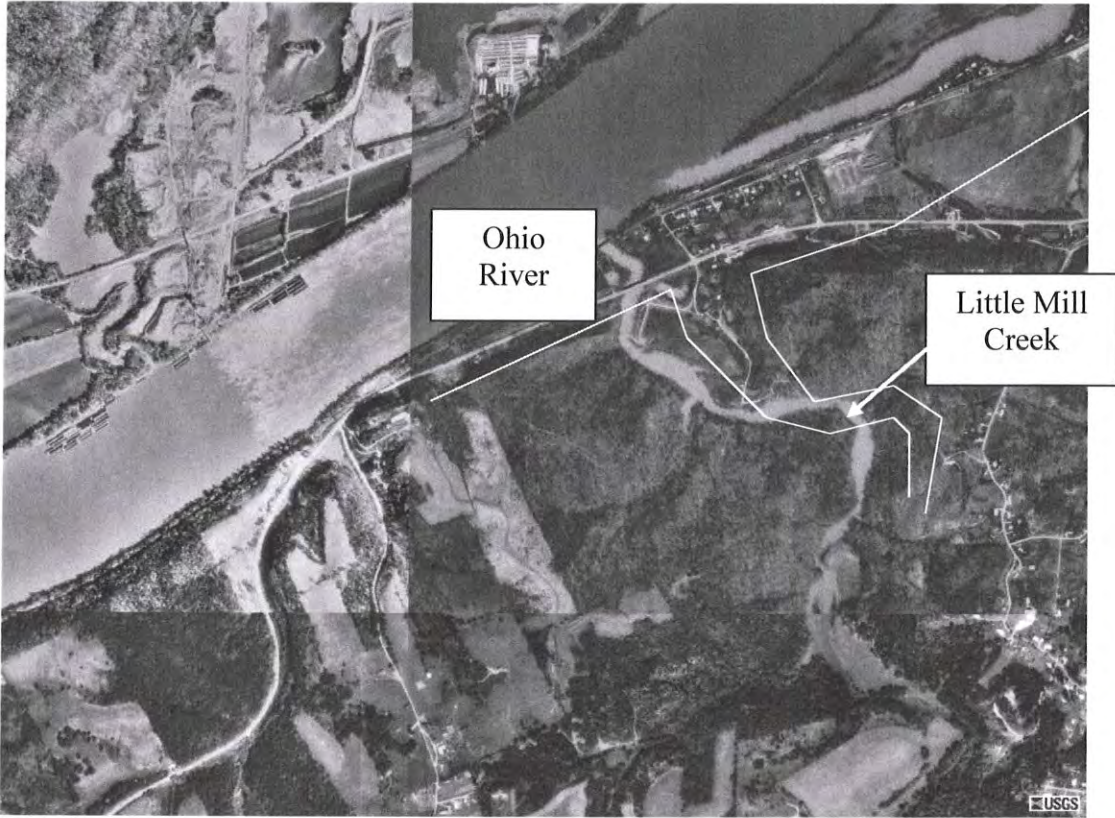
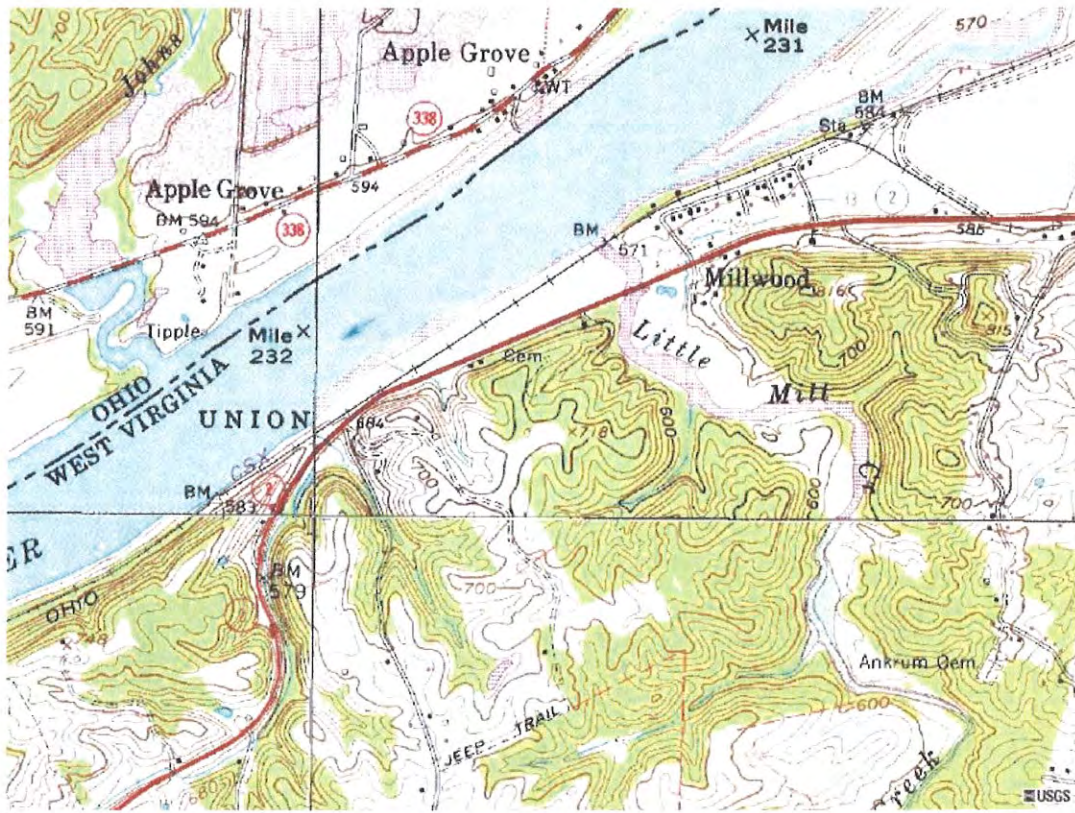


Plate 16.

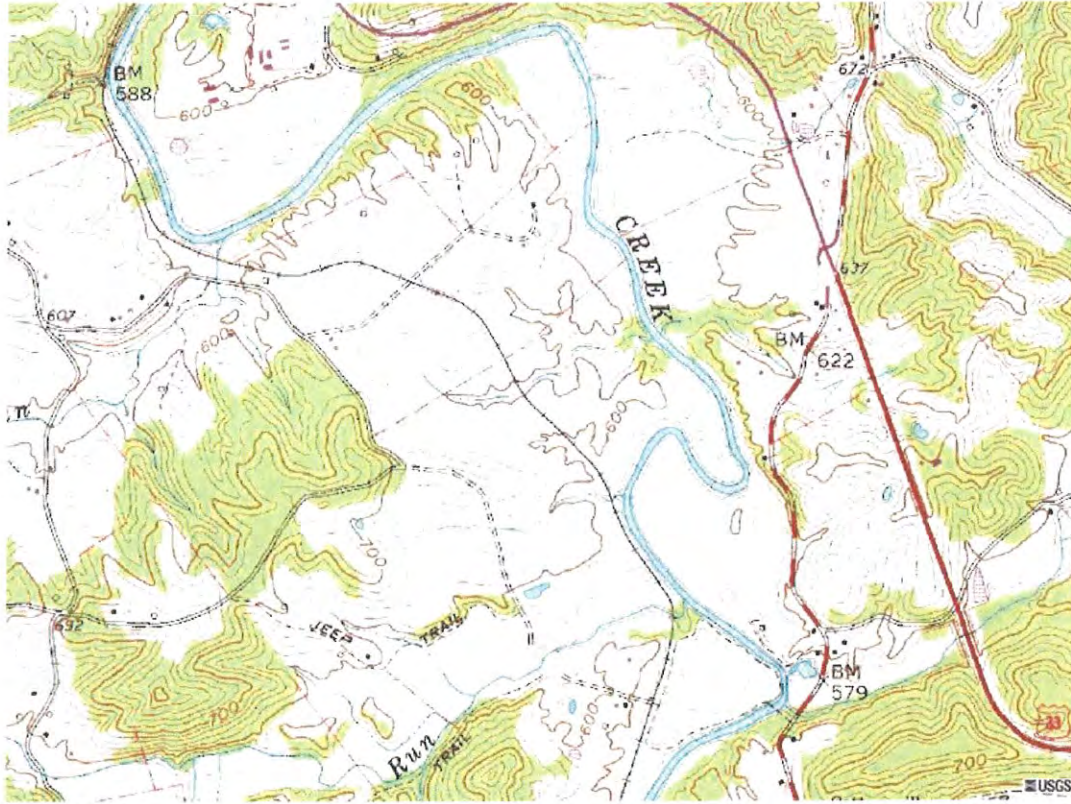
Plate 16 provides an aerial view of the confluence of Little Mill Creek and the Ohio River.



Topo 12.



Topo 17.

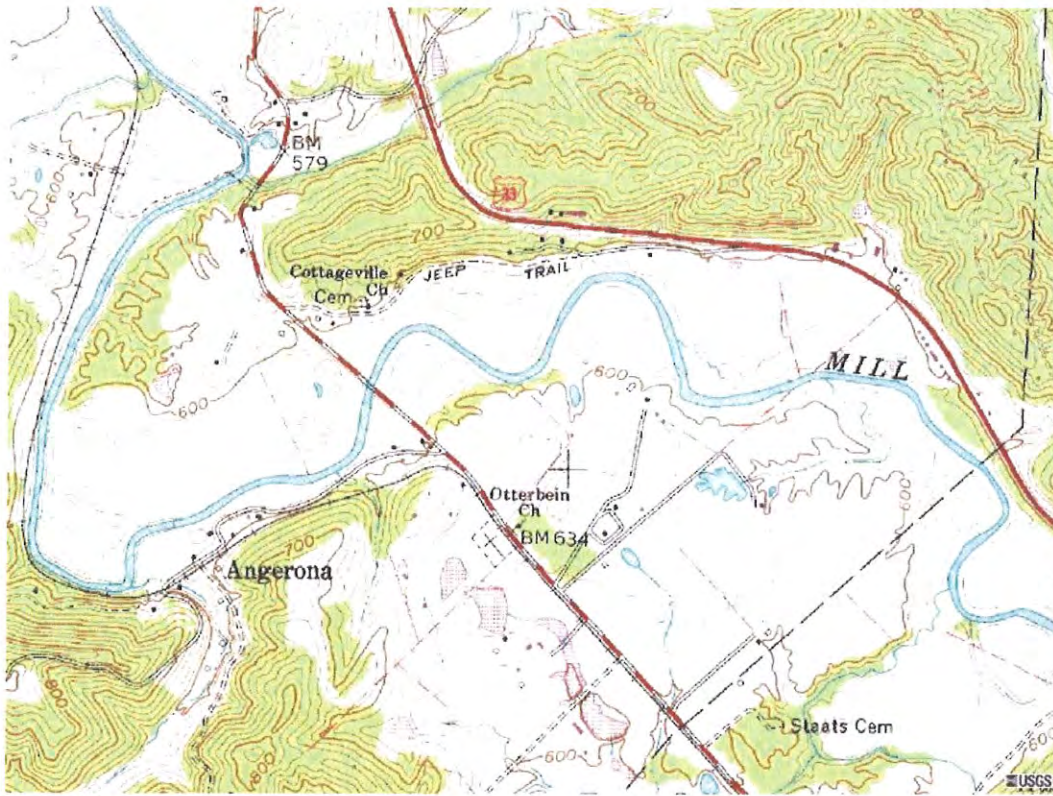


Topo 13.

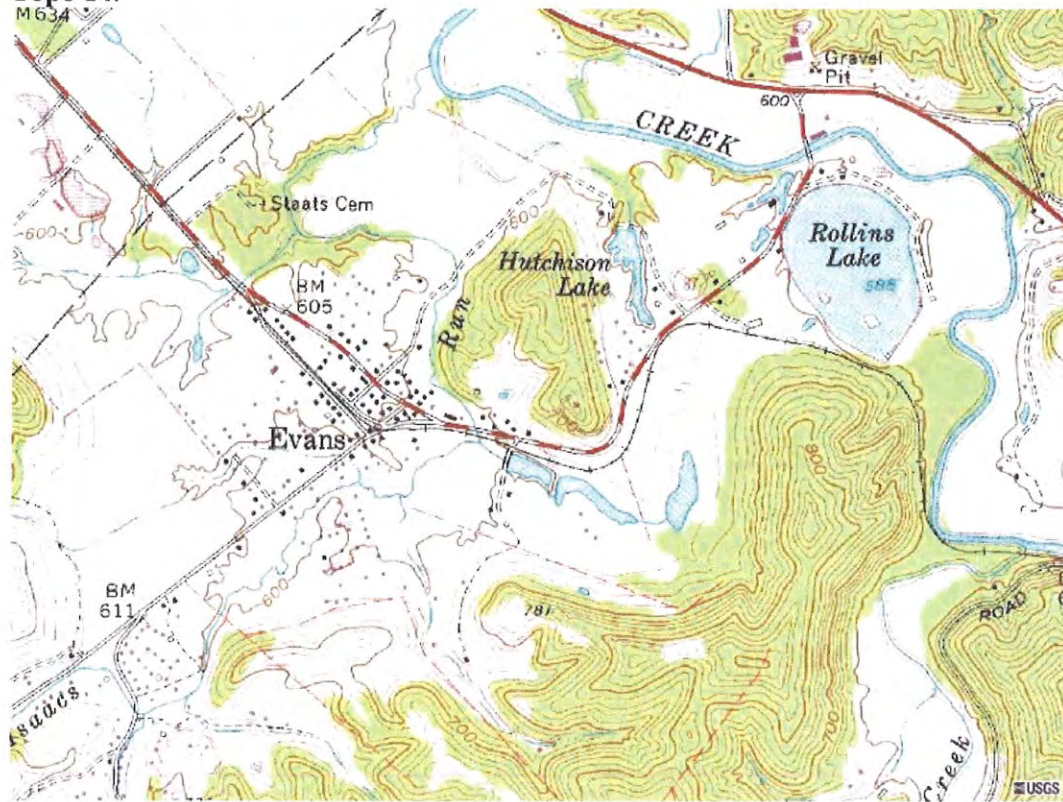


Plate 18.

Plate 18. provides a view of Little Mill Creek East of Cottageville.



Topo 14.
M634

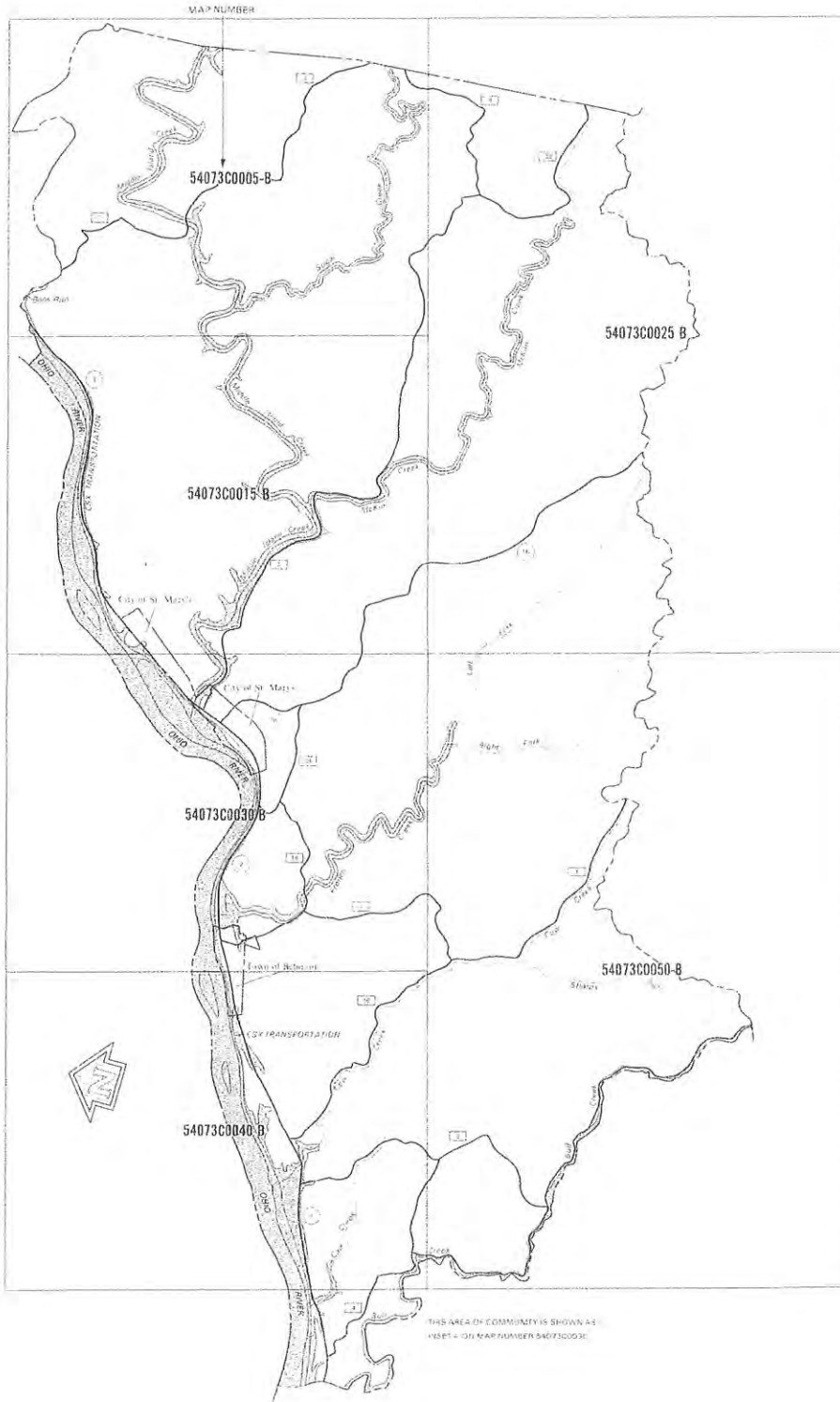


Topo 15.

Topo 15 provides a view of Evans West Virginia.



Plate 19.



FIRM Key Map

St. Marys Area



Plate 1.

Plate 1. above, shows the North or upriver section of St. Marys at Middle Island Creek where it enters the thoroughfare before entering the main stream of the Ohio River. The bold white line outlines the elevation that corresponds with the 100-year flood plane area on the north side of Middle Island Creek.

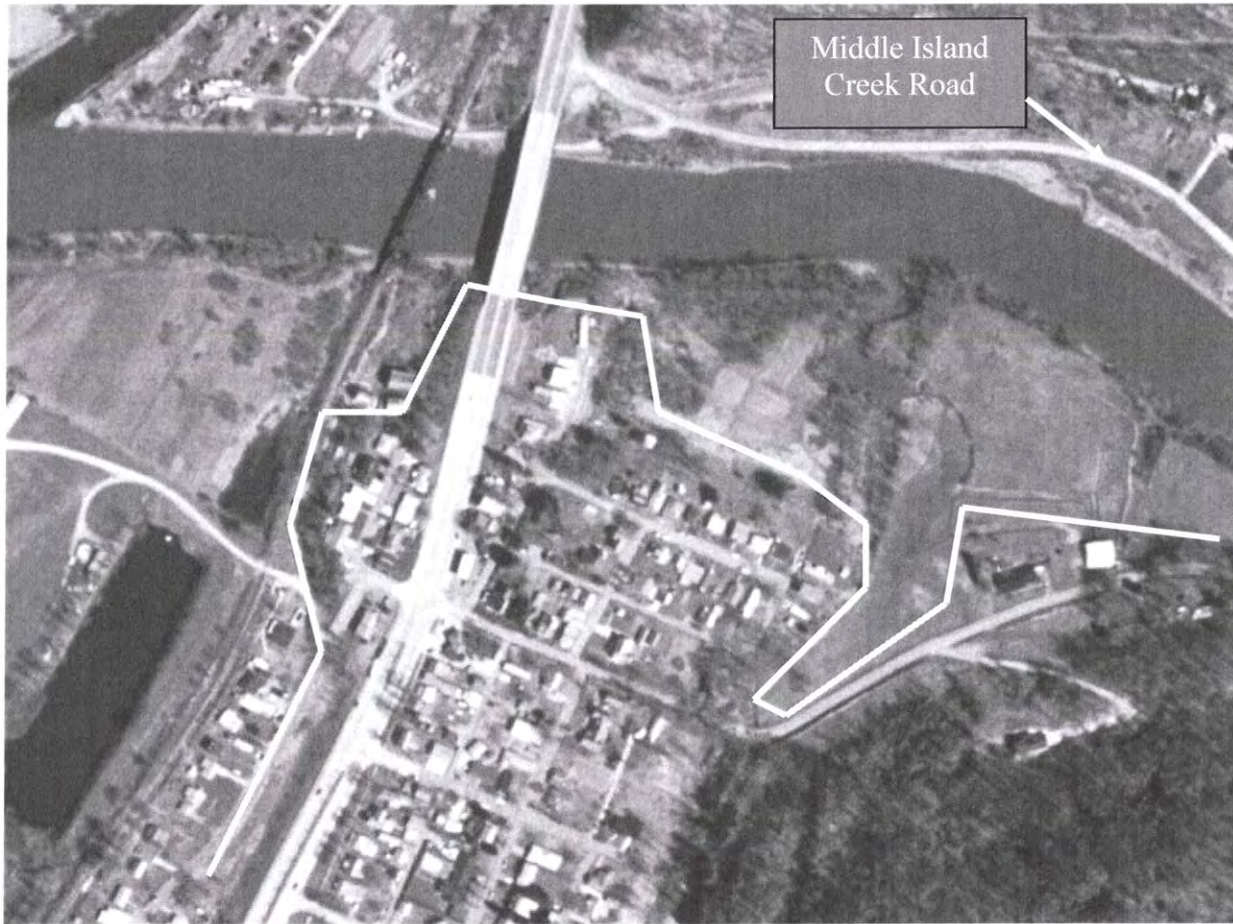
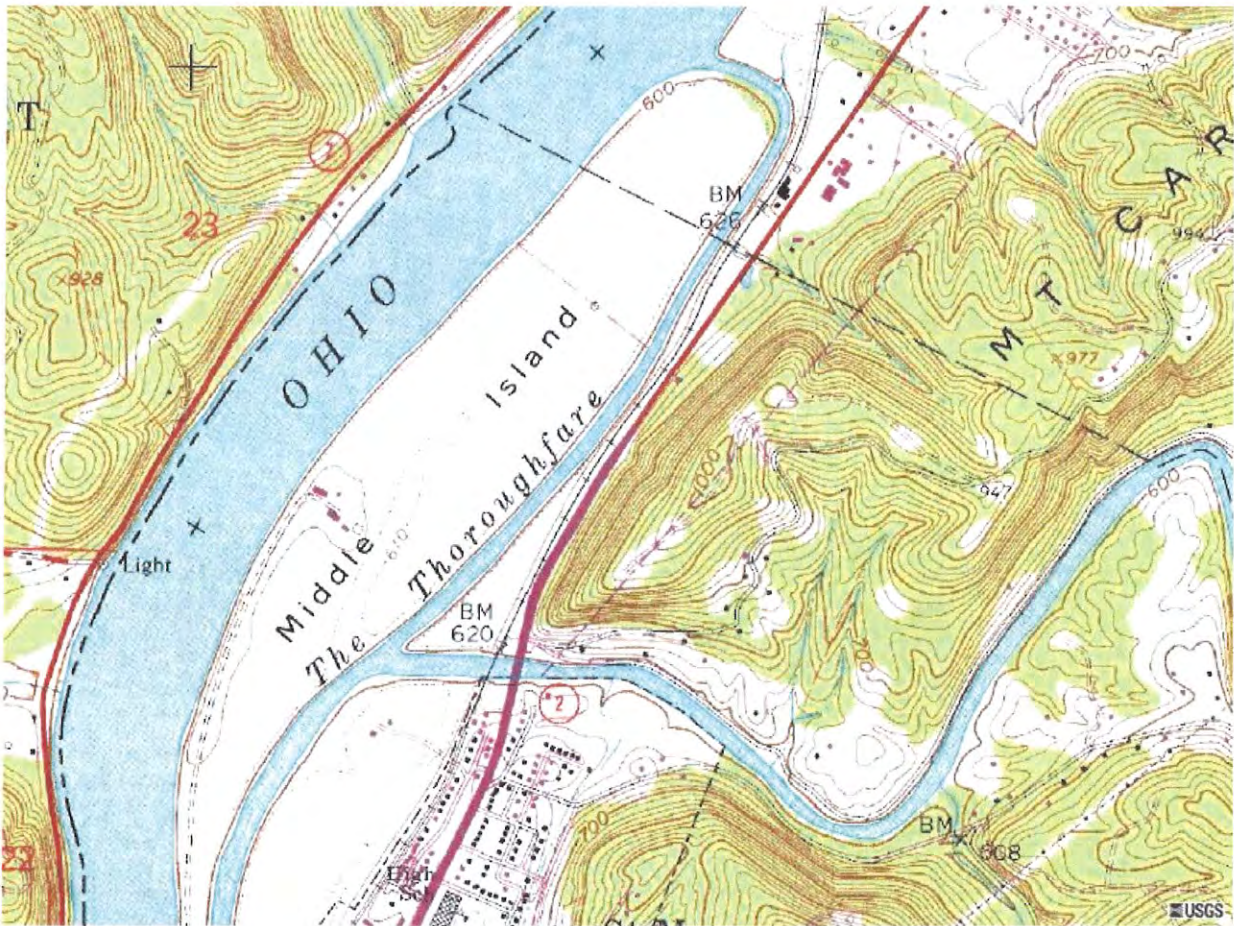


Plate 2.

Plate 2 above shows the South side of Middle Island Creek at the North end of St. Marys (Billsville). The bold white line in this plate corresponds to the levels of the 100-year flood plane area.



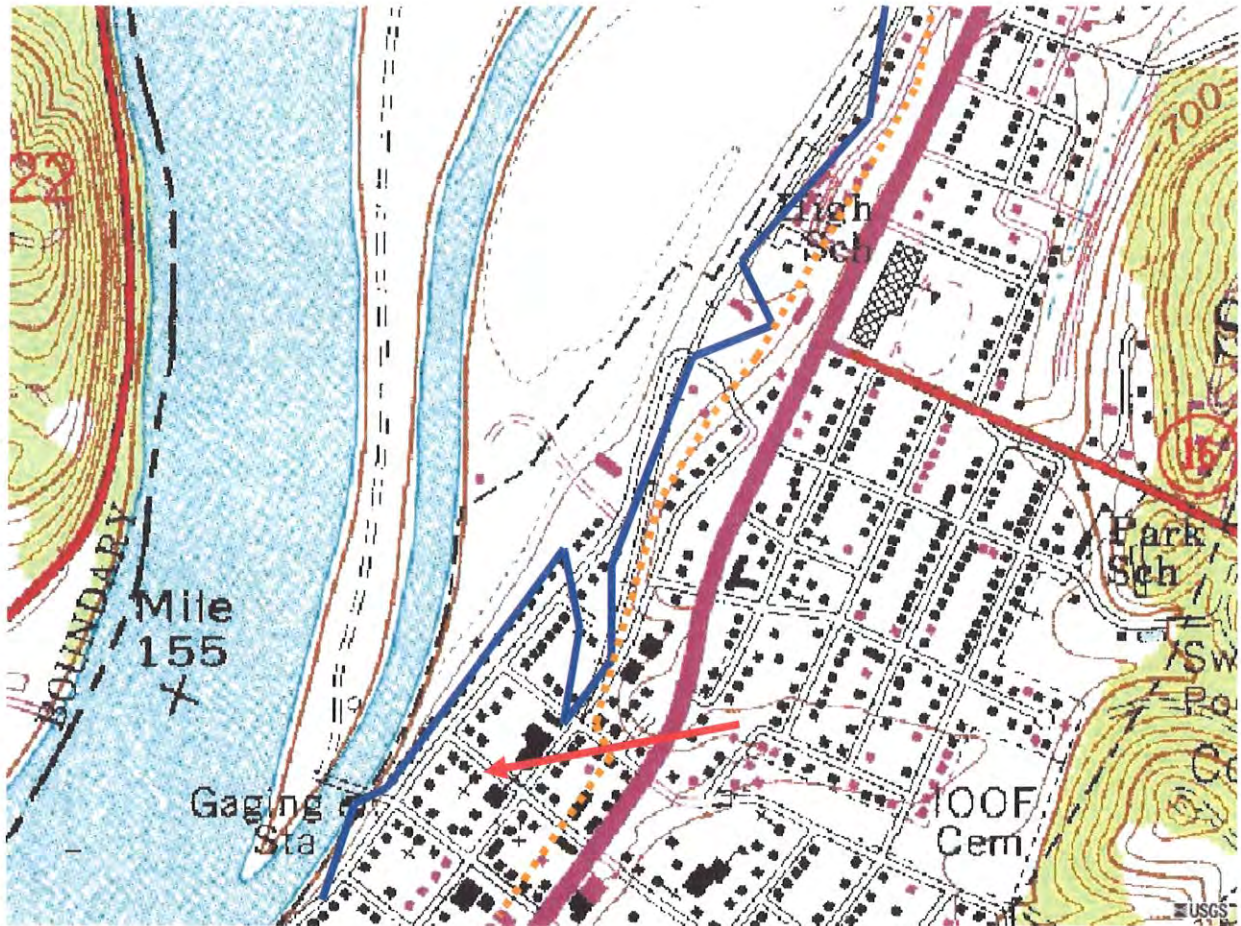
Topo 1.

The above illustration is a topographical map that combines Plate 1. and 2. Normal pool for this area is at Elevation 602.00 ft. Flood stage in this area is at "Bank-Full" (El. 602.0 to about El. 613.0) and varies with the bank elevations within a study area. The 100-year flood plain elevation is at Elevation 625.10.



Plate 3.

Plate 3. Shows Upper St. Marys at St. Marys High School and the bottomlands to the left. These bottom areas include the St. Marys Marina boat launching ramp, driving range, trailer campsite, and amphitheater.



Topo 2.

The blue line on this topo represents the 1964 flood level at El. 619.6. In this part of the city exact elevations are difficult to ascertain. The orange dotted line represents the 100-year flood level. For reference the 100-year flood level would be about 4'-0" on the wall of the St. Marys United Methodist Church (Red Arrow)



Ohio River

Plate 4.

Plate 4 shows downtown St. Marys and the adjacent Marina area. The long finger of land is the lower portion (point) of Middle Island. The bold white line is the boundary of the 100-year flood plain limit as noted on the FIRM maps.

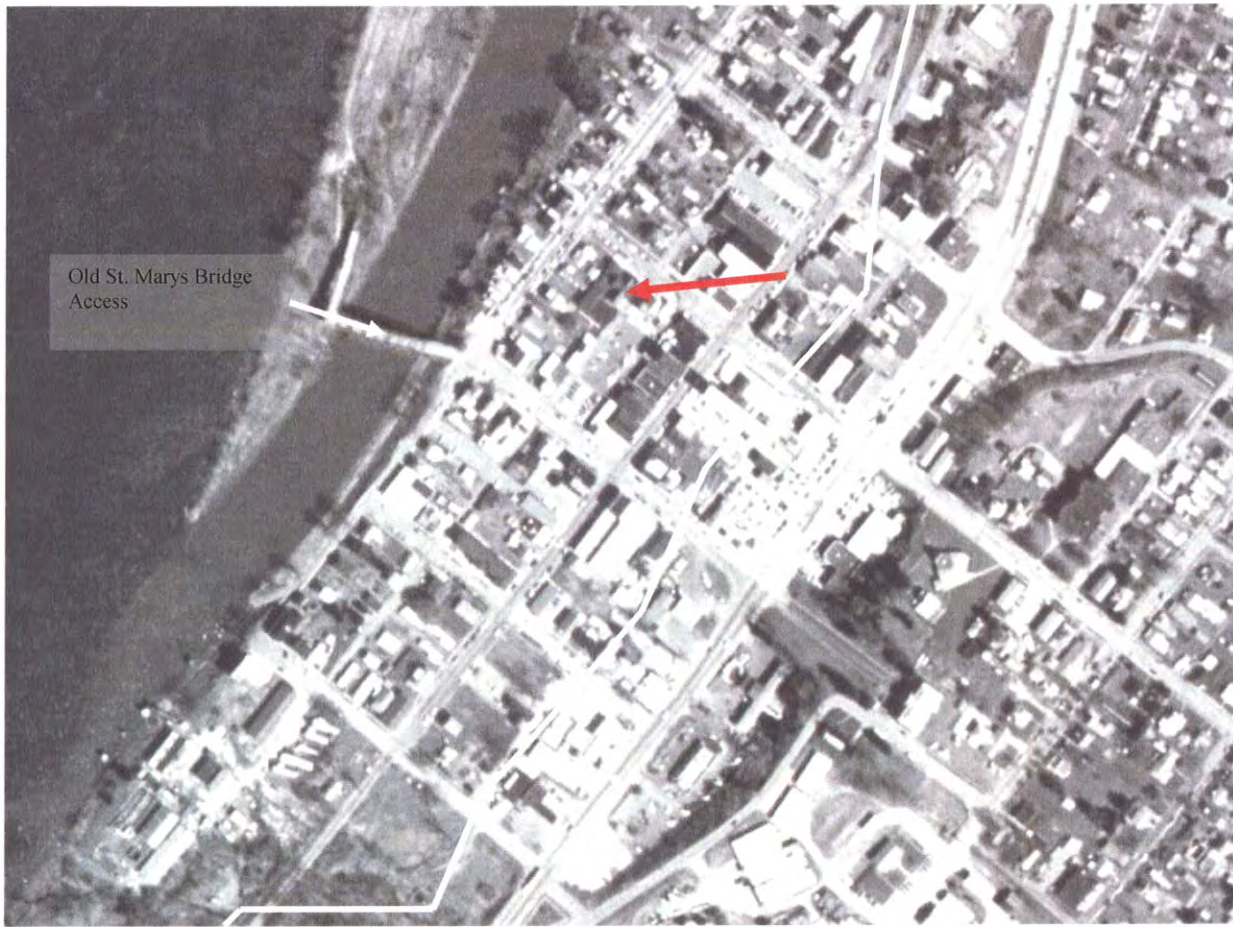


Plate 5.

Plate 5. Shows downtown St. Marys and the exit of the Middle Island Creek thoroughfare into the Ohio River. The lower portion of this plate includes the City of St. Marys sewer treatment plant. The Red Arrow indicates the location of the St. Marys United Methodist Church.



Plate 6.

Plate 6. Shows lower St. Marys at its corporate limits which include areas around the Ohio River Bridge (Hi Carpenter Bridge) and portions of the former Quaker State Oil Refinery that lie within the flood plain.

Belmont Area



Plate 7.

Plate 7. shows Lower Vacluse about a mile up river from the confluence of French Creek and the Ohio River. The white line illustrates the extent of the 100-year flood plain. Note that it does cover West Virginia Rt. 2 at this location.



Plate 8.

Plate 8. shows the area just up river from the confluence of French Creek and the Ohio River. The French Creek backwater lagoon is noted in the picture as well as the up river end of Wright's Mobil Home Park. The white line notes the limit of the 100-year flood plain.



Plate 9.

Plate 9 shows the backwater of French Creek at the East Side of the French Creek Bridge (WV Rt. 2). The white outlines the limit of the 100-year flood plain.

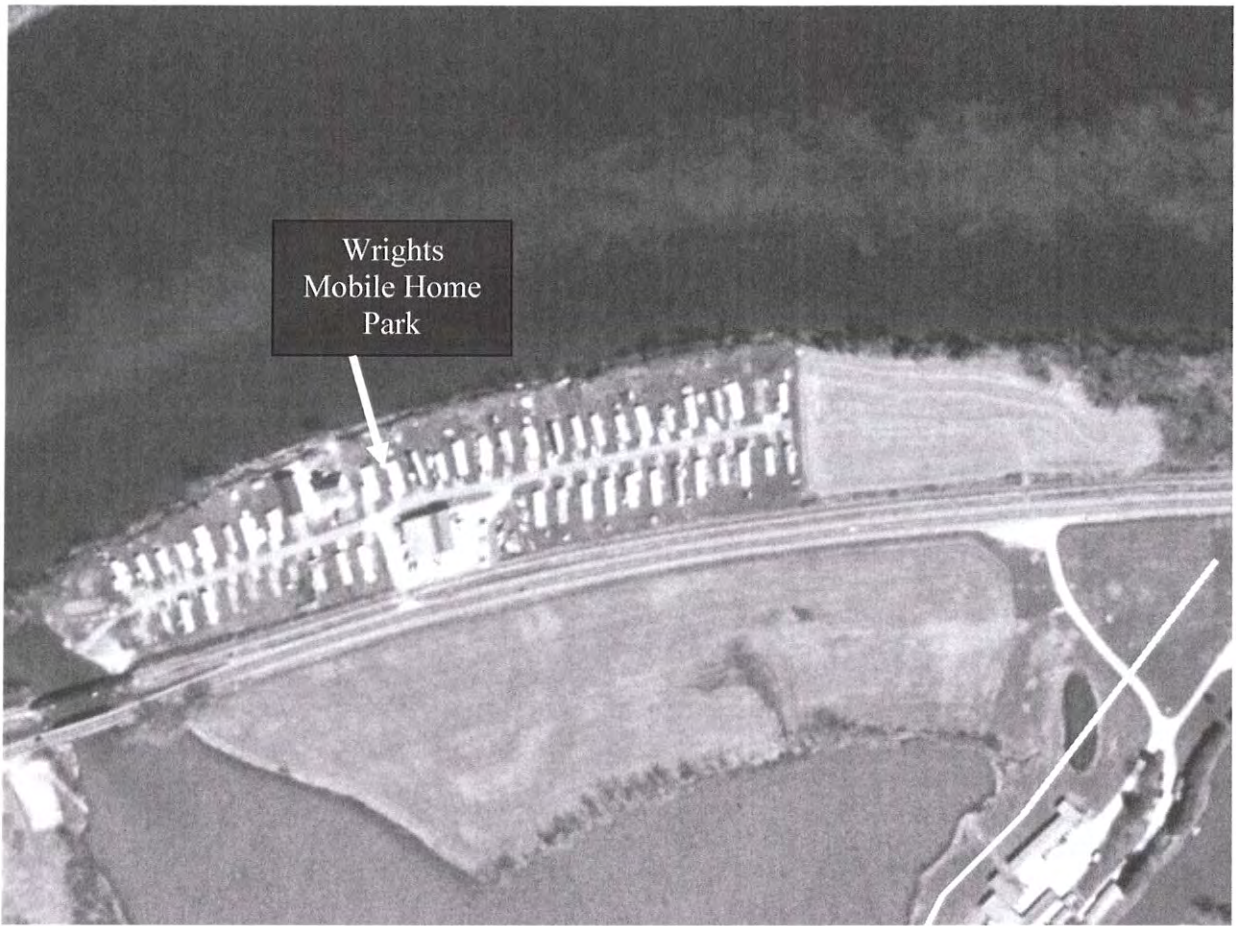
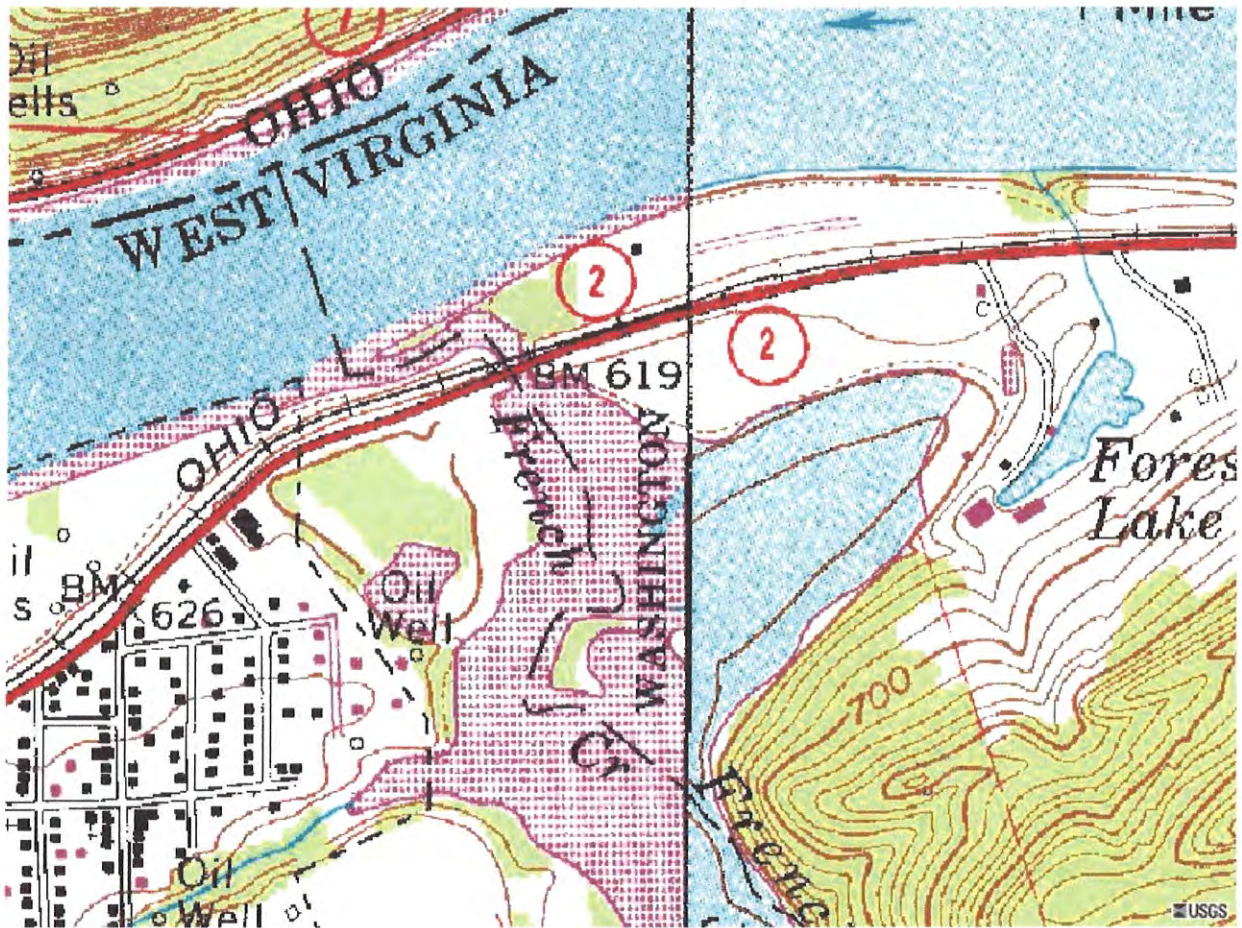


Plate 10.

Plate 10. shows portions of the French Creek backwater lagoon and Wright's Mobil Home Park. To the extreme left in this picture is the West Virginia Rt. 2 Bridge crossing French Creek.



Topo 3.

Topo 3. is a composite topographical map of “Fly Over” Plates 10 and 11. Contour intervals are at 20.0’ increments. The indicated benchmark on the French Creek Bridge is El. 619.0. This is 6.0’ below the 100-year flood plain.

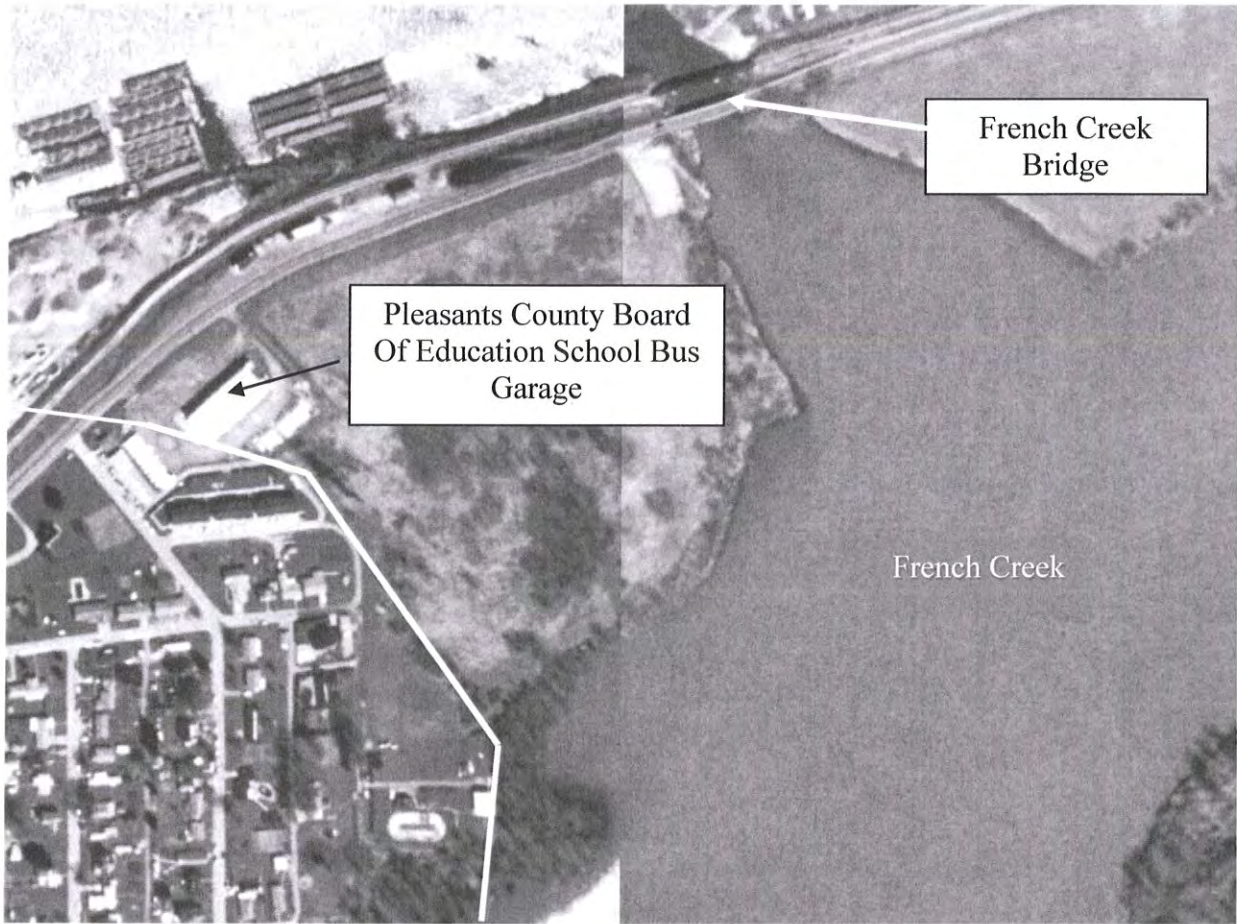


Plate 11.

Plate 11. shows the upriver area of Belmont, WV. In the upper left of this picture is the Westbrook Trucking and gravel yard associated with that business

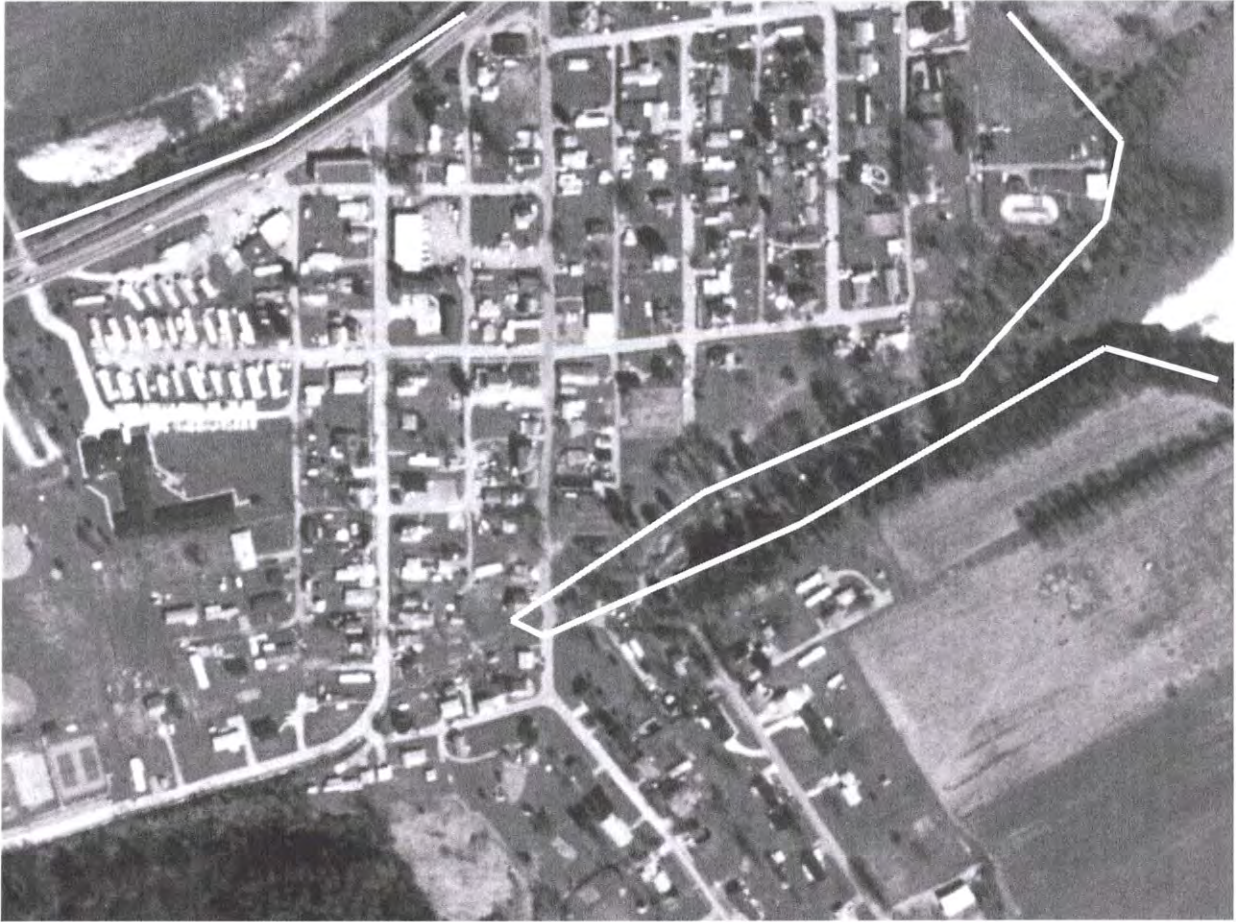


Plate 12.

Plate 12. shows old Belmont just downriver of French Creek Bridge. The 100 year flood Plain limit illustrated in this picture effectively cuts off any access to the Henry Camp Road. The road is cut off about a mile east of Belmont to the intersection of Henry Camp Road by the backwater of French Creek 100 year flood plain limit which will isolate 23 families should water reach these levels.

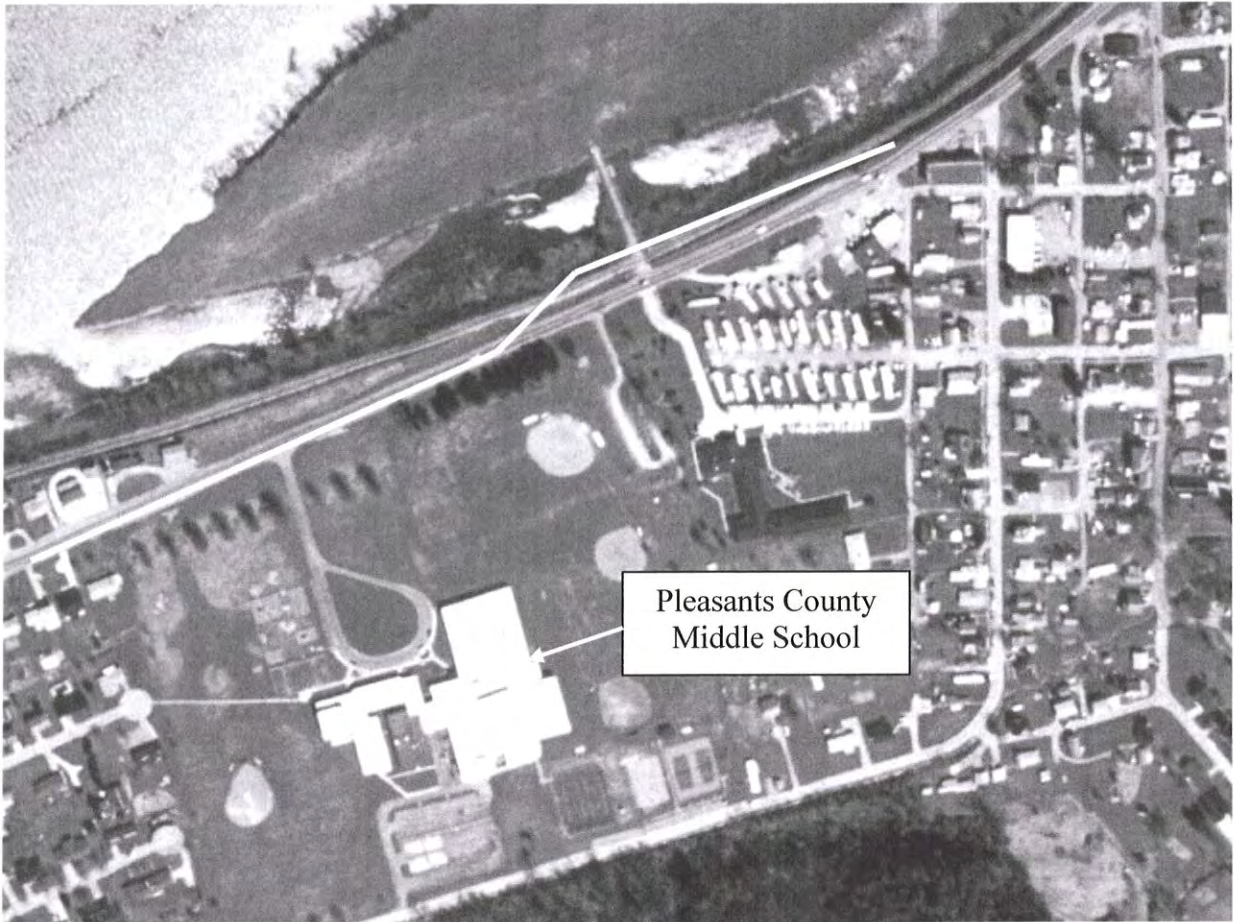
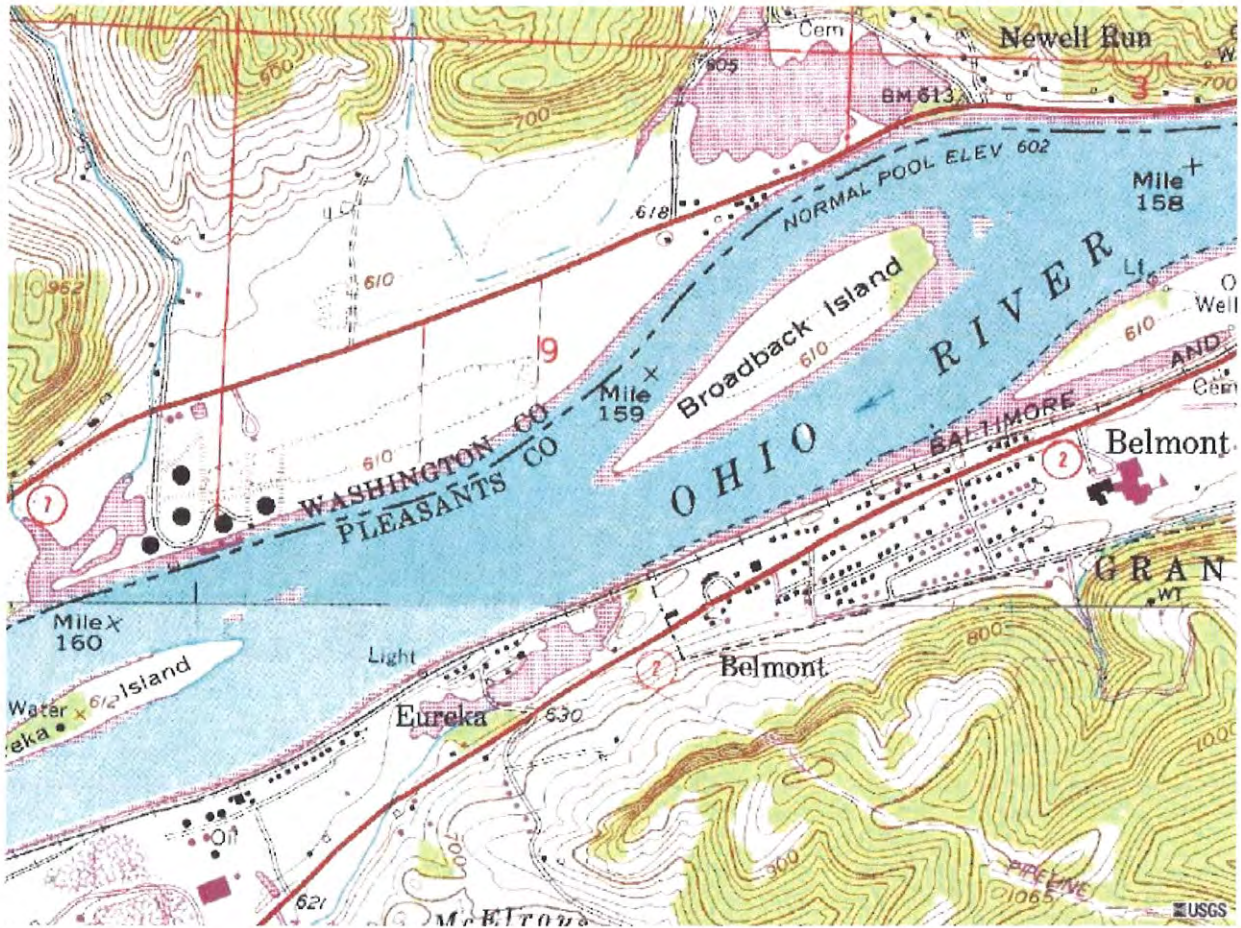


Plate 13.

Plate 13. shows the area between upper (old) Belmont and Lower (new) Belmont at the Belmont Elementary and Pleasant's County Middle School grounds. The white lines show the 100-year flood plain limits.



Plate 14.
Plate 14 shows lower (new) Belmont.



Topo 4.

Topo Map 4. corresponds with “Fly Over” Plate 14.

West Virginia Route 2 will be inundated from the lower corporation limits of Belmont through Eureka to the North end of Pleasants Power Station in a 100-year flood scenario.

Pleasants County Areas

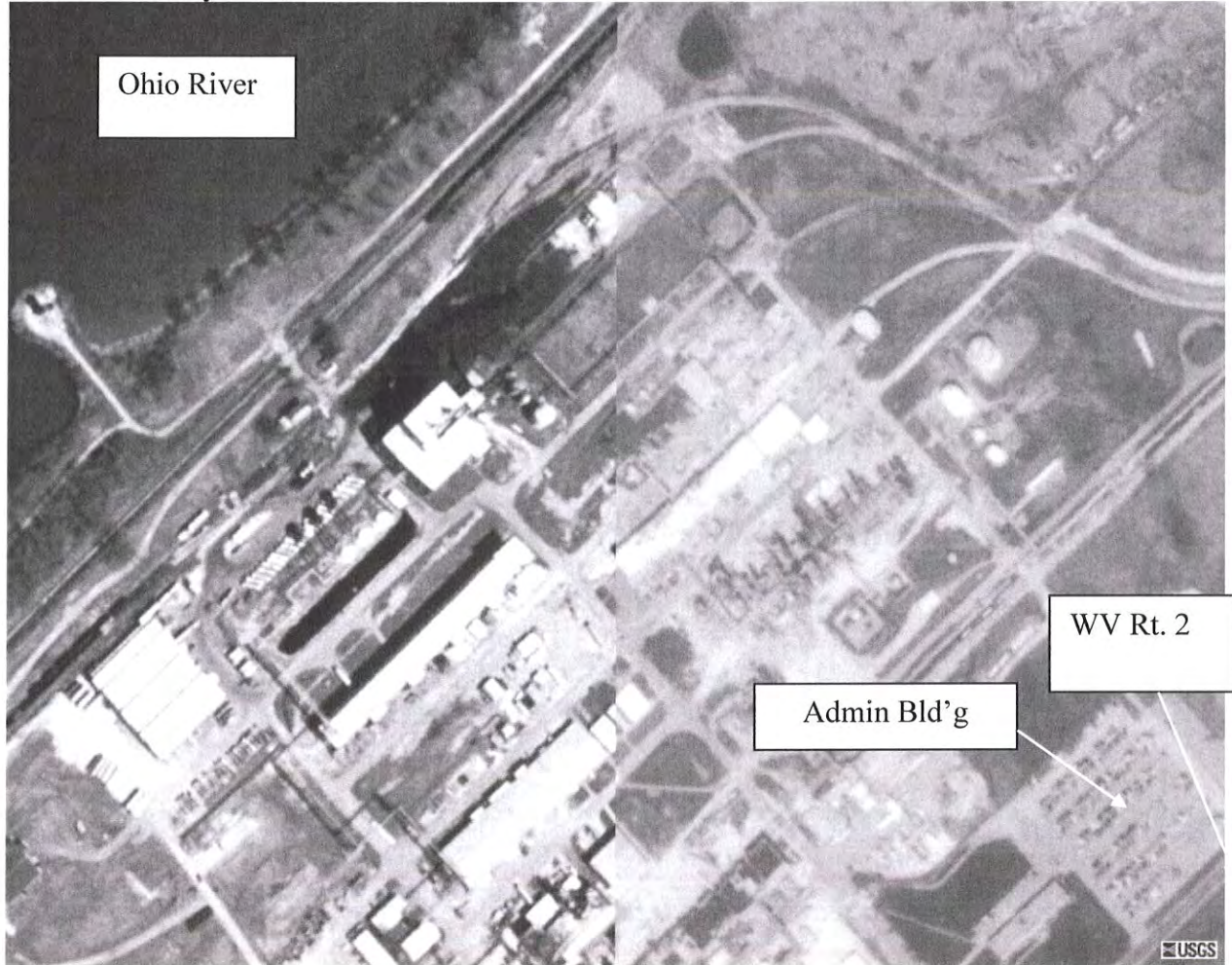


Plate 15.

Plate 15 shows the upper portion of the Cytec Industries Plant at Willow Island. El. 625.1 is identified as the 100 year-level however several recorded floods have exceeded El. 626.0.

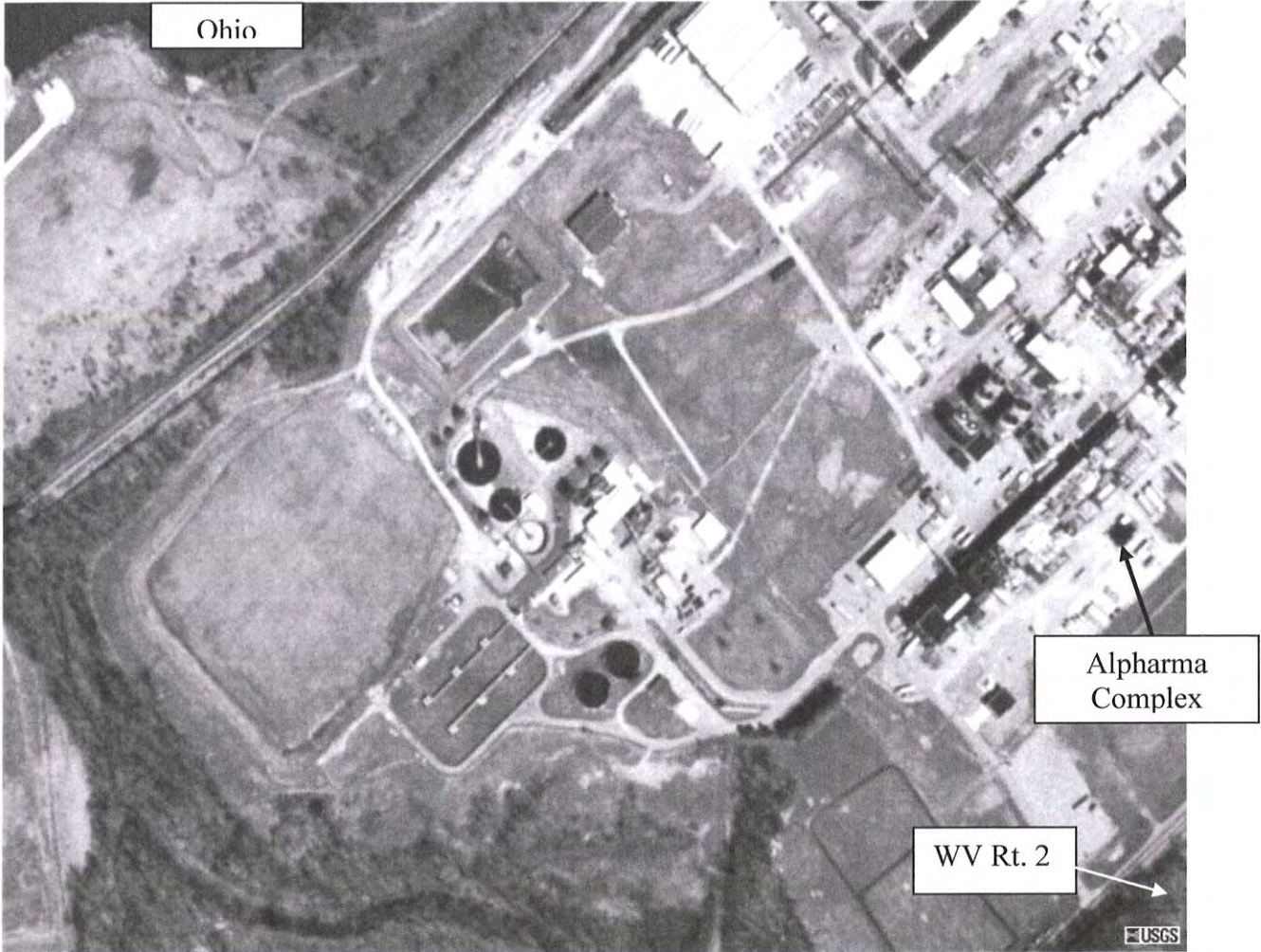
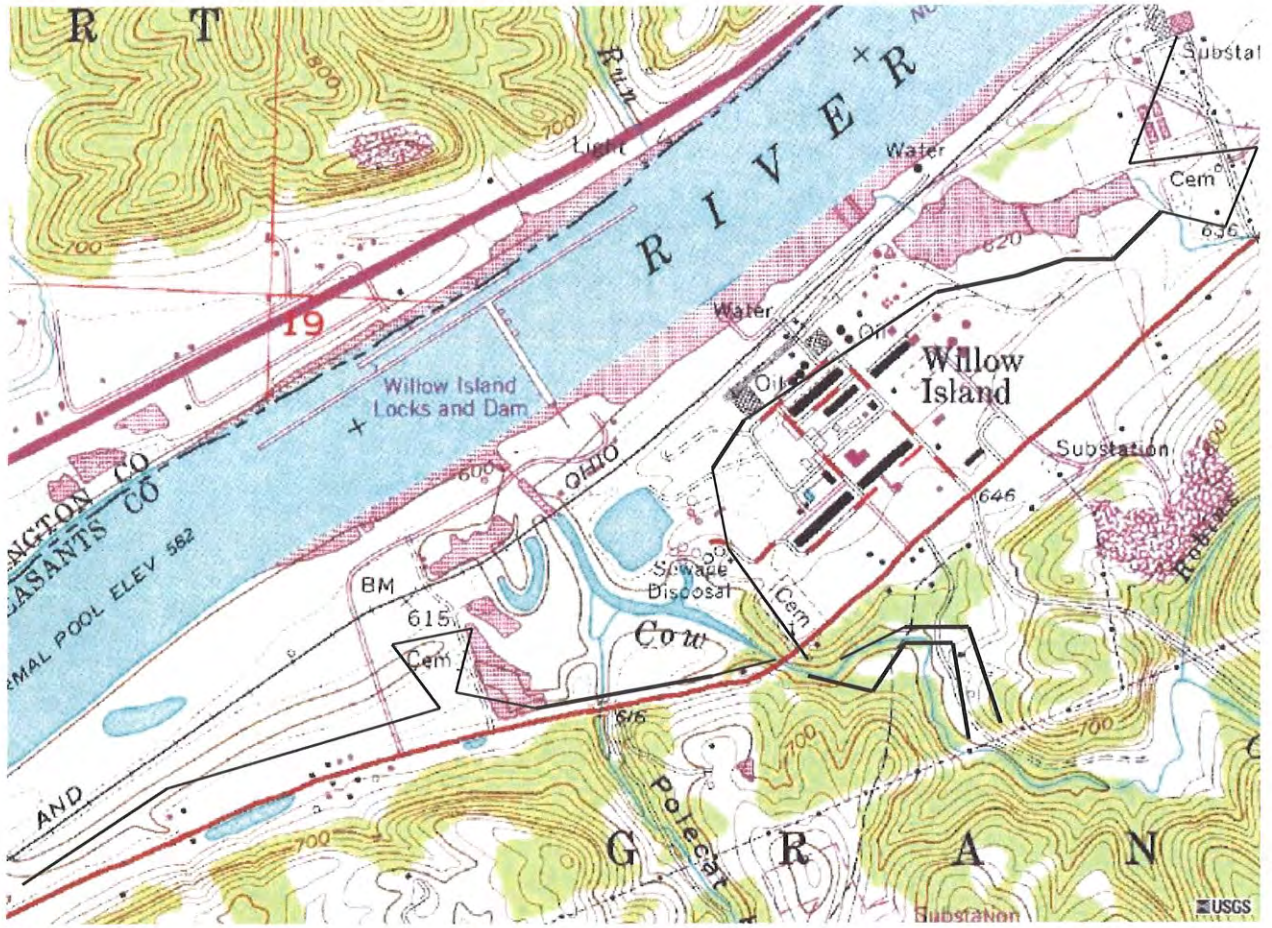


Plate 16.
Plate 16 shows the down river portion of the Cytec Industries Plant and the Alpha Pharma Plant facilities.



Topo 5.

Topo 5. provides a view of the Willow Island Dam and the Cytec/Alpharma chemical complex.



Plate 18.
Plate 18. shows the upper portion of West Virginia Route 2 just below the County line at Bens Run.

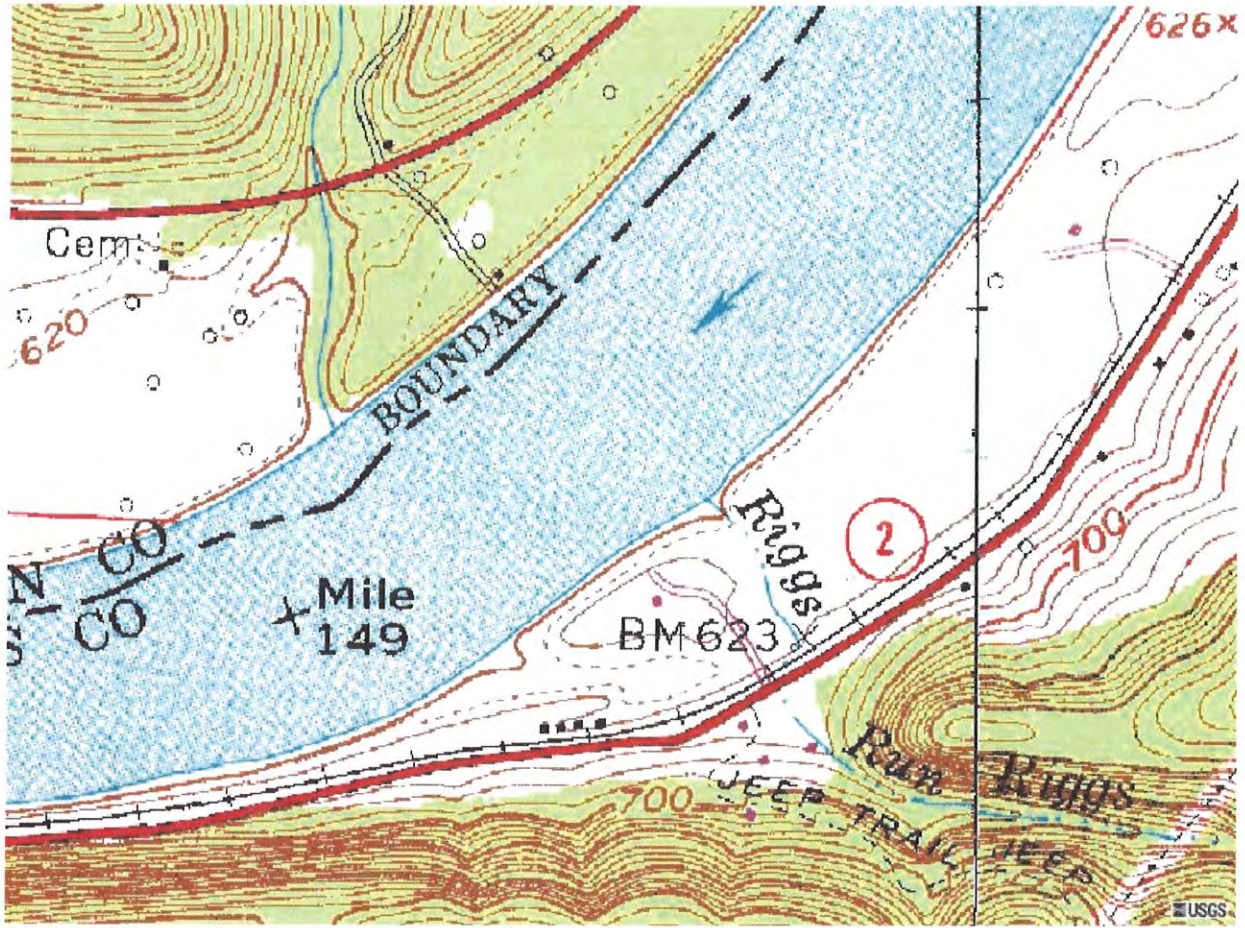


Plate 19.
This Plate is a continuation of West Virginia Route 2 South (shown on Plate 18.).



Plate 20.

This is a further continuation of West Virginia Route through Melody Park to the Northern end of Raven Rock.



Topo 6.

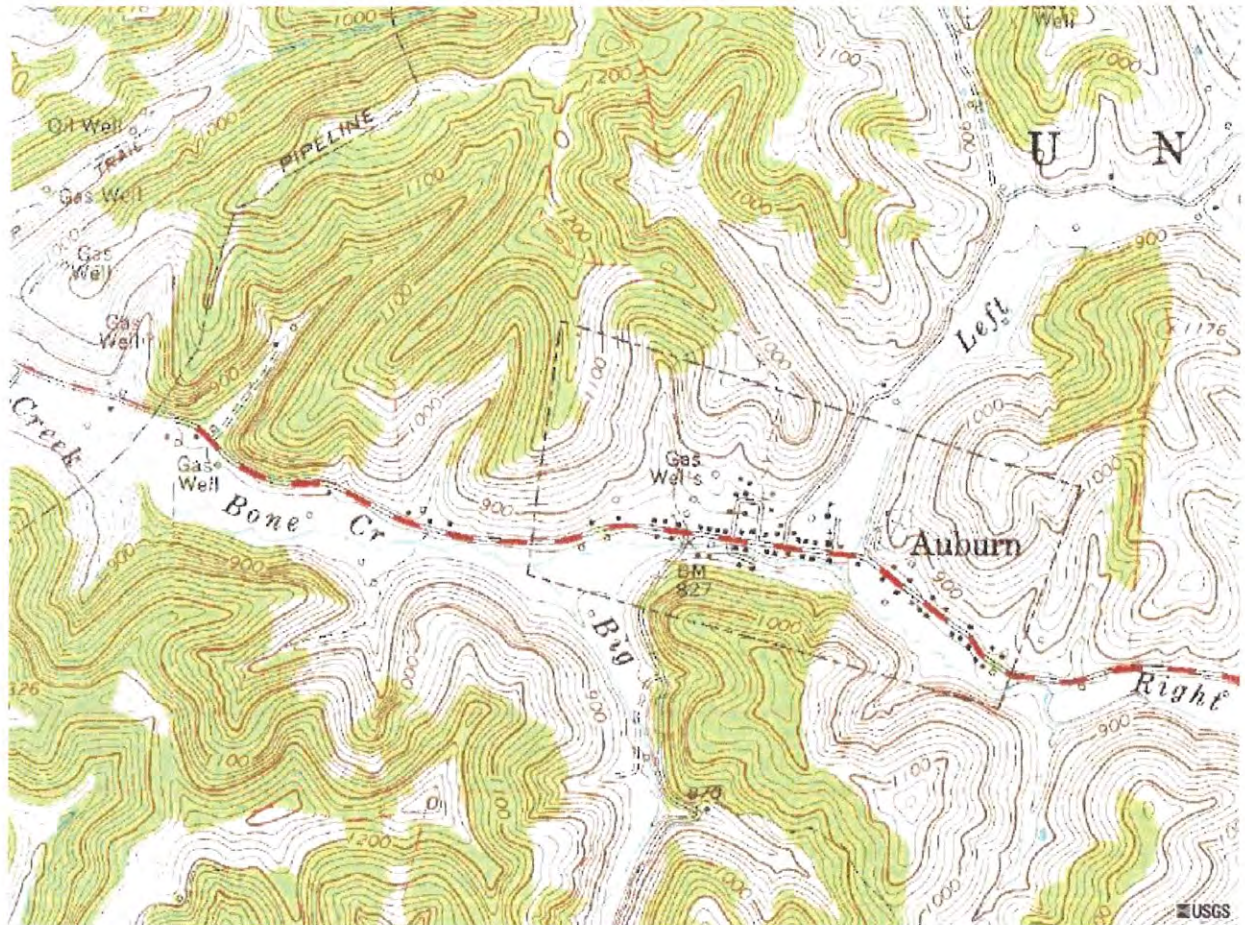
Topo 6 corresponds to "Fly Over" Plate 15, showing the topography of Melody Park just north (up river) Raven Rock.

Auburn



Plate 1

Plate 1 provides a view of the community of Auburn at the confluence of Right and Left hand forks and Bone Creek.



Topo 1.

Topo 1 provides a view of the community of Auburn. Auburn is the easternmost community in Ritchie County and is located along West Virginia Route 74 and Bone Creek near the Gilmer County Line. Bone Creek is a tributary of the South Fork of the Hughes River.

Cairo



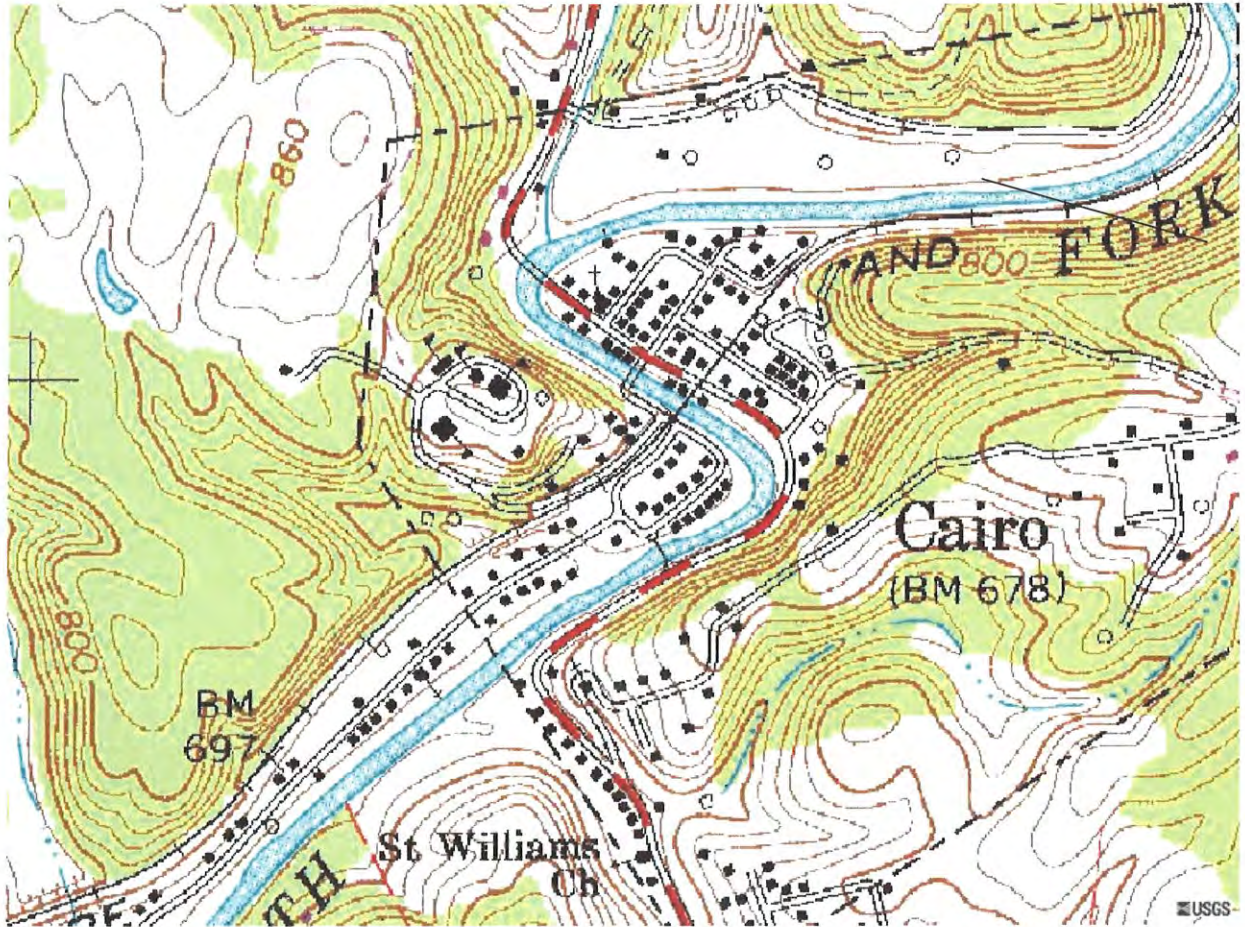
Plate 2.

Plate 2 shows the North Fork of the Hughes River winding around the population center of Cairo. All roads leading into town are within the flood plain and the center portion of town would be isolated in a major flood event.



Plate 3.

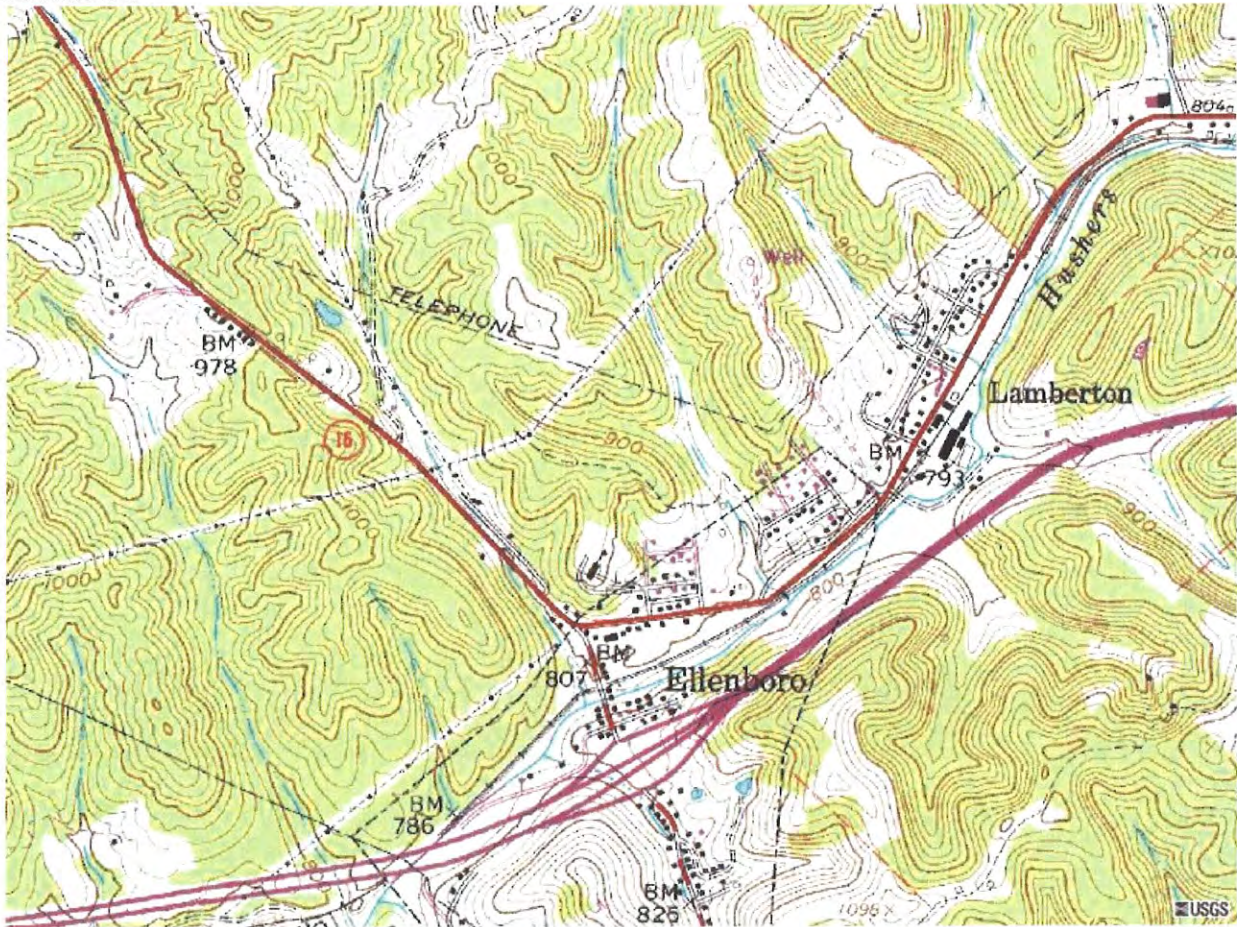
Plate 3 show the down river side of Cairo and the house in the flood plain that lie outside of the corporation limits.



Topo 2.

This map provides a topographical reference to main part of Cairo and adjacent areas. West Virginia Route 31 is the main road into and out of town. Cairo has the highest potential to be in a recurrent flood hazard event in Ritchie County.

Ellenboro



Topo 3.

Topo 3 shows the intersection of West Virginia Route 16 and U.S. 50 at Ellenboro. Hushers Run parallels U.S. 50 from Lamberton to an area past the Ritchie County High School.



Plate 4.

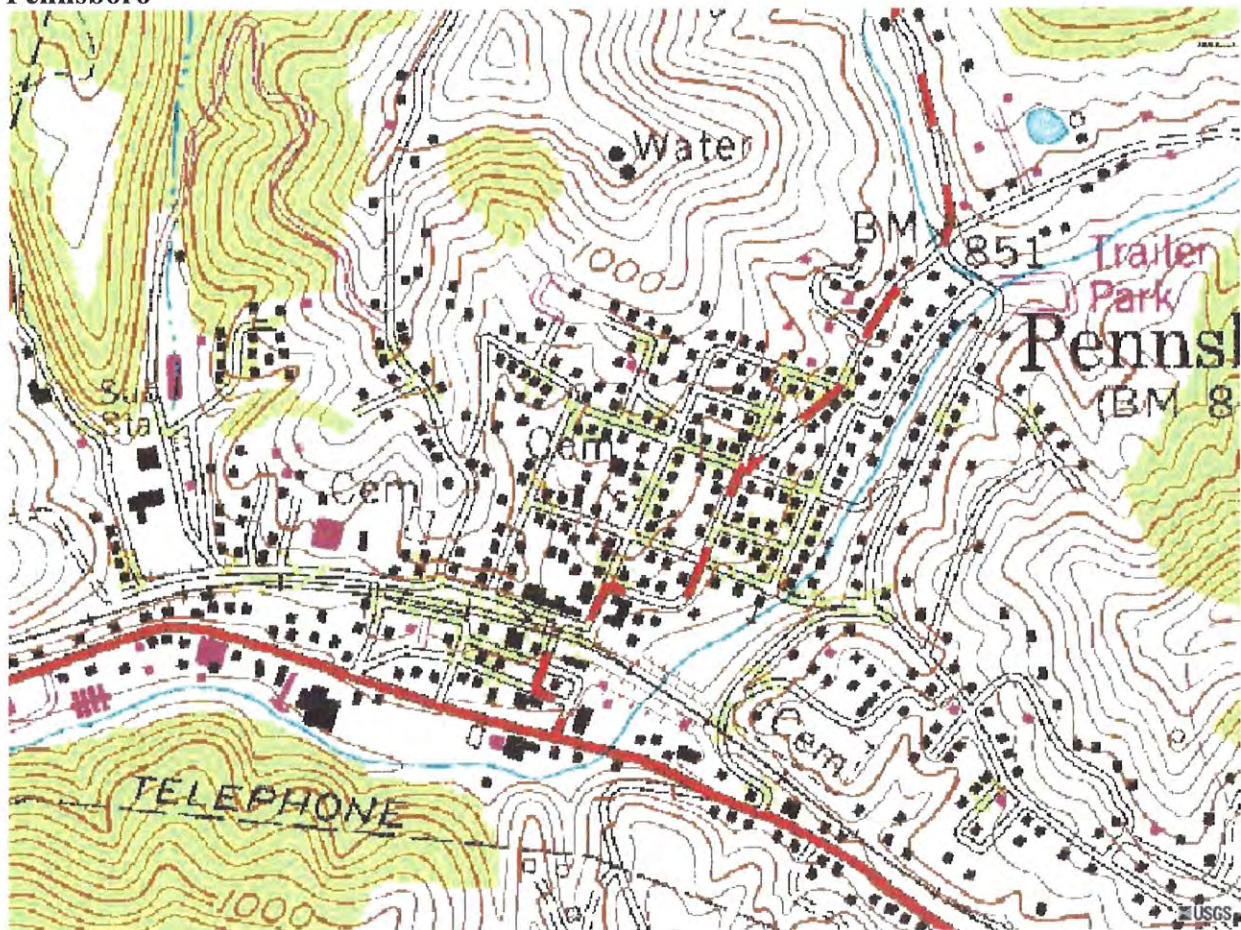
Plate 4 provides an aerial view of Ellenboro and the intersection of West Virginia route 16 and U.S. 50.



Plate 5.

Plate 5 provides a view of the eastern end of Ellenboro. This area of the community is where the most damage from the 1991 and 1998 floods occurred.

Pennsboro



Topo 4.

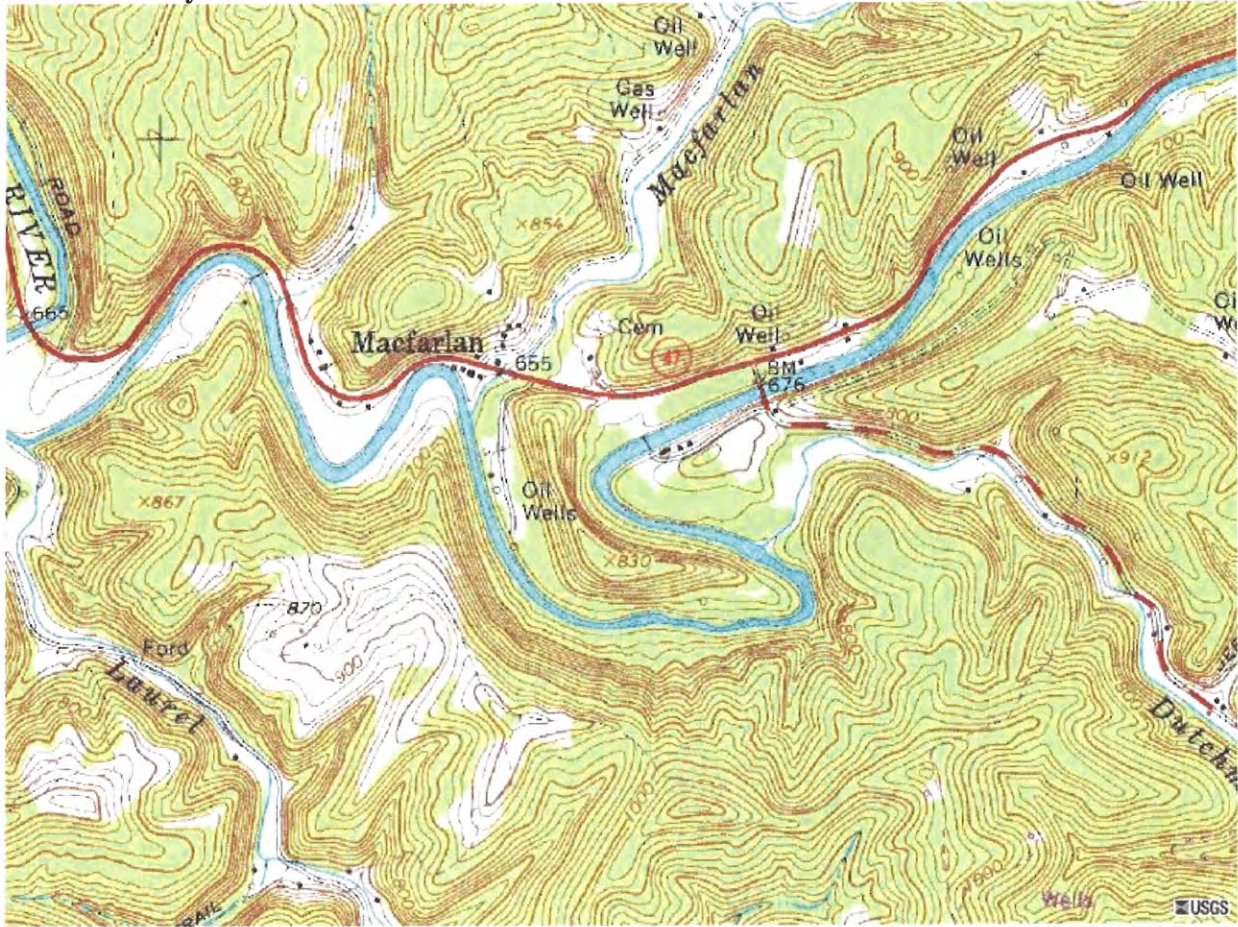
Topo 4 provides a view of the city of Pennsboro's downtown section.



Plate 6.

Plate 6 is an aerial view of Pennsboro.

Ritchie County Areas



Topo5.

Topo 5 provides a topographical view of the MacFarlan area in Ritchie County. The community of MacFarlan lies in the flood plain of the South Fork of the Hughes River along West Virginia Route 47. MacFarlan is the first in a series of four communities that are located on the South Fork of the Hughes River along Rt. 47.



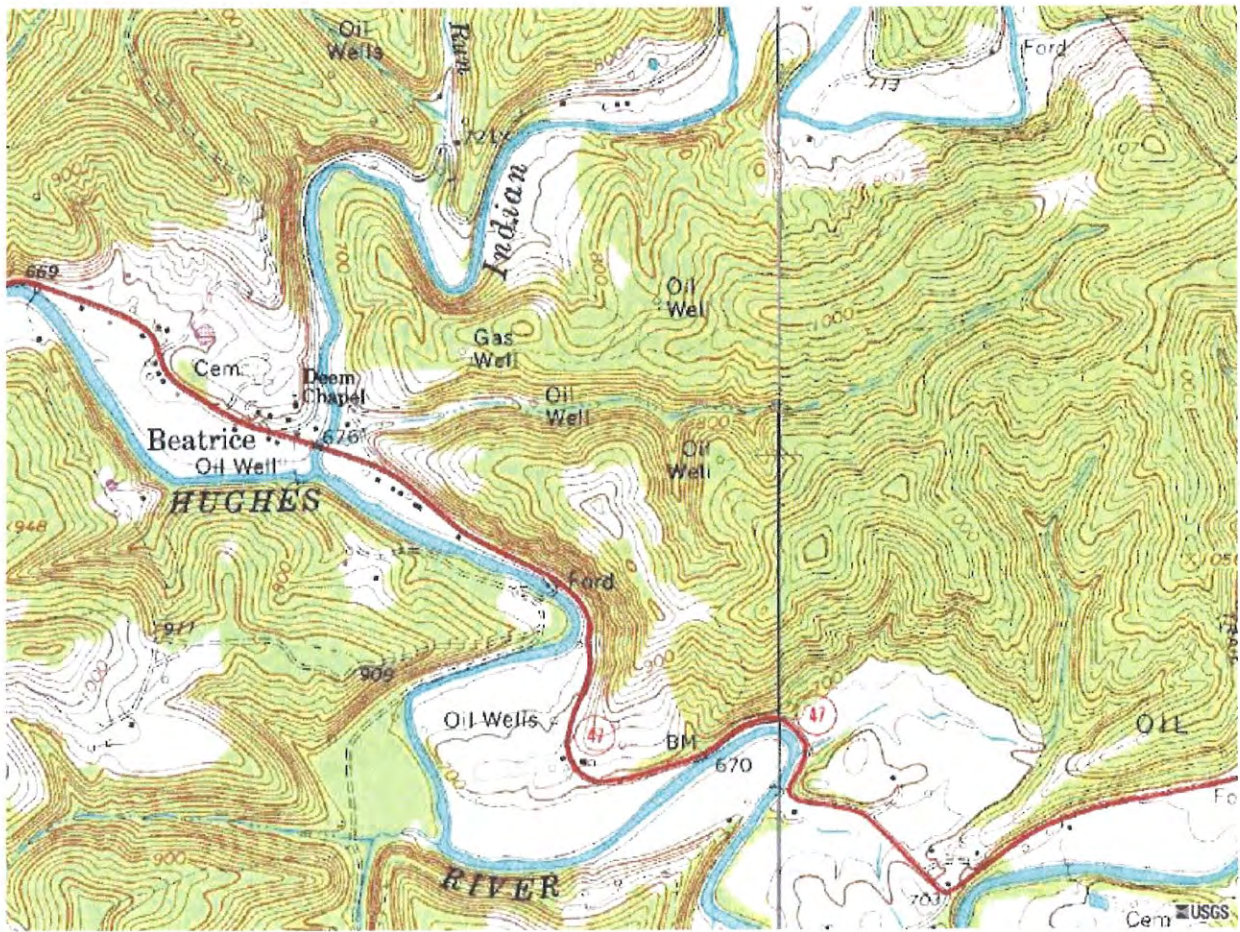
Plate 7.

Plate 7 provides a flyover view of the community of MacFarlan.



Plate 8.

Plate 8 is a view of the MacFarlan area east and up river of the community. West Virginia Route 47 parallels the South Fork of the Hughes River.



Topo 6.

Topo 6 provides a topographical view of Beatrice. Beatrice is located up river from MacFarlan on the South Fork of the Hugs River. Beatrice has the potential of recurrent flooding. In 1975, 1994, and 1999 three home were flooded.



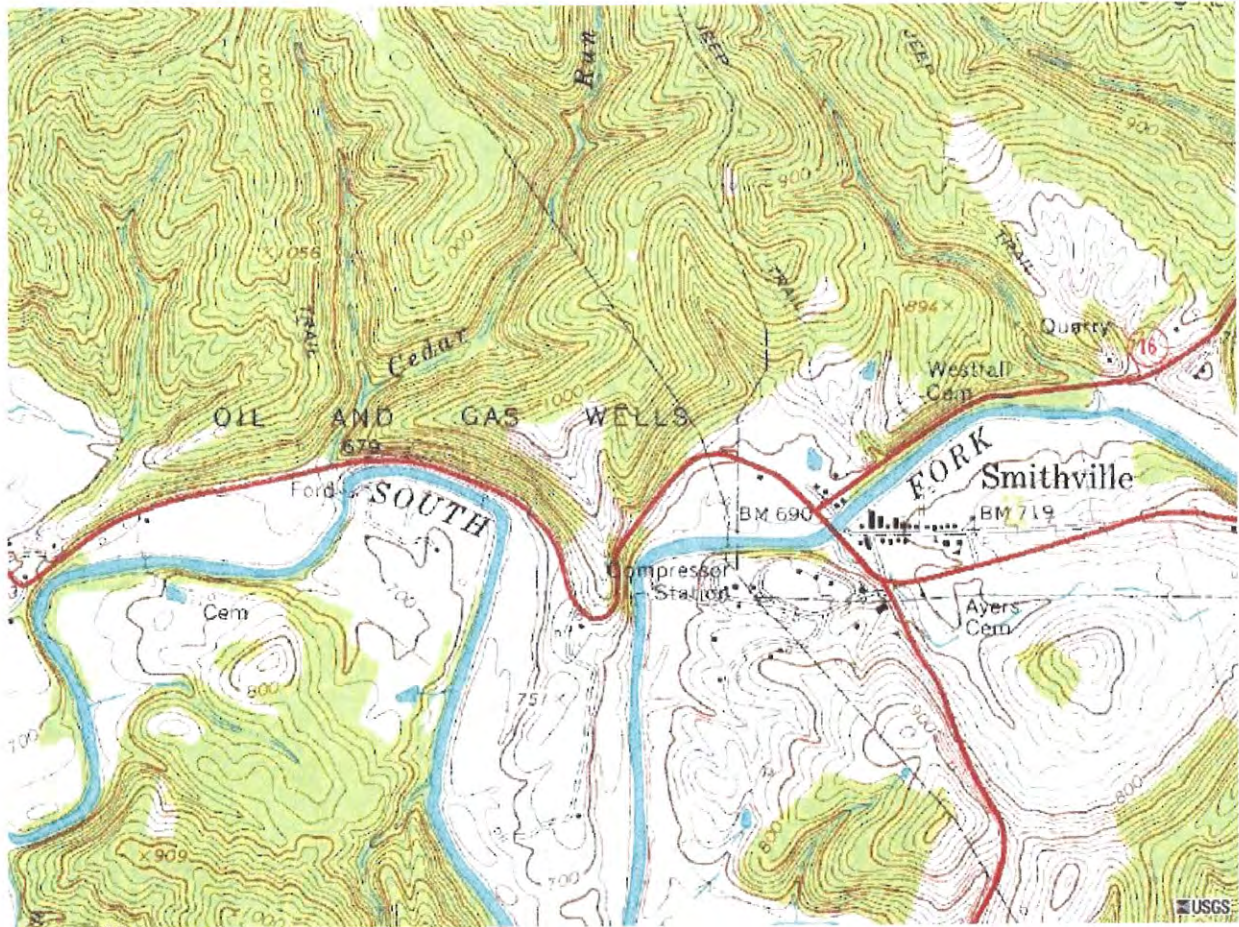
Plate 9.

Plate 9 provides an aerial view of Beatrice at the confluence of Indian Creek and the South Fork of the Hughes River.



Plate 10.

Plate 10 provides an aerial view of the areas east and up river of Beatrice toward Smithville.



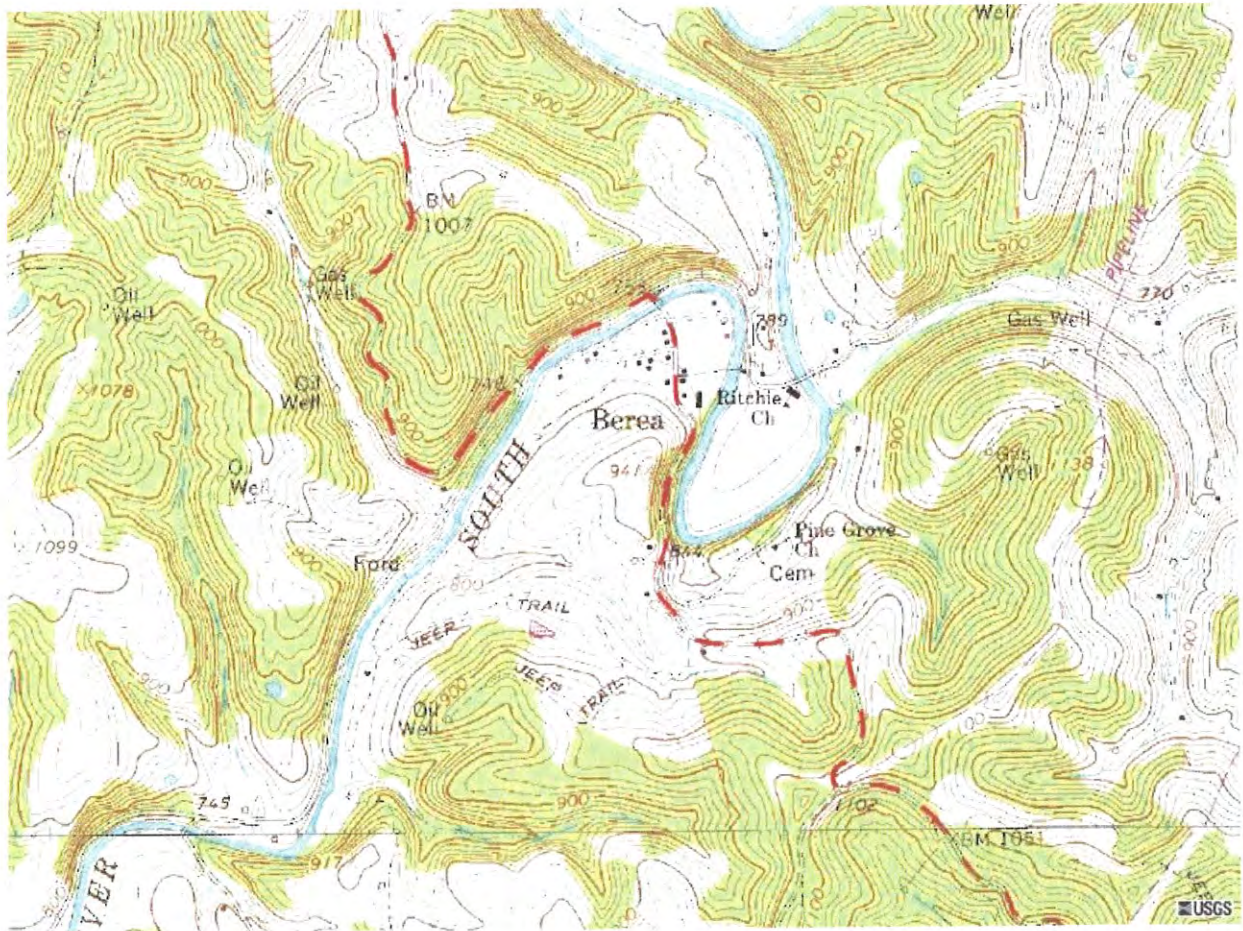
Topo 7.

Topo 7 provides a view of the Smithville area at the intersection of West Virginia Route 16 and Route 47.



Plate 11.

Plate 11 provides a view of the community of Smithville and the intersection of highways, bridges, and various structures.



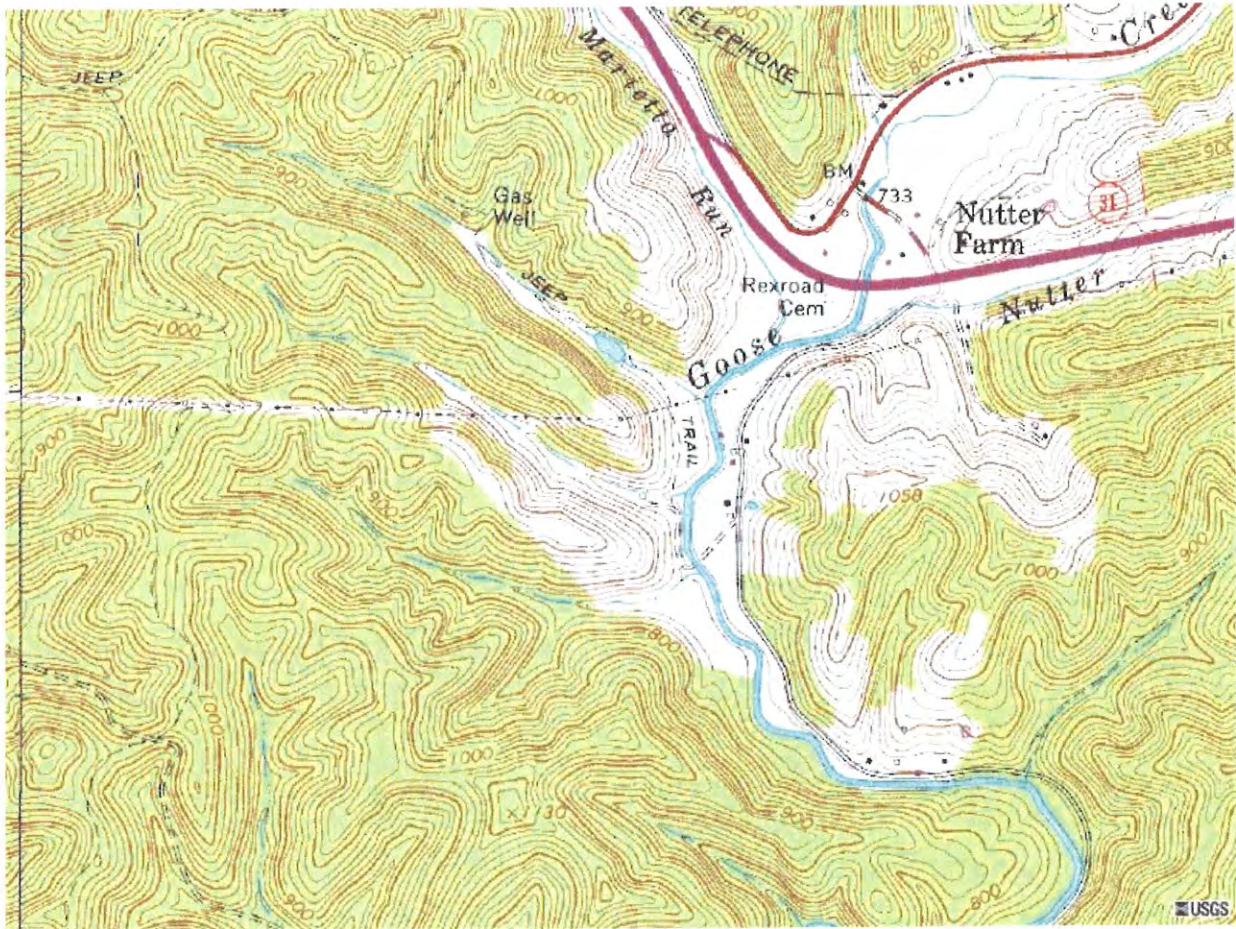
Topo 8.

Berea is a small community that is located on the South Fork of the Hughes River at West Virginia Route 74. This is a very remote community that has not experienced a serious flood since 1950 however, severe winter storms have caused it to be isolated for long periods of time.



Plate 12.

Plate 12 provides an aerial of the community of Berea.



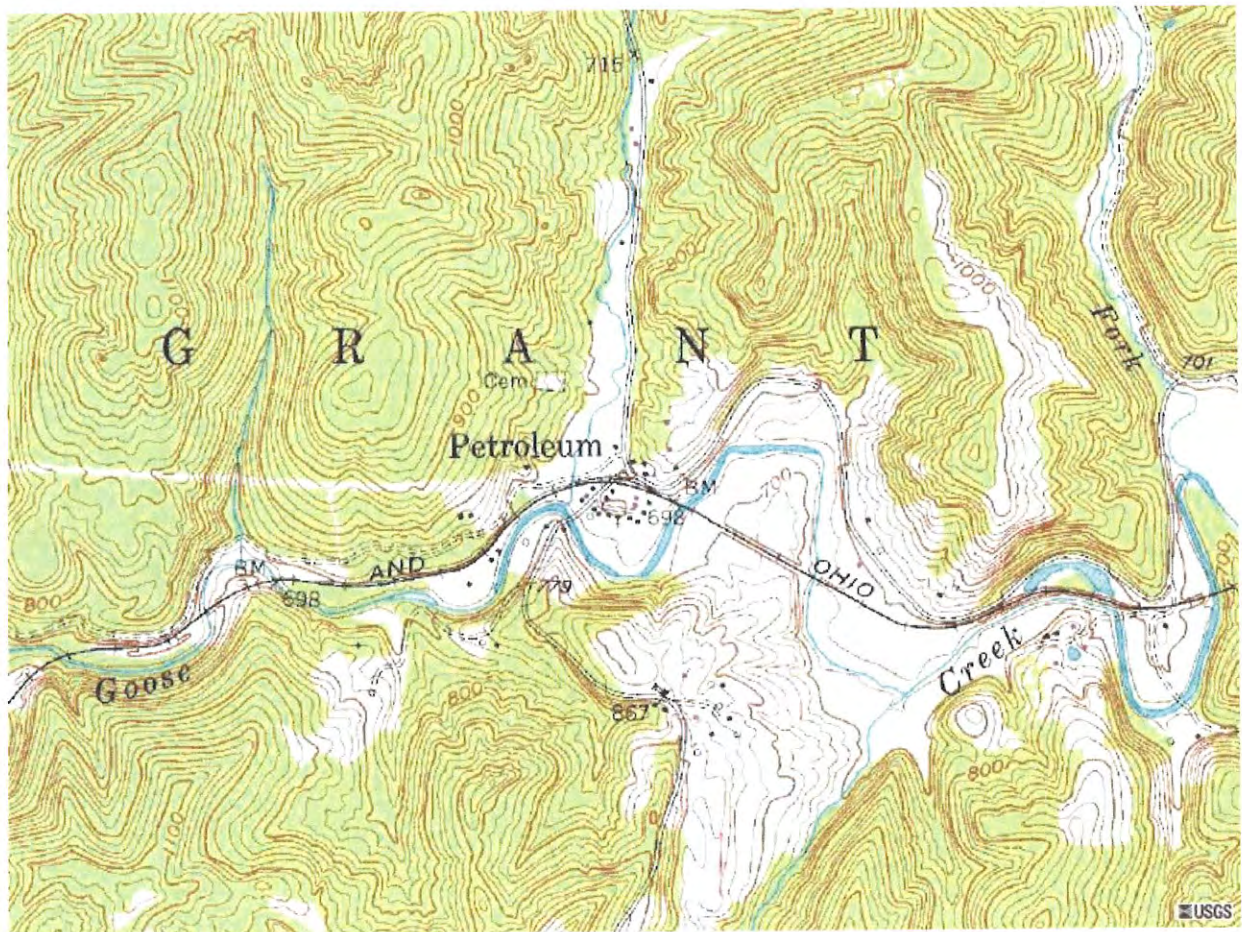
Topo 9.

Topo 9 provides a topographical view of the community of Nutter Farm. Nutter Farm is located on Goose Creek near U.S. Route 50 east of Parkersburg.



Plate 13.

Plate 13 is a aerial view of the community of Nutter Farm.



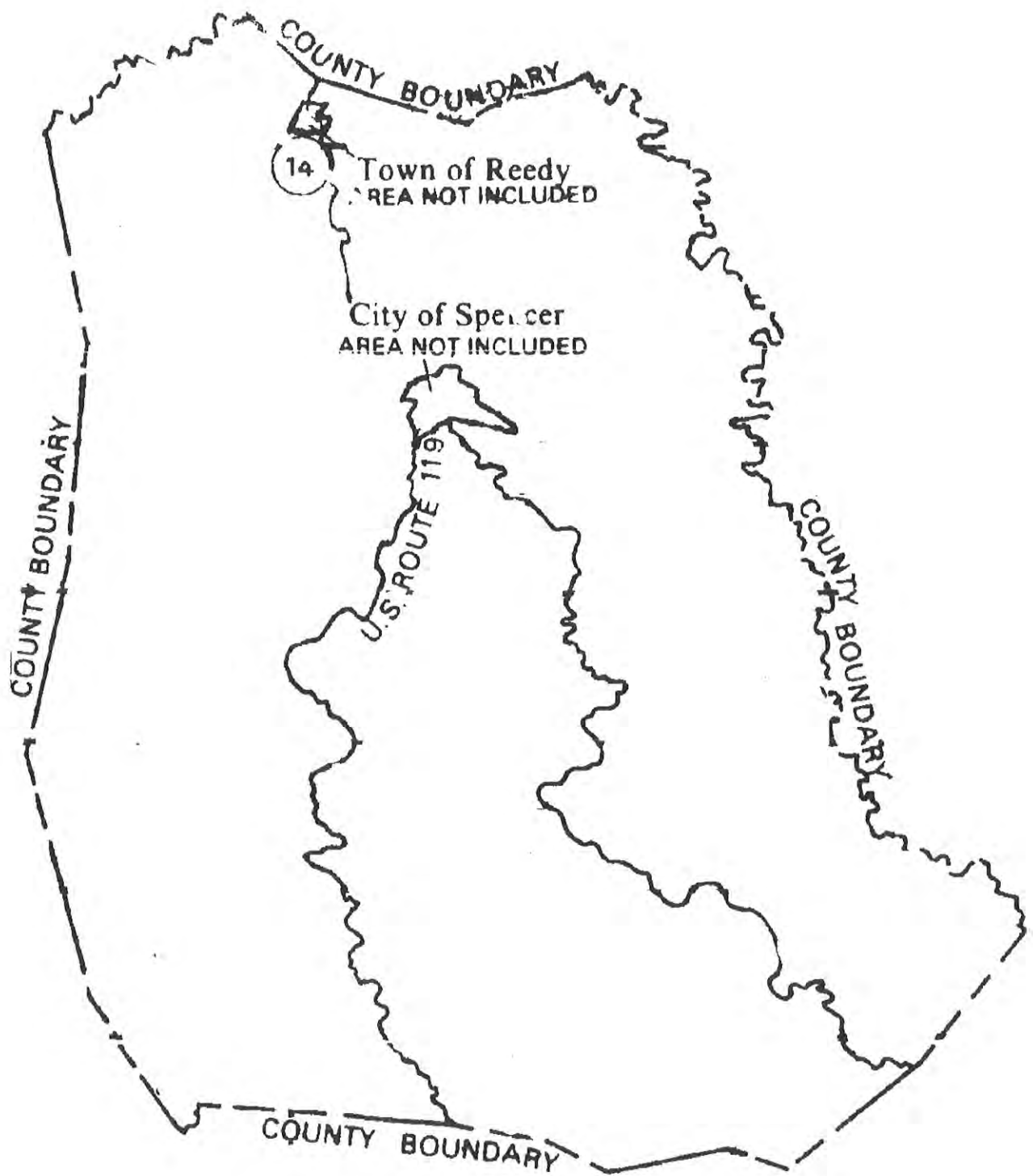
Topo 10.

Topo 10 provides a view of the community of Petroleum. Petroleum is located along Goose Creek downstream from Nutter Farm.



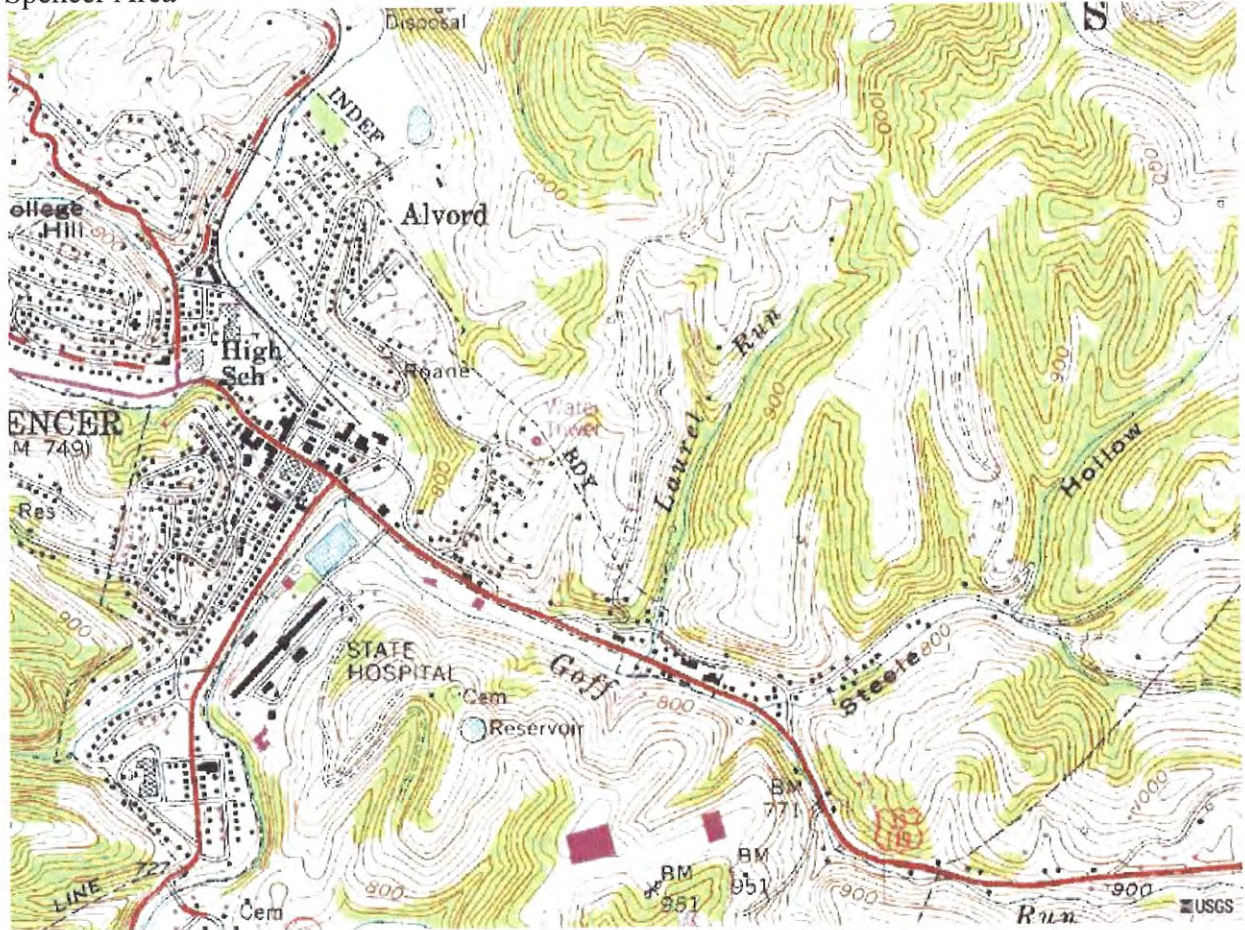
Plate 14.

Plate 14 provides an aerial view of the community of Petroleum. Petroleum was the location of a winter storm tragedy where 5 deaths occurred.



Roane County FIRM Key Map
Source: FIRM map March 18, 1991

Spencer Area



Topo 1. provides an area view of the City of Spencer, West Virginia.



Plate 1. provides an area view of Spencer West Virginia.

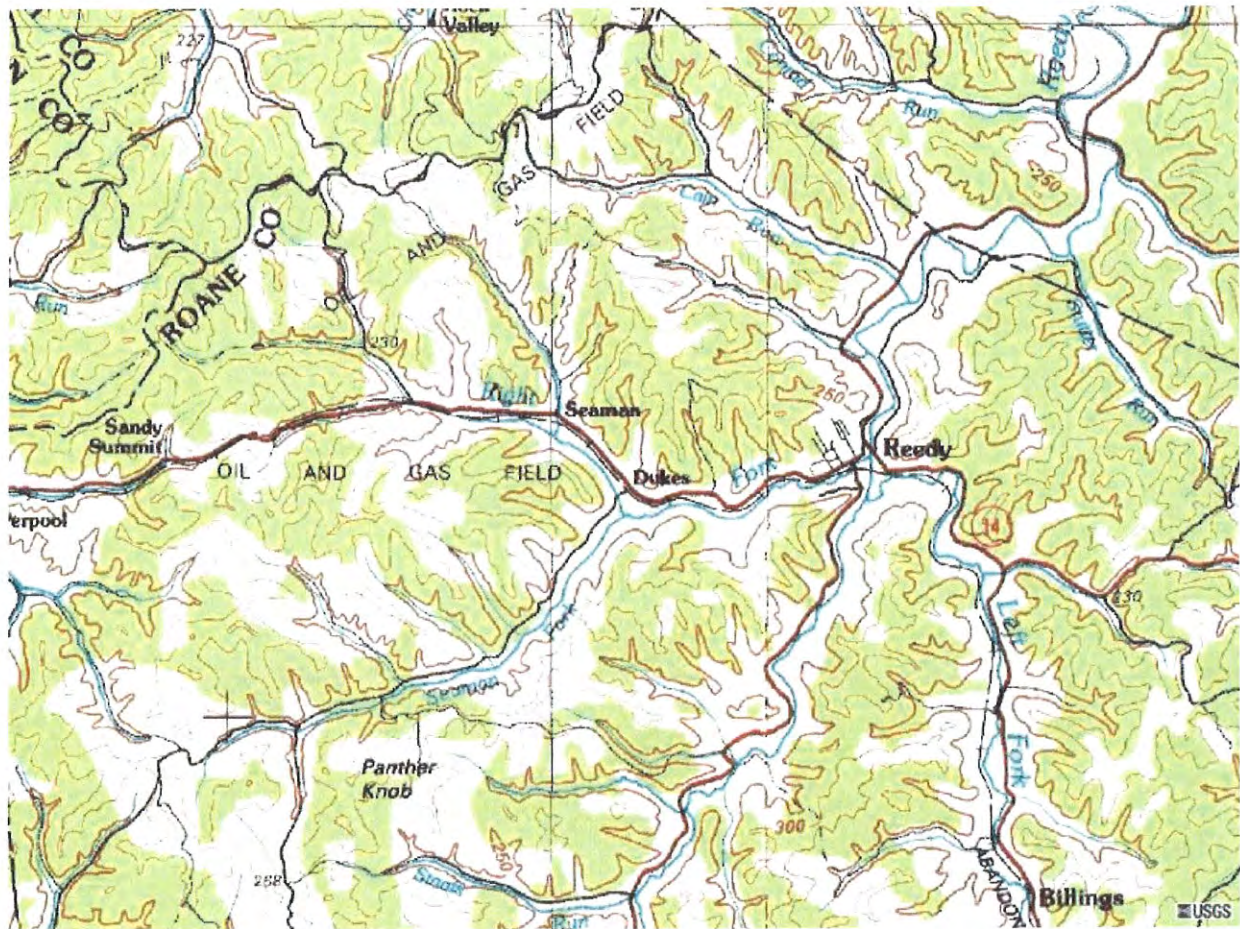


Plate 2. provides an aerial view of the Alvord section of Spencer West Virginia. Bridges crossing Spring Creek and Tanner Run can be seen in this picture.



Plate 3. provides an aerial view of U.S. Route 119 and U.S. Route 33 leading out of Spencer West Virginia along Goff Run and the bridge crossing Spring Creek in downtown Spencer.

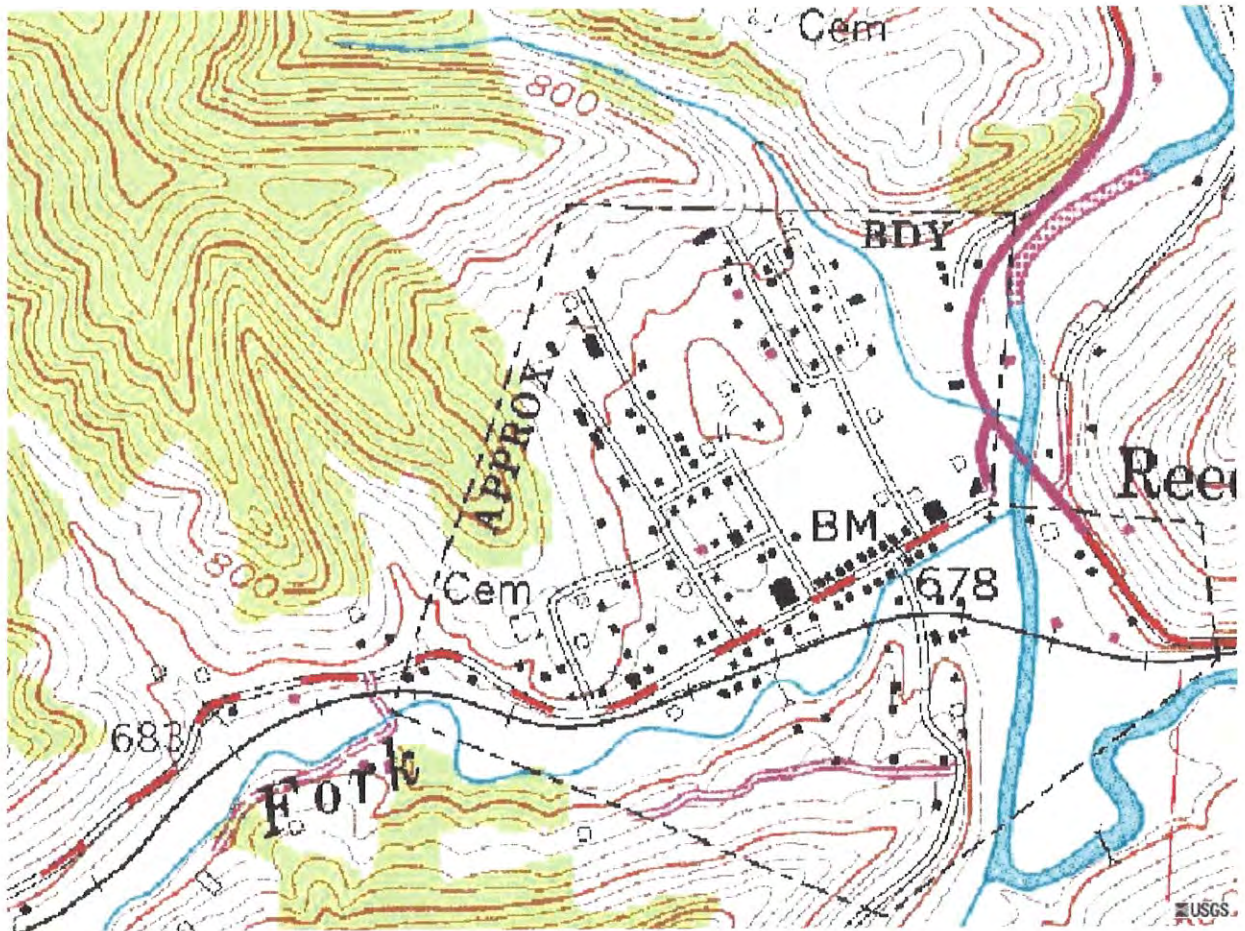
Reedy Area



Topo 2.



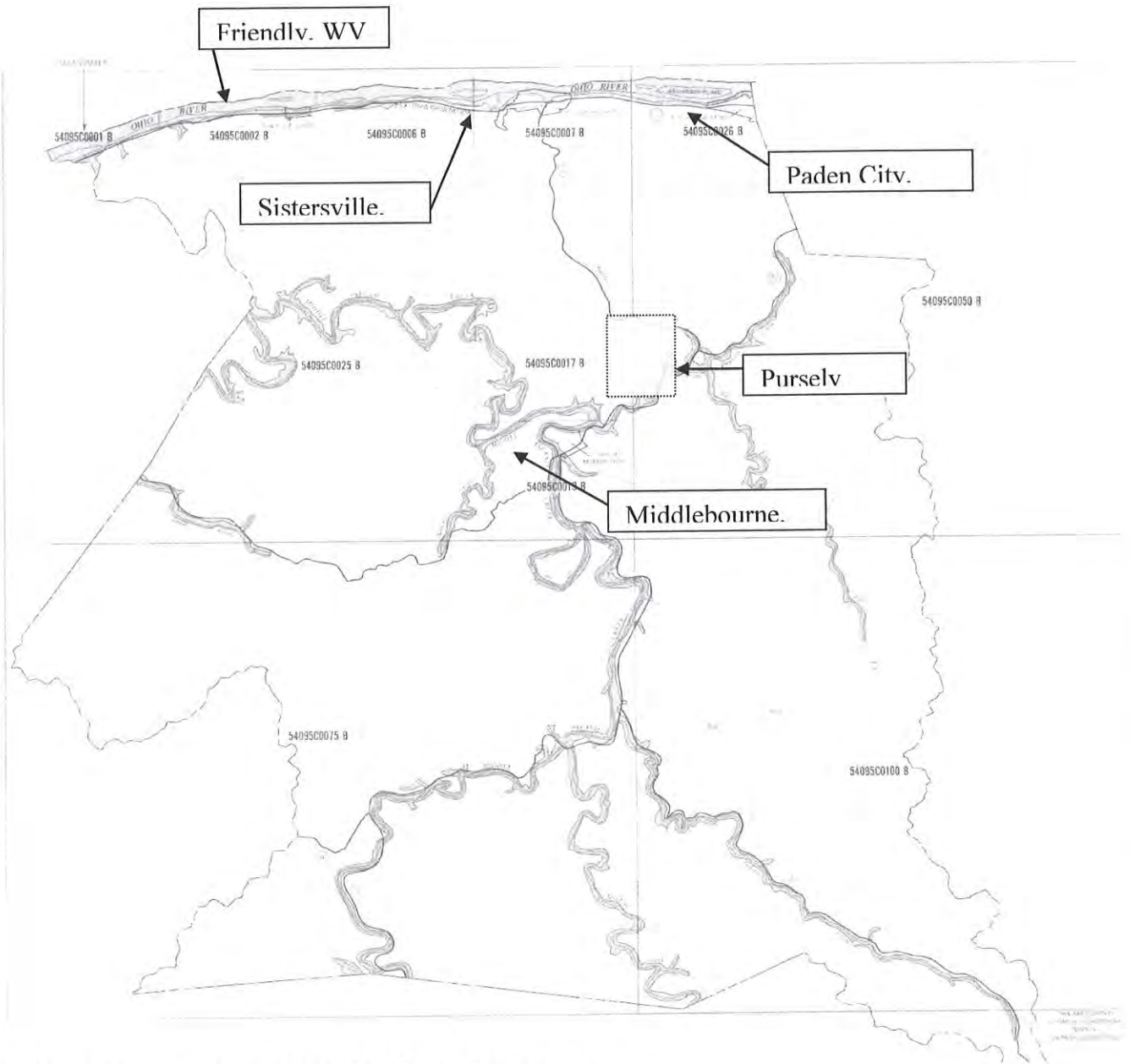
Plate 4.



Topo 3.



City of Spencer



Key Flood Insurance Rate Map (FIRM) for Tyler County.

The major population areas are noted on this map as well as “Pursely”. Pursely is located generally at the confluence of Pleasant Creek, Pursely Creek, and Elk Fork. As noted on this map West Virginia Route 18 North of Middlebourne lies in the flood plain of Pursely Creek and to the South on Rt. 18 is in the flood plain of Middle Island Creek. There are numerous places where West Virginia Route 18 will be flooded during a flooding event and therefore evacuation or access will be limited or impossible.

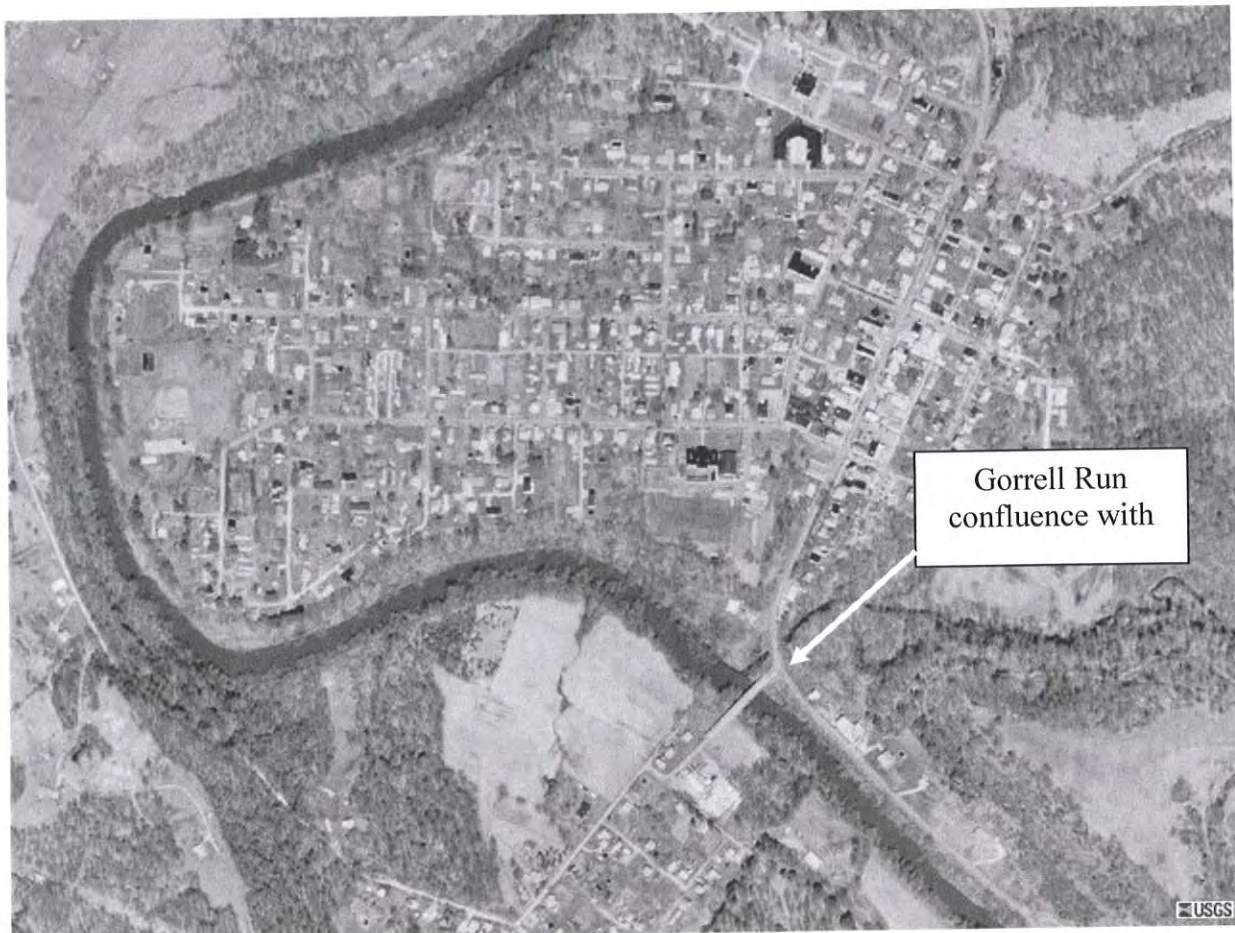
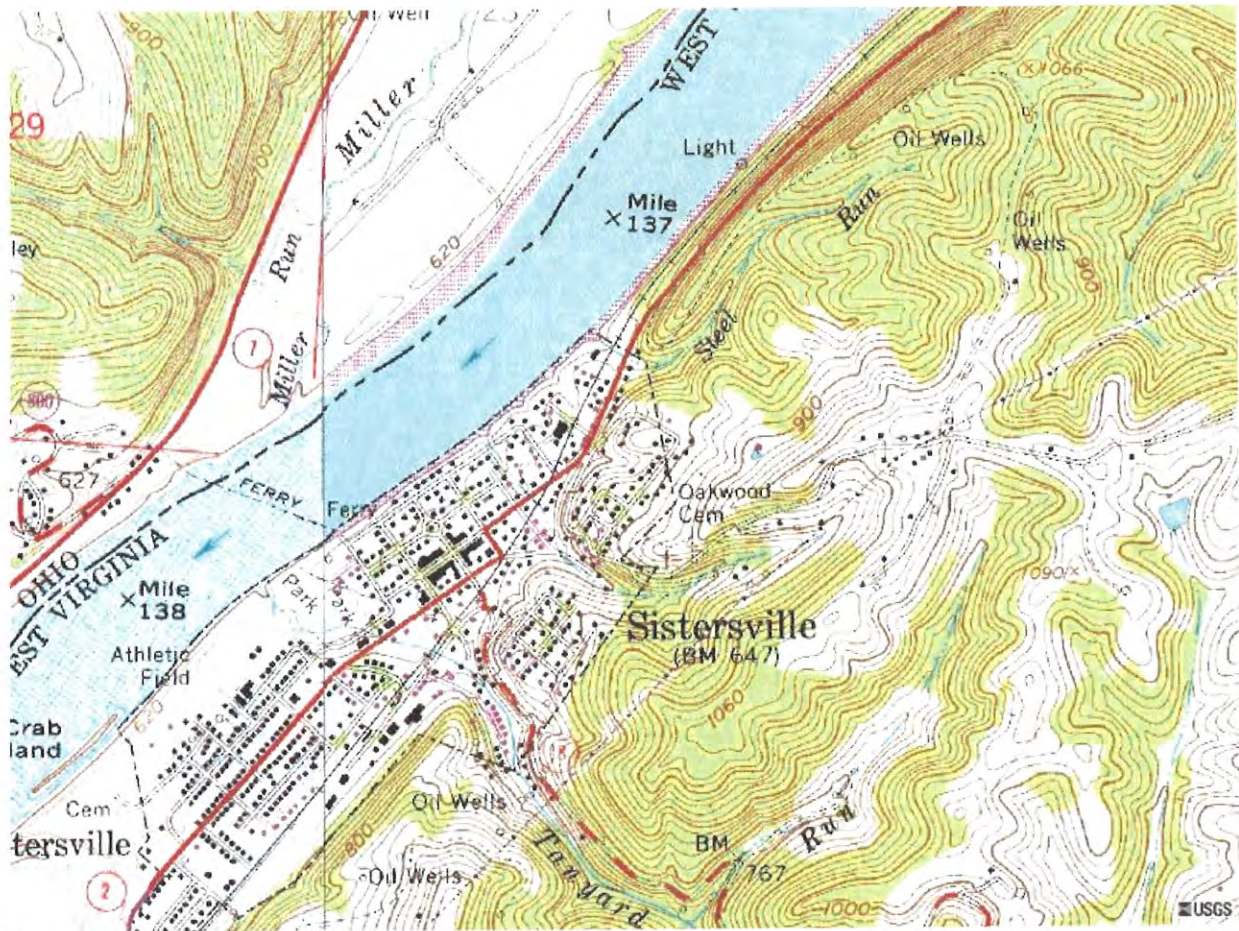


Plate 1.

Plate 1. provides a view of Middlebourne and Middle Island Creek as it courses around the town. The Gorrell Run confluence has been problematic in the past however the mean elevation of Middlebourne is El 700.0 plus and the 100-year Flood Plain elevation is about El. 686.0.

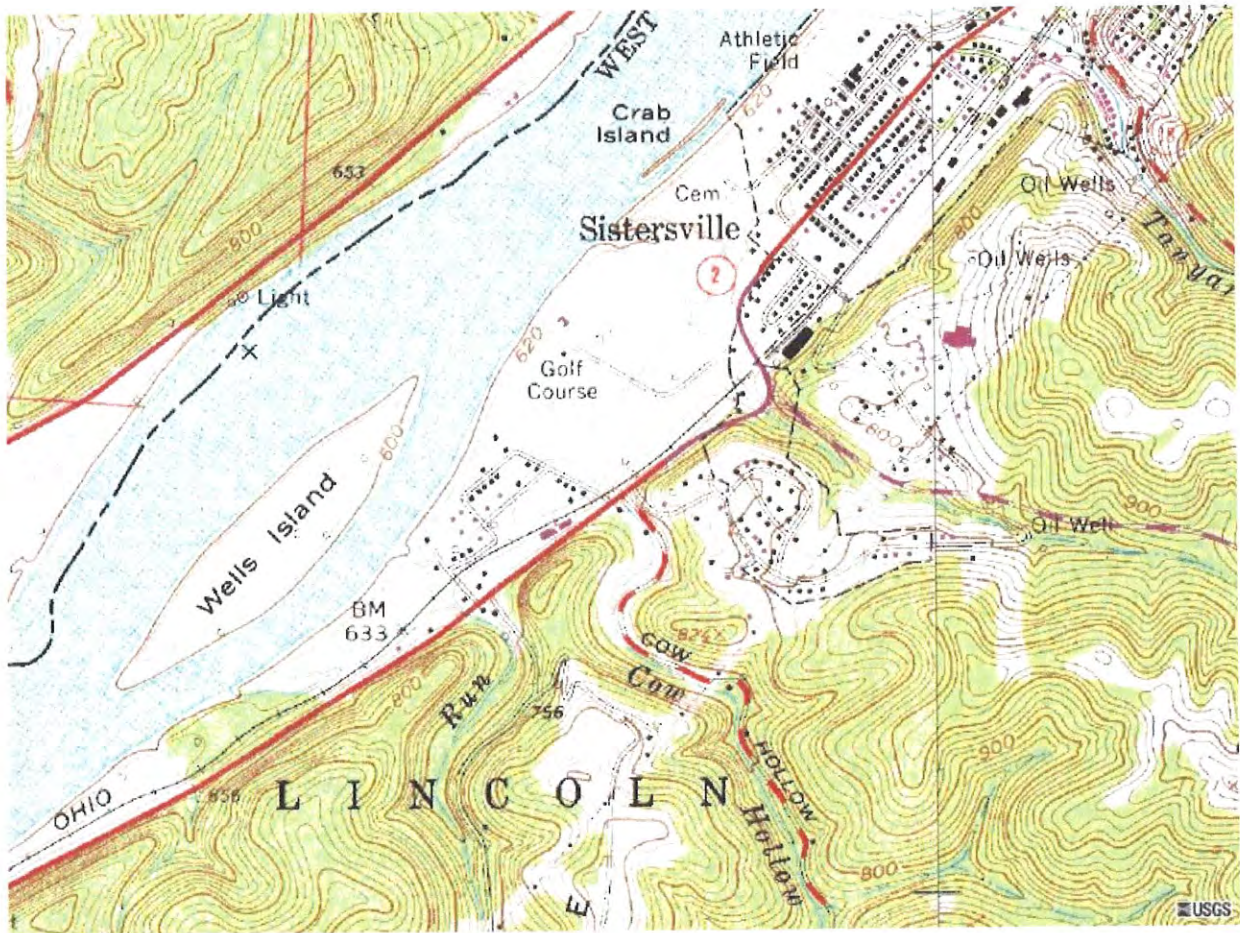
Middlebourne is the county seat of Tyler County. It is located at N 39.49 deg Lat. and W80.90 deg Long. on Middle Island Creek approximately 11.9 miles East of Sistersville. Middlebourne is the second most populated city, approximately 922 (1990 U.S. Census), that lies entirely within Tyler County. Middlebourne has a Volunteer Fire Department and Emergency Squad. These units service the southeastern and northeastern parts of the county. Tyler County Consolidated High is located outside of Middlebourne along West Virginia Route 18 (toward Sistersville) and is the only high school in the county.



Topo 1.

Topo 1. Shows the upriver portion of Sistersville.

Sistersville located at N 39.55 deg Lat. and W 80.99 Long. on the Ohio River and along West Virginia Route 2 at River mile marker 138. Sistersville is the most populated city approximately 1797 (1990 U.S. Census) lying entirely within Tyler County. Sistersville has the only hospital in the county (See Plate 5.) which is near the 100 year flood plain elevation and is identified as a critical facility. Sistersville businesses represent most of the commercial business in the county.



Topo 2.
Topo 2 above, shows the downriver portion of Sistersville.

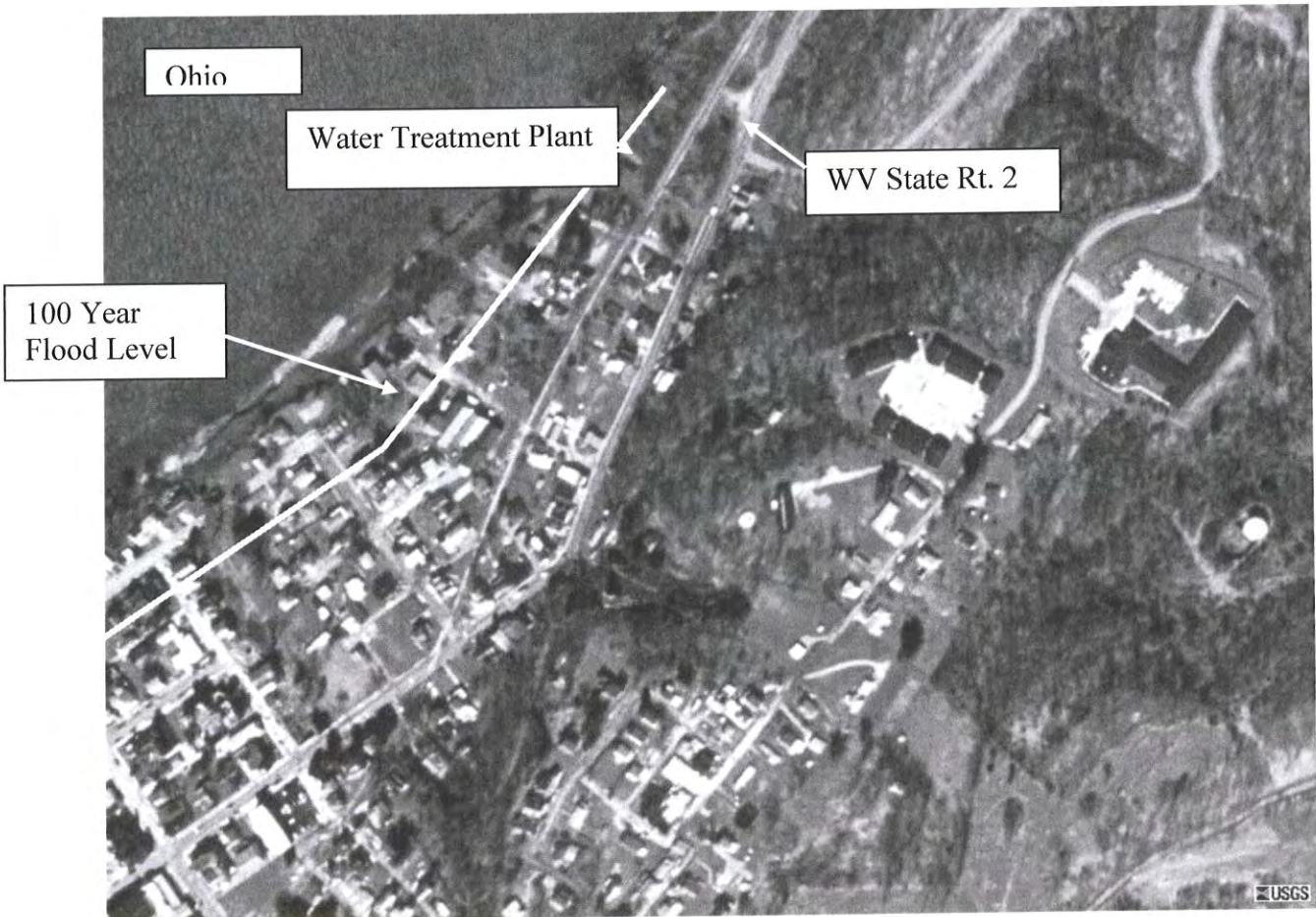


Plate 2.
Plate 2 provides a view of the north (up river) end of Sistersville near the water treatment plant.

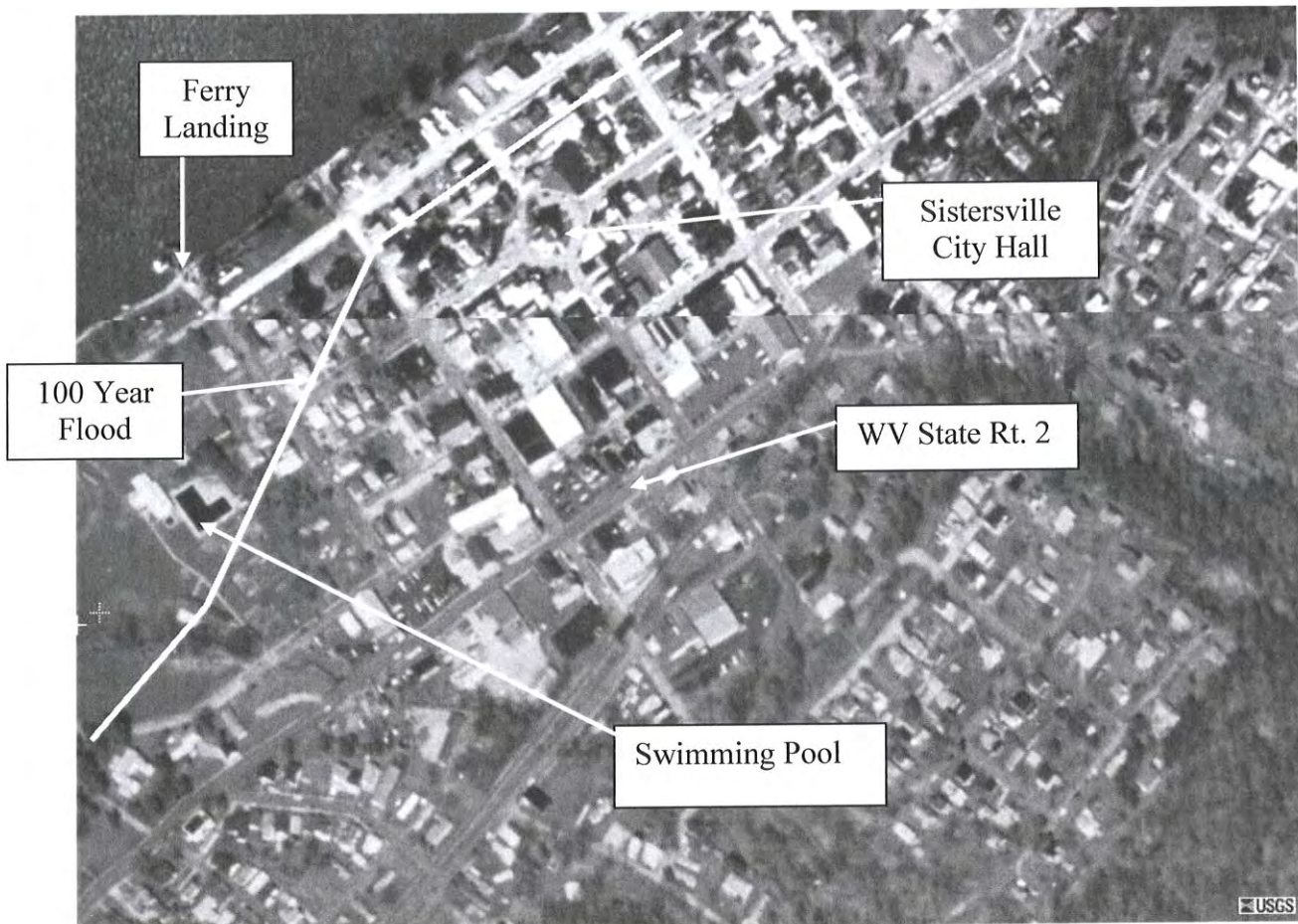


Plate 3.
Plate provides a view of the center/downtown section of Sistersville.



Plate 4.
Plate 4 provides a view of midtown Sistersville. The High School is no longer used as a school.

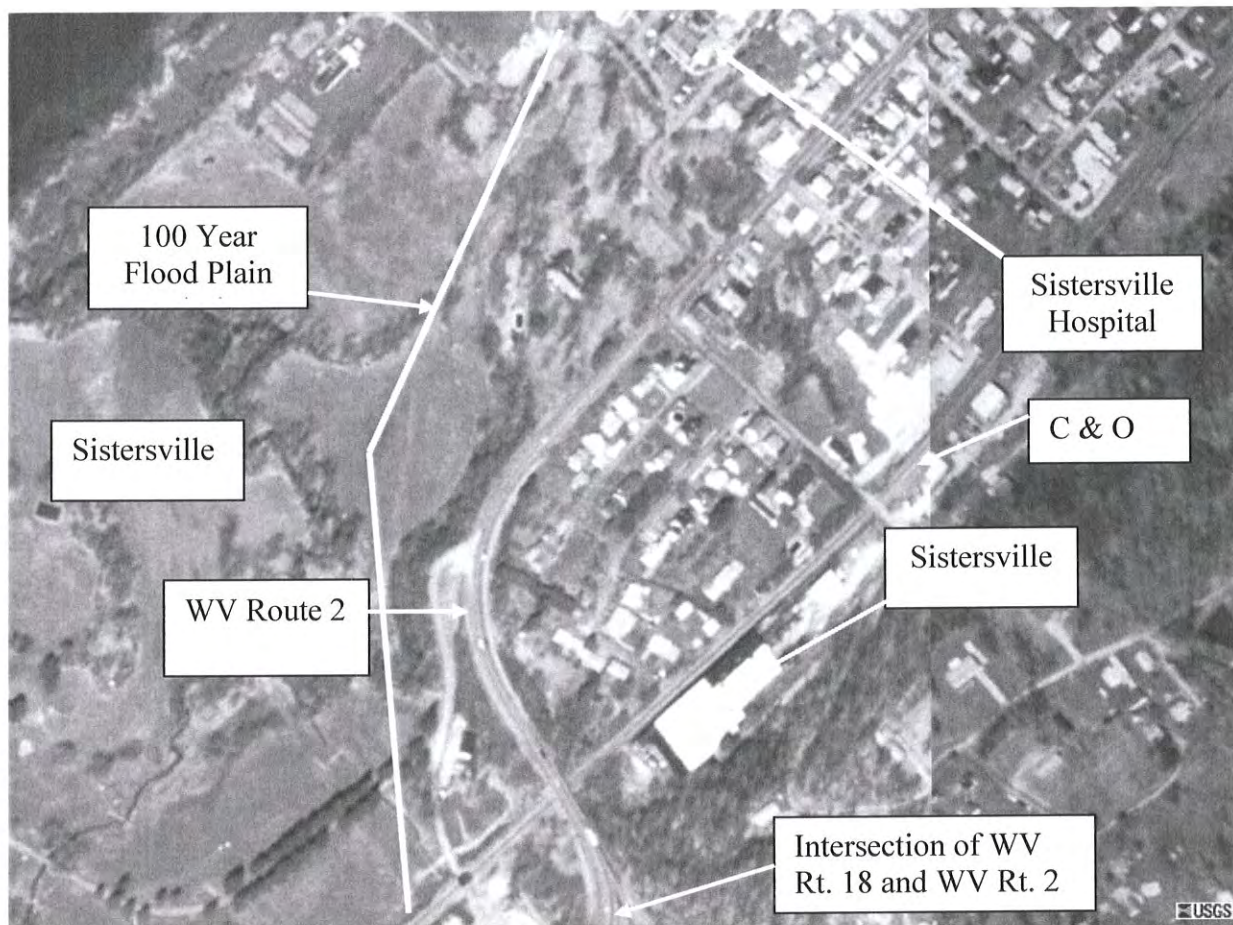


Plate 5.

Plate 5 provides a view of lower portion of Sistersville at the intersection of WV Rt. 2 and WV Rt 18.

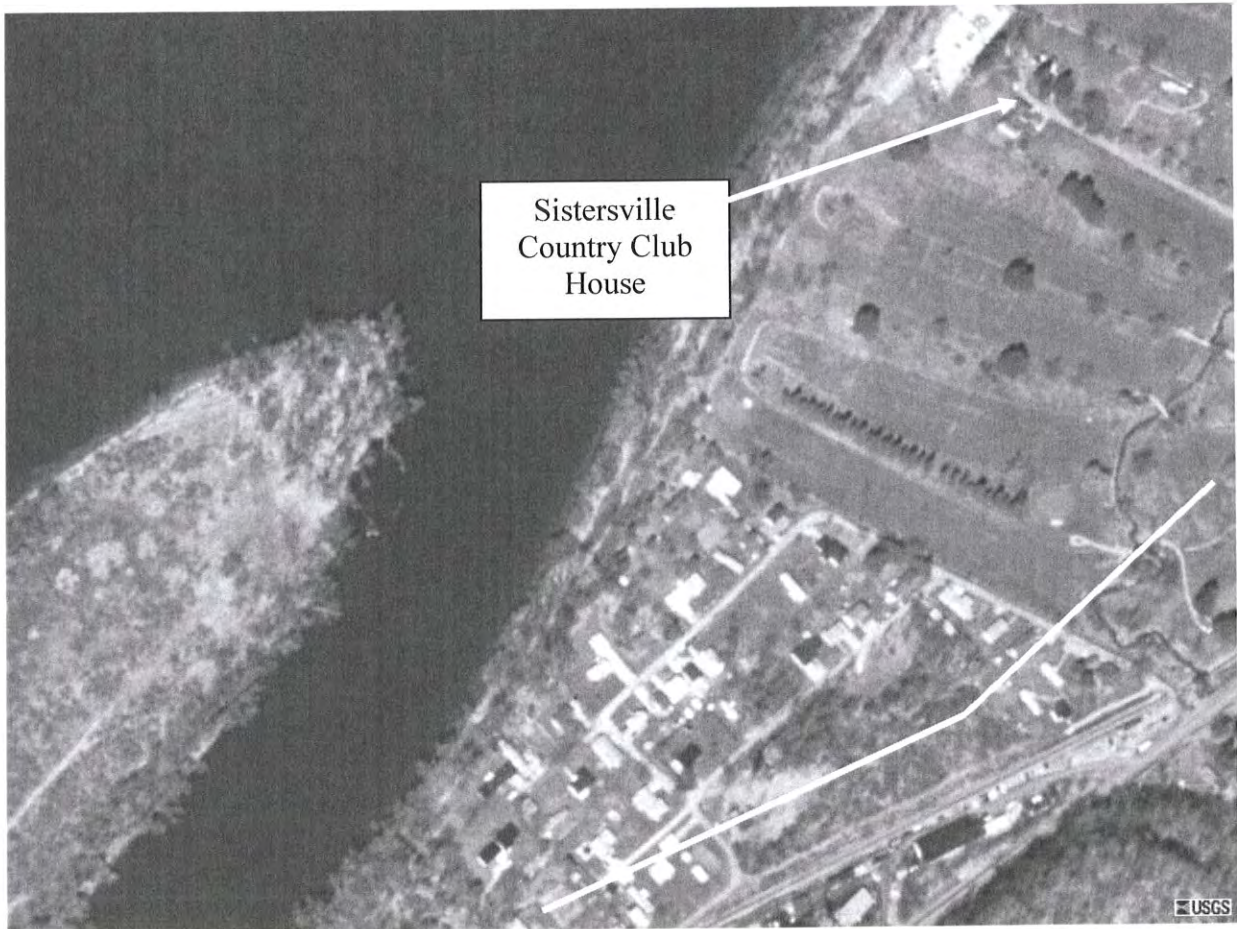


Plate 6.

Plate 6 provides a view of the South end of Sistersville and the Sistersville Country Club.

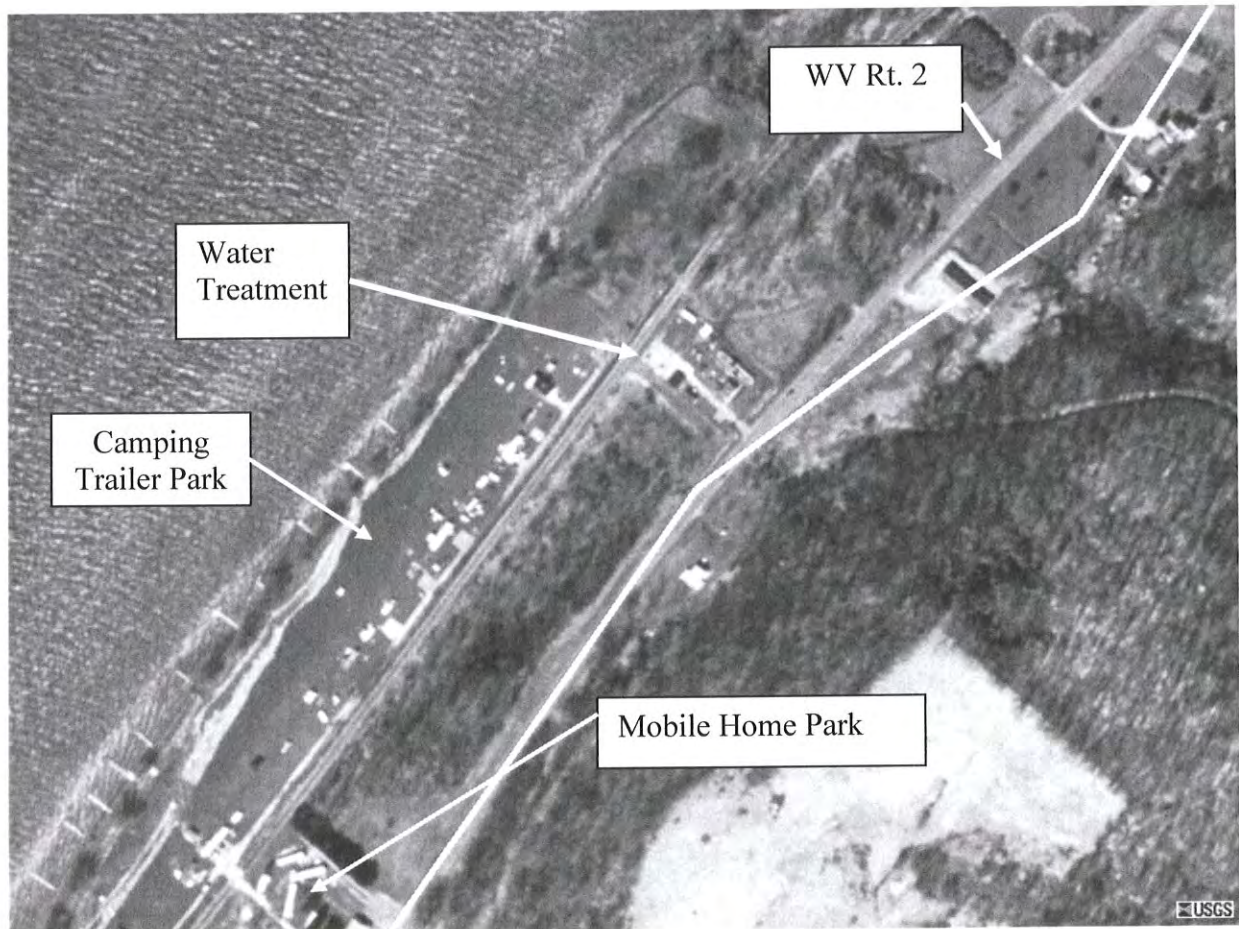


Plate 7.

Plate 7 shows Davenport just up river from Friendly

Friendly is the smallest town in Tyler County with a population of 146 (1990 U.S. Census). It is located about 5 miles South of Sistersville on West Virginia Route 2 at N 39.51 Lat. and W 81.06 Long along the Ohio River.



Plate 8.
This plate shows the up river portion of Friendly. The white line denotes the extents of the 100-year flood boundary

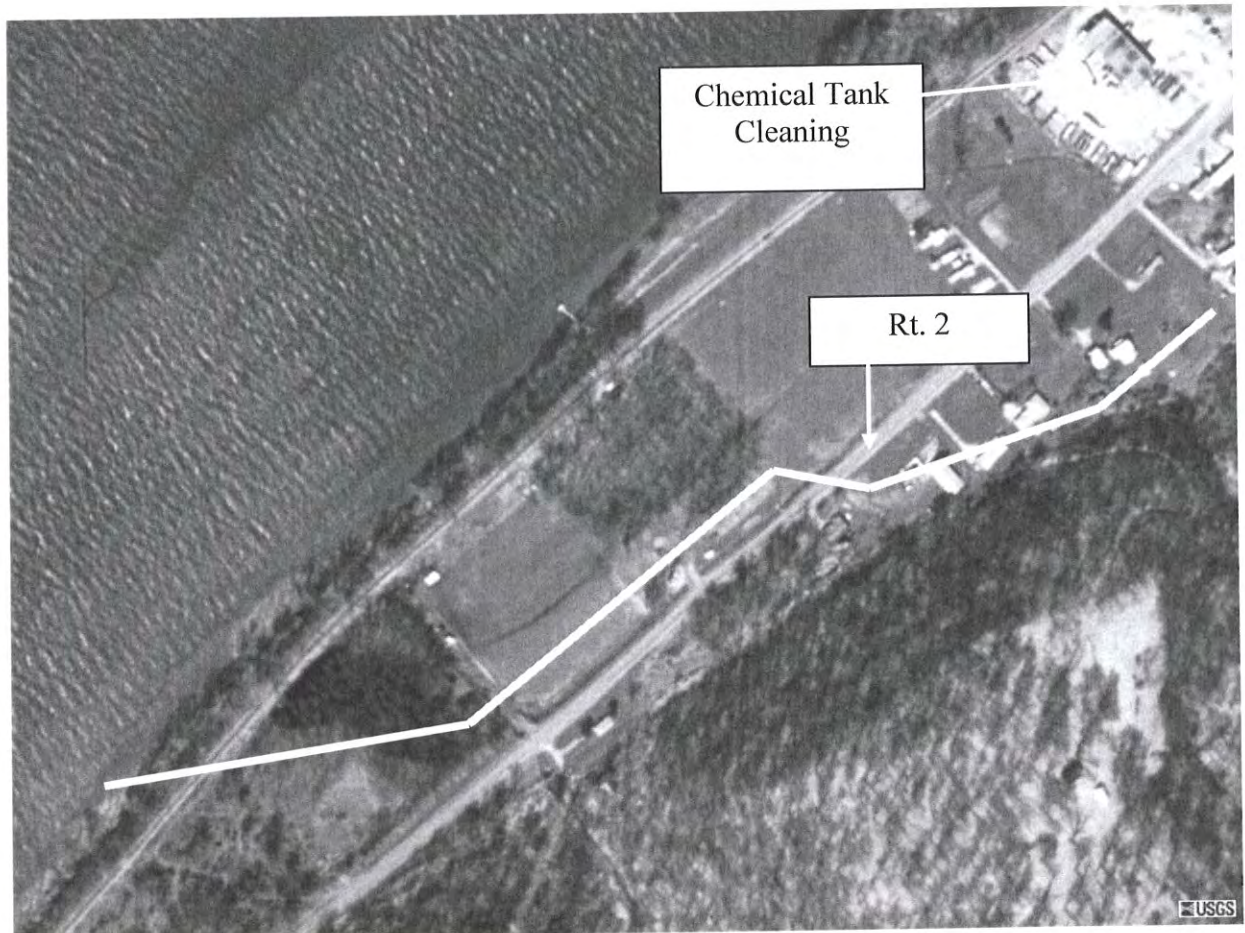
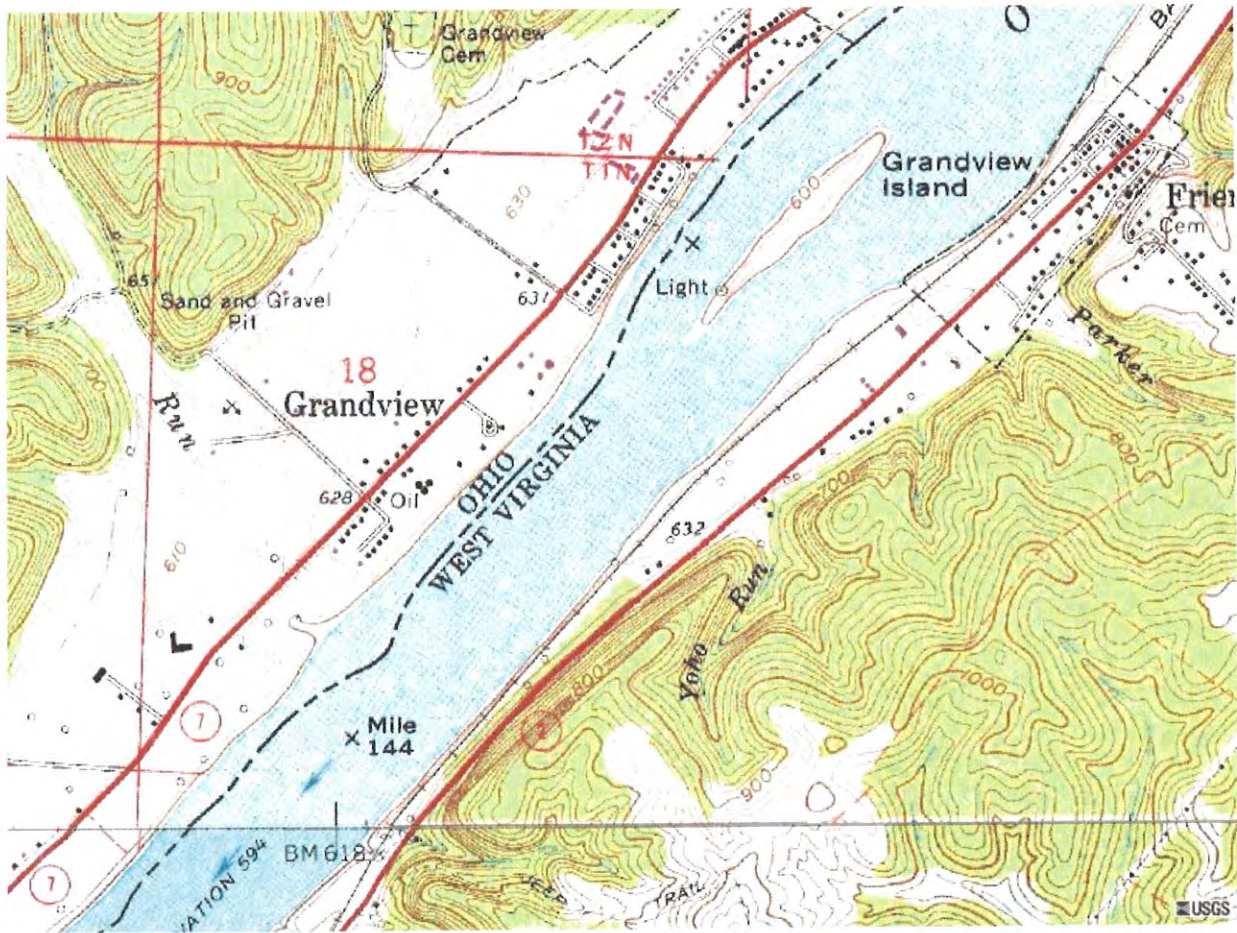


Plate 9. The down river portion of Friendly is show in this plate. All buildings on the riverside of West Virginia Rt. 2 are in the flood plain.



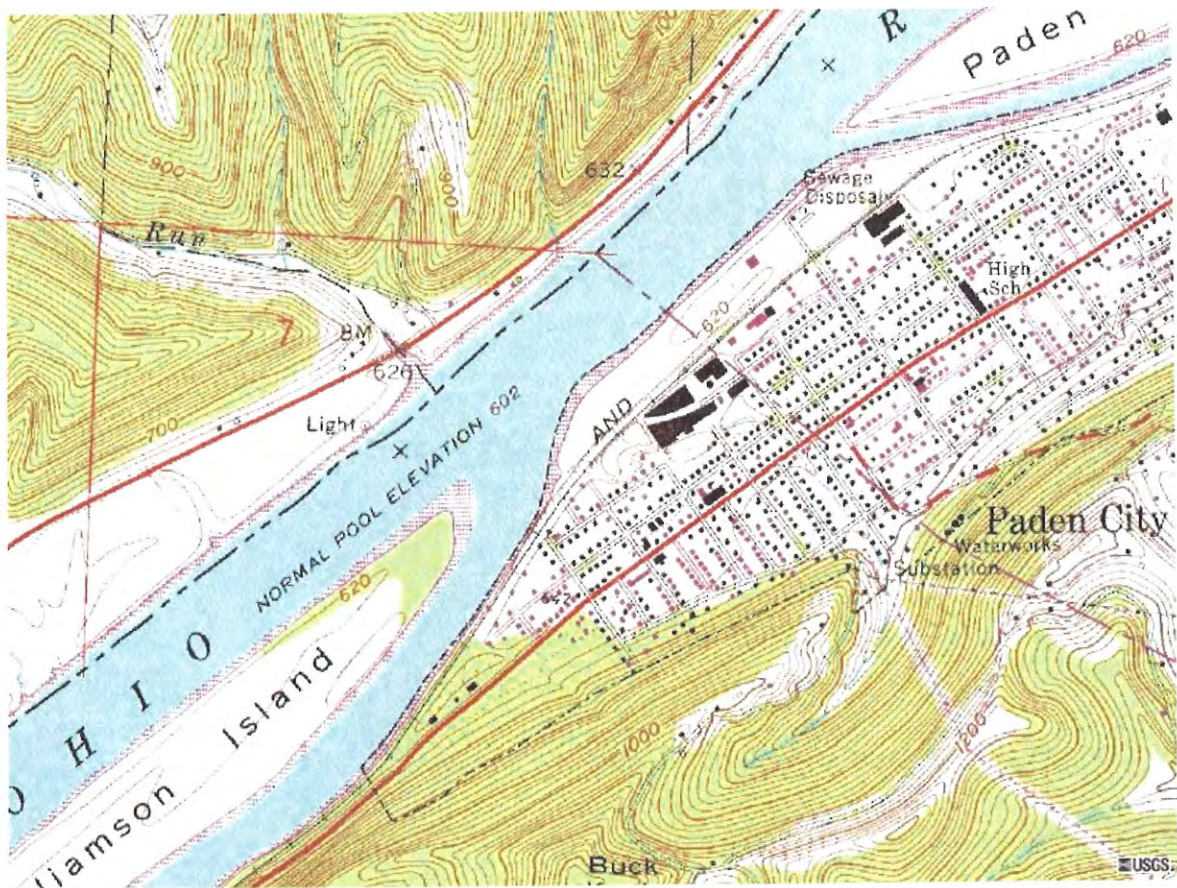
Topo 3.
Topo 3 shows the Friendly area.



Plate 10.

Plate 10. shows an aerial view of the lower portion of Paden City West Virginia. The county line is shown in white ... everything in Paden City on the up riverside of the line is in Wetzel County ... the area south of the line is in Tyler County.

The portion of Paden City that lies within Tyler County represents approximately $1/3^{\text{rd}}$ to $2/5^{\text{th}}$ of the total city population of 2862. Paden City lies approximately 5 miles North of Sistersville along the Ohio River and West Virginia Route 2 at N 39.60 deg Lat. and W80.93 deg Long.



Topo 4.

The normal pool elevation noted on this map is prior to the completion of the Willow Island Locks and Dam.

The City of Elizabeth



Plate 1.

Plate 1 provides a view of Elizabeth and the confluence of Tucker Creek into the Little Kanawha River downstream for the center of town.

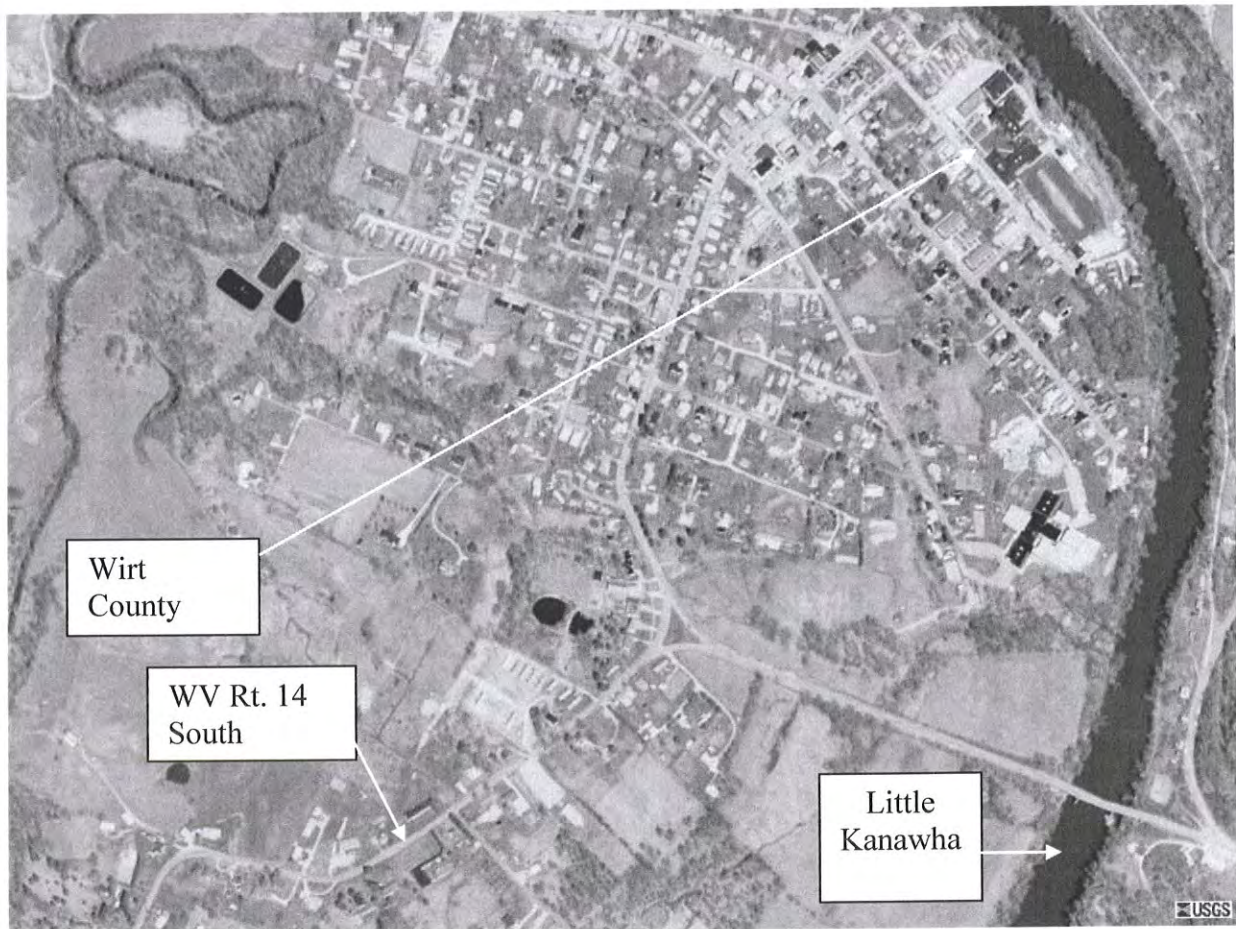
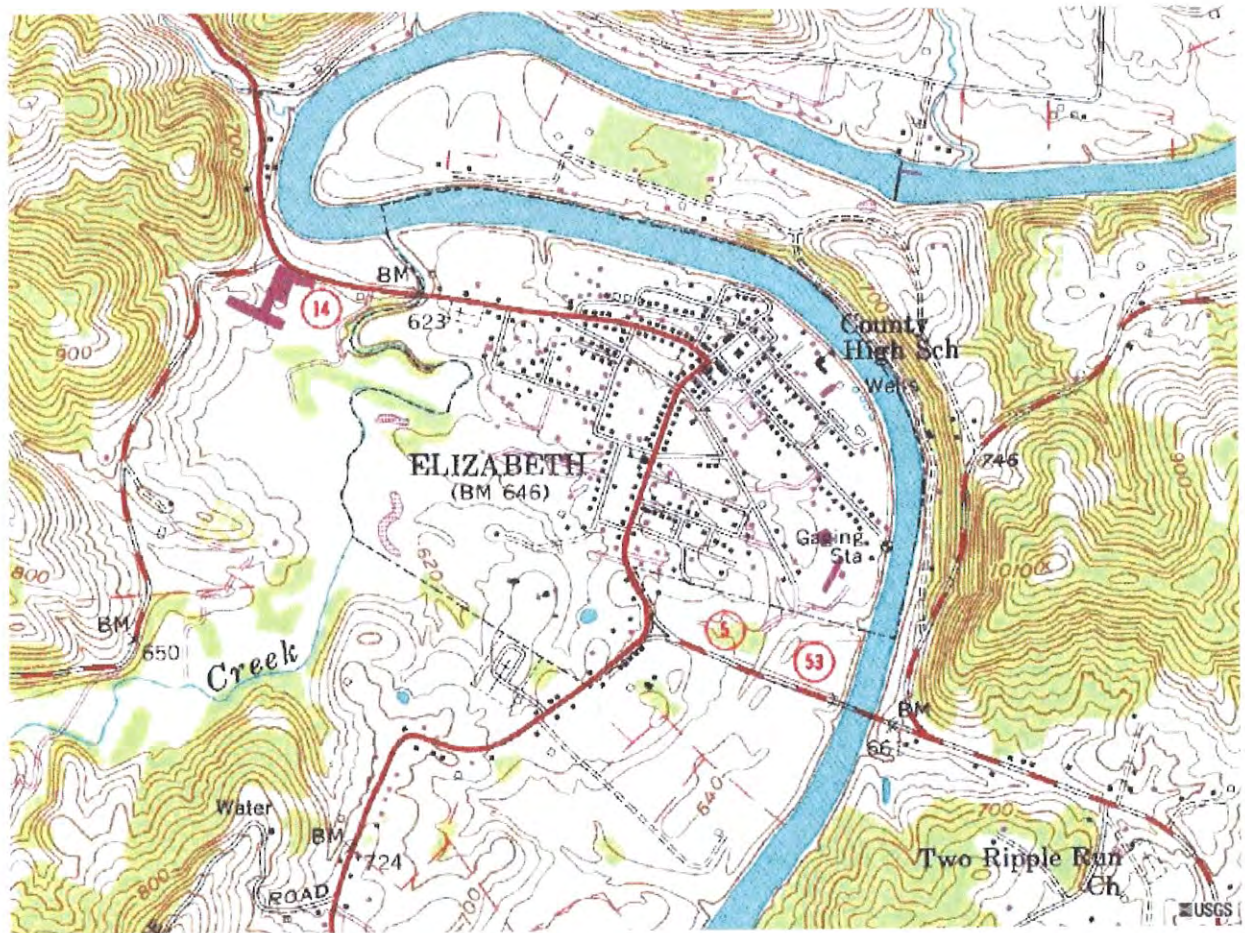
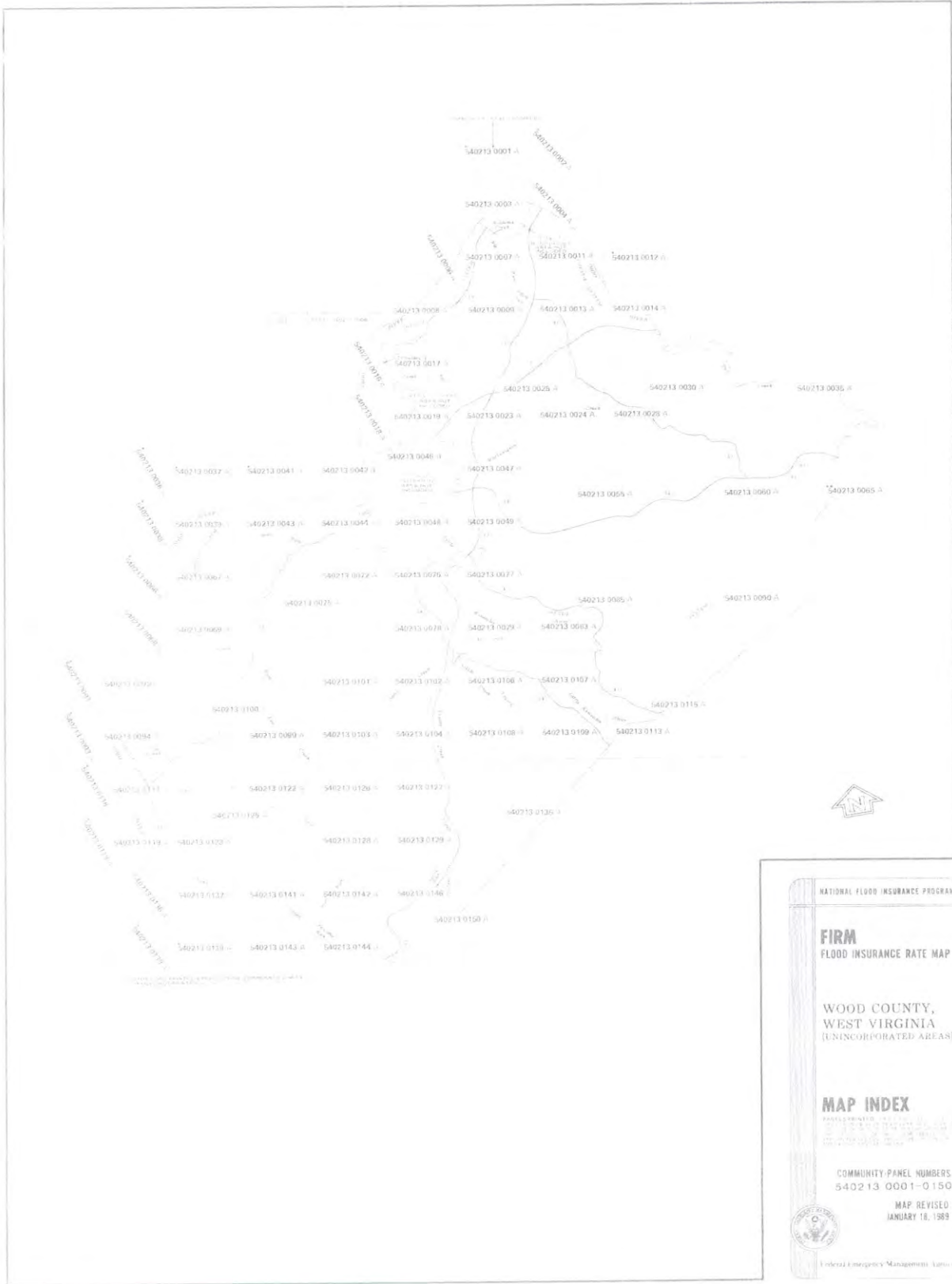


Plate 2.

Plate 2 provides a view of the Route 53 Bridge crossing the Little Kanawha River.



Topo 1.



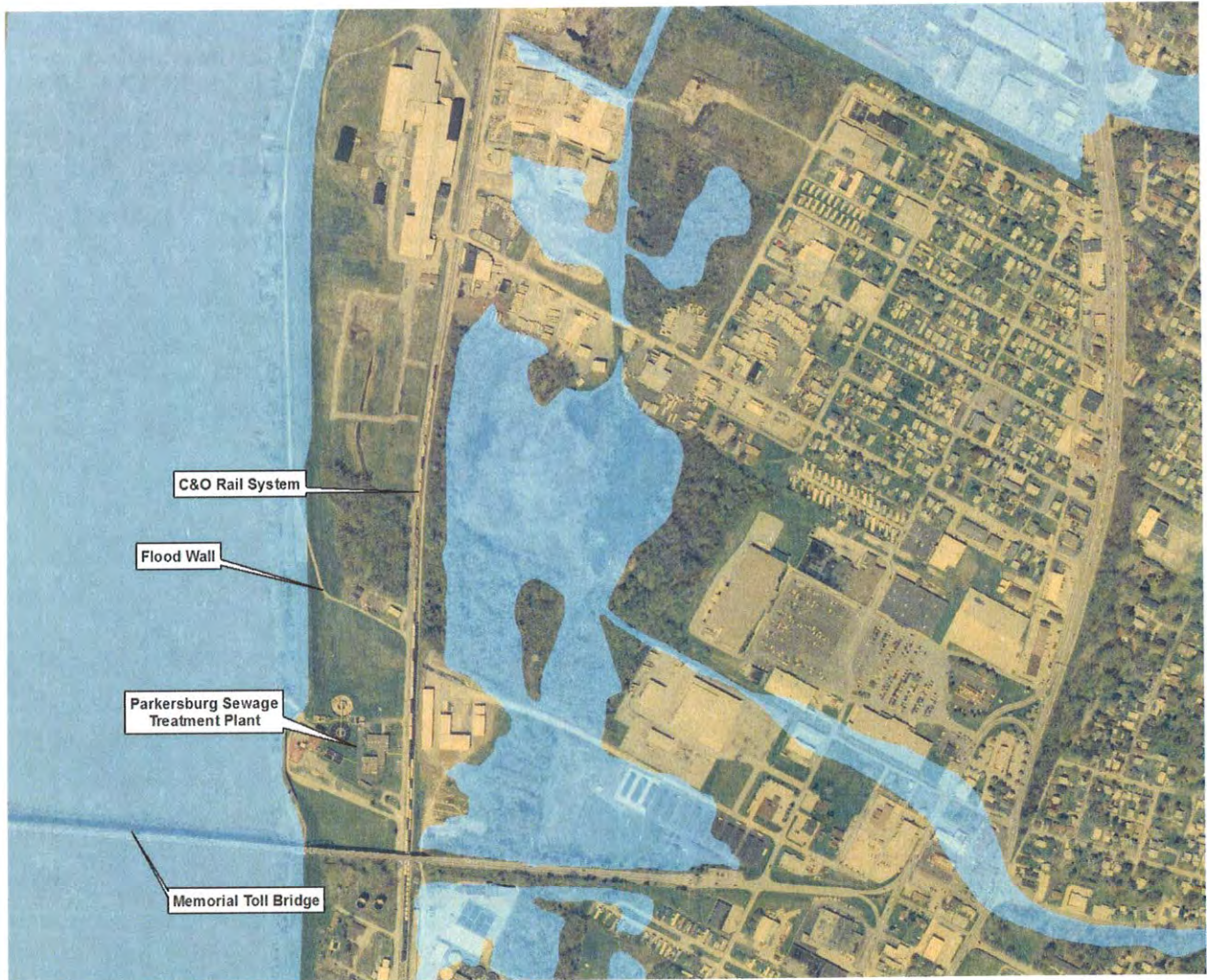


Plate 1.

Plate 1 shows the up river portion of Parkersburg between the floodwall and the Memorial Toll Bridge.

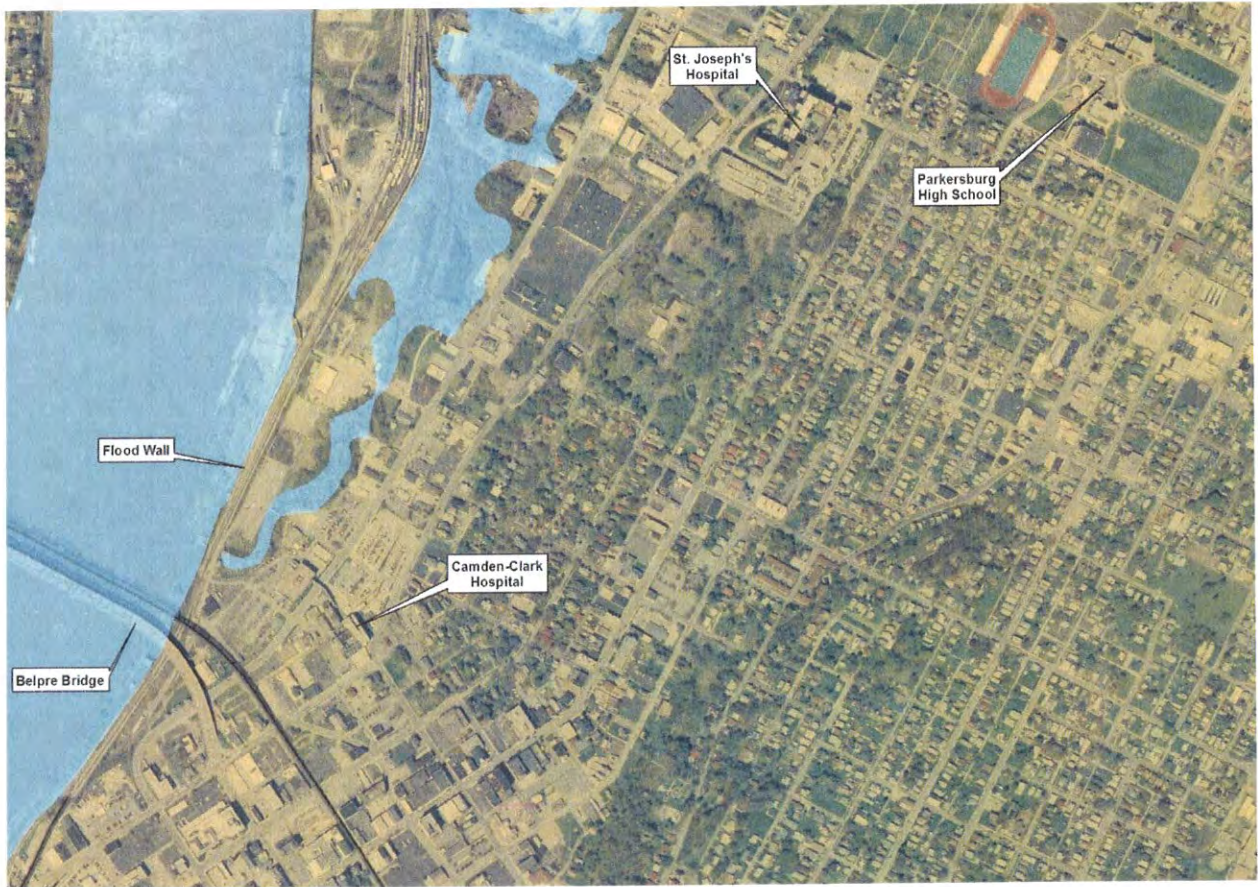


Plate 2.

Plate 2 notes portions of downtown Parkersburg.

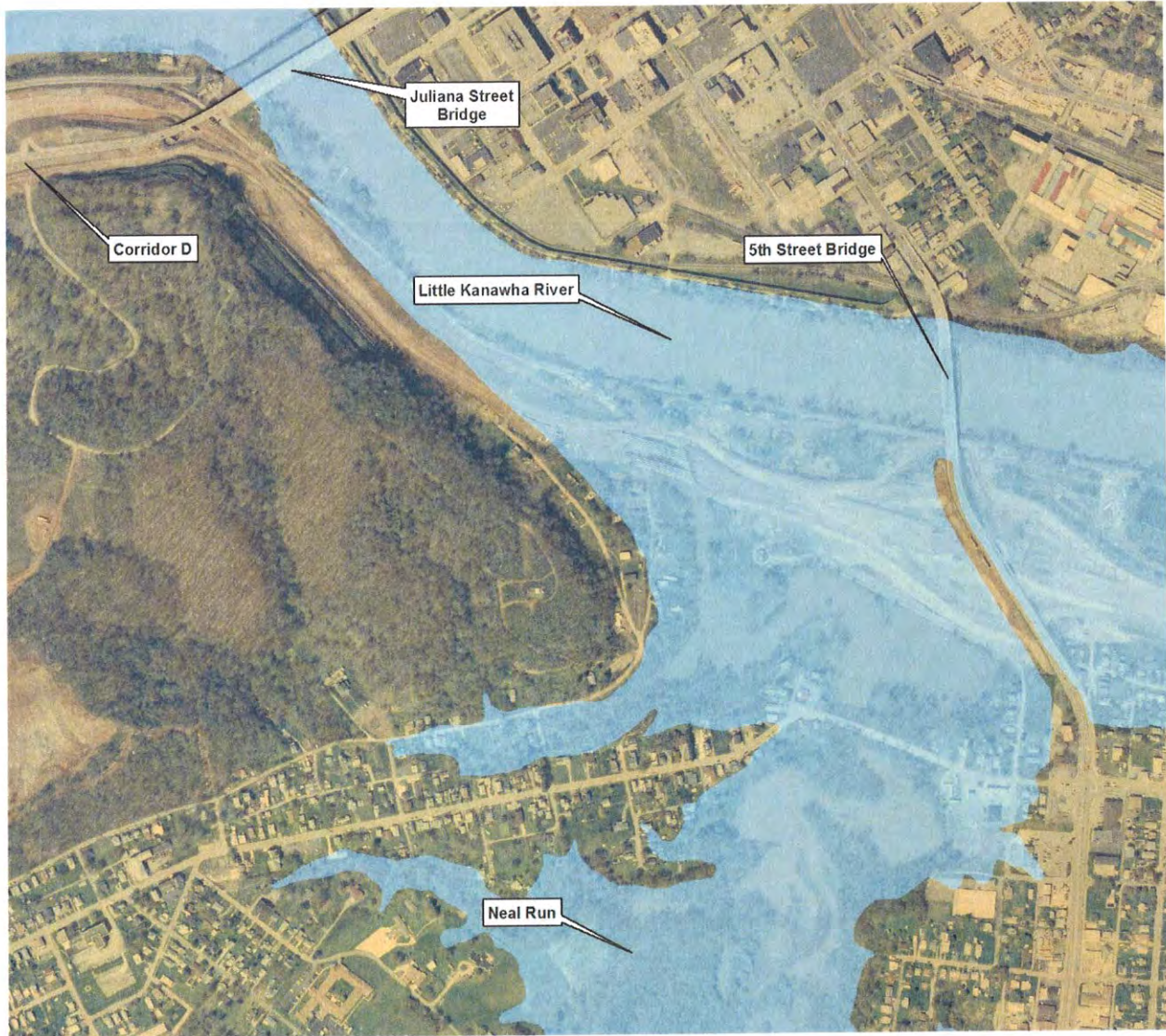


Plate 3.

Plate 3 provides an aerial view of Parkersburg at the confluence of the Little Kanawha River and the Ohio River. It should be noted that this picture does not show the new construction for the U.S. Route 50 corridor, which will change the characteristics of the low-lying areas in this region.

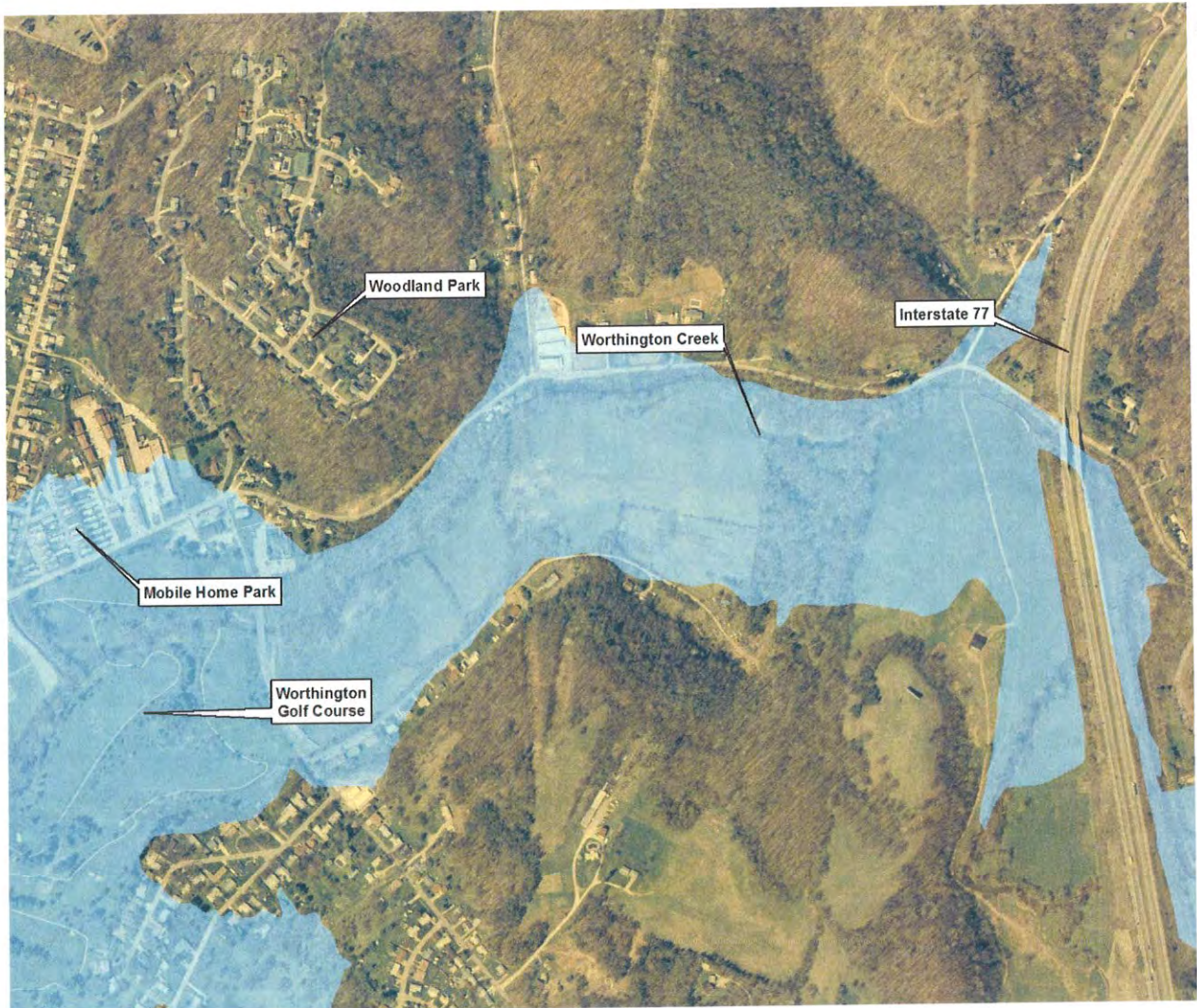


Plate 4.

Plate 4 shows the Worthington Creek area of Parkersburg at Interstate 77.

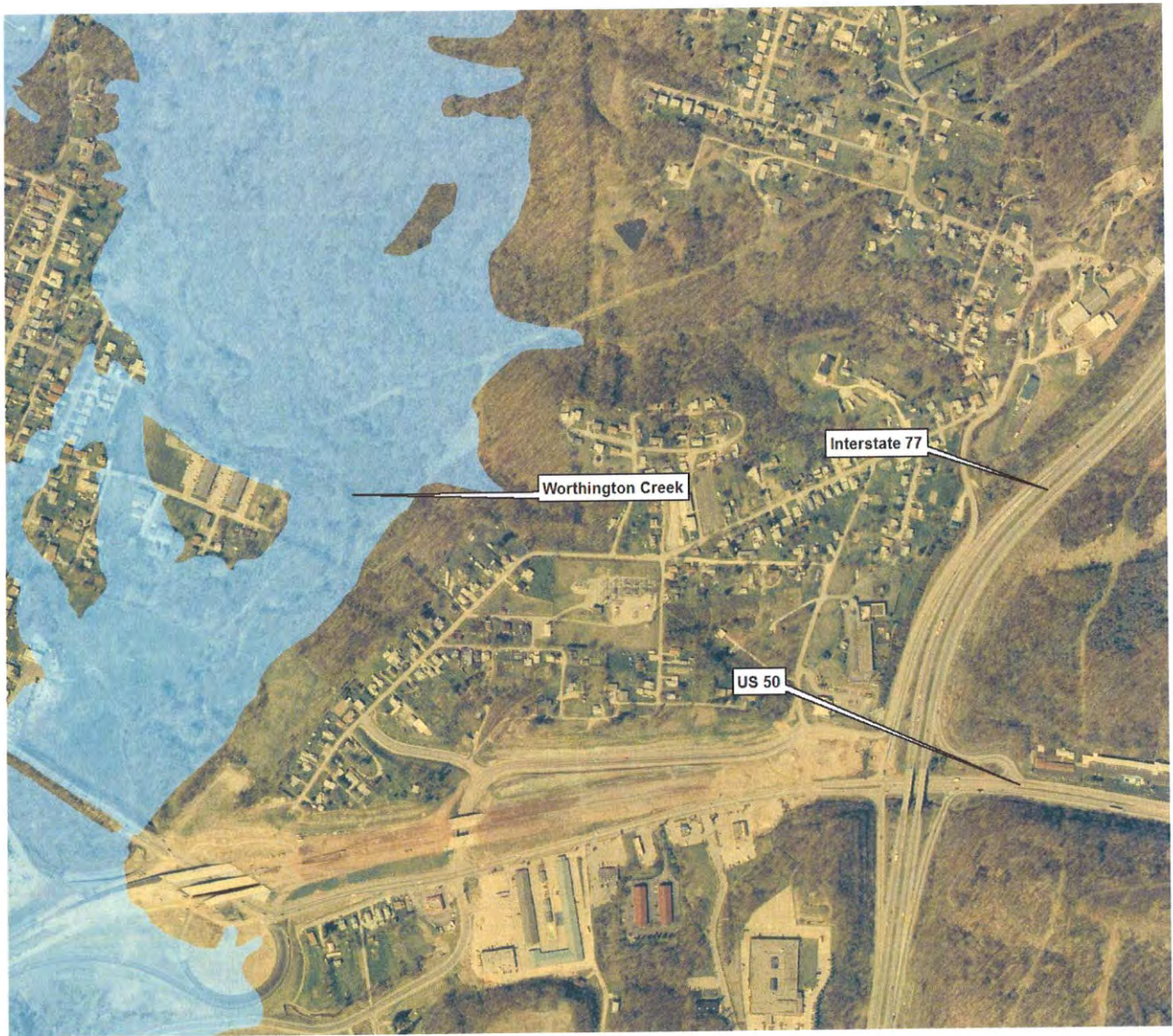


Plate 5.

Plate 5 shows the Worthington Creek area of Parkersburg at Interstate 77 and U.S. Route 50.

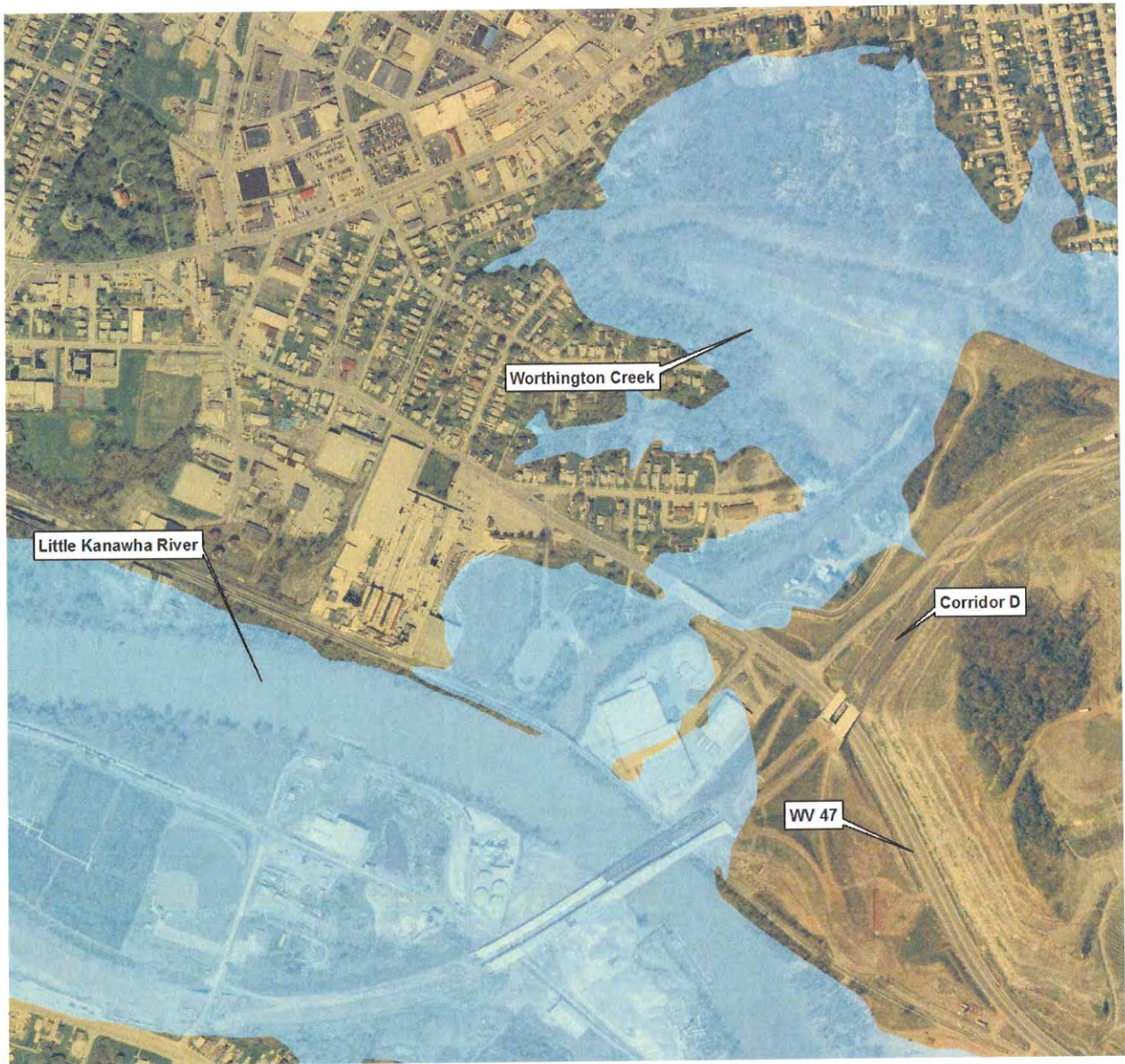


Plate 6.

Plate 6 shows a view of the Worthington Creek area of Parkersburg at the confluence of the Little Kanawha River.



Plate 7.

Plate 7. Provides an area view of the upriver section (Briscoe Run) Central and the City of Vienna.



Plate 8.

Plate 8. Provides an area view of up river area of the City of Vienna West Virginia



Plate 9. Provides an aerial view of the section of Vienna West Virginia.



Plate 10.

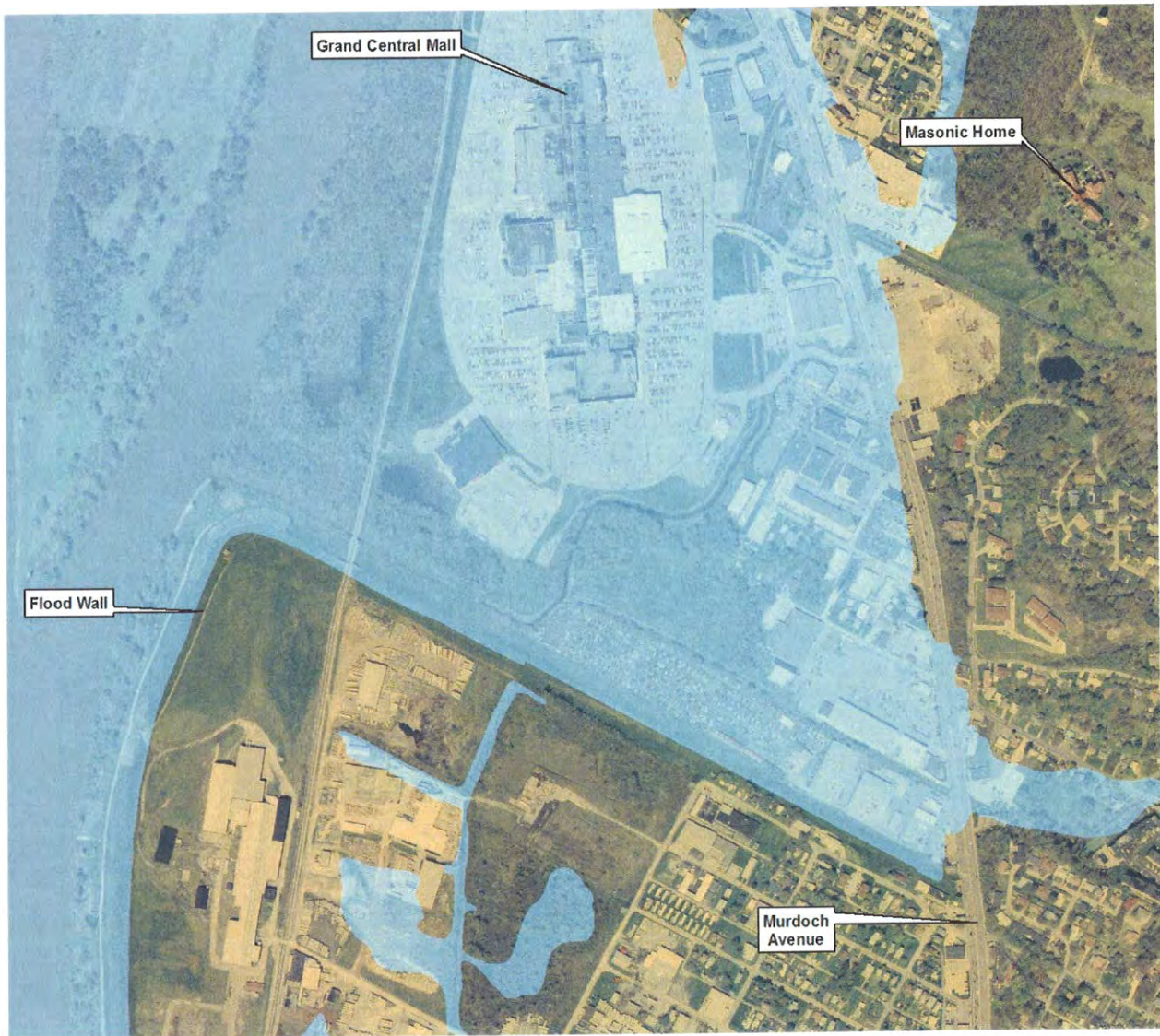


Plate. 11

Plate 10 and Plate 11 provide an aerial view of southern Vienna West Virginia shows the down river part of Vienna at the Ohio River. Also noted is the Parkersburg Flood Wall.

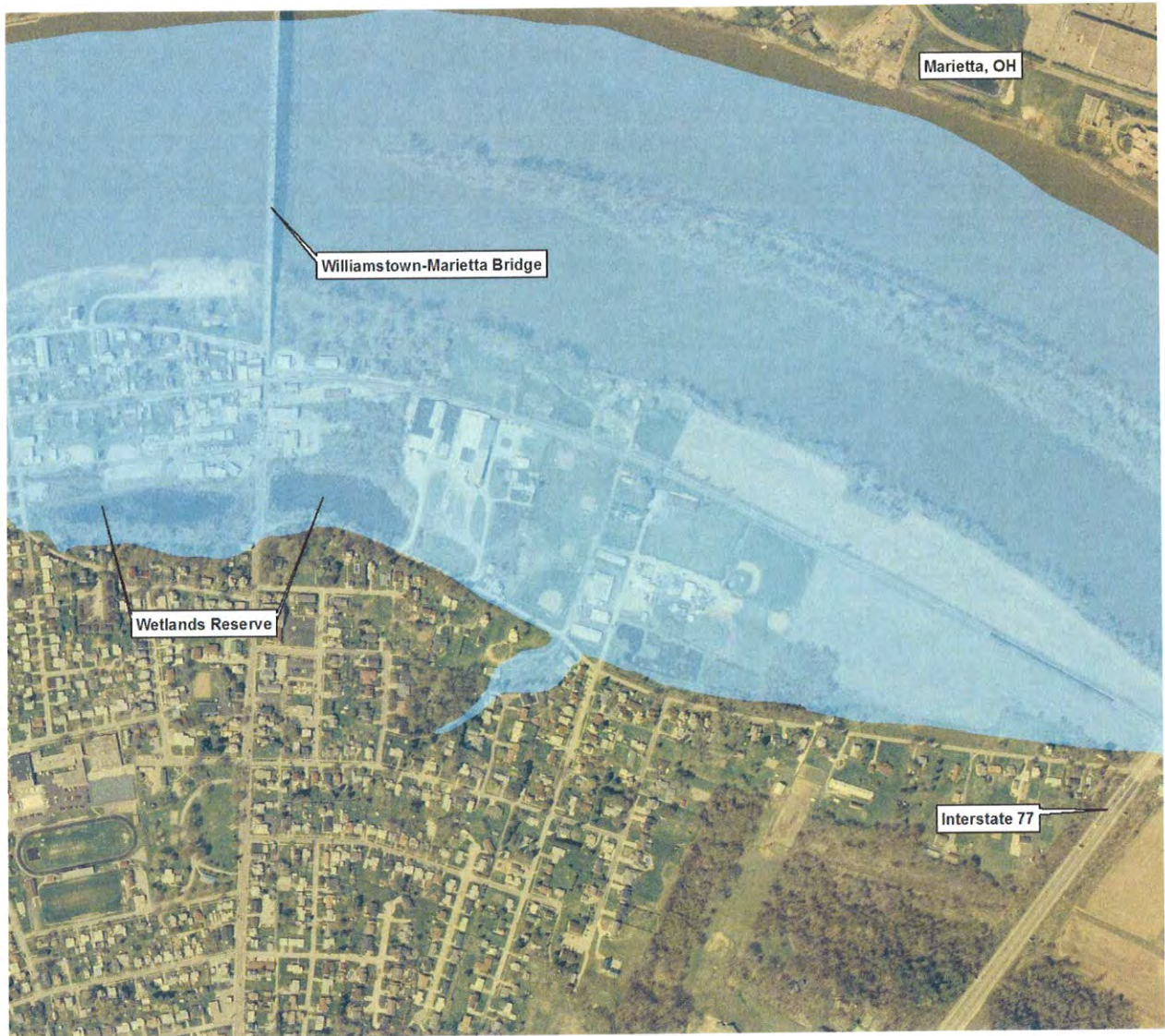


Plate 12

Plate 12. Provides an area view of Williamstown West Virginia.

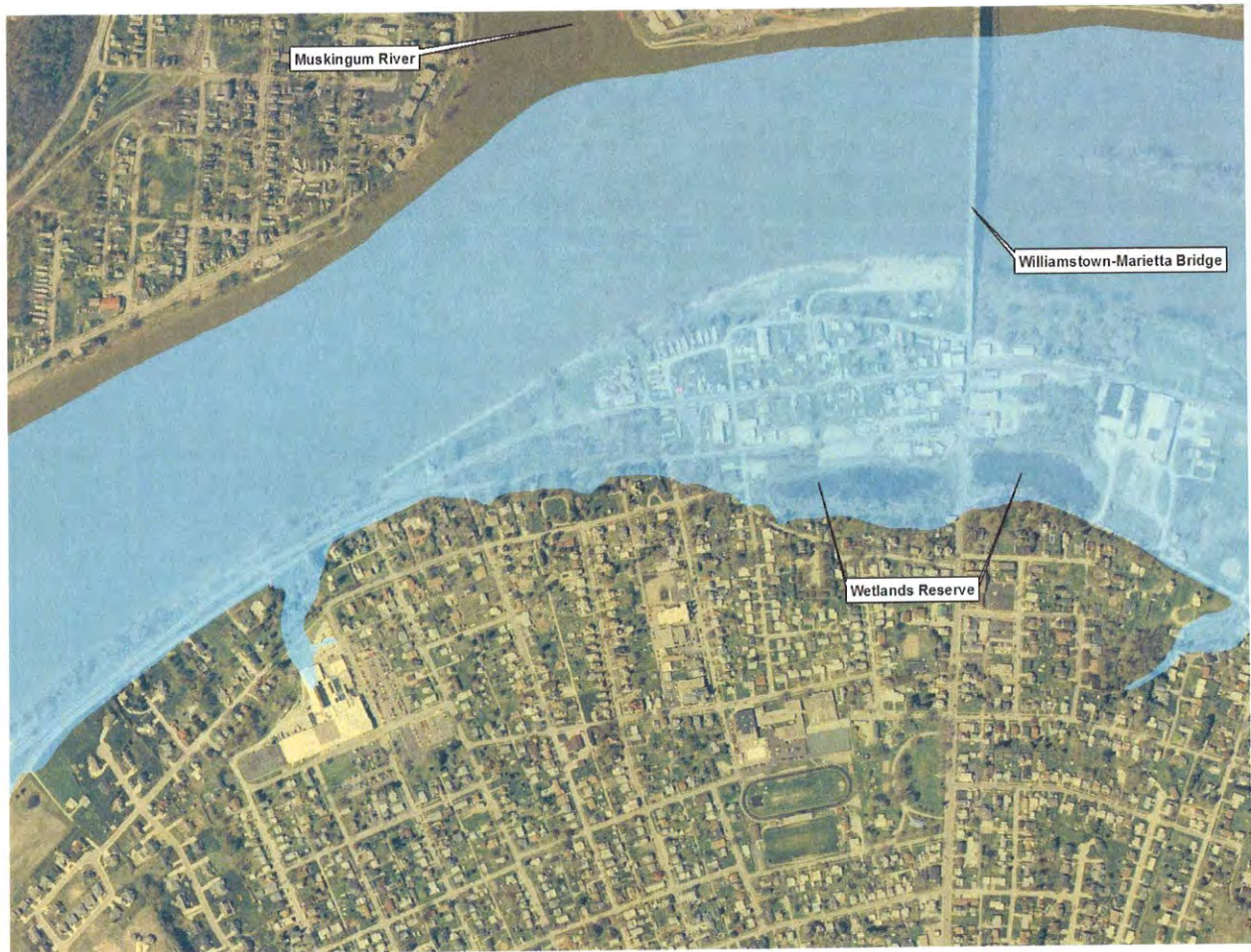


Plate 13.

Plate 13 Provides an aerial view of the section of Williamstown West Virginia.

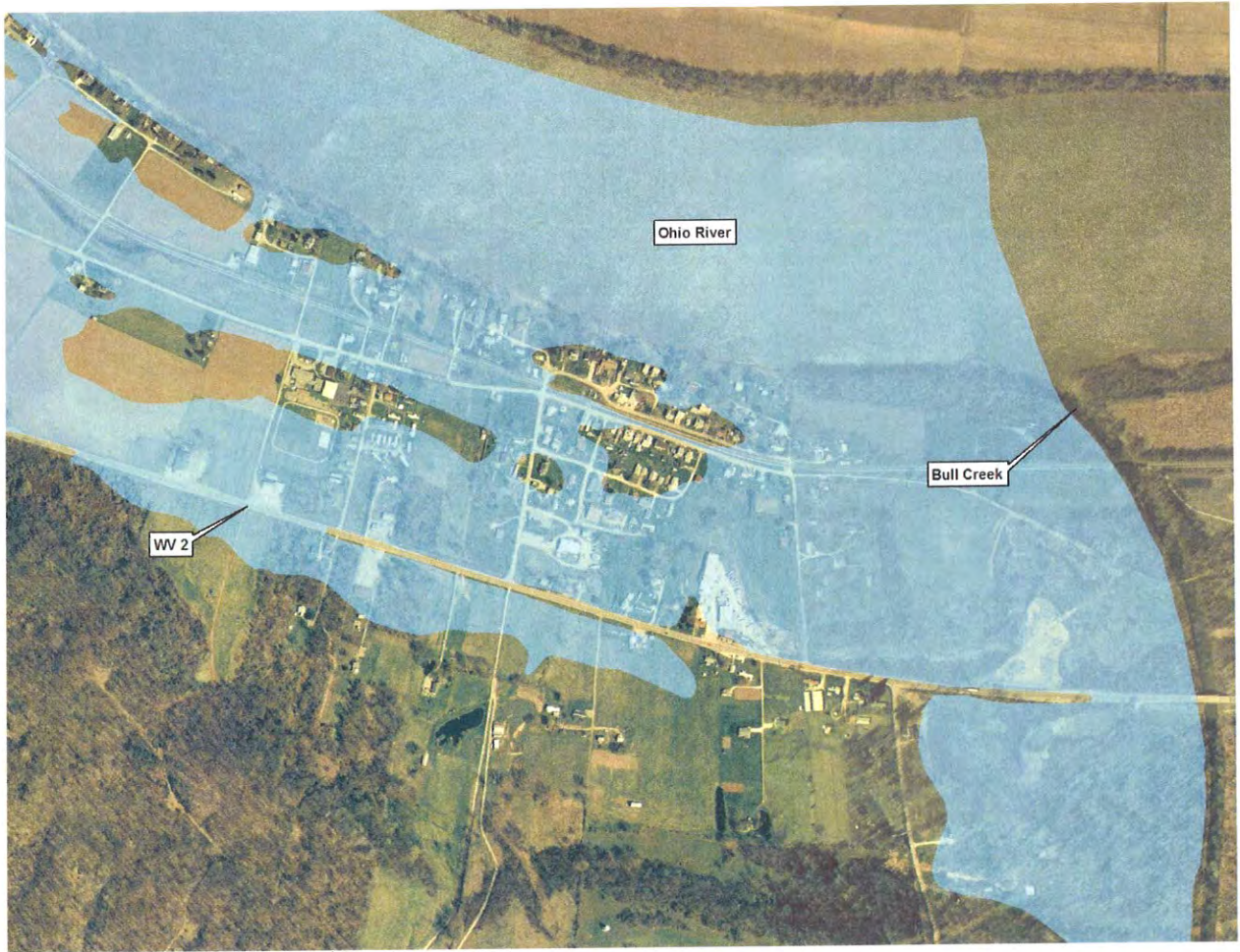


Plate 14.

Plate 14. Provides an area view of the community of Waverly in Wood County West Virginia.

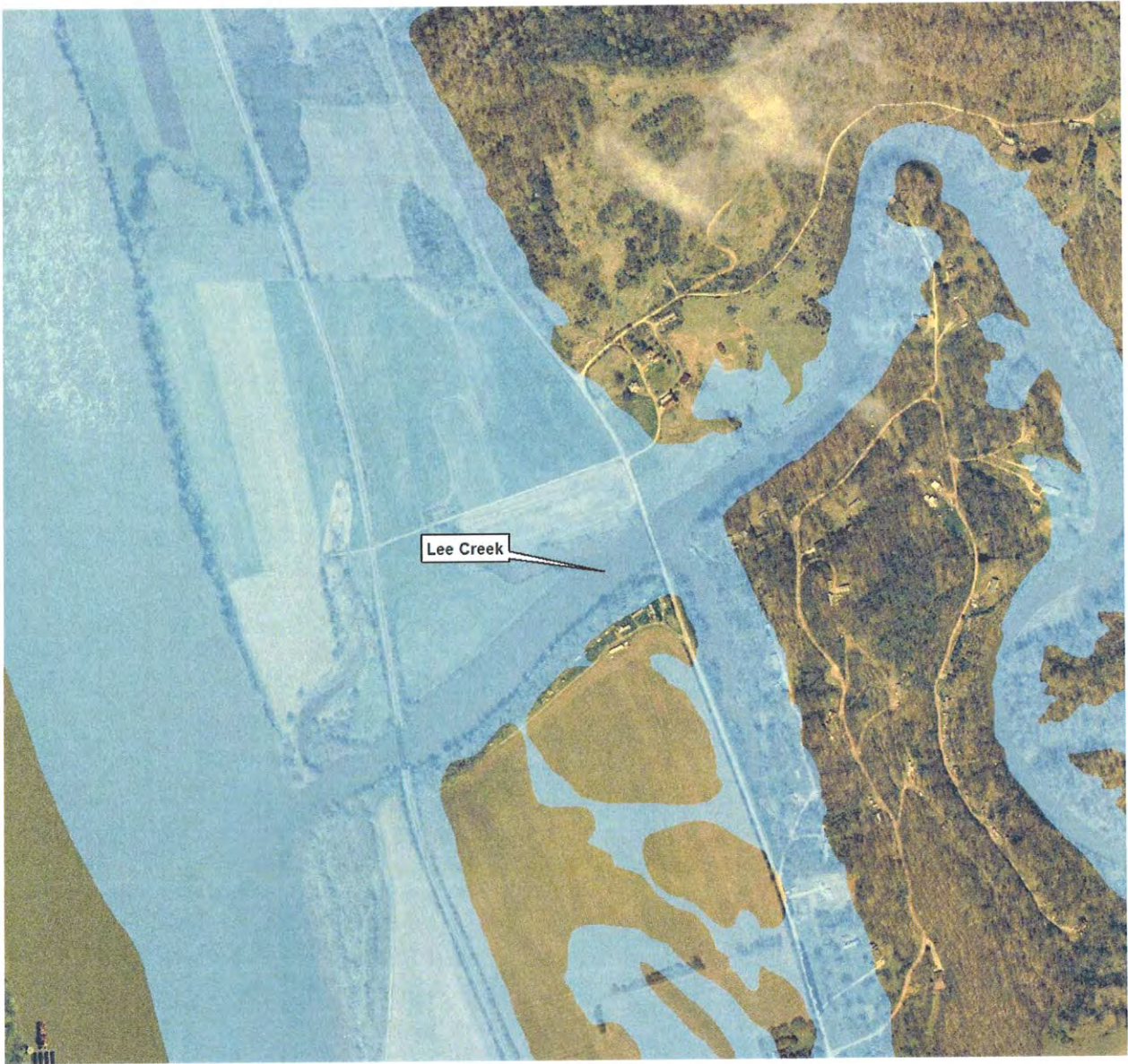


Plate 15.

Plate 15 provides an aerial view of Lee Creek above Belleville

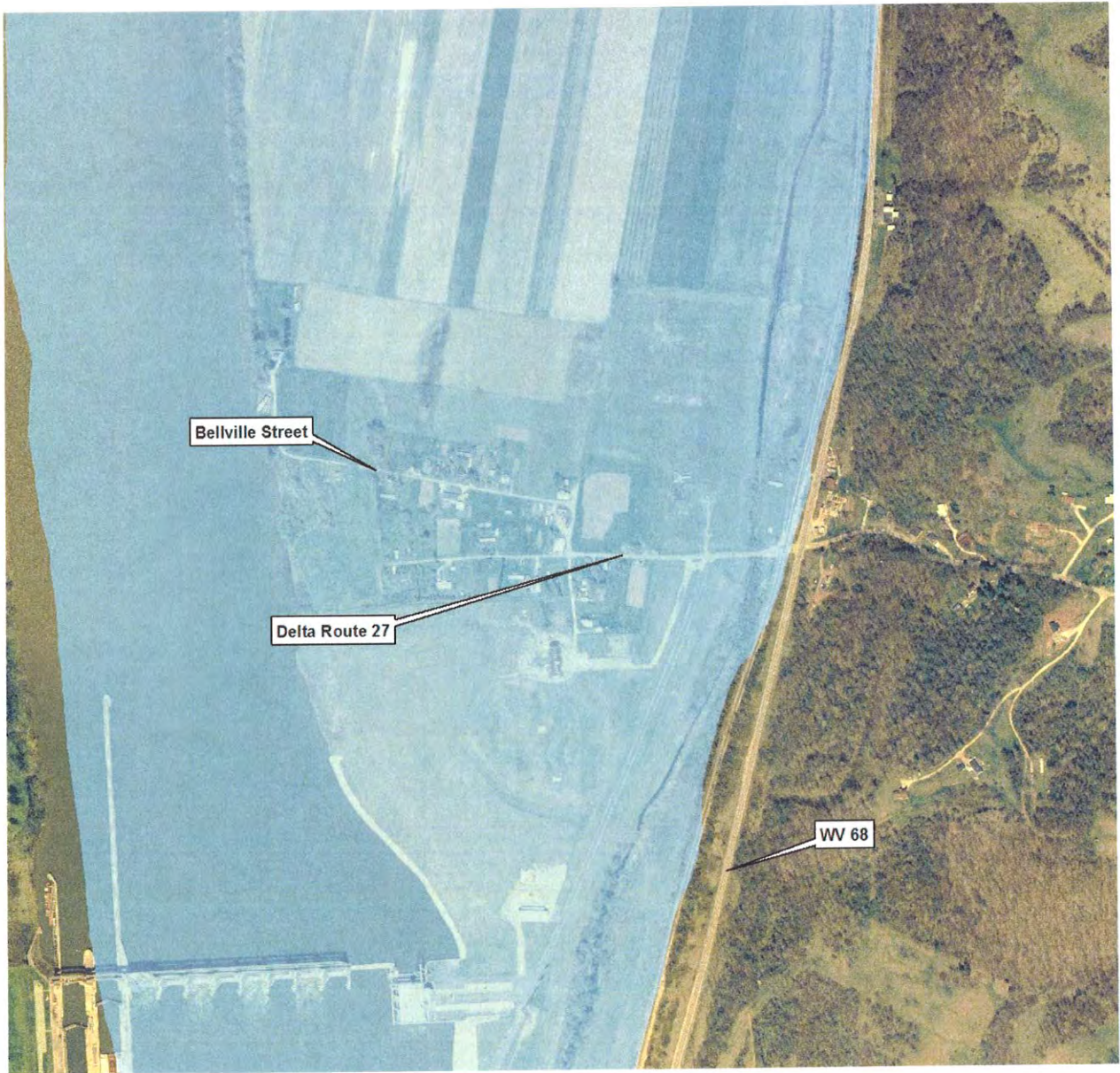


Plate 16.

Plate 16 shows Belleville and the Belleville Locks and Dam.

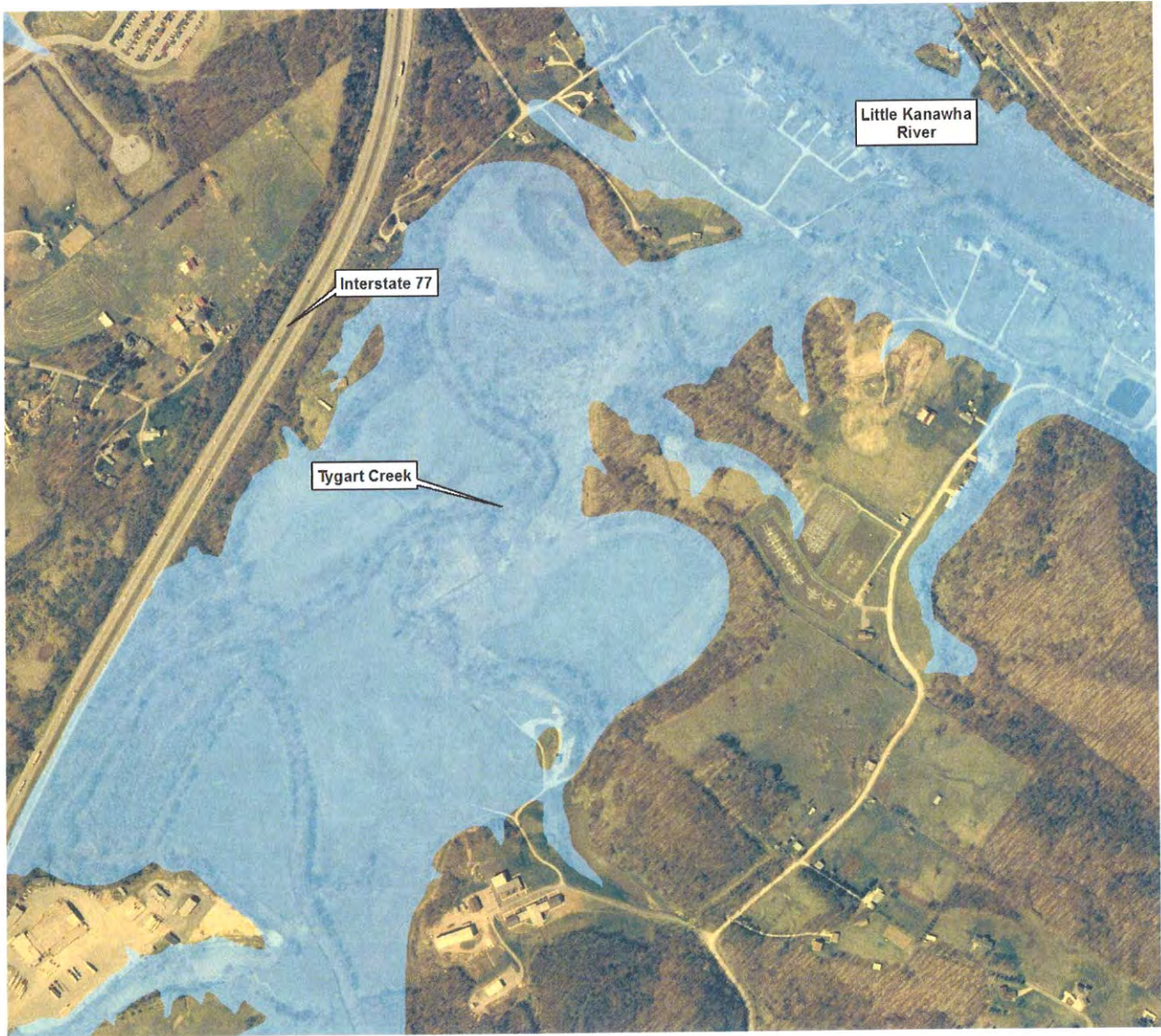


Plate 17.

Plate 17 shows Tygart Creek at its confluence with the Little Kanawha River.

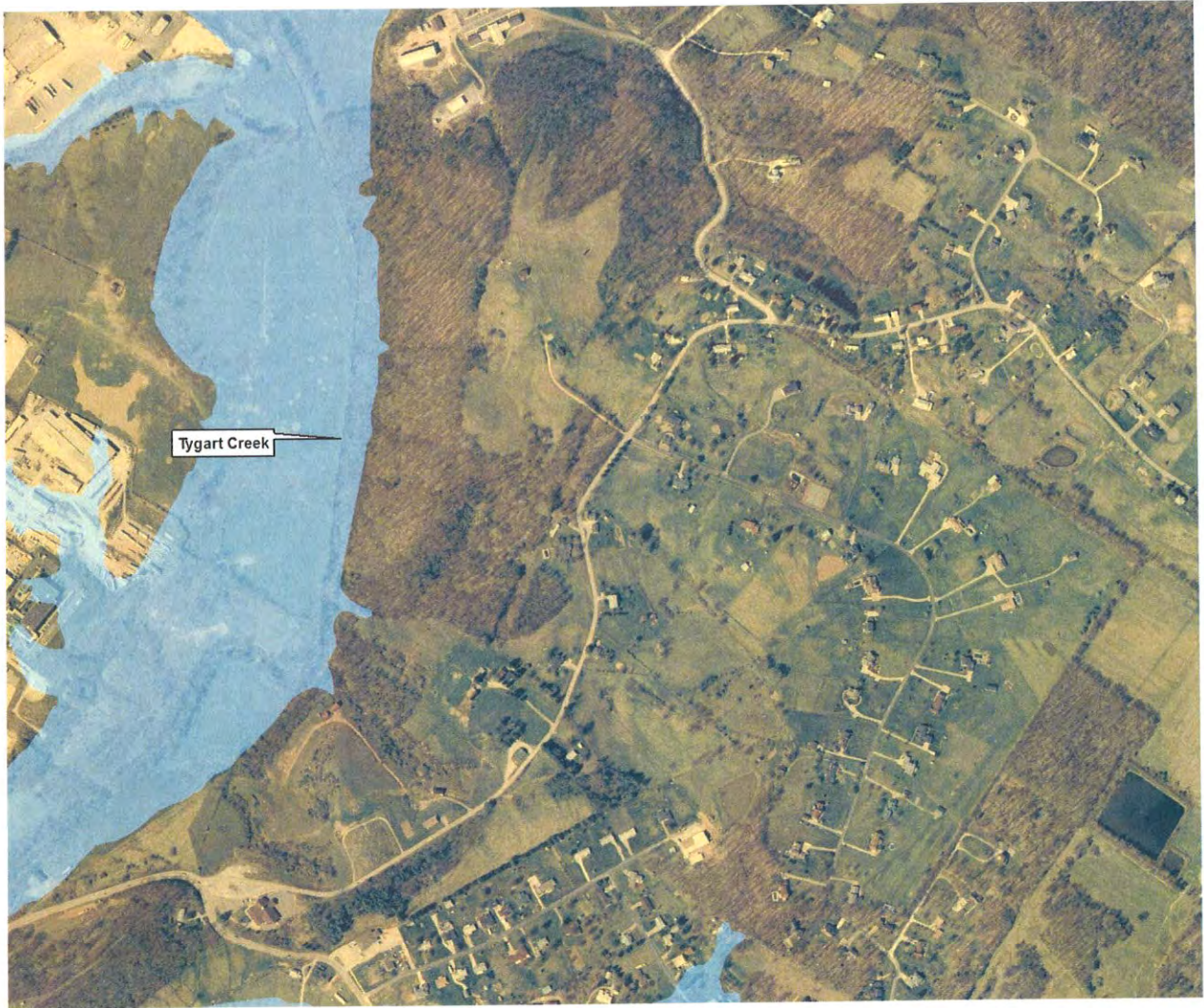


Plate 18.

Plate 18 shows Tygart Creek at Mineral Wells.



Plate 19.

Plate 19 shows Tygart Creek at Mineral Wells.



Plate 20.

Plate 20 provides a view of Happy Valley off old WV Rt. 47 at Cedar Grove. For purposes of this document the Happy Valley area will include both sides of the Little Kanawha River.

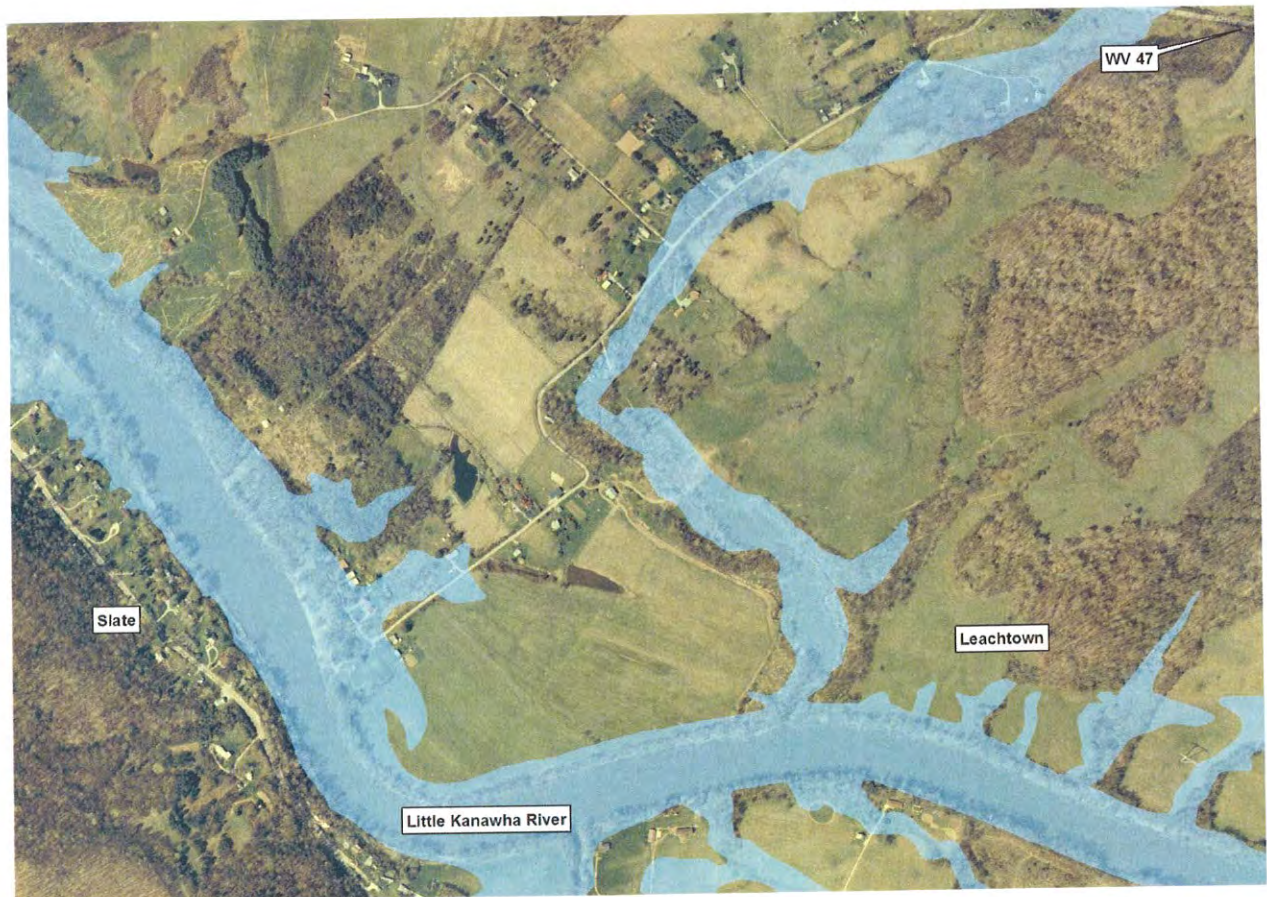
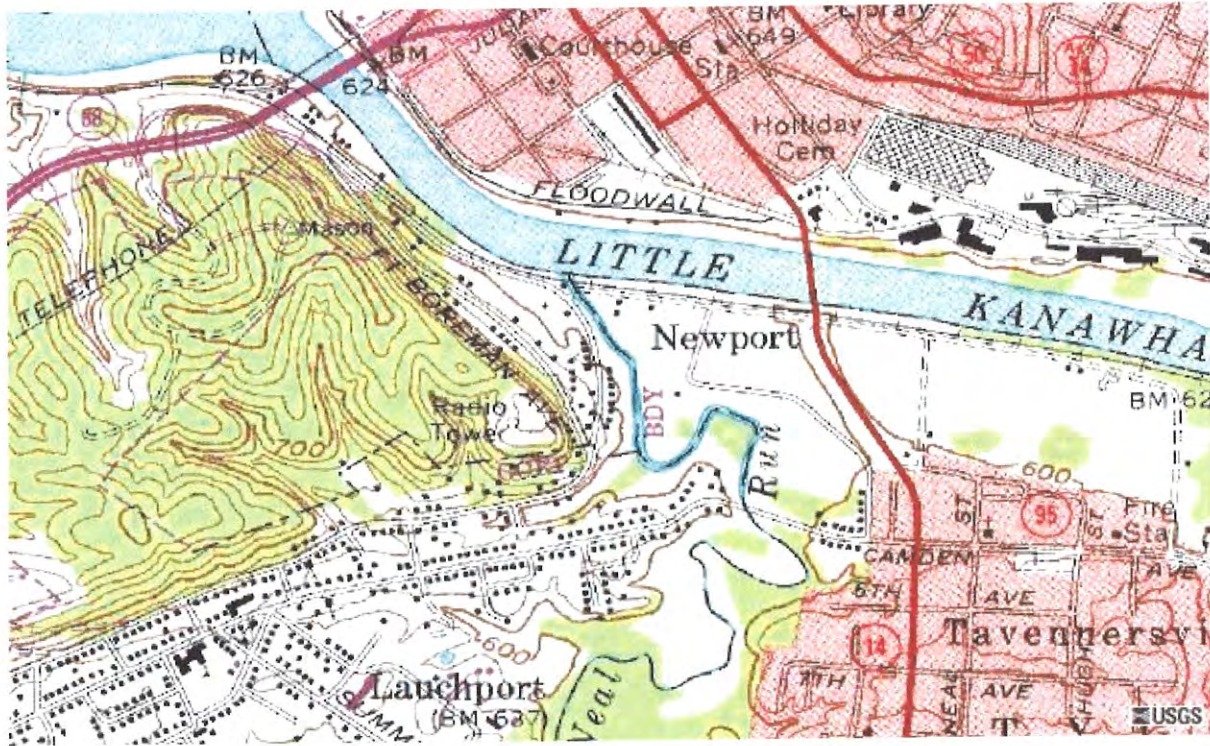


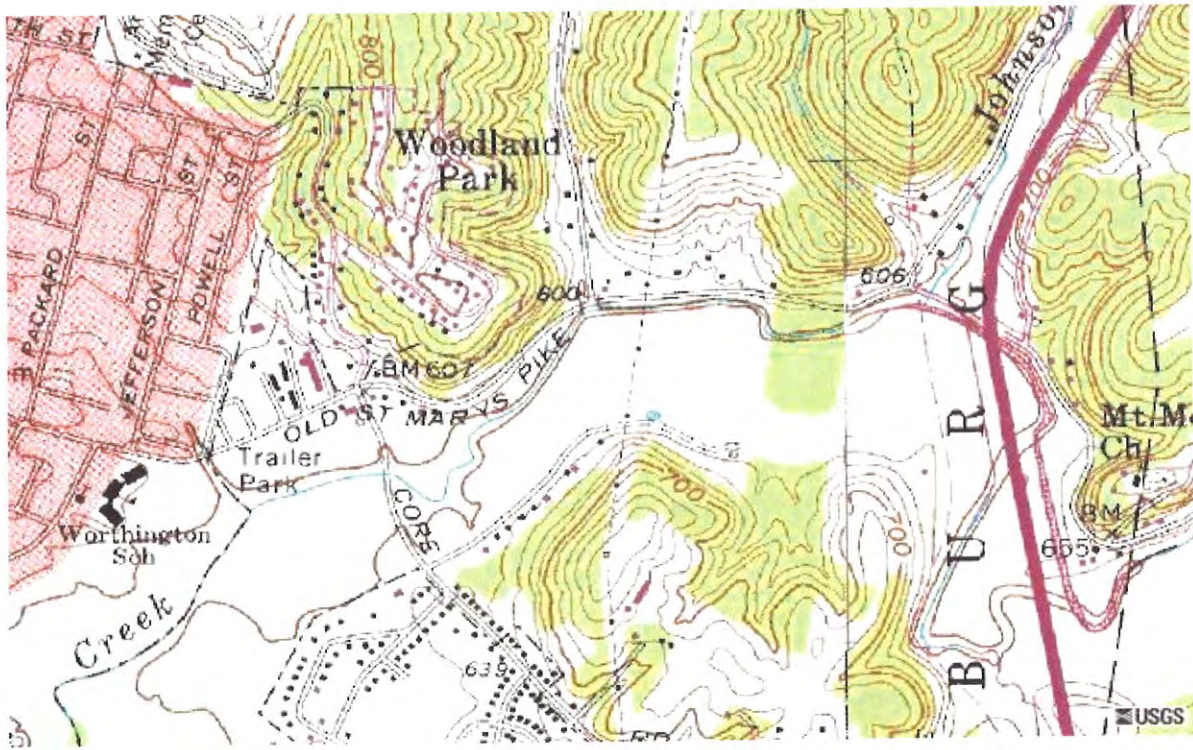
Plate 21.

Leachtown and Slate area along Little Kanawha River.



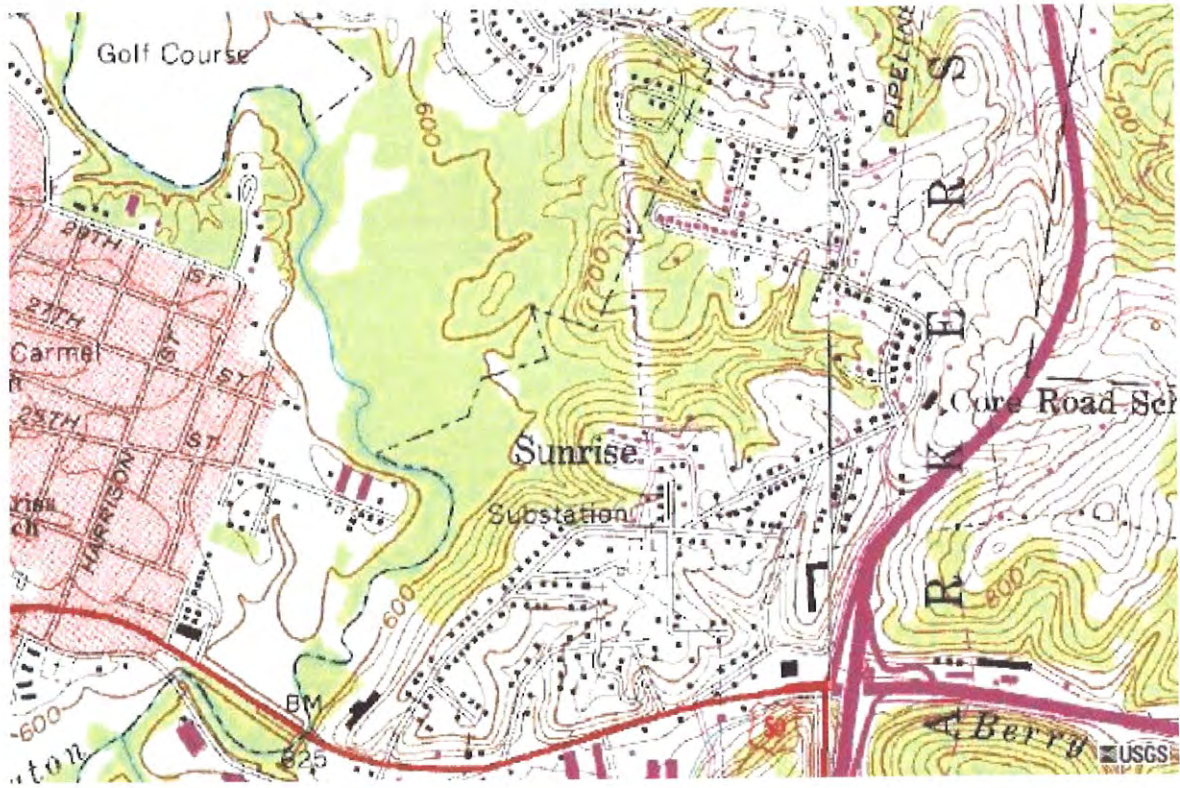
Topo 1.

This topo map provide a view of the West end of Camden Ave at Neal run.

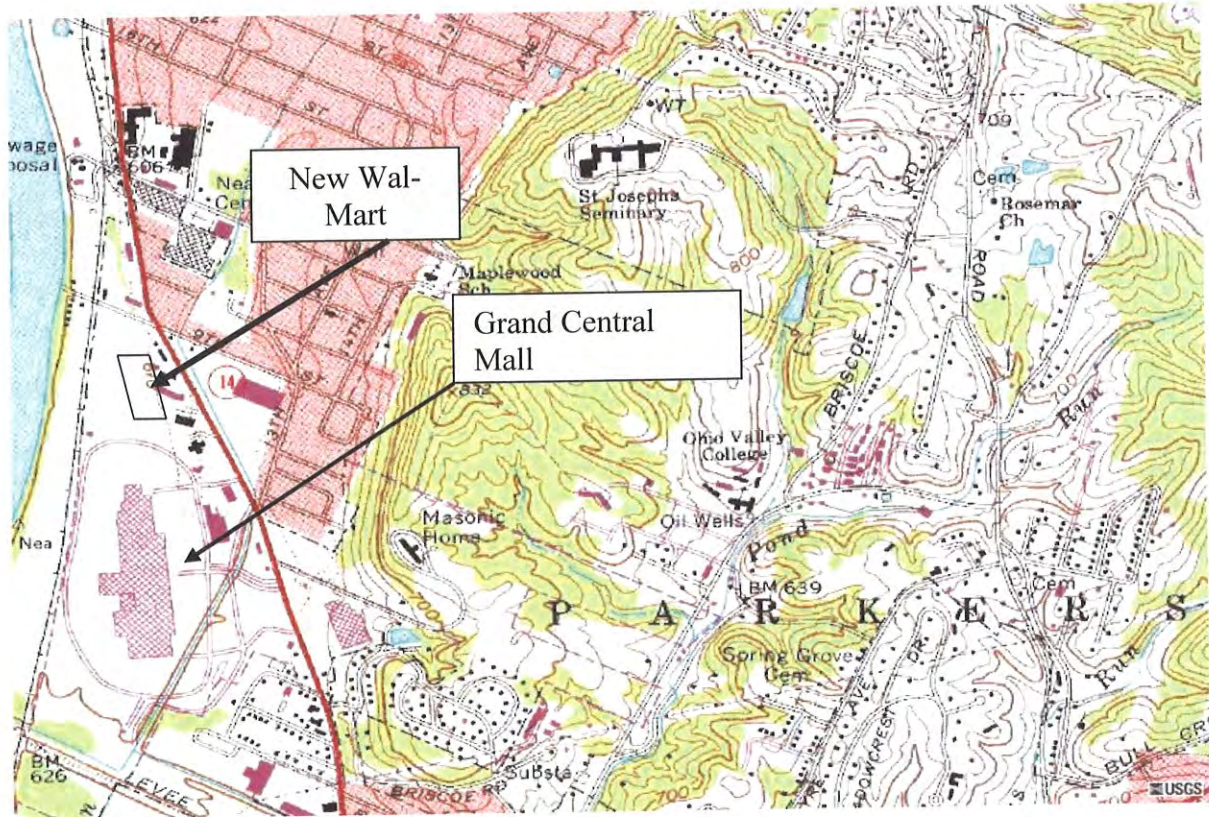


Topo 2.

This Topo provides a view of Worthington Creek. Note the BM elevation at the East of I-77 is El. 605.0.

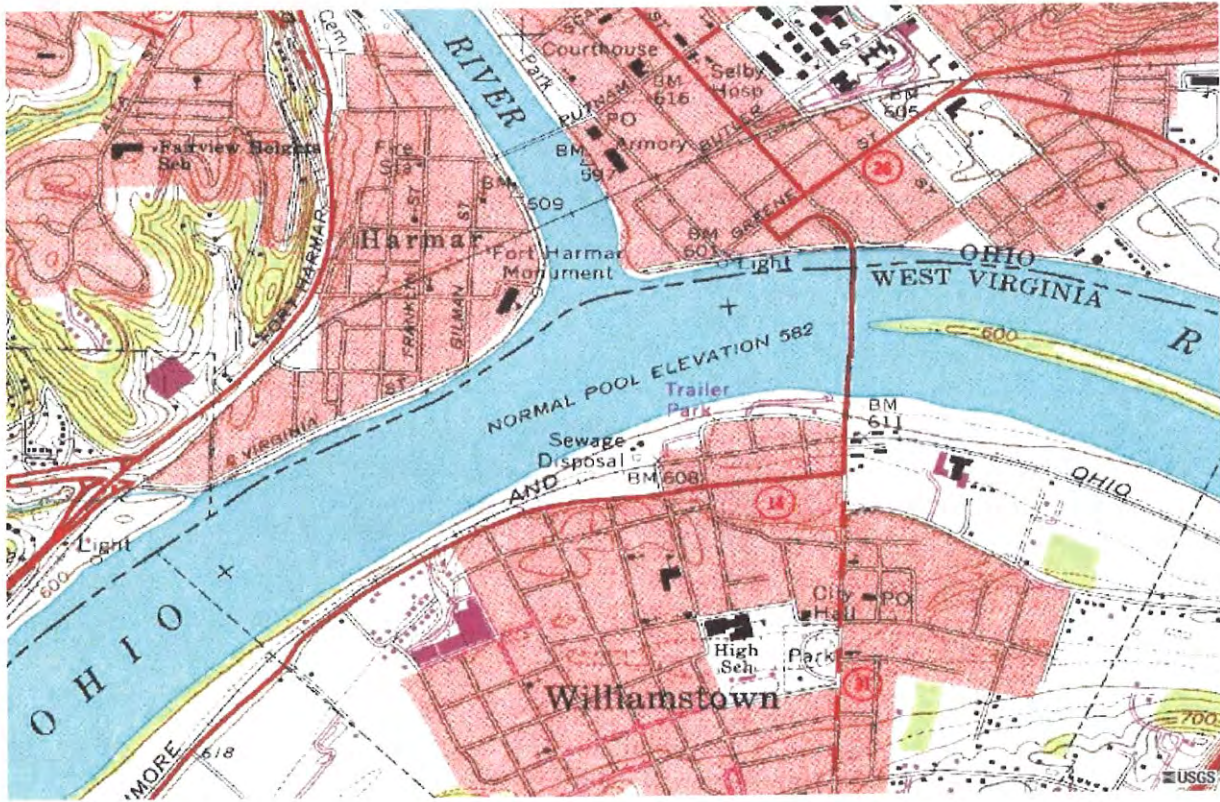


Topo 3.



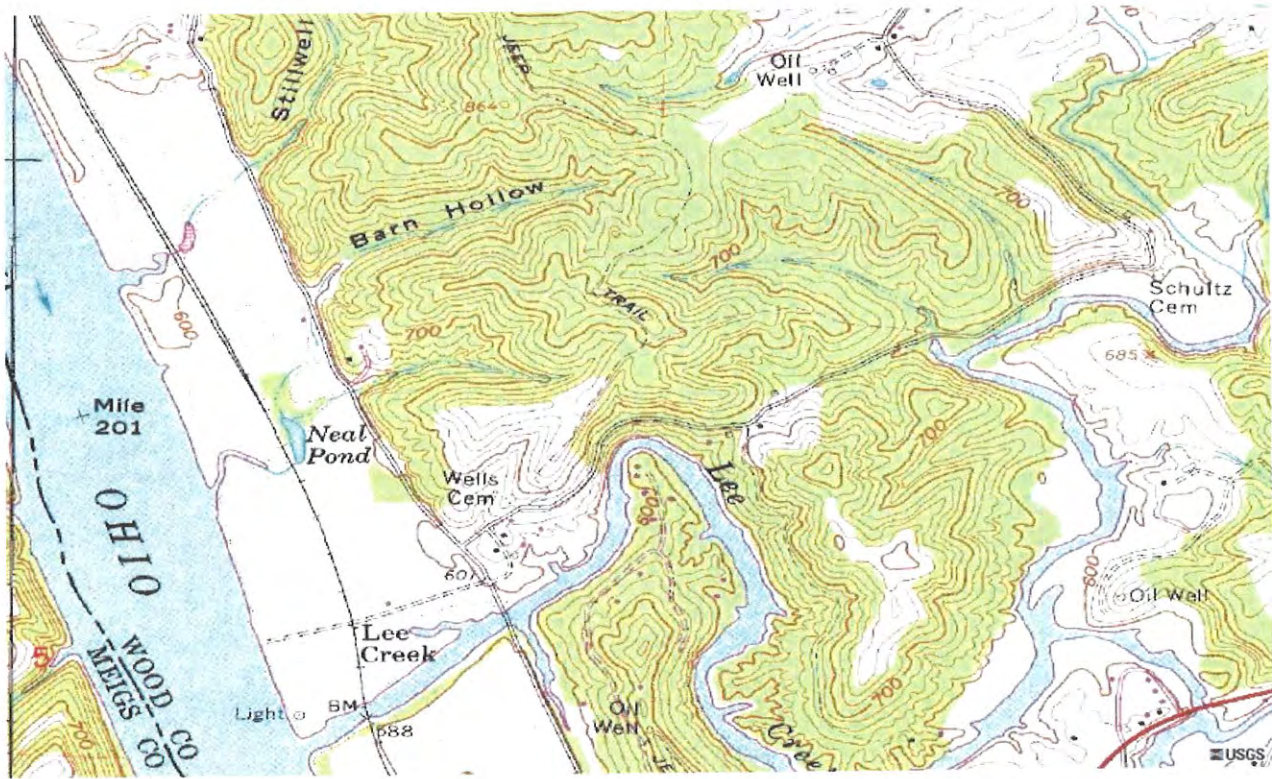
Topo 4.

Topo 4 provides a view of the down river portion of Vienna in the vicinity of The Grand Central Mall.

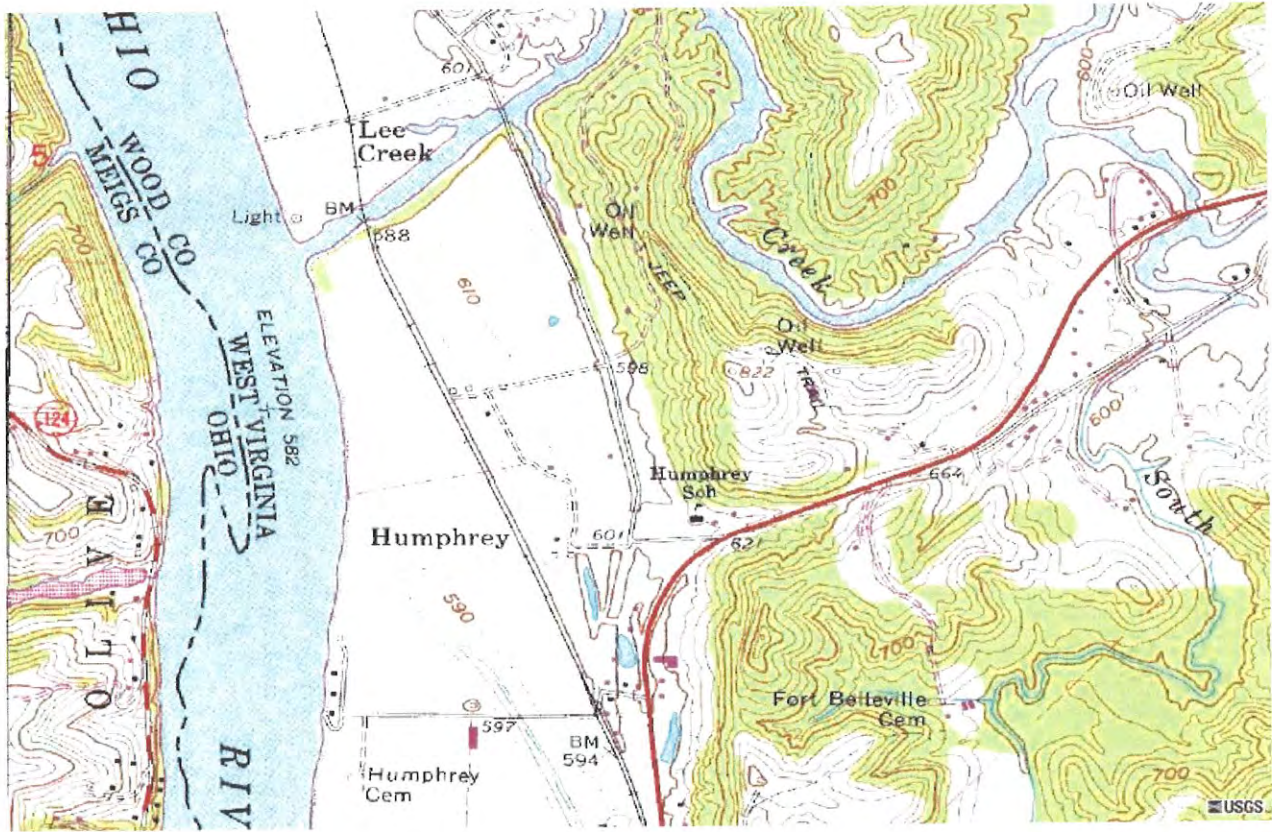


Topo 5.

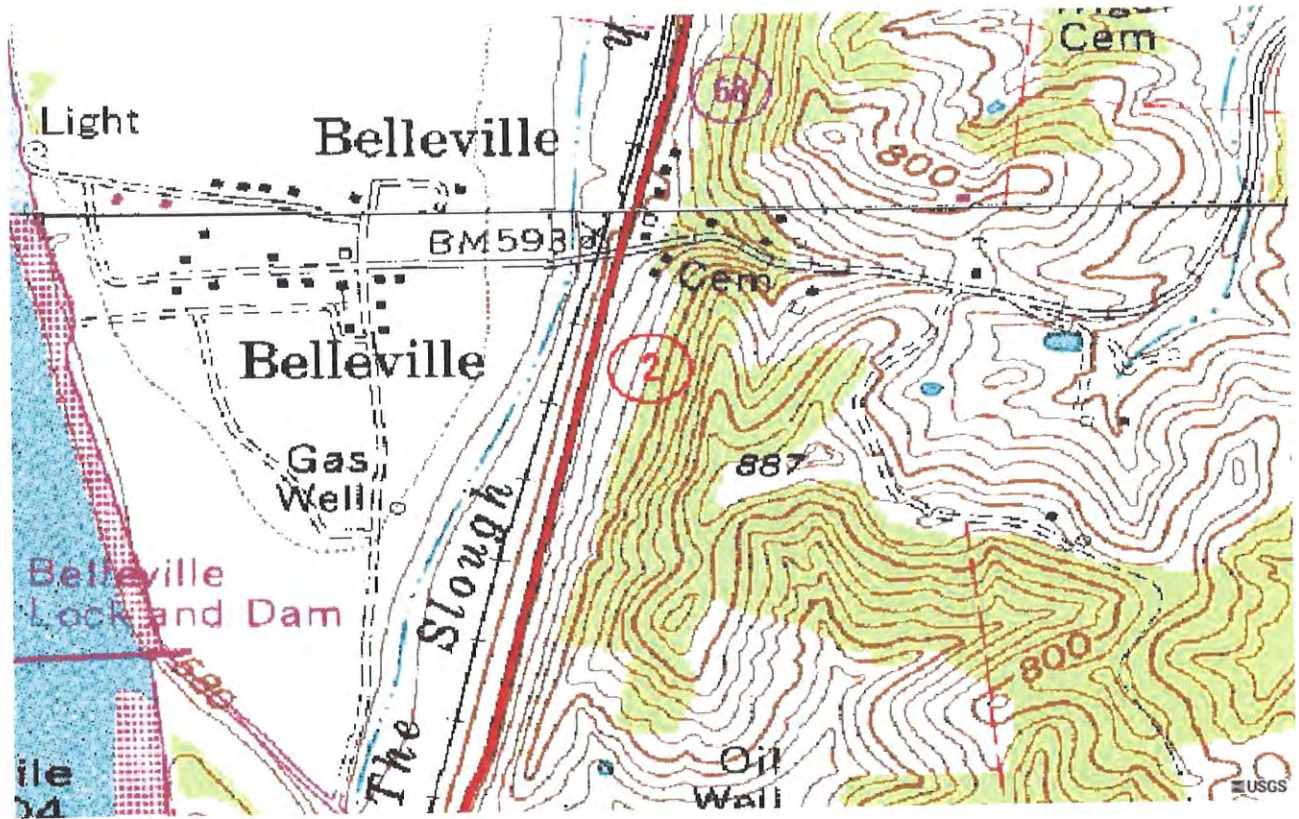
Topo 5 provides a view of "Downtown" Williamstown



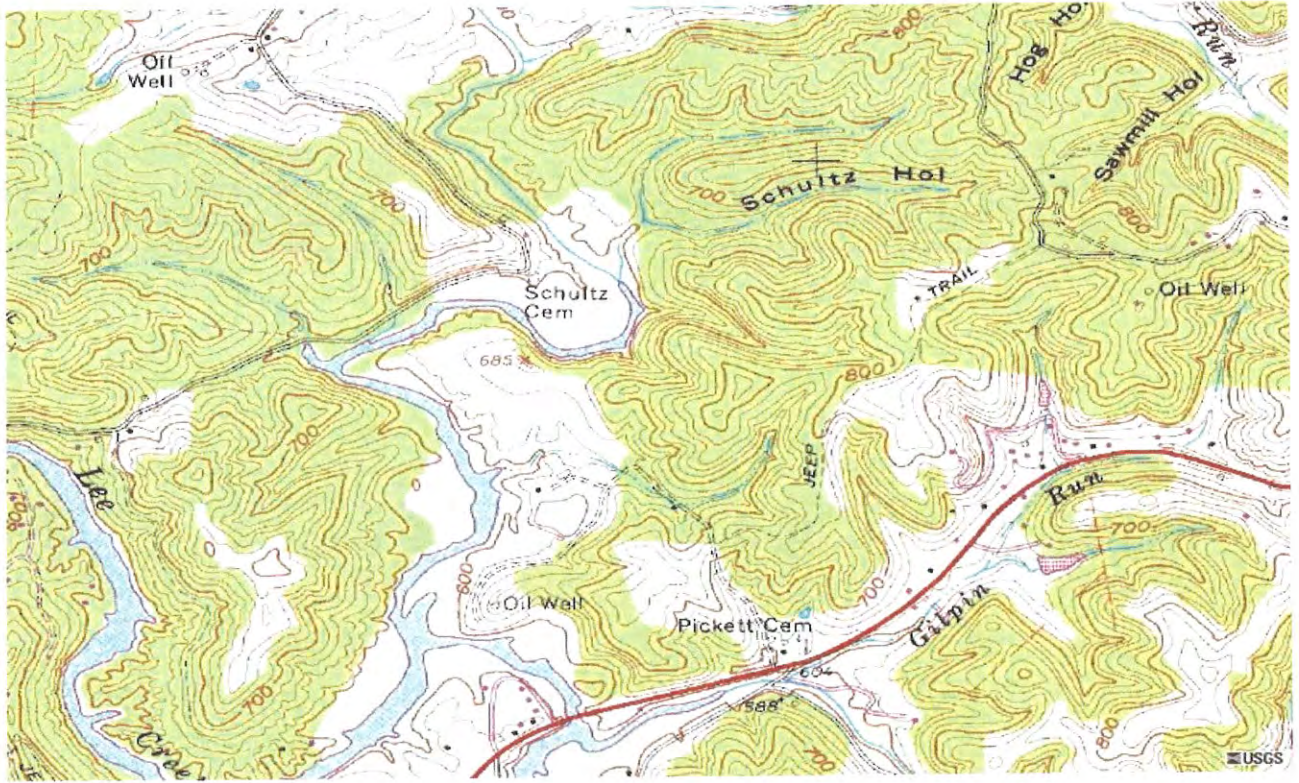
Topo 6.



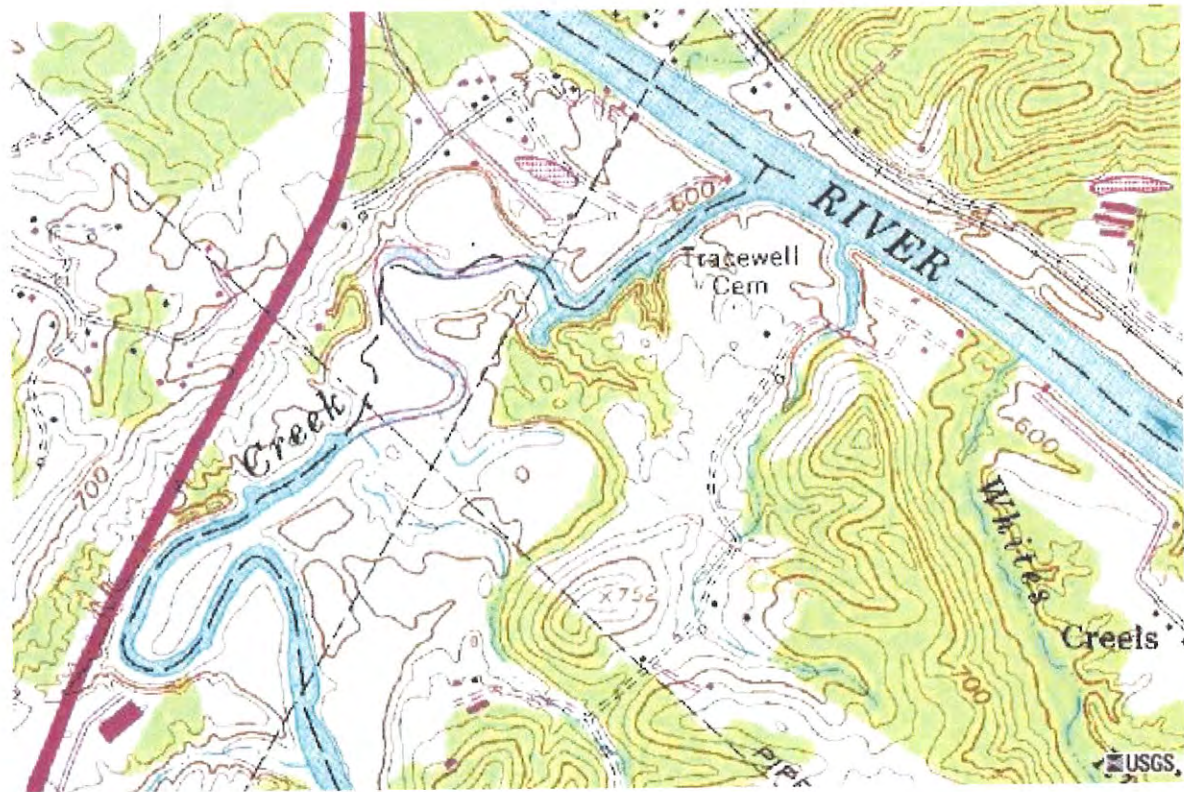
Topo 7.



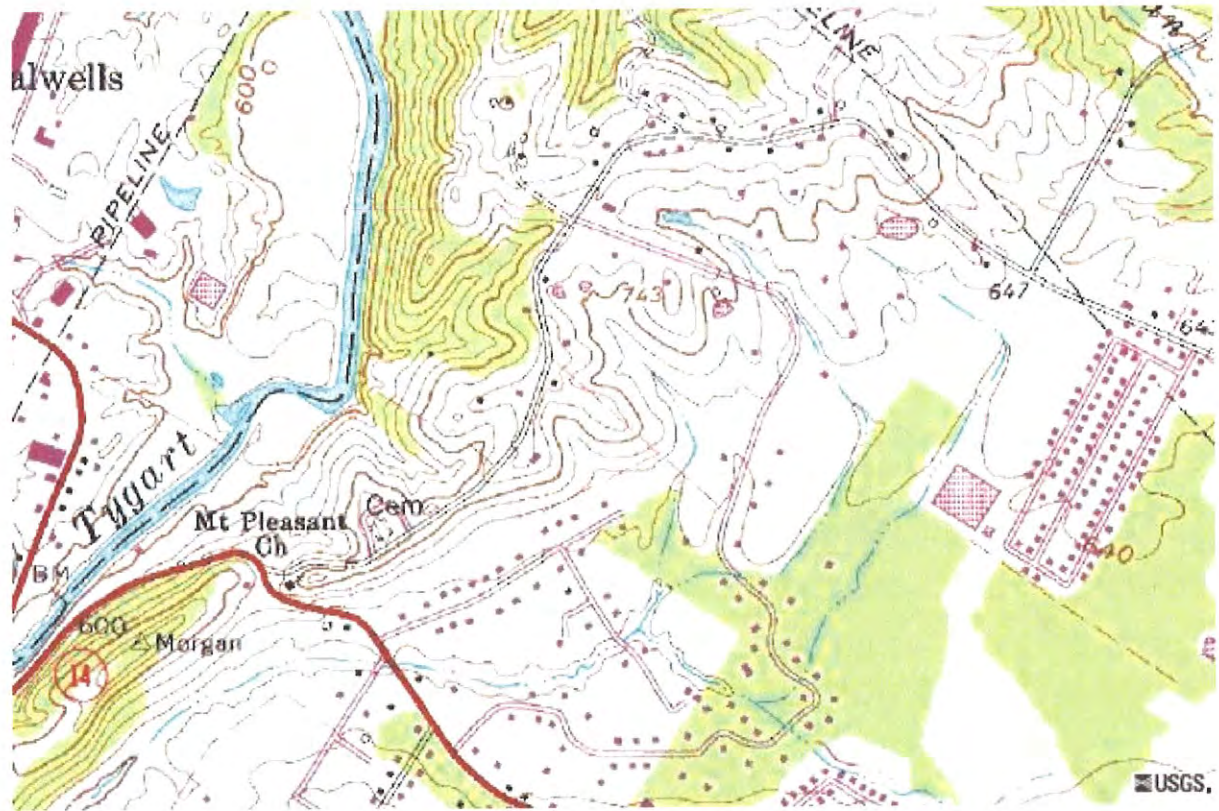
Topo 8.



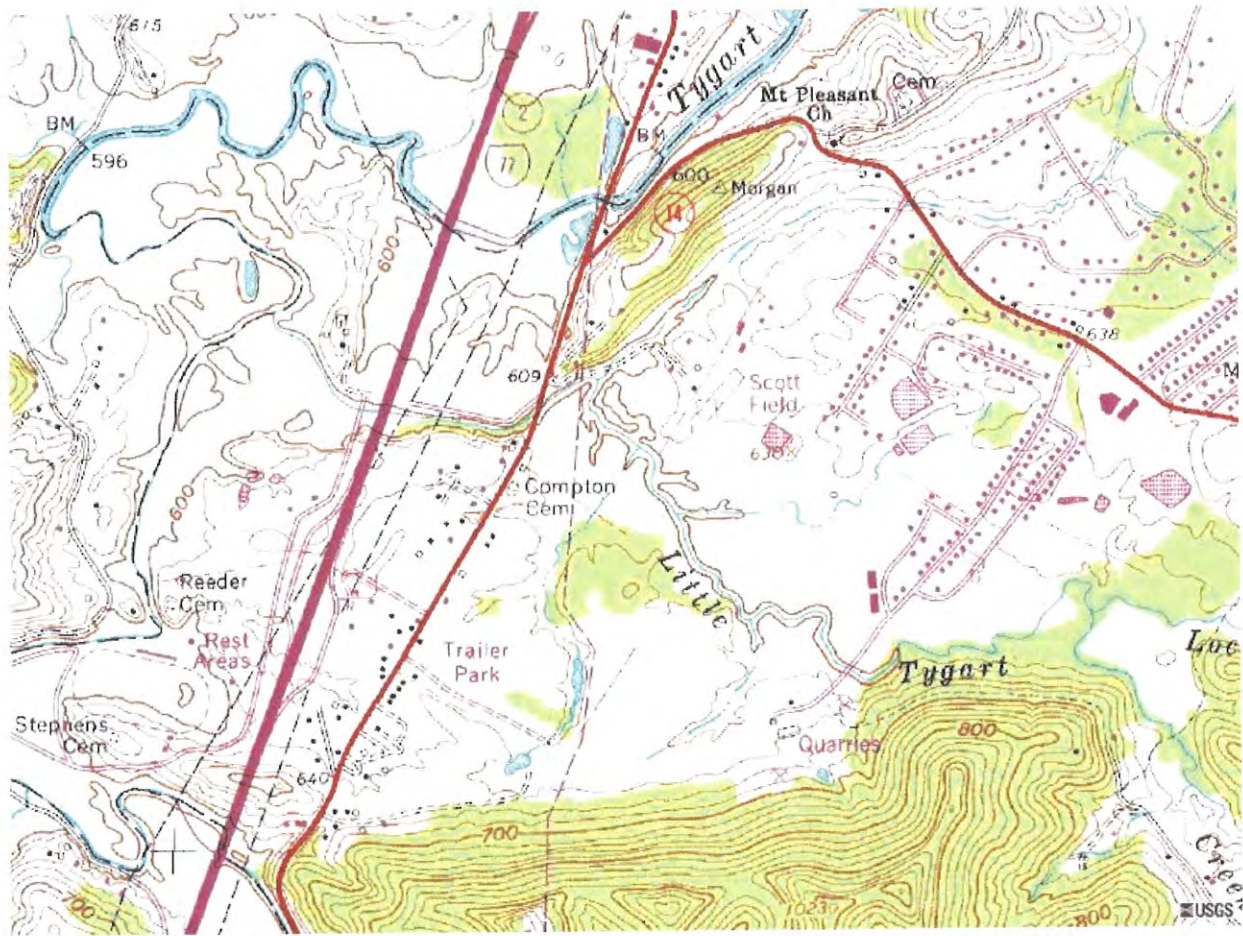
Topo 9.



Topo 10.

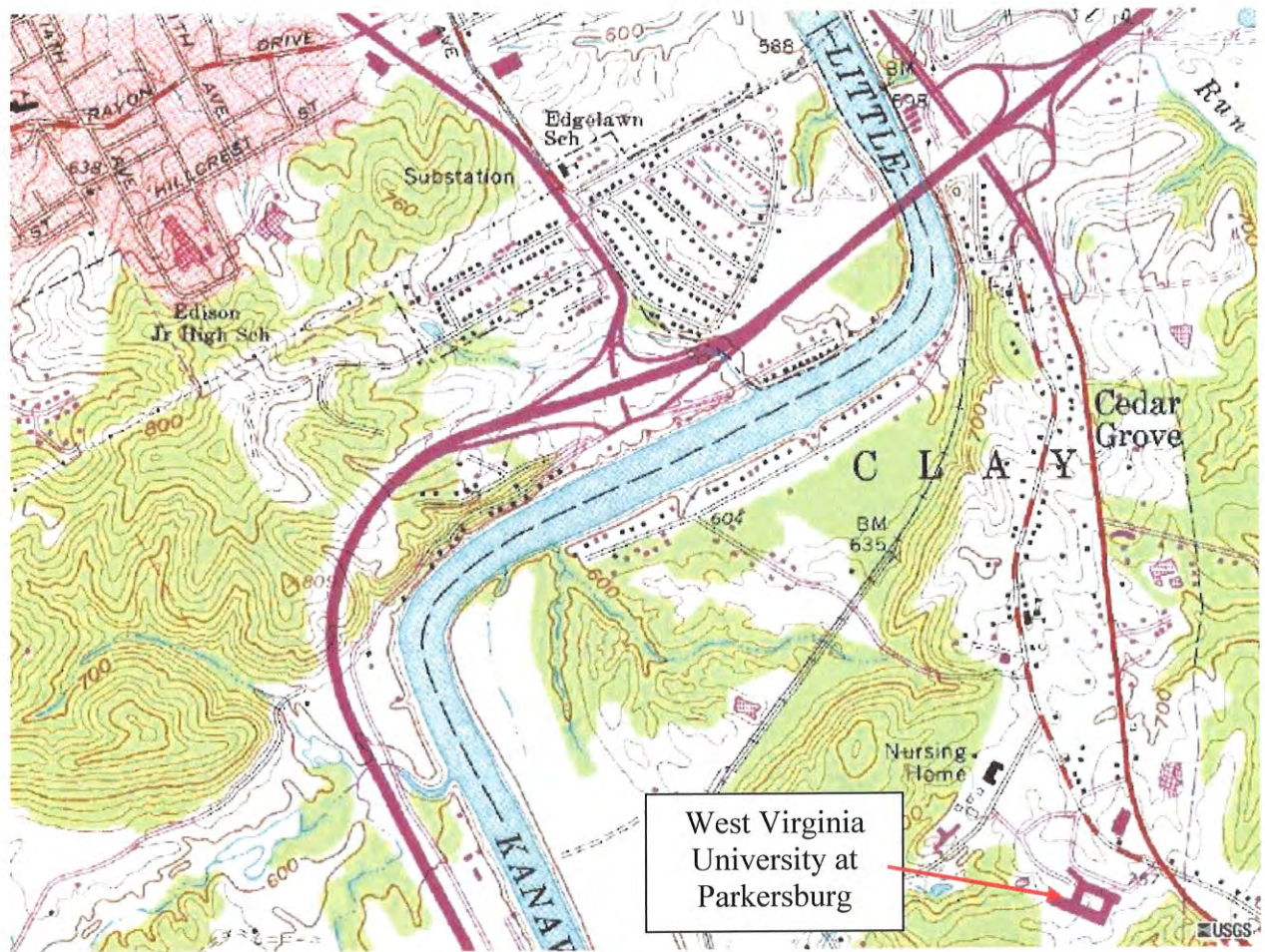


Topo 11.

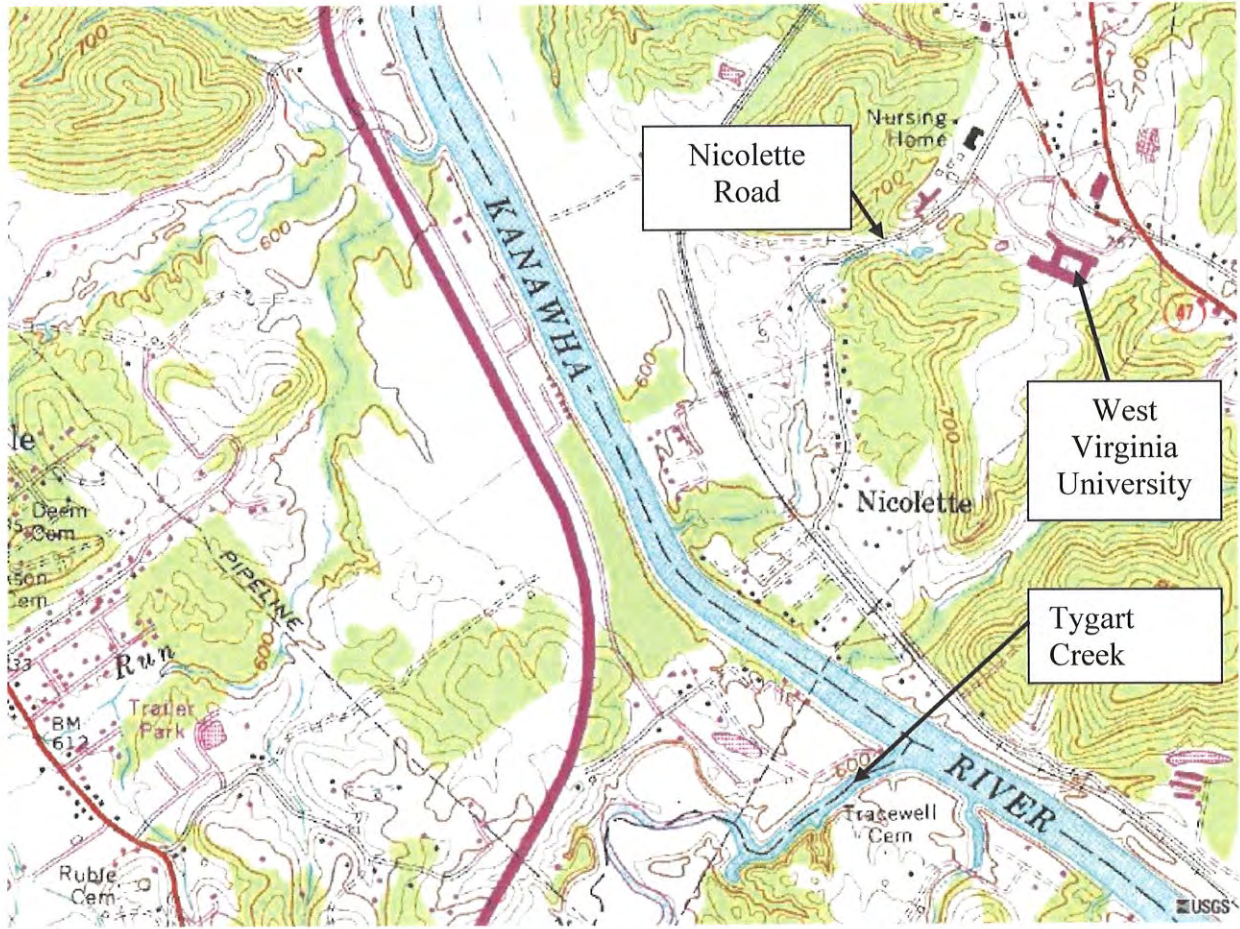


Topo 12.

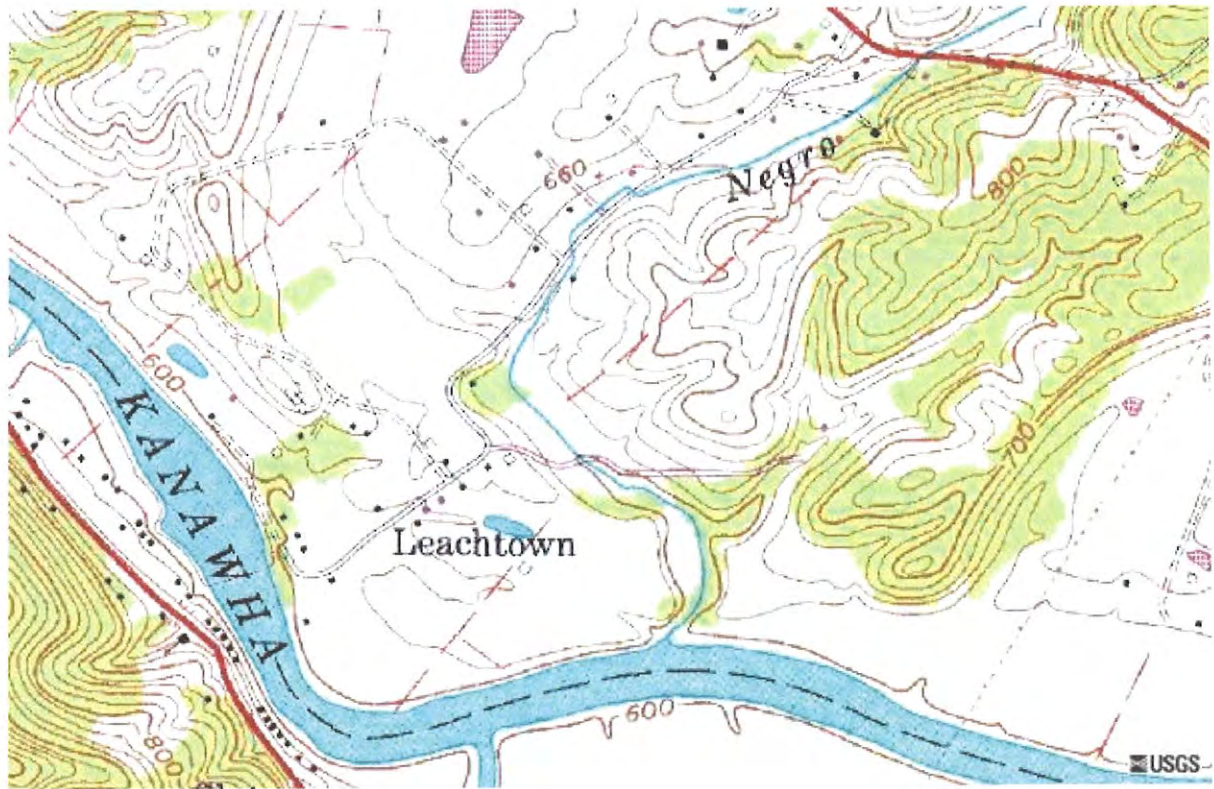
Topo 12 provides a view of I-77, WV Rt. 21, and WV Rt. 14 in the low lying areas of the community.



Topo 13.



Topo 14.



Topo 14. Topo 14 provides a view of the communities of Slate and Leachtown at the confluence of Negro Run and Slate Creek.