COMMONWEALTH OF VIRGINIA
DEPARTMENT OF MINES, MINERALS AND ENERGY
DIVISION OF MINERAL RESOURCES

PUBLICATION 143
GEOLOGIC MAP OF CLARKE, FREDERICK, PAGE, SHENANDOAH, AND WARREN COUNTIES VIRGINIA:
LORD FAIRFAX PLANNING DISTRICT

GEOLOGIC MAP OF CLARKE, FREDERICK, PAGE, SHENANDOAH, AND WARREN COUNTIES, VIRGINIA: LORD FAIRFAX PLANNING DISTRICT

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EXPLANATION

MISSISSIPPIAN

Pocono Formation (Mpo)

Sandstone, medium- to light-gray, medium- to coarse-grained with thin beds of black, carbonaceous shale. Basal contact mapped at the base of the lowest gray sandstone overlying reddish-brown shale or mudstone. Thickness: less than 200 feet preserved on Shockeys Knob, Frederick County.

Hampshire Formation (Dhs)

Shale, mudstone, siltstone, and sandstone. Shale, mudstone, and siltstone, dusky- to grayish-red, in part micaceous. Sandstone, medium- to brownish-gray, thin- to thick-bedded, cross laminated, in part micaceous and feldspathic; no reported fossils. Basal contact placed above the youngest fossiliferous sandstone and shale of the Chemung Formation overlain by redbeds. Thickness: 3600 feet in northern Frederick County (Butts and Edmundson, 1966); in central Frederick County and Shenandoah County the preserved thickness ranges from 550 to 750 feet.

Chemung Formation (Dch)

Sandstone, siltstone, and minor shale, interbedded. Sandstone, brownish-gray, medium- to coarse-grained, medium- to thick-bedded, in part cross laminated, conglomeratic beds common, sandstone most abundant in the upper part of the formation; many beds very fossiliferous. Siltstone, medium- to thick-bedded, dominant in lower part of unit. Shale, interbedded with sandstone and siltstone throughout section. Brownish-red shale common in upper half of section. Basal contact mapped at the base of fossiliferous sandstone underlain by micaceous shale and thin-bedded siltstone. Thickness ranges from 2500 feet in Frederick County to 1900 feet in Shenandoah County.

Brallier Formation (Db)

Shale, siltstone, and minor sandstone, interbedded, dark-gray to greenish-gray, weathers light-brownish-gray; grain size increases upward in section; sandstone more abundant in upper part of section, thin- to medium-bedded; sparsely fossiliferous. Base of the formation placed at the top of a thick sandstone unit of the underlying Mahantango Formation. Thickness ranges from 1000 to 1800 feet.

Mahantango Formation (Dma)

Mudstone, sandstone, and shale. Mudstone, dark- to olive-gray, hackly weathering, locally very fossiliferous, bedding obscure, spheroidal weathering common. Sandstone, medium-gray, fine-grained, medium- to very-thick-bedded, locally fossiliferous. Base gradational, mapped at the base of olive-gray beds overlying black, fissile shale. Near to southern end of the Supin Lick syncline the Mahantango can not be mapped as a separate unit and its equivalents are included in the Millboro Shale. Thickness ranges from 0 to 1100 feet; thickness in the Massanutten synclinorium about 900 feet.

DEVONIAN

Marcellus Shale, Millboro Shale, Tioga bentonite, and Needmore Formation, undivided (Dmn)

Marcellus Shale: shale, dark-gray to black, fissile, with interbeds of dark-gray argillaceous limestone or calcareous shale, locally very fossiliferous, fossils small. Thickness ranges from 350 feet in the Massanutten synclinorium to about 500 feet in northern Frederick County. **Millboro Shale:** At the southern end of the Supin Lick syncline the Marcellus Shale and Mahantango Formation are lithologically indistinguishable and are mapped as the Millboro Shale. **Tioga bentonite:** alternating gray, silty shale and siltstone; brown, biotite-bearing, calcareous tuff; and fissile, black shale. Thickness ranges from 100 feet in the Massanutten synclinorium to approximately 10 feet west of Little North Mountain. **Needmore Formation:** dark-greenish-gray, fossiliferous shale and calcareous mudstone with thin (3 – 8 feet), black shale at base. Thickness ranges from 500 feet in the Massanutten synclinorium to about 120 feet in other outcrop areas. Base of the map unit placed at top of gray sandstone of the Ridgeley Sandstone.

unconformity

Devonian and Silurian rocks, undivided (DS)

Ridgeley Sandstone: quartz arenite, light- to yellowish-gray, fine- to coarse-grained, locally conglomeratic, thin- to thick-bedded, generally cross laminated, calcareous cement, friable when weathered; fossiliferous, commonly contains molds of shells; thickness ranges from 0 locally in the Massanutten synclinorium to 200+ feet near Gore, Frederick County. **Shriver Chert:** greenish-gray blocky weathering chert in a clay matrix; only known exposure of this unit in quarry of Unimin Corporation near Gore; thickness unknown. **Helderberg Group:** limestone, light- to dark-gray, fine- to coarse-grained, laminated to thick-bedded, with black, nodular chert and white to light-gray, blocky chert, upper portion of the unit argillaceous, lower part of the unit sandy (locally a sandstone), base defined by a coarse-grained, gray limestone with large white to pink crinoid stems; locally very fossiliferous; thickness ranges from 50 to 100 feet. **Keyser Limestone:** medium- to dark-gray, fine- to coarse-grained limestone with abundant fossils, sandy near top, argillaceous near base, may contain laminated beds similar to the underlying Tonoloway Limestone in lower portion, sparse, small black chert nodules common; thickness ranges from 75 to 150 feet. **Tonoloway Limestone:** upper and lower members, medium- to dark-gray, fine-grained, laminated, mudcracked limestone with sparse fossils (ostracodes and rare brachiopods); middle member, medium-gray, fine- to medium-grained, abundant algal structures; thickness ranges from 50 feet in Fort Valley of Massanutten synclinorium to 400+ feet west of Great North Mountain. **Wills Creek Formation:** light- to medium-gray, fine- to coarse-grained, fossiliferous limestone; gray, calcareous siltstone; greenish-gray, calcareous mudstone; all lithologies weather to a yellowish-gray shaly residue; top generally marked by a 10-foot-thick gray sandstone (Tavenner Sandstone Member); thin beds of reddish shale occur near the base; thickness ranges from 130 feet in Massanutten synclinorium to 400 feet west of Great North Mountain. **Bloomsburg Formation:** dusky-red mudstone with interbedded fine- to medium-grained, thick-bedded, cross laminated, ferruginous sandstone and dusky-red, yellowish-brown weathering shale; several thin (2 - 8 feet thick) quartz arenite beds occur in the Massanutten synclinorium; thickness ranges from 400 feet in the Massanutten synclinorium to less than 50 feet west of Orkney Springs. **McKenzie Formation:** medium-gray, yellowish weathering, calcareous shale, locally very fossiliferous; thickness ranges from 0 to 75 feet in the Massanutten synclinorium to about 200 feet west of Little North Mountain.

SILURIAN

Keefer Sandstone and Rose Hill Formation, undivided (Skr)

Keefer Sandstone: sandstone, light-gray, fine- to coarse-grained, locally conglomeratic, cross laminated, quartz cement or overgrowths, thin green to purple shale beds near base, sparsely fossiliferous (*Skolithos, Arthrophycus*); thickness ranges from 30 to 70 feet, thickens in a southwestern direction. **Rose Hill Formation:** (Clinton Formation of earlier reports)**:** Sandstone and shale. Sandstone, light-gray to dusky-red, fine- to coarse-grained, cross laminated; gray sandstone identical to the overlying Keefer and the underlying Tuscarora, very resistant to weathering, makes ledges. Shale, green, yellowish-brown, and dusky-red, commonly contains limonitic lenses from the weathering of thin limestone beds. Fossiliferous. Thickness ranges from 350 feet in Frederick County to 500 feet in western Shenandoah County.

Tuscarora Formation (Stu)

Sandstone and quartzite. Sandstone, light-gray, weathers rusty brown, fine- to coarse-grained, commonly conglomeratic, clasts 0.25 to 0.5 inch, thin- to thick-bedded, cross laminated, quartz cement, matrix less than 1 %. Quartzite, light-gray, fine- to medium-grained, cemented by overgrowths, thick-bedded. Thin, red, green, or purple shale near base and top of unit. Sandstone generally overlain by quartzite. Contacts gradational, basal contact mapped at the base of the oldest thick sandstone bed, upper contact mapped at the first thick shale sequence overlying a thick quartzite. Thickness ranges from 150 to 300 feet with a thickness of 500 feet reported by Butts and Edmundson (1966) in Frederick County.

Juniata Formation (Oj)

Sandstone, dusky-red, fine- to medium-grained, cross laminated, in part feldspathic. Sandstone, light-gray to white, fine- to medium-grained, thick-bedded, cross laminated, base often contains red shale clasts. Shale and mudstone, dusky-red, weathers lumpy. Thickness ranges from 50 to 300 feet, thicker in western Shenandoah County.

Oswego Formation (Oos)

Sandstone, greenish-gray, fine- to coarse-grained, conglomeratic with chert, quartz, and lithic clasts, medium- to thick-bedded; minor interbeds of olive-gray shale. Thickness ranges from 200 to 300 feet.

ORDOVICIAN

Martinsburg Formation (Omb)

Upper 100 to 200 feet: brown, medium- to coarse-grained sandstone, lower portion fossiliferous. Middle 3000 to 4500 feet: olive-green, silty shale, dark-gray siltstone, and medium- to coarse-grained sandstone, locally contains pebbles. Lower 400 to 900 feet, **Stickley Run Member** (Epstein and others, 1995): medium-gray to grayish-black, very-fine-grained, very-thin- to thin-bedded, argillaceous limestone with interbedded medium- to dark-gray, calcareous shale. Thickness ranges from an estimated maximum of 5200 feet in the Massanutten synclinorium to about 2000 feet in the western outcrop areas.

Edinburg Formation, Lincolnshire Limestone, and New Market Limestone, undivided (Oein)

Edinburg Formation: Black, fine-grained to aphanic limestone with black shale partings, pyrite common (Liberty Hall lithofacies of Cooper and Cooper, 1946), and medium- to light-gray, fine- to coarse-grained, nodular limestone with thin black shale partings (Lantz Mill lithofacies of Cooper and Cooper, 1946). Top of the Edinburg marked by a 30- to 60-foot thick very-fine-grained, medium-gray, thick-bedded limestone (St. Luke Member). East of Little North Mountain a greenish-gray siltstone occurs about 15 feet above the base of the Edinburg (Tumbling Run Siltstone Member). K-bentonites, some with basal chert or silicified zones, common, particularly near the base and top. Fossiliferous. Thickness ranges from 425 to 500 feet. **Lincolnshire Limestone:** Limestone, light- to very-dark-gray, fine- to coarse-grained, medium to very-thick-bedded; dark colored limestone with black chert nodules, generally parallel to bedding; light colored, coarse-grained limestone, generally at the top of the formation, composed of fossil fragments (Murat Limestone Member). Upper contact gradational with the overlying Edinburg; lower contact unconformable with the underlying New Market. Thickness ranges from 25 to 250 feet. **Unconformity. New Market Limestone:** lower unit: medium- to dark-gray, fine-grained, thin-bedded, argillaceous, in part dolomitic, bioturbated limestone, carbonate pebble conglomerate common at base; upper unit: medium-gray, aphanic, thick-bedded limestone with scattered, rhomboid-shaped sparry calcite crystals; high-calcium limestone quarried in the area. Contacts unconformable. Thickness ranges from 0 to 200+ feet.

unconformity

Beekmantown Group

Pinesburg Station Dolomite and Rockdale Run Formation, undivided (Ob)

Pinesburg Station: Dolostone, medium- to light gray, weathers very-light-gray, fine-grained, medium- to thick-bedded, weathered surfaces exhibit a "butcher-block" structure; sparse fossils. Limestone, medium-gray, fine-grained, near base of unit. Thickness ranges from 0 to 875 feet. Present north of Strasburg in the western outcrop belts and north of central Clarke County in the eastern belt. Absence may be explained by pre-New Market erosion, nondeposition, or lateral facies change. **Rockdale Run Formation:** Medium-gray, fine-grained, fossiliferous limestone; light- to medium-gray, fine-grained, laminated dolomitic limestone and dolostone with mottled beds; thin lenses of calcareous sandstone occur in Warren County; thin lenses of gray chert common near the base of the formation. Upper contact unconformable; lower contact placed at the oldest thick bedded dolomite overlying dark-gray limestone of the Stonehenge Limestone. Thickness ranges from 1500 feet where the Pinesburg Station is present to 2400 feet where the Pinesburg Station is absent.

Stonehenge Limestone (Ost)

Upper Stonehenge: medium- to dark-gray and black, fine- to medium-grained limestone, thin beds of macerated fossil debris common. Thickness ranges from 400 to 500 feet. **Stoufferstown Member** (lower Stonehenge): dark-gray to black, fine-grained limestone with thin, shale-like partings; partings crinkly because of cleavage; and thin beds of coarse-grained, bioclastic limestone. Thickness: 50 to 150 feet.

Conococheague Formation (OCco)

Upper Conococheague: light- to dark-gray, fine-grained, laminated limestone, dolomitic limestone, and dolostone with flat-pebble conglomerate beds. The following lithologies occur as erosional-surface-bounded packages (from base to top): oolitic, coarse-grained calcarenite; stromatolitic limestone; ribbon-banded limestone and dolostone; interbedded fine-grained limestone and dolostone; and dolostone, commonly containing mudcracks; sandstone beds in uppermost part of formation, some sandstone beds cross laminated. **Big Spring Station Member** (lower 200 to 500 feet of Conococheague): light-gray, fine-grained dolomone; medium- to dark-gray, fine-grained laminated limestone and dolomitic limestone; gray, brown-weathering, coarse-grained sandstone and dolomitic sandstone; beds of flat-pebble conglomerate in dolostone. Thickness ranges from 2200 to 2600 feet.

Elbrook Formation (Ce)

Bulk of formation: dark- to medium-gray, fine- to medium-grained limestone, dolomitic limestone, dolostone, and dolomitic shale. Lithologies commonly occur as erosion-surface-bounded sequences of algal limestone overlain by laminated dolostone. Ground surface frequently covered with decalcified, ochreous, shale-like chips. Thickness ranges from 2000 to 2500 feet. Lower 300 to 400 feet: green to greenish-gray, fine-grained dolostone, dolomitic limestone, and shale; brown-weathering calcareous siltstone marks the top of unit.

Waynesboro Formation (Cwb)

Upper 300 feet: dusky-red to olive-gray, fine- to medium-grained sandstone and dusky-red to gray shale. Middle 400 feet: medium- to dark-gray, saccharoidal dolostone and fine-grained limestone. Lower 500 feet: dusky-red, olive-gray, and dark-gray shale and dusky-red to brownish-gray, fine- to medium-grained sandstone. Thickness approximately 1200 feet.

CAMBRIAN

Tomstown Dolomite (Ct)

Upper unit: light- to dark-gray, fine- to coarse-grained, medium- to thick-bedded, locally laminated dolostone; white chert rosettes and nodules in upper 50 feet; thickness about 600 feet. Middle unit: very-light- to medium-gray, medium-grained, very-thick-bedded dolostone and high-magnesium dolostone; thickness about 210 feet. Lower unit: dark-gray to black, very-fine-grained, thin- to very-thin-bedded limestone and dolomitic limestone with argillaceous laminations; thickness about 325 feet. Thickness ranges from 1100 to 1200 feet.

Antietam Formation (Ca)

White to light-gray, fine- to coarse-grained, silica-cemented, vitreous quartzite and subarkose with phyllite partings. *Skolithos* common. Thickness ranges from 350 to 600 feet.

Harpers Formation (Ch)

Upper 1100 feet: gray, fine- to medium-grained sandstone and quartzite, in part ferruginous. Lower 900 feet: gray to olive-gray phyllite and sandy phyllite with interbedded lithic sandstone. Thickness ranges from 2000 to 2500 feet.

Massanutten Sandstone (Sm)

Sandstone, very-light- to medium-gray, fine- to coarse-grained, locally conglomeratic, cross laminated, matrix less than 5 %, quartz cement less than 10 %, thin black carbonaceous shale beds with plant fossils in the lower 150 feet of formation (Pratt and others, 1978). Quartzite, light-gray, cross laminated, medium-grained, framework grains with overgrowths, matrix less than 0.5 %, cement less than 1 %. Upper one-third of formation contains sandy shale interbedded with sandstone, weathers brownish- to reddish-gray. Thickness approximately 900 feet.

unconformity

LATE PROTEROZOIC

Weverton Formation (Cw)

Upper 150 feet: quartz-pebble conglomerate and micaceous sandstone. Middle 300 feet: greenish-gray sandy phyllite and micaceous sandstone. Lower 150 feet: basal conglomerate composed of subangular to rounded quartz and flat shale clasts in a matrix of sand-size quartz and lithic grains (includes sericite and chlorite), quartz cement, overlain by light-gray, conglomeratic quartzite with interbedded greenish-gray sandy phyllite. Thickness ranges from 500 to 600 feet.

unconformity

Catoctin Formation (CZc)

Grayish-green to dark-yellowish-green, fine-grained, schistose metabasalt composed of albite, epidote, chlorite, actinolite, magnetite, hematite, sphene, and pyroxene; amygdule fillings of albite, quartz, calcite, epidote, chlorite, and jasper; tops of flows locally autobrecciated. Interbedded lithologies include: purple metaarkose, phyllite, rhyolitic metatuff, epidosite, and lithic metasandstone. Thickness ranges from 1500 to 3000 feet.

Swift Run Formation (Zsr)

Dark-greenish-brown, sandy and pebbly metagraywacke and meta-arkose; silver-gray and purple, tuffaceous phyllite; thin beds of metabasalt. Thickness ranges from 0 to 200 feet.

unconformity

MIDDLE PROTEROZOIC

Leucogranite (Yl)

Leucocratic, yellowish-gray, coarse-porphyroblastic, gneissic granite composed of quartz, perthite, and microcline; accessory minerals include biotite and plagioclase; alteration minerals include epidote and sericite from feldspar; contains 1-3 cm augen composed of aggregates of feldspar in a finer-grained, quartz-feldspar matrix, occurs as ovoid bodies of varying size and as dikes that cut charnockite and granulite. Some of the rocks shown as leucogranite contain varying amounts of closely associated granulite.

Charnockite (Yc)

Melanocratic, grayish-blue-green- to dusky-blue-green, massive- to slightly foliated, coarse-grained, heterogranular- to porphyritic charnockite composed of perthite, plagioclase (perthite > plagioclase), orthopyroxene, and quartz; accessory minerals include biotite, opaque minerals, zircon, and locally, pargasite; alteration minerals are uralite, as kelyphitic rims on orthopyroxene, and chlorite, that partially replaces biotite; develops rusty-brown rinds on weathered surfaces; feldspars are vitreous and greasy-green; rock is generally pristine in hand specimen, but may show development of retrograde minerals in thin section. Rocks mapped as charnockite occur as distinct masses, as mixed charnockite-granulite rocks, and as discrete interlayers (many of which are too small to map) in granulite.

Granulite (Yg)

Light- to olive-gray, medium-grained, compositionally foliated, generally garnetiferous, generally equigranular granulite composed of perthite, plagioclase (perthite to plagioclase ratio 3 to 1), and quartz; accessory minerals are biotite, microcline, orthopyroxene, garnet, and opaque minerals; alteration minerals are epidote and sericite from feldspar, uralite from orthopyroxene, and chlorite from biotite. Quartz-rich compositional layers alternate with feldspar-rich layers; compositional layers terminate abruptly, producing a dashed-pattern texture; garnet porphyroblasts larger than the matrix and aggregates of garnet blasts are common; unit may locally contain 2 to 3 mm quartz and feldspar porphyroblasts.

Granulite and Charnockite, undivided (Yu)

Page County

Flint Hill Gneiss (Yfh)

Light-gray to gray, medium- to coarse-grained, segregation-layered quartzofeldspathic biotite gneiss composed of quartz, plagioclase, microcline, green biotite, ilmenite, and titanite; accessory minerals include epidote, apatite, and zircon. Segregation layering defined by quartz-feldspar- and biotite-rich domains on the order of a few millimeters thick; migmatitic leucosomes of quartz and alkali-feldspar cut segregation layering in places; veins of blue quartz common (Lukert and Nuckols, 1976).

IGNEOUS ROCKS OF UNCERTAIN AGE

Peridotite (P_z)

Dark- to greenish-dark-gray peridotite composed of chlorite, phlogopite, hydrobiotite pseudomorphs after olivine and pyroxene with accessory garnet, rutile, and magnetite; secondary minerals include: dolomite, ankerite, ilmenite, magnetite, epidote, quartz, serpentine, talc, calcite, and perovskite (Rader and Biggs, 1976). Intrusive to the Martinsburg Formation.

Diabase (d_z)

Diabase, greenish-black, finely crystalline to aphanitic, composed of augite, labradorite with minor olivine and magnetite.

Metabasalt (b_z)

Dark-grayish green, aphanitic metabasalt composed of plagioclase, chlorite, and magnetite; hydrothermal alteration of country rock observed near Boyds Mill, Warren County.

Amphibolite (am)

Amphibolite dikes composed of actinolite with or without plagioclase and accessory chlorite, epidote, and sphene (Lukert and Nuckols, 1976). Intrusive to Middle Proterozoic rocks in Warren County.

KEY

Contacts
- exposed, approximate, inferred
- interpreted from aerial photographs

Faults
- Solid - exposed or approximate; dashed - inferred; CF – on the upper plate, tick mark indicates direction of dip; U, upthrown side; D, downthrown side; arrows indicate direction of relative movement.

Folds
- Anticline
- Overturned anticline
- Syncline
- Overturned syncline

Attitude of rocks
- Strike and dip of inclined bedding
- Strike and dip of overturned bedding
- Strike of vertical bedding

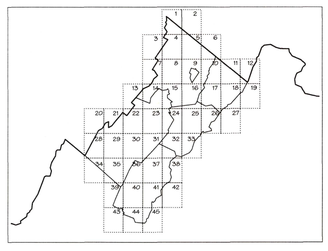
MN GN 14° 142 MILS 17° 28 MILS

UTM grid convergence (GN) and 1983 magnetic declination (MN) at center of map. Diagram is approximate

SCALE 1:100 000

KILOMETERS 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
MILES 1 0 1 2 3 4 5 6 7 8 9 10

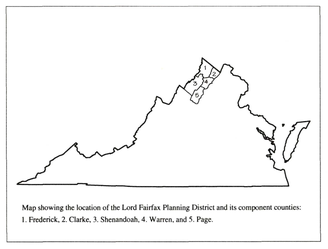
1 CENTIMETER ON THE MAP REPRESENTS 1 KILOMETER ON THE GROUND
CONTOUR INTERVAL 20 METERS



GEOLOGIC MAP COMPILATION

The geologist(s) listed following the quadrangle name prepared the 7.5-minute quadrangle geologic data for presentation at 1:100,000-scale.

1. Ridge: R. C. McDowell.
2. Glengary: R. A. Parker.
3. Capon Bridge: R. A. Parker.
4. Gore: R. A. Parker and R. C. McDowell.
5. White Hall: R. A. Parker and R. C. Orndorff.
6. Inwood: R. C. Orndorff.
7. Capon Springs: R. C. McDowell and R. A. Parker.
8. Hayfield: R. A. Parker and R. C. McDowell.
9. Winchester: R. C. Orndorff and R. A. Parker.
10. Stephenson: R. C. Orndorff.
11. Berryville: E. K. Rader.
12. Round Hill: E. K. Rader.
13. Wardensville: R. C. McDowell and E. K. Rader.
14. Mountain Falls: R. C. McDowell.
15. Middletown: R. C. Orndorff and R. C. McDowell.
16. Stephens City: R. C. Orndorff.
17. Boyce: R. C. Orndorff and R. C. McDowell.
18. Ashby Gap: E. K. Rader.
19. Bluemont: E. K. Rader.
20. Lost City: E. K. Rader.
21. Wolf Gap: E. K. Rader.
22. Woodstock: E. K. Rader.
23. Toms Brook: E. K. Rader.
24. Strasburg: E. K. Rader.
25. Front Royal: E. K. Rader.
26. Linden: E. K. Rader and T. M. Gathright, II.
27. Upperville: E. K. Rader.
28. Orkney Springs: E. K. Rader.
29. Conicville: E. K. Rader.
30. Edinburg: E. K. Rader.
31. Rileyville: E. K. Rader.
32. Bentonville: E. K. Rader and T. M. Gathright, II.
33. Chester Gap: E. K. Rader and T. M. Gathright, II.
34. Timberville: E. K. Rader and T. M. Gathright, II.
35. New Market: E. K. Rader and T. M. Gathright, II.
36. Hamburg: E. K. Rader and T. M. Gathright, II.
37. Luray: T. M. Gathright, II and E. K. Rader.
38. Thornton Gap: E. K. Rader and T. M. Gathright, II.
39. Tenth Legion: E. K. Rader and T. M. Gathright, II.
40. Stanley: T. M. Gathright, II and M. J. Sarros.
41. Big Meadows: T. M. Gathright, II.
42. Old Rag Mountain: T. M. Gathright, II.
43. Elkton West: T. M. Gathright, II.
44. Elkton East: T. M. Gathright, II.
45. Fletcher: T. M. Gathright, II.



Map showing the location of the Lord Fairfax Planning District and its component counties:
1. Frederick, 2. Clarke, 3. Shenandoah, 4. Warren, and 5. Page.

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