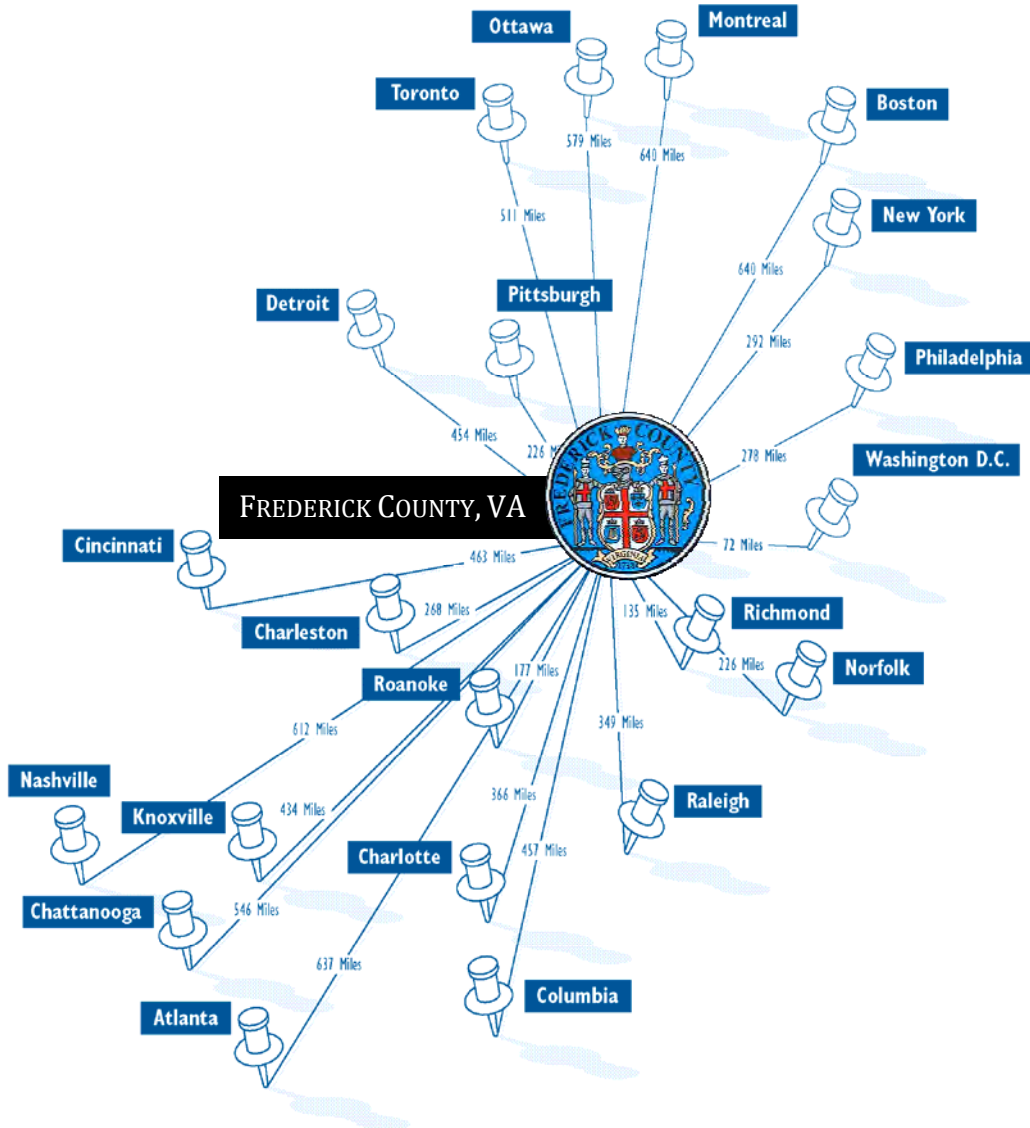


GEOGRAPHICAL SETTING

LOCATION

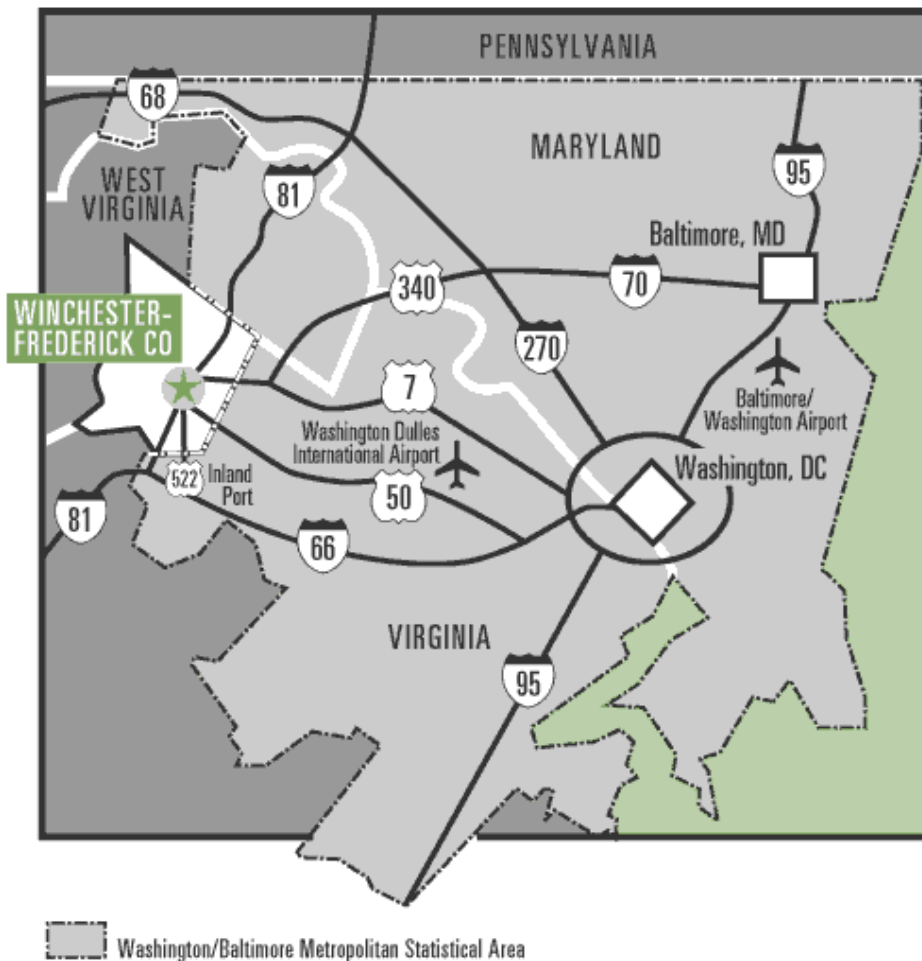
Frederick County is the northernmost jurisdiction in the Commonwealth of Virginia. It lies at the northern, lower end of the Shenandoah Valley west of the Blue Ridge Mountains and east of the Alleghenies. With the formation of the Washington-Baltimore Metropolitan Statistical Area after the 1990 US Census, the fifth largest USA market begins, literally, at the County Line.



APPENDIX II – BACKGROUND ANALYSIS AND SUPPORTING STUDIES

Located in the mid-Atlantic region of the United States, Frederick County's location on the eastern seaboard is a valuable asset to companies serving the US markets and Europe. It places local businesses halfway between the markets of the north and south, within one-day haul of 50% of the U.S. population. Over 60% of the goods manufactured in the United States are distributed from the 750-mile (1,207 kilometers) area. For national and international companies being in the Eastern Time Zone maximizes their hours of operations, which helps to improve efficiencies. In addition to being half way between Boston and Atlanta, Winchester-Frederick County is well positioned equidistant between Los Angeles and London. Excellent road, rail, inland ocean port and Dulles World Cargo Center provide access to the major markets in North America, Latin America, and globally.

Metropolitan Washington/Baltimore



APPENDIX II – BACKGROUND ANALYSIS AND SUPPORTING STUDIES

TOPOGRAPHY

Generally, the topography of Frederick County is characterized by the rolling Shenandoah Valley, 8 to 10 miles wide, and on its west flank, mountains, ridges and valleys of the Appalachian system. Frederick County and the City of Winchester comprise 436 square miles, or 279,000 acres. Winchester City occupies 9.3 square miles within the County's boundaries. The average altitude of the broad valley is about 700 feet and that of the ridgetops and mountaintops is about 1,950 feet. The most prominent mountains are along the Virginia-West Virginia boundary, with Pinnacle Knob (2,844 feet) the highest point in the County. The lowest point in the County is about 500 feet. Handley Library, in the center of Winchester, is at 714 feet.

Three aspects of the topography provide the area with a highly favorable visual environment. The Blue Ridge Mountains on the east serve both as a barrier to overly ambitious development from the mid-Atlantic metropolitan area, and provide a backdrop to a verdant landscape of farms and orchards. The easy rolling topography also provides character, but is not an impediment to development. The easily traversed Valley and the fabled Shenandoah River defined the outstanding network of modern transportation providing easy accessibility to the most important North American cities.

GEOPHYSICAL CHARACTERISTICS

The County has three geophysical areas as shown on the Physical Characteristics and Geologic Formations map.

The eastern area of the County is underlain by the Martinsburg shale which consists of a band running north-south along the length of the County, generally east of Interstate 81. It consists of broad, level ridges separated by steep stream valleys. The soils derived from the shales tend to be thin, poorly fertile, and have high seasonal water tables. The soils are highly compacted and not well suited for intensive agriculture or onsite sewage disposal systems. Primarily the historical use of this land is pasture and has in recent years been developed for residential and urban uses. Substantial suburban development served by public water and sewer is located within this area.

The central area is located between Interstate 81 and Little North Mountain. It consists of a band approximately five miles wide that also trends southwest to northeast, is underlain by limestone/carbonate bedrock, and displays gently rolling karst topography. This area contains the bulk of the prime agricultural soils in the County and supports apple and other fruit production, beef cattle operations, and some crop production, primarily hay and corn. The western area is the Ridge and Valley which is underlain by a variety of shale, sandstone, and limestone formations. This mostly forested area consists of alternating valleys and ridges that run southwest to northeast. Ridges are often very steep and are the highest elevations in the County.

APPENDIX II – BACKGROUND ANALYSIS AND SUPPORTING STUDIES

Some stress fractures are present along the fold lines of the highly folded vertical beds. The vertical bedrock layers provide a barrier to most groundwater movement across the beds. Groundwater moves laterally along the folded bedrock, with little movement through the fold system.

These three geographic regions can be further divided into four distinct drainage areas. The southern third of the county drains towards the south and east to Cedar Creek and Stephens Run and is in the Shenandoah River basin. The northern two-thirds of the County are divided north-south by Apple Pie Ridge, Round Hill and Little North Mountain forming the boundary between the Back Creek and Opequon Creek watersheds. These areas drain toward the north and the east, respectively, and are in the Potomac River Basin. The limestone-carbonate geology drains to the east, but includes random flow patterns throughout this topography, including some areas that are internally drained. Drainage areas provide a good basis for planning sewer and water service areas through gravity flow design. The movement of public sewage flow between the limestone-carbonate and the Ridge and Valley area requires pumping.

Regional geophysical characteristics influence suitability for more intensive forms of development. Urban development is predominant in the eastern shale belt and uses public sewer and water facilities. Rural residential development is predominantly in the limestone belt west of Winchester, Interstate 81 and Route 37. Despite the presence of prime soils, agricultural land use in this area has decreased due to development pressures. The relatively steep areas in the western portions of the County remain rural; however, development is increasing.




CLIMATE

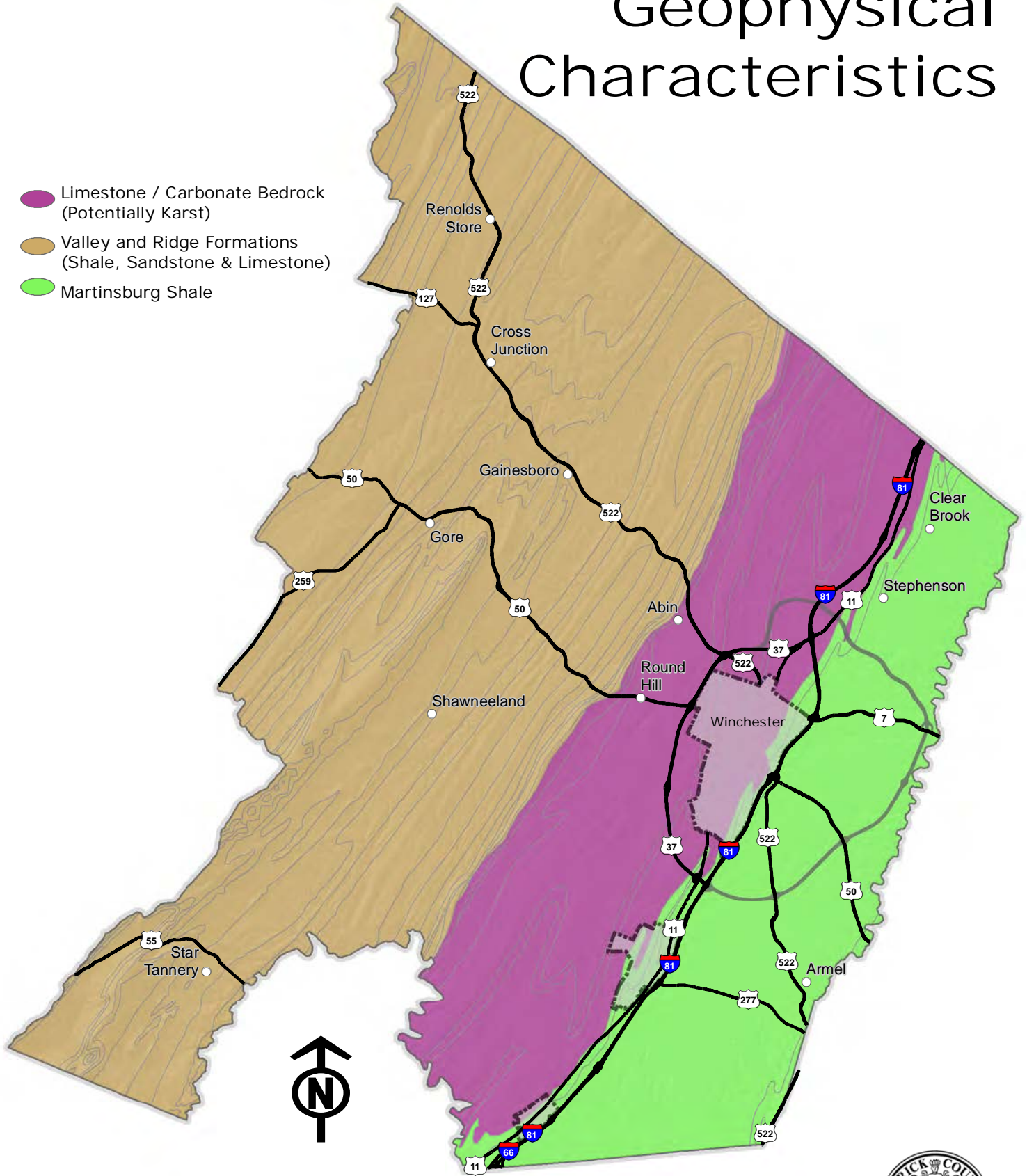
There are four distinct seasons. Few days fall near zero. Nine years in ten will have growing seasons from 148 to 219 days, depending on daily minimum temperature. The average number of growing degree days is 6,989.4, and the latest freeze (one year in ten; 28^o or lower) is April 15th. Only two years in ten will have extreme temperatures of more than 103^o or less than -10^o F.

Average January temperature	32 ^o F
Average July temperature	77 ^o F
Average annual precipitation	35.3" inches
Average annual snowfall	26.5" inches

The area is the heavily planted in apple and peach orchards, and is the "apple capital" of Virginia. In springtime, the explosion of apple blossoms is a spectacular event, announcing the Apple Blossom Festival, which draws an estimated 250,000 visitors each year.

Geophysical Characteristics

-  Limestone / Carbonate Bedrock (Potentially Karst)
-  Valley and Ridge Formations (Shale, Sandstone & Limestone)
-  Martinsburg Shale



APPENDIX II – BACKGROUND ANALYSIS AND SUPPORTING
STUDIES
