



# Chapter 4

## Intrinsic Qualities and Resources

### A. INTRODUCTION AND INVENTORY

The National Scenic Byways Program, as well as Delaware’s Scenic and Historic Highways Program, provide guidelines for establishing a scenic byway. In particular, byways must possess *one or more* of the following intrinsic qualities (6):

- SCENIC
- HISTORIC
- NATURAL
- RECREATIONAL
- CULTURAL
- ARCHEOLOGICAL

The byways of the Red Clay Valley are exceptionally scenic and help tell the history of the valley in the context of human interaction with nature. In this context the use of the land, both historically and in the present, speaks to the stewardship that has pervaded the thinking of those that live and work in the Valley. While the Valley provides limited recreational, cultural and archeological opportunities to those traveling its roadways, those that do exist are significant. In the following sections, the merits of the Red Clay Valley Scenic Byway are compared to standards

for each intrinsic quality as set forth in state and FHWA Policy. The FHWA policy is quoted at the beginning of each section to clearly focus attention on the standard that the Red Clay Valley Scenic Byway must meet for recognition under the Delaware Scenic and Historic Highways Program.

This plan makes extensive use of the scenic, natural and historic resource inventories that have been performed in the Valley in recent years, among them *The Red Clay Valley Scenic River and Highway Study* prepared by New Castle County and *The Red Clay Valley Project* prepared for the Brandywine Conservancy. The nature and extent of these studies not only sets the stage for this effort, but attests to the interest and concern for the resources that define the Valley. Interestingly, while each resource inventory was confirmed and updated for this planning effort, very little change has occurred since the resources were originally inventoried. For example, the visual accents inventoried to support the scenic intrinsic quality of the Valley have remained much intact over the past 15-20 years.

## B. PRIMARY INTRINSIC QUALITY: SCENIC

“Scenic quality is the heightened visual experience derived from the view of natural and man-made elements of the visual environment of the scenic byway corridor. The characteristics of the landscape are strikingly distinct and offer a pleasing and most memorable visual experience. All elements of the landscape – landform, water, vegetation, and man-made development – contribute to the quality of the corridor’s visual environment. Everything present is in harmony and shared in the intrinsic quality.” (FHWA Policy 5.18.95)

The Red Clay Valley is “a place of uncommon beauty and very special significance” (1). Both the Brandywine Conservancy study and the New Castle County study placed significant emphasis on the scenic resources of the Valley. In particular, the New Castle County study evaluated scenic roads in part according to the FHWA criteria contained in the then new publication *Scenic Byways* (July 1988). According to the New Castle County study, scenic byways are defined as roads having a high degree of natural beauty and historic or cultural value. The criteria used for selection included combinations of the following: 1) scale of roads (size, dimension, etc.), 2) characteristics of roads (runs with topography, winds, changes with terrain, etc.), 3) scenic accents and/or vistas along roads, 4) historic characteristics of, or along, roads (covered bridges, stone bridges, historic houses, etc.), 5) natural resources and/or ecosystems in close proximity to roads (watercourses, wetlands, rock outcrops and other geologic formations, woodlands, wildlife habitat, etc.), and 6) recreational activities along or adjacent to roads.

This past work provides a useful context for this planning effort; in fact, this plan builds on this research for several reasons: it shows consistency in FHWA policy as scenic byway literature has evolved, it helps define and characterize roads of significant value, and it underscores how little has changed in the Valley over the past 15-20 years.

The scenic quality of a roadway is largely a function of the criteria mentioned above and the forces that work to preserve land and resources along a roadway. In other words, what clearly contributes to scenic value are the host of visual, natural and historic features that grace a roadway

and the preservation efforts (listing on the National Register of Historic Places, execution of conservation easements, stream restoration efforts, etc.) that keep such features from being irrevocably changed or lost.

A majority of the Red Clay Valley lies in the piedmont physiographic province, largely characterized by rolling hills, ridges and valleys. While it appears that the Red Clay Creek sliced through the hills and ridges that stood in its way, the creek’s loops and turns are actually the result of detours around resistant metamorphic or igneous rock uplifts. These uplifts punctuate the region’s landscape and provide strikingly scenic points of relief. The natural forces that shaped the stream system also helped create a checkerboard of relatively level uplands that formed the basis for farms, residences and villages. Areas of land less accommodating, such as rock outcrops, steep slopes and wetlands, remained in a natural state. According to the New Castle County study, “the resulting landscape pattern was a tradition-rich mosaic of woods, fields, and settlements, stitched together by threads of flowing water.”

Travelers along the corridors of the Red Clay Valley enjoy this uniqueness in all its glory. As previously discussed, the character of the Valley inextricably links its roadways together. Whether witnessing the riverine resources or rock outcrops along Rt. 82 or the upland fields and forests along Ashland-Clinton School Road, travelers are witness to the landforms that shaped the Valley.

This uniqueness is evidenced by Delaware’s designation of several Natural Areas in the Valley: the Coverdale Farm Woods, the Burrows Run Valley, Chestnut Ridge, the Red Clay Ravine, and the Red Clay Reservation, have been documented as some of the most significant natural places in Delaware now known cumulatively as the Red Clay Creek Valley Natural Area (2).

The Scenic Landscapes map (Appendix 1) contained herein graphically illustrates the visual accents and vista points found along the Valley’s roadways; Appendix 3 contains a listing of visual accents and vista points, including photographs of each. Visual accents include visually significant landscapes and landforms that serve as indicators of natural or historic processes, contain multiple resources that together form visually significant groupings, or are clear examples of superior features or characteristics. Visual accents can be nat-

ural or manmade features which enhance or contribute to the landscape. Vista points designate broad, expansive views, the scenic boundary of which are primarily defined by forest cover (indicated on the map). All visual accents and vista points are within the public viewshed, i.e., visible from the public roads that form the scenic byways network.

On the Scenic Landscapes map, the approximate location of visual accents and vista points are shown and numbered according to their listing in Appendix 3. Visual accents are shown as points on the map and vista points are shown with arrows indicating the direction of the scenic viewshed. For visual accents, Appendix 3 indicates the type of accent and its location (numerically keyed to the Scenic Landscapes map). For vista points, Appendix 3 indicates the location and the direction of the scenic viewshed. In all, 94 visual accents and 11 vista points exist along the roads designated in this plan (as documented and photographed).

In addition, Appendix 2, Roadway Inventory, summarizes the overall characteristics of each road designated under the State's Scenic and Historic Highways Program.

### **C. SECONDARY INTRINSIC QUALITY: NATURAL**

“Natural quality applies to those features of the visual environment that are in a relatively undisturbed state. These features predate the arrival of human populations and may include geological formations, fossils, landform, water bodies, vegetation, and wildlife. There may be evidence of human activity but the natural features reveal minimal disturbances.” (FHWA Policy 5.18.95)

A study prepared in 1987 by Elizabeth Marler of the Delaware Nature Society (for the Department of Natural Resources and Environmental Control) characterized the Valley in the following manner: “The terrain is appealing, rich in natural attractions. In all of its Pennsylvania segment and most of the Delaware portion, it is typical Appalachian Piedmont – with steep slopes, rolling hills, deeply incised stream valleys, and a general absence of upland plains. It is composed mostly of metamorphic and igneous crystalline rocks, with some thrusts of pegmatite.

Underlying is Wissahickon schist of the Glenelg Series.”(3) Such a description alludes to the varied and unique character of the natural resources that make up the Red Clay Valley.

#### **1. Vegetation**

Vegetation found in the Valley is quite diverse and was described in detail in the Delaware Nature Society study. “The woodland coverage is predominantly deciduous hardwood, often second and third growth. The major woodland associations characterizing the upland forest areas are red oak, white oak, and/or black oak, tulip poplar, and American beech. Other common but less abundant species include hickory, ash, red maple, and flowering dogwood. Sycamores are often of spectacular size. Frequently mountain laurel provides an attractive shrub layer cover on the steeper slopes, together with mapleleaf viburnum and southern arrowwood. The woodland ground layer supports an abundance and variety of ferns and club moss, and woody vines like fox and summer grape and Virginia creeper. Herbaceous plants are seasonally abundant. The band of serpentine adjacent to Mt. Cuba and Hoopes Reservoir has in the past been the location of sightings of some 49 plants now considered rare.”(6) Several of the areas described in this study subsequently became listed in the state's Natural Areas Inventory.

In collaboration with the Red Clay Valley Scenic Byway Steering Committee, the Delaware Natural Heritage Program recently began surveying/characterizing the roadside vegetative communities present along the Byway. A description of their findings can be found in Appendix 5. This roadside survey conducted by the Delaware Natural Heritage Program is the first phase in their project to characterize the vegetation of the entire Red Clay watershed.

#### **2. Wildlife**

A high diversity of wildlife thrives in the Valley today. Amphibians and Reptiles include; Spotted Salamander, Eastern Redback Salamander, Two-Lined Salamander, Long-tailed Salamander, Red-spotted Newt, Northern Dusky Salamander, Northern Red Salamander, Four-toed Salamander, Eastern American Toad, Northern Spring Peeper, Northern Green Frog, Pickerel Frog, American Bullfrog, Wood Frog, Eastern Box Turtle, Bog Turtle, Eastern Painted Turtle,

Northern Red-bellied Cooter, Eastern Snapping Turtle, Stinkpot, Common Watersnake, Queen Snake, Eastern Gartersnake, Northern Ring-necked Snake, Northern Black Racer, Black Ratsnake, Eastern Milksnake, and Northern Brownsnake.

Mammals include: Virginia Opossum, Eastern Mole, Star-nosed Mole, Least Shrew, Northern Short-tailed Shrew, Eastern Cottontail, Meadow Vole, Southern Bog Lemming, White-footed Mouse, House Mouse, Meadow Jumping Mouse, Eastern Gray Squirrel, Red Squirrel, Southern Flying Squirrel, Woodchuck, Little Brown Myotis, Big Brown Bat, Red Bat, Long-tail Weasel, Striped Skunk, Raccoon, Muskrat, Red Fox, and White-tailed Deer.

The Red Clay Valley provides valuable habitat for a large diversity of avian species. The Breeding Bird Atlas Study (1983-87), Ashland Bird Survey (1978-1979), the Mt. Cuba Bird Survey (1980's) and the Burrows Run Bird Survey (1991-1998) found approximately 100 breeding species in the Red Clay Valley. In addition, these studies found that the total breeding, winter and migrant population contained over 200 species. Nesting neotropical migrant species such as Louisiana Waterthrush, Scarlet Tanager, Wood Thrush, and Warbling Vireo are found in relatively high abundance. Raptors of several species are commonly found along the Red Clay Creek and nearby lands. Birds that not long ago were uncommon, like Osprey and Bald Eagle, are now often observed in the Hoopes Reservoir area.

### 3. Topography

The piedmont of northern Delaware and most of eastern Pennsylvania is underlain by a slanting, geomorphic plate that causes the landscape to tilt slightly to the southeast (4). By contrast, the main **structure** of the landscape, its hills and ridges, runs northeast to southwest exactly at right angles to the underlying geomorphic tilt. In this region, watercourses such as the Red Clay Creek flow with the tilt. As described above, the Red Clay Creek loops and meanders – such as the “S” curve in the Red Clay near Hoopes Reservoir – due principally to the particularly tough and resistant metamorphic or igneous rock uplift that forced changes in stream direction.

According to the New Castle County study, “these uplifts punctuate the region’s landscape”

and are “the protruding visible bones of the landscape pushing through soft sedimentary tissue, providing striking scenic high points. Visible gray boulders and jagged cliff faces betray the presence of the ancient skeleton.”

The overall land pattern in the Red Clay Valley is created by the so-called dendritic stream patterning process. Greater and lesser watercourses flow at right angles to each other creating landscape in the endless cycles of depositing and re-depositing soil. The dendritic process creates a checkerboard of more or less rectangular and level landform units that in the past have worked well in their traditional role as sites for farming, settlement, etc. Areas of land less accommodating to development, on the edges of rocky ridges and steep slopes, or in wetland recharge areas have remained in or reverted to mature upland forest, wetland forest, or some intermediate landscape stage in the inexorable push that eventually turns all landscape into mature forest (4).

According to the Brandywine Conservancy study, “(i)t is thus the morphology of landscape, its structure, its geology, its history, and patterning process, that in combination with the constant processes of climate, temperature and rainfall, have made the Red Clay Valley area a place of beauty, abundant water, rich deep soils, healthy vegetation, and well shaped settlement areas. It is all these elements together that make the beautiful pastoral scenes and dramatic vistas we enjoy.” (1)

### 4. State Designated Natural Areas

In the publication *Delaware’s Outstanding Natural Areas and Their Preservation*, five Natural Areas were identified in the Red Clay Valley: Coverdale Farm Woods, Burrows Run Valley, Chestnut Ridge, Red Clay Ravine, and Red Clay Reservation.

Coverdale Farm Woods was identified as having “essentially no sign of recent man-made disturbance.” The Burrows Run Valley was characterized as a “lovely valley with a diversity of wildflowers.” The Red Clay Ravine Natural Area is used today for natural history education, as many “foot trails parallel the stream and wander back and forth across the east facing slope.” Finally, the Red Clay Reservation, which totals approximately 600 acres, “is ideally suited for ecological education.”

There has been much land preservation activity in the Valley. In the early 1990's, the Delaware Nature Society received a generous donation of 352 acres of land known as the Burrows Run Preserve (a portion of which has been dedicated in the state system of nature preserves). The Preserve is bounded by Way Road, Old Kennett Road and Ashland-Clinton School Road and surrounded by easements of 65 acres. Coupled with other public and private open spaces, preserved land accounts for roughly 20% of the 8,000 acres of land in the Valley (4). In an effort to expand preservation opportunities, the Delaware Nature Society enrolled the Coverdale Farm portion of the Burrows Run Preserve in the Delaware Farmland Preservation Program in 2006, thereby creating the Coverdale Farm Preservation District and providing preservation opportunities for smaller agricultural landowners in the area. The Coverdale District was expanded toward the Brandywine River in 2007 with the enrollment of the Brandywine Conservancy's May property.

The Natural Resources Inventory map (Appendix 1) contained herein graphically illustrates the resources that contribute so strongly to the character of the Valley. Resources of special interest include Natural Areas (synonymous with the County's regulated Critical Natural Areas), surface waters and flood plains, state and federally inventoried wetlands, steep slopes, and geologic formations (the Cockeysville formation, which constitutes a water resource protection area in New Castle County).

Additional land use/ land cover information is included on the generalized land use map also contained in Appendix 1. Land use and settlement patterns have changed little in the portion of the Valley designated as a State Scenic and Historic Highway. This is attributable to the presence of stable, large land holdings that characterize the farms and agricultural settlements of the nineteenth and early twentieth centuries.(1) As this map clearly shows, significant areas of forest and agriculture/pasture remain and land held in public or private open space (indicating some level of preservation) is prominent (including land held by the Delaware Nature Society). The most significant changes are attributable to suburban subdivisions expanding outward from Wilmington and other urbanized areas.

## **D. SUPPORTING INTRINSIC QUALITY: HISTORIC**

“Historic quality encompasses legacies of the past that are distinctly associated with physical elements of the landscape, whether natural or man made, that are of such historic significance that they educate the viewer and stir an appreciation of the past. The historic elements that reflect the actions of people and man include buildings, settlement patterns, and other examples of human activity. Historic features can be inventoried, mapped, and interpreted. They possess integrity of location design, setting, material, workmanship, feeling, and association.” (FHWA Policy 5.18.95)

### **1. Early History**

Prehistoric settlement began in the Valley 12,000 to 14,000 years before European settlement. The “original settlers” were the Leni-Lenape, meaning “native-genuine man.” Probably the most ancient of the Algonquin peoples, the Leni-Lenape were peaceful hunters, farmers, and fishermen who grew corn, beans, and pumpkin-like gourds, as well as picked grapes and hickory nuts, (3) well before the arrival of the first European settlement in the 1600s. Archeological sites have been identified between the east and west branches of the Red Clay Creek in Kennett Square, as well as in Ashland.

The Red Clay Valley has a diverse history encompassing significant trends in settlement, agriculture, manufacturing, transportation, architecture, and engineering over a period of three centuries. Settlement history begins in the 1680's, but earliest extant structures date to the beginning of the eighteenth century. Throughout the eighteenth and nineteenth centuries, agriculture and manufacturing were the primary forces that shaped the Valley. A system of turnpikes, begun in the decade of the 1810's, and a rail line, opened in 1872, drastically expanded the market for local farmers and manufacturers. Historically, the water-powered mill industries on the Red Clay were known for the diversity of their production. The Red Clay Creek has more extant sites associated with mill industries than any other watercourse in the Delaware Piedmont. Until the beginning of the twentieth century, the Red Clay Valley was an agricultural landscape with a small concentration of industry along the creek. The first

manifestations of suburban development began to appear after 1900 (2).

## 2. History of the Milling Industry

As a result of the change in elevation from Pennsylvania’s hills to the Delaware lowlands, the Red Clay Creek’s steady current provided a reliable power source. The milling industry along the Red Clay Creek grew with the region’s economy and mirrored United States eastern seaboard development. By the mid-1600’s there were sawmills on Red Clay Creek, and in 1689 the first recorded grist mill was built on the shores of the creek, in what is now Kennett Township. The seventeenth and eighteenth century mills were for the most part adjuncts of the prevailing agricultural economy, gristmills and sawmills, catering to a local population. (3) In fact, “[I]n 1849, the John Garrett Snuff Mill near the Pennsylvania line was making ‘Spanish segars’, smoking and plug tobacco, ‘pigtail tobacco’ and Scotch snuff by the bottle and keg. In the heyday of milling, there were some 18 mills situated up and down the Red Clay Creek.” (3)

Mill products got to port either by Indian trail or cart track. Above the fall line (roughly following Kirkwood Highway) “transportation by road was notoriously poor; streams were crossed by fords or at dams. Before the Revolution, four main roads served the area, but for many years to come road travel was still chancy; well into the

1900s the present Pennsylvania Route 82 was just a muddy trail as it passed the Marshall Paper Mill on the Red Clay Creek above the state line, and Yorklyn and Hockessin were joined by rail before there was a highway connecting them.” (3)

## 3. Historic Preservation Programs

The New Castle County Historic Preservation Program evaluates the historic character of properties. Several county studies have inventoried and evaluated historic structures as part of the county’s land use planning efforts. The conversion of land as governed by the county’s Unified Development Code (UDC) also requires that sites undergoing development be assessed and inventoried, and measures taken to protect such sites where possible. The Delaware Cultural Resources Survey provides a list of historic structures which are on the National Register, are worthy of nomination for the Register, or have the potential for consideration. This inventory, monitored and updated by both the county and state, provides a useful resource for understanding the history of the Red Clay Valley.

In 1988, an Historic Bridge Inventory was developed by the Delaware Department of Transportation to determine eligibility of Delaware bridges for National Register recognition. The following table of bridges in the upper Red Clay Valley were listed as eligible National Register nominations:

Number	Construction	Location
88	Steel Girder Bridge	Snuff Mill Road ( <i>road 244</i> ) over a tributary
112	Metal Truss Bridge	Yorklyn Road ( <i>road 257</i> ) over the Red Clay Creek
118	Ashland Bridge	Barley Mill Road ( <i>road 258</i> ) over the Red Clay Creek
119	Steel Girder Bridge	Mt. Cuba Road ( <i>road 261</i> ) over the Red Clay Creek
120	Concrete Arch Bridge	Mt. Cuba Road ( <i>road 261</i> ) over the Red Clay Creek
137	Wooddale Bridge	Foxhill Lane ( <i>road 263A</i> ) over the Red Clay Creek

Both the Ashland and Wooddale bridges are listed on the National Register (although the Wooddale bridge was severely damaged during storm Henri). Both bridges were of nearly identical construction — wooden covered bridges with steel I-beams under the decking. The bridges have a Town lattice truss structural system, which was patented by Ithiel Town in 1829. Both bridges will be restored in the coming year as described in Chapter 5, Section A2 Transportation Projects.

Historic sites are scattered throughout the Valley. Residences, farmsteads, mills, and bridges all attest to the settlement and development of the human community in the Red Clay Valley. Numerous historic sites are reflected in the scenic road inventory contained in Appendix 2. Appendix 4 provides a full inventory of the historic resources found in the Red Clay Valley (see also the Historic Resource Inventory map contained in Appendix 1 for a graphic portrayal of the historic resources of the Valley). Among the Valley's national register historic districts are the Wooddale Historic District, Garrett Snuff Mill Historic District, Auburn Mills Historic District, Graves Mill Historic District on Way Road, and Centerville Historic District. Among the other sites listed on the national register are the Wilmington and Western Railroad, the S.P. Dixon Farm on the Red Clay Creek south of Ashland, and the A. Armstrong Farm north of Old Wilmington Road.

## **E. RECREATIONAL QUALITIES**

“Recreational quality involves outdoor recreational activities directly associated with and dependent upon the natural and cultural elements of the corridor's landscape. The recreational activities provide opportunities for active and passive recreational experiences. They may include, but are not limited to, down hill skiing, rafting, boating, fishing, and hiking. Driving the road itself may qualify as a pleasurable recreational experience. The recreational activities may be seasonal, but the quality and importance of the recreational activities as seasonal operations must be well recognized.” (FHWA Policy 5.18.95)

The Red Clay Creek provides local residents and visitors with limited but expanding recreational opportunities. At present, the creek does not provide opportunities for fishing or swimming due

to poor water quality conditions and the shallow depth of the waterway. Public recreational opportunities, while limited, are expanding to include not only Valley Garden Park but the Hobbs tract (state parkland adjacent to Valley Garden Park), the Auburn Heights Preserve, and the Oversee state parkland adjacent to Auburn Heights. Not all of this land is immediately available for public access but much of it will be available within the next few years.

Recreational activities are also available to the public for a nominal fee at the Ashland Nature Center, operated by the Delaware Nature Society, or the Wilmington and Western Railroad of the Historic Red Clay, Inc. Members and guests are permitted access to the Ashland Nature Center for nature study, hiking and picnicking. Private recreational clubs, such as the Vicmead Hunt Club, Greenville Country Club, and Fieldstone Golf Course, provide recreational amenities to members. In addition, several horse riding stables and private swim clubs are located within the Valley.

## **F. CULTURAL QUALITIES**

“Cultural quality is evidence and expression of the customs or traditions of a distinct group of people. Cultural features include but are not limited to: crafts, music, dance, rituals, festivals, speech, food, special events, and vernacular architecture. The cultural qualities of the corridor could highlight one or more significant communities and/or ethnic traditions.” (FHWA Policy 5.18.95)

The Delaware Nature Society hosts an annual Harvest Moon Festival at Coverdale Farm that includes local musicians, crafts and artisans; this festival has become a large public event (approximately 5,000 attendees a year). Native American lore, hayrides, demonstrations of farming practices, gardening, and farm animals are among the many events held during this festival. The Nature Society also hosts an annual native plant sale at Coverdale Farm.

Mt. Cuba Center, Inc. is a 650-acre non-profit horticultural institution in northern Delaware dedicated to the study, conservation, and appreciation of plants native to the Appalachian Piedmont region. Each year Mt. Cuba Center, Inc. hosts a Wildflower Celebration with tours, demonstrations and activities that highlight its mission of garden display, education and research (approx-

mately 3,500 visitors attend annually), all conducted in the region's finest wildflower gardens. Tours, classes, workshops and symposia are also offered to engage the public in a greater awareness and involvement in gardening, land use and environmental stewardship.

Additionally, Mt. Cuba Center Inc. endeavors to conserve natural lands and open spaces and has protected significant acreages in the region.

A number of partners including the National Park Service are working to create a Northern Delaware Heritage Coalition. Proposed projects include several driving loops; one of which, the Red Clay Mill and History Tour has some overlap with the Red Clay Valley Scenic Byway. Members of the Steering Committee and DNS (as the Coordinating Agency) will continue to monitor the Northern Delaware Heritage Coalition effort and determine appropriate connections with the Byway.

## **G. ARCHEOLOGICAL QUALITIES**

“Archeological quality involves those characteristics of the scenic byways corridor that are physical evidence of historic or prehistoric human life or activity that are visible and capable of being inventoried and interpreted. The scenic byway corridor's archeological interest, as identified through ruins, artifacts, structural remains, and other physical evidence, have scientific significance that educate the viewer and stir an appreciation for the past.” (FHWA Policy 5.18.95)

The manmade “disturbances” of the landscape are the archeological record of the Red Clay Valley. The structures, the hedgerows, the country roads, and the other changes to the land throughout the Valley's history are the archeological remnants of early European settlers and the agrarian heritage of the eighteenth and nineteenth centuries. Stone building ruins, remains of the Valley's industrial and agrarian heritage are strewn across the landscape (see Appendix 3 (accents and vista pts.) for a listing of such sites).