National Park Service
U.S. Department of the Interior

Delaware Water Gap National Recreation Area
Pennsylvania and New Jersey

Delaware Water Gap National Recreation Area
Old Mine Road North
Cultural Landscape Report

Denver Service Center
Olmsted Center for Landscape Preservation

Delaware Water Gap National Recreation Area

Old Mine Road North

Cultural Landscape Report

April 2024
Prepared by:
WLA Studio

Under the direction of
National Park Service
Denver Service Center and
Olmsted Center for Landscape Preservation

The Olmsted Center for Landscape Preservation promotes the stewardship of significant landscapes through research, planning, and sustainable preservation maintenance. The Center accomplishes its mission in collaboration with a network of partners including national parks, universities, government agencies, and private nonprofit organizations. Techniques and principles of preservation practice are made available through training and publications.

Olmsted Center for Landscape Preservation

15 State Street, 6th Floor

Boston, MA 02109

www.nps.gov/oclp/

Publication Credits: Graphics from sources other than federal repositories may not be reproduced without the permission of the owners noted in the captions. Other information in this publication may be copied and used with the condition that full credit be given to the authors and publisher. Appropriate citations and bibliographic credits should be made for each use.

Cover Photo: Old Mine Road North, looking south near Black Farm, March 2023 (Source: WLA Studio).

Delaware Water Gap National Recreation Area

Old Mine Road North

Cultural Landscape Report

Approved by: DOYLE SAPP Digitally signed by DOYLE SAPP Date: 2024.05.02 14:49:59 -04'00'

Superintendent, Delaware Water Gap National Recreation Area Date

Page intentionally left blank

Table of Contents

Foreword xxi

Introduction 1

Historical Overview 1
Management Summary 3
Scope of Work and Methodology 6
Description of Study Boundaries 7

Site History 9

Illustrations for Site History are found at the end of each historic period, Drawings 1.1–1.21. 9
Geological History and Physical Formation 9
Precontact History and Settlement in the Delaware River Valley (ca. 12,000 BP–1500 CE) 10
Paleoindian Period (ca. 12,000–10,000 BP) 10
Archaic Period (ca. 10,000–3,000 BP) 11
The Woodland Period (ca. 3,000 BP–1,600 BP) 12
The Lenape of the Delaware River Valley 13
Landscape Summary 17
The Colonial Frontier (1500–1790s) 17
Dutch Exploration and Early Myths About the History of Old Mine Road 18
Transition to English Colonial Rule 19
Frontier Settlement in the Minisink Valley 21
Lenape Land Loss and the French and Indian War 26
To the Federal Period 29
Transportation Networks in the Delaware River Valley Frontier 32
Frontier-Era Lifeways 37
Landscape Summary 42
The Federal Period through the Nineteenth Century (1790s–1900) 44
Population Growth and Settlement Patterns 44
Mining Efforts and Other Industries During the Nineteenth Century 47
The Rise and Fall of Agriculture During the Nineteenth Century 47
The Beginnings of the Resort Era During the Nineteenth Century 49
Transportation Networks During the Nineteenth Century 51
Lifeways During the Nineteenth Century 60
Landscape Summary 66
Old Mine Road During the Early Twentieth Century (1900–1955) 85
The Resort and Vacation Era During the Early Twentieth Century 85
The Decline of Agriculture and Town Life in the Early Twentieth Century 86
The Great Depression and the New Deal 86
Transportation Networks During the Early Twentieth Century 91
Lifeways During the Early Twentieth Century 103
Landscape Summary 105
Old Mine Road and the Tocks Island Dam Project (1955–1973) 131

Dam Building, Flooding, and Federal Intervention 131
Tocks Island Dam and the Delaware Water Gap National Recreation Area 133
Early Planning and Mitigation Efforts 137
Land Acquisition Controversy 140
Deauthorization of the Tocks Island Dam Project 143
Transportation Networks During the Tocks Island Project Period 144
Landscape Summary 145
Delaware Water Gap National Recreation Area (1973–present) 173
National Park Service Ownership and Management 173
Park Management During the 1980s 178
Park Management During the 1990s 186
Park Management During the Early 2000s 188
Park Management, 2010–present 189
Landscape Summary 191

Existing Conditions 199

Introduction 199
Natural Systems and Features 201
Climate 201
Physiography and Ecoregion 201
Geology and Soils 202
Hydrology 203
Ecology 207
Spatial Organization 208
Land Use 209
Farming 209
Residential 209
Mineral Extraction 209
Cemetery 209
Cultural Traditions 209
Farming 209
Outdoor Recreation 209
Historic Preservation/Interpretation 209
Forest Management 210
Cluster Arrangement 210
Black Farm Cluster 210
Westbrook-Bell Farm Cluster 210
Circulation 210
Roadway Classification, Traffic, and Design Speed 210
Intersections 211
Turnouts and Informal Pull-Offs 216
Gravel/Earth Driveways 217
Road Traces 217
Topography 217
Natural Topographic Features 217
Engineered Topography–Roadway Design Principles 218
Cultural Topography 222
Vegetation 223
Natural Vegetation 223
Cultural Vegetation 225

Buildings and Structures 229
Buildings 229
Roadway Structures 229
Utilities 235
Non-roadway Structures 236
Constructed Water Features 238
Stone Pool and Dam at MP 5.379-5.398 238
Stone Armoring 238
Views and Vistas 240
Small-Scale Features 240
Roadway Small-Scale Features 240
Non-Roadway Small-Scale Features 244
Archeological Sites 244
Minisink Historic Landmark District 244
Previously Identified Archeological Sites 246
Building Ruins 246
Building Remnants 246
Utility Remnants 246
Structure Ruins 246
Component Landscapes 247
Bevans-Hellwig Property LCS ID:009539 (MP 0.0) 248
Heron's Nest/Frank Stoll House (Mettler Road) 249
John Wesley Van Auken House (Mettler Road) 250
Mettler Cemetery (MP 1.65) 250
Depue House LCS ID: 009540 (MP 2.8) 250
Anson Johnson House LCS ID: 082381 (MP 4.2) 252
William Ennis House (Ennis House) LCS ID: 009541 (MP 4.621) 253
Westbrook-Bell Farm LCS ID: 009542 (MP 5.133) 254
Black Farm LCS ID: 082392 (MP 5.3) 256
Minisink Dutch Reformed Church Cemetery (MP 7.33-7.348) 258

Analysis and Evaluation 275

Introduction 275
National Register Evaluation 276
National Register Documentation 277
Component Landscapes 281
Period of Significance 283
Evaluation of Historical Integrity 283
Cultural Landscape Evaluation 286
Natural Systems and Features 286
Spatial Organization 289
Land Use 290
Cultural Traditions 296
Cluster Arrangement 297
Circulation 305
Topography 317
Vegetation 319
Buildings and Structures 324
Constructed Water Features 336
Views and Vistas 338

Small-Scale Features 343
Archeological Sites 349
Analysis and Evaluation Table 351

Bibliography 379

Appendix A 391

Culvert Mile Point Distribution and Reconciliation 391

List of Figures

Figure 1.1. Regional map showing the location of Delaware Water Gap National Recreation Area between Milford and Stroudsburg, Pennsylvania 4

Figure 1.2. Annotated USGS map enlargement showing the location of the Old Mine Road North Project Area 5

Figure 2.1. Circa 1600 to 1700 map of Lenape languages and tribes 14

Figure 2.2. Circa 1651–1655 map by Nicholaes Visscher showing the Middle Atlantic area including the Minisink area 18

Figure 2.3. A map showing the boundaries of New Netherland 20

Figure 2.4. 1755 map by Dodley et al. entitled "A general map of the middle British colonies, in America" 24

Figure 2.5. 1758 map produced by Jonathan Hampton, with fort/blockhouse locations shown along a road in the location of Old Mine Road North 28

Figure 2.6. 1947 photograph of a stone building known as Fort Nomanock (or Namanock), which was located off Minisink Cemetery Road 29

Figure 2.7. 1781 map showing ownership along Old Mine Road North, a portion of "A map containing part of the Provinces of New York and New Jersey" 31

Figure 2.8. A portion of a 1769 map entitled "Three maps of northern New Jersey, with reference to the boundary between New York and New Jersey" 33

Figure 2.9. A portion of a 1781 map, entitled "A sketch of the northern parts of New Jersey," showing Old Mine Road extending south of Walpack Bend 35

Figure 2.10. 1900 photograph of an ox cart in New York 37

Figure 2.11. 1933 photograph showing the front and side elevations of the Westbrook-Bell House 38

Figure 2.12. 1974 photograph of the John Wesley Van Auken House 39

Figure 2.13. 1860 map showing the location of owners along the Old Mine Road North corridor 45

Figure 2.14. An example of a lime kiln in the Middle Delaware River Valley; photographed in 1970 during a HABS survey of the John Turn Farm in Monroe County, Pennsylvania 48

Figure 2.15. 1861 painting by George Inness entitled "Delaware Water Gap" 50

Figure 2.16. An engraving of Granville Perkins' 1872 painting "Delaware Water Gap" 51

Figure 2.17. 1792 map showing the section of Old Mine Road that runs between present-day Port Jervis, New York and Walpack Bend 53

Figure 2.18. 1797 map showing the section of Old Mine Road running between Port Jervis, New York and Walpack Bend, while the section south of Walpack Bend is omitted 53

Figure 2.19. 1795 map showing the section of Old Mine Road south of Walpack Bend, similar to its present configuration 54

Figure 2.20. 1836 map showing that Old Mine Road, then known as the Columbia Walpack Turnpike, had managed to overcome the "Indian Ladder," as the road is shown following the bank of the river to Columbia, New Jersey 55
Figure 2.21. An example of a split rail fence, located in DEWA 61
Figure 2.22. A photograph of the Isaac Van Campen House in Walpack, New Jersey, taken ca. 1910 61
Figure 2.23. A photograph of the Colonel Abraham Van Campen House in Millbrook, New Jersey, taken on September 10, 1941 61
Figure 2.24. A schematic drawing of I-House floor plan variations by architectural historian Fred Kniffen 62
Figure 2.25. Portion of an 1888 map showing the alignment of Old Dingmans Road between Old Mine Road North and the Delaware River at Dingmans Ferry 67
Figure 2.26. LIDAR image of the area around the intersection of Old Dingmans Road and Old Mine Road North showing different historic alignments of Old Dingmans Road between Old Mine Road North and the Delaware River 68
Figure 2.27. 1930 map showing Old Mine Road North 95
Figure 2.28. Illustration depicting Sections No. 1 through 7 in Sussex County and Sections No. 8 and 9 in Warren County 99
Figure 2.29. 1934 drawing for a one-mile segment of Old Mine Road (not Old Mine Road North) showing a typical section of the road 100
Figure 2.30. 1935 drawing for a section of Old Mine Road (not Old Mine Road North) showing the poured concrete headwalls to be located at the culvert outlets 100
Figure 2.31. 1959 drawing for a section of Old Mine Road (not Old Mine Road North) showing details for concrete guide posts. This detail is present along Old Mine Road North ... 102
Figure 2.32. 1937 drawing of "Bridge No. 280" located at the Jager Road intersection with Old Mine Road North 102
Figure 2.33. 1969 photograph of a corn crib at Knight Farm in Flatbrookville, Sussex County, NJ, south of the Old Mine Road North project area 103
Figure 2.34. 1931 aerial photograph of Old Mine Road North 106
Figure 2.35. 1919 cover of ***Public Roads*** magazine with a photo entitled "Approaching Dingman's Ferry (N.J.) on a Road that Convicts Built" 107
Figure 2.36. 1931 aerial of the Bevans-Hellwig property 109
Figure 2.37. 1931 aerial of Heron's Nest 109
Figure 2.38. 1931 aerial of the John Wesley Van Auken House 110
Figure 2.39. 1931 aerial of Mettler Cemetery 110
Figure 2.40. An undated photograph of the Depue House 111
Figure 2.41. An undated photograph of the Depue House 111
Figure 2.42. An undated photograph of the Depue House property, facing west 111
Figure 2.43. 1931 aerial of the Depue House 111
Figure 2.44. Undated photograph of the Anson Johnson House showing a two story porch across the facade of the building 112
Figure 2.45. 1931 aerial of the Anson Johnson House 112
Figure 2.46. An undated photograph of the Ennis House prior to later additions 113

Figure 2.47. 1931 aerial of the Ennis House 113
Figure 2.48. A 1937 photograph of the William Ennis House 113
Figure 2.49. An undated photograph of the Westbrook-Bell House 114
Figure 2.50. A 1937 photograph of the Westbrook-Bell House 114
Figure 2.51. 1931 aerial of the Westbrook-Bell Farm 115
Figure 2.52. 1931 aerial of the Black Farm 115
Figure 2.53. 1931 aerial of the Minisink Dutch Reform Cemetery 116
Figure 2.54. Annotated 1960 USACE map highlighting the proposed Tocks Island Dam reservoir and Old Mine Road North 133
Figure 2.55. 1965 map depicting the boundaries of the Tocks Island Dam reservoir and different recreational developments proposed throughout the DWGNRA 134
Figure 2.56. Proposals for recreational developments along Old Mine Road North 139
Figure 2.57. 1984 aerial photograph of a portion of Old Mine Road North 146
Figure 2.58. 1974 picture of the outbuildings on the Gumaer property 146
Figure 2.59. 1971 HABS photograph of the Everitt House, taken by George A. Eisenman 147
Figure 2.60. 1957 aerial showing ten vacation cabins formerly extant along Old Mine Road North 147
Figure 2.61. 1957 aerial photograph of Old Mine Road North. Note the mixture of open agricultural fields and forested areas 148
Figure 2.62. 1970 aerial photograph of Old Mine Road North. Note the marked increase in forested areas 149
Figure 2.63. 1974 photograph of the two-story frame wing on the Bevans-Hellwig House 150
Figure 2.64. 1974 photograph of the west elevation of the Bevans-Hellwig kitchen 150
Figure 2.65. 1974 of the east elevation of the Bevans-Hellwig House 150
Figure 2.66. 1974 photograph of the Pennsylvania Bank barn on the Bevans-Hellwig property 150
Figure 2.67. 1970 aerial image of the Bevans-Hellwig property 151
Figure 2.68. 1974 photograph of the front elevation of Heron's Nest/Frank Stoll House 151
Figure 2.69. 1974 photograph of the rear elevation of Heron's Nest/Frank Stoll House 151
Figure 2.70. 1974 photograph of the garage apartment at the Heron's Nest 151
Figure 2.71. 1970 aerial of Heron's Nest, shown inside the yellow circle 152
Figure 2.72. 1974 photograph of the John Wesley Van Auken House 152
Figure 2.73. 1974 photograph of the historic barn located on the Van Auken property 152
Figure 2.74. 1970 aerial of the Van Auken property 152
Figure 2.75. 1970 aerial of Mettler Cemetery 153
Figure 2.76. 1970 photograph of the Depue House, taken by George Eisenman 153
Figure 2.77. 1970 photograph of the Depue House, taken by George Eisenman 153
Figure 2.78. 1970 aerial of the Depue House, shown inside the yellow circle 154
Figure 2.79. Undated view of the Anson Johnson House 154
Figure 2.81. 1970 aerial of the Ennis House 155
Figure 2.82. 1970 photograph showing the south and east elevations of the Westbrook-Bell House 155
Figure 2.83. 1970 aerial of the Westbrook-Bell House 155
Figure 2.84. An undated photograph of Black Farm 156

Figure 2.85. 1970 aerial of the Black Farm 156
Figure 2.86. 1970 aerial showing the location of the Minisink Dutch Reformed Cemetery 157
Figure 2.87. A portion of a 1978 General Management Plan map showing land status and ownership in the Old Mine Road North vicinity 175
Figure 2.88. A portion of a 1978 General Management Plan map showing the general development plan in the Old Mine Road North vicinity 179
Figure 2.89. Portion of a 1984 NPS map showing existing roads and trails in the Old Mine Road North area 181
Figure 2.90. Portion of a map from the 1987 DEWA GMP showing proposed and existing amenities along Old Mine Road North 185
Figure 2.91. 1977 photograph of the quarry on the west side of Old Mine Road North, which was still active in 1977 192
Figure 2.92. 1977 photograph of Old Mine Road North around MP 4.8, view to south 192
Figure 2.93. 1977 photograph of Old Mine Road North, view to south at approximately MP 3.2 193
Figure 2.94. Sussex County Historic Marker program sign at Westbrook-Bell Farm entrance 194
Figure 2.95. Walpack Historical Society marker at the Depue House 194
Figure 2.96. 1977 photograph of the Depue House with Old Mine Road North in the foreground, view to southwest 195
Figure 2.97. 1977 view of the Ennis House, showing the north elevation 196
Figure 2.98. 1977 photo of the Westbrook-Bell House as recorded for the Old Mine Road Historic District National Register Nomination 197
Figure 3.1. The study area extends from the intersection of Peters Valley-Wagonwheel Road and Old Mine Road North to the intersection of Old Mine Road and US-206 in the Delaware Water Gap National Recreation Area 200
Figure 3.2. The site area is within the 67l Northern Glaciated Limestone Ridges, Valleys, and Terraces Level IV ecoregion 202
Figure 3.3. Delaware Water Gap National Recreation Area is named for the distinct geologic feature located approximately twenty-two miles south of the site area 203
Figure 3.4. A new drainage pattern is emerging from the hillside east of Old Mine Road North at MP .78 204
Figure 3.5. A new emergent drainage pattern is partially flooding the east side of the roadway before reaching the culvert at MP .78 205
Figure 3.6. Kittatinny Creek crosses Old Mine Road at MP 2.159 through three metal culverts with concrete headwalls 205
Figure 3.7. An ephemeral drainage (dry in image) crosses Old Mine Road North just south of Jager Road at MP 4.237 205
Figure 3.8. A drainage historically known as White Kill crosses Old Mine Road North through a stone box culvert at MP 5.387 206
Figure 3.9. White Brook crosses Old Mine Road North through a bridge at MP 7.52 206
Figure 3.10. Brau Kettle is a historic hydrologic feature located just west of Old Mine Road North at MP 4.167–4.186 207

Figure 3.11. The spatial organization of Old Mine Road North is defined by the route of the roadway, which closely hugs the base of Walpack Ridge, leaving the flat arable land west of the roadway open for agricultural use 208
Figure 3.12. At MP 0.0, Old Mine Road turns ninety degrees at the intersection of Peters Valley-Wagonwheel Road, continuing south of the study area (at right) 211
Figure 3.13. Old Dingmans Road intersects Old Mine Road North at MP .67 211
Figure 3.14. Old Mine Road North crosses Dingmans Road/State Route 560 at MP .852 212
Figure 3.15. There is a sharp grade change on the northwest corner of the intersection of Old Mine Road North and Dingmans Road 212
Figure 3.16. Mettler Road spurs off the west side of Old Mine Road North at MP 1.155 212
Figure 3.17. Van Ness Road spurs off the east side of Old Mine Road North at MP 2.14-2.159 212
Figure 3.18. A gravel roadway spurs off the west side of Old Mine Road North at MP 3.174 213
Figure 3.19. A gravel roadway leads to the Namanock Recreation Area from Old Mine Road North. The roadway spurs off the west side of Old Mine Road North at MP 3.447 213
Figure 3.20. Jager Road is a paved through road which intersects Old Mine Road North at MP 4.223 213
Figure 3.21. The driveway to the Ennis House spurs off this gravel drive, Chudzik Lane, which extends west from Old Mine Road North at MP 4.621-4.64 213
Figure 3.22. Vehicular access to the Minisink Cemetery Road/Winant Trail and the Minisink/Westbrook Cemetery is restricted by a metal gate at MP 4.867-4.886 214
Figure 3.23. A gravel driveway leads to the Westbrook-Bell Property from Old Mine Road North at MP 5.133 214
Figure 3.24. Van Etten Road is a gravel drive which spurs off Old Mine Road North at MP 5.322 214
Figure 3.25. An unnamed gravel road spurs off the west side of Old Mine Road North at MP 5.568 214
Figure 3.26. An unnamed gravel road spurs off the west side of Old Mine Road North at MP 6.117 215
Figure 3.27. The former Pine Road trace is located at MP 7.292 215
Figure 3.28. Laurel Lane spurs off Old Mine Road North at MP 7.519 and continues southwest to follow White Brook 215
Figure 3.29. U.S. Highway 206 marks the end of the study area at MP 7.519-7.538 215
Figure 3.30. A designated turnout at MP 5.36-5.379 is lined by concrete guide posts spanned by steel cable 216
Figure 3.31. This gravel pull-off at MP 4.223-4.242 is at the location of a former homesite 216
Figure 3.32. A gravel pull-off at MP 7.443-7.462 with a paved apron off the west side of Old Mine Road North 216
Figure 3.33. An active gravel driveway to the "Lutz House" at MP 5.114 216
Figure 3.34. The cut and fill grading of this road trace at MP .511 is clearly visible 217
Figure 3.35. A steep ravine leads to the Delaware River west of the study area 217
Figure 3.36. Cut and fill grading is clearly visible at this location where Old Mine Road North carves through the ridgeline 219

Figure 3.37. Superelevation is a roadway design feature that improves the safety of a turn 220
Figure 3.38. Some turns do not employ superelevation, such as at this location where the roadway slopes from left to right out of the turn, which creates a more dangerous roadway condition 220
Figure 3.39. Old Mine Road North is designed with a series of ditches on the downslope side of the roadway which collect stormwater and convey it to a culvert passing beneath the roadway (at right) 220
Figure 3.40. This graded and leveled area marks the location of a former homesite 221
Figure 3.41. Depressions like this one (marked with a white dashed line at center) indicate former land disturbing activities like demolition of a structure 221
Figure 3.42. This earthen berm at MP .78 running parallel with Old Mine Road North directs the flow of a spring northward to a large culvert 222
Figure 3.43. This curving berm with trees planted along it marks the location of the 1996 remediation project to removed buried surplus military material 223
Figure 3.44. Tailings and mounded landforms from the former Layton quarry/gravel pit quarry on the west side of Old Mine Road North 223
Figure 3.45. The typical composition of a Northern Red Oak-Mixed Hardwood Successional Forest in DEWA 224
Figure 3.46. Dense thorny exotic invasive vegetation limited field investigations in some parts of the study area 224
Figure 3.47. A hemlock dominated grove on a steep hillside near Mettler Road on the east side of Old Mine Road North 225
Figure 3.48. This irregular tree line grew up along a stone row marking the boundary of two fields 225
Figure 3.49. This intentional tree line was planted with regular spacing on the west side of Old Mine Road North 226
Figure 3.50. The presence of wolf trees indicates that the area was formerly an open clearing or field, such as at this former farmstead 226
Figure 3.51. A patch of Japanese pachysandra growing near a stone wall in location of the former Everitt House at MP 5.4 226
Figure 3.52. Cultural vegetation such as this grouping of boxwoods and hemlock help identify locations of former homesites along the corridor 227
Figure 3.53. Cultural vegetation and depressions at this clearing mark the location of a former homesite at MP 4.242 227
Figure 3.54. The only mown turfgrass areas along the corridor are located at historic component landscapes such as the Depue House 227
Figure 3.55. The NPS maintains agricultural special use permits with local farmers to cultivate fields along the roadway 228
Figure 3.56. Remnant pine plantations are located intermittently along the roadway, such as this mature stand (at left) near Mettler Cemetery 228
Figure 3.57. Type 1 culverts consist of a metal culvert with a stone headwall, typically on the inlet side 229

Figure 3.58. Type 2 culverts consist of a corrugated plastic culvert with a stone headwall, typically on the inlet side 229
Figure 3.59. Type 3 culverts consist of a precast concrete culvert with a stone headwall 229
Figure 3.60. Type 4 culverts consist of a metal culvert with a board-formed concrete headwall on the inlet and outlet sides 229
Figure 3.61. At least one culvert along the roadway is composed of an RCP culvert with a board-formed concrete headwall on both the inlet and outlet sides 230
Figure 3.62. A board-formed concrete box culvert in poor condition is located at MP .761 230
Figure 3.63. This board-formed concrete box culvert at MP .791 is flanked by dry-stacked stone retaining walls and appears to have replaced an earlier stone box culvert 230
Figure 3.64. Three large metal culverts with board-formed concrete headwalls convey Kittatinny Creek beneath Old Mine Road North at MP 2.159 230
Figure 3.65. The Kittatinny Creek culvert at MP 2.159 as viewed from Old Mine Road North 230
Figure 3.66. A concrete box culvert with concrete guard rails conveys an unnamed drainage south of Jager Road at MP 3.935 230
Figure 3.67. The concrete box culvert at MP 3.95 has flared wing walls on the east side and straight wing walls on the west side 232
Figure 3.68. A concrete box culvert with concrete guard rails at MP 4.237 conveys an unnamed drainage at MP 4.237 just south of Jager Road 232
Figure 3.69. The west/outlet of the mortared stone box culvert at MP 5.387 conveys White Kill beneath Old Mine Road North to a stone-lined pond 233
Figure 3.70. The east/inlet side of the mortared stone box culvert at MP 5.387 234
Figure 3.71. White Brook crosses Old Mine Road North through a concrete bridge at 7.56 235
Figure 3.72. Representative example of a utility pole 236
Figure 3.73. A mortared river stone retaining wall atop the hill at MP .63 237
Figure 3.74. A typical dry-stacked stone retaining wall along Old Mine Road North 237
Figure 3.75. A typical stone fencerow in the Old Mine Road North corridor 237
Figure 3.76. A stone-lined circular pool at the western outlet of the box culvert at MP 5.379–5.398 238
Figure 3.77. Some culverts have rock armoring on the outlet side to prevent erosion on the hillside 239
Figure 3.78. Rock armoring along a creek channel at MP .795 239
Figure 3.79. Views along the corridor are restricted by dense tree canopy and tight curves in several locations 241
Figure 3.80. Representative view of stone walls crossing sloping terrain on east side of Old Mine Road 241
Figure 3.81. Agricultural fields provide open views to the surrounding landscape 242
Figure 3.82. A granite marker dedicated to Alonzo Depue in front of the Depue House along Old Mine Road North 243
Figure 3.83. A stone marker just south of the Depue House, which is the former historic marker for Alonzo Depue 243
Figure 3.84. A typical wayfinding sign on the Old Mine Road North corridor 243
Figure 3.85. The intersection at Dingmans Road is protected by steel guard rails 243

Figure 3.86. The north side of the bridge at White Brook is protected by older steel guard rails... 243
Figure 3.87. There are wood and steel guard rails along the Old Mine Road North corridor..... 243
Figure 3.88. Concrete and steel guide posts at a pulloff along the west side of Old Mine Road North 244
Figure 3.89. Remnant metal post and barbed wire fencing on the east side of Old Mine Road across from the Black Farm 245
Figure 3.90. Remnant wood post and woven wire fencing is common throughout the corridor... 245
Figure 3.91. The Mettler Cemetery is enclosed on three sides by a green chain link fence..... 245
Figure 3.92. A typical informal gate along Old Mine Road North, constructed of a cable between two wooden posts 245
Figure 3.93. A typical NPS installed metal gate on the Old Mine Road North corridor 245
Figure 3.94. Mortared stone foundation remnants of former homesites are frequent along the Old Mine Road North corridor 247
Figure 3.95. This concrete and stone foundation is the remains of a barn at the Black Farm..... 247
Figure 3.96. There are several abandoned open septic tanks throughout the study area 247
Figure 3.97. There are several abandoned open wells within the study area..... 247
Figure 3.98. The Bevans-Hellwig property at MP 0.0. View to northeast..... 248
Figure 3.99. This fieldstone building is the only remaining building on the Bevans-Hellwig property..... 248
Figure 3.100. The south elevation of the Heron's Nest property on the east side of Mettler Road.. 249
Figure 3.101. The north elevation of Heron's Nest is severely deteriorated..... 249
Figure 3.102. Heron's Nest Garage is just west of the driveway to Heron's Nest..... 249
Figure 3.103. The John Wesley Van Auken House is a privately owned home on Mettler Road..... 251
Figure 3.104. The cemetery markers at Mettler Cemetery are arranged loosely in rows, view to north, Old Mine Road North is in the background photo right..... 251
Figure 3.105. The northwest corner of the Depue House..... 252
Figure 3.106. The Depue House is located close to the roadway..... 252
Figure 3.107. The east facade of the Anson Johnson House, set back from Old Mine Road North 253
Figure 3.108. Terraced stone retaining walls off the rear (west) elevation of the Anson Johnson House 253
Figure 3.109. The Ennis House faces Old Mine Road North but is set off from the roadway 254
Figure 3.110. The Ennis House has received multiple additions 254
Figure 3.111. There is a small shed in poor condition at the Ennis House property..... 254
Figure 3.112. The east elevation of the Westbrook-Bell House..... 255
Figure 3.113. Barn # 2 and barn #1 at the Westbrook-Bell Farm 255
Figure 3.114. A small privy at the Westbrook-Bell Farm..... 255
Figure 3.115. The Black Farm House is located close to Old Mine Road North 256
Figure 3.116. The Black Farm House is banked on the east side, with a two-story rear wing 257
Figure 3.117. A small stone springhouse north of the Black Farm House..... 257
Figure 3.118. The Black Farm Dutch Barn is a rare type in Sussex County, NJ..... 258
Figure 3.119. There is a smaller building south of the Dutch Barn, known as the Black Wagon Shed or Corn Crib 258

Figure 3.120. The Minisink Reformed Church Cemetery is easily missed along the roadway, most of the markers are simply laid stones without engraving 259
Figure 3.121. Detailed view of a marker in the Minisink Reformed Church Cemetery 259
Figure 4.1. Map of the north end of the project area showing the National Register District boundary (red line) and its contributing features 279
Figure 4.2. Map of the south end of the project area showing the National Register District boundary (red line) and its contributing features 280
Figure 4.3. Example of changes to a component landscape since the end of the historic period. The Anson Johnson House and property in 1977 and 2023 281
Figure 4.4. 1872 map "Copied from a Map Owned by John D. Everitt," by Ge. E. Hursh 290
Figure 4.5. Portion of a 1900 map showing the forested areas around Old Mine Road North (noted in red) 291
Figure 4.6. Historic aerial photograph from 1931 293
Figure 4.7. Historic aerial photograph from 1970 293
Figure 4.8. 1860 map showing the location commercial establishments along Old Mine Road North 294
Figure 4.9. Farmstead clusters present in 1931 are highlighted in green 298
Figure 4.10. 1931 aerial photograph of the Bevans-Hellwig property 299
Figure 4.11. 1931 aerial photograph of Heron's Nes 299
Figure 4.12. 1931 aerial photograph of the John Wesley Van Auken House 300
Figure 4.13. 1931 aerial photograph of the Depue House 300
Figure 4.14. 1931 aerial photograph of the Anson Johnson House 301
Figure 4.15. 1931 aerial photograph of the Ennis House 301
Figure 4.16. 1931 aerial photograph of the Westbrook-Bell Farm 302
Figure 4.17. 1931 aerial photograph of the Black Farm 302
Figure 4.18. Farmstead clusters that are still extant or partially extant are highlighted in blue 304
Figure 4.19. 1758 map produced by Jonathan Hampton, with fort/blockhouse locations shown along a road in the location of Old Mine Road North 306
Figure 4.20. 1777 map, "The Province of New Jersey, divided into East and West," by William Faden, Bernard Ratzer, and Gerard Bancker 307
Figure 4.21. 1781 map showing ownership along Old Mine Road North by Skinner et al 308
Figure 4.22. A portion of a 1795 map by Samuel Lewis showing the section of Old Mine Road south of Walpack Bend 309
Figure 4.23. 1860 map showing the location of owners along the Old Mine Road North corridor 310
Figure 4.24. Ge. E. Hursh, *Copied From a Map Owned by John D. Everitt*, March 4, 1872 311
Figure 4.25. Ge. E. Hursh, *Copied From a Map Owned by John D. Everitt*, March 4, 1872 311
Figure 4.26. Ge. E. Hursh, *Copied From a Map Owned by John D. Everitt*, March 4, 1872 312
Figure 4.27. 1872 "Topographic Map of Sussex Co., New Jersey," showing the location of several village clusters, post offices, schools, and auxiliary roads along Old Mine Road North 313
Figure 4.28. 1941 drawing for a section of Old Mine Road (not Old Mine Road North) showing horizontal and vertical alignment 314

Figure 4.29. 1921 drawing for a section of Old Mine Road (not Old Mine Road North) showing typical cross section of road 315
Figure 4.30. Example of a wood fence row along Old Mine Road North 320
Figure 4.31. Example of changes to the character of vegetation along Old Mine Road North in 1977 and 2023 322
Figure 4.32. 1931 aerial photograph, highlighted to show the extent of fields adjacent to Old Mine Road North 322
Figure 4.33. 2020 aerial photograph. Note the heavy vegetation and loss of agricultural fields south of Dingmans Ferry, as well as the now noncontiguous agricultural fields north of Dingmans Ferry 323
Figure 4.34. 1974 photograph of the outbuildings located on the Gumaer property and a 2023 photograph showing that none of these buildings still exist 325
Figure 4.35. 1974 photograph of the two-story frame wing on the Bevans-Hellwig House and a similar view from 2023 325
Figure 4.36. 1974 photograph of the west elevation of the Bevans-Hellwig Kitchen. Note the non-historic picture window and gabled dorme 325
Figure 4.37. 1974 photograph of the Pennsylvania bank barn on the Bevans-Hellwig property 326
Figure 4.38. 1974 photograph of the front elevation of Heron's Nest/Frank Stoll House and a 2023 photograph at the same location 326
Figure 4.39. 1974 photograph of the garage apartment at the Heron's Nest property 326
Figure 4.40. 1974 photograph of the John Wesley Van Auken House 327
Figure 4.41. 1974 photograph of the historic barn located on the Van Auken property 327
Figure 4.42. 1970 photograph of the Depue House, taken by George Eisenman 327
Figure 4.43. 1970 photograph of the Depue House, taken by George Eisenman 327
Figure 4.44. An undated photograph of the Depue House property 328
Figure 4.45. 1974 photograph of the main house located on the Gumaer property 328
Figure 4.46. An undated photograph of the Ennis House prior to later additions 329
Figure 4.47. A 1937 photograph of the William Ennis House 329
Figure 4.48. An undated photograph of the Westbrook-Bell House 330
Figure 4.49. A 1937 photograph of the Westbrook-Bell House 330
Figure 4.50. Front elevation of the Black Farm main house, taken in 1993 330
Figure 4.51. An undated photograph of Black Farm 330
Figure 4.52. 1971 photograph of the Everitt House from John M. McRae, "Everitt House" 331
Figure 4.53. 1971 photograph of the Everitt House from John M. McRae, "Everitt House" 331
Figure 4.54. The fieldstone kitchen wing of the Bevans-Hellwig House 333
Figure 4.55. The front elevation of the main house at Heron's Nest 333
Figure 4.56. The front elevation of the garage apartment at Heron's Nest 333
Figure 4.57. The front elevation of the John Wesley Van Auken House 334
Figure 4.58. The front elevation of the Depue House 334
Figure 4.59. The front elevation of the Anson Johnson House 334
Figure 4.60. The front elevation of the shed at the Anson Johnson House 335
Figure 4.61. The front elevation of the William Ennis House 335
Figure 4.62. The front elevation of the Westbrook-Bell House 335

Figure 4.63. The two barns at the Wesbrook-Bell property 335
Figure 4.64. The privy at the Westbrook-Bell property 335
Figure 4.65. The front elevation of the Black Farm main house 337
Figure 4.66. The rear and side elevations of the Black Farm main house 337
Figure 4.67. The front elevation of the springhouse at the Black Farm 337
Figure 4.68. The rear elevation of the springhouse at the Black Farm 337
Figure 4.69. The Dutch Barn at the Black Farm 337
Figure 4.70. The corn crib/wagon shed at the Black Farm 337
Figure 4.71. 1931 aerial photograph showing Old Mine Road North 338
Figure 4.72. An undated photograph of the Depue House property 339
Figure 4.73. Undated postcard of "View Down the Delaware from the Cliffs," showing the Delaware River, Minisink Island, and New Jersey beyond 340
Figure 4.75. 1980s aerial photograph showing Old Mine Road North 342
Figure 4.76. 2020 aerial photograph showing Old Mine Road North 342
Figure 4.77. View looking south along Old Mine Road North to the Black Farm House 343
Figure 4.78. An undated photograph of the Depue House 344
Figure 4.79. 1971 photograph of the Everitt House 344
Figure 4.80. An undated photograph of the Ennis House prior to later additions 344
Figure 4.81. An undated photograph of the Depue House property. 345
Figure 4.82. An undated photograph of Black Farm 345
Figure 4.83. The commemorative marker at the Westbrook-Bell property 345
Figure 4.84. The commemorative marker at the former site of the Minisink Dutch Reformed Church 346
Figure 4.85. The former historic marker south of the Depue House 346
Figure 4.86. The concrete stairs at the Bevans-Hellwig property 346
Figure 4.87. The brick and stone firebox at the Bevans-Hellwig property 346
Figure 4.88. The concrete footbridge at Heron's Nest 347

Page intentionally left blank

Foreword

Old Mine Road, a historic thoroughfare that winds through dense woods along the eastern bank of the Delaware River, carries visitors through a landscape rich with human history. This is particularly true of the road's northern section, where the remnant eighteenth-century farmsteads of some of New Jersey's earliest European colonists coincide with the ancient homeland of the Munsee Lenape. The descendants of these ancient peoples have survived numerous displacements and continue to share a deep physical and spiritual relationship to their ancestral homelands. Indigenous peoples of these lands include the contemporary Tribal Nations of the Delaware Nation, Delaware Tribe of Indians, Shawnee Tribe, and Stockbridge-Munsee Community. This report documents what we know of Old Mine Road North's rich pre- and post-Columbian history and its existing conditions. This information will guide the management of the cultural landscape and advance public knowledge of its significance and historic development.

That rich history encompasses the vibrant, complex society of the Munsee Lenape, who had been living in the Upper Delaware River Valley for thousands of years by the time European colonists arrived. Making use of the valley's natural resources for food, medicine, and ceremonial practices, the Munsee Lenape cultivated fields along the river's banks, built villages, and engaged in extensive diplomatic trade networks. Beginning in the eighteenth century, encroachment into the valley by Dutch and English colonists threatened this enduring way of life and eventually resulted in violent displacement.

In the nineteenth century, many descendants of the early European colonists found success in farming along Old Mine Road, taking advantage of advances in agricultural practices and the growing populations of surrounding towns. By the latter half of the century, increasing competition and industrialization led to diminishing returns. Soon, Old Mine Road was serving more tourists than farmers, thanks to a growing appreciation of the natural beauty of the Delaware River Valley and its picturesque rural landscape. In the middle of the twentieth century, the now-defunct Tocks Island Dam project ushered in a new era of displacement along Old Mine Road amid conservation of the broader valley by the National Park Service.

Delaware Water Gap National Recreation Area is the present steward of Old Mine Road and its deep, complicated history. As a cultural landscape, Old Mine Road holds great value in the recreational opportunities it provides visitors as well as the layers of human history that it embodies. The Cultural Landscape Report for Old Mine Road North represents an important advancement in our understanding of this significant landscape and provides an important tool for present and future managers to tell its story more fully and accurately.

DOYLE SAPP Digitally signed by DOYLE SAPP
Date: 2024.03.29 11:48:46 -04'00'

Doyle W. Sapp

Superintendent, Delaware Water Gap National Recreation Area

Page intentionally left blank

Introduction

Historical Overview

Old Mine Road North has a cultural and environmental history dating back millennia, which includes the time in which pre-contact Native Americans and the ancestors of the present-day Lenape people were living along the Delaware and Hudson River valleys in the physiographic province at the north end of the Appalachian Mountains. Here in the Minisink Valley, many generations of Native Americans—most recently the Munsee Lenape—drew from the natural environment's bountiful resources, established extensive trading networks between towns, and developed rich and multifaceted cultures. The area was a major focal point for pre-contact trail networks, which "branched off in all directions."[1] Contemporary federally recognized tribes of this land in the United States include the Delaware Nation, Delaware Tribe of Indians, Shawnee Tribe, and the Stockbridge Munsee Community; recognized First Nations in Canada include the Eelünaapéewi Lahkéewiit (Delaware Nation at Moraviantown) and the Munsee-Delaware Nation. Additionally, there is a community of Delaware who are part of the Six Nations of the Grand River First Nation.

Beginning in the late-1600s, encroachment by European frontierspeople and homesteaders forced the Lenape into a series of treaties that gradually eroded their territory.[2] The portions of Old Mine Road south of Port Jervis likely began to form organically by the first human occupants of this region and, later, following Dutch and English settlement southward into the Minisink Valley. European colonists eventually widened the road to accommodate horseback travel and later made it suitable for wagons.[3] Common legends and lore about the origins of Old Mine Road as a Dutch-era road related to seventeenth-century mining activities within the project area are unsubstantiated and lack historical evidence. Some historians question the notion that the Dutch ever explored the south end of the Delaware River Valley on the New Jersey side of the Delaware River.[4]

By the 1710s, European settlement had reached the Minisink Valley area in northwestern New Jersey and a small agricultural settlement formed along the earliest portion of Old Mine Road. The influx of European incomers to this area necessitated improvements to transportation routes in the area during the early eighteenth century, and the construction of early wagon roads became "necessary to ship produce and receive needed supplies."[5] Colonial surveyors attempted to lay out roads that were easily traversable for travelers and commercial activity, which meant using the natural topography to minimize steep slopes that would be potentially impassible in poor weather conditions.[6] This was true of Old Mine Road, which hugged the lower edge of Kittatinny Ridge, just east of the Delaware River.

By the end of the eighteenth century, various homesteaders had established farms in the area, and a scattered populace of European Americans inhabited the present-day Montague and Sandyston townships in Sussex County, New Jersey. These homesteaders cleared fields and increased agricultural production. Most of the agricultural fields were concentrated on the lower terraces of the Delaware River, which were generally flatter and more fertile than sloped areas on the east side of the roadway. Eighteenth-century

1. Dennis Bertland, Patricia M. Valence, and Russell J. Woodling, "The Minisink: A Chronicle of One of America's First and Last Frontiers" (New Jersey and Pennsylvania: Four-County Task Force on the Tocks Island Dam Project, 1975), 68.
2. Note: Current scholarship currently discourages the use of the term "settler" to describe the non-Indigenous peoples living in America who formed the historical white European-descended sociopolitical majority. This CLR uses other terminology to be more accurate in its description of the people (mostly white Dutch, Swedish, and English) who moved to this area as the Native Americans who lived here were forced out.
3. A. Berle Clemensen, "Preliminary Historic Resource Study" (Delaware Water Gap National Recreation Area, September 1996), 125.
4. Herbert C. Kraft, *The Dutch, the Indians, and the Quest for Copper: Pahaquarry and the Old Mine Road* (South Orange, New Jersey: Seton Hall University Museum, 1996), 44–48.
5. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 137.
6. "Sussex County Book of Roads, Book A, 64-65," 1772.

farmsteads typically contained a main residential building, with clustered outbuildings nearby. Building materials and techniques often reflected the ethnic background of the builder. During the frontier era, homesteaders established numerous residential and agricultural properties, as well as churches and cemeteries, along Old Mine Road North.

As the local population increased around 1800, villages began to emerge throughout the Delaware River Valley. Two small interior villages that developed in the Old Mine Road North area included Brick House/Montague on the north end and at the south end, Bevans. Historians note that by 1850, the road system in Sussex County, including Old Mine Road, was basically in place, and changed little into the 1900s.[7]

During the early twentieth century, the New Jersey State Highway Commission began to provide funds for improvements to routes within the state and establish engineering standards for state roads. Old Mine Road was a township road during this period and needed improvement, and state funds began to flow toward improvements of Old Mine Road and the surrounding road network.[8] By 1939, the scenic nature of Old Mine Road was nationally recognized, and it is described in a 1939 *WPA Guide to 1930s New Jersey*, which states that much of the route was improved by this point with gravel, interspersed by sections of macadam.[9] In 1932, Sussex County assumed control of those sections of Old Mine Road located in Montague and Sandyston townships. At this time, the section of Old Mine Road between the road to Dingmans Ferry and Montague Township had a thirty-three foot right-of-way, and a right-of-way survey noted the location of existing driveways, road intersections, and culverts.[10]

7. Clemensen, "Preliminary Historic Resource Study," 135.
8. "Plainfield Woman Urges State Highway Commission Improve The Sussex County Road," *The Courier News*, May 19, 1926. Note: "ratables" refers to property that provides tax income.
9. Works Progress Administration, *The WPA Guide to 1930s New Jersey* (New Brunswick, New Jersey: Rutgers University Press, 1939), 473.
10. Sussex County Board of Commissioners, "Resolution, Taking Over Delaware Mine Road, Montague Township," December 30, 1932, Sussex County Deed and Records Room; Sussex County Board of Commissioners, "Resolution, Taking Over Delaware Mine Road, Sandyston Township," December 30, 1932, Sussex County Deed and Records Room.

Between 1934 and 1959, the county and state approved a series of "Plans of Proposed Reconstruction" drawings for sections of Old Mine Road. These drawings depict approved work plans for portions of Old Mine Road south of the study area and show typical construction details and specifications for the roadway and related roadside structures. Unfortunately, research has not uncovered similar construction drawings from this period for the Old Mine Road North section. However, there are extant features present on Old Mine Road North that are typical of WPA-era and later road improvements completed on the sections to the south, including some culverts, headwalls, guide posts, and pavement widths.

During the first half of the twentieth century, some struggling farmers sold their properties to outside buyers, and at least one farmstead in the study area was converted into a seasonal vacation home and vacation cottages appeared along Old Mine Road North. As former farmsteads were converted into vacation homes, their landscapes changed, and many of the agricultural fields grew fallow. While some property owners rented fields to neighboring farmers or tenant farmers, other landscapes surrounding the main house became more highly manicured, designed for aesthetic and leisurely purposes.

During the 1950s, the federal government began to study the Delaware River Valley for locations to install a new dam as a flood control measure. Eventually, the Army Corps of Engineers selected Tocks Island, located south Old Mine Road North in the Delaware River, and the endeavor was called the Tocks Island Dam project. Congress authorized the Tocks Island Dam project in 1962, and the government proposed that the dam's reservoir and the surrounding area would serve as a recreational amenity for the area. The United States Congress passed an act to authorize a national recreation area here in 1965.[11] In 1966, the National Park Service (NPS) published a master plan for the new national recreation area that would eventually become Delaware Water Gap National Recreation Area (DEWA). The NPS anticipated ten million visitors annually, primarily consisting of city dwellers from nearby urban centers visiting during the summer months. Old Mine Road was to be

11. "An Act to Authorize Establishment of the Delaware Gap National Recreation Area, and for Other Purposes," Pub. L. No. 89–158 (1965).

used for "sightseeing (pleasure driving)," with highlights the including the historic houses and farmsteads along the scenic roadway.[12]

Despite funding challenges and a lack of local support, land acquisition in the Delaware River Valley officially began in 1967. Property owners and local residents banded together to oppose these efforts, but the federal government continued to purchase or condemn properties along Old Mine Road. During the land acquisition period, many homes were occupied by squatters. To prevent squatters from continuing to occupy houses throughout the future park, the federal government demolished many of the former houses, ancillary agricultural buildings, and vacation houses along Old Mine Road. During this protracted and contentious transfer of ownership, officials did not actively maintain local roads. The remaining agricultural fields along the route became fallow and began to reforest. By the mid-1980s, numerous farmhouses and agricultural clusters had been removed from the Old Mine Road North area.

In 1980, a twenty-six-mile portion of Old Mine Road was listed in the National Register of Historic Places as a historic district (NRIS ID 80000410). Since that time, this section of Old Mine Road has been maintained as a historical and recreational asset, with minimal interventions to the road itself by the NPS beyond routine maintenance, emergency repairs, and compliance documentation.

Management Summary

This Cultural Landscape Report (CLR) is for Old Mine Road North, located in Delaware Water Gap National Recreation Area (DEWA). DEWA is in northwestern New Jersey and northeastern Pennsylvania straddling the Delaware River, which creates the border between these states (Figure 1.1, Figure 1.2). The 7.55-mile section referred to as Old Mine Road North is situated south of Montague, New Jersey, on the east side of the Delaware River. The study area for the project is coterminous with the polygon enclosing the northern section of the Old Mine Road National Register District. The entire Old Mine Road National Register District consists of approximately 26 miles of road corridor, beginning at Montague Township, Sussex County, New Jersey, south to Hardwick Township, Warren County, New Jersey.

DEWA is located in the Delaware River Valley (also referred to as the Kittatinny Valley and sometimes as the Minisink Valley, when referring to the northern portion of the valley in DEWA), part of the Ridge-and-Valley physiographic province at the north end of the Appalachian Mountains. The namesake Delaware Water Gap is a V-shaped valley at the south end of the park, where the Delaware River Valley cuts through the Kittatinny Ridge. North of the Delaware Water Gap, the park is oriented around the Delaware River Valley and the Middle Delaware River, which run between the Kittatinny Ridge to the east and the Blue Mountain Ridge to the west.[13] The Middle Delaware River is approximately forty miles long, extending from the Delaware Water Gap to Port Jervis, New York.[14] Old Mine Road North is part of the Old Mine Road Historic District, listed in the National Register of Historic Places in 1980 (NRIS ID 80000410). The Old Mine Road North project area is in Sussex County, New Jersey, and is split between Montague and Sandyston townships.

Congress established DEWA in 1965 "as a way to provide for public outdoor recreational use and enjoyment" in association with the Tocks Island Dam project, which was later discontinued and deauthorized. The 67,210 acres acquired by the federal government, including Old Mine Road North, then became part of the National Park Service.

Since acquiring Old Mine Road North, the NPS has documented and maintained the project area while preparing reports to inform the resource's management and maintenance going forward. This work is guided by the park's purpose statement, which is as follows:

12. "The Master Plan: Delaware Water Gap National Recreation Area" (United States Department of the Interior, National Park Service, 1966), 14–16.

13. "Geologic Resources Inventory Report," Natural Resource Report (Delaware Water Gap National Recreation Area: National Park Service, Natural Resource Stewardship & Science, 2013), 1–2.

14. "National Wild and Scenic Rivers in the DRB," Delaware River Basin Commission, January 1, 2023, https://nj.gov/drbc/basin/wild.html.

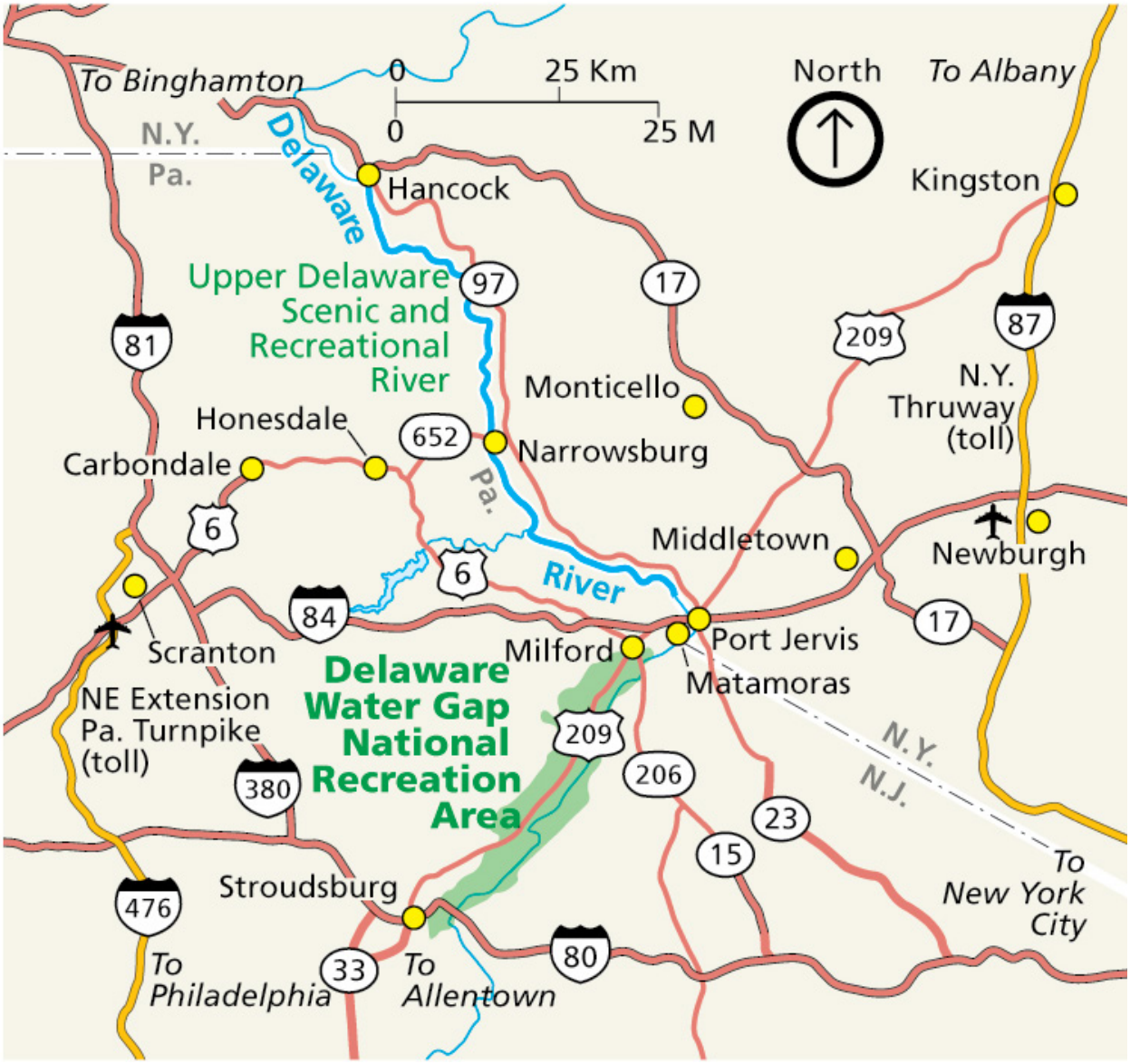


Figure 1.1. Regional map showing the location of Delaware Water Gap National Recreation Area between Milford and Stroudsburg, Pennsylvania (Source: NPS, Harpers Ferry Center).

The purpose of Delaware Water Gap National Recreation Area and the Middle Delaware National Scenic and Recreational River is to preserve the natural, cultural, and scenic resources and values of the Delaware River valley and provide opportunities for resource-based recreation, education, and enjoyment in close proximity to the most densely populated region of the nation.[15]

The Foundation Document for DEWA lists the fundamental resources and values (FRVs), which "are essential to achieving the purpose of the park and maintaining its significance." Included in these values and resources is the Old Mine Road Historic District, which "preserves one of the oldest commercial roadways in the northeastern United States" and that demonstrates "evidence of changing land use, settlement patterns, and lifeways."[16] The project area is also home to numerous documented Native American archeological sites. Old Mine Road North

15. "Foundation Document, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River" (United States Department of the Interior, National Park Service, October 2014), 4.

16. "Foundation Document, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River."

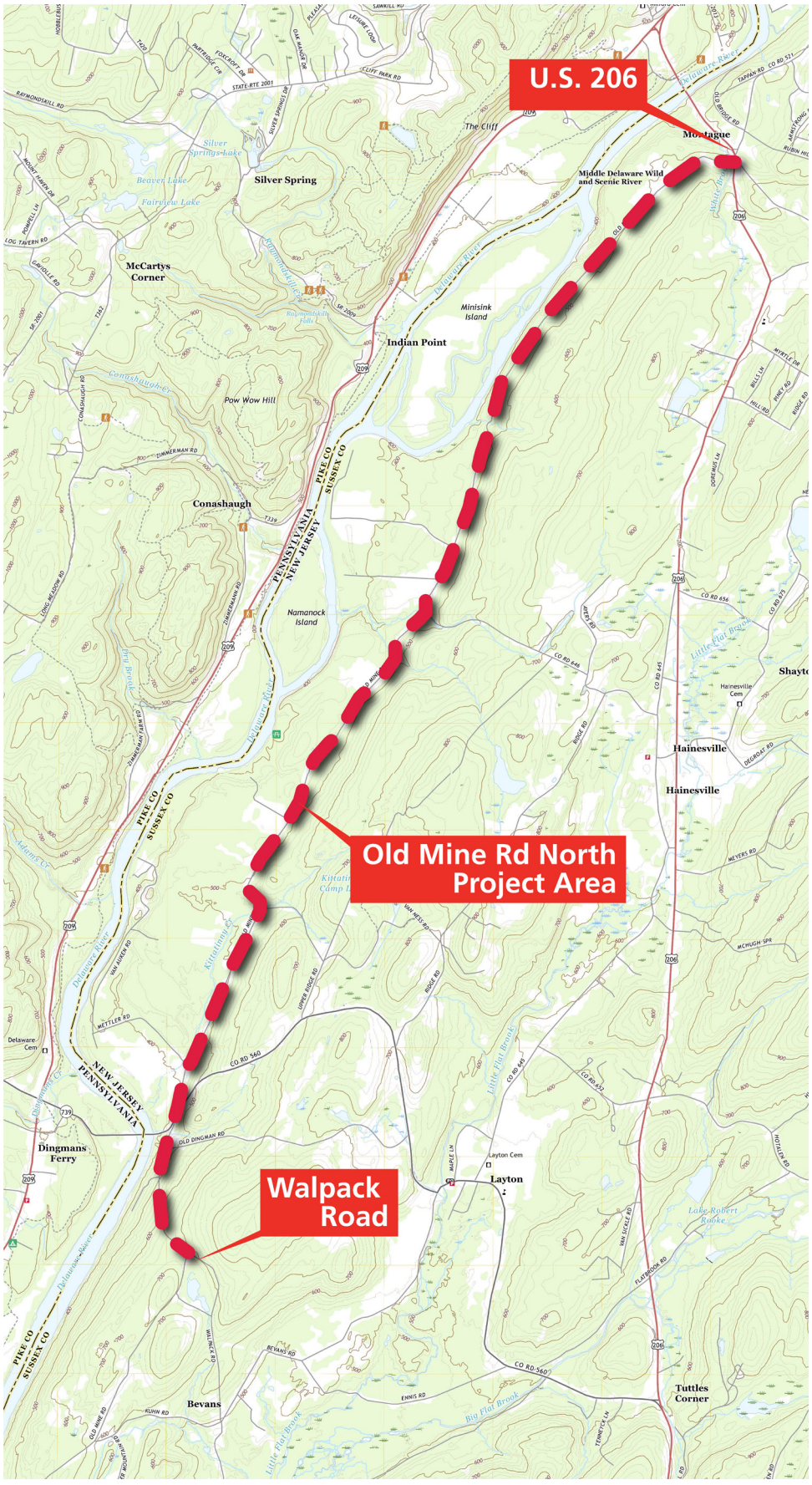


Figure 1.2. Annotated USGS map enlargement showing the location of the Old Mine Road North Project Area (Source: USGS, Annotated by WLA Studio, 2023).

provides access to both the scenic and recreational resources afforded at DEWA.

Within this context, the National Park Service and its partners are working to preserve the historic road and its adjacent landscape, enhance its historic character, and provide for contemporary use of the road by visitors to DEWA. To date, these efforts have been hampered by lack of comprehensive documentation of the road and the roadway.[17]

Scope of Work and Methodology

Per the Scope of Work, this project consists of an updated CLR Part I, according to the format and contents outlined in *A Guide to Cultural Landscape Reports Contents, Process and Techniques* (1998). This CLR will (1) describe the historical development of the areas; (2) document the existing site conditions; (3) provide analysis of the landscape's potential National Register significance; and (4) identify and assess integrity of character defining features.

The site history included in this report gives an overview of the Old Mine Road North cultural landscape. The contractor team made extensive efforts to obtain information from the Sussex County Engineering Office and the Warren County Engineering Office to locate construction drawings for this segment of Old Mine Road. The team identified right-of-way drawings dating to 1932 for this portion of the road but did not locate construction drawings for improvements to the corridor. The team conducted research at the Sussex County Records Office, which yielded original road return information for the corridor. The team contacted the following agencies to locate drawings for Old Mine Road North: New Jersey Department of Transportation, Sussex County Division of Engineering, Warren County Engineering Office, Montague Township Clerk, Sandyston Township, Sandyston Historical Society, Montague Historical Society, Sussex County Historical Society, New Jersey Historic Preservation Office, New Jersey State Archives, and New Jersey State Library. While the consultant team did identify information relevant to the research for this project at these repositories, research did not reveal the location of drawings depicting the construction of Old Mine Road North. Researchers consulted numerous primary and secondary documents to inform the site history section of this document. These resources can be found in the footnotes and bibliography. Mapping of historic features is featured in Drawings 1.1–1.21. These drawings depict the change in the Old Mine Road North landscape over time.

The existing conditions section provides a comprehensive description of cultural landscape features, including natural and cultural resources. The inventory includes information gathered during site visits by project team members in January and March 2023. The contractor team visited the study area and verified existing conditions shown on existing mapping. This existing mapping included baseline data from the Olmsted Center for Landscape Preservation, a 2022 Archeological Pedestrian Survey of the project area completed by DEWA staff, previous compliance and geotechnical reports, and drawings produced in conjunction with a proposed 2022–2023 construction project within the study area. The contractor confirmed existing documentation and recorded additional data using a commercial-grade GPS receiver paired with georeferenced high resolution photography. This data was the baseline for the creation of an illustrated narrative for existing conditions. The existing conditions chapter provides a concise description of the cultural landscape as it appears in the present. Most of the existing condition documentation was undertaken in January and March 2023. The NPS conducted some of the documentation during an archeological pedestrian survey in March through May 2022. The consultant team verified and supplemented this data during the March 2023 fieldwork. The existing conditions section includes a narrative description of Old Mine Road North illustrated with photographs, maps, and other graphic figures. Drawings 2.1–2.7 document existing conditions at Old Mine Road North in illustrated plans.

The analysis and evaluation section uses criteria developed by the National Register of Historic Places and the *Secretary of Interior Standards for the Treatment of Cultural Landscapes* to evaluate

17. The roadway includes the "road prism," which for this project is defined as the pavement surface itself and fifty feet measured horizontally, from the outer edges of the pavement surface.

the historic integrity of existing landscape resources. The Analysis and Evaluation section, which documents the historical significance of Old Mine Road North and evaluates its historic characteristics and features, is organized into two parts. The first evaluates the historical significance of the landscape according to criteria established by the National Register of Historic Places. Most of this significance is documented in a 1980 National Register of Historic Places documentation for the Old Mine Road Historic District (NRIS ID 80000410) and two Determination of Eligibility Updates for the district. The second part, using National Park Service cultural landscape methods, inventories and evaluates the cultural landscape to assess changes in the historic landscape character. The evaluation considers changes since the end of the historic period (1600–1965).[18] Landscape features are inventoried in Tables 4.1–4.2. The inventory addresses all features within the road prism, including those on private inholdings.

The district is listed significant under National Register Criteria A, C, and D in the areas of Archeology, Agriculture, Architecture, Commerce, Exploration/Settlement, and Transportation. An update to the Determination of Eligibility from the New Jersey Department of Environmental Protection, Historic Preservation Office (NJHPO) dated February 25, 2020, states that the areas of significance should also include Entertainment/ Recreation.[19] Currently, the National Register of Historic Places nomination suggests significance at the local level, but subsequent documentation of Old Mine Road Historic District proposes a state level of significance.[20] The period of significance for Old Mine Road North is 1600–1965. Based on analysis of historic condition and changes to the landscape since the period of significance, the Old Mine Road North cultural landscape retains sufficient integrity to the period of significance to convey its historic association. The cultural landscape retains integrity of location and association, with diminished integrity of workmanship and design. The site retains enormous potential for future archeology.

Description of Study Boundaries

The study boundary for this CLR is coterminous with the polygon enclosing the Old Mine Road National Register District (Old Mine Road North section), but in no instances is the study area less than fifty feet, measured horizontally, from the outer edges of the pavement surface (referred to as the "road prism" or "roadway"). The 7.55-mile section referred to as Old Mine Road North is situated south of Montague, New Jersey, on the east side of the Delaware River. The study area for the project is coterminous with the polygon enclosing the northern section of the Old Mine Road National Register District. The entire Old Mine Road National Register District consists of approximately 26 miles of road corridor, beginning at Montague Township, Sussex County, New Jersey, south to Hardwick Township, Warren County, New Jersey. Old Mine Road North corresponds to DEWA Route 0015 as inventoried in the Federal Highway Administration (FHWA) Office of Federal Lands Road Inventory Program (RIP).

Resources and landscape elements beyond the study area are shown on project mapping as context but were not considered within the scope of work. In some cases, thick vegetation or unsafe topographic conditions limited site investigation to a narrower area, but these instances were rare. During scoping meetings, the consultant team and the NPS agreed that in instances where the National Register District boundary encompasses an area beyond the fifty-foot road prism, the consultant team would evaluate these areas for context only to inform the history of the road. This report considers these areas (cemeteries and remnant farmsteads) component landscapes. According to the NPS,

> A component landscape is a definable physical area within the boundaries of a landscape that is listed on, or eligible for listing on, the National Register of Historic Places. It contributes to the significance of the landscape, and may also be individually eligible for the National Register. A component landscape warrants individual documentation to adequately record the physical

18. This document uses "historic period" to describe the period of significance for Old Mine Road North.
19. Katherine Marcopul to Sula Jacobs, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area, Historic Properties Management Plan," February 25, 2020, Delaware Water Gap National Recreation Area.
20. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," Cultural Landscapes Inventory (U.S. Department of the Interior, National Park Service, October 2005), 1.14.

character or assemblage of related features. A component landscape feature is a physical unit that is part of the existing character of a component landscape. Each feature is identified in association with one of thirteen landscape characteristics, and evaluated as contributing or noncontributing to the historic character of the component landscape, or as managed as a cultural resource.

These component landscapes are worthy of documentation with an individual cultural landscape inventory (CLI) or CLR. Therefore, major features are documented in this CLR, but additional landscape features may have been or are present that deserve full documentation in a later study. These character areas are as follows (from south to north): Bevans-Hellwig Farm (ca. 1796, MP 0.0), Heron's Nest/Frank Stoll House (ca. 1830, Mettler Road), John Wesley Van Auken House (ca. 1760, Mettler Road), Mettler Cemetery (ca. early nineteenth century, MP. 1.65), Depue House (ca. 1780, MP 2.8), Anson Johnson House (ca. 1840, MP 4.2), William Ennis House (1751, MP 4.6), Westbrook-Bell Farm (ca. pre-1730, MP 5.14), Black Farm (ca. late eighteenth century, MP 5.3), Minisink Dutch Reformed Church and Cemetery (ca. pre-1737, MP 7.38).

Site History

Illustrations for Site History are found at the end of each historic period, Drawings 1.1–1.21.

Geological History and Physical Formation

Delaware Water Gap National Recreation Area (DEWA) is located in the Delaware River Valley (also referred to as the Kittatinny Valley), part of the Ridge-and-Valley physiographic province at the north end of the Appalachian Mountains. The namesake Delaware Water Gap is a V-shaped valley at the south end of the park, where the Delaware Valley cuts through the Kittatinny Ridge. North of the Delaware Water Gap, the park is oriented around the Delaware River Valley and the Middle Delaware River, which run between the Kittatinny Ridge to the east and the Blue Mountain Ridge to the west.[21] The Middle Delaware River is approximately forty miles long, extending from the Delaware Water Gap to Port Jervis, New York.[22]

The creation of the Delaware Water Gap and the Delaware River Valley is the result of geological processes that occurred over hundreds of millions of years. The initial creation of the Appalachian Mountains is attributed to a series of mountain-building events caused by tectonic collisions. Approximately 65.5 million BP (before present), by the onset of the Cenozoic Era, the Appalachian Mountain Range reached its maximum height and tectonic events around the present-day DEWA subsided. As the Appalachian Mountains eroded over time, areas composed of erosion-resistant materials formed ridges while softer, less-resistant materials eroded away to form valleys.[23] The Delaware Water Gap formed via a process of headwater erosion, which gradually eroded away at a weak flexure zone of soft bedrock in the Kittatinny Ridge, and subsequent stream capture. These processes are summarized as follows:

> As headwater erosion, the process by which a stream cuts progressively further upslope, cut the stream ravines, a notch formed on the east side of the ridge crest. The river exploited the highly deformed zone of weakness when forming the notch. A combination of weathering processes, such as frost wedging, dissolution (chemical weathering), abrasion (mechanical weathering), and tree-root wedging, further broke down the rocks…
>
> Through time, the notch deepened through Kittatinny Mountain, eroding a gap. Eventually, an eastern stream captured the flow of a western stream and a through-flowing water gap formed, creating the channel for the modern Delaware River system…[24]

These processes of erosion and stream capture gradually cut through the Kittatinny Ridge and formed the Delaware Water Gap, measuring one mile wide and 1,200 feet deep. The Water Gap is flanked by Mount Tammany to the north (in present-day New Jersey), and Mount Minsi to the south (in present-day Pennsylvania). Mount Tammany has an elevation of 1,527 feet, while Mount Minsi has an elevation of 1,463 feet.[25]

Successive periods of glaciation also impacted the landscape of DEWA, most recently during the Wisconsin glaciation, which ended approximately 11,000 years ago. As sheets of ice "advanced and retreated over the park," the glaciers eroded away at certain areas and deposited earth in others. At the same time, rivers, streams, and marshlands were created by the melting glacial waters that carved their way through the landscape.[26] As the glaciers receded, the area became vegetated. According to archeologist Peter Pagoulatos, pollen profiles dating to "12,000 and 10,000 BP indicate

21. "Geologic Resources Inventory Report," Natural Resource Report (Delaware Water Gap National Recreation Area: National Park Service, Natural Resource Stewardship & Science, 2013), 1–2.
22. "National Wild and Scenic Rivers in the DRB," Delaware River Basin Commission, January 1, 2023, https://nj.gov/drbc/basin/wild.html.
23. "Delaware Water Gap National Recreation Area," Geologic Resources Inventory Report (U.S. Department of the Interior, National Park Service, October 2013), 40.
24. "Delaware Water Gap National Recreation Area," 7–10.
25. "Delaware Water Gap National Recreation Area," 7.
26. "Delaware Water Gap National Recreation Area," 11.

a cold and moist climate," and a landscape host to a "mosaic pattern of coniferous, deciduous, and possible boreal-like forests."[27] At that time, plant life in the area would have included "spruce, pine, and lesser amounts of sedges and grasses," and the northern end of present-day New Jersey would have had large wetland biomes, "which represented former glacial lakes." Pagoulatos notes that fauna in the area would have included "elk and white-tailed deer, with some possible caribous, mastodon, and mammoth."[28]

Precontact History and Settlement in the Delaware River Valley (ca. 12,000 BP–1500 CE)

Contemporary federally recognized tribes of this land in the United States include the Delaware Tribe of Indians, the Delaware Nation, the Stockbridge-Munsee Band of Mohican Indians, and the Shawnee Tribe, while recognized tribes in Canada include the Delaware of Six Nations, the Delaware Nation at Moraviantown, and the Munsee Delaware Nation. It should be noted that the following passages are based upon western temporal epistemologies and may not accurately reflect the temporal epistemologies of many North American indigenous peoples.

Paleoindian Period (ca. 12,000–10,000 BP)

Following the end of the Wisconsin glaciation, the Delaware River Valley became host to new vegetation and wildlife. Around this time, early humans began to arrive. The Delaware Water Gap was likely an important site for Paleoindian peoples, who would have used the gap as a passage through the mountain ridge.[29] The first Paleoindian groups are believed to have reached present-day New Jersey around 11,000 BP. Paleoindian people "lived in small groups and led a nomadic life with seasonal movement to hunt, fish, and gather plants and plant seeds."[30] According to archeologist Peter Pagoulatos, Paleoindian groups used "durable and portable lithic assemblage composed of lanceolate shaped fluted points, most resembling those of the Eastern Clovis Tradition, scrapers, gravers, knives, and other flake tools."[31]

The Zierdt archeological site dates to the Paleoindian Period and is located south of present-day Montague, toward the north end of Delaware Water Gap National Recreation Area. According to archeologist Sydne B. Marshall, the Zierdt Site is "located on a high sandy terrace formed by glacial melt waters," approximately half a mile southeast of the Delaware River.[32] Artifacts recovered at the site include "fluted points, several scrapers, a knife, a graver, a core, and over one hundred waste flakes." Excavations also revealed a "small hearth with fire-reddened rock." According to Pagoulatos, the Zierdt Site "appears to represent a more limited short-term encampment," most likely used by family units.[33]

Another notable example of a Paleoindian Period site is the Shawnee-Minisink Site, located on the Pennsylvania side of the Delaware River near the southern portion of DEWA. The Shawnee-Minisink Site is a stratified site, with multiple layers of artifacts from different periods of occupation spanning 13,000 years.[34] Artifacts dating to the Paleoindian Period are contained within the deepest stratified layer and have been protected from external impacts. Based on soil analysis, the climate in this area during the Paleoindian Period was "warmer, drier, and sunnier than before, but cooler and wetter than modern climate," and seed analysis indicates that plant life would have consisted of deciduous and coniferous forests. The Shawnee-Minisink Site is significant for yielding

27. Peter Pagoulatos, "Paleoindian Site Location in New Jersey," *Archaeology of Eastern North America* 32 (2004): 124–25.
28. Pagoulatos, "Paleoindian Site Location in New Jersey," 124–25.
29. "Delaware Water Gap National Recreation Area," 2.
30. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," Cultural Landscapes Inventory (U.S. Department of the Interior, National Park Service, October 2005), 26.
31. Pagoulatos, "Paleoindian Site Location in New Jersey," 123.
32. Sydne B. Marshall, "Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period ca. 10,000 B.C. - 6000 B.C.," n.d., 31, https://www.nj.gov/dep/hpo/1identify/pg_10_AborigianalSettleNJMarshall.pdf.
33. Pagoulatos, "Paleoindian Site Location in New Jersey," 133.
34. "Shawnee-Minisink Site," National Register of Historic Places Registration Form (United States Department of the Interior, National Park Service, September 25, 2007).

plant and fish remains dating to the Paleoindian Period, indicating that people inhabiting the region during this period did not rely solely on big game and had a "sophisticated subsistence system that relied on many different food resources." The Shawnee-Minisink Site is also an important source of artifacts relating to the types of tools and materials used by Paleoindian Period people. Tools recovered from the Shawnee-Minisink Site include examples made from locally sourced black chert, while others are made of non-local materials.[35]

Archaic Period (ca. 10,000–3,000 BP)

During the Archaic Period (ca. 10,000–3,000 BP), the climate continued to warm, and human populations adapted their ways of life accordingly. Many of the large land mammals present in the Paleoindian Period, including mammoths, mastodons, and elk, were extinct in the New Jersey area by the onset of the Archaic Period.[36] The landscape transitioned from "more boreal mixed pine-oak forests to the more temperate oak-hickory deciduous forests," which correlated "with a notable increase in population in the Middle to Late Archaic Periods."[37] Archeologist Herbert C. Kraft notes that "the general vegetational pattern had acquired a completely modern appearance" during the Archaic Period.[38]

By the Archaic Period, the remains of glacial lakes had created fertile marshlands in present-day Warren and Sussex counties, which "attracted a succession of Indian hunting-gathering bands." According to archeologists Kraft and R. Alan Mounier, the Delaware River Valley "provided raw materials and natural food resources for both humans and animals," and "the Delaware Valley floodplain has preserved some of New Jersey's best evidence of Archaic cultures."[39]

The Archaic Period is characterized by the appearance of new types of stone projectile points. According to Pagoulatos, populations living in north New Jersey during the Archaic Period lived in small, highly mobile groups and "used a rather durable and portable lithic assemblage composed of corner-notched, stemmed and bifurcate points forms, scrapers, gravers, knives, flake tools, choppers, abraders, anvil stones, notched netsinkers and occasional ground stone tools."[40] According to Kraft, it is likely that stemmed and notched points were "propelled by means of an atlatl or spear-throwing device, as indicated by the discovery of stone weights or 'bannerstones,'" used to better propel spears. Additionally, the presence of netsinkers implies that people during the Archaic Period had begun to employ fishing nets, and the "appearance of stone axes, adzes, celts, and gouges" suggests advances in woodworking during this time.[41] According to Kraft, the Delaware River would have been an important source of food for human populations, providing them with "an abundance of fish and fresh water mussels, especially in the spring when shad were running."[42] According to Kraft and Mounier, heavy tools used during this time likely assisted in the construction of dugout canoes made from large tree trunks.[43] Canoes would have further aided native people's abilities to fish and travel between sites.

One example of an Archaic Period occupation site in the study area is the Brace Site. The Brace Site is in the northern portion of DEWA. Artifacts recovered at the Brace Site date to the late Archaic Period and early Woodland Period. According to an archeological report from 1978, excavations at the Brace Site recovered 104 projectile points, of which 62 percent were made of shale. A majority were stemmed, although there were small numbers of points that were side- or corner-notched. In addition to the shale points, there other made of "flint, jasper, and chert." The Brace Site also produced fourteen scrapers, of which three were chert and eleven were jasper

35. "Shawnee-Minisink Site."
36. Herbert C. Kraft and R. Alan Mounier, "The Archaic Period in New Jersey (ca. 8000 B.C. - 1000 B.C.)," n.d., 60, https://www.nj.gov/dep/hpo/1identify/pg_52_ArchaicPeriodNJCraft_Mounier.pdf.
37. Kraft and Mounier, "The Archaic Period in New Jersey," 59.
38. Kraft and Mounier, "The Archaic Period in New Jersey," 66.
39. Kraft and Mounier, "The Archaic Period in New Jersey," 58.
40. Peter Pagoulatos, "Early Archaic Settlement Patterns of New Jersey," *Archaeology of Eastern North America* 31 (2003): 15.
41. Kraft and Mounier, "The Archaic Period in New Jersey," 52.
42. Kraft and Mounier, "The Archaic Period in New Jersey," 63.
43. Kraft and Mounier, "The Archaic Period in New Jersey," 61.

and five hammerstones made of "river-smoothed sandstone."[44]

The Woodland Period (ca. 3,000 BP–1,600 BP)

The Woodland Period is characterized by major changes in the lifestyles and technologies of precontact peoples. The onset of the Woodland Period is marked by the widespread use of pottery, the trend toward increased settlement, and the emergence of more elaborate cultural rituals.[45] The end of the Woodland Period was "a time of intensive occupation and gardening along major riverine sites," coinciding with the domestication of plants, "such as maize, beans, squash, pumpkins, tobacco, and possibly sunflowers." Woodland Period people used fire to clear lands for farming. The transition to increasingly sedentary, agricultural lifestyles was accompanied by more permanent and substantial dwelling structures, increased populations, and changing hunting techniques. According to Kraft and Mounier, by this time, hunters were "using the bow and arrow almost exclusively, the arrow being tipped with broad, triangular points of the Levanna type."[46] Woodland Period people in northern New Jersey also maintained trade relationships with nearby peoples, and "Numerous lithic and ceramic artifacts attest to trade and culture contact with peoples from throughout New Jersey."[47]

Fish and freshwater mussels continued to be an important food source for Woodland Period people living in the Delaware River Valley. During seasonal shad runs, they employed gill nets and notched pebble netsinkers to keep them weighted. They also gathered freshwater mussels, and "Thousands of discarded shells have been found in many of the pits and middens on the river terraces." They also utilized dugout canoes crafted from large tree trunks to aid in fishing and for transportation along the Delaware River.[48] People gathered plants and natural materials and used these resources for various medicinal purposes, and "Illness was treated with herbal teas and poultices made from local medicinal plants, roots, and tree barks."[49]

During the Woodland Period, there was a noticeable increase in settlements along the Delaware River, particularly north of the Delaware Water Gap. Kraft identifies the "Pahaquarra Culture" in this area from circa 1000 to 1350 CE. According to Kraft, Woodland Period people living in the Delaware River Valley during this time lived in small "unfortified hamlets" with one or more family groups. Houses were typically circular wigwams or "round-ended longhouses with the doorway on one of the long sides." Houses had deep dugout storage pits to store food, and "Some of the storage pits dug by the Minisink Indians in the Upper Delaware River Valley measured up to 98 inches in depth and more than 60 inches in diameter." Ceramics produced by members of the Pahaquarra Culture included ovular, "egg-shaped" clay pots, which ranged in size from small vessels sized for personal use to large "community-type vessels have a capacity of up to twenty gallons."[50]

Kraft theorizes that the Pahaquarra Culture people were the ancestors of the later Munsee Lenape people in the area (also referred to as Minsi Lenape). However, Kraft uses the term "Proto-Munsee" to refer to the people that lived in the Delaware River Valley and northwestern New Jersey from circa 1350 CE to the point of European contact, as the term Munsee did not originate until after the arrival of European explorers (other writers and academics also use the term "Minisink Indian"). It appears that, in many ways, the lifeways of the Proto-Munsee people were similar to the Pahaquarra Culture. According to Kraft, the Proto-Munsee continued to live in small settlements, and domestic structures were often small, circular wigwams or larger longhouses with rounded ends and single entrances. The Proto-Munsee people

44. "The Brace Site," Site Registration Program (New Jersey State Museum, Bureau of Archaeology, n.d.).
45. Lorraine E. Williams and Ronald A. Thomas, "The Early/Middle Woodland Period in New Jersey (ca. 1000 B.C. - A.D. 1000)," n.d., 107, https://www.nj.gov/dep/hpo/1identify/pg_103_EarlyMiddleWdlndPeriodNJWilliams_Thomas.pdf.
46. Herbert C. Kraft and R. Alan Mounier, "The Late Woodland Period in New Jersey (ca. A.D. 1000 - 1600)," n.d., 146–48, https://www.state.nj.us/dep/hpo/1identify/pg_139_LateWdlndPeriodNJKraft_Mounier.pdf.
47. Kraft and Mounier, "The Late Woodland Period in New Jersey," 141.
48. Kraft and Mounier, "The Late Woodland Period in New Jersey," 151.
49. A. Berle Clemensen, "Preliminary Historic Resource Study" (Delaware Water Gap National Recreation Area, September 1996), 9.
50. Kraft and Mounier, "The Late Woodland Period in New Jersey," 146–52.

cultivated plants, using hoes and other gardening tools that were crafted out of stone or animal bone.[51]

Proto-Munsee people also produced pottery and decorative items that were different from those of their predecessors. Kraft notes that decorative elements were "incised into the rim, collar, and shoulder of the pot, and consist of triangular and linear geometric patterns in complicated interrelationships." Effigies also began to appear on ceramic pots and tobacco pipes, typically featuring "two eyes and a mouth impressed or incised into an otherwise plain surface."[52]

According to historical ecologist Emily W. B. Russell, precontact vegetation in northern New Jersey "was primarily oak forest, broken by swamps, meadows, and occasional Indian clearings in the lowlands." Precontact forests were predominantly oak (*Quercus* spp.), including white, red, and black oaks, followed by lesser concentrations of chestnut (*Castanea* spp.) and hickory (*Caryna* spp.) trees. Other trees, including hemlock (*Conium* maculatum), birch (*Betula* spp.), maple (*Acer* spp.), beech (*Fagus* spp.), elm (*Ulmus* spp.), and ash (*Fraxinus* spp.), were likely present but less common and "probably minor components of the forest."[53]

The Lenape of the Delaware River Valley

The ancestors of the present-day Lenape people were living along the Delaware River and Hudson River valleys in New Jersey, New York, Pennsylvania, and Delaware well before European explorers reached North America (Figure 2.1). The Lenape shared an Algonquian language, with distinct northern (Munsee) and southern (Unami) dialects.[54] The tribal name, Lenape, translates roughly to "The People."[55] The Lenape are also referred to as the Delaware people, which is derived from the name of Sir Thomas West, Lord De la Warr III, "who was appointed the English governor of Virginia in 1610."[56] Both terms, Lenape and Delaware, are used by present-day tribal members.[57] Descendants of the Lenape belong to several recognized tribal groups in the United States and Canada, including the Delaware Tribe of Indians, the Delaware Nation, the Stockbridge-Munsee Band of Mohican Indians, the Delaware of Six Nations, the Delaware Nation at Moraviantown, and the Munsee Delaware Nation.[58]

Traditionally, the Lenape people were subdivided into three primary tribal bands based on their geographic location: "the Munsee (Wolf Clan), the Unami (Turtle Clan) and the Unalachtigo (Turkey Clan)."[59] These tribal bands are differentiated as follows:

> The Minsi or Munsee lived in the highlands of eastern Pennsylvania and western New Jersey and had the wolf as its totem; the Unami, whose lands covered the Piedmont Section southward to Philadelphia and were known as the turtle tribe; and the Unalchtigo [*sic*], who occupied the coast plan and whose activity was in the area of Wilmington, Delaware and used the turkey symbol or totem.[60]

According to archeologist Margaret Caffrey, Lenape society was matrilineal. Historical accounts cited by Caffrey stated that children did not "'inherit tribal rights from the father but from the mother.' Therefore, both men and women owed allegiance to their lineage over their husbands or

51. Kraft and Mounier, "The Late Woodland Period in New Jersey," 146–52.
52. Kraft and Mounier, "The Late Woodland Period in New Jersey," 152–57.
53. Emily W. B. Russell, "Vegetation of Northern New Jersey Before European Settlement," *The American Midland Naturalist* 105, no. 1 (January 1981): 10.
54. Brice Obermeyer, *Delaware Tribe in a Cherokee Nation* (Lincoln, Nebraska: University of Nebraska Press, 2009), 37–39.
55. "Frequently Asked Questions About the Lenape or Delaware Tribe," Official Web Site of the Delaware Tribe of Indians, June 26, 2013, https://delawaretribe.org/blog/2013/06/26/faqs/.
56. Obermeyer, *Delaware Tribe in a Cherokee Nation*, 38.
57. "Frequently Asked Questions About the Lenape or Delaware Tribe."
58. "The Lenape," Museum of Indian Culture, n.d., https://www.museumofindianculture.org/copy-of-museum-resources.
59. Nekole Alligood, "The History of Delaware Nation," Delaware Nation, n.d., https://www.delawarenation-nsn.gov/history/.
60. Dennis Bertland, Patricia M. Valence, and Russell J. Woodling, "The Minisink: A Chronicle of One of America's First and Last Frontiers" (New Jersey and Pennsylvania: Four-County Task Force on the Tocks Island Dam Project, 1975), 30.

wives."[61] Historian Brice Obermeyer describes the social and political structure of Lenape bands and villages as follows:

> In the seventeenth century, Munsee- and Unami-speaking groups lived in approximately forty politically autonomous bands of a few hundred members each that were linked through cultural similarities, periodic alliances, and marriage… Each village housed several matrilineages, each with their own understood hunting territory. Each lineage belonged to one of at least three

61. Margaret M. Caffrey, "Complementary Power: Men and Women of the Lenni Lenape," *American Indian Quarterly* 24, no. 1 (2000): 49.

Figure 2.1. Circa 1600 to 1700 map of Lenape languages and tribes, annotated with pink line to show the approximate location of the Old Mine Road North study area (Source: Native Land Digital, https://native-land.ca/maps/territories/lenape/; annotated by WLA Studio, 2023).

> clans, and both of the clans and lineages were exogamous. During the winter months the villages would disperse as each lineage would break up into smaller family foraging groups and make greater use of the lineage's hunting territory that surrounded the centrally located village. The villages were likely settled in the same location for long periods of time, and each was governed by a group of male sachems, or linear representatives. Although the sachems were male, the matron of each matrilineage was the chief-maker, as it was she who named and could replace lineage sachems. The villages were this relatively egalitarian with political decisions ultimately being made by consensus within each lineage…[62]

Within Lenape villages and family units, women were the primary farmers, responsible for harvesting corn, beans, and squash, and gathering maple syrup. In addition, women "were expected to pound corn to meal in mortars or troughs, cook and make bread, smoke and dry meat, tan skins and make clothing and moccasins, store food, gather nuts, tubers, and berries…and make mats, ropes, has, and baskets of wild hemp." Meanwhile, Lenape men were the primary hunters, hunting deer, beaver, raccoon, fox, and bear.[63] Men also hunted wild fowl, such as "turkeys, cranes, geese, and ducks," and fished year-round. Lenape men fished for "alewives, shad, and sturgeon," using fish weirs, harpoons, and bows and arrows.[64] Men also assisted land-clearing efforts for farming, made canoes, and after European contact, constructed fences around farmland.[65]

According to Nora Thompson Dean, a well-known Lenape traditionalist, activist, and member of the Delaware Tribe of Indians, "the woman had full charge of the home; in fact, she was considered the owner of the house. The woman took care of the food preparation, and the man procured the game animals. The woman took care of planting and the garden and the man cleared the land for the gardens."[66] Lenape houses were typically circular or ovular wigwams or longhouses, varying in size from "fifteen to sixty feet in length and up to twenty feet in width."[67] According to Kraft, Lenape houses had a vaulted ceiling made of "an arbor-like framework of saplings overlaid with slabs of linden, elm, chestnut, walnut, or other bark." Interior spaces were outfitted with sleeping benches, and it is possible that partition walls were constructed to separate interior spaces.[68]

The Lenape utilized natural resources for medicinal and ceremonial purposes. In 1971, ethnobotanist Georgia A. Hill, Jr. published "Delaware Ethnobotany," in which he compiled generational plant knowledge from Lenape tribal members. The Lenape used crushed horsemint (*Monarda* spp.), also known as 'bee balm' or 'Indian perfume' to treat headaches, boiled black walnut (*Juglans nigra*) leaves to treat ringworm, and used persimmon (*Diospyros virginiana*) sap for relief from earaches. Boiled bark tea from wild black cherry (*Prunus serotina*) was used to treat colds and cough, while boiled black walnut bark tea was used to induce vomiting and ease stomach cramps. The Lenape used eastern red cedar (*Juniperus virginiana*) as incense, employed for a variety of different ceremonies, such as mourning and purification rituals. Tobacco (*Nicotiana tabacum*) was an important medicinal and ceremonial plant. The Lenape used tobacco to treat toothaches and reduce painful wasp stings.[69] The Lenape also used tobacco as an incense and a ceremonial offering. Regarding the spiritual importance of tobacco, Hill says the following:

> Among the Delawares tobacco was considered a magic plant. It was offered to the creator and to other spiritual agents as the occasion warranted. Tobacco was burned like incense in an open fire and was used during prayers and incantations by medicine men.

62. Obermeyer, *Delaware Tribe in a Cherokee Nation*, 40.
63. Caffrey, "Complementary Power: Men and Women of the Lenni Lenape," 46.
64. Herbert C. Kraft, *The Dutch, the Indians, and the Quest for Copper: Pahaquarry and the Old Mine Road* (South Orange, New Jersey: Seton Hall University Museum, 1996), 7–8.
65. Caffrey, "Complementary Power: Men and Women of the Lenni Lenape," 45.
66. Nora Thompson Dean, "Some of the Ways of the Delaware Indian Women," Official Web Site of the Delaware Tribe of Indians, January 24, 1983, https://delawaretribe.org/blog/2016/08/07/some-of-the-ways-of-the-delaware-indian-women/.
67. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 13.
68. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 9.
69. George A. Hill Jr. and Jim Rementer, "Delaware Ethnobotany," 2015, https://delawaretribe.org/wp-content/uploads/DEL-ETHNOBOTANY-Hill.pdf.

> When an herbalist gathered roots or leaves in the woods he customarily sprinkled tobacco at the base of the plant as an offering to the spirit of the plant…
>
> Tobacco was used to quiet angry waters; to allay destructive winds; to seek good luck in hunting; to protect a traveler; to return thanks to the creator; to console the bereaved; and for other religious purposes…[70]

The Munsee Lenape were the northernmost clan of the Lenape, and their territory included the Upper Delaware River and Hudson River valleys, encompassing the study area. Prior to European settlement in the area, "Munsee people…lived along the northern section of current-day Old Mine Road" in "hamlets and small villages."[71] There was a sizable village located on Minisink Island and the adjacent banks of New Jersey and Pennsylvania. The Minisink village likely consisted of scattered farmsteads and housed hundreds of people during peak population periods. The population of the Minisink village fluctuated considerably based of seasonal migration patterns.[72] Minisink Island was located near the intersection of two important Native American trails, the Minsi Path and the Minisink Path. The Minsi Path extended from below Philadelphia, running north along the Pennsylvania bank of the Delaware River before crossing at Port Jervis, New York, and extending to the Hudson River. The Minisink Path ran east to west from coastal New Jersey through Pennsylvania, and on into the Ohio Valley.[73] Minisink Island's location near this important crossroads contributed to the Minisink village's size and importance. Other Native American groups also migrated into and out of the area during the seventeenth and eighteenth centuries. For example, During the late 1600s, "many of the hundreds of Shawnee people moving east to escape intensified fighting in the Ohio Valley brought on by King William's War [1688–1697] settled at Pechoquealin, their name for the Delaware Water Gap, sometime after 1692."[74]

While much of the historical lore about the creation of Old Mine Road is tied to the long-standing narrative of Dutch mining activities at the Pahaquarry copper mines during the seventeenth century, historians and archeologists have repeatedly dispelled this for lack of evidence. Although there were later mining endeavors made in the area by English colonists, the distribution of copper throughout the landscape is so dispersed that these ventures proved unfeasible.[75] Archeologists are still uncovering evidence regarding the Lenape mining activities. While Kraft asserts that the Lenape people did not mine for or use copper implements in any considerable measure, and Lenape artifacts "did not derive from the Pahaquarry mine," recent archeological evidence reveals that Lenape copper artifacts may have originated locally in Pennsylvania or New Jersey.[76]

70. Hill and Rementer, "Delaware Ethnobotany," 22.
71. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," 15.
72. "Minisink Historic District," National Historic Landmark Nomination (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, 1993), 7–9.
73. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 132.
74. Robert Grumet, *Historic Contact: Indian People and Colonists in Today's Northeastern United States in the Sixteenth through the Eighteenth Centuries* (Norman: University of Oklahoma Press, 1995), 218.
75. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," 27.
76. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 20–23. As noted by DEWA staff, it is important to remember that Native American mining for copper may have looked very different from a large European mining operation and may have entailed small-scale mining from exposed surface veins or working drift copper (nodules) found on the surface (the Delaware Valley is a rich source of the latter). These small-scale efforts may have not warranted recordation as established mines in European histories. Previous (and very limited) testing of a handful of copper artifacts from NJ suggested origin in the Midwest; however, recent testing of Precontact copper artifacts from NJ (including one site in DEWA) indicated that the chemical composition of many artifacts is similar to that recorded at local sources (NJ and PA), and not the Midwest. Additional study is needed on this subject. See Gregory D. Lattanzi, "The Provenance of Pre-Contact Copper Artifacts: Social Complexity and Trade in the Delaware Valley," *Archaeology of Eastern North America* 35 (2007): 125–37 and Richard Veit, Gregory D. Lattanzi, and Charles A. Bello, "More Precious Than Gold: A Preliminary Study of the Varieties and Distribution of Pre-Contact Copper Artifacts in New Jersey," *Archaeology of Eastern North America* 32 (2004): 73–88.

Landscape Summary

Following the Wisconsin glaciation, northern New Jersey became host to a mix of coniferous, deciduous, and possibly boreal forests. The landscape would have included spruce and pine trees, alongside smaller quantities of grassy plants. Former glacial lakes likely created large wetland biomes. In addition to elk and deer, the landscape was likely home to caribou, mastodons, and mammoths. During the Paleoindian Period, human occupants in the region made few changes to the natural environment. Paleoindian people adhered to a hunter-gatherer lifestyle, meaning their settlements were small and ephemeral.

By the onset of the Archaic Period, warming climate conditions contributed to changes in regional plant and animal life. Large land mammals, including elk, mastodon, and mammoth, were extinct in the area. Forested areas were now dominated by deciduous forests with oak and hickory trees, and vegetation patterns in northern New Jersey reached conditions like the present. Archaic Period people continued to follow a hunter-gatherer lifestyle and live in small, mobile bands with temporary settlements. Human occupation had a minimal impact on the natural environment.

Settlements became larger and more permanent during the Woodland Period. People built larger, more substantial dwellings and cleared land for agriculture. Woodland Period people domesticated several staple crops, including maize, beans, squash, and tobacco, supporting growing populations. They burned trees and shrubs to clear land for agriculture. Woodland Period people also harvested large numbers of freshwater mussels and, over time, discarded shells formed middens. They felled trees to build dugout canoes, allowing people to travel via the Delaware River.

By the time of European arrival, different Lenape tribal bands had established permanent settlements along the Delaware River in present-day New Jersey, New York, Pennsylvania, and Delaware. A sizable Munsee Lenape village was located on and around Minisink Island. The Lenape gathered plants and other natural materials to treat various maladies. The Lenape continued to plant staple crops and burn land to clear it for farming as needed. By this time, native people had created a well-established trail network, and the Minisink Path and Minsi Path intersected near Minisink Island, contributing to the village's importance.

The Colonial Frontier (1500–1790s)

It is possible that the Munsee Lenape people were aware of European explorers well before they made direct contact. The earliest known European expedition that sailed along the coastline of present-day New Jersey was *La Dauphine*, captained by Italian explorer Giovanni de Verrazzano in 1524. Although small voyages had likely sailed along the coast of present-day New Jersey, Verrazzano was the first to leave behind a record of his visit. These European explorers and their large ships would have undoubtedly attracted the attention of native people living along the coast, and "News of the white strangers was doubtless passed from band to band."[77]

The arrival of European explorers in the western hemisphere would have disastrous consequences for native peoples throughout the New World. Like other Native American groups, the Lenni Lenape people were exposed to foreign diseases and pathogens that decimated their populations, including smallpox, malaria, measles, and the influenza virus. The impact of these diseases caused a broader "cultural dislocation," as it disproportionately impacted the young and the elderly, which had a destructive impact on the collective past and future generations of Native American tribes.[78] Although the Minisink Lenape people may not have had direct contact with the earliest wave of European colonists, it is possibly that they were still exposed to these illnesses indirectly through trade and contact with other Lenape and Native American groups.

77. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 5.
78. Richard Veit, "Setting the Stage: Archaeology and the Delaware Indians, a 12,000-Year Odyssey," in *New Jersey: A History of the Garden State* (New Brunswick, New Jersey: Rutgers University Press, 2015), 20–21.

Figure 2.2. Circa 1651–1655 map by Nicholaes Visscher showing the Middle Atlantic area including the Minisink area, located in the yellow box (Source: Library of Congress, https://www.loc.gov/item/97683561/; label added by WLA Studio).

Dutch Exploration and Early Myths About the History of Old Mine Road

The first known European to explore present-day New Jersey was Henry Hudson, who was commissioned by the Dutch to find a westward passage to the East Indies in 1609.[79] The New Netherland Company (1615–1618) and the West Indies Company (1621–1664) soon followed Hudson's exploration.[80] These companies were primarily concerned with trading for fur and only later turned their attention to establishing permanent settlements in the New World.[81] Although Hudson had described the potential for precious metals in his initial journey along the Hudson River, the Dutch trading companies did not incentivize the pursuit of mining during the early seventeenth century.

In addition to their general prioritization of fur, Kraft outlines several practical arguments for why it is so improbable that Dutch miners built Old Mine Road during the seventeenth century. For one, the Dutch companies had a very difficult time recruiting Dutch citizens to come live in the New World, as it was "probably the wealthiest nation in Europe" at the time, and "its citizens were self-

79. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 37.
80. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 41.
81. Maxine N. Lurie, "Colonial Period: The Complex and Contradictory Beginnings of a Mid-Atlantic Province," in *New Jersey: A History of the Garden State* (New Brunswick, New Jersey: Rutgers University Press, 2015), 34.

sufficient and content, and they enjoyed political as well as religious freedom." Despite efforts to recruit persecuted and marginalized people to settle in New Netherland, there were just three hundred people living in the colony by 1629.[82] Additionally, relations between early colonists and Native American groups became increasingly hostile as colonists encroached on and infiltrated native territories, and "it would have been foolhardy for a small band of prospectors, miners, and road-builders to venture into the interior." Further complicating the matter, any potential builders would have been faced with a scarcity of materials, equipment, and work animals needed to build a road.[83]

Kraft goes on to refute earlier claims that the Dutch had reached the Minisink Valley during the mid-seventeenth century. According to Kraft, earlier historical accounts such as Amelia Stickney Decker's 1942 publication *That Ancient Trail* likely misattributed colonial-era references to mountainous areas with mining potential to the Kittatinny Ridge and Minisink Valley. Decker cites the *Journal of New Netherlands*, which claimed that in "1645, the West India Company determined to investigate, because by this time a definite location of the mine was found." Kraft asserts that these references were more likely about the Mauritius and Raritan River Valley, of which "the Dutch had far greater knowledge." Additionally, Kraft notes that the Dutch would have had tremendous difficulty sailing upriver past present-day Trenton, at which point the river becomes much more shallow and harder to navigate.[84] Further confusing the matter was the colonial-era reference to Nevasink (also spelled Neversink), a waterway in south New Jersey, which was misinterpreted as a reference to Neversink, a tributary of the Delaware River located near present-day Port Jervis. As Kraft points out, the Neversink stream did not receive its name until the 1800s, and therefore the colonial reference to Nevasink could not have been made in reference to that tributary or that area in the Minisink Valley.[85]

82. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 43.
83. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 43.
84. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 44–45.
85. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 46–48.

During the mid-1600s, the Dutch and Swedish vied for control of New Netherland. The New Sweden Company (1638–1655) attempted to establish settlements along the banks of the lower Delaware River, but they eventually conceded defeat to the Dutch around 1655.[86] At the same time, there were ongoing conflicts between Native American groups and the Dutch, resulting in a series of conflicts known as the Governor Kieft War (1643–1645), the Peach War (1655), the First Esopus War (1659–1660), and the Second Esopus War (1663–1664).[87] While the Minisink area Munsee Lenape people were not directly involved in these conflicts, they did offer aid to other Lenape tribes. According to Kraft, the Munsee Lenape people living in the Minisink Valley were "friendly with the Esopus Indians and would not have taken kindly to potentially hostile strangers," and "when the Dutch in New Netherland were waging war against the Esopus in 1655–1660, the Minisink Indians gave the Esopus Indians refuge and support."[88]

One of the earliest geographic references to the Minisink area was on a map produced circa 1655 by Dutch cartographer Nicolas J. Visscher, entitled "Novi Belgii Novaeque Angliae Nec Non Partis Virginiae Tabula." The map illustrates an area toward the north end of the Delaware River called, "Minnessinck ofte t'Landt van Bacham," which translates to "Minisink or the land of villages" (Figure 2.2).[89]

Transition to English Colonial Rule

As European imperial powers competed for control abroad, the English and Dutch became embroiled in a series of ongoing conflicts to secure control over trade and territory in the New World during the mid-seventeenth century. In addition to being a commercial competitor and trade rival in the New World, New Netherland also functioned as "a wedge that separated Virginia Colony on the south from New England, and thus disrupted the

86. Lurie, "Colonial Period," 34–35.
87. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 1.
88. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 56.
89. Herbert C. Kraft, "The Minisink Settlements: An Investigation into a Prehistoric and Early Historic Site in Sussex County, New Jersey" (South Orange, New Jersey: Archaeological Research Center, March 30, 1977), 6.

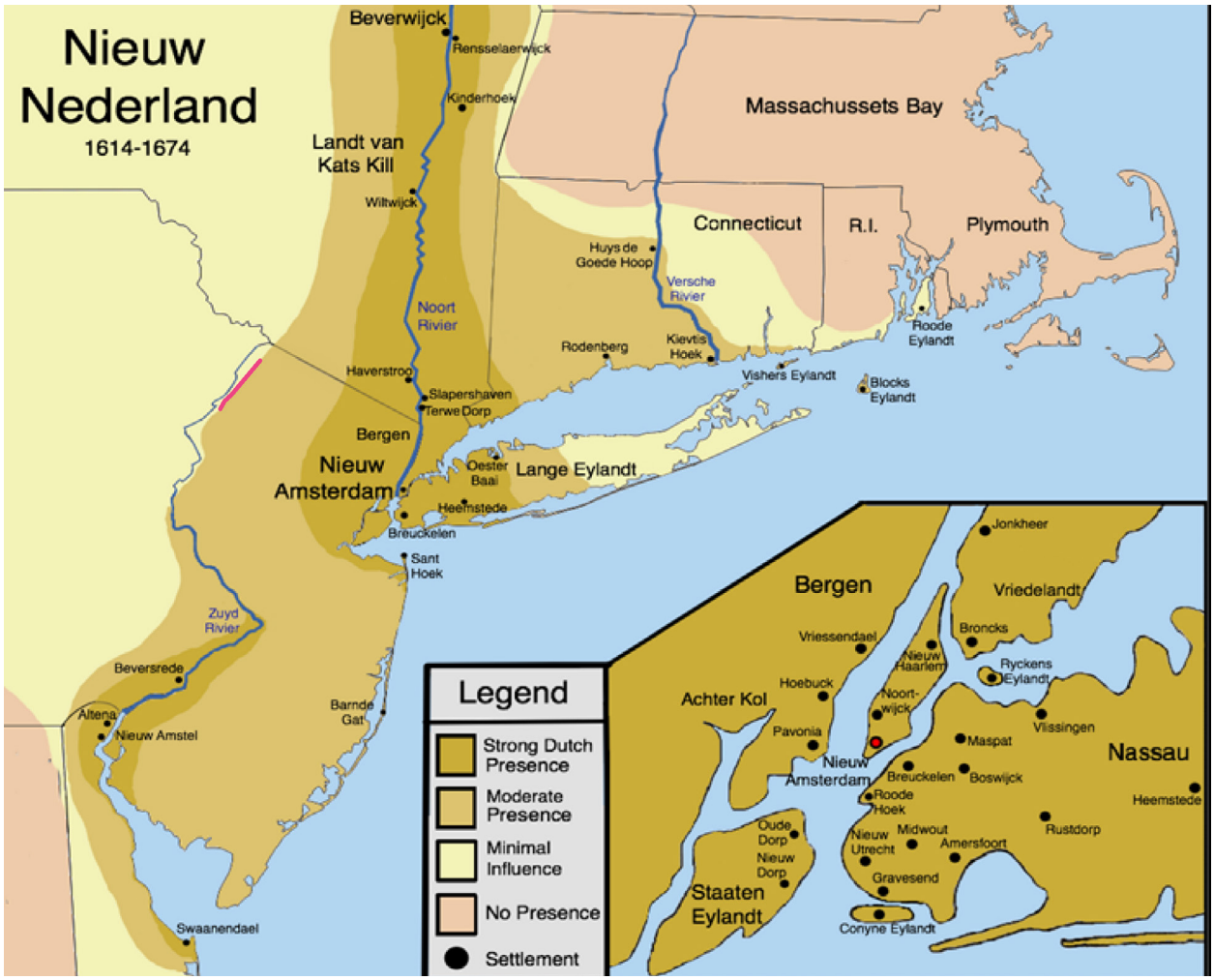


Figure 2.3. A map showing the boundaries of New Netherland. Note that the study area is on the periphery of the Dutch colony, as well as the English colonial holding north and south of New Netherland, annotated with pink line to show the approximate location of the Old Mine Road North study area (Source: Vivid Maps, Old maps of the New Amsterdam and New Netherland - Vivid Maps).

continuity of English settlements" (Figure 2.3).[90] In 1664, England seized control of New Netherland, and King Charles II granted control of the territory to his brother, Duke of York, as a proprietary colony. Following a brief repossession by the Dutch from 1673 to 1674, the English regained control and administered former New Netherland as two separate colonies, East and West New Jersey.[91] The boundary between East and West New Jersey ran northwest through the state, passing through present-day DEWA.

Although the colonial governments of East and West New Jersey were somewhat unstable and faced repeated administrative difficulties, particularly regarding land titles and property disputes, settlement increased substantially under British colonial rule.[92] By the end of the seventeenth century, European colonists had begun to establish residences and farms in the Minisink Valley. It is unknown when, exactly, non-Native Americans first encountered the area, but Kraft points to Thomas Budd's description from 1685 as the first substantiated reference to the Minisink Valley. Budd's account says the following:

> From the Falls of the Delaware River the Indians go in cannows [*sic*] up the said River to an Indian Town called Minisincks, which is accounted from the Falls about eighty miles. This they perform by great labor in setting up against the stream, but they can come down with ease and speed.[93]

90. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 60.
91. Lurie, "Colonial Period," 35.
92. Lurie, "Colonial Period," 38.
93. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 46.

Kraft also notes that the relationship between European colonists and Native Americans improved under the English, despite the fact that "some of the Indians were still occasionally harassed and cheated by white settlers and tradesmen." Until the onset of the French and Indian War (1754–1763) in 1754, European colonists traveled through Minisink territory "without undue concern."[94] In the 1690s, the English colonial government sent Captain Arent Schuyler to explore and trade in the Minisink area on several occasions. In 1694, England sent Schuyler to negotiate British alliances with the Minisink Lenape people, "and to persuade the Minisink to remain loyal to the English."[95]

Frontier Settlement in the Minisink Valley

One of the first European colonists known to reside in Minisink territory was blacksmith William Tietsort. On October 15, 1698, the Munsee Lenape people granted Tietsort a license to purchase property, and they invited him to do so because they valued his "skills in repairing guns, metal tools, and implements, and voluntarily granted him a track of land known by the name Shaikaeckamick." The Munsee Lenape people granted Tietsort an official deed on June 3, 1700.[96]

According to Kraft, many European colonists were beginning to seek land in the area around the time of Tietsort's arrival, first settling in the Upper Delaware River Valley near Esopus (present-day Kingston, New York). However, "settlers gradually wended their way even further into the upper Delaware Valley."[97] In 1696, "twenty Dutch applications had already obtained a patent to purchase land in the Minisink country." The following year, in 1697, Arent Schuyler received a one-thousand-acre land patent (often referred to as the Shuyler patent) that "covered the land between Port Jervis and the Minisink Islands and apparently included the Islands."[98]

As described in an early history of the area written by James P. Snell in 1881, "Some of the acts passed by the Provincial Assembly of New York show that there was a considerable population in the valley of the Delaware, upon and at the mouth of the Mackhackemack, or Neversink, and southward to and include the Minisink islands, prior to the year 1700."[99] By 1701, Kraft notes that there were enough European newcomers residing in the upper Minisink area "to constitute a voting precinct within the jurisdiction of New York State."[100] Family names listed within the voting precinct included "Westbrook, Westfall, Van Kuykendall, Cortright, and Swartout," which "reflected the early Dutch dominance of the region."[101]

Around the turn of the eighteenth cenutry, non-Native American settlement began to reach the Minisink Valley area in West Jersey. This influx of people was primarily from south New York, particularly Ulster and Orange County, who were "driven farther south and west by high prices and rents charged by manor lords along the Hudson." Many of these early arrivals were poor Germans who had arrived in New York as indentured servants in the 1710s. They had arrived in the colony to "produce naval stores;" however, that venture failed almost immediately after they arrived, and the indentured servants were essentially "abandoned." As a result, many of these people "moved with other Dutch and English families to frontier areas where they purchased land directly from Indian owners."[102] Among these was Solomon Davis, who purchased one thousand acres of "fertile lowlands called Kendiawmong from the Minisink Indians" in 1712, located approximately three miles south of Minisink Island.[103]

In 1713, the colonial government of New Jersey appointed commissioners to purchase land from the Munsee Lenape people in the Minisink Valley,

94. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 130–31.
95. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 135.
96. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 130–31.
97. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 137.
98. Kraft, "The Minisink Settlements," 30–31.
99. James P. Snell and W. Woodford Clayton, *History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers* (Philadelphia, Pennsylvania: Everts & Peck, 1881), 315.
100. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 137.
101. Lenard E. Brown, "Historical Base Map, Delaware Water Gap" (New Jersey: Denver Service Center, National Park Service, March 1973), 9.
102. "Minisink Historic District," 9.
103. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 137.

and on August 18 that year, the tribe signed four deeds that that gave the commissioners "titles to a huge area comprising present-day Warren and part of Sussex Counties."[104] Kraft notes that "many of the Minisinks were unclear about the amount of property conveyed in 1713," and the tribe was under the impression that they also maintained their right "to hunt, fish, and gather on this land" (this deception would continue to be a grievance felt among the Munsee Lenape people throughout future negotiations between the Lenape and the New Jersey proprietors).[105] As noted by historian C. A. Weslager, the Lenape maintained a fundamentally different view of land ownership to that of European colonists. According to Weslager, "Land 'ownership' to the Delawares meant the right to use the land, to plant on it, to build wigwams on it, to hunt the animals that lived on it, but not to possess it permanently in the sense that it belonged to one person in perpetuity."[106]

Deed records from this time indicate that European colonists in West Jersey had begun to purchase land around Minisink Island in 1713. On April 18, 1713, "Johannes Westphalia, Claus Westphalia, Simon Westphalia, Tunis Quick, and Cornelius Dutcher" purchased two thousand acres of land in the area from Thomas Stevenson, "an owner of West Jersey proprietary rights."[107] Kraft notes that the increased European population in this area during the early eighteenth century likely necessitated the construction of early wagon roads, which became "necessary to ship produce and receive needed supplies."[108]

After the Munsee Lenape people deeded their land in the Minisink Valley in 1713, "the New Jersey Proprietors and other well-connected individuals sent surveyors to the region to establish claims for the most desirable tracts." In 1715, John Reading Jr. was sent to survey land on behalf of his father. In his journal that year, Reading conveys his difficulty navigating the area due to the mountainous terrain. In 1719, Reading traveled to northern New Jersey, this time "to survey the long disputed boundary line between New Jersey and New York." In Reading's 1719 journal entries, he references Solomon Davis's house and its proximity to a wagon road, located approximately three miles south of Minisink Island. Apparently, Davis's property was accessible via a wagon path that extended north toward present-day Port Jervis. According to Kraft, "This is the first recorded mention of any wagon road, and then only from the vicinity of Minisink Island north to Mahackamac," and "had there been an existing mine road in 1719, John Reading and his men surely would have used it."[109] It is likely that John Reading Jr. used a trail that ran along the west side of the Delaware River. Writing about this likelihood, Don McTernon says the following:

> To this day the Pennsylvania side of the Delaware immediately south of Port Jervis offers a much more level route for travel than the frequently hilly New Jersey side. All of the earliest detailed maps which I have examined, beginning with Lewis Evans' maps of the Middle British Colonies in America published in 1749 and 1755 show a road running up the Pennsylvania side of the Delaware through the Minisink region to a fording place just west of the mouth of the Mahackamack Branch.[110]

John Reading Jr. and his team likely followed a Native American trail called the Minsi Path along the west side of the Delaware River. As noted, the Minsi Path crossed the river around present-day Port Jervis and continued northeast to Esopus, present-day Kingston, New York on the Hudson River.[111] According to historian A. Berle Clemensen, a wagon road following the previous Minsi Path from Port Jervis to Kingston was likely in place by 1715 and was referred to as "the High Road to Esopus."[112] By 1719, this wagon road had branched off and extended south along the New

104. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 113.
105. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 100.
106. C. A. Weslager, *The Delaware Indians: A History* (New Brunswick, New Jersey: Rutgers University Press, 1972), 37.
107. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 137.
108. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 137.
109. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 130.
110. Don McTernan, "The Esopus-Minisink Way: A Brief History of the Area with an Examination of the Legend of the 'Old Mine Road,'" 1969, 113–14, The Esopus-Minisink Way.
111. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 132.
112. A. Berle Clemensen, "Preliminary Historic Resource Study" (Delaware Water Gap National Recreation Area, September 1996) ix-x.

Jersey side of the Delaware River approximately six miles south of present-day Port Jervis, reaching the residence of Solomon Davis.[113]

In 1722, Solomon Davis sold or granted two acres of land to Thomas Quick, with the purpose of establishing a gristmill and dam on the property. The would-be mill was located in the present-day Montague Township, just north of Old Mine Road. Over time, a small mill village known as Millville emerged, containing a "milldam, mills, blacksmith shop and several dwellings." Located on Shimer's Brook, approximately two miles north of Montague, Millville was likely an important industrial and commercial center for European homesteaders establishing farmsteads along early manifestations of Old Mine Road.[114]

Despite provincial laws that decreed that colonial residents were not supposed to purchase land directly from Native Americans, a deed from 1730 indicates that Johannes Westbrook Jr. did purchase land from a native individual named "Scyacop, Indian of Minissink." Westbrook purchased one hundred acres of land "at and around Westbrook's house and barn for the sum of five pounds."[115] The language of the deed, "which mentions a house and a barn" already present on the site, suggests that Westbrook or an earlier party had already moved to that area before formally purchasing the land. As noted by architectural historian Wesley I. Shank, "the deed was probably an effort to legalize ownership or to thwart claims by the New Jersey proprietors."[116]

A house commonly referred to as Fort Westbrook was built circa 1735 on the east side of the Delaware River. According to Kraft, Johannes Westbrook likely built Fort Westbrook, as indicated by a date stone that contained his initials, reading "1735 JW." Kraft notes that the building was constructed of fieldstone, and its overall construction was typical of colonial-era Dutch architecture. Despite the moniker "Fort Westbrook," there is no record of the building being used for military or defensive purposes. Fort Westbrook was in a state of ruin by the mid-twentieth century and is no longer extant. According to Kraft, much of the original structure was scavenged by nearby property owners for their own construction purposes.[117]

Johannes Westbrook also likely owned property that would be the future site of the Black Farm. Although now known as the Black Farm (referencing twentieth-century ownership) this property was historically referred to as "Westbrook Farm."[118] Around 1750, an unknown party (possibly a member of the Westbrook family) built a house on a stone foundation, soon followed by a large Dutch barn built circa 1775. The original house is no longer extant, but the owners repurposed the stone foundation for another house in the mid-nineteenth century. This house and the Dutch Barn are still extant.[119]

Johannes Westbrook was soon followed by his brother, Anthony Westbrook, who purchased 240 acres from Jacob Van Kuykendall and Uriah Westfall, who had themselves purchased the land from proprietary owner Thomas Stevenson. Anthony Westbrook had his land surveyed and sold a 5-acre plot to Jan Courtright. According to Clemensen, "A line of farms developed along the Delaware River opposite Minisink Island as Jacob and Matthew Van Kuykendall, and Jurian Westfall lived near the Westbrooks and Courtright." This settlement was oriented on and around the former Minisink village site. However, according to Clemensen, the village "was nothing more than an agricultural area."[120]

Johannes Westbrook, who settled on the south side of White Kill, was a neighbor of Daniel Westfall, who lived on the opposite side of the creek (this

113. Clemensen, "Preliminary Historic Resource Study," 125.
114. "Millville Historic & Archaeological District (Boundary Increase)," National Register of Historic Places Nomination Form (Montague Township, Sussex County, New Jersey: United States Department of the Interior, National Park Service, 2013).
115. "Minisink Historic District," 9.
116. Wesley I. Shank, "Eighteenth-Century Architecture of the Upper Delaware River Valley of New Jersey and Pennsylvania," *Journal of the Society of Architectural Historians* 31, no. 2 (May 1972): 138–39.
117. Kraft, "The Minisink Settlements," 44.
118. John Bruce Dodd, "The Black/Minisink Farmhouse," Historic Structure Report (Sandyston Township, Sussex County, New Jersey: Delaware Water Gap National Recreation Area, 1993), 5.
119. "Draft Historic Buildings Strategy" (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, July 2021), 28.
120. Clemensen, "Preliminary Historic Resource Study," 18.

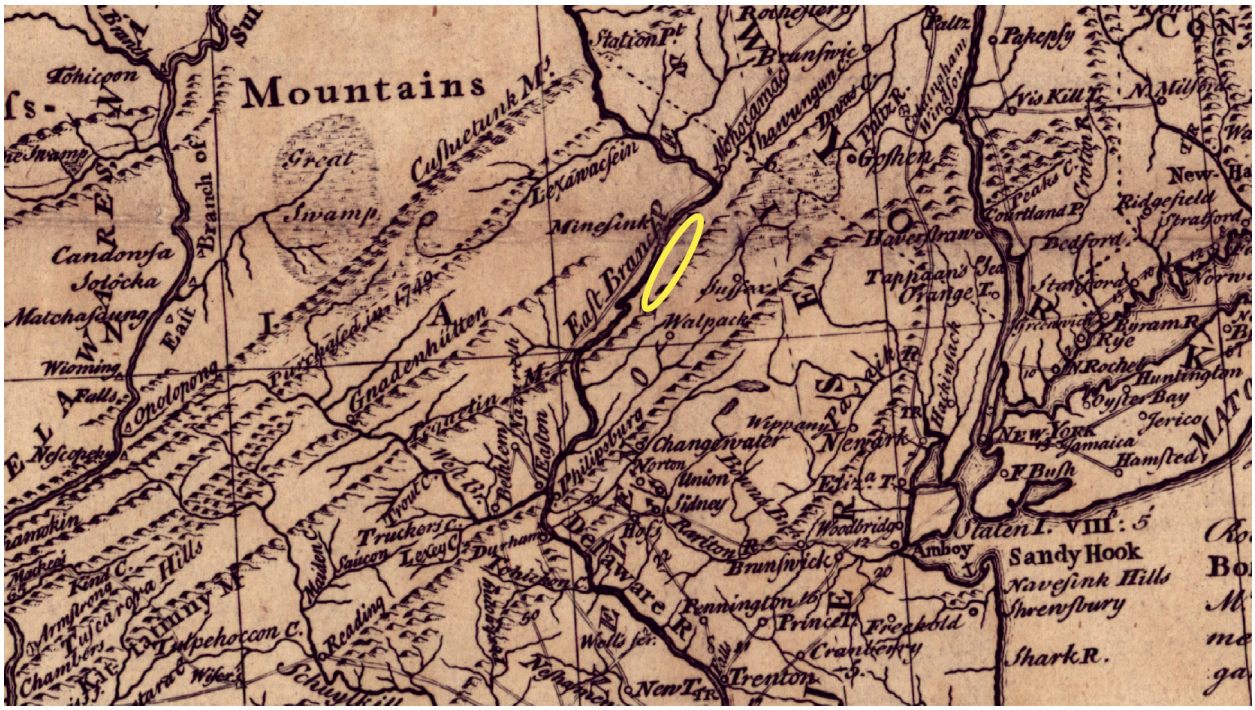


Figure 2.4. 1755 map by Dodley et al. entitled "A general map of the middle British colonies, in America" annotated with the approximate location of the CLR study area (Source: Library of Congress, https://lccn.loc.gov/gm71005449).

property was later known as the Everitt House).[121] According to Snell, Westfall was possibly Johannes Westbrook's son-in-law and was "mentioned as a companion of the Westbrook brothers in their advent to the Minisink."[122] Snell notes that Westfall built the earliest mill constructed in the Minisink area, describing it as follows:

> The earliest mill erected in the Minisink was built by Daniel Westfall, on the side of the D. D. Everitt property. It was probably erected soon after the advent of that early settler, who came with the Westbrook family to the Minisink. It was a very simple structure, and the flour was bolted by hand. Though primitive in construction, it answered well the demands of that early day, and was in use for many years, — probably until after the Revolution.[123]

Road surveys recorded by commissioners in the Sussex County Book of Roads in 1772 refer to the bridge crossing White Kill as "Westfalls Bridge," indicating that it abutted Daniel Westfall's property and suggesting that he was responsible for its construction.[124]

South of the agricultural settlement around Minisink Island, there were several other early European colonists who arrived in the area during the early to mid-eighteenth century. The Ennis House is located approximately half a mile south of the Westbrook-Bell House. An unknown individual built the Ennis House around 1751, as indicated by an inscription carved into the stone by one of the house's windows. The inscription contains the initials "TB" and the year "1751."[125] According to Kraft, these initials most likely stand for Tobias Brink, "one of the original settlers" in the area.[126] William Ennis purchased the house in 1753, and the house was subsequently named for him.[127] The Isaac Van Campen Inn was located approximately eight miles south of Minisink Island and dates to circa 1750. Van Campen purchased the property

121. The name White Kill is referenced in the 1769 map entitled "Three maps of northern New Jersey, with reference to the boundary between New York and New Jersey," which shows that White Kill is the boundary line at the southern end of Montague Township (at its boundary with Sandyston Township to the south (Figure 2.7). "Kill" is the word for water channel in Dutch.
122. Snell and Clayton, *History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers*, 362–63.
123. Snell and Clayton, *History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers*, 368.
124. "Sussex County Book of Roads, Book A, 64-65," 1772.
125. Shank, "Eighteenth-Century Architecture of the Upper Delaware River Valley," 139.
126. Kraft, "The Minisink Settlements," 47.
127. Shank, "Eighteenth-Century Architecture of the Upper Delaware River Valley," 139.

from a man named Harmon Rosenkrans, and it is unknown if Van Campen or Rosenkrans built the house.[128] Further south past the Walpack Bend, Isaac's uncle Abraham Van Campen operated a farm, established sometime around 1750. Abraham Van Campen purchased 1,666 acres from West Jersey proprietor George Hutchinson in 1732.[129]

In 1739, the European population in northern New Jersey had increased enough that a new county, Morris County, was formed from Hunterdon County. In 1753, Sussex County was created from Morris County, and by "1755 several hundred people lived in the Upper Delaware River Valley on the New Jersey side."[130] According to Clemensen, "They resided in small, scattered groups opposite Mashipacong Island, near present-day Montague, opposite Minisink Island, and in the Walpack Bend area" (Figure 2.4).[131] Clemensen notes that early farmsteads often sought out locations with easy access to springs, "because access to water was necessary for the family and the farm animals."[132] A notable spring located on Old Mine Road North is Brau Kettle, a Dutch name that roughly translates to 'boiling kettle.' According to local histories, Brau Kettle was an important landmark in the area, and may have been an early trading point for European colonists and the native Lenape, although research has not produced any primary source material to substantiate these claims.[133]

Clemensen asserts that by 1743, the wagon road extended seven miles south of Minisink Island, reaching Harman Rosenkrans's property, located "at Shappanack about seven miles south of Minisink Island." Clemensen cites a 1743 petition for road improvements, signed by Rosenkrans and nineteen others, as evidence that a road reached close to his property by this time. Clemensen notes that Abraham Van Campen, who lived south of Walpack Bend, did not sign this petition, suggesting that the road did not extend to his property by this time. Clemensen suggests that Van Campen used alternative routes to transport his goods, perhaps floating "excess grain down the Delaware River to Philadelphia" or taking "it across the river to trade to his brother-in-law, Aaron Depui, who operated a store at Shawnee, Pennsylvania."[134] Clemensen estimates that the road reached Walpack Bend by the following year, where travelers used Daniel Decker's ferry to cross the Delaware River to travel between New Jersey and Pennsylvania.[135]

The first evidence of British mining activities at the Pahaquarry Mines site appeared by the mid-eighteenth century, sometime around 1753.[136] According to Clemensen, John Reading Jr., Martin Ryerson, and Anthony Maxwell "formed a partnership to extract copper ore on land they obtained along Mine Brook," and "A number of prospect holes along with two adits and two inclined shafts remain from their labor."[137] Kraft refutes the notion that the Pahaquarry Mines were truly operational during this period, citing a lack of information available in written records. Instead, he posits that while "some limited exploratory work was done here," their endeavors were likely hampered by ongoing conflicts during the French and Indian War.[138] In contrast, a 1995 Cultural Landscape Report (CLR) on the Pahaquarry Mines argues that there was considerable activity on the site, despite the ongoing threat of the French and Indian War. The CLR describes their mine building efforts as follows:

> Reaching and his partners constructed a stamp mill, the source of power for which came from water stored behind two dams on Mine Brook… Several buildings were constructed on the two-acre parcel which fronted the Delaware River to serve as housing for the workforce, as well as a dwelling for Anthony Maxwell, and probably a barn.[139]

Both sources agree that the amount of copper present at the site was not enough to support a

128. Clemensen, "Preliminary Historic Resource Study," 27.
129. Clemensen, "Preliminary Historic Resource Study," 19.
130. Clemensen, "Preliminary Historic Resource Study," 20.
131. Clemensen, "Preliminary Historic Resource Study," 20.
132. Clemensen, "Preliminary Historic Resource Study," 50.
133. "Sandyston Preps for 250th Anniversary," *New Jersey Herald*, February 11, 2012, https://www.njherald.com/story/news/2012/02/11/sandyston-preps-for-250th-anniversary/3982099007/.
134. Clemensen, "Preliminary Historic Resource Study," 125–27.
135. Clemensen, "Preliminary Historic Resource Study," 125.
136. Clemensen, "Preliminary Historic Resource Study," x, 125-127.
137. Clemensen, "Preliminary Historic Resource Study," xiv.
138. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 108.
139. Steve R. Burns Chavez and A. Berle Clemensen, "Pahaquarry Copper Mine, Delaware Water Gap," Cultural Landscape Report (New Jersey: United States Department of the Interior, National Park Service, August 1995), 32.

fully-fledged mining operation, and the Pahaquarry Mines ceased operations by 1760.[140] Regardless of the true extent of their mining endeavors at this time, Clemensen argues that there would have been some sort of "rudimentary road or bridle path" that extended to the Pahaquarry Mines site by this time.[141]

Lenape Land Loss and the French and Indian War

As the white population in the Minisink region grew, the relationship between the Munsee Lenape people and the incoming European colonists deteriorated. In addition to their diminished territory, the Munsee Lenape people were also confronted with the colonists' treatment of the land, such as "cutting down the forests, slaughtering game, building dams and roads, and fencing in newly cleared farmlands."[142] With their population already diminished due to the spread of European diseases, many Munsee Lenape people left the Minisink Valley entirely as white settlements continued, opting to move further north or west.

The Munsee Lenape also faced predatory and deceptive land grabs that rapidly eroded their territory. One of the most egregious examples was the Walking Purchase of 1737, which robbed the Munsee Lenape of substantial land holdings in the Pennsylvania colony. The Walking Purchase was predicated on false claims that a 1686 deed signed by the Lenape granted the Pennsylvania Colony a vast acreage of land in the Upper Delaware River and Lehigh River valleys. The Walking Purchase was orchestrated by James Logan, a representative of the Penn family who had already begun surveying territory and selling it to investors prior to acquiring ownership. He in turn "desperately needed to clear Delaware claims in order to satisfy paying customers."[143] The land Logan and the Penn family sought included territory north of Tohiccon Creek, which was home to several important Lenape settlements, including "Chief Nutimus's Indian village of Nockamixon, as well as Captain John's village of Welagameka, the homes of Chiefs Tishcohan and Lappawinsoe at Hociundoquen, and the Indian settlements of Pocopoco and Meniolagomeka," collectively known as the "Forks of the Delaware Indians."[144]

Logan's claim that the 1686 deed included land north of the Tohiccan Creek was false, and in fact, the deed explicitly stated that the conveyed property did not extend north Tohiccan Creek. However, the Lenape agreed to reenact a day-and-a-half-long walk to delineate the conveyed property, as was mentioned in the original 1686 deed, assuming that it would not extend north of Tohiccan Creek into Lenape territory. However, Logan recruited runners to travel as far north as possible in the allotted time. The fastest runner traveled approximately fifty-five miles northward, and Logan claimed that the 1,200 square miles of adjacent territory now belonged to Pennsylvania.[145] To quell Lenape resistance to the deceitful land grab, Logan and the Penn family requested Iroquois support for their claims. The Iroquois, in turn, backed British claims and instructed the Lenape to vacate the territory conveyed in the Walking Purchase.[146] The illegitimate Walking Purchase of 1737 made the situation in New Jersey even more tense. Kraft describes the situation as follows:

> …the Minisink Indians on the New Jersey side of the Delaware River from the Water Gap into southern New York State, were only too well aware of their precarious territorial position. Their land on the Pennsylvania side was gone, most of the upper Delaware Valley on the New Jersey side had been sold in 1713, and the territory to the east was filling up with white settlers, all of whom wanted the Indians removed.[147]

Due to European colonial expansion during the early eighteenth century, and especially after the monumental land loss initiated by the Walking Purchase in 1737, many Lenape people began migrating westward. According to Obermeyer,

140. Burns Chavez and Clemensen, "Pahaquarry Copper Mine," 32.
141. Clemensen, "Preliminary Historic Resource Study," x.
142. "Minisink Historic District," 9–10.
143. Steven C. Harper, "The Map That Reveals the Deception of the 1737 Walking Purchase," *The Pennsylvania Magazine of History and Biography* 136, no. 4 (October 2012): 457–60.
144. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 102.
145. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 103–4.
146. Weslager, *The Delaware Indians: A History*, 190–91.
147. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 105.

"By the mid-eighteenth century, the majority of Munsee and Unami speakers had joined several villages along the Susquehanna, Allegheny, and Ohio rivers," where they were joined by displaced members of other Native American tribes, including the Shawnee, Conoy, and Nanticoke.[148] As members of the Lenape and other tribes moved westward, many coalesced into a collection of small villages along the Allegheny River. This largest settlement was called Kittanning, which was a "cluster of small settlements that dotted either side of the Allegheny River some forty miles upstream from the confluence of the Allegheny and Monongahela rivers."[149]

Violence between Munsee Lenape and the European colonists erupted in the 1750s during the French and Indian War. Frustrated by the behavior of British colonists and their deceptive land grabs, the Munsee Lenape tribe allied with the French when the French and Indian War began in 1754. By 1755, Munsee Lenape war parties were attacking settlements in Pennsylvania, New York, and New Jersey. Following an attack on a Moravian settlement in present-day Lehighton, Pennsylvania, the colonial governor of Pennsylvania declared war on the Munsee Lenape tribe and soon "devised a plan to erect twelve stockaded forts, fifteen miles apart, that could house fifty men each."[150] The New Jersey colonial government followed suit and began constructing blockhouse fortifications in the thirty-five-mile stretch between the Delaware Water Gap and the New Jersey-New York border. Clemensen notes that "In December 1755, the New Jersey colonial government authorized four blockhouses along the Delaware in Sussex County and 250 men were enlisted to man those posts," and "By January 1756, some men were stationed near Abraham Van Campen's house in present-day Pahaquarry Township."[151]

Although Clemensen acknowledges that the historical records of these blockhouses are sparse, historian Ted Bush offers the following details:

> 1) A twenty-foot-square blockhouse surrounded by a sixty-five-foot square stockade [was located] near Abraham Van Campen's house.
>
> 2) Fort Walpack was located six miles above the Van Campen blockhouse. It consisted of a palisade about fifty-foot square surrounding a small blockhouse.
>
> 3) Fort Johns (also called Headquarters and currently known as Fort Shapnack) was situated on a knoll near Isaac Van Campen's home about six miles north of Fort Walpack…
>
> 4) Fort Nomanock was established eight miles above Fort Johns.
>
> 5) Fort Shipeconk was located four miles upstream from Nominack…
>
> 6) Fort Cole was situated in the present-day Port Jervis area.[152]

By 1758, colonial governors had constructed several other blockhouses and smaller forts along the New Jersey bank of the Delaware River north of the Water Gap.[153] Several of these forts are depicted on a map drawn by Jonathan Hampton in 1758 (Figure 2.5). Hampton's map is the earliest known depiction of Old Mine Road. Hampton's map shows a road connecting the forts north of Walpack Bend, but the map does not mention the presence of a mine or refer to the road as a "mine road."[154] The section of road connecting the forts north of Walpack Bend appears to follow the general trajectory of the Old Mine Road north to Port Jervis. According to Kraft, Hampton's map appears "to be the first to show a road or path across the Kittatinny Mountains and on up the New Jersey side of the Delaware River to and beyond Port Jervis."[155] It is also possible that the section of road south of Walpack Bend to the Pahaquarry Mines existed at this point, but it was not well developed or heavily traveled enough to be recorded on Hampton's 1758 map. Clemensen cites the location of the southernmost blockade at Abraham Van Campen's house as evidence that

148. Obermeyer, *Delaware Tribe in a Cherokee Nation*, 41–42.
149. Daniel P. Barr, "Victory at Kittanning? Reevaluating the Impact of Armstrong's Raid on the Seven Years' War in Pennsylvania," *The Pennsylvania Magazine of History and Biography* 131, no. 1 (January 2007): 9.
150. Clemensen, "Preliminary Historic Resource Study," 37.
151. Clemensen, "Preliminary Historic Resource Study," 40.
152. Clemensen, "Preliminary Historic Resource Study," 40.
153. Clemensen, "Preliminary Historic Resource Study," 41.
154. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 105–7.
155. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 139.

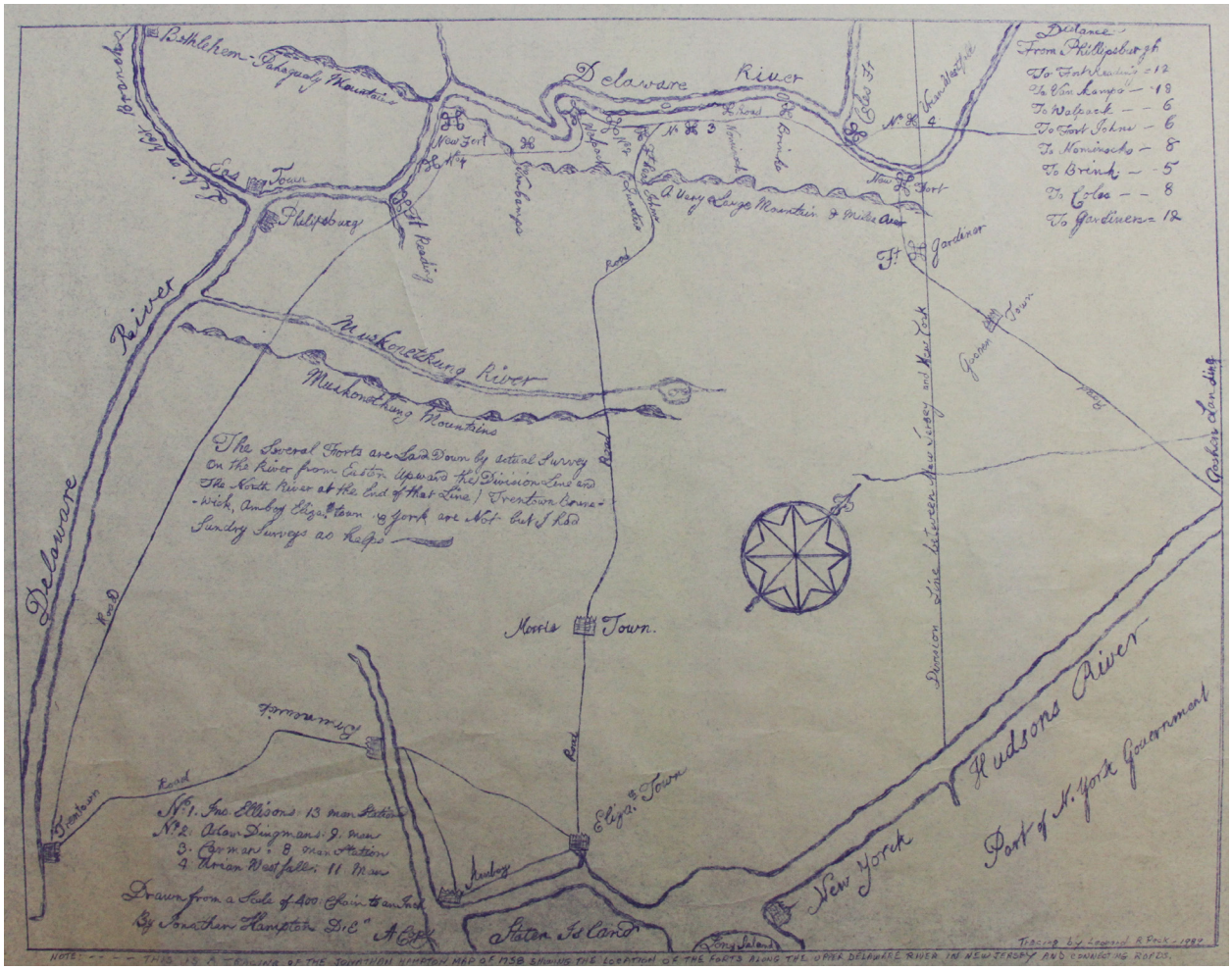


Figure 2.5. 1758 map produced by Jonathan Hampton, with fort/blockhouse locations shown along a road in the location of Old Mine Road North (Source: DEWA Archives).

the road likely extended at least to that point by the late 1750s.[156]

According to Kraft, Fort Nomanock (or Namanock) was a log fort, surrounded by a stockade, located off what is now referred to as Minisink Cemetery Road/Winant Trail. Eventually a square stone building replaced the log structure, though it is uncertain if this was in the same location as the original Fort Nomanock.[157] This building was recorded in photographs in 1947 and 1967 but no longer exists (Figure 2.6).

During the French and Indian War, Munsee Lenape war parties raided "the valleys south and east into the Kittatinny Mountains," where they burned down houses, killed several colonists and their livestock, and took prisoners. Kraft notes several known individuals killed by Munsee Lenape raiders, including Gilbert van Camp and his family, two men sheltering at the Depue House (not the extant Depue House on Old Mine Road North), thirteen people belonging to "Mr. Bemper and his company," and several members of the Swartwout family.[158] According to Clemensen, Munsee Lenape warriors attacked the Cole house in May of 1758, killing four children. Around that time, Munsee Lenape warriors also killed a laborer at the Westbrook Farm. In June, two men on patrol were killed and seven men were killed at the Westfall House, located near Minisink Island. Despite the Munsee Lenape tribe's efforts to drive the British from the area, persistent attacks ultimately had the opposite effect and "caused the New Jersey government to send more soldiers to the area and establish additional posts."[159]

156. Clemensen, "Preliminary Historic Resource Study," 127.
157. Kraft, "The Minisink Settlements," 51.
158. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 105–7.
159. Clemensen, "Preliminary Historic Resource Study," 41.

Figure 2.6. (Left) 1947 photograph of a stone building known as Fort Nomanock (or Namanock), which was located off Minisink Cemetery Road. (Right) By 1967, the building was in a state of ruin. Kraft notes that archeology may reveal more information about the original log fort and this stone building (Source: DEWA Archives).

British colonists responded to Lenape attacks with their own violent campaigns. A notable example of British violence against the Lenape was the Kittanning Campaign in 1756, in which the British attacked the newly established Lenape settlement. The attack on Kittanning resulted in the deaths of numerous Lenape, including Captain Jacobs (also known as Tewea), a well-respected leader in the Lenape community who was shot to death by British attackers alongside his wife and young son.[160] On June 29, 1756, New Jersey Governor Jonathan Belcher issued a proclamation declaring that the Delaware Indians were "Enemies, Rebels and Traitors" of Her Majesty and offered "£130 for every scalp of a male above the age of fifteen collected by militiamen, and 150 Spanish dollars to every Anglo-American inhabitant who brought a scalp as proof of having destroyed a savage Indian."[161] In this proclamation, New Jersey's government forcibly and violently removed the Native Americans living in the Delaware River Valley, "removing a final obstacle to land development and settlement."[162] Protection for the allied Delaware tribe members was to occur, but only if they stayed within the bounds outlined in the Treaty of Crosswicks (1756), in which the Munsee Lenape "ceded rights to most of their lands in New Jersey to that colony's government."[163]

By 1758, the Lenape were defeated, and as a condition of the 1758 Treaty of Easton, they ceded all land north of the Delaware Water Gap in New Jersey to the British.[164] Following the Treaty of Easton, the Lenape withdrew from the Delaware River Valley and moved westward.[165]

To the Federal Period

In the wake of French defeat, Native American populations faced the threat of continued British encroachment and territorial loss. In an effort to push back against British settlement, Ottawa Chief Pontiac organized a pan-tribal alliance between numerous Native American groups in the early 1760s. Referred to as Pontiac's Rebellion (1763–1765), allied parties were encouraged to attack the nearest British forts. As described by Clemensen, some Munsee Lenape people felt compelled to join rebellion, "but most were disheartened by their previous lack of success." In preparation for potential attacks, Pennsylvania sent troops to the Delaware River Valley, and European residents on the New Jersey side took shelter at Isaac Van Campen's house. While there were several small

160. Barr, "Victory at Kittanning? Reevaluating the Impact of Armstrong's Raid on the Seven Years' War in Pennsylvania," 19–20.
161. Jeffery M. Dorwart, *Invasion and Insurrection: Security, Defense, and War in the Delaware Valley*, 1621–1815 (Newark: University of Delaware Press, 2008), 89.
162. Dorwart, *Invasion and Insurrection*, 89.
163. Stephanie Gamble, "Treaty Negotiations with Native Americans," Encyclopedia of Greater Philadelphia, 2015, https://philadelphiaencyclopedia.org/essays/treaty-negotiations-with-native-americans/.
164. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 68.
165. Clemensen, "Preliminary Historic Resource Study," 41.

attacks in Pennsylvania, there were no raids in New Jersey.[166]

During the American Revolution, many Native American tribes allied with the British Army in the face of continued colonial expansion. The Lenape, who by the onset of the Revolutionary War (1775–1783) had moved westward, were divided in their allegiances. According to Obermeyer, "The pro-British Delaware groups were living in what is today the northwestern portion of Ohio, and the pro-American Delaware groups were settled near the frontier city of Pittsburgh."[167] Regardless of their allegiances during the conflict, though, Obermeyer notes that the Lenape were collectively treated as British allies following the end of the Revolutionary War, and "different Delaware groups migrated north and west to Canada and Spanish Territory in order to escape American retaliation while others stayed within the Ohio Territory."[168] One of the most egregious examples of postwar violence against the Lenape occurred during the Gnadenhutten Massacre in 1782 in Gnadenhutten, Ohio. The group of Lenape living at Gnadenhutten were Moravian Christian converts, committed to the Moravian belief in pacifism. Under the command of David Williamson, American militiamen from Pennsylvania "rounded up and systematically murdered all 90 of the town's inhabitants – men, women, and children – as they prayed and sang hymns."[169] None of the men who participated in the massacre were prosecuted or held accountable for their role in the violence perpetrated against the Lenape at Gnadenhutten.

Despite threats of violence and continued dislocation, the Lenape living along the western American frontier continued to fight for their sovereignty and resist American rule. Lenape that opted to stay in the Ohio Territory became "a powerful frontier force that participated in the intertribal resistance to the new American government during the late eighteenth century."[170] Despite their efforts, the Lenape were defeated at the Battle of Fallen Timbers in 1795 and subsequently agreed to the terms of the Treaty of Greenville, which dictated that they did not take up arms against the United States. Descendants of the groups that migrated to Canada are now represented by the Delaware of Six Nations, the Delaware Nation at Moraviantown, and the Munsee Delaware Nation, while descendants who remained in the present-day United States are represented by the Delaware Tribe of Indians, the Delaware Nation, and the Stockbridge-Munsee Band of Mohican Indians.

While the Lenape faced uncertain futures on the western frontier, residents along Old Mine Road North faced violence from British troops and their Native American allies. There were several small raids along the Middle Delaware River Valley. Clemensen cites James Snell's *History of Sussex and Warren Counties*, who describes several attacks made on settlements in the area. According to Snell, several families were attacked or killed along the Neversink River and in Montague. Joseph Brant and a band of Tories raided several settlements, burning down a settlement above present-day Port Jervis. Meanwhile, Captain Peter Westbrook and several men died pursuing Native American fighters that had been spotted along the New Jersey bank of the Delaware River. Apart from small raids and skirmishes, there were no major battles or military engagements that occurred in the Middle Delaware River Valley during the Revolutionary War.[171]

Although there are numerous stories about Revolutionary War soldiers marching through the Delaware River Valley along Old Mine Road, Clemensen asserts that "Most of these reports appear to be based on speculation with little basis on fact." According to Clemensen, Colonel Philip Van Cortland and the 2nd New York Regiment's trek in May 1779 is the only "verifiable military expedition to travel along the Delaware River on the New Jersey side." Van Cortland and his men departed from Port Jervis, en route to meet Major General John Sullivan in Pennsylvania. Van Cortland and his men traveled to Walpack Bend and rested at Isaac Van Campen's house before crossing into Pennsylvania at Decker's Ferry (Figure 2.7).[172]

166. Clemensen, "Preliminary Historic Resource Study," 42.
167. Obermeyer, *Delaware Tribe in a Cherokee Nation*, 43.
168. Obermeyer, *Delaware Tribe in a Cherokee Nation*, 43.
169. Robert S. Grumet, *The Lenapes*, ed. Frank W. Porter III (New York, New York: Chelsea House Publishers, 1989), 74.
170. Obermeyer, *Delaware Tribe in a Cherokee Nation*, 45.
171. Clemensen, "Preliminary Historic Resource Study," 43.
172. Clemensen, "Preliminary Historic Resource Study," 44.

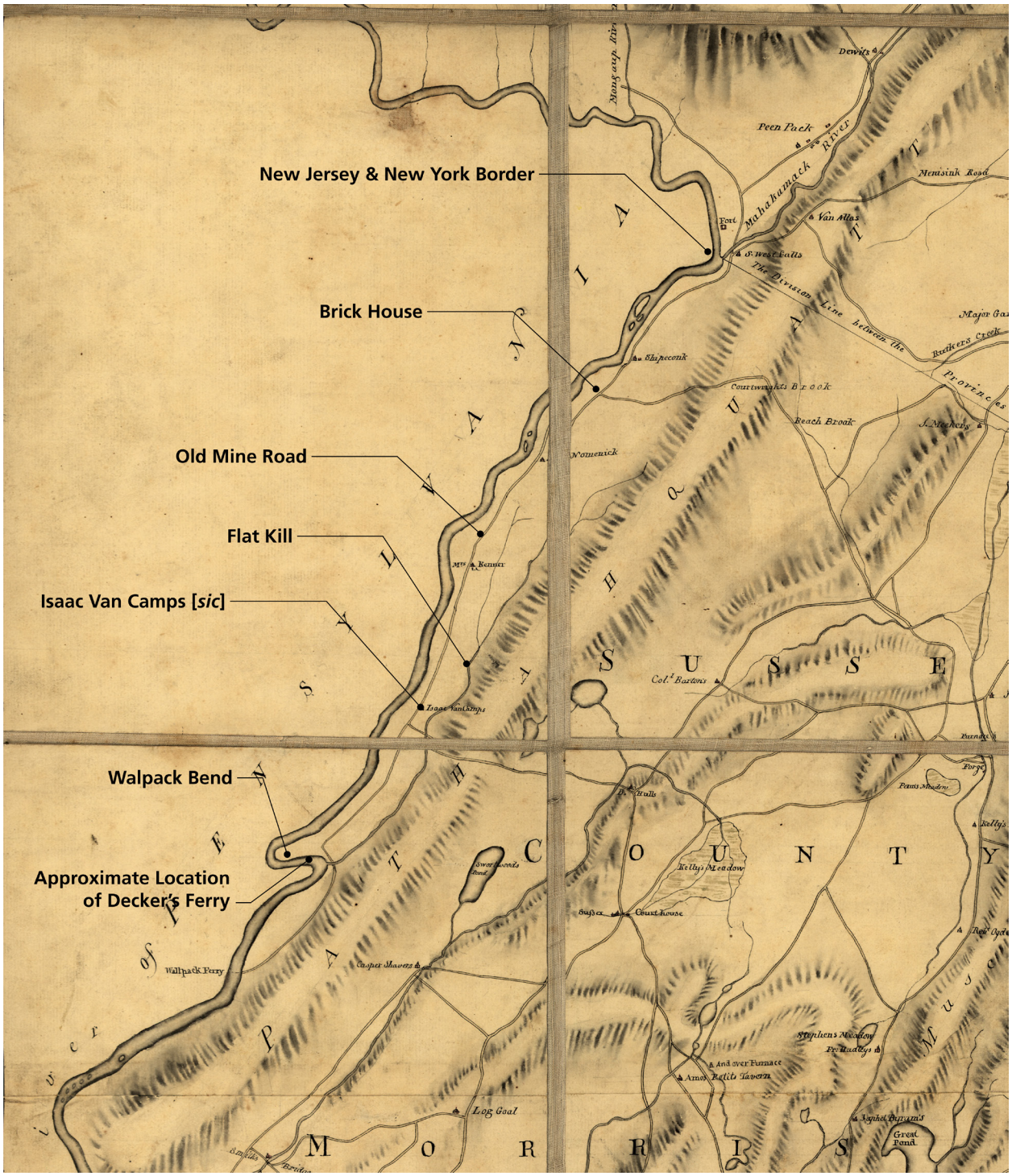


Figure 2.7. 1781 map showing ownership along Old Mine Road North, a portion of "A map containing part of the Provinces of New York and New Jersey" by Skinner et al. The map has been annotated to show the approximate location of additional features (Source: Library of Congress, https://lccn.loc.gov/gm71005417).

Population growth during the latter half of the eighteenth century was stymied by the violence of the French and Indian War, followed in quick succession by Pontiac's Rebellion and the American Revolution. According to Clemensen, "the area still had a thinly scattered populace," and by 1790, "Montague Township had 543 people, Sandyston Township contained a population of 519, and Walpack Township settlers numbered 496," while "Pahaquarry Township in what would become Warren County probably had around 100 inhabitants."[173]

173. Clemensen, "Preliminary Historic Resource Study," 20.

Transportation Networks in the Delaware River Valley Frontier

Old Mine Road

While precontact roads existed in North America, there is no evidence that there was one located in New Jersey, and "travel by water was the dominant method of transportation" prior to European homesteading in the Minisink Valley. According to the *New Jersey Roadway Study Historic Context for Significant Roads*, "Overland transportation, when undertaken, was accomplished on narrow paths. Paths were commonly between twelve (12) and eighteen (18) inches wide and reflected the most direct and feasible routes" between settlements, villages, and waterways.[174]

As noted, Minisink Island was located near the intersection of two important Native American trails, the Minsi Path and the Minisink Path. The Minsi Path extended from below Philadelphia, running north along the Pennsylvania bank of the Delaware River before crossing at Port Jervis, New York and extending to the Hudson River. The Minisink Path ran east to west from coastal New Jersey through Pennsylvania, and on into the Ohio Valley.[175] Minisink Island's location near this important crossroads contributed to the Minisink village's size and importance. According to historians Bertland, Valence, and Woodling, "Minisink Island was a major focal point" in the trail network "even though the river had to be forded to reach it. From the island, major and minor trails branched off in all directions."[176]

Early histories and local legends about the origins of Old Mine Road as a Dutch-era road related to seventeenth-century mining activities are unsubstantiated and lack historical evidence. Kraft repeatedly points to the logistic challenges of Dutch roadbuilding at the time, arguing that the endeavor would have been dangerous and impractical.[177] Additionally, there is no substantial historical evidence that the Dutch were aware of the Pahaquarry copper deposits at any point during the seventeenth century. In fact, Kraft questions the notion that the Dutch ever even explored the south end of the Minisink Valley on the New Jersey side of the Delaware River, as the terrain was challenging, and they did not have the necessary boats to travel upriver past present-day Trenton.[178]

Portions of the road system south of Port Jervis and the Minsi Path likely began to form organically, following Dutch and English settlement toward the end of the seventeenth century, which gradually stretched southward first from Kingston to Port Jervis and then on into the Minisink Valley. According to Clemensen, Native American pathways were typically two to three feet wide and were traveled by foot. After Europeans arrived, they gradually widened roads to accommodate horseback travel and eventually made the roads suitable for wagons.[179] During the colonial period, most "traffic consisted of either foot travel or horseback." Wagons and stagecoaches became more common in New Jersey toward the end of the period, but wheeled traffic tended to cause considerable damage on roads that were often already in poor condition, "as the narrow wheels tended to rut up even the best of roads in a short period of time."[180]

During the early colonial period, road construction and maintenance in New Jersey was minimal, and most 'roads' were more similar to trails or paths. Colonial roads were measured in a series of legs that each followed a centerline, and "This centerline, following a specified direction for a set distance, comprised a single leg." Road width was measured in rods, with each rod measuring 16.5 feet. Centerlines and legs often shifted, adjusting to the given topography. Although roads did sometimes cross ridges, they "tended to follow the valley floors" and run parallel to ridgeline, as is the case with Old Mine Road. Additionally, roads were often fragmentary and the result of necessity, "connecting a locale with a specific central destination," such as a village, mill, or farmstead.

174. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study" (Trenton, NJ: New Jersey Department of Transportation, January 2011), 17.
175. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 132.
176. Bertland, Valence, and Woodling, "The Minisink: A Chronicle of One of America's First and Last Frontiers," 68.
177. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 43.
178. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 44–48.
179. Clemensen, "Preliminary Historic Resource Study," 125.
180. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 20–25.

Figure 2.8. A portion of a 1769 map entitled "Three maps of northern New Jersey, with reference to the boundary between New York and New Jersey," which shows Old Mine Road extending south of Walpack Bend. Note the location of White Kill, shown at "the Bounds of the Montague Precinct" (Source: Library of Congress, https://www.loc.gov/item/gm71000590/).

Each village often had roads that "radiated out from it to the dispersed farmsteads," but it was rare to find individual roads that connected several towns or villages throughout the state, particularly in the more remote areas of northern New Jersey.[181]

County commissions who hired local laborers usually administered road construction and maintenance during the colonial period, and "construction usually consisted of little more than felling of trees and cutting of underbrush to allow passage of a wagon." Eventually, it became standard practice for each town or district to have two designated surveyors to handle road construction and alignment. Often, road alignment fell along property boundaries in order to "limit impacts to adjacent property owners." The costs of road construction and maintenance were typically funded through general taxes, and it was expected that "the cost of a road was to be borne by those who to benefit by it." Exceptions to the local administrative structure included major thoroughfares between important towns and cities,

181. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 20–25.

and roads that were "especially difficult to build or maintain," which often required state-level interventions and management, but these instances were rare.[182]

When Sussex County embarked on road building projects during the colonial period, court appointed surveyors recorded their recommendations and filed road return reports in the Sussex County Book of Roads. Two road return reports recorded in 1772 include surveyed bearings and distances of the preferred alignment for portions of Old Mine Road North. The first road return report filed in Book A, pages 64–65, describes Old Mine Road North as "A Return of the Road that leads this the Township of Montague to the High Road that leads to Esopus." The portion of road surveyed ran north from White Kill, beginning at a bridge over the creek, referred to as "Westfalls Bridge." The road return report states that the road was to cause the "least damage to the inhabitants" and be the "most advantageous to travellers [*sic*]."[183] The second road return, filed in Book A, page 66, describes Old Mine Road North as "the Road that leads though this Township of Sandiston [*sic*] to the Road that leads to the high Road that leads to Esopus." This road return report surveyed a portion of that ran from "upper line of Walpack Township" north to "Westfalls" (presumably referring to the Westfall Bridge). The road return states that the purpose of the survey is "lay out Roads that may be most advantageous to the inhabitants, and also profitable to foreigners."[184] These comments suggest the surveyors considered the location of existing farmsteads, laying out roads to conveniently connect to them but minimizing encroachment onto their property. Second, the report implies they attempted to layout roads that were easily traversable for travelers and commercial activity, which meant using the natural topography to minimize steep slopes that would be potentially impassible in poor weather conditions. These two road return reports do not describe the road's width, but as noted, rights-of-way during the colonial period were typically a multiple of a rod, measuring 16.5 feet.

There are several maps that suggest that Old Mine Road extended south beyond Walpack Bend by the end of the colonial period. Produced in 1769, a map entitled "Three maps of northern New Jersey, with reference to the boundary between New York and New Jersey," shows Old Mine Road extending south past Walpack Bend, ending at an unidentified point on the east bank of the Delaware River (Figure 2.8).[185] It is possible that Old Mine Road extended to meet Gould Ferry (later known as Old Shoemaker Ferry), which crossed the river "between Shawnee and Depue Islands." James Gould established the ferry circa 1736, making it "one of the earliest ferries in the area," and it would stand to reason that travelers would need access to Old Mine Road on the New Jersey side of the river.[186]

As discussed previously, the extent of the mining venture at the Pahaquarry Mines and the southern extent of Old Mine Road during the 1750s has been debated by different historians. There is evidence that John Reading Jr. and his mining partners did engage in some mining work at the Pahaquarry Mines. Documented investment in the erection of infrastructure includes two mill dams, a stamp mill, worker housing, a mine owner dwelling, and possibly a barn. Additionally, workers constructed at least two adits and two included shafts between 1753 and 1760.[187] According to Clemensen, it stands to reason that there was some sort of "rudimentary road or bridle path" that extended south to Pahaquarry Mines by the 1750s.[188] Kraft asserts that their efforts were likely stalled due to the onset of the French and Indian War in 1754.[189]

A 1781 map, "A Map Containing Part of the Provinces of New York and New Jersey," shows a similar trajectory for Old Mine Road. In this map, Old Mine Road extends south past Walpack Bend before terminating on the east bank of the Delaware River at a location identified as "Walpack

182. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 20–25.
183. "Sussex County Book of Roads, Book A, 64–65."
184. "Sussex County Book of Roads, Book A, 66," 1772.
185. *Three Maps of Northern New Jersey, with Reference to the Boundary between New York and New Jersey*, 1769, Library of Congress Geography and Map Division, https://www.loc.gov/item/gm71000590/.
186. Clemensen, "Preliminary Historic Resource Study," 145.
187. Burns Chavez and Clemensen, "Pahaquarry Copper Mine," 32.
188. Clemensen, "Preliminary Historic Resource Study," x.
189. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 108.

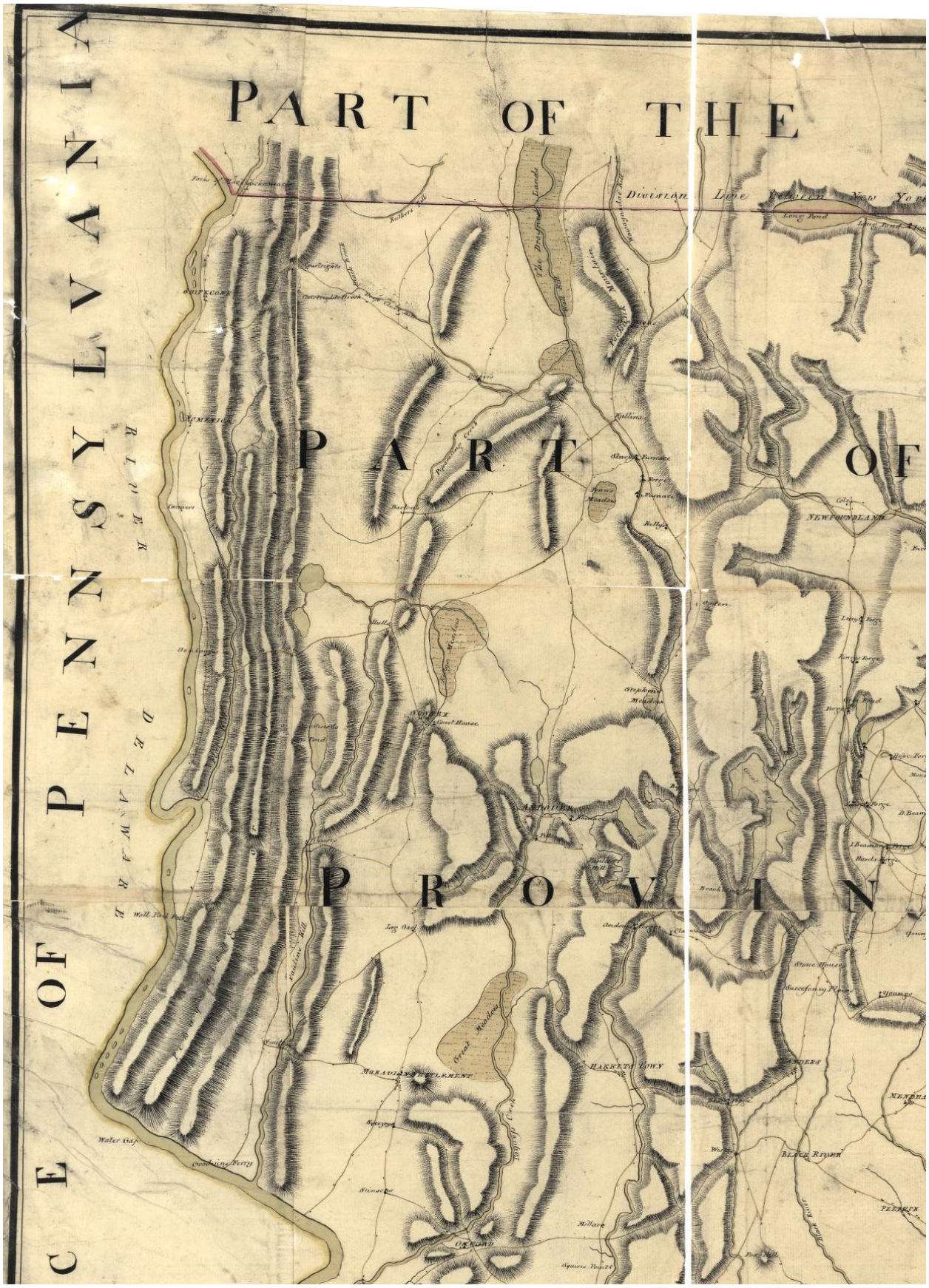


Figure 2.9. A portion of a 1781 map, entitled "A sketch of the northern parts of New Jersey," showing Old Mine Road extending south of Walpack Bend (Source: Library of Congress, https://lccn.loc.gov/gm72003605).

Ferry" (Figure 2.7).[190] The trajectory of Old Mine Road is similarly depicted in another 1781 map "A sketch of the northern parts of New Jersey." This map shows Old Mine Road extending south of Walpack Bend, again terminating on the east bank of the Delaware River at a location labeled "Wall Pack Ferry" (Figure 2.9).[191] Like the 1769 map, these maps indicate that Old Mine Road extended south past Walpack Bend, likely connecting nearby residents and travelers with important crossing points on the Delaware River

Rivers and Streams

Prior to the arrival of European colonists, Native American communities living in the Delaware River Valley used the Delaware River consistently as a source of food and as a means of transportation. There is evidence that Native American groups constructed dugout canoes from large tree trunks as early as the Archaic Period.[192] This practice continued through the Woodland Period and on into the colonial era.

Early European colonists found the Delaware River difficult to navigate. As described by Kraft, the Dutch were unable to sail upriver past present-day Trenton, at which point the river becomes much shallower and more difficult to navigate.[193] Similarly, English colonists noted that travel upriver on the Delaware River was challenging. In his description from 1685, Thomas Budd noted that Native Americans used canoes to travel upstream to the Minisink Valley.[194] When European explorers reached the Minisink Valley, they undoubtedly began to use the Delaware River in ways similar to the Munsee Lenape people already living in the area. Clemensen speculates that early European colonists likely adopted the use of dugout canoes to transport goods along the river.[195]

Over time, explorers and residents introduced new types of vessels. By the mid-eighteenth century, the Durham boat became the standards means of transportation along the Delaware River, "and for over a century was the craft of choice for transporting heavy freight." First introduced in 1727, the Durham boat had a flat-bottom, well-suited for the shallow waters of the Delaware River. Typically, a Durham boat was "sixty feet long, eight feet wide, and two feet deep," and "The bow and stern were curved."[196] Another means of river transportation used in the eighteenth century were log rafts, floated down the Delaware River on higher water during the springtime. The log rafts were floated often to Philadelphia, where the logs were repurposed to meet lumber demands.[197] Access to the Delaware River was crucial to the success of Millville, located in Montague Township. Located on Shimer's Brook, the mills at Millville were able to transport their products via the Delaware River, "and the low lands along the river there provided landings for ferries and rafting operations in connection with transporting commercial timber and grain to urban markets."[198]

Ferries were also a crucial means of river travel along the Delaware River, providing means to cross the river between New Jersey and Pennsylvania. Ferries were important for a number of reasons, as people owned land or had family members on opposite shores. Crossing the river was often necessary for business and trade, and "Farmers crossed the river to market their products with a nearby merchant, purchase supplies, grind their grain at a grist mill, or obtain lumber at a sawmill." Roads along the New Jersey bank of the Delaware River were often rough and rudimentary, especially early on, and "Poor land transportation necessitated fording the river to take advantage of better roads on the other shore." Typically, ferries were square with flat bottoms and were operated using a rope and pulley system to pull the ferry from one side of the river to the other.[199]

There were several ferries that operated along the Delaware River during the colonial period. Jacob

190. Andrew Skinner, Thomas Millidge, and Oliver De Lancey, *A Map Containing Part of the Provinces of New York and New Jersey*, 1781, 1781, Library of Congress Geography and Map Division, https://lccn.loc.gov/gm71005417.
191. John Hills, Benjamin Morgan, and Thomas Millidge, *A Sketch of the Northern Parts of New Jersey*, 1781, 1781, Library of Congress Geography and Map Division, https://lccn.loc.gov/gm72003605.
192. Kraft and Mounier, "The Archaic Period in New Jersey," 61.
193. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 44–45.
194. Kraft, *The Dutch, the Indians, and the Quest for Copper*, 46.
195. Clemensen, "Preliminary Historic Resource Study," 141.
196. Clemensen, "Preliminary Historic Resource Study," 141.
197. Clemensen, "Preliminary Historic Resource Study," 142.
198. "Millville Historic & Archaeological District (Boundary Increase)."
199. Clemensen, "Preliminary Historic Resource Study," 144.

Decker established his ferry in the eighteenth century, which was situated immediately south of the Delaware Water Gap. This feature later became known as Dunnfield Ferry. James Gould established Gould Ferry (later known as the Old Shoemaker Ferry), which connected Shawnee, Pennsylvania, to Pahaquarry Township, sometime around 1736, and it "was one of the earliest ferries in the area."[200] Daniel Decker established Decker's Ferry, located at Walpack Bend, sometime between 1744 and 1756. According to Clemensen, the ferry originated around 1744, "when the road from Shawnee was extended to Walpack Bend." Andrew Dingman established Dingmans Ferry (also referred to as Dingman's Choice) in 1735, and it "was the first ferry in the Upper Delaware Valley." Dingmans Ferry was located approximately four miles south of Minisink Island and connected Delaware Township in Pennsylvania to Sandyston Township in New Jersey.[201]

Frontier-Era Lifeways

Farmsteads in the Delaware River Valley

Early European homesteads were concentrated along the lower terraces along the Delaware River, where the ground was relatively flat and more fertile.[202] According to Clemensen, crops grown by frontier-era farmers included spring wheat, corn, rye, oats, buckwheat, and flax. Farmers primarily grew corn as livestock feed. Rye, which farmers could grow in poorer soil, "was considered hardier than wheat and many people preferred it as a bread grain." People grew oats and buckwheat as food for both people and their livestock. People grew flax primarily "for use in the home manufacture of clothing." Some farmers also had orchards, and apples were the favored fruit for their versatility, as they could be eaten in season, dried for colder months, used as livestock feed, and fermented for cider.[203]

During the frontier period, many farmers did not rotate crops or employ fertilizers, and "Because land was plentiful and the cheapest element of farming when compared to capital and labor, the land received little respect." Farmers frequently abandoned fields that had become infertile, instead using them for livestock.[204] Common livestock animals included "Oxen, horses, cattle, pigs, sheep, and poultry;" however, people during this time relied heavily on hunting and wild game for meat and did not typically keep large amounts of livestock.[205]

Oxen were typically used to pull wagons and carts (Figure 2.10). Two-wheeled carts were common by the 1730s, "but they were crude, wooden contrivances" that frequently broke. Four-wheeled wagons came into use by the 1740s, but Clemensen notes that "they were virtually useless because roads were too poor to permit travel with these conveyances."[206] Horses were typically used to carry individual riders from place to place, rather than to pull a cart or wagon. Farmers kept cattle for milk, butter, and beef and pigs for their meat, which was "an important part of the frontier diet." People used rendered pork fat for cooking as well as soap and candle making. Northern New Jersey homesteaders kept sheep for their wool, which they used alongside flax linen for clothing. Farmers used chickens and ducks as a source of eggs and meat. Farmers also maintained gardens, growing seasonal vegetables such as "cabbage, turnips, onions, beets, peas, carrots, parsnips, squash and pumpkins."[207]

Early farmstead dwellings tended to reflect the ethnic heritage of the builder. Although the earliest houses may have been log construction out of necessity, Dutch newcomers brought with them

200. Clemensen, "Preliminary Historic Resource Study," 145.
201. Clemensen, "Preliminary Historic Resource Study," 147–48.
202. Clemensen, "Preliminary Historic Resource Study," 49.
203. Clemensen, "Preliminary Historic Resource Study," 52–53.
204. Clemensen, "Preliminary Historic Resource Study," 52.
205. Clemensen, "Preliminary Historic Resource Study," 54.
206. Clemensen, "Preliminary Historic Resource Study," 55.
207. Clemensen, "Preliminary Historic Resource Study," 54–55.

Figure 2.10. 1900 photograph of an ox cart in New York (Source: Library of Congress, https://lccn.loc.gov/2012648361).

Figure 2.11. 1933 photograph showing the front and side elevations of the Westbrook-Bell House (Source: Library of Congress, https://www.loc.gov/item/nj0147/).

a tradition of stone construction. As noted by Clemensen, "by the mid-eighteenth century, one-and-a-half to two-story houses of this type begin to appear."[208] Shank cites the Westbrook-Bell House and the Ennis House as good examples of Dutch architectural practices in the Delaware River Valley during the early to mid-eighteenth century (Figure 2.11). In his assessment of the buildings, Shank says the following:

> The roof form and slope of both houses are characteristic of the early Dutch houses of Ulster County, New York, as are the rubble stonework of the walls and the replacing of stonework at the attic portions of the gable end walls with clapboards on a wooden frame. In both houses, too, the timber floor-framing system follows Hudson valley Dutch practice.[209]

Sometime during the late 1700s, members of the Westbrook family constructed a one-and-a-half story rear wing addition to the Westbrook-Bell House. Like the original block, the rear wing addition is made of stone. The main block is made of fairly regular ashlar stone, while the rear addition is made of random-course rubble stone.[210] According to Clemensen, it was common for ashlar cut stone to be used on front walls, while more irregular stones were used for side and back walls.[211]

The Depue House is also a good example of the Dutch tradition of stone construction. The original portion of the Depue House was likely a one-story stone dwelling, constructed by an unknown party circa 1780.[212] Evidence suggests that Isaac Van Auken may have constructed the Depue House, as he was listed as a leaseholder by the East Jersey Proprietors in 1754. This property was later allotted to various shareholders in 1793, and in 1799, Isaac Van Auken purchased the property from shareholders James, Earl of Perth

208. Clemensen, "Preliminary Historic Resource Study," 50.
209. Shank, "Eighteenth-Century Architecture of the Upper Delaware River Valley," 137–38.
210. "Draft Historic Buildings Strategy," 65.
211. Clemensen, "Preliminary Historic Resource Study," 50.
212. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II" (United States Department of the Interior, National Park Service, Mid-Atlantic Regional Office, 1974), 764.

Figure 2.12. 1974 photograph of the John Wesley Van Auken House (Source: 1974 Architectural Reconnaissance Report, New Jersey Historic Preservation Division).

(James Drummond), Rachel Drummond, and their heirs.[213]

In addition to stone houses, European colonists also constructed wood-framed houses. By the mid- to late eighteenth century, the English model of the wood-framed two-story I-House became common in the Delaware River Valley.[214] The John Wesley Van Auken House is a good example of a wood-framed I-House built during the eighteenth century (Figure 2.12). Built by an unknown party sometime around 1760, the Van Auken House features a central entryway, framed by a simple portico with classically inspired architectural elements. According to a 1974 architectural survey, the Van Auken House "probably served the first of the two ferries of the Dingman's area" and "was a night-stop for the loggers who rafted down the Delaware River."[215]

Apart from the main dwelling, barns were the most common outbuildings associated with frontier-era farmsteads. As with residential architecture, barn design tended to reflect the ethnic heritage of the builder, with Dutch, English, and German varieties. Other outbuildings common during this time included "smokehouses, springhouses, icehouses, poultry and hog sheds, and granaries."[216] The Dutch Barn at Black Farm is a good, intact example of Dutch vernacular architecture and construction methods along Old Mine Road and is "one of only three Dutch barns in the county."[217]

Women of the Delaware River Valley

Colonial-era women in the Delaware River Valley likely spent their time tending to a variety of different household tasks. Gardening was often relegated as women's work, and Clemensen notes that women also "gathered wild strawberries, grapes, blackberries, currants, and gooseberries" to supplement their food sources. In addition to tending to the garden and foraging, women also did most of the household cooking.[218] Women were often in charge of medicinal knowledge and general health care within their family units. Herb gardens provided women with the ingredients for folk medicines and other "home remedies." Similarly, women also served as midwives and assisted in childbirth, because "Until the 1760s, male physicians did not attend childbirth."[219]

Women were also tasked with spinning to make thread, using flax and wool to provide clothes and other household items.[220] When necessary, women labored in the fields alongside their male counterparts. Women also assumed economic responsibilities, "running family trades, shops, and businesses in the absence or death of their husbands. They ran general stores, taverns, mills, and shops of many kinds."[221] The role of women can be summarized as follows:

> Women performed gender-defined tasks essential to the survival of the settlement and their families. They were responsible for cooking, food preservation, laundering, herb and vegetable gardens, tending small animals such as chickens for eggs, weaving, and spinning, as well as religious instruction for children. Female children and unmarried sisters, or spinsters, assisted in domestic responsibilities.[222]

213. John Bruce Dodd, Anne Kathleen Sullivan, and Ronald J. Dupont Jr., "The DePue House," Historic Structure Report (Sandyston Township, Sussex County, New Jersey: United States Department of the Interior, National Park Service, 1996), 8–10.
214. Clemensen, "Preliminary Historic Resource Study," 50.
215. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 757.
216. Clemensen, "Preliminary Historic Resource Study," 50–51.
217. "Draft Historic Buildings Strategy," 28.
218. Clemensen, "Preliminary Historic Resource Study," 55–56.
219. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women* (Metuchen, New Jersey: The Scarecrow Press, Inc., 1990), 3.
220. Clemensen, "Preliminary Historic Resource Study," 56.
221. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women*, 2–3.
222. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women*, 3.

Like women elsewhere at the time, colonial-era women in New Jersey had diminished legal status, limited educational opportunities, and were often confined to domestic duties. Under English common law, married women "forfeited all personal property and surrendered control of real property to her husband," and "Wages earned by a married woman legally belonged to her husband." Under English common law, women "could not vote, sue or be sued, draft wills, make contracts, or buy and sell land." Unmarried women did not face the same restrictions, but their situations could be tenuous as they often faced the challenge of being financially independent.[223]

According to historian Maxine N. Lurie, although colonial-era women were restricted in many ways, their roles varied greatly based on their ethnic and religious background. On account of their faith, Quaker women experienced greater equality, evidenced by "examples of female ministers, and provisions for partible inheritance." Similarly, Dutch women often received an inheritance, as the Dutch "were more likely to divide estates equally among all children or to have wives inherit all, rather than following the English pattern of favoring sons." Class also played a role in the opportunities made available to women, and Lurie notes that "As the eighteenth century progressed, elite women received more education."[224] Similarly, wealthy women likely would not have been expected to assist their husbands or family members with hard labor, instead relying on hired help or coerced labor.

There is limited documentation about the exact number of enslaved women in northern New Jersey during the late seventeenth century and through the eighteenth century.[225] Enslaved women were often forced to help carry domestic burdens, including serving as "nannies, cooks, maids and washerwomen," among other types of work.[226] An advertisement for an enslaved woman published in 1734 provides some insight into the types of tasks that would be forced upon enslaved women in New Jersey during the colonial period: "To be sold, A Young Negro Woman, about 20 years old, she dos all sorts of House work; she can Brew, Bake, boyle roast, soap, wash, Iron & Starch; and she is a good darey woman she can Card and Spin at the Wheel, Cotton, Lennon, and Wollen…"[227]

Enslaved People in the Delaware River Valley

There is evidence that slavery was present in New Netherland as early as 1639 in a settlement called Pavonia, located near present-day Jersey City. Enslaved people were brought to New Netherland, and later New Jersey, to address "the chronic shortage of free labor" on account of sparse immigration and settlement.[228] The first enslaved people forcibly brought to New Netherland were twenty men and thirty women who had been kidnapped by slave traders in Africa. The Dutch West India Company used these enslaved people to incentivize European settlement, promising would be homesteaders that enslaved laborers would be available to them.[229]

During the 1640s and 1650s, there was an increase in the import and sale of enslaved people. In 1655, "the first ship arrived in New Amsterdam directly from Africa with a cargo of 300 enslaved persons," and by 1660 "New Amsterdam was considered the most important slave port in North America."[230] Under Dutch colonial rule, enslaved people were afforded a few basic rights. Enslaved families were often kept intact, and enslaved people could be admitted into the Dutch Reformed Church if they wished.[231] According to historian Ira Berlin, enslaved people also had a much higher rate of manumission under Dutch colonial rule, and "By 1664, at the time of English conquest, about one black person in five had achieved freedom in New

223. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women*, 3.
224. Nancy Michael Shukaitis, *Lasting Legacies of the Lower Minisink* (East Stroudsburg, Pennsylvania: Nancy Michael Shukaitis, 2007), 54.
225. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women*, 3.
226. The New Jersey Council for Social Studies, "Slavery in New Jersey," *Social Science Docket*, Winter - Spring 2016, 49.
227. "Part 3 - Slavery in Mid-18th-Century New Jersey," Montclair State University, Anthropology Research, n.d., https://www.montclair.edu/anthropology/research/slavery-in-nj/part-3/.
228. The New Jersey Council for Social Studies, "Slavery in New Jersey," 49.
229. "Part 1 - Early Settlement and the Rise of Slavery in Colonial Dutch New Jersey," Montclair State University, Anthropology Research, n.d., https://www.montclair.edu/anthropology/research/slavery-in-nj/part-1/.
230. "Part 1 - Early Settlement and the Rise of Slavery in Colonial Dutch New Jersey."
231. The New Jersey Council for Social Studies, "Slavery in New Jersey," 49.

Amsterdam."[232] Berlin describes the possibilities for free Black people in New Netherlands as follows:

> By the middle of the seventeenth century, black people participated in almost every aspect of life in New Netherland. They sued and were sued in Dutch courts, married and baptized their children in the Dutch Reform Church, and fought alongside Dutch militiamen against the colony's enemies. Black men and women – slave as well as free – traded on their own accumulated property. [233]

Under English colonial rule, however, the rights and privileges of free Black people were slowly eroded and the number of enslaved people in New Jersey increased substantially. Similarly, the institution of slavery and the treatment of enslaved people changed under the English. Soon after the creation of East and West New Jersey, wealthy landowners from Barbados relocated to the new English colony, "enticed by promises made by the English to provide 150 acres for each household head and another 150 acres for each manservant, which included slaves."[234]

During the late seventeenth and early eighteenth century, the English colonial government enacted a series of slave codes to police the behavior of enslaved people. Enslaved people that broke these codes often faced cruel and violent retribution from their enslavers. A slave revolt in 1712 triggered the passage of even more stringent slave codes in the 1713 *Act for Regulating of Slaves*.[235]

Slavery in New Jersey was primarily concentrated in the northern counties of New Jersey, which served as the "agricultural hinterland" for growing urban settlements like New York.[236] Of the 2,600 enslaved people living in New Jersey by 1726, an estimated 75 percent lived in northern counties. This demographic distribution continued to hold true in 1745, by which point there were 4,700 enslaved people in New Jersey. The concentration of enslaved people in eastern New Jersey was also due to the larger Quaker population in the southern counties and western New Jersey, who "objected to slavery."[237]

Throughout the eighteenth century, slavery became an increasingly entrenched part of New Jersey's economy. Enslavers often relegated enslaved women to domestic tasks. Enslaved men were frequently forced to work as farmhands and laborers. Many enslaved people were highly skilled, working as carpenters, blacksmiths, barrel makers, tanners, miners, leatherworkers, bakers, cooks, privateers, mariners, shoemakers, or tailors, among other occupations. Captain Arent Schuyler, one of the earliest English explorers of the Minisink area, purchased a large tract of land in Bergen County (and present-day Passaic County). Schuyler's land had a large copper deposit, and "an enslaved laborer owned by Schuyler is credited with discovering this mine." Schuyler and his family operated a copper mine on the property for the next several decades, "relying extensively on enslaved laborers working in the mines."[238] It is unknown if any enslaved people were forced to labor in the Pahaquarry Mines.

In the Delaware River Valley, slavery was more common on the New Jersey side of the river. According to Clemensen, "the Germans and Quakers of Pennsylvania opposed slavery," thus making it rare on the opposite side of the river.[239] It is known that large, wealthy landowners in the Delaware River Valley, including the Rosenkrans and Van Campen families, did enslave people.[240] Research uncovered very little information about the identities or lives of enslaved people who lived in the Delaware River Valley during the colonial period.

232. Ira Berlin, "From Creole to African: Atlantic Creoles and the Origins of African-American Society in Mainland North America," in *The Slavery Reader* (London, England: Routledge, 2003), 438.
233. Berlin, "From Creole to African: Atlantic Creoles and the Origins of African-American Society in Mainland North America," 438.
234. "Part 2 - Slavery in Early English East Jersey," Montclair State University, Anthropology Research, n.d., https://www.montclair.edu/anthropology/research/slavery-in-nj/part-2/.
235. "Part 2 - Slavery in Early English East Jersey."
236. "Part 2 - Slavery in Early English East Jersey."
237. The New Jersey Council for Social Studies, "Slavery in New Jersey," 49.
238. "Part 3 - Slavery in Mid-18th-Century New Jersey."
239. Clemensen, "Preliminary Historic Resource Study," 52.
240. Clemensen, "Preliminary Historic Resource Study," 102.

Landscape Summary

European explorers and homesteaders brought significant changes to the Delaware River Valley landscape. Old Mine Road likely formed organically, extending southward as early colonists moved further into the Minisink Valley from Port Jervis, settling along the New Jersey bank of the Delaware River by the turn of the eighteenth century. European colonists and homesteaders, primarily of Dutch and English origin, established farmsteads and several agricultural communities along the path of Old Mine Road.

As activity along the pathway increased, it was likely widened and improved to accommodate limited amounts of wagon travel. The earliest reference to a wagon road was in John Reading Jr.'s 1719 journal. Reading describes a wagon road that ran from Solomon Davis's house, situated approximately three miles south of Minisink Island somewhere near present-day Van Ness Road, to present-day Port Jervis, New York. Approximately two miles south, Andrew Dingman established a ferry service at the present location of Dingmans Ferry Bridge by 1735. A 1758 map depicts Old Mine Road (labeled "road"), with several forts along its length. By the mid-eighteenth century, Old Mine Road likely extended south to Walpack Bend. It is possible that a bridle path extended to the Pahaquarry Mines at this time, but it is unlikely that the wagon road extended further south than Walpack Bend. By the end of the colonial period, however, historic maps suggest that Old Mine Road extended south past Walpack Bend, terminating at ferry crossings on the east bank of the Delaware River.

European colonists' relationship with the natural environment was vastly different from the Munsee Lenape's. European homesteaders were quick to cut down forested areas and fence in agricultural fields. They constructed rudimentary roads, dammed streams, and increased hunting competition for game animals. Their treatment of the land was a source of tension with Munsee Lenape, and violence between the two groups erupted during the French and Indian War. European colonists built a series of fortified blockhouses along Old Mine Road to protect themselves from attack. Jonathan Hampton's 1758 map shows a road connecting the forts positioned north of Walpack Bend.

European homesteaders cleared fields and increased agricultural production during this time. A majority of the agricultural fields were concentrated on the lower terraces of the Delaware River, which were generally flatter and more fertile than sloped areas. Farmers at this time did not use fertilizer or rotate crops, frequently exhausting the soil. Farmers often abandoned infertile fields and repurposed them for livestock. Staple crops grown at this time included spring wheat, corn, rye, oats, buckwheat, and flax. Vegetable and herb gardens were also common, as were fruit orchards. Eighteenth-century farmsteads typically contained a main residential building, with clustered outbuildings nearby. Building materials and techniques often reflected the ethnic background of the builder.

Component Landscapes

John Wesley Van Auken House (ca. 1760, Mettler Road)

An unknown party built the John Wesley Van Auken House in 1760. The Van Auken House is a one-and-a-half story wood-framed building. This building is a good example of English architectural heritage and building methods common at this time, which commonly featured wood-framed I-House domestic buildings. The Van Auken House also features notable classical architectural elements.

Research did not reveal information about other outbuildings that may have existed or been constructed during this period. The Van Auken House was likely surrounded by cleared agricultural land used for farming and livestock during this period. As the residents would have required some means of accessing their property, it is possible some sort of dirt path existed between Old Mine Road North and the Van Auken House during this period, possibly along the alignment of Mettler Road. It is also possible that the original trajectory of Old Mine Road passed closer to the bank of the Delaware River and the Van Auken House. However, neither scenario is verifiable with available information.

Depue House (ca. 1780, MP 2.8)

An unknown party constructed the original portion of the Depue House around 1780. Although unsubstantiated, historical evidence suggests that the original builder may have been Isaac Van Auken. The original portion of the

Depue House (the south section of the building) was likely a one-story structure originally, made of rough-cut fieldstone, and gradually expanded over time. A notable feature on the original portion of the house is the small beehive oven on the south elevation. Research did not reveal information about other outbuildings that may have existed or that the owners constructed during this period. The Depue House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

William Ennis House (1751, MP 4.6)
An unknown party built the Ennis House in 1751, as indicated by an inscribed date stone on the building. William Ennis purchased the property in 1753 and it was subsequently named for him. The original block of the Ennis House has stone walls and a timber-framed roof. The Ennis House is a good example of Dutch architectural heritage and building methods common at this time.

Research did not reveal information about other outbuildings that may have existed or been constructed during this period. The Ennis House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Westbrook-Bell Farm (ca. pre-1730, MP 5.14)
Johannes Westbrook purchased a 100-acre plot of land from the Munsee Lenape in 1730. Based on the language of the deed, a dwelling and barn were already present at the property. Westbrook was likely already living on the property, and the deed simply formalized his ownership. The original block of the Westbrook-Bell House has stone walls and a timber-framed roof. During the late nineteenth century, a one-and-a-half story stone addition was built on the rear of the original block. The Westbrook-Bell House is a good example of Dutch architectural heritage and building methods common at this time. According to a Historic American Buildings (HABS) survey of the Westbrook-Bell House, it is believed that the cellar underneath the house was used as secret hiding spot or escape route in the event of an attack during the French and Indian War. The cellar is accessible via a trap door, and supposedly the cellar provided access to a tunnel that led to a nearby ravine.[241] Apart from the barn mentioned in the 1730 deed, there is no information about other outbuildings that may have existed or been constructed during this period. The Westbrook-Bell House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Black Farm (ca. mid to late eighteenth century, MP 5.3)
As noted, the moniker "Black Farm" is a reference to a later, twentieth-century owner. Historically, Black Farm was commonly referred to as "Westbrook Farm," and the property was likely a portion of the land originally deeded to Johannes Westbrook in the early eighteenth century. A majority of the buildings at the Black Farm date to the mid-nineteenth century, but there are portions of the farmstead that date to the mid- to late eighteenth century. An unknown party built a house on a 3-foot stone foundation circa 1750, followed by a large Dutch Barn, constructed around 1775. The original house at Black Farm is no longer extant, but the circa 1750 stone foundation was repurposed for later construction, serving as the foundation for the Black Farm House, which is still extant.

The Dutch Barn at Black Farm, constructed around 1775, is also still extant. The Dutch Barn is a good example of Dutch vernacular architecture and construction methods employed on eighteenth-century farmstead along Old Mine Road. The Dutch Barn "is a 4-bay, true form Dutch barn, which features a central aisle or nave with wagon doors on both of the gable end elevations."[242] Apart from the Dutch Barn, there no information about other outbuildings that may have existed at Black Farm during this period.

Minisink Dutch Reformed Church & Cemetery (1737, MP 7.38)
The Minisink Dutch Reformed Church established their congregation in 1737 and built a log church

241. Wesley Shank and William C. Badger, "Johannes Westbrook House," Historic American Buildings Survey (Sandyston Township, Sussex County, New Jersey: Department of the Interior, Heritage Conservation and Recreation Service, 1970).
242. John J. Donahue to Katherine Marcopul, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area," December 9, 2016, 7, Delaware Water Gap National Recreation Area.

sometime between 1740 and 1743.[243] The congregation may have established a cemetery and met informally at this location prior to constructing the church, as the earliest discernible burial markers in the cemetery date to 1715. According to church records, the church shared a pastor with three other congregations: Walpack in New Jersey; Deerpark (Port Jervis) in New York; and Smithfield in Pennsylvania, and the pastor traveled up and down Old Mine Road to provide services.[244] Reportedly the parsonage (established in 1745) was located near Fort Nomanock on land originally owned by the Westbrooks.[245] The original church was a simple log building located near a bend in Old Mine Road that served the congregation in this location for ninety years until a new church was built in Montague in 1827.[246]

The Federal Period through the Nineteenth Century (1790s–1900)

Population Growth and Settlement Patterns

The Delaware River Valley, including the Delaware River Valley, was sparsely populated at the onset of the federal period, beginning circa 1790. By the turn of and into the nineteenth century, settlement in the Delaware River Valley steadily increased. Unlike the early colonial period, where European colonists primarily moved southward into the area from New York, during the nineteenth century, a majority of newcomers came from southeastern Pennsylvania, while some came from New England. A majority of these incoming Europeans were of "English, German, Welsh, and Scotch-Irish ancestry."[247] Earlier farmers along Old Mine Road had already established agricultural fields along the flatter land along the riverbank. As a result, later arrivals were "forced to cultivate the mountain slopes" further east of the Delaware River. In addition to their challenging topography, these sloped areas also had very rocky soil, and would be farmers "had to remove large amounts of stones before they could till the ground." These extracted stones were then repurposed to construct stone rows, which "served as a field fence or to mark the property boundary." Many stone rows and remnants of stone rows are still extant along Old Mine Road.[248]

As the local population increased around 1800, villages began to emerge throughout the Delaware River Valley. According to Clemensen, the earliest villages in the area typically emerged along important transportation routes or at important sites of early industry, such as gristmills and sawmills, which would have been crucial for the surrounding agricultural communities. Early villages would have "catered to the surrounding agricultural community," providing access to important goods and services. Additionally, early villages provided valuable community services, acting as a centralized place for "education, religious activity, and socializing." Early villages in this area typically developed in a linear pattern, consisting of buildings, one row deep, along a central roadway. Over time, larger villages, such as Milford, Pennsylvania (established circa 1793), and Stroudsburg, Pennsylvania (established circa 1806), adopted grid-layouts.[249]

No large villages developed on the New Jersey bank of the Delaware River during the nineteenth century. However, there were several small interior villages that began to appear in the area during the early and mid-nineteenth century, along or near Old Mine Road. As described by Clemensen, these smaller interior villages followed a linear layout and typically consisted of "a general store, blacksmith shop, grist mill and/or saw mill, one or two churches, a school, sometimes a tavern, and several dwellings."[250] Interior villages that emerged on or near Old Mine Road during the nineteenth century include Millville, Brick House/Montague, Bevans, Peters Valley, Walpack Center, Flatbrookville, Millbrook, Brotzmansville, and Dunnfield (Brick House/Montague and Bevans

243. Robert William Blasberg and Jean-Albee Everitt, "Two and One Quarter Centuries on Old Mine Road: The History of Minisink Reformed Church, 1737-1962," 1984, 31, https://www.ancestry.com/search/collections/11144/.
244. Blasberg and Everitt, "Two and One Quarter Centuries on Old Mine Road," 31.
245. Royden Woodward Vosburgh, *Minisink Valley Reformed Dutch Church Records, 1716-1830* (New York: New York, Printed for the Society, 1913), v.
246. Blasberg and Everitt, "Two and One Quarter Centuries on Old Mine Road," 5, 17.
247. Clemensen, "Preliminary Historic Resource Study," 22–23.
248. Clemensen, "Preliminary Historic Resource Study," xi.
249. Clemensen, "Preliminary Historic Resource Study," xii-xiii.
250. Clemensen, "Preliminary Historic Resource Study," xiv.

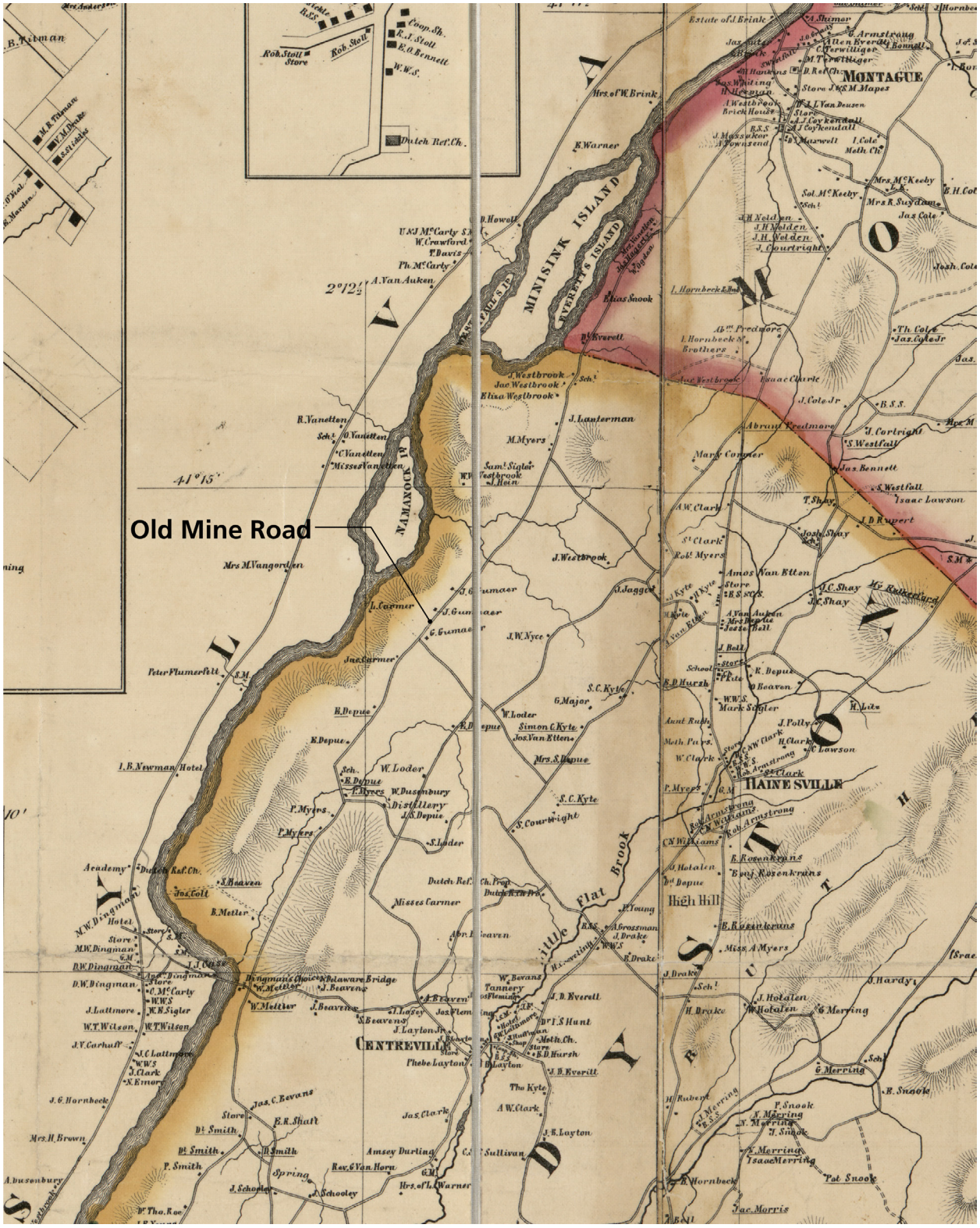


Figure 2.13. 1860 map showing the location of owners along the Old Mine Road North corridor. From Griffin Morgan Hopkins Jr.,"Map of Sussex Co., New Jersey: from actual surveys & records.," Philadelphia: Carlos Allen, M.D., Publisher, 1860 (Source: Library of Congress, https://www.loc.gov/item/2012593681/).

are located at the north and south end of the study area, respectively).[251]

Located at the north end of Old Mine Road, a small village developed around the Brick House Hotel. Roger Clark built the Brick House Hotel around 1776 (no longer extant). The Brick House Hotel was "a major stopping place for several stage lines that crossed the Delaware at this point," and a small village, known as Brick House, emerged around the establishment.[252] Eventually, this village became known as Montague, and by the end of the eighteenth century it had grown to include "the hotel [Brick House], a general store, two blacksmith shops, a wheelwright shop, two churches, and a school located on a linear design along River Road." None of the historic buildings from this period exist today.[253]

A small crossroads community called Bevans existed at the south end of Old Mine Road North, presumably named for the Bevans family that established a farmstead there. The 1860 "Map of Sussex Co., New Jersey" by Griffith Morgan Hopkins, Jr. indicates that there was a store at directly across the road from the Bevans-Hellwig property, noted on the map as owned by Jas. [James] c. Bevans.

Peters Valley, just south of Bevans, was named for Peter Van Ness. The village grew around the intersection of several interior roads and pathways, including present-day Peters Valley-Wagonwheel Road, Bevans Road, and Kuhn Road. The village began to take shape after Robert Stoll opened a general store at that location in 1830, which was followed by a Dutch Reformed Church in 1838. Like the other small village sites, Peters Valley followed a linear developmental pattern along the various roads forming the intersection. Clemensen notes that by the mid-nineteenth century, Peters Valley had grown to include "a Universalist Church, as well as a hotel, a blacksmith and wheelwright shop, a cooper's shop, a cobbler's shop, a grist mill, a school, a hotel, and a number of dwellings."[254]

The 1860 "Map of Sussex Co., New Jersey" by Griffith Morgan Hopkins, Jr. provides a detailed depiction of development on the New Jersey side of the Delaware River Valley at the time, including roadways, villages, important buildings, and property owners (Figure 2.13). Several, but not all, of the larger towns and villages have their own dedicated inset maps. This map includes detailed illustrations of natural features, including the Delaware River, islands, streams, brooks, and nearby ridges. Notable properties and owners shown along Old Mine Road North include the following (listed from north to south): A. Westbrook, Brick House, B.S.S. [blacksmith shop], J. Massaker, A. Townsend, Mrs. Vanetten, Jos. Hagerty, W. Ogden, D. Evurett [*sic*], J. Westbrook, Sch. [school], Jac. Westbrook, Eliza Westbrook, J. Lanterman, M. Myers, Sam. Sigler, W. Westbrook, J. Hein, J. Gumaer, J. Gumaer, G. Gumaer, L. Carmer, Jac. Carmer, E. Depue, E. Depue, Sch. [school], E. Depue, P. Myers, P. Myers, P. Myers, S. Beaven, Jos. Colt, B. Metler, Dingman's Choice & Delaware Bridge, W. Mettler, W. Mettler, Jas. C. Bevans, and a store.[255]

An 1872 map by Ge. E. Hursh contains the property boundaries and associated ownership of parcels along Old Mine Road. Properties and owners shown in the study area include the following (listed from north to south): Mattias Kikendal; Jacob Kikendal; Dirk Westbrook; R. R. Livingston, J. Stevens, and Jn. Rutherford; Joseph Kirkbride; Abraham Hassbrook; Earl of Perth, Duchess of Gordon, P. V. B. Livingston, and A. Burr; William Crook; James Parker; and James C. Bevans. Depictions of buildings are used to indicate the locations of clustered buildings in villages like Montague and Peters Valley, but individual dwellings along Old Mine Road are not marked. This map contains depictions of some landscape features, including the Delaware River,

251. Clemensen, "Preliminary Historic Resource Study," 174–84.
252. Brown, "Historical Base Map, Delaware Water Gap," 107.
253. Clemensen, "Preliminary Historic Resource Study," 174.
254. Clemensen, "Preliminary Historic Resource Study," 175–77. This citation from Clemenson mentions hotel twice. It is unclear if there were two hotels or if this is a mistake in the text. An 1860 map in the Preliminary Historic Resource Study shows one hotel (Historic Map 12: Map of Peters Valley, G.M. Hopkins).
255. Griffith Morgan Hopkins Jr, *Map of Sussex Co., New Jersey: From Actual Surveys & Records.* (Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860), https://www.loc.gov/item/2012593681/.

islands, streams, brooks, and swamps. Large trees that are used as property boundary markers are also included on the map.[256]

Mining Efforts and Other Industries During the Nineteenth Century

After John Reading Jr. and his partners abandoned their mining endeavors at the Pahaquarry Mines during the 1750s, there was a prolonged period of inactivity at the site. John Reading Jr.'s grandchildren later inherited the land, and his grandson Joseph Reading revived mining attempts at the site during the late 1820s. Joseph Reading and his business partner Thomas Gordon granted a 999-year lease to three men, Henry Miller, David Bruce, and David Kirkendal, "for the purpose of digging, searching, and exploring for copper and other valuable ores and minerals." The land was leased on the condition that Reading and Gordon "receive ten percent of all copper and other valuable ores recovered" at the mines, and the lease would be rendered null if no copper or other ore were discovered by the men within a five-year period. Miller, Bruce, and Kirkendal ultimately failed to recover copper or another ore at the site and Reading and Gordon soon sold the land to local farmers Moses Van Campen and Andrew Ribble.[257]

During the 1840s, the discovery of copper deposits in Michigan led to increased interest in copper mining elsewhere in the United States. Additionally, copper was becoming an important commodity in the shipbuilding industry "for its use as a material for sheathing wooden vessels." In 1845, wealthy investor Charles Bartles purchased seventy-one acres of land from Andrew Ribble, which "contained the original John Reading forty-acre tract plus the twenty-four acre and two-acre parcels that Joseph Reading and Thomas Gordon sold to Ribble." The following year, James N. Reading purchased 195 acres from Moses Van Campen, which "had been part of the original 200-acre Reading/Johnson land." On February 26, 1847, Bartles and Reading, along with several other wealthy investors, established the Alleghany Mining Company. With Reading operating as the president, the company continued to purchase land surrounding the mining site.[258] According to Clemensen, the Allegheny Mining Company employed local men and purchased a variety of supplies from nearby farmers. Their efforts, however, were short lived, and mining operations ceased in March of 1848.[259]

In 1861, stakeholders sold the Allegheny Mining Company to a new group of investors. Under new management, the Allegheny Mining Company purchased additional land and reached a mining depth of fifty-nine feet. However, their efforts proved fruitless as the ore deposits were insufficient to support the mine, and operations ceased in 1862. Although retaining their mineral rights, the Allegheny Mining Company sold its land to Aaron Keyser, "who was conducting an extensive timbering operation in the area." The Pahaquarry Copper Mines remained inactive until the early twentieth century.[260]

The Rise and Fall of Agriculture During the Nineteenth Century

As more people emigrated to the Delaware River Valley from surrounding states, agriculture in the area underwent a significant transformation. The increase in population meant that more land was being cultivated than at any point previously. Additionally, newcomers brought with them new agricultural practices that improved crop production and soil quality. After 1810, farmers in the area began to incorporate several important strategies, such as spreading livestock manure in their fields, planting red clover to create nitrogen rich soil, using lime as an additive to manage soil acidity, and practicing regular crop rotation to maintain soil quality.[261] Beginning in the 1830s, many farmers began constructing kilns to burn limestone and produce lime for their fields (Figure 2.14). Farmers in Sussex County had access to a limestone quarry in the Kittatinny Valley, east of Old Mine Road. Although lime kilns were common features on farmsteads throughout the Delaware River Valley and there are several

256. Ge. E. Hursh, *Copied from a Map Owned by John D. Everitt*, March 4, 1872, March 4, 1872, Delaware Water Gap National Recreation Area Archives.
257. Clemensen, "Preliminary Historic Resource Study," 217–18.
258. Clemensen, "Preliminary Historic Resource Study," 218–19.
259. Clemensen, "Preliminary Historic Resource Study," 220.
260. Clemensen, "Preliminary Historic Resource Study," 220–22.
261. Clemensen, "Preliminary Historic Resource Study," 57–58.

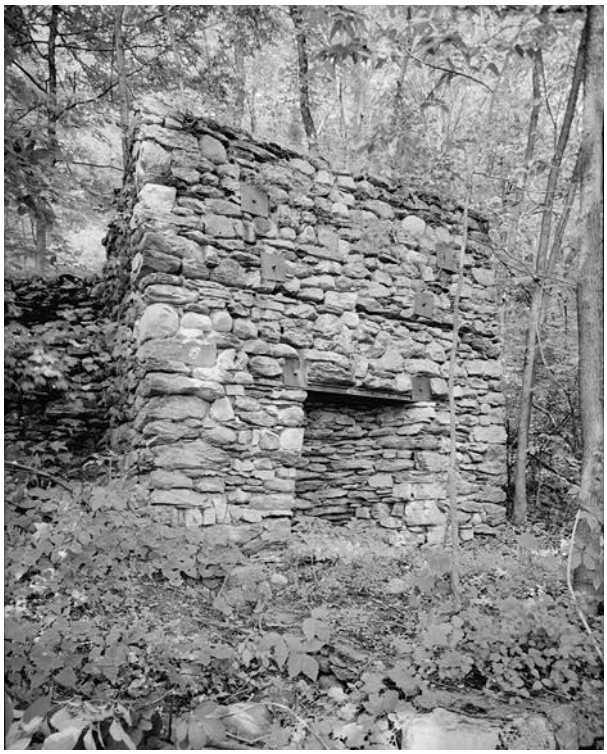


Figure 2.14. An example of a lime kiln in the Middle Delaware River Valley; photographed in 1970 during a HABS survey of the John Turn Farm in Monroe County, Pennsylvania (Source: Library of Congress, https://www.loc.gov/pictures/collection/hh/item/pa0606/).

kilns on properties within one-half to one mile of the road, it is unknown if any were present on farmsteads along Old Mine Road North.[262] By the mid-nineteenth century, commercial fertilizers were available, further improving soil quality and crop production.[263]

The emergence of villages with skilled craftsmen and general stores was also crucial to the advancement of the agricultural economy during this time. As noted by Clemensen, "The rise of villages along the transportation corridors brought skilled men to the area who produced improved farm implements and relieved farmers of cumbersome jobs," and "The services of tanners, harnessmakers [*sic*], blacksmiths, wheelwrights, and wagonmakers were welcome professions in agricultural communities."[264] Surplus crops could be sold for a profit, and farmers used their extra income to invest in better implements and purchase livestock.

The onset of industrialization during the latter half of the nineteenth century again radically transformed the agricultural economy in the Delaware River Valley. The advent of agricultural machinery transformed agricultural labor, lessening the reliance on physical labor. Clemensen summarizes these advancements as follows:

> After 1840, increasing mechanization in farm implements further reduced farmers' reliance on hand labor. By that decade, the grain drill greatly speeded crop planting. In the 1850s, the McCormick reaper became a common means to cut grass and grain with horse-power…At the same time, straddle-row type corn cultivators permitted farmers to more rapidly remove weeds from corn fields. By the 1870s, mowing machines replaced the reaper to harvest grass for hay. In the next decade, the twine binder replaced the reaper…A combination threshing machine and grain separator allowed farmers to harvest grain in the field…hay loaders reduced the hand labor of the hay harvest. With the advent of silos, corn stalks were cut in the field and hauled to the farmyard where a machine chopped the corn and blew it into the silo.[265]

Agricultural mechanization and improved productivity increased competition among farmers, both locally and nationwide. In the Delaware River Valley, many smaller, subsistence farmers were unable to employ these new technologies because their fields were often narrow and sloped. According to Clemensen, the farmers who were unable to compete were often forced from their land, and their fields were occasionally "purchased by neighboring farmers, who lived on more level land, for use as pastures, while other abandoned mountain slope fields reverted to natural succession."[266] As successful farmers expanded, they removed fence rows and stone rows, increasing "field size to more efficiently accommodate modern machinery."[267]

On a broader scale, industrialization and the mechanization of agriculture, combined with nationwide improvements in transportation systems, created new sources of western crops and foodstuffs that were much cheaper than goods produced by local farmers. By the mid-nineteenth

262. Clemensen, "Preliminary Historic Resource Study," 242.
263. Clemensen, "Preliminary Historic Resource Study," 63.
264. Clemensen, "Preliminary Historic Resource Study," 56–58.
265. Clemensen, "Preliminary Historic Resource Study," 63.
266. Clemensen, "Preliminary Historic Resource Study," 63.
267. Clemensen, "Preliminary Historic Resource Study," 76.

century, many local farmers were being priced out of their local markets, and they responded by adjusting "the types of crops and livestock that they raised." According to Clemensen, "By the 1850s, a trend toward dairying began in this region. . .farmers began to plant more corn and convert a greater percentage of the farm land to pasture and grass for hay." However, by the 1880s there was a decline in the number of dairy cows in the Delaware River Valley, and many farmers "switched to raising more pigs."[268]

In general, farming in the Middle Delaware River Valley declined steadily during the latter half of the nineteenth century. Between 1850 and 1880, the number of farms overall increased, but their tilled acreage ceased to increase by the 1870s. As noted by Clemensen, the average farm had ninety acres of tilled land in 1870. By 1880, "the acreage under cultivation diminished to sixty-four."[269]

As agricultural fortunes in the Delaware River Valley waxed and waned throughout the nineteenth century, many farmers began to seek alternative ways to supplement their incomes. By the 1890s, many farmers began to capitalize on the burgeoning tourism industry in the region by renting rooms to summer boarders on vacation from nearby urban centers. Renting rooms became a common practice among farmers in the area and lasted well into the 1900s.[270] According to Clemensen, many guests who roomed with local farmers were seeking to experience the past, attempting to "rediscover the country life of their parents' day."[271] Clemensen cites several examples of this phenomenon, saying, "The Abraham Van Campen, Benjamin B. Van Campen, Oakley Stoll, Jacob Roe, Frank Stoll [Heron's Nest], Anson Johnson, and William Ennis farms and/or homes exemplify such summer residences."[272]

The Beginnings of the Resort Era During the Nineteenth Century

By the early nineteenth century, artists and intellectuals had become preoccupied with Romanticism and notions of the Picturesque, seeking the sublime through the natural world. Several American landscape painters featured the Delaware Water Gap and Delaware River Valley in their work. In 1800, Thomas Birch featured the landscape in his painting *The Majestic Delaware*, the first known work featuring the Delaware Water Gap. Karl Bodmer painted the landscape in his 1832 *The Delaware Water Gap*, and George Inness featured the landscape repeatedly in paintings he created beginning in the 1850s (Figure 2.15). During the 1870s, artist Granville Perkins' works featuring the Delaware Water Gap were printed in nationwide publications, such as *Harper's Weekly*.[273] Perkins' work was also featured in *Picturesque America*, a two volume series featuring descriptions and illustrations of natural wonders and beauty throughout the United States (Figure 2.16). *Picturesque America* is often credited for having had a significant impact on the growth of domestic rural tourism among American travelers.[274] According to Clemensen, "An intrigue with the natural wonders of the Delaware Water Gap area most likely developed as a result of the display and publication of art works that depicted this landscape."[275]

Prior to the emergence of a tourist economy in the area, most travel through the area was perfunctory, not an act of leisure or adventure. To accommodate travelers, taverns emerged during the eighteenth century. Clemensen notes that taverns eventually evolved into inns by the early nineteenth century, which "specialized in housing hunters and fishermen." By the 1820s, the earliest waves of vacationers and "sightseers" began to arrive, giving way to the numerous hotels and boarding houses that appeared throughout

268. Clemensen, "Preliminary Historic Resource Study," 64–65.
269. Clemensen, "Preliminary Historic Resource Study," 66–67.
270. Clemensen, "Preliminary Historic Resource Study," 75.
271. Clemensen, "Preliminary Historic Resource Study," 255.
272. Clemensen, "Preliminary Historic Resource Study," xvii.
273. Clemensen, "Preliminary Historic Resource Study," 247.
274. "1872-74 Book, Picturesque America or The Land We Live In," Long Island University's Cedar Swamp Historical Society Collection at the D. Davis Schwartz Library, n.d., http://www.liucedarswampcollection.org/template1/picturesque.html.
275. Clemensen, "Preliminary Historic Resource Study," 247.

Figure 2.15. 1861 painting by George Inness entitled "Delaware Water Gap" (Source: The Metropolitan Museum of Art, Open Artstor, https://library.artstor.org/).

the region during the nineteenth century.[276] The Kittatinny House was one of the earliest hotels in the area. The initial owner, Antoine Dutot, began constructing the hotel in 1829. Still unfinished by 1832, Dutot sold the would-be hotel to Samuel Snyder that year. Despite the fact that construction was not yet complete, Snyder successfully booked the Kittatinny House to capacity during his first vacation season as owner, and many guests came seeking the "recuperative benefits of the area with its 'revivifying' breeze."[277] In 1841, William A. Brodhead began managing the hotel. Brodhead eventually purchased the Kittatinny House in 1851 and quickly expanded the hotel's capacity through multiple additions over time. In 1851, the capacity of the hotel jumped from twenty-five to sixty. By 1860, the Kittatinny House could accommodate 150 guests, and by 1866 it could accommodate up to 250 visitors.[278]

Hotels offered guests a variety of outdoor experiences, and visitors "could partake in carriage rides, walking, riding horses, boating, and fishing," among other activities. In 1879, Luke Brodhead began hosting guests on his steamboat, the *Kittatinny*, for "river excursions that included moonlight cruises." Bicycling also became a popular activity among guests, who formed "bicycle clubs" and organized group rides along the Delaware River.[279]

Cycling's growing popularity among tourists is evidenced by numerous newspaper advertisements for hotels and cycling organizations offering cycling experiences in the area. On June 1, 1896, the *Press of Atlantic City* published advertisements for a multitude of hotels along the Delaware River, north

276. Clemensen, "Preliminary Historic Resource Study," 253.
277. Clemensen, "Preliminary Historic Resource Study," 254.
278. Clemensen, "Preliminary Historic Resource Study," 254.
279. Clemensen, "Preliminary Historic Resource Study," 256.

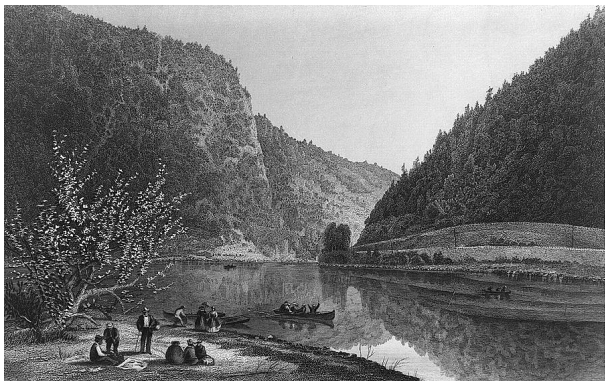


Figure 2.16. An engraving of Granville Perkins' 1872 painting "Delaware Water Gap" (Source: Library of Congress, https://www.loc.gov/pictures/item/93508323/).

of the Water Gap. The Crissman House in Milford and the High Falls Hotel at Dingmans Ferry both advertised cycling opportunities for guests.[280] The following month, on July 30, 1896, *The Jersey City News* published and advertisement announcing the formation of "The Hudson County Association of Cycling Clubs," informing readers that a "party of members of the Century Wheelmen of New York will leave on August 15 for a tour of the Delaware Water Gap, returning on August 23."[281]

The growing popular preoccupation with the natural world coincided with significant advancements in domestic transportation networks during the mid-nineteenth century, particularly the spread of passenger rail networks. As noted by Clemensen, "Railroad connections at either end of the valley…provided the easiest entrance to the area. In 1847, the Erie Railroad reached Port Jervis, New York, and, by 1860, vacationers to the Milford area arrived via that route." The southern end of the valley was accessible following the completion of the Delaware, Lackawanna and Western Railroad in 1856. These rail connections brought visitors from nearby urban centers, particularly New York City and Philadelphia and were instrumental to the development of the tourism industry in the area.[282]

Initially, the early hotels were located around the Delaware Water Gap itself. Clemensen notes that many plans to expand existing hotels or establish new hotels were halted during the mid-nineteenth century due to the 1857 financial panic, followed in quick succession by the American Civil War.[283] After the conflict ended, there was a "construction binge" in the area. As the tourism industry in the Delaware River Valley increased substantially during the latter half of the nineteenth century, lodging places began to spread northward along the Delaware River. Clemensen notes that until the early twentieth century, most hotels north of the Water Gap were positioned along the Pennsylvania side of the river.[284] However, Peters Valley had a small hotel that hosted summer guests.[285] Flatbrookville and Millbrook also had hotels during the mid- to late nineteenth century.[286] Additionally, numerous smaller boarding houses emerged and commenced operations during this period.

Transportation Networks During the Nineteenth Century

Old Mine Road

As noted previously, there is evidence that Old Mine Road extended south past Walpack Bend prior to the American Revolution. Such a path would have been necessary for John Reading Jr. and his associates to reach the Pahaquarry Mine site. Additionally, the location of a fortified blockhouse constructed during the French and Indian War at Abraham Van Campen's house, further south of the Pahaquarry Mine, suggests that this area was connected to the northern section of Old Mine Road by some sort of bridle path or small road, connecting it to the larger chain of blockhouses established during the French and Indian War.[287] Additionally, maps produced in the latter half of the nineteenth century depict Old Mine Road extending south of Walpack Bend, meeting a ferry crossing located along the eastern bank of the Delaware River.

280. "Hotels of Other Resorts," *Press of Atlanta City*, June 1, 1896, https://www.newspapers.com/image/916763544/?match=9.
281. "Wheelmen Organize," *The Jersey City News*, July 30, 1896, https://www.newspapers.com/image/856077013/?match=1.
282. Clemensen, "Preliminary Historic Resource Study," 254.
283. Clemensen, "Preliminary Historic Resource Study," 254.
284. Clemensen, "Preliminary Historic Resource Study," 255.
285. Clemensen, "Preliminary Historic Resource Study," xiv.
286. Clemensen, "Preliminary Historic Resource Study," 177–80.
287. Clemensen, "Preliminary Historic Resource Study," 127.

A 1793 decision recorded in a Sussex County Book of Roads confirms the extension of Old Mine Road to the Pahaquarry Mine site. According to the Book of Roads, "Surveyors of the Highways for the Townships of Walpack, Sandiston [*sic*], and Montague" agreed to extend Old Mine Road, referred to as the "Great Road," south to the Pahaquarry Mine. According to the Book of Roads, the extension was to be four rods wide and "maintained by the inhabitants of Walpack as a public road."[288]

The depiction of Old Mine Road, north of Walpack Bend is fairly consistent among maps produced during the early federal period. However, the section of Old Mine Road south of Walpack Bend is not always included. According to Clemensen, the southern section of road may not have been heavily trafficked or considered important enough to be included, and depictions of Old Mine Road vary depending on the priorities of the individual mapmaker and their purposes.[289] Relatively minimal travel along the portion of Old Mine Road south of Walpack Bend was likely because most travelers crossed the Delaware River near Walpack Bend before traveling south of the Pennsylvania bank of the river. Clemensen notes that many travelers traveled along Old Mine Road, crossed the river using a ferry, then "continued overland on the Pennsylvania side of the river."[290]

Examples of cartographic discrepancies can be observed in a series of maps produced in the 1790s. Reading Howell's 1792 map, "A Map of the State of Pennsylvania," shows the section of Old Mine Road that runs between present-day Port Jervis, New York and Walpack Bend. The section of Old Mine Road south of Walpack Bend is omitted (Figure 2.17). Similarly, a German-produced map from 1797, entitled "New Jersey; Erdbeschreibung von Amerika," shows the section of Old Mine Road running between Port Jervis, New York and Walpack Bend, while the section south of Walpack Bend is omitted. The 1797 map does depict the location of Abraham Van Campen's mill, shown as "Van Campens Muhle," approximately halfway between Walpack Bend and the Water Gap (Figure 2.18).

In contrast, Lewis Samuel's 1795 map, "State of New Jersey," clearly shows the section of Old Mine Road south of Walpack Bend, similar to its present configuration. In this map, the road passes by the Pahaquarry Mines and Abraham Van Campen's house before crossing the river just north of the Water Gap (Figure 2.19). The crossing point shown on the map is at the Shoemaker property, where Daniel Shoemaker operated a ferry.[291] According to Samuel's map, Old Mine Road did not extend further south than Shoemaker's Ferry and curve along the New Jersey bank of the Delaware River, as it does now. According to Clemensen, this is likely an accurate depiction of the road at the time, because "until 1830, a route did not exist through the Water Gap on the New Jersey side" due to a large rock outcrop referred to as the "Indian Ladder" that obstructed travel on that side of the river.[292] Countering Clemenson, however, a historical account from Luke Brodhead in 1870 describes the path beyond the Indian Ladder even though the feature proved a formidable obstruction. Brodhead notes that there were steps, which (presumably) Native Americans carved with stone mauls and that travelers climbed over a tree on the south side of the feature. He states that "After the path became more frequented by the early settlers, a wooden ladder was constructed in place of the tree used by the Indians."[293] H. S. Tanner's 1836 map "New Jersey" indicates that Old Mine Road extended beyond the Indian Ladder, as the road is shown following the bank of the river, all the way to Columbia, New Jersey (Figure 2.20).

According to Clemensen, "By the end of the 1850s, the road system of Sussex and Warren Counties was basically in place and little changed until the twentieth century."[294] The 1860 map, "Map of Sussex Co., New Jersey," provides a detailed depiction of Old Mine Road as it existed at the time (Figure 2.13). As Clemensen notes, by this point in time, Old Mine Road appear to have reached close approximations of their present-day

288. "Sussex County Book of Roads, A-202," 1793.
289. Clemensen, "Preliminary Historic Resource Study," 127.
290. Clemensen, "Preliminary Historic Resource Study," 125.
291. Clemensen, "Preliminary Historic Resource Study," 145.
292. Clemensen, "Preliminary Historic Resource Study," 131.
293. L. W. Brodhead, *The Delaware Water Gap: Its Scenery, Its Legends and Early History* (Philadelphia, PA: Sherman & Co., Printers, 1870), 50–51.
294. Clemensen, "Preliminary Historic Resource Study," 135.

Figure 2.17. 1792 map showing the section of Old Mine Road that runs between present-day Port Jervis, New York and Walpack Bend. From Howell Reading, "A Map of The State of Pennsylvania," London: James Phillips, 1792 (Source: David Rumsey Map Collection, https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~2650~220061:A-Map-Of-The-State-Of-Pennsylvania-).

Figure 2.18. 1797 map showing the section of Old Mine Road running between Port Jervis, New York and Walpack Bend, while the section south of Walpack Bend is omitted. This map also depicts the location of Abraham Van Campen's mill, shown as "Abraham Van Campens Muhle," approximately halfway between Walpack Bend and the Water Gap. From D. F. Sotzmann, "New Jersey; Erdbeschreibung von Amerika," Hamburg, Germany: Carl Ernst Bohn, 1797 (Source: Harvard Map Collection, Harvard University, https://curiosity.lib.harvard.edu/scanned-maps/catalog/44-990094935050203941).

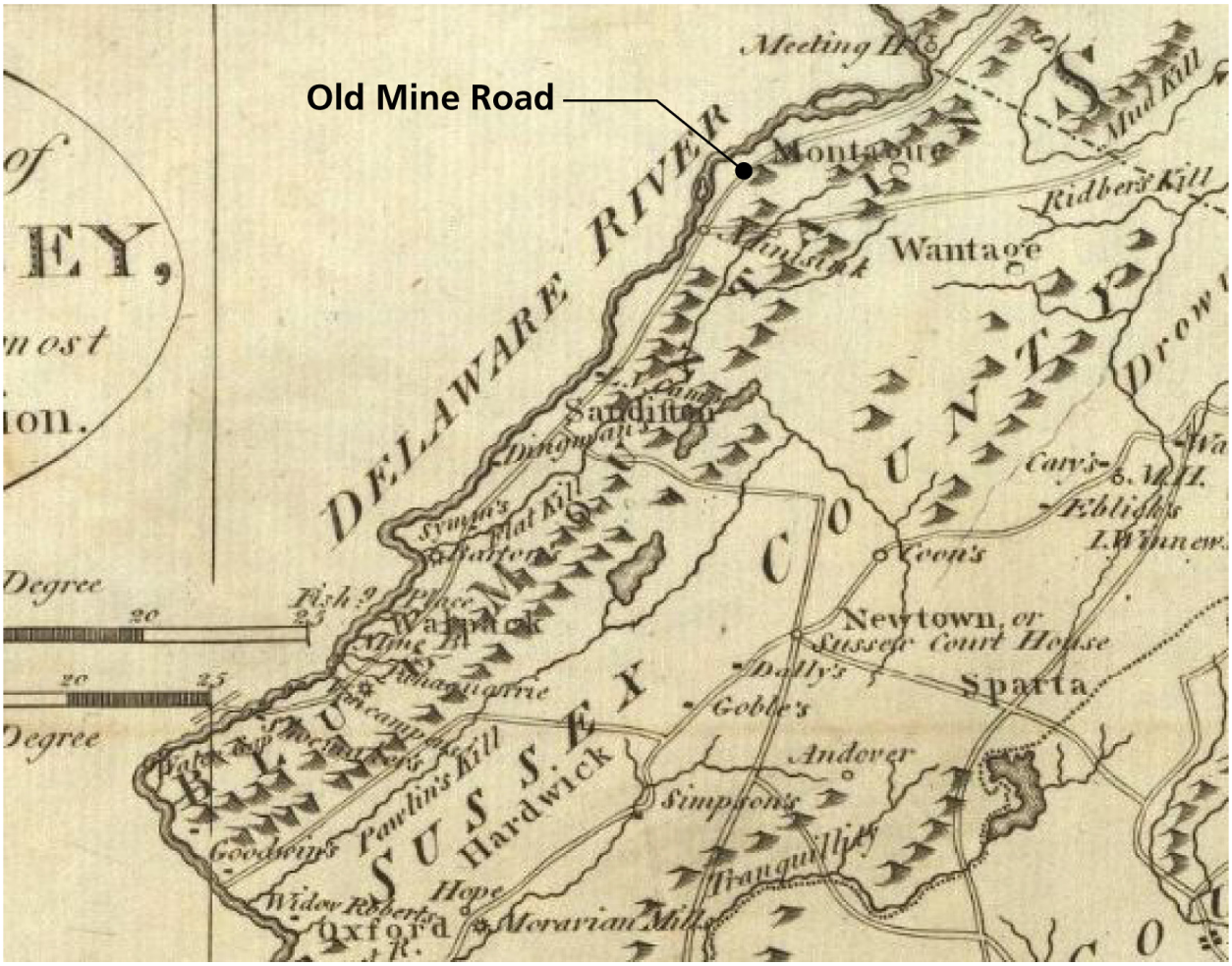


Figure 2.19. 1795 map showing the section of Old Mine Road south of Walpack Bend, similar to its present configuration. From Samuel Lewis, "The State of New Jersey, Compiled from the most Authentic Information," Philadelphia, Pennsylvania: Mathew Carey, 1795 (Source: David Rumsey Map Collection, https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~126~10013: The-State-of-New-Jersey-Compiled-fr).

locations and configurations.[295] The orientation of Old Mine Road at this time is further confirmed by the 1872 map by Ge. E. Hursh, which shows the road in essentially the same position as depicted in the 1860 "Map of Sussex Co., New Jersey."[296]

Road Construction and Maintenance Practices in New Jersey

After the American Revolution, a new model for road construction was introduced: turnpikes. Private companies who operated under charters granted by state governments funded and constructed turnpikes, or toll roads. Federal roadbuilding efforts were often hamstrung by challenges to their Constitutional authority, and "many states found it more practical to grant charters to private companies." Under their charters, these companies maintained the right to collect tolls from travelers using the road. The companies then used these tolls to fund maintenance of the roadway and "to provide dividends to investors."[297]

The first turnpike company in New Jersey was the New Jersey Turnpike Company, established in 1795.[298] The first turnpike in New Jersey, the Morris Turnpike, was completed in 1807, and by 1819, the New Jersey state government granted fifty-four turnpike charters, of which thirty-two were

295. Clemensen, "Preliminary Historic Resource Study," 135.
296. Hursh, "Copied from a Map Owned by John D. Everitt."
297. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 34.
298. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 34.

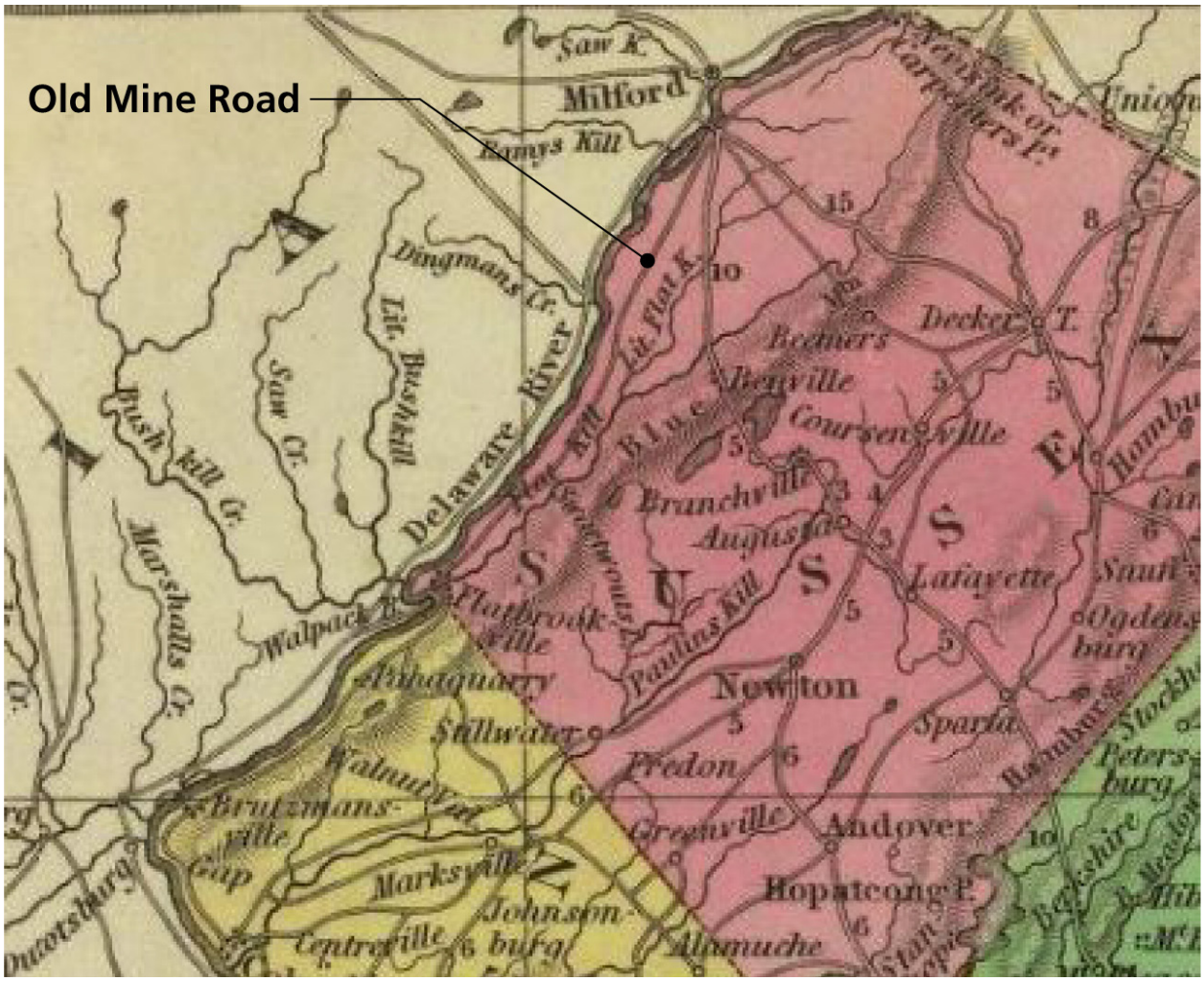


Figure 2.20. 1836 map showing that Old Mine Road, then known as the Columbia Walpack Turnpike, had managed to overcome the "Indian Ladder," as the road is shown following the bank of the river to Columbia, New Jersey. From H. S. Tanner, "New Jersey, Reduced from T. Gordon's Map," Philadelphia, Pennsylvania: HS Tanner, 1836 (Source: David Rumsey Map Collection, https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~547~60185:New-Jersey-Reduced-From-T--Gordon-s).

built.[299] The Morris Turnpike ran northwest from Elizabethtown, New Jersey before crossing through Newton, New Jersey and ending in Milford, Pennsylvania. In 1811, the company expanded the Morris Turnpike, adding a branch called the Water Gap Turnpike. The Water Gap Turnpike branched off from the Morris Turnpike in Newton, running southwest to end at the Delaware River south of the Delaware Water Gap, near Columbia, New Jersey. In 1819, construction of the Columbia and Walpack Turnpike began. The Columbia and Walpack Turnpike ran from Columbia to Walpack, New Jersey, crossing through Millbrook. Due to construction difficulties, the Columbia and Walpack Turnpike was not completed until 1830.[300]

According to Clemensen, the construction of the Columbia and Walpack Turnpike led to the disuse and deterioration of the three-mile stretch of road north of the Van Campen mill, as local residents favored the newly constructed turnpike.[301]

While local governments continued to oversee the construction of public roads, they usually favored turnpike roads because privatization "relieved local overseers from their responsibilities for maintaining local roads." The construction and maintenance of local roads was often challenging due to limited funding, further complicated by the interests and objections of local property owners. Often times, surveyors and overseers had to navigate road construction around the

299. Clemensen, "Preliminary Historic Resource Study," 131.
300. Clemensen, "Preliminary Historic Resource Study," 131–35.
301. Clemensen, "Preliminary Historic Resource Study," 135.

property lines of "well-to-do, influential property owners." In addition to being beholden to private landowners, local roads were also dependent on the willingness of nearby citizens to assist in road maintenance efforts. Although state legislation mandated that local residents either work to maintain the road or pay a tax penalty, public workdays often "turned into social events, and few improvements were actually realized." In general, most publicly managed roads in New Jersey suffered from poor maintenance and were in poor condition.[302]

In 1846, the New Jersey state government tried to rectify some of these issues with the passage of the New Jersey Roads Act, which contained stipulations about standard construction methods of local roads. However, this legislation "was inadequate and did not provide state funds for public roads."[303] Throughout the nineteenth century, Old Mine Road was "composed of narrow, unpaved rural roads extending through the woodlands and beside the farmlands of the Upper Delaware Valley."[304] Turnpike companies, on the other hand, used their capital to invest in higher quality road construction. Gravel and stone roads were the highest quality, but also the most expensive, due to the "time-consuming process of quarrying, breaking, placing, and replacing rocks in roadways," and the reliance on local stone sources. Corduroy roads used felled trees to fill swampy areas. In corduroy road construction, logs were placed horizontally along the width of the road, then covered with mud and dirt. Corduroy roads were lower-quality, and "tended to be rough and hazardous to the animals pulling the cart as well as to the carts itself." By the mid-nineteenth century, many turnpike companies turned to plank roads as their preferred construction method. Plank roads "consisted of one or two tracks of wooden stringers embedded in earth and topped by planks," and were often laid on top of existing roads. However, plank roads required regular maintenance, and "many companies went bankrupt when they could not afford to replace them [planks] as necessary."[305]

The use of turnpikes peaked during the 1830s in New Jersey. Despite their popularity, the larger turnpike business model proved to be a failure, and most turnpikes were unable to generate enough income to fund road maintenance and provide investor returns. Additionally, turnpikes were being edged out by newer, more efficient means of transportation, specifically canals and railroads, which diverted freight and passenger traffic during the mid-nineteenth century. Eventually, the conditions for private turnpike companies became so dire that state governments passed legislation allowing them to abandon their roads, at which point "the property would then revert to public control." The New Jersey state legislature also created provisions that allowed local governments to purchase toll roads and convert them to public infrastructure.[306] As private turnpike companies withdrew, New Jersey began funding public roads following the passage of the New Jersey State-Aid Highway Act of 1891.[307] This legislation established a $75,000 fund to aid counties in the construction of roads, making New Jersey the first state in the U.S. to publicly fund road improvement projects.[308] Initially, New Jersey tasked the State Board of Agriculture with administering road improvements. In 1894, New Jersey created the Commissioner of Public Roads position through the Public Roads Act to oversee state aid and road improvements.[309]

In 1895, the state legislature passed a law requiring each county to appoint a supervisor of roads. The supervisor of roads would serve a five-year term, and their duties were "to construct, repair, and maintain all county roads, bridges, drains, culverts, catch basins, and guardrail. The supervisor is

302. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 34–36.
303. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 34–35.
304. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," 31.
305. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 39–40.
306. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 37–38.
307. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 35.
308. NJDOT, "Transportation History, NJDOT 50th Anniversary," accessed May 23, 2023, https://www.state.nj.us/transportation/about/50thanniversary/history.shtm.
309. NJDOT, "Transportation History, NJDOT 50th Anniversary."

also responsible for keeping highways passable in all seasons and weather."[310] During the early twentieth century, further legislation was passed requiring counties to appoint a county engineer to aid in the construction of public roads and all associated infrastructure. From that point forward, road construction would be handled by the county engineer, while road maintenance was the duty of the supervisor.[311]

Around the time New Jersey's state government was taking the lead in the public administration of road improvement projects, there was a growing popular concern about the state of public roads in the United States. Between 1889 and 1900, nearly five million copies of a booklet entitled "The Gospel of Good Roads: A Letter to the American Farmer" by Isaac B. Potter were distributed in the United States.[312] The League of American Wheelmen (LAW), an organization of bicyclists under direction of its National Committee on Improvement of the Highways, published this booklet in 1891. The booklet appealed to farmers to advocate for improved roads that were "hard and smooth, nicely sloped in both directions to insure [*sic*] quick drainage," arguing "if you had a road like that from your farm to town, you might do all your hauling with two horses instead of five you now have and save yourself immense expense."[313]

Potter described European roads, especially those in France, as being superior to those in the northeastern United States, with their upkeep funded by the government. The booklet identifies the "great destroyers" of dirt roads in the U.S., "water and narrow wheel tires" along with lack of grading for drainage.[314] Potter does not make specific construction recommendations, but the booklet describes good roads as typically consisting of gravel or stone with material nearby for repairs (in some cases in piles along the side of the road).[315] The booklet describes roads in rural areas as lacking proper grading, drainage, and surfacing to provide suitable surfaces for moving goods from farms to villages, markets, or cities. Management of these rural roads fell to individuals or local governments with little to no standardization, and according to historian Wayne Fuller, this lack of investment meant that "only about seven per cent of the nation's roadways had been improved with gravel, shell, oil, or some other substance by 1904."[316]

Simultaneous to advocacy efforts to fund improved roads, groups of engineers were beginning to develop public standards for road building. In 1890, the Committee on Better Roads published resolutions on road construction including:

1. That in the improvement of roads, the Macadam system,[317] consisting of small angular fragments, in sizes not exceeding from two (2) to two and a half (2½) inches in their longest dimension, according to quality, should be used, wherever a stone surface is both practicable and justifiable.

2. That the minimum width of the metaled surface for a single track should be a demirod (eight and one-quarter feet) of such depth as the amount of traffic and the character of the subsoil may require; to be determined by the engineer in charge.

3. That the bed to receive the stone must be so prepared that it cannot be saturated with water, and to accomplish great attention

310. "Inventory of the County Archives of New Jersey, No. 19 Sussex County (Newton)," The New Jersey Historic Records Survey (Newark, New Jersey: Division of Community Service Programs, Work Projects Administration, 1941), 174, https://www.ancestry.com/imageviewer/collections/11250/images/dvm_LocHist002206-00001-1?ssrc=&backlabel=Return&pId=2000000000.
311. "Inventory of the County Archives of New Jersey," 170.
312. The Gospel of Good Roads is publicly available via Google Books.
313. Isaac B. Potter, *The Gospel of Good Roads: A Letter to the American Farmer* (New York: The League of American Wheelmen, 1891), 22–23.
314. Potter, *The Gospel of Good Roads*, 39.
315. Potter, *The Gospel of Good Roads*, 47–48.
316. Wayne E. Fuller, "Good Roads and Rural Free Delivery of Mail," *The Mississippi Valley Historical Review* 42, no. 1 (1955): 67, https://doi.org/10.2307/1898624.
317. The macadam system of paving was named for John Macadam (sometimes spelled MacAdam or McAdam), who put forward this method of paving as the Surveyor-General of Roads in England during the early 1800s. The method recommended properly preparing the subgrade by compacting and grading it. Builders then placed small broken stones over the prepared subgrade, which was compacted in several layers (at least three layers). The U.S. Department of Transportation states that the first macadam surface road in the U.S. was the Boonesborough Turnpike Road between Hagerstown and Boonsboro, Maryland.

should be paid to the character and drainage of the subsoil.

4. That there should be legislative enactment regulating the width of the tires of wheels, and that the minimum width of all cart, dray, wagon or other heavy draught vehicles should be four (4) inches, to be increased when the capacity of the vehicle exceeds half a net ton per wheel, at the rate of one inch for each four hundred (400) pounds in excess.[318]

The publication goes into detail on different road construction systems including macadam and Telford-macadam, which used larger stones as a base course. The authors advocated for making macadamized roadways as wide as possible, where there are steep slopes present, "so as to allow horses to cut the road from side to side in going up with heavy loads."[319] Road repair and maintenance are also addressed in the document. Technological advances including the steamroller (mid-1850s), jaw rock crusher (1858), leaning wheel grader (1885), and the track-laying tractor (1904) made the construction of improved macadamized roads more efficient and cost effective.[320]

In 1895, an article entitled "Stone Roads in New Jersey" by civil engineer E. G. Harrison advocated for the following road building standards that were cost effective. Specifically, he recommended a Telford foundation with cheaper stone, and "the best and more costly for surface only."[321] In rural areas, he recommended grassed ditches on the sides of the roads and construction with a crowned center. He continues:

> Wherever it is possible the hills should be cut and low places filled, so that the maximum grade will not exceed 5 or 6 feet rise in 100 feet [5 to 6 percent]; where hills can not be reduced to this grade without incurring too much expense, the hill if possible, should be avoided by relaying the road in another place. . . . On hills the slope or side grade in construction from center of road to side ditches should be increased so as to exceed that of the longitudinal grade; that is, if the latter is, say, 5 per cent, the slope to the side should be at least 6 per cent and over.[322]

Rivers and Streams

The Delaware River continued to serve as a crucial means of transportation throughout the nineteenth century. The practice of crafting rafts from large pieces of lumber to transport the lumber itself downriver continued. According to Clemensen, "as many as a thousand rafts containing fifty million feet of lumber floated down the Delaware" in 1828. Raftsmen piloted their rafts using oars, using high water during the spring months to avoid the numerous "rock obstructions, rifts, and rapids" that made navigating the Delaware River challenging and dangerous. Rafting declined during the latter half of the nineteenth century and rafting along the Delaware largely ceased by the turn of the century.[323]

The use of ferries continued through the nineteenth century. Those that had existed previously remained in operation, and operators established new ferries throughout the Delaware River Valley. Ennis Ferry was established around 1800, located approximately three-quarters of a mile north of Dingmans Ferry. Ennis Ferry remained operational until 1834. Meanwhile, there were several ferries that operated in the Montague and Milford areas, providing transit between the two villages.[324]

Dingmans Ferry also remained operational until 1836, at which point its operators replaced it with a bridge. The bridge at Dingmans Ferry was somewhat impermanent throughout the nineteenth century, and it "was destroyed on three occasions." During periods without a functional bridge, the ferry resumed operation to carry people across the river. According to Clemensen, the ferry was operational "between 1847 and 1850, 1854 to 1856, and 1862 to 1898." In 1898, the ferry was

318. Lewis M. Haupt, *A Move for Better Roads: Essays on Roadmaking and Maintenance and Road Laws* (Philadelphia: University of Pennsylvania Press, 1891), 6–7.
319. Haupt, *A Move for Better Roads*, 41.
320. Peter J. Hugill, "Good Roads and the Automobile in the United States 1880-1929," *Geographical Review* 72, no. 3 (1982): 331, https://doi.org/10.2307/214531.
321. E. G. Harrison, "Stone Roads in New Jersey," in Historical and Technical Papers on Road Building in the United States (Washington, DC, 1895) 23–27.
322. E. G. Harrison, "Stone Roads in New Jersey," *Historical and Technical Papers on Road Building in the United States* (Washington, DC, 1895), 23–27.
323. Clemensen, "Preliminary Historic Resource Study," 142.
324. Clemensen, "Preliminary Historic Resource Study," 148.

permanently replaced by an iron bridge (still extant and operational).[325]

Research has not produced evidence that steamboats became common in this area apart from small vessels that offered leisure cruises. Although steamboats were common on the Delaware River south of Trenton and on canals constructed during the nineteenth century, it is likely that the often shallow, rocky bed of the Middle and Upper Delaware River Valley prevented the widespread embrace of steamboats in that area.

Canals and Railroads

No canals were constructed on the Delaware River in the Middle Delaware River Valley. However, two canals built in New Jersey were close enough that residents in the Middle Delaware River Valley may have accessed them, either directly or indirectly, as part of larger trade and transportation networks. The Morris Canal, constructed in 1831 and later expanded in 1836, ran roughly east to west through New Jersey, extending from Phillipsburg, on through Waterloo (located in Sussex County), before terminating in Newark. Although this canal did not pass directly through the Delaware River Valley, Clemensen notes that goods distributed from that area were likely distributed via canals, and "some items of trade to and from the lower portion of the Upper Delaware Valley were probably carried on this canal."[326]

In 1823, the Delaware and Hudson Canal Company established a 108-mile canal from Honesdale, Pennsylvania to Rondout, New York. This canal crossed the Delaware River at Port Jervis, and according to Clemensen, "residents from the upper part of the Upper Delaware Valley profited by commercial exchanges at two locations on the canal route." Residents could access the canal route via the Dingman's Choice Turnpike, which connected to the canal at Hawley, Pennsylvania, or directly by traveling north to Port Jervis.[327] Depending on their location, it is likely that some residents traveled along portions of Old Mine Road to utilize the canal system.

Railroads reached the Delaware River Valley in the mid-nineteenth century, creating important avenues to urban markets in eastern New Jersey and New York City. The Erie Railroad reached Port Jervis, New York by 1847, providing railroad access at the north end of the road system leading to Old Mine Road. Clemensen notes that that the position of the Erie Railroad at Port Jervis effectively "robbed Milford, Pennsylvania of its position as a market center," and the town instead "became a summer resort village." In 1856, the Delaware, Lackawanna and Western Railroad reached Stroudsburg and East Stroudsburg, Pennsylvania, which "attracted some manufacturing" and encouraged growth in that area.[328] In 1854, the Sussex Mine Railroad was extended to reach Newton, which subsequently became an important "trade center of Sussex County and part of Warren County." The Sussex Mine Railroad again expanded in 1869, reaching further north to Branchville, providing closer access to people living in the Delaware River Valley.[329]

During the 1870s, investors formed the New York, Susquehanna and Western Railroad. The New York, Susquehanna and Western Railroad intersected and connected with the Sussex Mine Railroad, and "through agreements with several railroads, gained access to the Hudson River through Jersey City." By 1881, The New York, Susquehanna and Western Railroad ran through the New Jersey side of the Delaware Water Gap, connecting Weehawken, New Jersey and Stroudsburg, Pennsylvania.[330]

Railroad companies often reached agreements with one another, sharing sections of track in order to expand their own reach. The railroad companies that operated in and near the Delaware River Valley were important to the region's ability to export and import goods, connecting it with much larger economic centers like New York and Philadelphia. At the same time, these railroads were instrumental in the growth of the tourism industry in the region. Reliance on railroads would continue on through the early twentieth century.[331]

325. Clemensen, "Preliminary Historic Resource Study," 148.
326. Clemensen, "Preliminary Historic Resource Study," 150.
327. Clemensen, "Preliminary Historic Resource Study," 150.
328. Clemensen, "Preliminary Historic Resource Study," 153–54.
329. Clemensen, "Preliminary Historic Resource Study," 151.
330. Clemensen, "Preliminary Historic Resource Study," 151.
331. Clemensen, "Preliminary Historic Resource Study," 151.

Lifeways During the Nineteenth Century

Farmsteads in the Delaware River Valley

Farmsteads established during the nineteenth century were often relegated to parcels with more challenging topography, as the flat areas had already been claimed and cultivated by earlier waves of homesteaders.[332] These sloped areas tended to have very rocky soil and would be farmers had to "remove larger amounts of rock before they could cultivate the ground." These rocks were then repurposed to create rock rows between property lines and field boundaries. According to Clemensen, "rock rows began to appear in the 1790-1840 era," and "The rocks of varying sizes were dumped in straight rows that ran up the slopes. The rock rows were usually six to ten feet wide and three to five feet high."[333] Farmers continued to construct stone rows throughout the nineteenth century as materials and needs presented themselves. When farmers abandoned sloped, mountain-side fields during the agricultural decline that occurred during the late nineteenth century, the stone rows remained in place as the surrounding landscape returned to natural succession.[334]

In addition to stone rows, farmers also used split rail fences (also referred to as worm fences), a carry-over from the earlier colonial period (Figure 2.21). During the early nineteenth century, some property owners began to construct post and rail fences, often placed along the side of the property facing the road "to give passersby a good impression."[335] By 1840, split rail fences had been almost entirely supplanted by post and rail fences (Figure 2.22). During the 1870s, barbed wire fences became common, and "by the turn of the twentieth century, woven wire fences made an appearance" (Figure 2.23).[336]

Farmers tended to plant similar crops as they had during the eighteenth century, but their stewardship of the land improved considerably. During the nineteenth century, farmers in Delaware River Valley began to rotate their crops, manage soil quality, and use fertilizers to improve crop yields.[337] As livestock holdings increased, farmers grew more corn to supply feed. Hessian flies damaged spring wheat crops, and many farmers transitioned to winter wheat, which was grown in the fall alongside rye. Farmers continued to grow buckwheat, and oat acreage increased during the nineteenth century. According to Clemensen, "Excess grains such as wheat, rye, and buckwheat along with the flour ground at local grist mills were rafted to market in Philadelphia." Potatoes became a staple crop in the nineteenth century, and "nearly all farmers planted from one to four acres" of potatoes. Meanwhile, flax production declined as cotton and wool gradually replaced linen, and "With few exceptions, farmers no longer raised flax by 1850."[338] Apple orchards became common during the latter half of the nineteenth century, and some farmers also introduced peaches. Some farmers also planted tobacco crops beginning in the 1880s, but this practice was short lived and largely abandoned by 1900.[339]

In addition to improved land stewardship, the mechanization of farm equipment during the nineteenth century also aided farmers. By reducing the amount of physical labor required, mechanized farm equipment allowed farmers to increase their productive acreage. As farmers cleared wooded areas for new fields, they "marketed the timber for lumber, railroad ties, and cordwood," and "Bark from oak and hemlock trees was sold to tanneries."[340]

During the latter half of the nineteenth century, however, railroads and canals brought new competition from western agricultural sources. As a result, "farmers in the Upper Delaware Valley and the surrounding areas in New York, New Jersey, and Pennsylvania began to place a different emphasis on the types of crops and livestock they raised." By the mid-nineteenth century, many farmers in the Delaware River Valley turned to dairying, and this trend endured through the 1870s. To accommodate increased numbers of dairy cows, farmers grew more corn and increased the amount of their land dedicated to pasture and hay. Farmers produced milk, cream, and butter, which was transported to different markets via

332. Clemensen, "Preliminary Historic Resource Study," xi.
333. Clemensen, "Preliminary Historic Resource Study," 59.
334. Clemensen, "Preliminary Historic Resource Study," 62.
335. Clemensen, "Preliminary Historic Resource Study," 59.
336. Clemensen, "Preliminary Historic Resource Study," 62.
337. Clemensen, "Preliminary Historic Resource Study," 58.
338. Clemensen, "Preliminary Historic Resource Study," 59.
339. Clemensen, "Preliminary Historic Resource Study," 75.
340. Clemensen, "Preliminary Historic Resource Study," 62.

Figure 2.21. An example of a split rail fence, located in DEWA (Source: DEWA Archives, 2015).

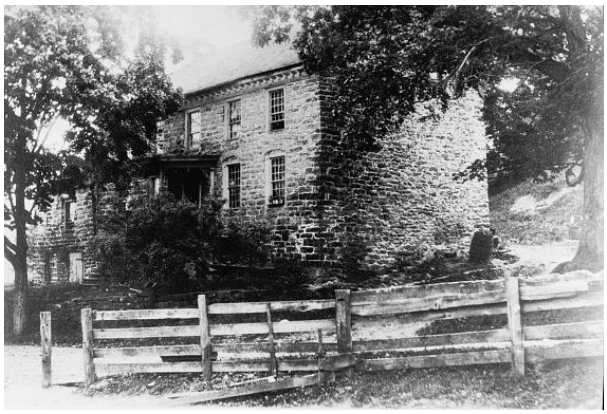


Figure 2.22. A photograph of the Isaac Van Campen House in Walpack, New Jersey, taken ca. 1910. Note the post and rail fence in the front yard From Wesley Shank, William C. Badger, and George Eisenman, "Isaac Van Campen House," Historic American Buildings Survey, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, HABS, https://www.loc.gov/pictures/item/nj0155.photos.215381p/resource/).

Figure 2.23. A photograph of the Colonel Abraham Van Campen House in Millbrook, New Jersey, taken on September 10, 1941. Note the barbed wire fence in the foreground. From Kenneth N. Clark and George Eisenman, "Colonel Abraham Van Campen House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1968 (Source: Library of Congress, https://www.loc.gov/pictures/item/nj0155.photos.215381p/resource/).

railroads, and Clemensen notes that these products were most likely transported via the Erie Railroad, which had stations in Port Jervis and Goshen, New York.[341] In addition to dairy cattle, farmers also raised beef cattle and hogs. There was an increase in the horse population in the region during the nineteenth century, "as horses began to displace oxen as the beasts of burden." Farmers raised fowl, including chickens, ducks, and geese, for their own consumption.[342]

The incorporation of agricultural machinery and the transition to dairying changed the types of outbuildings found on agricultural properties during the nineteenth century. Agricultural machinery required storage, and "Farmers erected machine sheds to store their new farm implements." Additionally, farmers constructed stables for their dairy cattle, and "more storage facilities were required for hay and corn."[343]

The agricultural economy experienced a gradual downturn during the late nineteenth century. While many smaller farmers abandoned and sold their land, others attempted to supplement their income by capitalizing on the burgeoning tourism industry.[344] Many farmers began offering summer boarding rooms for rent, which was popular among vacationers seeking a glimpse of "country life."[345]

While earlier waves of colonists in the eighteenth century often brought with them traditional Dutch house types and construction methods, the late eighteenth and early nineteenth century saw an increase in Minisink residents of English heritage. As a result, English house types and construction methods became more common. Whereas the Dutch preferred to build with stone, the English typically built wood-frame houses, and "by 1830, few stone houses were built." Additionally, the I-House emerged as a popular and enduring domestic form.[346] The I-House is typically two-stories tall and one room deep, with rooms situated on either side of a central hall and staircase. Variations and vernacular adaptations of this house type are common, as are additions

341. Clemensen, "Preliminary Historic Resource Study," 65.
342. Clemensen, "Preliminary Historic Resource Study," 60–61.
343. Clemensen, "Preliminary Historic Resource Study," 62.
344. Clemensen, "Preliminary Historic Resource Study," 75.
345. Clemensen, "Preliminary Historic Resource Study," 255.
346. Clemensen, "Preliminary Historic Resource Study," 57.

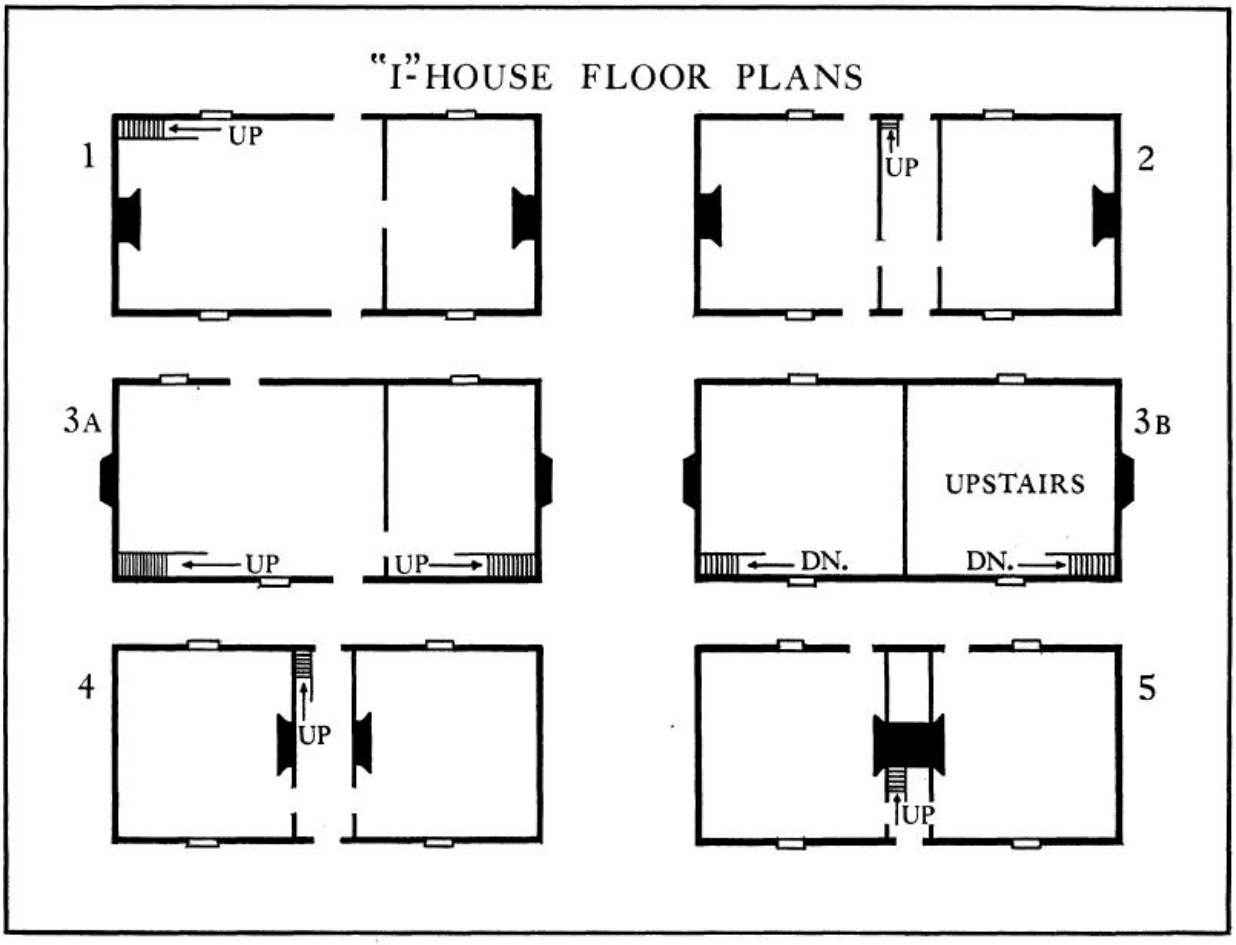


Figure 2.24. A schematic drawing of I-House floor plan variations by architectural historian Fred Kniffen (Source: Fred Kniffen, "Folk Housing: Key to Diffusion," in *Annals of the Association of American Geographers* 55, no. 4 (1965): 556. http://www.jstor.org/stable/2569440).

over time (Figure 2.24). Most farmers had established themselves in the area by the 1840s, and construction of farmhouses slowed through the remainder of the century.[347] Several extant farmhouses along Old Mine Road North date to the late eighteenth century and early to mid-nineteenth century, including the Depue House, Heron's Nest, the Black Farm, and the Anson Johnson House.

John Ennis (also spelled Ennest) built the original portion of Heron's Nest in 1830, as indicated by a date stone on the building. Sidney Bevans expanded the house around 1860, adding two wood-framed additions. Subsequent owners continued to expand and alter the property throughout the twentieth century. This series of changes has obscured the original portion of the house.[348] However, the material choice for the original portion of Heron's Nest reflects a carry-over of earlier preferences for stone construction.

An unknown party built the Anson Johnson House around 1840. The Anson Johnson House is a two-story wood-framed building, with a typical central-hall I-House floor plan. The transition to wood-framed construction and I-House forms is evident at the Anson Johnson House. Clemensen notes that the stone chimney in the south gable is typical of the area's Dutch architectural heritage and influence.[349]

The Black Farmhouse is a two-story, wood-framed I-House with a central-hall floor plan. Abraham and Hugh Westbrook purchased the property from Jacob Hornbeck in 1842. NPS records indicate that the house was built circa 1820, and someone built an addition circa 1840. The house was built on a circa 1750 stone foundation already present

347. Clemensen, "Preliminary Historic Resource Study," 62.
348. Clemensen, "Preliminary Historic Resource Study," 275.
349. Clemensen, "Preliminary Historic Resource Study," 277–78.

at the site. The property was commonly referred to as the "Westbrook Farm" until Alice W. Black purchased the property in 1907, after which the property was referred to as "Black Farm."[350] Like the Anson Johnson House, Black Farm is a good representation of the transition to wood-framed I-Houses that had occurred in the area by the mid-nineteenth century. The property also contains a wood-framed Dutch Barn, a wagon shed, and a stone shed that served as a springhouse. The wood-framed Dutch Barn predates the main house and was constructed by a previous owner sometime around 1775. The dates of construction for the other outbuildings are undetermined, but they were likely built around the same time as the main house.[351]

Women in the Delaware River Valley

At the onset of the American Revolution, the New Jersey state legislature enacted a new state constitution during the war. Under the 1776 New Jersey Constitution, "All Inhabitants of this Colony of full Age, who are worth Fifty Pounds proclamation Money clear Estate in the same, & have resided within the County in which they claim a Vote for twelve Months immediately preceding the Election, shall be entitled to vote."[352] The language in the 1776 constitution expanded the right to vote to include unmarried women and free Black people. Historians interpret the omission of gender or racially specific language differently. Some argue that it was an oversight, as the state constitution was hastily drafted during military conflict. Others, however, argue that this omission was intentional, pushed through by Quaker delegates who "were more accepting of women's rights" and opposed slavery.[353] Some scholars argue that the inclusion of single women reflected changing attitudes toward the appropriate role of women in the public sphere, as the rights of single women had already "approached those of men" in that they could "sign contracts, petition the legislature, bring their own cases in court, and own businesses."[354] From this perspective, women's suffrage was a natural progression.

Regardless, many eligible women became active in the political sphere, and both Federalists and Republicans made appeals to women voters in New Jersey and even exploited women's suffrage as point of political leverage. Political opponents argued that women voters were "pliable" and easily influenced. This association was an attempt to relate "female voters with voter fraud" and "delegitimize the opposing party." Over time, these political strategies "helped undermine popular support for women's suffrage."[355] On November 16, 1807, the state legislature passed a law that limited voting rights to white men, and "The elimination of the franchise for women met no resistance."[356] It is unknown if any single or widowed women living in the Delaware River Valley exercised their right to vote during this brief period of women's enfranchisement.

The day-to-day lives of women in the Delaware River Valley did change substantially throughout the nineteenth century. For rural women living on farmsteads, mechanization relieved some of their domestic burdens. Wool mills, first introduced in the 1820s, allowed "farm families to purchase cheap woolen cloth which relieved women of the need to make thread and weave it into cloth." Additionally, the advent of the sewing machine in 1834 further aided women in their domestic labor.[357] However, rural women were responsible for many domestic duties, including gardening, foraging, food preparation, and health care, in addition to contributing manual labor for farm duties when needed.

For upper class women, mechanization and industrialization transformed their roles from producers to consumers, as "items formerly produced by members of individual household economic units were made in factories." Upper class women functioned as household managers,

350. John Bruce Dodd, "The Black/Minisink Farmhouse," Historic Structure Report (Sandyston Township, Sussex County, New Jersey: Delaware Water Gap National Recreation Area, 1993), 4-5.
351. "Draft Historic Buildings Strategy," 28.
352. Campbell Curry-Ledbetter, "Women's Suffrage in New Jersey 1776-1807: A Political Weapon," *The Georgetown Journal of Gender and the Law* XXI, no. 705 (2020): 707.
353. Graham Russell Gao Hodges, "New Jersey in the Early Republic," in *New Jersey: A History of the Garden State* (New Brunswick, New Jersey: Rutgers University Press, 2015), 100.
354. Curry-Ledbetter, "Women's Suffrage in New Jersey 1776-1807," 708.
355. Curry-Ledbetter, "Women's Suffrage in New Jersey 1776-1807," 706.
356. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women*, 4.
357. Clemensen, "Preliminary Historic Resource Study," 61.

overseeing their domestic spheres, and many women found work in upper class homes where they were employed as domestic servants. Industrialization also created factory jobs for middle- and lower-class women in urban areas, while others became teachers and worked in the burgeoning public school system.[358] In the Delaware River Valley, all of the villages had schools by the 1840s, and the villages hired women as teachers but for lower pay than their male counterparts.[359]

Enslaved and Emancipated People in the Delaware River Valley

Slavery had long been a point of debate and regional tension in New Jersey. Although East and West Jersey officially unified in 1702, the Revolutionary War reignited the debate about slavery in New Jersey. The conflict resulted in extensive property damage throughout the state, and there was an immediate need for laborers, free and enslaved, after the war. Additionally, the Quaker community remained neutral throughout the duration of the war, and many enslaved people seeking freedom fought for the English. As a result, "postwar advocacy for abolition did not find much in the way of broad public support."[360]

In addition to the fraught social and political climate after the Revolutionary War, regional economic and demographic differences between former East and West New Jersey persisted. Western New Jersey, which had a high Quaker population, was far less reliant on slavery than eastern New Jersey and generally favored emancipation. Eastern New Jersey, on the other hand, was far more reliant on the labor of enslaved people, and "slaveholders also controlled the majority of wealth in the state." The regional differences are clearly reflected in the demographics of eastern and western New Jersey. In 1790, enslaved people accounted for 3 percent of western New Jersey's population, whereas they accounted for 11 percent of eastern New Jersey's population.[361]

While western New Jersey Quakers continued to advocate for abolition, they faced "fierce opposition from representatives from slaveholding counties like Bergen, Somerset, and Monmouth." In eastern New Jersey, slavery persisted and even expanded after the American Revolution, and "Between 1790 and 1800, the number of slaves in East Jersey counties grew from 8,196 to 9,406." Sussex County was adjacent to the counties with high populations of enslaved people, and it too saw an increase in the population of enslaved people during this time.[362] According to census records, there were 430 enslaved people living in Sussex County in 1790. By 1800, this number had increased to 514.[363]

In 1785, the state legislature established a ban on the import of enslaved people into New Jersey. However, the ban lacked teeth and violators faced "very low fines." Throughout the 1790s, organizations like the Quaker Society of Friends pushed for abolition, but the state legislature only passed a series of reforms that "allowed slaves to own property, gave free blacks permission to live anywhere, and increased penalties for abusing slaves." In 1804, the New Jersey state legislature passed a gradual emancipation act, "which provided a legal formula by which newly born enslaved African Americans became apprentices to their mothers' masters for twenty-one years (for females) or twenty-five years (for males)."[364] This legislation effectively phased out slavery, and as a result, the number of enslaved people living in New Jersey declined steadily. In 1810, there were 478 enslaved people living in Sussex County, followed by 378 enslaved people in 1820. By 1830, there were 51 enslaved people in Sussex County, decreasing to 13 in 1840. By 1850, the census recorded the presence of 1 enslaved person in Sussex County.[365]

According to Clemensen, the Rosenkrans and Van Campen families continued to rely on the labor of enslaved people through the early nineteenth

358. The Women's Project of New Jersey, Inc., *Past and Promise: Lives of New Jersey Women*, 46–47.
359. Clemensen, "Preliminary Historic Resource Study," 197.
360. "Part 5 - The Struggle for Abolition," Montclair State University, Anthropology Research, n.d., 5, https://www.montclair.edu/anthropology/research/slavery-in-nj/part-5/?
361. "Part 5 - The Struggle for Abolition."
362. "Part 5 - The Struggle for Abolition."
363. Snell and Clayton, *History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers*, 77.
364. Hodges, "New Jersey in the Early Republic," 103–4.
365. Snell and Clayton, *History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers*, 77.

century.[366] Successive owners of the Van Campen Inn, including Isaac Van Campen and John Dewitt, enslaved people. Isaac Van Campen enslaved eight people, all of "whom he freed upon his death." John Dewitt owned three enslaved people, and his will indicates that they included a man named Abraham, his wife whose name is unknown, and a man named Caesar Soults.[367] By the mid-nineteenth century, there is no mention or record of enslaved people living on farmsteads in the Sussex County section of the Delaware River Valley in the United States Census Slave Schedules. This is likely due to the gradual emancipation legislation passed in 1804, and it is likely that slavery had largely ceased in the study area by the mid-nineteenth century.

Faced with delayed emancipation and conditional freedoms, many enslaved people escaped to nearby urban centers like New York or Philadelphia, while others "found work on ocean vessels or in the mines in northwestern New Jersey." Others went north, and by 1810, "there were several well-established underground railroad routes running from southern states through Philadelphia to lower New Jersey and then on to Perth Amboy and New York City and beyond."[368] According to an article published in the *New Jersey Herald*, the Underground Railroad had routes that passed through Sussex County. According to oral histories, there were several caves located along the banks of the Delaware River that provided shelter for enslaved people escaping north. One cave is located near Montague, while the other is just south of Port Jervis. Unfortunately, due to the secretive and clandestine nature of the Underground Railroad, there is no known primary documentation to confirm these stories; however, it is possible that the Underground Railroad was active in or near the study area.[369]

As enslaved people chose to seek freedom rather than await gradual emancipation, many free Black people also chose to leave New Jersey in search of opportunities elsewhere. At the turn of the century, Black people accounted for around 8 percent of the general population. However, by 1830, that number had decreased to 6 percent, and by 1860, only 4 percent of New Jersey's population consisted of Black people.[370] There were several free Black individuals that did continue living in the area before and after the abolition of slavery. In a catalog of free Black heads of households in 1830, there are several individuals listed in Montague, Sandyston, and Walpack townships. In Montague, free Black heads of households included William Cammil, Enos Smith, and Stephen Jones. John West was the only free Black head of household listed for Sandyston. In Walpack, free Black heads of households include Joseph Huff, Daniel Johnson, Enos Johnson, Absalom Reamer, and Titus Westpece [*sic*].[371]

The presence of Black families living in the area is further evidenced by the presence of a Black cemetery near Walpack. Local historian Sharon Spangenberg has completed extensive research about the cemetery and Black residents who may have been buried there. According to her research, Isaac Van Campen freed four enslaved people between 1796 and 1802, named Daniel, Adam, Enos, and Sophia. Among them was Enos Johnson, who would later be listed among the free Black heads of households in Walpack. According to Spangenberg, Enos married a woman named Elizabeth Bakeman and purchased a house and ten acres of property in 1843 (this property is still extant and is known as the Johnson/Losey House).[372]

Other known Black property owners identified by Spangenberg included "Absolem Reamer, Charles Huff and Henry West (Westpeace)." Other Black families, including "members of the William Campbell and Caroline Adams families" were likely tenants of other property owners. Spangenberg notes that there are approximately fifty fieldstone markers in the cemetery, and "Spangenberg guesses that many of the black families identified

366. Clemensen, "Preliminary Historic Resource Study," 102.
367. "Who Is Buried in the 'Slave' Cemetery?" *Spanning the Gap*, Spring 1999, http://npshistory.com/publications/dewa/spanning-the-gap/v21-2-4.pdf.
368. Hodges, "New Jersey in the Early Republic," 102.
369. "Sussex County Once Had an Underground Railroad," *New Jersey Herald*, May 1, 2016, https://www.njherald.com/story/lifestyle/2016/05/01/sussex-county-once-had-underground/4059727007/.
370. Hodges, "New Jersey in the Early Republic," 104.
371. Carter G. Woodson, *Free Negro Heads of Families in the United States in 1830 Together with a Brief Treatment of the Free Negro* (Washington, D.C.: The Association for the Study of Negro Life and History, Inc., 1925), 83.
372. "Who Is Buried in the Walpack Black Cemetery?," *New Jersey Herald*, February 16, 2020, https://www.njherald.com/story/lifestyle/around-town/2020/02/16/who-is-buried-in-walpack/1699296007/.

as residents of Walpack between 1830–1880 are buried in the cemetery." The only individual known to be buried at the Walpack cemetery is Mary Reamer Stackhouse, who died in 1882. Her burial was mentioned in the diary of Anna Losey Doremus, "who lived near the black cemetery."[373]

Landscape Summary

At the onset of the federal period, the Delaware River Valley was sparsely populated; however, there was a considerable population increase during the nineteenth century. As the population swelled, more acres were under cultivation than at any time previously. Established farmers in the valley had already claimed the flat, fertile lowlands. Newer arrivals were relegated to clear and farm the mountain slopes further east from the riverbank. As they cleared the rocky soil, the extracted stones were gathered and stacked to form stone rows, demarcating property boundaries and field lines. Farmers and field hands constructed stone rows throughout the nineteenth century. In addition to stone rows, split rail fences were also common. Post and rail fences and barbed wire fences became common to mid- to late nineteenth century, followed by woven fire fences around the turn of the century.

During the early nineteenth century, farmers began incorporating better soil management strategies such as rotating crops, spreading manure, and planting cover crops like red clover. Commercial fertilizers were introduced to the area by the mid-nineteenth century. Staple crops included winter wheat, rye, and buckwheat. Corn production increased as livestock holdings increased, and cotton replaced flax. Potatoes were introduced during the nineteenth century and became a staple crop. During the mid- to late nineteenth century, mechanized farm equipment became common. In order to accommodate large machinery, farmers enlarged fields and removed many fences and stone rows. Many smaller farmers on sloped mountain sides succumbed to competition from larger producers, and they abandoned many of these fields and allowed them to return to natural succession with stone rows remaining in place. During the late nineteenth century, many farmers in the Delaware River Valley transitioned to dairying. To feed their cattle, farmers devoted more acreage to corn fields and pasture.

Farmers and their families continued to maintain vegetable gardens and fruit orchards during the nineteenth century. Farmsteads typically contained a main residential building with clustered outbuildings nearby. As agricultural machinery became more common, farmers required more outbuildings for equipment storage. Additionally, many farmers also constructed new storage buildings for hay and corn to accommodate dairying. During the early nineteenth century, stone and wood-framed buildings were both common. However, by the mid-nineteenth century, wood-framed I-Houses became the standard domestic model.

Population growth contributed to the emergence of several small villages in the Delaware River Valley. The village of Montague, at the north end of Old Mine Road North, continued growing during the early nineteenth century. Peters Valley (also known as Bevans) began to take shape around 1830 and was located near the south end Old Mine Road North. Villages typically developed following an informal linear pattern of buildings positioned along a central roadway.

Samuel Lewis's 1795 map, "State of New Jersey," depicts the Old Mine Road south of Walpack Bend, similar to its present configuration. In this map, Old Mine Road does not extend past the rock outcrop known as "Indian Ladder," but historical documentation states that a footpath extended beyond this feature.[374] An 1834 map of New Jersey by H. S. Tanner shows Old Mine Road reaching Columbia, New Jersey. By 1850, the present-day alignment of Old Mine Road was essentially in place. The 1860 "Map of Sussex Co., New Jersey" and an 1872 map by George E. Hursh confirm the location of the road.

In terms of intersections along Old Mine Road North, the three-way intersection with Walpack Road in the southern end of Old Mine Road North is depicted in this general location on an 1860 map of Sussex County. The intersection of Old Dingmans Road and Old Mine Road North appears on this map as well. Old Dingmans Road

373. "Who Is Buried in the Walpack Black Cemetery?"

374. Brodhead, *The Delaware Water Gap: Its Scenery, Its Legends and Early History*, 50–51.

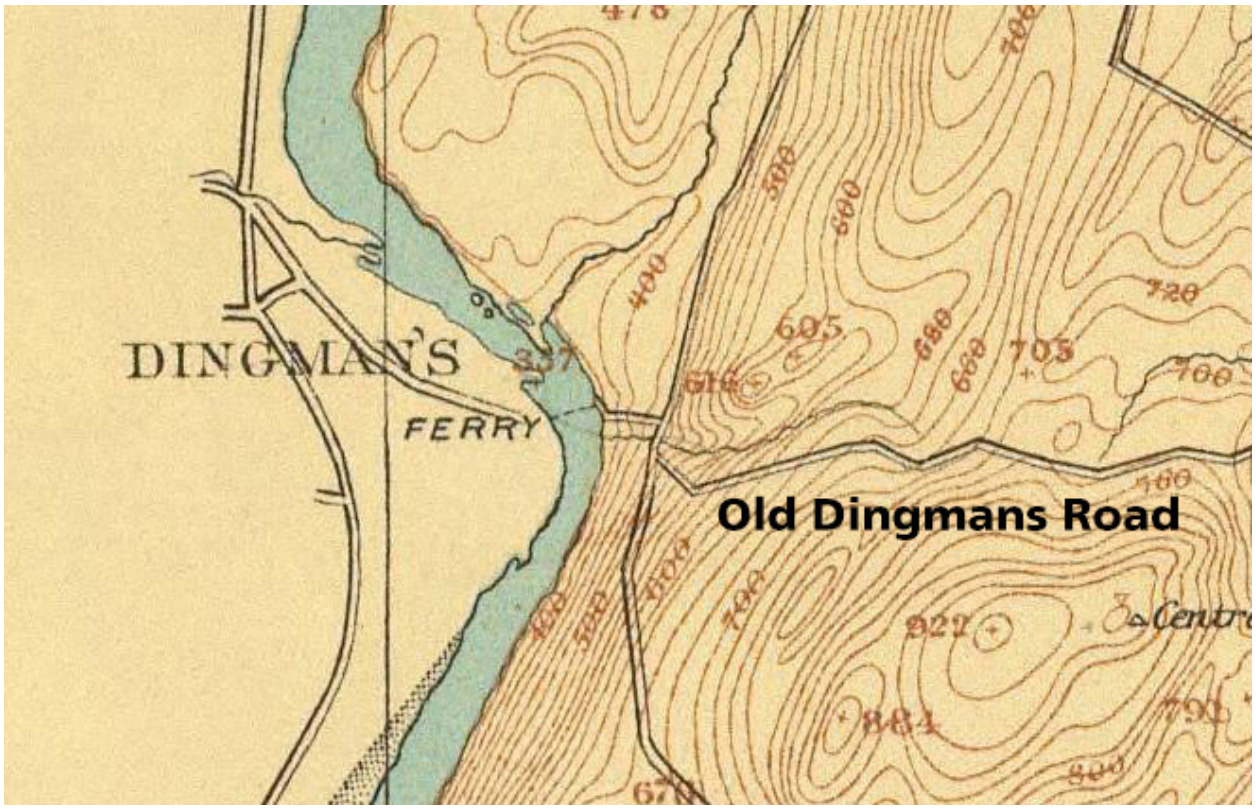


Figure 2.25. Portion of an 1888 map showing the alignment of Old Dingmans Road between Old Mine Road North and the Delaware River at Dingmans Ferry. The following LIDAR image has this alignment noted in red (Source: Cook and Vermeule, 1888 Geological Survey of New Jersey).

was a significant east–west road leading from the town of Centreville to the bridge across the Delaware River. The 1860 map shows the Old Dingmans Road and Old Mine Road juncture as a four-way intersection, with Old Dingmans Road extending west toward the Delaware River. Access to Dingmans Ferry from the west side of Old Mine Road North appears to have moved during the later 1800s. An 1881 map shows this portion of Old Dingmans Road north of the eastern alignment, but south of the current location of Tuttles Corner Dingmans Road/CR 560 (Figure 2.25). An analysis of LIDAR (Light Detection and Ranging) image annotated by DEWA staff shows this alignment (noted in red) as well as two previous alignments of Old Dingmans Road (Figure 2.26). Later topographic maps, which provide more detail and are likely more accurate, show Old Mine Road and Old Dingmans Road as a three-way intersection. A topographic map from 1891, for example, shows Old Dingmans Road turning northward just prior to joining Old Mine Road North from the east to create a slightly angled intersection.

The 1860 map of Sussex County shows a dashed line in the approximate location of present-day Mettler Road, which provided access from Old Mine Road North to residences located off the road closer to the Delaware River, including those owned by B. Mettler, S. Beaven, and Jos. Colt. The intersection of Van Ness Road and Old Mine Road North appears on the 1860 map of Sussex County. According to the 1860 map, Van Ness Road led east from Old Mine Road North, accessing several residences and a distillery located adjacent to an unnamed stream. The intersection of Jager Road and Old Mine Road North appears on the 1860 map of Sussex County (albeit slightly stylized and depicted as more perpendicular). This map shows a four-way intersection at the current location of U.S. 206 (MP 7.58).

Component Landscapes

Bevans-Hellwig Farm (ca. 1796, MP 0.0)

The history of the Bevans-Hellwig Farm remains somewhat unclear, and research has uncovered several conflicting versions of the farmstead's development and chronology. The 2005 *River Road System Cultural Landscapes Inventory* dates the main house on the Bevans-Hellwig Farm to circa 1796 and does not offer speculation about when

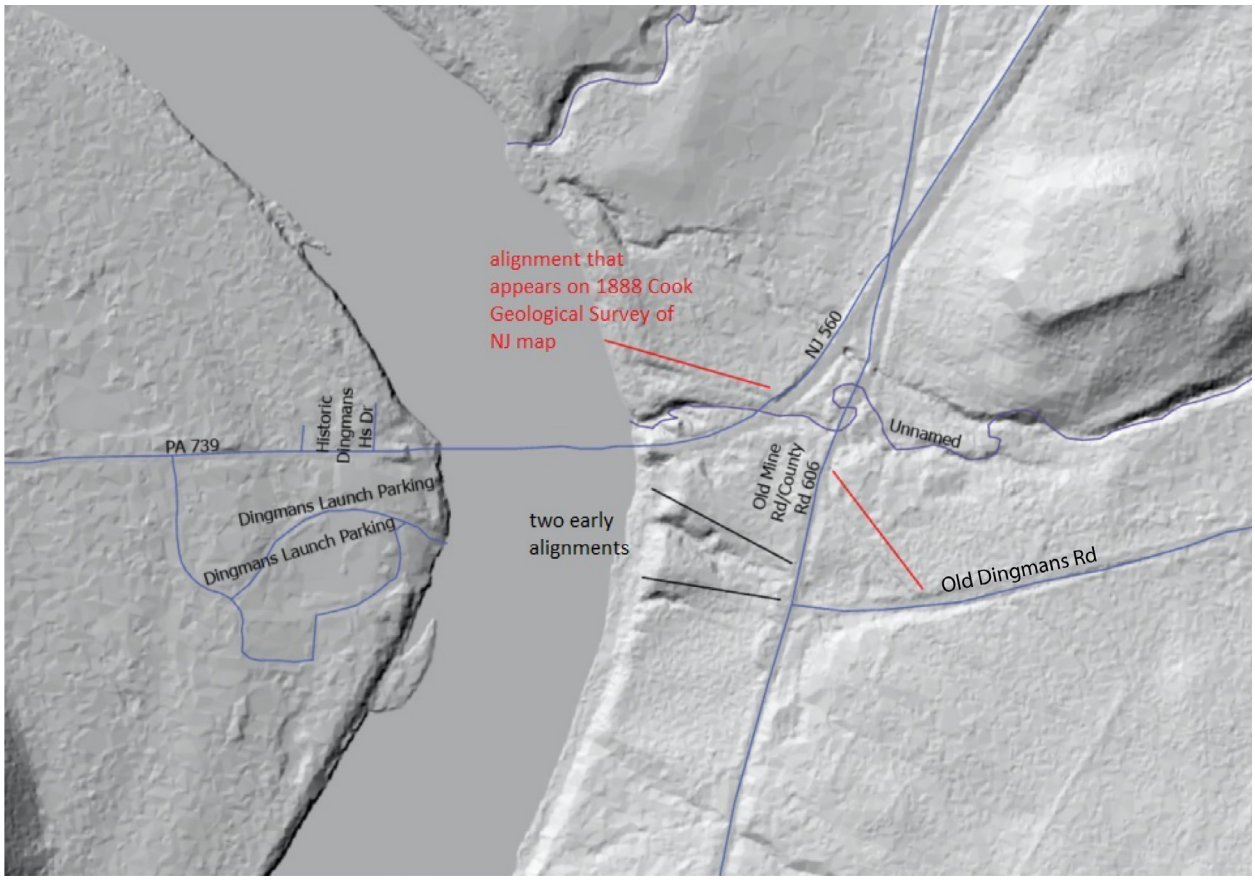


Figure 2.26. LIDAR image of the area around the intersection of Old Dingmans Road and Old Mine Road North showing different historic alignments of Old Dingmans Road between Old Mine Road North and the Delaware River (Source: DEWA).

specific sections of the house were constructed.[375] In contrast, the 1974 *DEWA Historical Architectural Survey* asserts that the original portion of the Bevans-Hellwig Farm was the one-and-a-half story fieldstone wing, dating to circa 1770 (this is the 'Bevans-Hellwig kitchen' building, the only remaining portion of the main house and the only extant structure of the Bevans-Hellwig Farm). Following the construction of the original wing, the 1975 survey posits that a larger front addition was constructed circa 1850, followed by a small rear addition constructed circa 1930.[376] In contrast to both of these possibilities, in the 1996 *DEWA Preliminary Historic Resource Study*, Clemensen speculates that the fieldstone kitchen was built between 1830 and 1850, either as a stand-alone building or as an addition to the main house.[377] Meanwhile, a 1977 *Historic Structure Report* completed by Sarah M. Sweetser asserts that the extant Bevans-Hellwig kitchen portion predated the rest of the house and was likely constructed around 1830. Sweetser cites "door trim and a segment of chair rail, which are held in place with cut nails known to have been manufactured at that time in Philadelphia."[378]

Although the exact chronology of the Bevans-Hellwig Farm's development is unconfirmed, the farmstead likely began to take shape during the late eighteenth century. By the mid-nineteenth century, the Bevans-Hellwig Farm main house consisted of a two-story frame building and a one-story stone rear wing. A historic barn (no longer extant) on the property likely dates to this period, but the exact date of construction is unknown. Research did not reveal information about other outbuildings that may have existed or been constructed during this period. The Bevans-Hellwig Farm was likely

375. Shaun Eyring et al., "River Road System, New Jersey, Cultural Landscapes Inventory," October 2005, 55, Delaware Water Gap National Recreation Area.
376. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 721.
377. Clemensen, "Preliminary Historic Resource Study," 101–2.
378. Sarah M. Sweetser, "Small Stone House, Robert Farm; Armstrong House; Bevins-Hellwig House," Historic Structure Report (Denver, Colorado: Denver Service Center, United States Department of the Interior, National Park Service, March 1977), 111–12.

surrounded by cleared agricultural land used for farming and livestock during this period.

Heron's Nest (ca. 1830, Mettler Road)
John Ennis (also spelled Ennes) built the original portion of Heron's Nest in 1830. During the mid- to late nineteenth century, Sidney Bevans added two wood-framed additions. Research did not reveal information about other outbuildings that may have existed or been constructed during this period. Heron's Nest was likely surrounded by cleared agricultural land used for farming and livestock during this period.

John Wesley Van Auken House (ca. 1760, Mettler Road)
The owners of the John Wesley Van Auken House (circa 1760) constructed a large two-story addition on the rear of the building sometime around 1850. It is possible that alterations to the front entryway were made during this time as well.[379] Research did not reveal information about other outbuildings that may have existed or been constructed during this period. The Van Auken House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Mettler Cemetery (ca. early nineteenth century, MP 1.65)
Mettler Cemetery dates to the early nineteenth century.[380] The oldest burial markers at the Mettler Cemetery date to the 1810s. The number of burials and the presence of any notable landscape features during this period are unknown.

Depue House (ca. 1780, MP 2.8)
In 1810, John Nyce purchased the property from Isaac Van Auken (possibly the original builder). Around this time, John Nyce or another unknown party built a large two-story addition on the north end of the original block. The 1780 and 1810 portions of the building are both made of rough-cut fieldstone, clad in stucco.[381]

In 1858, Elisha Depue acquired the property. According to oral histories from Depue descendants, the residents demolished a barn that was original to the property sometime around 1880. The Depue family constructed a new barn and corn crib on the opposite side of the road around 1876.[382] Research did not reveal information about other outbuildings that may have existed or been constructed during this period. The Depue House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Anson Johnson House (ca. 1840, MP 4.2)
An unknown party built the Anson Johnson House around 1840. It is a two-story wood-framed building. The Anson Johnson House is a good representative example of the English central-hall I-House building type.

The New Jersey State Historic Preservation Office (NJHPO) speculates that a shed on the property was constructed around the same time as the main house, but this date has not been confirmed.[383] Park personnel second this determination, noting that the form, construction methods, and field stone foundation of the shed suggest that it was built around the time the main house was constructed, and likely functioned as a barn.[384]

There is no information about other outbuildings that may have existed or been constructed during this period. The Anson Johnson House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

William Ennis House (1751, MP 4.6)
According to a 2016 *Historic Resources Survey Form*, the owners of the Ennis House (1751) partially infilled the original door with stone and converted it into a window sometime during the nineteenth century, prior to 1890.[385] The owners made no known additions to the Ennis House during this period. There is no information about other outbuildings that may have existed or been constructed during this period. The Ennis House

379. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 752-757.
380. "Old Mine Road Historic District," National Register of Historic Places Inventory Nomination Form (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, 1980), 5.
381. Wesley Shank and William C. Badger, "Nyce-Depue Farm," Historic American Buildings Survey (Sandyston Township, Sussex County, New Jersey: Department of the Interior, Heritage Conservation and Recreation Service, 1970).
382. Shank and Badger, "Nyce-Depue Farm."
383. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 4.
384. Park personnel provided this information.
385. "Historic Resource Survey Forms" (Bushkill, PA: U.S. Department of the Interior, National Park Service, 2016), 21.

was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Westbrook-Bell Farm (ca. pre-1730, MP 5.14)
According to HABS, Eliza Westbrook made significant alterations to the Westbrook-Bell House (circa 1725) during the 1860s. Under her ownership, a large central chimney was removed and replaced with two chimneys in both gable ends, and the interior was remodeled. The HABS report also notes the presence of a wooden summer kitchen, which was "added in the north corner." It is unclear if this kitchen was an interior renovation, an addition, or a stand-alone building.[386]

The NJHPO dates the extant barns on the property to the early nineteenth century.[387] There is no information about other outbuildings that may have existed or been constructed during this period. The Westbrook-Bell House was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Black Farm (ca. mid to late eighteenth century, MP 5.3)
Two buildings at the Black Farm are known to date to this period. Originally referred to as the "Westbrook Farm," the main house was constructed by members of the Westbrook family sometime after they purchased the property in 1842. The house was built on the stone foundations of an older house at that location (circa 1750). The Black Farm House is a good representative example of the English I-House, which became the dominant residential building type during the nineteenth century. The Black Farm House is also a good example of a vernacular expression Federal style architecture, which became popular after the Revolutionary War. The Federal style "stressed exterior symmetry," and "In its vernacular form the Federal style was generally characterized by a side-gable form with a 5-bay arrangement," as observed at the Black Farm House.[388]

An unknown party previously built the large wood-framed Dutch Barn sometime during the late eighteenth century, circa 1775. The date of the smaller outbuilding of unknown use (possibly a corn crib or wagon shed) and stone springhouse were likely constructed around the same time as the main house.[389] There is no information about other outbuildings that may have existed or been constructed during this period. The Black Farm was likely surrounded by cleared agricultural land used for farming and livestock during this period.

Minisink Dutch Reformed Church & Cemetery (ca. pre-1737, MP 7.38)
The Minisink Dutch Reformed Church seems to have fallen out of use by 1827, at which point the congregation built a new church further north in Montague. The cemetery may have remained in use for some time as the latest burial marker dates to 1853, but church records indicate that the congregation moved numerous gravestones to the cemetery at the new church in Montague. The original Minisink Dutch Reformed Church building was sold on November 7, 1829, for the sum of $148.33.[390] The original log building was sold and removed from the cemetery in 1829.[391]

386. Shank and Badger, "Johannes Westbrook House."
387. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 5.
388. Dodd, "The Black/Minisink Farmhouse," 6.
389. Donahue to Marcopul, "Updates to Determination of Eligibility," December 9, 2016, 4–6.
390. Vosburgh, *Minisink Valley Reformed Dutch Church Records*, iv-viii.
391. Vosburgh, *Minisink Valley Reformed Dutch Church Records.*

Streams & Creeks
Bridge
Road
Old Mine Road North
Presumed Building or Structure
Component Landscape
River
CLR Boundary
DEWA Park Boundary

Dwg. 2.7c
Dwg. 2.7b
Dwg. 2.7a
Dwg. 2.6b
Dwg. 2.6a
Dwg. 2.5c
Dwg. 2.5b
Dwg. 2.5a
Dwg. 2.4c
Dwg. 2.4b
Dwg. 2.4a
Dwg. 2.3
Dwg. 2.2

mi 7.588

Delaware River
Minisink Island
Namanock Island
OLD MINE ROAD NORTH
Dingmans Road
Mettler Rd

Black Farm
Westbrook-Bell Farm
Ennis House
Anson Johnson House
Mettler Cemetery
Heron's Nest
John Wesley Van Auken House
Bevans-Hellwig Property
mi 0.0

County of Sussex, NJ, State of New Jersey, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Overview

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. "Map of Sussex Co., New Jersey: From Actual Surveys & Records." Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hursh, Ge. E. "Copied From a Map Owned by John D. Everitt." March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. "Topographical Map of Sussex County 1872." 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

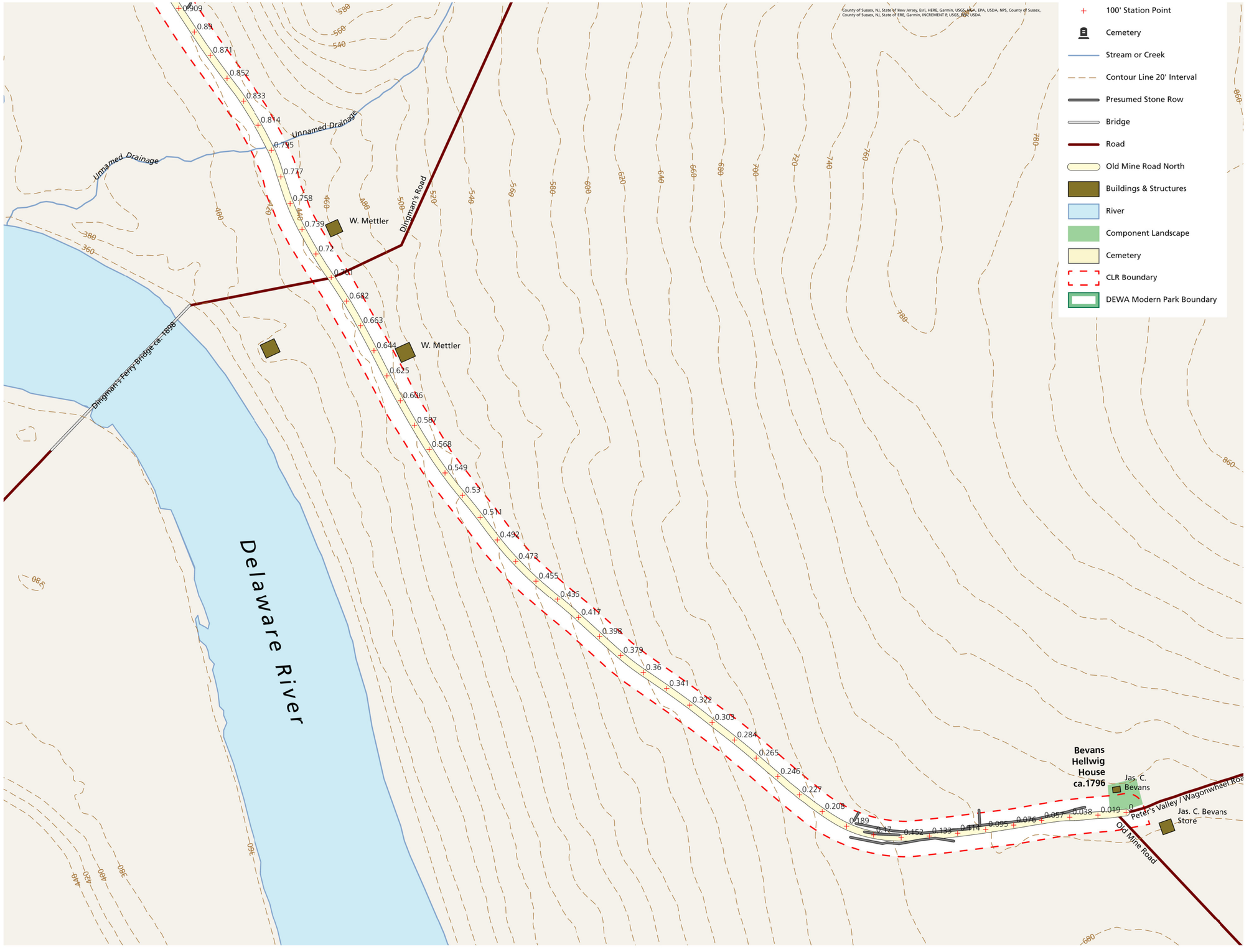
WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 500 1,000 2,000 Feet

Drawing 2.1



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Mile 0.000 to 0.909

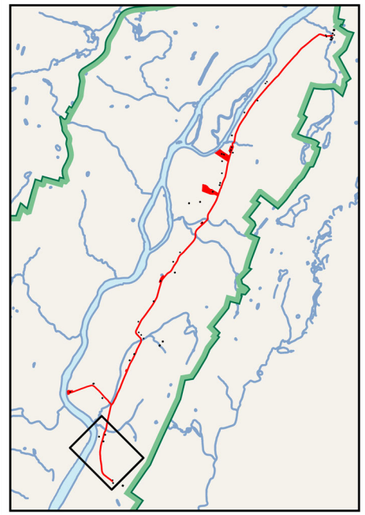
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. "Map of Sussex Co., New Jersey: From Actual Surveys & Records." Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hursh, Ge. E. "Copied From a Map Owned by John D. Everitt." March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. "Topographical Map of Sussex County 1872." 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

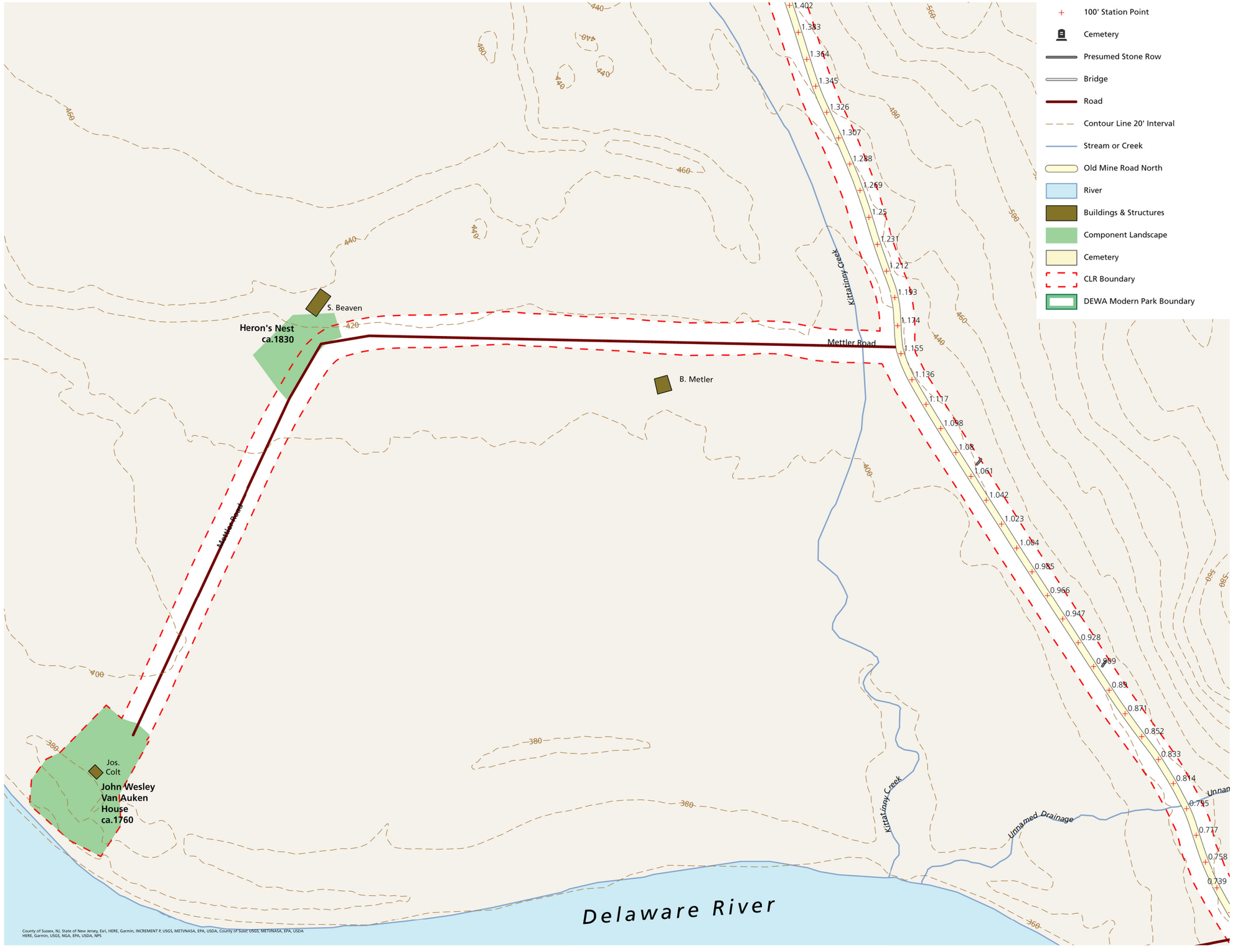


NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:30,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 85 170 340 Feet

Drawing 2.2



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Mile 0.739 to 1.402

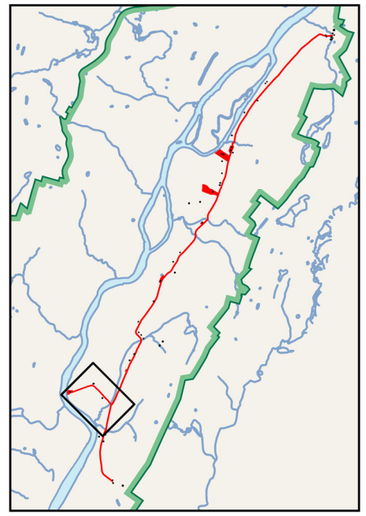
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. "Map of Sussex Co., New Jersey: From Actual Surveys & Records." Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hursh, Ge. E. "Copied From a Map Owned by John D. Everitt." March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. "Topographical Map of Sussex County 1872." 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

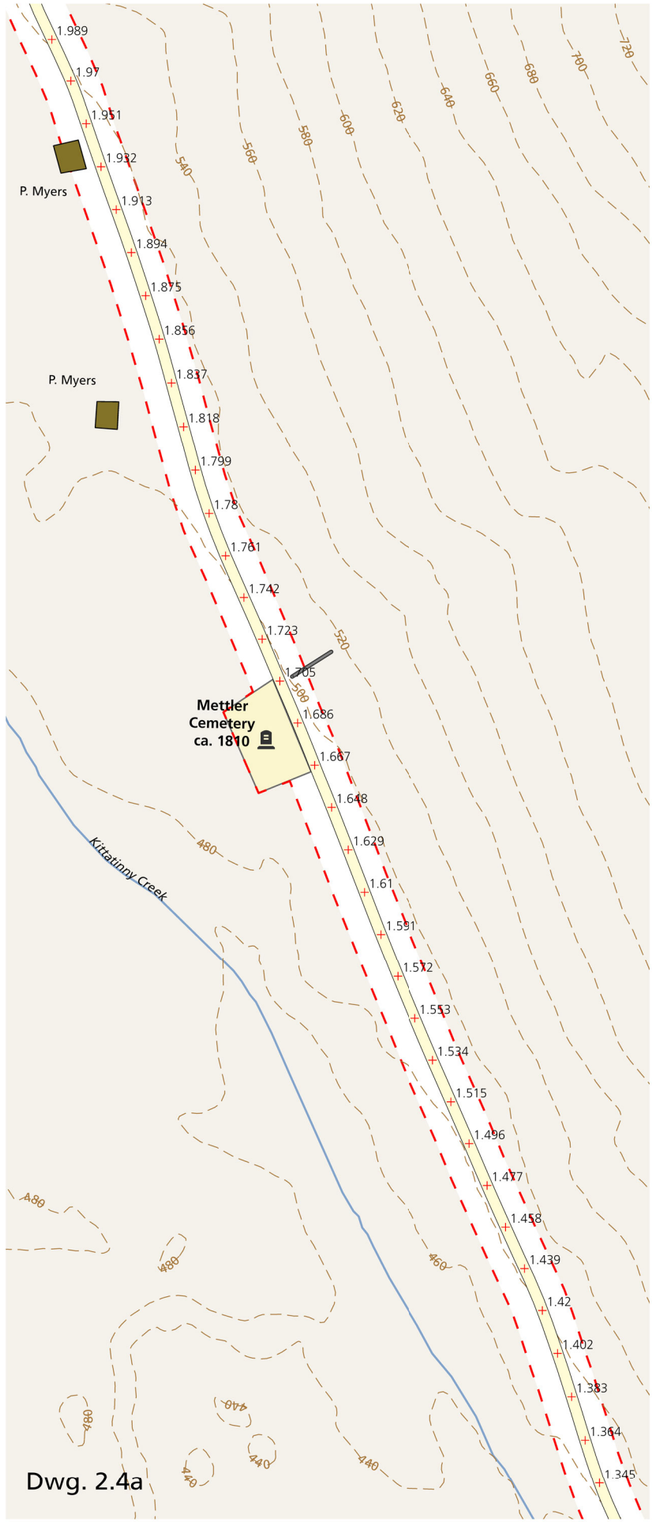


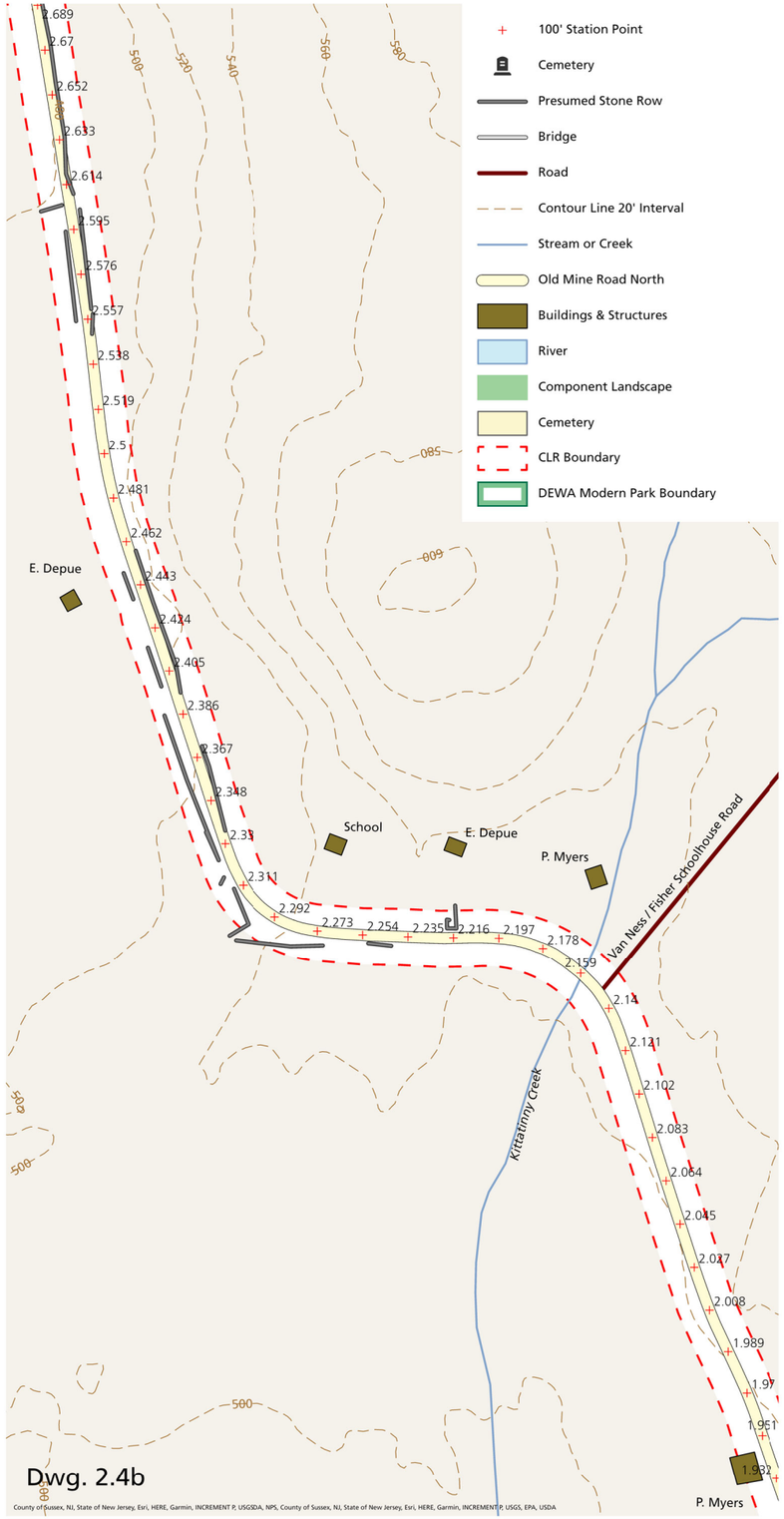
NOTES

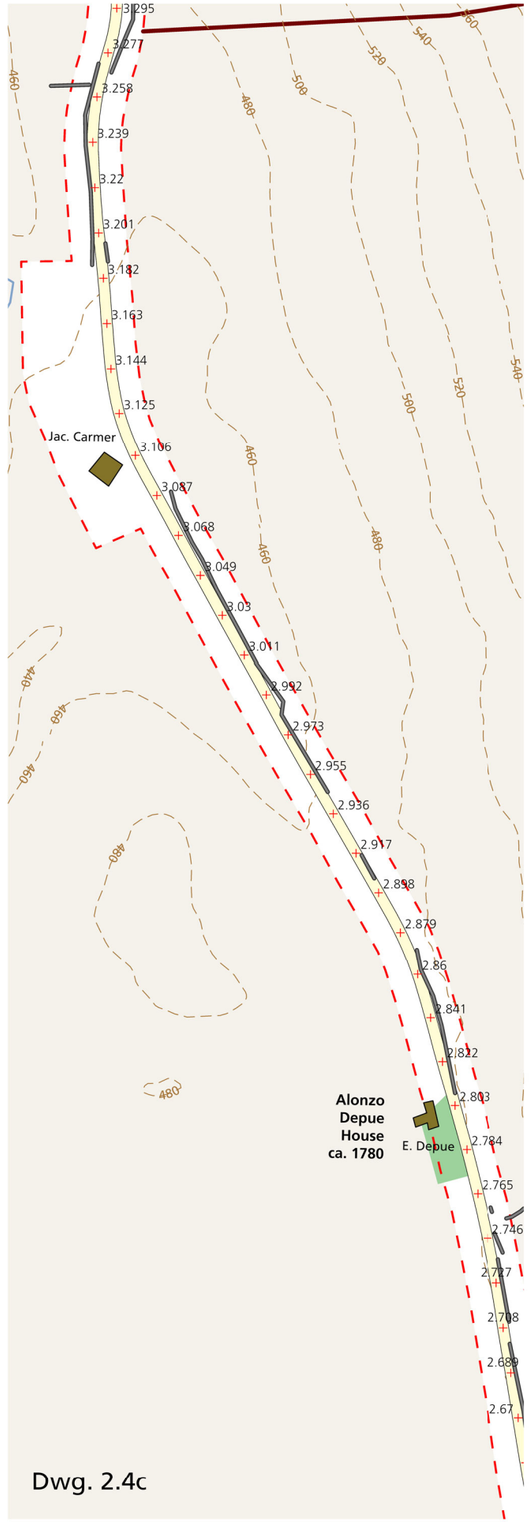
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:30,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 85 170 340 Feet

Drawing 2.3







100' Station Point
Cemetery
Presumed Stone Row
Bridge
Road
Contour Line 20' Interval
Stream or Creek
Old Mine Road North
Buildings & Structures
River
Component Landscape
Cemetery
CLR Boundary
DEWA Modern Park Boundary

County of Sussex, NJ, State of New Jersey, Esri, HERE, Garmin, INCREMENT P, USGSDA, NPS, County of Sussex, NJ, State of New Jersey, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Mile 1.345 to 3.295

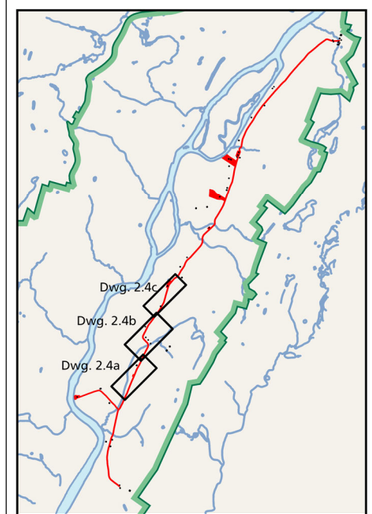
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. “Map of Sussex Co., New Jersey: From Actual Surveys & Records.” Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hursh, Ge. E. “Copied From a Map Owned by John D. Everitt.” March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. “Topographical Map of Sussex County 1872.” 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

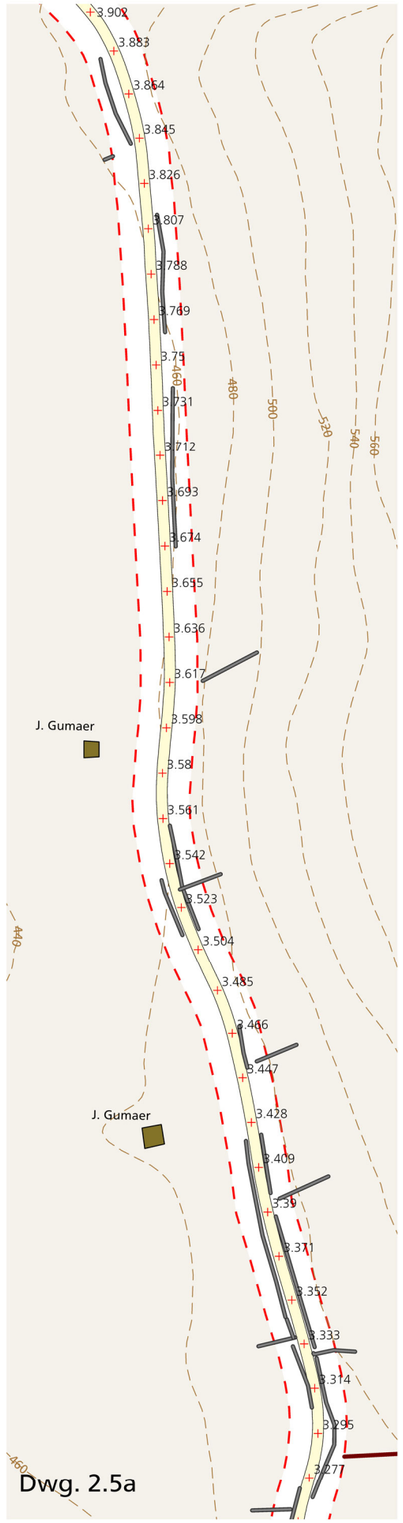


NOTES

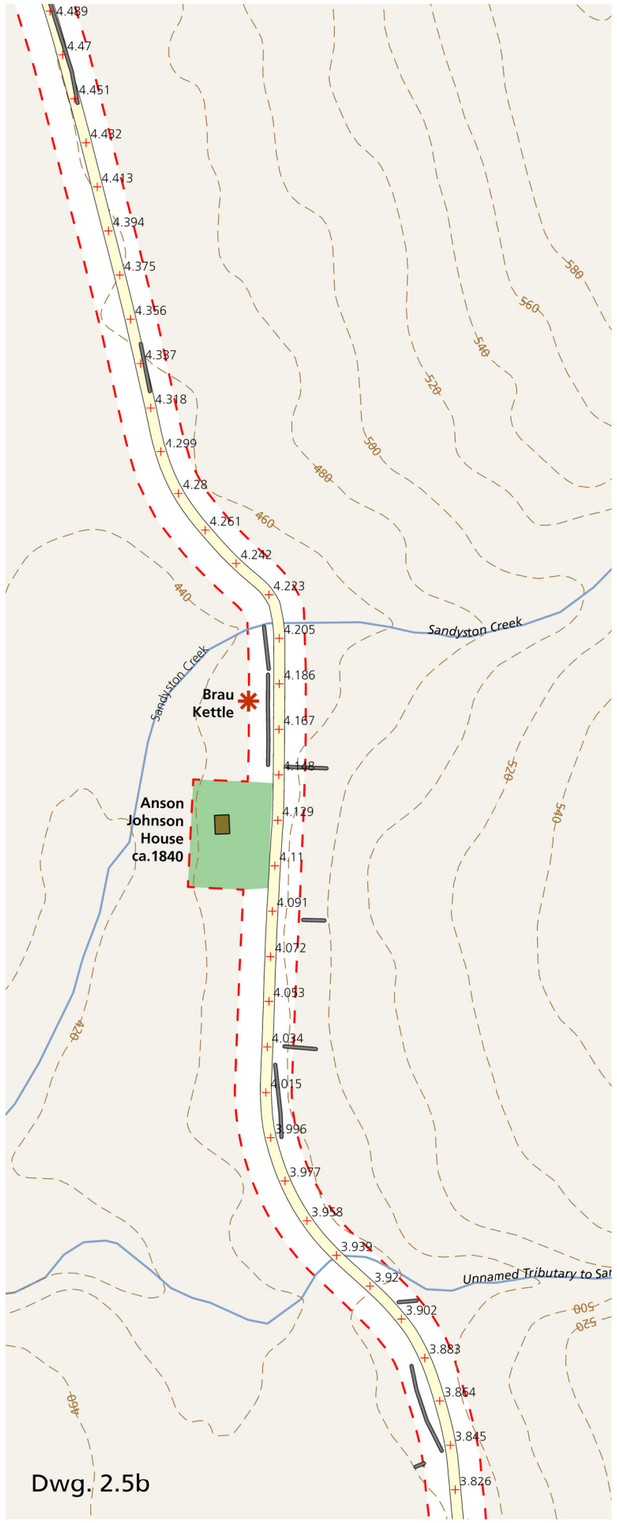
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:30,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 85 170 340 Feet

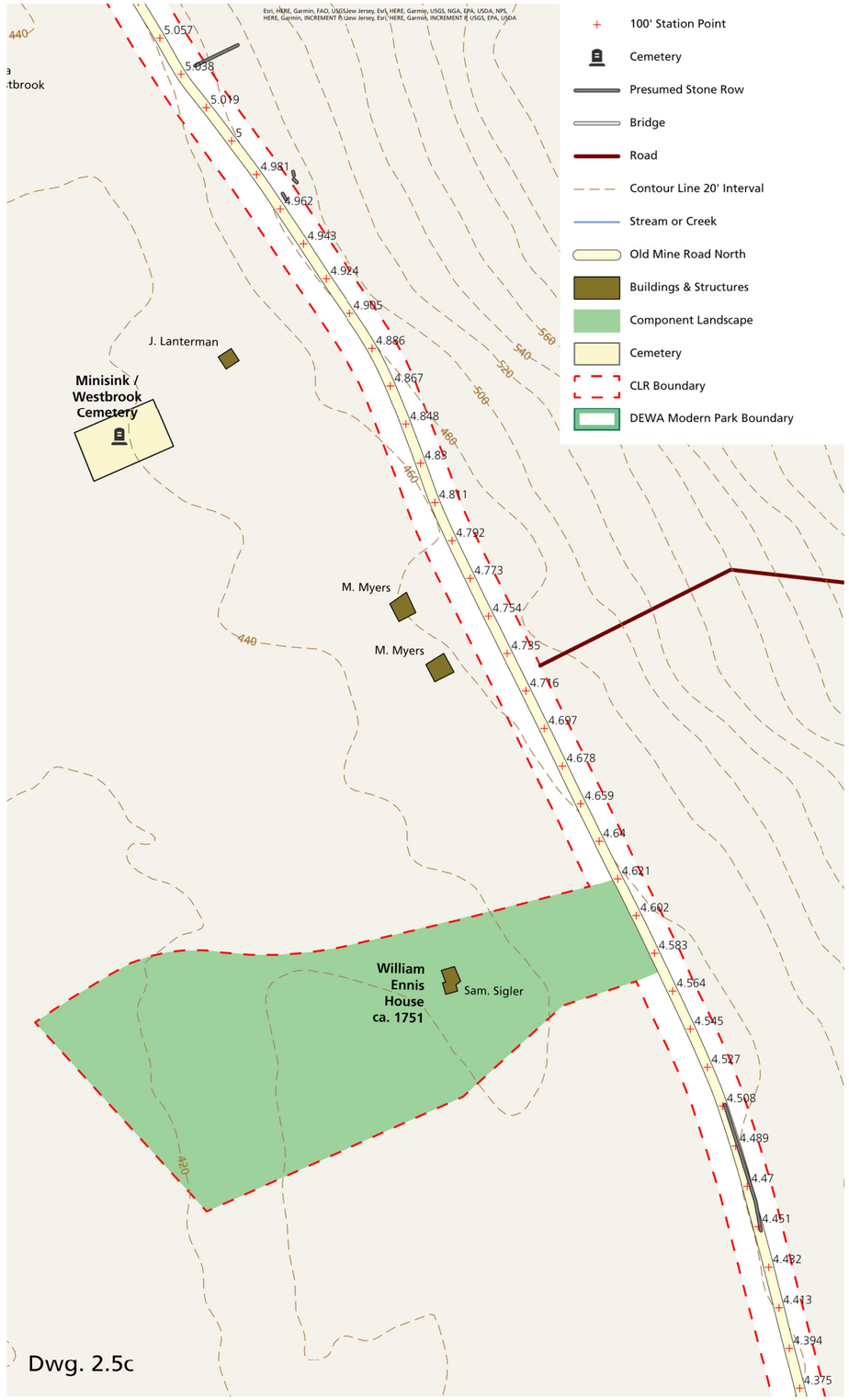
Drawing 2.4



Dwg. 2.5a



Dwg. 2.5b



Dwg. 2.5c

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Mile 3.277 to 5.057

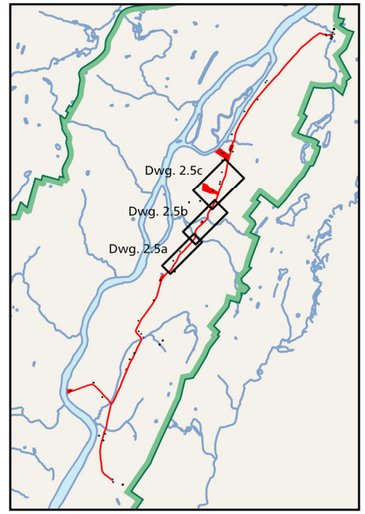
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. “Map of Sussex Co., New Jersey: From Actual Surveys & Records.” Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hursh, Ge. E. “Copied From a Map Owned by John D. Everitt.” March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. “Topographical Map of Sussex County 1872.” 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

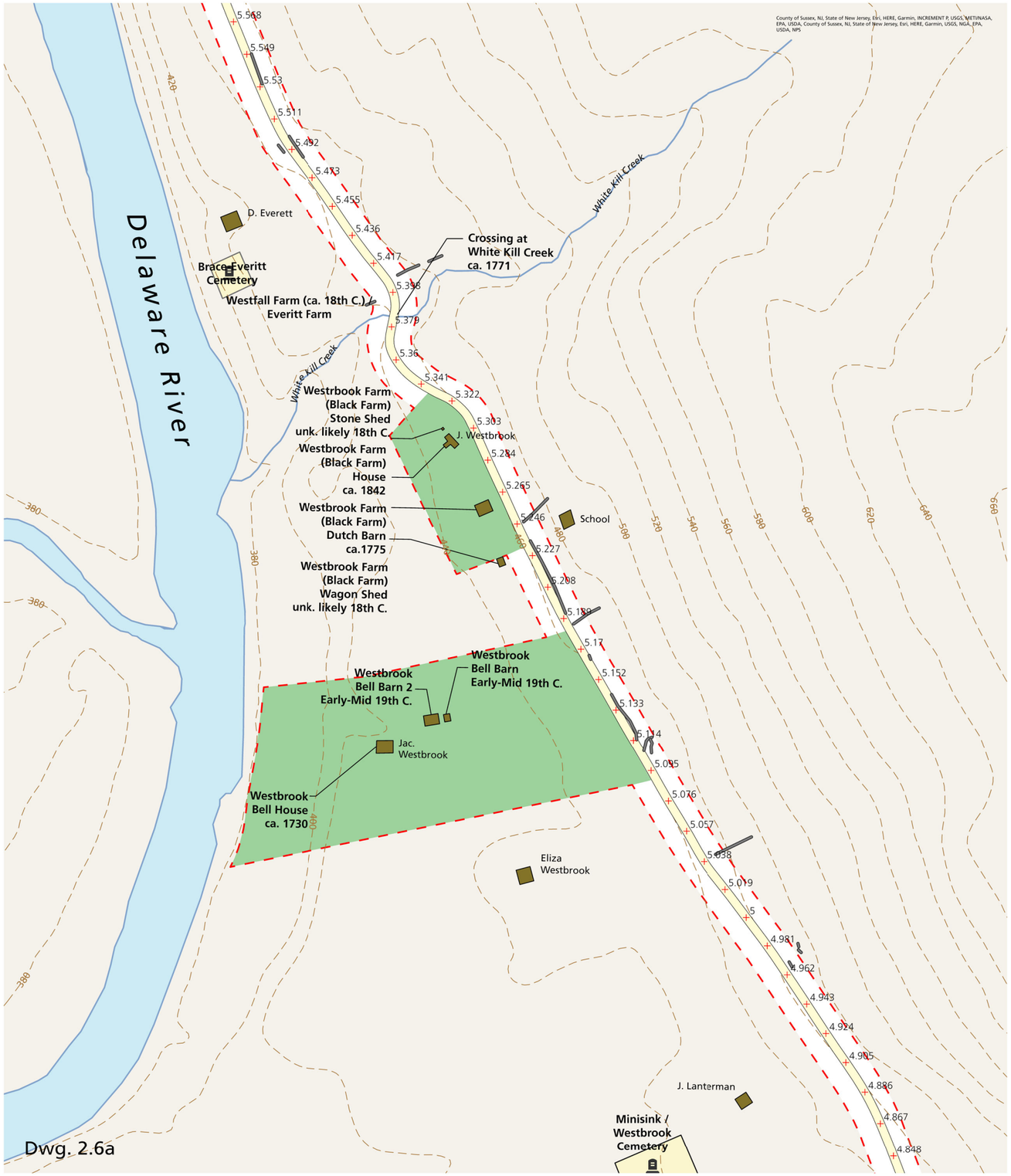


NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:30,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 85 170 340 Feet

Drawing 2.5



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Mile 4.848 to 6.08

National Park Service

Olmsted Center for Landscape Preservation

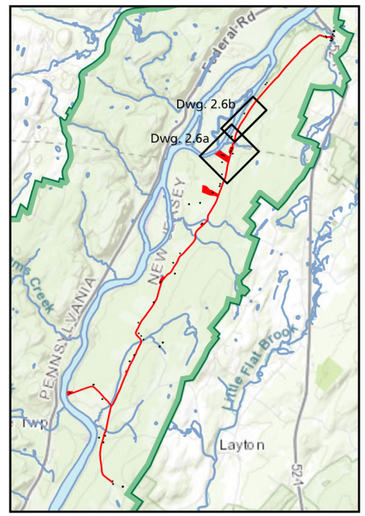
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. "Map of Sussex Co., New Jersey: From Actual Surveys & Records." Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hurst, Ge. E. "Copied From a Map Owned by John D. Everitt." March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. "Topographical Map of Sussex County 1872." 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:30,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 85 170 340 Feet

Drawing 2.6

Mrs. Vanetten

Jas. Hagerty

W. Ogden

Delaware River

Dwg. 2.7a

Dwg. 2.7b

D.J.L. Van Deusen Store

Village of Brick House

River Road

Brick House A. Westbrook

A.J. Coykendall

White Brook

A.J. Coykendall

I. Massaker

D. Maxwell

D. Maxwell

A. Townsend

B.S.S.

B.S.S.

White Brook

Minisink Dutch Reformed Church Cemetery ca. 1715

100' Station Point

Cemetery

Bridge

Road

Contour Line 20' Interval

Presumed Stone Row

Stream or Creek

Old Mine Road North

Buildings & Structures

River

Component Landscape

Cemetery

CLR Boundary

DEWA Modern Park Boundary

County of Sussex, NJ, State of New Jersey, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, County of Sussex, NJ, State of New Jersey, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

Dwg. 2.7c

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1790-1900 Period Plan, Mile 5.928 to 7.538

National Park Service

Olmsted Center for Landscape Preservation

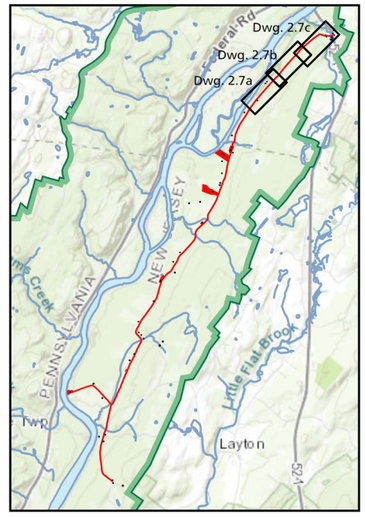
www.nps.gov/oclp

SOURCES

1. Hopkins, Griffith Morgan, Jr. "Map of Sussex Co., New Jersey: From Actual Surveys & Records." Philadelphia, Pennsylvania: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.
2. Hurst, Ge. E. "Copied From a Map Owned by John D. Everitt." March 4, 1872. Delaware Water Gap National Recreation Area Archives.
3. "Topographical Map of Sussex County 1872." 1872. 2 miles = 1 inch. Rutgers University.

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location. Feature scale exaggerated for visibility.
3. Scale: 1:30,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. OMRN is depicted in its' present alignment. The exact route alignment of OMRN during this period is unknown.

0 85 170 340 Feet

Drawing 2.7

Old Mine Road During the Early Twentieth Century (1900–1955)

The Resort and Vacation Era During the Early Twentieth Century

The tourism industry in the Delaware River Valley continued through the first several decades of the twentieth century. As noted previously, early guests were attracted to the area for its natural features, and outdoor recreation provided a contrast to urban areas in the throes of industrialization. Around 1900, public and private recreation parks became popular attractions for tourists, often catering to hunters and outdoorspeople.[392]

There was a notable shift in recreational preferences during the early twentieth century. Tourists were less concerned with the picturesque or the sublime qualities of nature, instead seeking an "emphasis on amusement." According to Clemensen, "Americans no longer derived their pleasure as a spectator of nature, but rather as a participant in a raucous setting which simulated the mechanical achievements of the industrial age." Breezy Point Park, established in the Stroudsburg, Pennsylvania, area in 1913, appealed to these new sensibilities by offering activities such as "dancing, a merry-go-round, swings, a tennis court, a baseball field, and bathing."[393] These types of amusement resorts became more common in the Pocono Mountains during the early 1900s, drawing customers away from the small hotels and boarding houses along the Delaware River, and over time, "vacationers deserted the area in favor of the man-made environment of the Pocono Mountain resorts."[394]

Accompanying these changing preferences was the advent of automobile ownership, which provided tourists with unprecedented freedom and mobility across multiple economic groups. Whereas earlier guests were typically wealthy, taking prolonged vacations and renting rooms for weeks or even months at a time, the automobile provided leisure opportunities for middle- and lower-class consumers, who "tended to remain at the hotels and boarding houses for only a few days before journeying to other areas." Clemensen asserts that "The advent of automobiles in 1906 signaled the eventual end for the Upper Delaware Valley hotels and boarding houses."[395]

The decline of the village hotel industry happened slowly over the next several decades. In Millbrook, the hotel closed in 1910, along with the town's general store. Roughly ten years later, the hotel in Flatbrookville closed, as did its general store, post office, and school.[396] The hotel in Peters Valley, which had been particularly popular with summer vacationers in the early twentieth century, also closed around this time, and the village only had a few remaining residents by the 1940s.[397]

As hotels and boarding houses struggled to adjust to changing consumer tastes, wealthy and upper middle-class vacationers began to abandon long-term rentals and hotel bookings, preferring instead to purchase farmsteads as second homes that they could visit as they pleased.[398]

Beginning in the 1920s, the Delaware River Valley became the site of several Boy Scout camps, all located on the New Jersey side of the river. The Boy Scouts of America established Camp Weygadt and Camp Minsi in 1921 at a site formerly owned by the Delaware Water Gap Slate Company. Camp Weygadt occupied the southern portion of the site, while Camp Minsi occupied the northern portion of the site. In 1925, the Boy Scouts established Camp Pahaquarra at the former Pahaquarry Copper Company site, and the Boy Scouts "adapted most of the buildings that had been constructed by the mining company for their use." The Boy Scouts established Camp Mohican on the bank of Catfish Pond on Kittatinny Mountain in 1926, followed by Camp No-Be-Bo-Sco at Sand Pond in 1927. In 1937, the Boy Scouts established Camp Ken-Etiwa-Pec on the bank of Long Pine Pond, and in 1940 they established Camp Cowaw near Camp Pahaquarra.[399] The multitude of Boy

392. Clemensen, "Preliminary Historic Resource Study," 256–57.
393. Clemensen, "Preliminary Historic Resource Study," 257.
394. Clemensen, "Preliminary Historic Resource Study," 258–59.
395. Clemensen, "Preliminary Historic Resource Study," 258.
396. Clemensen, "Preliminary Historic Resource Study," 180.
397. Clemensen, "Preliminary Historic Resource Study," 177.
398. Clemensen, "Preliminary Historic Resource Study," 261.
399. Clemensen, "Preliminary Historic Resource Study," 262.

Scout camps constructed in this area during a twenty-year span speaks to the popularity of the Delaware River Valley as a recreational landscape.

The Decline of Agriculture and Town Life in the Early Twentieth Century

Although the agricultural economy had begun to decline during the late nineteenth century, farming continued in the Delaware River Valley into the mid-twentieth century. After 1900, dairy farmers began marketing whole milk rather than butter, and whole milk products were sent to "cooling and pasteurizing stations" in nearby towns before being shipped via rail to large consumer centers in eastern New Jersey and New York City. Dairying continued in the Delaware River Valley through the 1960s, but the industry proved unsustainable. According to Clemensen, limited land "spelled the death knell for many dairy farmers because they could not efficiently compete with larger dairy operations in the region."[400]

During the 1920s and 1930s, many farmers began raising chickens to sell eggs and broiler chickens. This practice declined during the 1960s, because "chicken farmers in the later era found that low prices and lack of size limited their ability to compete with larger regional producers."[401] The issues faced by dairy and chicken farmers are representative of larger trends in the agricultural economy around 1900. Larger regional producers were able to access local markets via improved transportation networks, and many local farmers were unable to compete with the lower prices and higher quantities of larger suppliers. The onset of the Great Depression during the 1930s further damaged the agricultural economy of the Delaware River Valley. Many farmers were forced to sell their land, and "those who managed to retain their property reverted almost to subsistence lifestyles."[402]

As the agricultural economy in the area waned, villages throughout the Delaware River Valley faced a steady decline, hastened by the increase in automobile ownership. Improved transportation networks meant local consumers had access to regional markets and factory produced consumer items. As a result, the role of local artisans and mechanics became less vital, and "Village artisans. . .all but disappeared as their services were no longer required." Meanwhile, "Trucks allowed merchants and manufacturers from urban centers to bypass the local trade centers and collect farm products directly from individual farmers."[403] As Clemensen describes it, the introduction of the automobile "doomed the village merchant to extinction."[404]

Villages in the Delaware River Valley tried to capitalize on the growing tourism industry. According to Clemensen, most villages had established hotels by the 1850s, which "accommodated travelers and transient laborers."[405] During the early twentieth century, vacationers embraced automobiles as their preferred method of travel and their reliance on village hotels for long-term boarding declined. As a result, many hotels closed as "the valley hotel owners suffered from lack of capital to maintain their establishments." These financial challenges were compounded by the Great Depression, which limited the number of seasonal tourists, and very few hotels remained operational by the end of the 1930s.[406] The combined impacts of agricultural decline, improved transportation networks, changing tourist preferences, and economic depression led to a steady decline in village populations by the 1930s. Soon, "schools began to be consolidated in larger towns," and the "loss of village schools further decreased the usefulness of these hamlets and added to their general decline."[407]

The Great Depression and the New Deal

After a period of economic growth following World War I, on October 24, 1929, the United States stock market crashed. Over the next week, the value of shares fell precipitously, sending the American economy into a tailspin. Quickly,

400. Clemensen, "Preliminary Historic Resource Study," 75–76.
401. Clemensen, "Preliminary Historic Resource Study," 76.
402. Clemensen, "Preliminary Historic Resource Study," 78.
403. Clemensen, "Preliminary Historic Resource Study," 200.
404. Clemensen, "Preliminary Historic Resource Study," 152.
405. Clemensen, "Preliminary Historic Resource Study," 199.
406. Clemensen, "Preliminary Historic Resource Study," 258–59.
407. Clemensen, "Preliminary Historic Resource Study," 200.

millions of American workers lost their jobs. In 1929, there were approximately one-and-a-half million unemployed workers in the United States. By 1932, this figure had grown to over ten million.[408] The following year, the unemployment rate stood at over 25 percent.[409]

In New Jersey, many employers responded to the economic decline by reducing wages and limiting production. As conditions deteriorated, "Private charities and local governments provided relief for the unemployed, but by 1931 they were overwhelmed," and many people faced homelessness and food scarcity. Meanwhile, "Scores of businesses and more than 140 New Jersey banks failed," robbing people of their savings and leaving them unable to pay their bills. Unemployment in Newark was so high that the city decided to "abandon mechanized equipment and have the unemployed dug tunnels by hand for the planned subway line" to hire more laborers.[410]

The crash and subsequent recession that began during the presidency of Herbert C. Hoover, a steadfast believer in laissez-faire economic policy, did little to interject federal governmental assistance into the market. Instead, Hoover worked with private industry and state governments to stimulate the economy and create jobs. As a result, various states established relief programs such as hiring unemployed men to perform conservation and reforestation work.[411] In spite of these programs, as the market was not stabilizing on its own, the Hoover administration "responded to the worsening economic crisis by providing additional appropriations for the construction of roads and trails in national parks and monuments and other public works. . . ."[412] However, by 1932, the Hoover administration's mostly hands-off policies had an inadequate effect on the economy, and public sentiment turned against the president.[413] The presidential election of 1932 resulted in Hoover's defeat, and Franklin Delano Roosevelt took his place.

During Hoover's presidency, New Jersey Governor Morgan Larson established the State Emergency Relief Administration in 1931, "which provided assistance to local and county governments to meet the needs of more than 300,000 unemployed New Jerseyans." While other aid programs often used government funds to finance construction projects and boost employment, the New Jersey State Emergency Relief Administration was funded by "diverting monies from highway construction and selling the bridges over the Delaware River." These funds were then used as grants, matching local funding for "work and direct relief."[414] Governor Larson, a Republican, lost to Democrat A. Harry Moore in the 1931 gubernatorial election. Although Moore was "fiscally conservative" and reduced state spending, he "embraced the expansion of public relief and sought to channel more government aid to struggling municipalities."[415]

Although Hoover and the Republican Party fell out of public favor during the onset of the Great Depression, the Republican Party remained fairly popular among rural and suburban votes in New Jersey. Republican Franklin Delano Roosevelt won the state by a slim margin in the 1932 election, and Democrats failed to gain the state's seats in the U.S. House of Representatives. These voting trends remained true for the 1936 presidential election as well, although Roosevelt's margins did improve slightly.[416]

The Roosevelt administration held the idea that the federal government should play a leading role in rejuvenating American economy and society. In March 1933, Roosevelt announced a "New Deal" economic policy, which proposed the establishment of multiple programs designed to alleviate the debilitating economic depression, strengthen the economy, and prevent future market

408. Ren Davis and Helen Davis, *Our Mark on This Land: A Guide to the Legacy of the Civilian Conservation Corps in America's Parks* (Granville: OH: The McDonald & Woodward Publishing Company, 2011), 5.
409. John C. Paige, *The Civilian Conservation Corps and the National Park Service, 1933-1942: An Administrative History* (National Park Service, 1985), www.nps.gov/parkhistory/online_books/ccc/.
410. G. Kurt Piehler, "Depression and War," in *New Jersey: A History of the Garden State*, ed. Maxine N. Lurie and Richard Francis Veit (New Brunswick, New Jersey: Rutgers University Press, 2012), 238–39.
411. Paige, *The Civilian Conservation Corps*.
412. John C. Paige, *The Civilian Conservation Corps and the National Park Service, 1933-1942: An Administrative History* (National Park Service, 1985), www.nps.gov/parkhistory/online_books/ccc/.
413. Hoover Presidential Library, "The Great Depression," n.d., https://hoover.archives.gov/exhibits/great-depression.
414. Piehler, "Depression and War," 239.
415. Piehler, "Depression and War," 239–40.
416. Piehler, "Depression and War," 240.

crashes. The New Deal included both top-down and bottom-up economic policies.[417] Top-down policies focused on items such as tariffs and taxes, while bottom-up programs focused on creating employment through federal work projects. With the backing of the Democratically-controlled Congress, over the course of the spring and summer of 1933, Roosevelt signed several bills into law that established economic relief programs.

Immediately prior to ascending to the presidency, Roosevelt served as governor of New York. During his tenure, New York was one of the states that established a relief program focused on the reforestation of old farmsteads. As president, Roosevelt possessed "a desire to conserve both the natural and human resources of the nation" and to create jobs in the process.[418] Roosevelt alluded to the creation of a national program to provide these services in his inaugural address, stating:

> Our greatest primary task is to put people to work. This is no unsolvable problem if we face it wisely and courageously. It can be accomplished in part by direct recruiting by the Government itself, treating the task as we would treat the emergency of a war, but at the same time, through this employment, accomplishing greatly needed projects to stimulate and reorganize the use of our natural resources.[419]

One of the first programs created by Roosevelt was the Emergency Conservation Work program (ECW), which was popularly known as the Civilian Conservation Corps (CCC).[420] The ECW program was designed to do the following:

> . . . to provide for employing citizens of the United States who are unemployed, in the construction, maintenance and carrying on of works of a public nature in connection with forestation of lands belonging to the United States . . . the construction, maintenance, or repair of paths, trails, and fire-lanes in the national parks and national forests, and such work on the public domain, national and State government reservations incidental to or necessary in connection with any projects.[421]

Roosevelt envisioned that the program would provide employment for 250,000 people.

Roosevelt appointed Robert Fechner as the Executive Director of the ECW. Fechner assembled an advisory council and set out to coordinate the multiple agencies charged with responsibilities related to the program. Managing the program were: the Department of Labor, tasked with the selection and enrollment of men; the War Department, which was in charge of enrolling, feeding, housing, conditioning, and transferring the men to their camps; and the Departments of the Interior and Agriculture, "which were to select and oversee work projects and administer the work camps."[422] Fechner, the advisory council, and Roosevelt decided that enrollees would be unemployed, unmarried men between the ages of eighteen and twenty-five mostly recruited from large urban areas. The wages would be thirty dollars per month, with the enrollees committed to sending twenty-five dollars back to their families at home. To help oversee the men, the Department of the Interior was "allowed to hire a limited number of skilled local workers known as locally employed men (LEM). For these men the marriage and age stipulations would be waived."[423]

Congress passed several other acts specifically aimed at reemployment at this time. The National Industrial Recovery Act (NIRA) established the National Recovery Administration (NRA), which

417. Kyle Wilkison, "The Great Depression and New Deal, 1929-1940s," n.d., http://faculty.collin.edu/kwilkison/Resources%20for%20Students/DepressionNewDeal.html.

418. Paige, *The Civilian Conservation Corps and the National Park Service, 1933-1942: An Administrative History*.

419. Franklin D. Roosevelt, "First Inaugural Address of Franklin D. Roosevelt," Text, Inaugural Addresses of the Presidents of the United States : from George Washington 1789 to George Bush 1989 (Washington, D.C. : U.S. G.P.O. : for sale by the Supt. of Docs., U.S. G.P.O., 1989, March 4, 1933), https://avalon.law.yale.edu/20th_century/froos1.asp.

420. While the official name of the program remained ECW until 1937, the press referred to the program as the CCC from its inception.

421. "An Act for the Relief of Unemployment through the Performance of Useful Public Work, and for Other Purposes," GSA: Franklin D. Roosevelt and Conservation (Vol. 1) (Part II), March 31, 1933, https://www.nps.gov/parkhistory/online_books/cany/fdr/part2.htm.

422. John A. Salmond, *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study* (Durham: Duke University Press, 1967), https://www.nps.gov/parkhistory/online_books/ccc/salmond/chap2.htm.

423. Paige, *The Civilian Conservation Corps and the National Park Service, 1933-1942: An Administrative History*.

enacted "industry-wide codes to place limits on the number of hours to be worked per day and set standards for minimum wages. The NIRA also guaranteed many workers the right to collective bargaining and forbade child labor."[424] NIRA created the Public Works Administration (PWA), which aimed to stimulate the construction industry, and the Civil Works Administration (CWA) to provide jobs for the unemployed.

The CWA "took half its workers from relief rolls; the other half were people who needed jobs, but who did not have to demonstrate their poverty by submitting to a 'means' test."[425] As opposed to the conservation-focus of the CCC program, the CWA "tailor[ed] jobs to fit the skills of workers."[426] By January 1934, the CWA employed over four million people performing diverse tasks ranging from construction to teaching. Most of the projects submitted to the CWA were from states or local governments. The CWA paid workers an average of fifteen dollars per week for construction jobs such as repairing schools, building roads, and installing utilities.

Roosevelt, alarmed by the costs of the CWA, ended the program in 1934.[427] In its place, the Federal Emergency Relief Administration (FERA), which was established the previous year, became the point agency for relief distribution in the United States. However, FERA workers were not as well paid as those under CWA. Furthermore, jobs were scarcer, and many were construction oriented. "While the worker under CWA had averaged $15.04 a week, he received only $6.50 a week under FERA; moreover, he could get on FERA rolls only if he had first identified himself as a reliefer and submitted to the humiliation of a 'means' test."[428] In 1935, New Jersey received thirty-three million dollars in FERA funding, "which covered 75 percent of the costs of emergency relief." In New Jersey, FERA grant funds were used to fund relief offices, hire social workers, "professionalize the delivery of welfare services."[429]

In January 1935, Roosevelt proposed a new program for emergency public employment for millions of American workers still without employment. This effort became known as the Works Progress Administration (later renamed Works Projects Administration, WPA), led by Harry Hopkins.[430] The WPA funded not only public building projects but also theater, writing, and arts projects. In New Jersey, the WPA employed 120,000 people by 1936.[431]

World War II interrupted Roosevelt's New Deal programs, and due to their brevity, their overall effectiveness is difficult to gauge. "By predepression standards, [the WPA] marked a bold departure. . . yet it never came close to meeting Roosevelt's goal of giving jobs to all who could work."[432] Black Americans, especially Black women, were systematically denied many of the benefits of the programs. However, New Deal relief programs offered much needed—if temporary—employment for millions of Americans, providing money to families who had no other source of income. Furthermore, the programs provided training to unskilled workers that would translate into gainful employment after the war. Finally, the projects undertaken by the PWA, WPA, CCC, and other work crews produced numerous state and national parks, essential infrastructure improvements including roads and bridges, the construction of numerous buildings, the recordation of historic landscapes and buildings, and many artistic works.

These construction projects had significant impacts at the state and local level, including throughout the state of New Jersey. According to historian G. Kurt Piehler, "New Deal programs played an important role in modernizing New Jersey's infrastructure and institutions. Projects supported by the PWA and WPA improved virtually every form of transportation, contributing huge sums for

424. Richard M. Mizelle, "Black Levee Camp Workers, The NAACP, and the Mississippi Flood Control Project, 1927-1933," *Journal of African American History* 98, no. 4 (Fall 2013): 525.The NAACP, and the Mississippi Flood Control Project, 1927-1933,\\uc0\\u8221{} {\\i{} Journal of African American History} 98, no. 4 (Fall 2013
425. William E. Leuchtenburg, *Franklin D. Roosevelt and the New Deal* (Harper & Row, 1963), 121.
426. Edwin A. Lyon, *A New Deal for Southeastern Archeology* (Tuscaloosa, Alabama: University of Alabama Press, 1996), 27–28.
427. Leuchtenburg, *Franklin D. Roosevelt and the New Deal*, 122.
428. Leuchtenburg, *Franklin D. Roosevelt and the New Deal*, 123.
429. Piehler, "Depression and War," 241–42.
430. The federal government created the WPA as part of the Emergency Relief Appropriate Act of 1935, thus WPA workers are sometimes referred to as ERA workers.
431. Piehler, "Depression and War," 243.
432. Leuchtenburg, *Franklin D. Roosevelt and the New Deal*, 129–30.

roads, bridges, harbors, mass transit, and airport facilities."[433]

By the mid-1930s, the WPA had established branch offices throughout New Jersey for the management of projects in the state. According to a letter from WPA State Administrator William H. J. Ely to E. Donald Sterner, Commissioner of the New Jersey State Highway Department, these projects were to be administered and reviewed by both agencies. Branch offices managed implementation and project administration. Sussex County was located in Branch No. 1, managed by William J. Burke with Edward A. Delvin serving as operating engineer.[434] In 1941, the WPA allocated $7,636,992 "for improving roads throughout New Jersey." Allocations to Sussex County likely fluctuated from year to year.[435]

Clemensen discusses improvements made to the River Road system, which includes Old Mine Road, during this time period, noting that many of the improvements were made using government funding to better accommodate increased automobile traffic. Clemensen summarizes these changes as follows:

> In the wake of the depression era of the 1930s, federal government funding for work projects provided money for roadwork. Warren and Sussex County commissioners took advantage of this financial allotment to improve roads. Most roads were widened and hard surfaced in the 1935–1940 period. River Road from the Water Gap to the area just above the Pahaquarry mine site was realigned away from the Delaware River bank to higher ground. Guard rails of triangular-shaped, concrete post holding steel cable were used to appropriate locations along the newly surfaced roads as a safety measure for the increased automobile use.[436]

Between 1924 and 1939, the county used WPA funds for grading, construction, and improvements on Sections 1 through 7 of "River Road" in Sussex County.[437] Clemensen does not specifically discuss changes that were or were not made to Old Mine Road North during this period, and research has not uncovered evidence that WPA funds were used to finance road maintenance and improvement projects along Old Mine Road North. Additionally, no drawings for improvements to Old Mine Road North have been located to date.

In 1939, the WPA published *The WPA Guide to 1930s New Jersey*. This publication contains several different recreational driving tours through New Jersey, including one that ran south along Old Mine Road, from Montague 19.8 miles south to Rosenkrans Ferry (also spelled Rosencrans; this ferry crossed the river at Walpack Bend and Bushkill, Pennsylvania, and is no longer extant). According to the tour description, "The southern part of Old Mine Road offers a glimpse into the history of New Jersey" and "penetrates some of the State's most scenic country, popular with hunters, fishermen, and city-sated week-enders."[438] Regarding the condition of the road for would be travelers, the guide says the following:

> Few gas stations; occasional tourist homes.
>
> Road graveled with small stretches macadamized; most parts unmarked, and though occasional signs point to "Old Delaware Road," the route is difficult to follow especially at junctions with other dirt roads. Rattlesnakes and copperheads abound in region; advisable to exercise caution when walking.[439]

The WPA Guide to 1930s New Jersey also offers a brief description of the section of Old Mine Road North that runs between Dingmans Ferry Road and Peters Valley, noting that "The road rises sharply away from the river and then descends to PETER'S VALLEY."[440]

In addition to the descriptions of the road itself, *The WPA Guide to 1930s New Jersey* also offers descriptions of several built structures positioned

433. Piehler, "Depression and War," 247.
434. William H. J. Ely to E. Donald Sterner, "Works Progress Administration, New Jersey," April 13, 1938, WPA Misch. Records, New Jersey State Archives.
435. Associated Press, "Jersey WPA Gets $7,636,992," *New York Times*, June 5, 1941.
436. Clemensen, "Preliminary Historic Resource Study," 135.
437. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," 24.
438. Works Progress Administration, *The WPA Guide to 1930s New Jersey* (New Brunswick, New Jersey: Rutgers University Press, 1939), 472.
439. Works Progress Administration, *The WPA Guide to 1930s New Jersey*, 472.
440. Works Progress Administration, *The WPA Guide to 1930s New Jersey*, 473.

along the roadway at this time. The WPA guide notes the presence of "a few tombstones and granite marker on the site of the Minisink Church," which are "Almost invisible in a tiny weed-grown patch," referring to the Minisink Reformed Church Cemetery at the north end of the study area.[441] According to park personnel, this granite marker was donated by John Van Sickle, a founding member of the Sussex County Historical Society, in 1913.[442] The WPA guide also describes "a row of 10 tiny white cabins with green window trim" approximately 1.1 mile south of the northern terminus of the road, which were used as summer vacation homes by members of the North Bergen Patrolmen's Association. These buildings are no longer extant. The guide notes the Westbrook-Bell House, with a stone marker erected by the Chinkchewunksa Chapter of the Daughters of the American Revolution at the end of its driveway. The guide also notes the presence of the Ennis House, the ruins of Fort Nomanock [*sic*], and Mettler Cemetery. Of the Mettler Cemetery, the guide describes the site as "without benefit of fence, church, or trees."[443] Toward the south end of Old Mine Road North, near Dingmans Ferry, the WPA guide describes how, on the New Jersey bank of the Delaware River, "a smooth rocky ledge serves as front yard for summer cottages," which are no longer extant.[444]

Transportation Networks During the Early Twentieth Century

The Good Roads Era in New Jersey

By the 1870s, nationwide reforms associated with the Progressive Movement ushered in the Good Roads Era. Reformers advocated for better roads to improve the quality of rural life, limiting social isolation and offering better access to "opportunities available in towns and cities." In urban areas, street sanitation was a pressing issue, which often "translated into paved streets for easier cleaning." The *New Jersey Historic Road Study* summarizes the importance of the Good Roads Era as follows:

> The Good Roads Era was characterized by several related technological and administrative innovations in overland transportation; the most tangible of which was the improvement of existing roads, especially their wearing surface and durability. The period…also saw the emergence of the professional highway engineer and consequent increased uniformity in construction techniques, the implementation of public funding for road building, and the use of roads for recreation. The need for these improvements responded to the increasing use of the automobile.[445]

Construction of improved roads in New Jersey required several important legislative and administrative advancements. Early government interest in highway standardization did not really begin until the turn of the century as "rigidly centralized control of highway construction was [not yet] established in this country. As a result, only 150,000 miles of the more than 2.2 million miles of public highway in use in 1904 boasted any kind of improved surface."[446] Several federal agencies aimed at creating road construction standardization, beginning with the Office of Road Inquiry (ORI), part of the Department of Agriculture in 1893, replaced by the Office of Public Roads in 1905, which later transitioned to the Bureau of Public Roads (BPR). Federal engineers with the BPR disseminated technical information about road construction, materials, and standards to states, counties, and municipalities throughout the United States. Much of this educational work took place through state highway departments. The state of New Jersey was one of the first states to have a state roads agency, established in 1894.[447]

As mentioned previously, the New Jersey state government passed the New Jersey State-Aid Highway Act in 1891, which provided public

441. Works Progress Administration, *The WPA Guide to 1930s New Jersey*, 473.
442. Park personnel provided this information.
443. Works Progress Administration, *The WPA Guide to 1930s New Jersey*, 473.
444. Works Progress Administration, *The WPA Guide to 1930s New Jersey*, 473.
445. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 50.
446. Bruce E. Seely, "Engineers and Government-Business Cooperation: Highway Standards and the Bureau of Public Roads, 1900–1940," *The Business History Review* 58, no. 1 (1984): 54, https://doi.org/10.2307/3114528.
447. Seely, "Engineers and Government Business Cooperation," 54–55.

funding for roads.[448] In 1895, a year after New Jersey established its own state roads agency, the state government passed legislation that required each county to appoint a supervisor of roads, whose duties were to "to construct, repair, and maintain all county roads, bridges, drains culverts, catch basins, and guardrail. The supervisor is also responsible for keeping highways passable in all seasons and weather."[449] In 1909, Sussex County hired a county engineer to oversee road construction.[450]

The October 1909 edition of *Good Roads Magazine* featured an advertisement for Indian Refining Company, Inc. and their work using "liquid asphalt binder" to pave roads. The advertisement refers to this material as "the best road according to present standard," and "impervious to water; dust-less, mudless, odorless, smooth, resilient, non slippery [*sic*], and above all, durable." The advertisement also features three pictures of paved roadway, described as "portions of new road constructed in the mountains of Sussex County, N. J. – 10 miles in length."[451] The image description does not specify the exact location of this ten-mile stretch of paved road, and evidence suggests that the north section of Old Mine Road was unpaved through the 1930s. However, this advertisement does indicate that road improvement projects and asphalt paving were occurring in the area by 1909.

Road improvements in Sussex County in 1909 appear to mark an important change in road maintenance and construction in the area. An earlier 1907 edition of *Good Roads Magazine* published an article discussing road improvements in New Jersey, which noted that "Sussex County shows little or no interest in road improvements, and while it has about seven miles of macadam it expended only $1,349.79 in 1906 for repairs." The article quotes a report that asserted "some of the so-called repairs would better not have been made, as they consisted in spreading a layer of dirt over the stone until the latter was buried out of sight, leaving nothing but a dirt road."[452] Macadam roads generally proved problematic during the transition to automobile traffic. While macadam roads were suitable for light wagon and carriage traffic, they were not adequate for automotive traffic. In addition to creating large clouds of dust, heavy traffic quickly degraded the stability of macadam roads.[453]

The shift in road maintenance and construction projects in Sussex County between 1907 and 1909 reflects several important trends characteristic of the Good Roads Era, including increased government intervention, administrative centralization, professionalization, new construction methods and materials, and new transportation technologies, specifically the automobile.

After New Jersey passed the State-Aid Highway Act in 1891, other states began to pass similar legislation, particularly those "in the northeast and other populous areas."[454] The federal government soon followed, and in 1916, the U.S. Congress passed the Federal-Aid Road Act, providing seventy-five million dollars for state road projects over the next five years, with BPR overseeing the funds. BPR and the newly established American Association of State Highway Officials (AASHO) worked together to produce standard specifications for materials and standards for geometric and structural design for American roads.[455]

The Highway Era in New Jersey

Road improvements during the early twentieth century were in large part a reaction to the increasing popularity of and reliance on automobiles. Preceding the proliferation of the automobile in the U.S., technology involved in the production of bicycles in the 1890s involved all the elements necessary for automobile production including "cold-rolled steel, accurately machined gears, ball and needle bearings, and pneumatic

448. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 35.
449. "Inventory of the County Archives of New Jersey," 174.
450. "Inventory of the County Archives of New Jersey," 170.
451. "The Best Road Liquid Asphalt Binder, Indian Refining Company, Inc.," *Good Roads Magazine*, October 1909.
452. "New Jersey Road Improvement and Repairing," *Good Roads Magazine*, May 1907.
453. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 56.
454. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 60.
455. Seely, "Engineers and Government-Business Cooperation," 63.

tires."[456] The beginning of the automobile industry grew out of bicycle manufacturing, but the first models required relatively smooth-surfaced roads. Early models included Mercedes, the runabout buggy, and high wheelers, meant for the rural markets. After further innovation, trial and failure, and the introduction of the Ford Model T, by 1912, "the stage was set for the adoption of the automobile by the urban middle class and by farmers in rural areas."[457]

By 1914, U.S. manufacturers produced more automobiles annually than wagon and carriages, and the nation was transitioning to a new form of transportation. By 1916, "there was one car for every 32 New Jersey residents and six cars for every mile of improved road." New Jersey residents were quick to adopt automobiles, and a survey conducted in 1913 indicated that New Jersey "had a higher number of vehicles per mile of road than most other states in the region." Motor tourism became a popular recreational pursuit for many people in New Jersey, and farmers were quick to utilize trucks to ship their goods, often "at a cheaper rate than prevailing railroad freight fees."[458]

Trucks, in particular, were rough on more rudimentary roadways. Even improved macadam road surfaces could not bear the weight of freight trucks, and "Narrow truck tires were very destructive because they could shear the road's surface layer and cause structural destabilization." Truck use increased for wartime mobilization during World War I, as railroad routes became congested, and trucks offered "greater flexibility of movement." As trucks assumed increased economic and military importance, the New Jersey legislature began to pay more attention to the needs of the expanding roadway system.[459]

In 1917, New Jersey established the State Highway System. The first routes that were absorbed into the State Highway System were those that "formed continuous inter-county and statewide origin/destination routes." In 1917, the State Highway System consisted of fifteen original state routes, "selected because they were vital to the state's various interests, whether agricultural, commercial, industrial, recreational, or the larger national interest in defense." Unlike earlier roads in the state, which conformed to the land and developed in a more informal, ad hoc basis, road construction projects after 1917 adhered to new standards for state highway construction and were more "highly engineered." Unlike improvements in the Good Roads Era, which were typically "limited to upgrading the road's surface," highway improvements tackled more complex issues like alignment and grading.[460]

In 1926, the State Highway engineer conducted a statewide road study that "evaluated current and projected traffic demands" in New Jersey. The study identified forty-five important routes in the state and emphasized those roads that would "connect major population centers." These new highways "could be either newly constructed… or a combination of upgraded sections of existing roads connected by new construction." Due to the economic downturn following the Great Depression, many of these projects were delayed and the proposed highway system was not completed until the 1940s.[461]

Old Mine Road North and the River Road System

In August 1909, *Good Roads Magazine* reported that "The Bd. Of Freeholders has passed a resolution providing for the improvement of the River Road in Montague township."[462] The report does not include information about the exact location of these improvements along River Road or what these improvements may have entailed. However, it is possible that these improvements were intended to make the roads better suited for automotive traffic, accommodating the changing needs of local farmers, merchants, and tourists around this time.

456. Hugill, "Good Roads and the Automobile in the United States 1880-1929," 327.
457. Hugill, "Good Roads and the Automobile in the United States 1880-1929," 335–36.
458. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 82–83.
459. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 83–84.
460. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 81–84.
461. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 374.
462. "Newton, N. J.," *Good Roads Magazine*, August 1909, 669, https://babel.hathitrust.org/cgi/pt?id=mdp.39015021735850&seq=7.

The following year, newspaper records indicated that a new road connecting Layton and Tuttles Corner was to begin construction. This road coincides with the eastern portion of the present-day Tuttles Corner/Dingmans Road (County Route 560). On June 3, 1910, the *Pike County Press* out of Milford published an article entitled "Notes from Sandyston" describing the planned road construction. According to the article, "It is reported that the new Macadem [*sic*] road from Tuttles Corner to Layton will begin early this month."[463] By 1915, newspaper articles indicate that plans were underway to extend the road from Layton to Dingmans Ferry, composing the western section of present-day Tuttles Corner/ Dingmans Road, which intersects with Old Mine Road North.[464] In 1917, the *Perth Amboy Evening News* published an article reporting on the status of construction. According to the article, the "Last connecting link on Dingman's-Layton road nearly finished by state prison labor. Less than 2,000 feet remain to be graded. Temporary stone pavement to be laid from Layton end when grading is finished." The article also notes that the road is made of "good macadam."[465] The use of macadam speaks to changing standards for roadway construction and increased automotive traffic in the area at the time.

A 1921 State Highway Commission report for the fiscal year ending June 30, 1921, contains a detailed list of township roads under construction or completed that year. There is no mention of Old Mine Road for Sussex County, and the only road listed for Sussex County is the Montague-Port Jervis Road, described as gravel and approximately three miles long. The report also lists construction of three miles of gravel road for Delaware River Road in Warren County, in Lopatcong Township.[466]

The 1921 annual report does not give details for construction or improvements to township roads, but it does detail the engineering standards for state routes, stating:

> The State highways herein provided for shall be paved with granite, asphalt or wood blocks, bricks, concrete, bituminous concrete, sheet asphalt or other pavement having a hard surface and of a durable character . . . In all cases … the width of the roadway shall be at least thirty feet, except at bridges, culverts, or grade crossings, where the width of the roadway shall be of such width or widths as the State Highway Commission may deem necessary and determine. All sharp turns and angles and railroad grade crossings shall be eliminated wherever practicable.[467]

In 1926, *The Courier News* published an article discussing a woman's petition to improve the section of Old Mine Road (referred to as Delaware Mine Road in the article) between Dingmans Ferry and Brick House at Montague. The article says the following:

> Following a hearing granted to residents of Sandyston Township, Sussex County, for aid in the improvement of the Delaware Mine from Dingman's Bridge to Brick House, the commission voted to have Major W. G. Sloan, the State High engineer, and Edward E. Reed, the assistant State Highway engineer, prepare a report on the condition of the thoroughfare. The speakers included Ira Stull and George R. Elligood, of Layton, and Mrs. William M. Sandford, of Plainfield, who has a summer home along the Delaware River in the township.
>
> They stated that the estimated cost of placing gravel on the five miles of the unimproved sections would be $27,000 and they were anxious to have the State give $20,000 toward this sum. They pointed out that the road is one of the oldest in the State, being formerly used to carry ore from the mines in that section. They maintained that an improved highway would materially enhance ratables in that section.[468]

Over the next several years, Sussex County was allotted state funding for road improvements. In

463. "Notes from Sandyston," *Pike County Press*, June 3, 1910.
464. "Layton-Dingmans Road Work Now Awaits the Completion of Two Bridges Near Springdale," *Newark Star-Eagle*, May 22, 1915.
465. "Report On N.J. Road Conditions," *Perth Amboy Evening News*, May 26, 1917.
466. New Jersey State Highway Department and New Jersey State Highway Commission, "Annual Report of the New Jersey State Highway Department for the Year Ending FY 1921," State Publication (Union Hill, NJ, 1921), 42, http://hdl.handle.net/10929/27474.
467. New Jersey State Highway Department and New Jersey State Highway Commission, "Annual Report of the New Jersey State Highway Department for the Year Ending FY 1921," 117.
468. "Plainfield Woman Urges State Highway Commission Improve the Sussex County Road," *The Courier News*, May 19, 1926. Note: "ratables" refers to property that provides tax income.

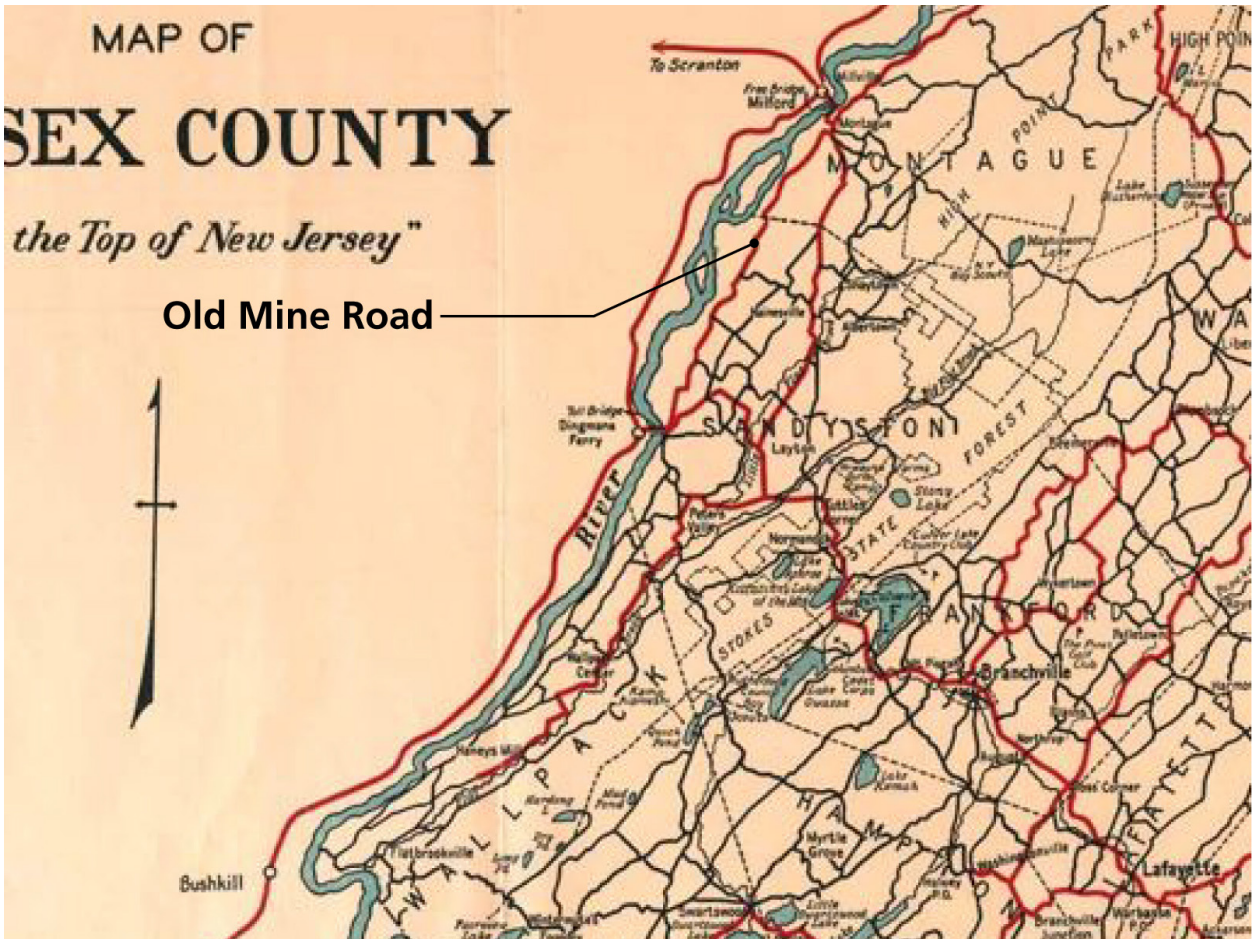


Figure 2.27. 1930 map showing Old Mine Road North, shown in red. From "Map of Sussex County." Newark, New Jersey: The Essex Press, Inc., 1930 (Source: Special Collections and University Archives, Rutgers University Libraries, http://mapmaker.rutgers.edu/SUSSEX_COUNTY/SussexCounty_1930.jpg).

1928, the state of New Jersey appropriated $3,000 for improvements to "Delaware-Mine Road" in Montague Township. There is no line item for the road in Sandyston Township listed in 1928.[469] In 1929, the State Highway Administration allotted Sussex County $111,300 in county aid from the motor vehicle fund, but the report does not list which roads received improvements. According to the 1939 *WPA Guide to 1930s New Jersey* (first edition published 1939), a majority of the 19.8-mile section of Old Mine Road between Montague and Rosencrans Ferry (including the entire Old Mine Road North section) was graveled. However, there were several small sections of the road that were paved with macadam by that time, suggesting that some improvements had been made to sections of the road. The also states that "the route is difficult to follow especially at junctions with other dirt roads," and describes the intersection at "Dingman's Road" (now Old Dingmans Road) as "the junction of three dirt roads with a macadamized highway," indicating that improvements were not consistent across the length of the roadway.[470]

The 1930 "Map of Sussex County" shows all of the major roadways in the county. Major thoroughfares, including the section of Old Mine Road North between Dingmans Ferry and Montague, are shown in red. The section of Old Mine Road south of Dingmans Ferry is depicted by a thinner, black line (Figure 2.27).

In 1932, Sussex County assumed control of those sections of Old Mine Road located in Montague and Sandyston townships. The resolution for the Montague portion read as follows:

469. "State Highway Department Report, 1928," Highway Department, Auditing and Accounting Bureau, Annual Reports, 1917-1931 (Trenton, NJ: New Jersey State Archives, 1928), 24.

470. Works Progress Administration, *The WPA Guide to 1930s New Jersey*, 473.

Whereas, application has been made to this Board by the Township Committee of the Township of Montague requesting that this Board take over as a County road, a certain road in the Township of Sandyston [other instances of Sandyston were altered to read Montague throughout the resolution, this one may be inadvertently left in] known as the Delaware Mine Road beginning at the Montague Township line to the Montague River Road and Brick House in Montague Township a distance of two miles which was improved with County aid under Chapter 185 P. L. 1918 and the supplements and amendments thereto, especially pursuant to Section 1128; and

Whereas the governing body of said municipality has signified its consent to the taking of the same by this Board; and

Whereas this Board is of the opinion that said road road [*sic*] should become a County road, and the interest of the County will be best met by the taking over of said road;

Therefore be it resolved, That this Board accept said offer and hereby acquire said road, the same to be a County road under the control of this Board after January 2, 1932.

Be it further resolved, That a copy of this resolution together with the map showing such road, be certified by the Clerk of this Board, and filed in the office of the County Clerk as required by law.

Be it further resolved, That this road be taken over with the understanding that the County shall be relieved of all damages by reason of any change of grade or change of alignment in the improvement of said road heretofore made.

Be it further resolved, That this road be taken over as a County road upon the condition that said municipality furnish such additional assurances or grants of land or rights of maps hereto attached if so requested by this Board.

Dated December 30, 1932.[471]

Also on December 30, 1932, an almost identical resolution passed for the Sandyston Township section of Old Mine Road, directly south of the section running through Montague Township. The opening statement of the resolution states the following:

> Whereas, application has been made to this Board by the Township Committee of the Township of Sandyston requesting that this Board take over as a County road, a certain road in the Township of Sandyston known as the Delaware Mine Road beginning at the Branchville-Dingmans road near Dingmans Bridge to the Montague Township Line a distance of five miles which was improved with County aid under Chapter 185 P. L. 1918 and the supplements and amendments thereto, especially pursuant to Section 1128…[472]

Both resolutions cite 1918 legislation, which dictated who would oversee road improvements efforts. Chapter 185 P. L. 1918 Section 1128 reads, as follows:

> Every board of chosen freeholders may by resolution, direct that any public road, or portion thereof located within any municipality within the county, or lying between and being the boundary line of any two municipalities within said county, said road being an extension of or connecting with some improved county road, or State road, be improved in such a manner as the said board by resolution shall direct; provided, however, the governing body of the municipality, or where said road shall be a boundary line as above stated, the governing bodies of the two municipalities shall make application to the said board for an improvement as a condition of the improvement, that the municipality or municipalities will pay such portion of the cost of the improvement as may be agreed upon. The amount or amounts so agreed upon shall be paid to the collector of the county and be disbursed at the direction of said board, and the work of the improvement shall be done under the direction and supervision of said board. Any road, or portion thereof, so improved shall remain a road of the municipality or municipalities and shall be

471. Sussex County Board of Commissioners, "Resolution, Taking Over Delaware Mine Road, Montague Township," December 30, 1932, Sussex County Deed and Records Room.

472. Sussex County Board of Commissioners, "Resolution, Taking Over Delaware Mine Road, Sandyston Township," December 30, 1932, Sussex County Deed and Records Room.

maintained and repaired by such municipality or municipalities.[473]

These changes in ownership are reflected in a 1939 "Road Map of Sussex County, New Jersey." In this map, the section of Old Mine Road between Dingmans Ferry and Montague is labeled as part of the county road system. The section of Old Mine Road south of Dingmans Ferry is labeled as an "Improved Township Road."[474]

This resolution does not mention the portion Old Mine Road North south of Dingmans Ferry, which is located in Sussex County and runs to Peters Valley. This section of Old Mine Road is not depicted in red in the previously mentioned 1930 "Map of Sussex County," suggesting that it was not an especially important or heavily trafficked section of road.[475] The 1927 "Road Map of Sussex County New Jersey" indicates that the section of the road system north of Montague, known as River Road, had already been adopted as a part of the county road system by that time.[476]

In 1932, the section of Old Mine Road between Dingmans Ferry and Montague was subject to a right-of-way survey to reflect current road conditions. The survey is referenced in the 1932 Sussex County resolution. These survey drawings show the general dimensions of the roadway and associated right-of-way, which is consistently thirty-three feet wide.[477] This width is consistent with the colonial-era method of measuring road width in 'rods,' each of which measured 16.5 feet.[478] The survey drawings also show the locations of buildings along the road, large culverts, and important marker trees. They indicate that there is a "guard rail post" at the south end of Old Mine Road North, where it intersects with the road to Dingmans Ferry. The survey drawings do not, however, indicate the material composition of this section of Old Mine Road.[479]

The following details can be gathered from the 1932 right-of-way survey conducted by Sussex County:

- A thirty-three-foot right-of-way is typical, road pavement width is not noted.
- Some culverts/drainage structures are noted on plan, but they vary in width.
- The culvert across Kittatinny Creek (also known as "Skunk Run") at Van Ness Road appears to be twenty-four feet wide and it appears to be a robust box culvert with wing walls.
- The culvert at STA 162.5 (on these drawings, not to be confused with MP stationing used for CLR project) about twenty feet wide.
- The culvert at Jager Road is about eighteen feet wide.
- The Black Farm-Minisink culvert is about twenty-eight feet wide.
- The bridge at Montague is eighteen feet wide.[480]

As mentioned, by the mid-1930s the WPA had established branch offices throughout New Jersey for the management of projects in the state. According to a letter from WPA State Administrator William H. J. Ely to E. Donald Sterner, Commissioner of the New Jersey State Highway Department, these projects were to be administered and reviewed by both agencies. WPA branch offices managed implementation and project management.[481]

473. "Laws--New Jersey, 1918, Chapter 185, Section 1128," New Jersey Chapter / Session Laws, New Jersey State Library, accessed March 21, 2023, https://www.njstatelib.org/research_library/legal_resources/historical_laws/session_laws/.
474. Harvey Snook, *Road Map of Sussex County, New Jersey* (New York, New York: General Drafting Co., Inc., 1939), Special Collections and University Archives, Rutgers University Libraries.
475. *Map of Sussex County* (Newark, New Jersey: The Essex Press, Inc., 1930), Special Collections and University Archives, Rutgers University Libraries, http://mapmaker.rutgers.edu/SUSSEX_COUNTY/SussexCounty_1930.jpg.
476. Harvey Snook, *Road Map of Sussex County, New Jersey* (New York: General Drafting Co., Inc., 1927), Special Collections and University Archives, Rutgers University Libraries.
477. "Delaware Mine Road, Sandyston & Montague TWPS., Sussex, Co., New Jersey," 1932, Sussex County Deed and Records Room.
478. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study," 20–25.
479. "Delaware Mine Road, Sandyston & Montague TWPS., Sussex, Co., New Jersey."
480. Sussex County Board of Commissioners, "Resolution, Taking Over Delaware Mine Road, Montague Township."
481. Ely to Sterner, "Works Progress Administration, New Jersey," April 13, 1938.

Between 1934 and 1959, the county and state approved a series of "Plans of Proposed Reconstruction" drawings for sections of Old Mine Road. In Sussex County, the plans depict improvements along portions of Old Mine Road, divided into Sections 1 through 7. These drawings depict approved work plans for portions of Old Mine Road south of the study area and show typical construction details and specifications for the roadway and related roadside structures. Unfortunately, research has not uncovered similar construction drawings from this period for the Old Mine Road North section. However, there are extant features present on Old Mine Road North that are typical of WPA-era road improvements completed on other sections of Old Mine Road, including some culverts, headwalls, guide posts, and pavement widths. The construction methods and materials of these features along the Old Mine Road North section are consistent with the construction documents produced for improvements to the other Sussex County sections of Old Mine Road between 1934–1959 (Figure 2.28).

A set of engineering drawings from 1934 shows a one-mile segment of Old Mine Road at Walpack Bend (Section No. 1). The drawings depict a typical roadway section, with two nine-foot-wide travel lanes with a two-foot shoulder on either side (Figure 2.29). Where guard rails were necessary, the right-of-way would be extended one foot on the opposite side of the guard rail.[482] The guard rails are shown to be eight inches wide. For this section of road, the drawings estimate that sixty "single guard posts" are needed, along with 1,565 linear feet of "wire rope railing." The road in this section was to be built of eight-inch-thick compacted gravel, designed with a "parabolic surface" to shed water, with a four-inch slope from the crown. The drawing also notes that the "cost of removal of existing drainage structures to be included in bid price for excavation," and it lists estimated quantities of needed culvert pipes, including twenty-eight linear feet of twelve-inch reinforced concrete pipe and 556 linear feet of eighteen-inch reinforced concrete pipe.[483]

Drawings of proposed work produced in 1935 show a 1.51 mile stretch of road, north of the section depicted in the 1934 drawings. This portion of Old Mine Road is referred to as Section No. 2. The road in this section would consist of two nine-foot-wide lanes with two feet of buffer on either side. The road in this section was to be built of ten inches of compacted gravel, designed with a "parabolic surface" to shed water, with a four-inch slope from the crown. Where guard rails were necessary, the right-of-way would be extended one foot on the opposite side of the guard rail. The guard rails are shown to be eight inches wide. The drawings also show guard rail posts with wire rope railing ("guard fence"), which consists of two ¾-inch galvanized cables fastened to six-inch by six-inch or ten-inch by ten-inch posts. The drawings do not specify the material of the posts. The wires were to pass through the central posts and attach to the end posts with turnbuckle fasteners. End posts and every third center post were to extend into the ground three feet, six inches and be secured with concrete. Culvert drawings for this section indicate that they were made of twelve- and eighteen-inch corrugated iron pipes, set in poured concrete headwalls. The headwalls were one foot, six inches at the base, roughly two feet, six inches below ground level, and twelve inches at the top (Figure 2.30). The top of the headwall extended twelve inches above the pipe. The width of the headwall is to be four times the diameter of the pipe in that given culvert.[484]

A section drawing from 1941 shows proposed work for Sections No. 3 and 4 of Old Mine Road, which are discontinuous. This drawing contains similar details to the earlier 1934 and 1935 drawings, with slightly different road dimensions. In these sections, the road is composed of two nine-foot-wide lanes with a four-foot buffer on either side. The road in these sections was to be built of ten inches of compacted gravel, designed with a "parabolic surface" to shed water, with a

482. The drawings use inconsistent nomenclature for guide rails, guard posts, and guard fence. In the descriptions of drawings, the terminology on each drawing set is used in the text. Existing conditions sections use "guard rail" for metal or timber railings on the road that prevent cars from leaving the road prism. "Guide posts" and "guide rail" is the terminology given to concrete and wire fencing, which exists along Old Mine Road North today.

483. Snook and Harris, "Plans of Proposed Reconstruction of River Road, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, May 21, 1934), Delaware Water Gap National Recreation Area.

484. Harvey Snook, "Plans of Proposed Reconstruction of River Road - Section No. 5, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, September 25, 1942), Delaware Water Gap National Recreation Area.

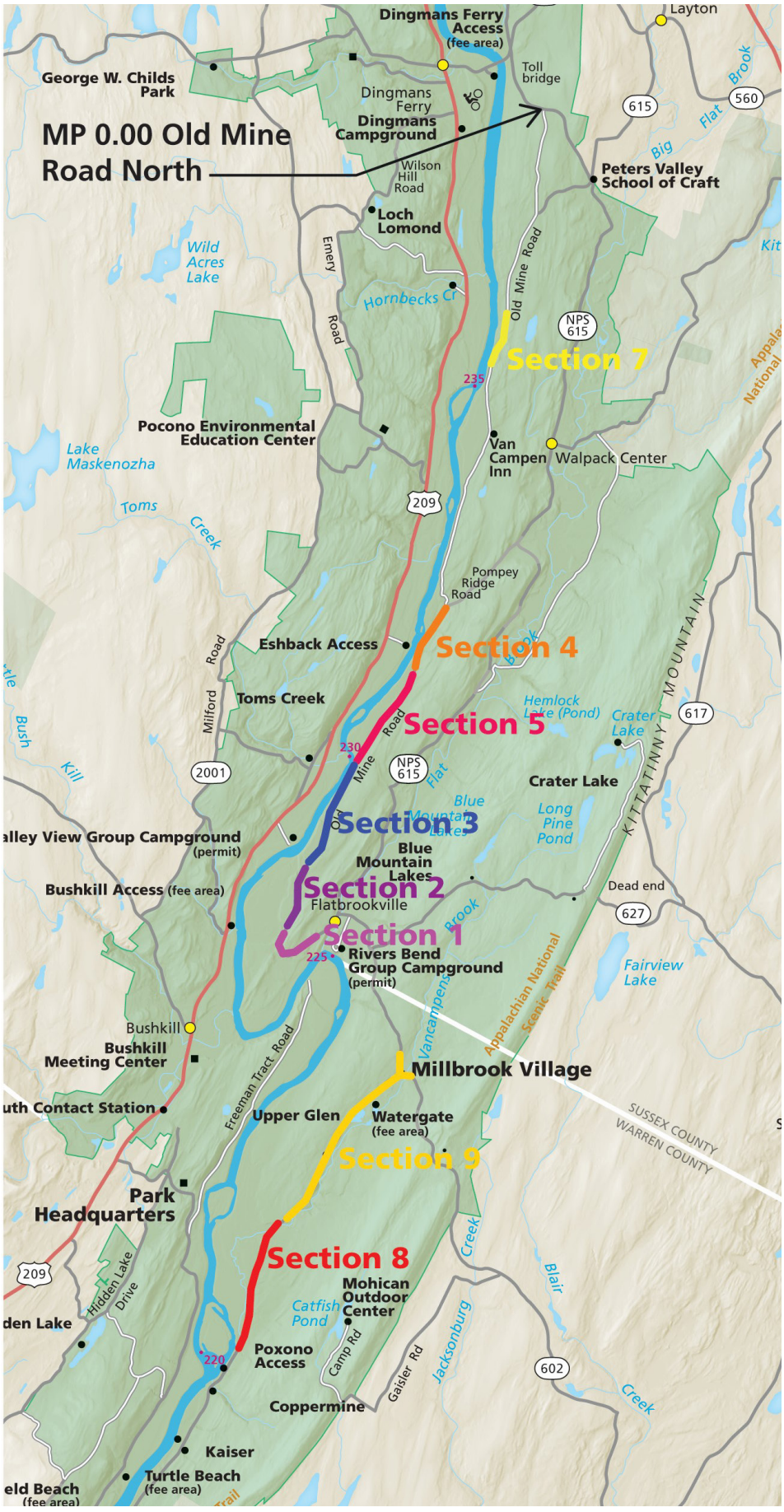


Figure 2.28. Illustration depicting Sections No. 1 through 7 in Sussex County and Sections No. 8 and 9 in Warren County. Historic engineering drawings show improvements to these sections of "River Road," referred to as "Old Mine Road" by DEWA staff (Source: Harpers Ferry Center with additions by WLA Studio, 2023).

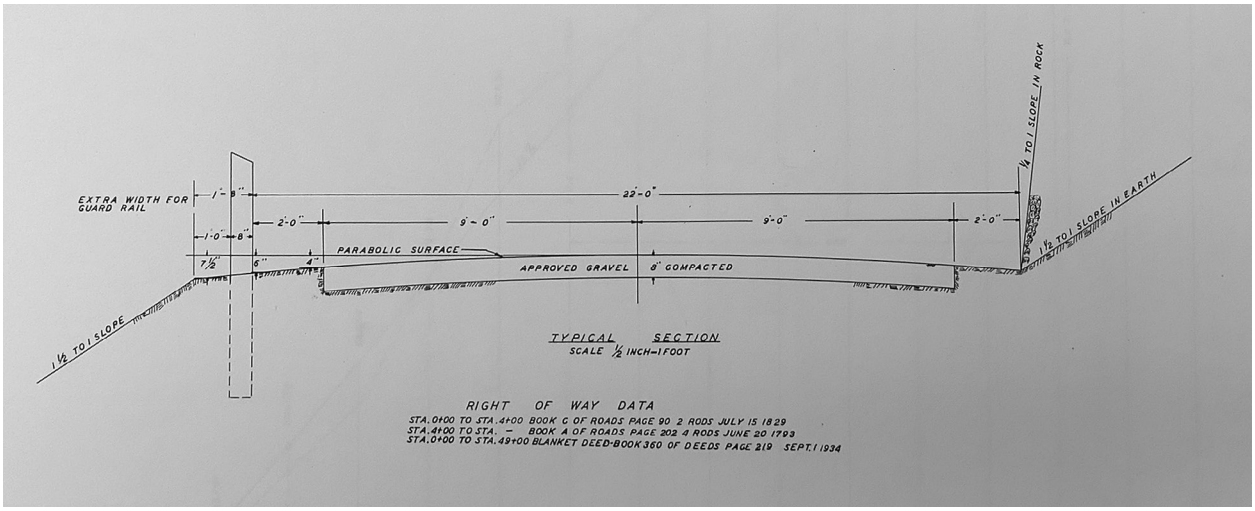


Figure 2.29. 1934 drawing for a one-mile segment of Old Mine Road (not Old Mine Road North) showing a typical section of the road (Source: DEWA Archives, Snook and Harris, "Plans of Proposed Reconstruction of River Road, Walpack Township, Sussex County, New Jersey," Bushkill, PA, May 21, 1934).

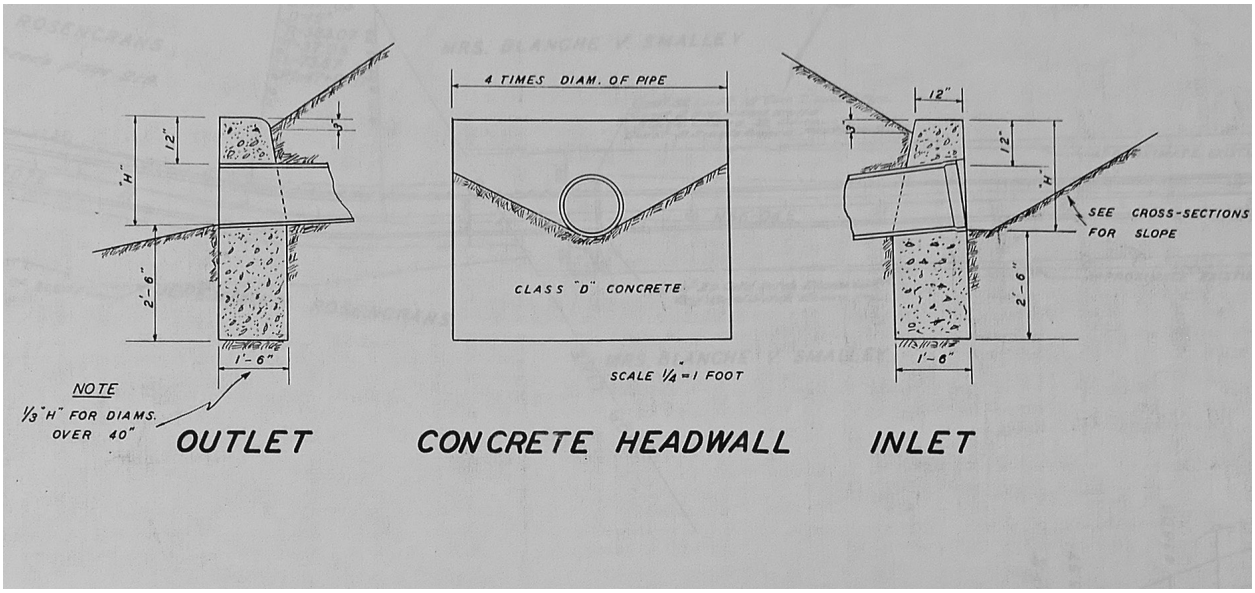


Figure 2.30. 1935 drawing for a section of Old Mine Road (not Old Mine Road North) showing the poured concrete headwalls to be located at the culvert outlets. This detail is present along Old Mine Road North (Source: DEWA Archives, Snook and Harris, "Plans of Proposed Reconstruction of River Road, Walpack Township, Sussex County, New Jersey," Bushkill, PA, May 21, 1934).

three-inch slope from the crown. Where guard rails were necessary, the right-of-way would be extended two feet on the opposite side of the guard rail. The guard rails in Sections No. 3 and 4 appear to the same as those in Section No. 2, consisting of two ¾-inch galvanized cables fastened to six-inch by six-inch or ten-inch by ten-inch posts, with the end posts and every third post secured in the round the concrete. These drawings, however, do denote the material of the guard rail posts, which are described as "timber," made of "dense square edge and sound grade southern yellow pine conforming to Section 6 Article 11.6.1 of New Jersey State Highway Standard Specifications 1935."[485]

A section drawing from 1942 shows a 1.56-mile section of Old Mine Road North of Walpack Bend, referred to as Section No. 5. This drawing contains similar details to the earlier 1934 drawings, with slightly different road conditions and the addition of a French drain system and mortar rubble headwalls for drainage pipes. In this section, the

485. Harvey Snook, "Plans of Proposed Reconstruction of River Road - Section 3 and 4, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, February 27, 1941), Delaware Water Gap National Recreation Area.

road is composed of two nine-foot lanes with a four-foot buffer on either side. Where guard rails were necessary, the right-of-way would be extended two feet on the opposite side of the guard rail. The road in this section is shown to be ten inches of compacted gravel, with a parabolic surface shape to shed water. The French drain system, referred to as Type F, contain a six-inch vitrified tile pipe, buried beneath broken stone, salt hay, and earth. Culverts in this section are made of twelve- or eighteen-inch reinforced concrete pipes set in mortar rubble headwalls. The rubble mortar headwalls are one foot, six inches wide at their base, and twelve inches wide at their tops. The headwall measures two feet, six inches below the pipe, and twelve inches above the pipe. The width of the headwall is four times the diameter of the given pipe.[486]

Drawings for Section No. 6 of Old Mine Road were completed in 1948 and approved by the state in 1951. The road in this section would consist of two ten-foot-wide lanes with a three-foot buffer on either side. The road in this section was to be built of ten inches of compacted gravel, designed with a "parabolic surface" to shed water, with a three-inch slope from the crown. Where guard rails were necessary, the right-of-way would be extended two feet on the opposite side of the guard rail. Culverts in Section No. 6 appear to be the same as those in Section No. 5, made of twelve- or eighteen-inch reinforced concrete pipes set in mortar rubble headwalls. The rubble mortar headwalls are one foot, six inches wide at their base, and twelve inches wide at their tops. The headwall measures two feet, six inches below the pipe, and twelve inches above the pipe. The width of the headwall is four times the diameter of the given pipe. Drawings for Section No. 6 also include descriptions of "field fencing," which consisted of four-foot, six-inch posts. According to the plans, these posts were to be made of either "cedar or locust," or "punched or self fastener steel T-bar posts." These posts were to be positioned fifteen feet apart, with four strands of twisted metal wire between.[487]

Drawings for Section No. 7 of Old Mine Road were approved in 1959. The road in this section would consist of two ten-foot-wide lanes with a three-foot buffer on either side. The road in this section was to be built of twelve inches of compacted gravel, designed with a "parabolic surface" to shed water, with a six-inch slope from the crown. Where guard rails were necessary, the right-of-way would be extended two feet on the opposite side of the guard rail. A separate page contained drawings and dimensions for culverts, guard rails, field fencing, and signposts in Section No. 7. The field fencing would match that described in Section No. 6, while the culverts would be mortar rubble headwalls, matching those found in Sections No. 5 and 6. The drawings for Section No. 7 also have descriptions of concrete guard posts (Figure 2.31). These posts are six feet tall and three-sided with pyramidal tops. The guide posts are to be spaced fifteen feet apart, attached with metal cables. These cables are attached to center posts with metal hook bolts and end posts with iron turnbuckle fasteners. According to the plans, "Cable and fittings to conform to N.J. State HWY. Dept standard specifications for road and bridge construction of 1941." Signposts are six feet, six inches tall above ground, with three feet, ten inches below ground. The signposts will be made of concrete, with three bolt holes toward the top of the post to hang signage.[488]

While research did reveal drawings for Sections No. 8 and 9, located in Warren County, no drawings for north of Section No. 7 (Old Mine Road North) were located during the research process. The only construction drawing located for this section of Old Mine Road is for a "bridge," dating to 1937 (Figure 2.32). The drawing appears to match the layout of the culvert at the Jager Road intersection with Old Mine Road North. The drawing reproduction quality is poor, but it depicts a board formed reinforced concrete culvert with wingwalls. The wingwall positions appear to match the layout of those at Jager Road. This construction likely occurred in conjunction with an intersection reconfiguration at this location that mapping shows occurred between 1931 and 1956.

486. Snook, "Plans of Proposed Reconstruction of River Road - Section No. 5, Walpack Township, Sussex County, New Jersey."

487. Losee, "Plans of Proposed Reconstruction of River Road - Section No. 6, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, September 6, 1951), Delaware Water Gap National Recreation Area.

488. George Harper, "Plans of Proposed Reconstruction of River Road - Section No. 7, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, December 1, 1959), Delaware Water Gap National Recreation Area.

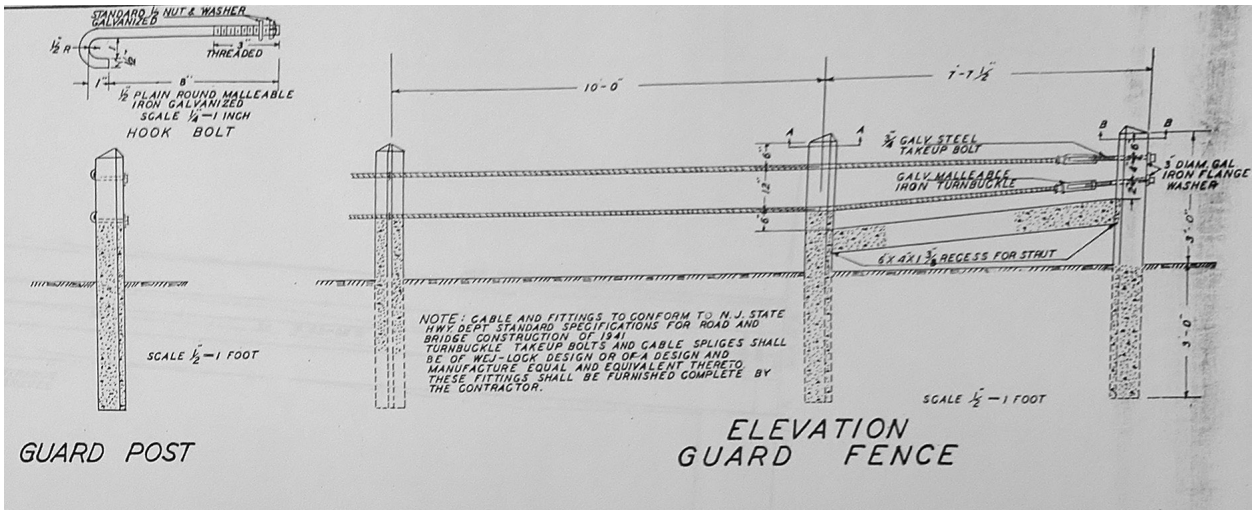


Figure 2.31. 1959 drawing for a section of Old Mine Road (not Old Mine Road North) showing details for concrete guide posts. This detail is present along Old Mine Road North (Source: DEWA Archives, Harper "Plans of Proposed Reconstruction of River Road - Section No. 7, Walpack Township, Sussex County, New Jersey," Bushkill, PA, December 1, 1959).

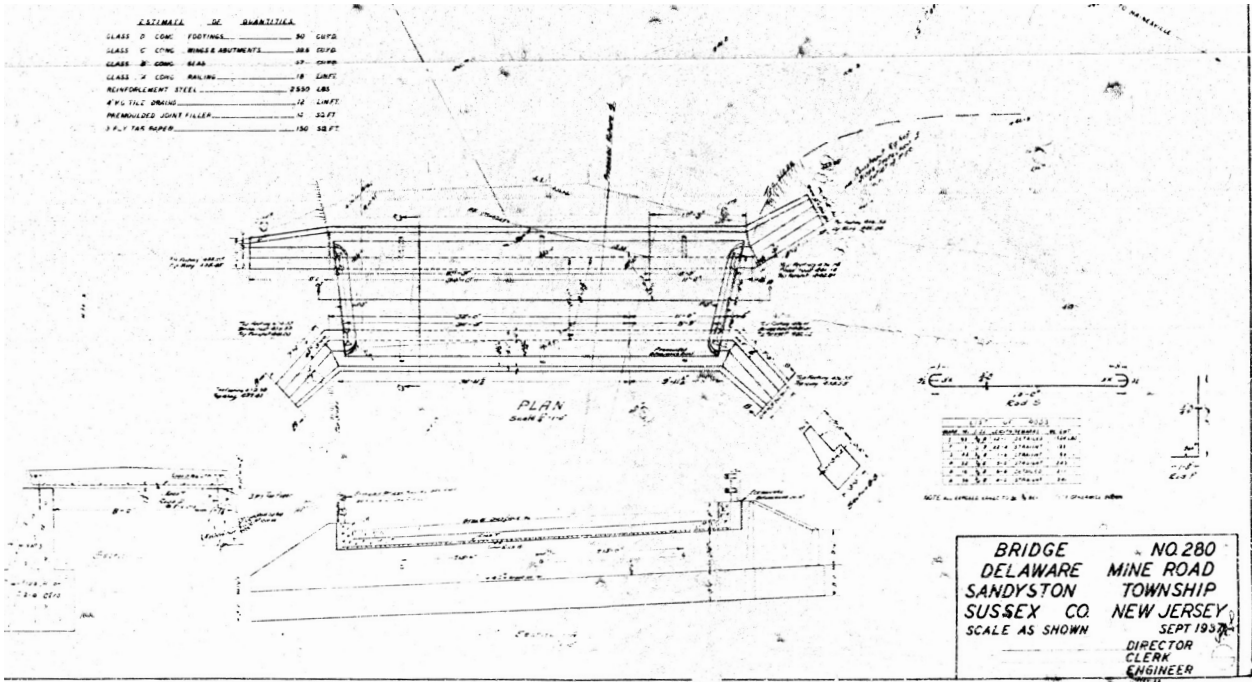


Figure 2.32. 1937 drawing of "Bridge No. 280" located at the Jager Road intersection with Old Mine Road North (Source: Sussex County Deed Room).

In the early 1950s, the state of New Jersey reconfigured the tangled five-way intersection at Montague, near the location of the historic Brick House Hotel, to streamline the path of U.S. 206. Using eminent domain, the state of New Jersey demolished the Brick House Hotel to make way for the realigned highway and a new bridge between Montague-Milford. The new highway opened in 1953. Other historic buildings in the small village of Brick House/Montague were demolished as part of the Tocks Island Dam project.[489] The realignment project and subsequent repaving and widening of U.S. 206 altered the historic configuration of the intersection between Old Mine Road North and the highway. Subsequently, Old Mine Road North became a secondary circulation route.

489. "Milford Bridge Dedicated," *The Courier-News*, December 31, 1953.

Lifeways During the Early Twentieth Century

Changing Farmstead Architecture and Land Use Patterns

As agricultural practices and production adapted during the early twentieth century, farmstead outbuildings and land use patterns changed accordingly. According to Clemensen, barns were still the dominant agricultural outbuilding, but increasing numbers of auxiliary buildings were clustered around barns during this period. Examples included corn cribs, hog barns, and silos (Figure 2.33). Dairy farmers often constructed additional silos. Farmers transitioned away from wooden silos, and by "1917 into the early 1920s, taller, glazed tile block silos appeared," followed by "concrete stave silos" by the 1940s. Farmers constructed milk houses as well, often located nearby or attached to a barn. Mechanized farm equipment became a common feature on farmsteads during this time, requiring new storage buildings and "machine repair shops." Additionally, the increasing rate of automobile ownership was accompanied by the appearance of garage outbuildings.[490]

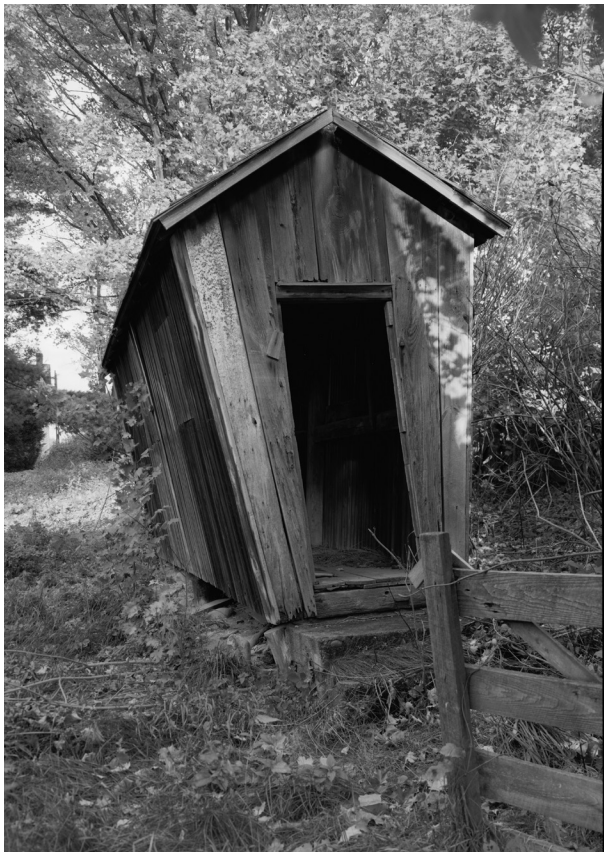


Figure 2.33. 1969 photograph of a corn crib at Knight Farm in Flatbrookville, Sussex County, NJ, south of the Old Mine Road North project area. The farm was developed between 1890–1910. (Source: Library of Congress, https://www.loc.gov/item/nj0148/).

Motorized farm equipment became ever more common during this period, and Clemensen notes that gasoline-powered tractors reached the area by 1919. The proliferation of motorized farm equipment, combined with the increasing use of personal automobiles during the early twentieth century, eliminated the reliance on horses for labor and transportation, and Clemensen notes that "By 1945 nearly all horses disappeared from farm use."[491] Farmers enlarged fields to accommodate this new machinery, "Old fence rows were removed to increase field size," and "some rock rows were displaced by bulldozer to enlarge fields, but, for the most part, the rock rows on mountain slope fields. . .remained undisturbed and natural succession continued." According to Clemensen, most agricultural fields during this period were left unfenced, and dairy farmers "tended to fence only the yards in which the dairy cattle were kept." Fences built during this period were primarily "woven wire fences," attached to wooden or steel posts, while "Some farmers used board fences or modern wood rail fences built of 2×4s or 2×6s attached to posts."[492]

The introduction of electricity also transformed life on rural farmsteads. The possibility of electrification was mentioned in an article of the *Pike County Dispatch* in 1926. According to the article, a group of surveyors were investigating the possibility of establishing power line in Milford and Montague, noting that "A power line passing through this section would be a great convenience to the farmer of today for lighting purposes, pumping, power, etc. Nearly every farmer here has a radio and engines that are now run by kerosene and gas."[493] In 1937, *The Central New Jersey Home News* published an article about the Rural Electrification Administration (REA), noting that the New Deal agency announced "an allotment of $42,000 to build thirty-five miles of

490. Clemensen, "Preliminary Historic Resource Study," 76–77.
491. Clemensen, "Preliminary Historic Resource Study," 76–77.
492. Clemensen, "Preliminary Historic Resource Study," 76–77.
493. "Electric Lights for Montague," *Pike County Dispatch*, January 14, 1926.

power line in Sussex County, N. J.," which would serve an estimated two hundred people.[494] In 1938, *The Morning Call* published an article about the welcomed introduction of electricity among farmers in northern Sussex County, saying the following:

> Northern Sussex County farmers and their wives, who will soon discard the candles and kerosene lamps which have been their principal mode of illumination for generations, met in the Wantage Township Consolidated school near Sussex Wednesday night in a form of celebration of the installation of electricity in their communities. The Rural Electrification Administration, subsidized by federal funds, recently completed a project which is now providing 260 Sussex County farm houses with electricity. More than 100 miles of line have been erected thus far.[495]

The introduction of electricity helped alleviate many types of physical labor needed on rural farmsteads. Electrical lighting extended working hours, and one "study showed that electrical lights added two to four hours a day to a family's potential working time."[496] Water pumps eliminated the need to physically pump and haul water to the house and to outbuildings, saving farm families time and energy. Appliances like washers and refrigerators saved time and energy, particularly for women on rural farmsteads. As described by historian David E. Nye, "electrical appliances lengthened the day, eliminated much of the heaviest labor, improved family health, and spruced up the farm's general appearance."[497]

Crop production also underwent a notable transition during the early twentieth century. Buckwheat planting ended by 1920, and by 1945, few farmers produce wheat, rye, or oats. Some farmers began to plant soybeans on acreage previously used for wheat and rye during the 1920s. Clemensen notes that generally, "Corn remained as the predominant crop with a large amount chopped for silage" to feed dairy cattle.[498]

Apart from outbuildings, there was limited new residential construction on farmsteads, and most construction was limited to "additions or alterations."[499] As noted previously, struggling farmers often decided to sell their property, and many agricultural farmsteads were purchased by out-of-towners as second homes and summer retreats. Examples of this phenomenon on the New Jersey side of the Delaware River include the Miller Farm, the Benjamin B. Van Campen Farm, Salamovka, and the Jacob Roe House. Along Old Mine Road North examples include Heron's Nest and the Anson Johnson House.[500]

This transition in ownership was often accompanied by significant changes in land use trends and landscaping practices. While nearby farmers or tenant farmers often rented out agricultural fields, the domestic landscapes became more intentionally designed and manicured. Clemensen describes how these new owners transformed agricultural properties, stating:

> In the course of ownership, summer residents usually changed the farm yards they occupied by expanding the farm house and adding buildings such as caretakers' quarters and much more landscape details. Frequently, nearby streams were channeled and bridged, ponds were created, more shrubbery, trees, and flower were planted, decorative retaining walls were constructed, and driveways were lined with trees to form an allée. On occasion, tenant farm homes were built nearby. These new owners usually continued to farm by renting the land or hiring tenant farmers. Consequently, some agricultural elements remained amid the landscape changes.[501]

As wealthy vacationers purchased farmsteads and transformed them into vacation homes with more ornamental landscapes, their historically agricultural character became somewhat secondary.

494. "Power Line Project for Sussex County," *The Central New Jersey Home News*, April 18, 1937.
495. "Farmers Discard Kerosene and Candle Lamps," *The Morning Call*, April 4, 1938.
496. David E. Nye, *Electrifying America: Social Meaning of a New Technology, 1880-1940* (Cambridge, Massachusetts: The MIT Press, 1990), 323.
497. Nye, *Electrifying America: Social Meaning of a New Technology, 1880-1940*, 323–24.
498. Clemensen, "Preliminary Historic Resource Study," 77.
499. Clemensen, "Preliminary Historic Resource Study," 76.
500. Clemensen, "Preliminary Historic Resource Study," 275–77.
501. Clemensen, "Preliminary Historic Resource Study," 261.

A notable example of this changing cultural landscape pattern occurred at Heron's Nest, which Frank Stoll purchased in 1927. According to Clemensen, Stoll previously lived in Brooklyn, New York, where he "was a horticultural expert with the Brooklyn Botanic Garden," and Stoll's professional career likely informed the various additions and alterations made to the Heron's Nest property during his ownership, particularly those changes made to the property's landscaping.[502] Stoll made several notable changes to the main house, including the construction of a two-story stucco addition on the west and north sides of the house. Stoll then built a two-story garage workshop with a second-floor apartment, just north of the Heron's Nest main building, in 1932. Stoll also transformed the surrounding landscape, adding several decorative stone walls, as well as a small pond with a decorative concrete footbridge.[503] In June of 1934, Stoll hosted a visit from members of the Brooklyn Nature Club, presumably to tour the landscape Stoll had designed on his property.[504]

Landscape Summary

The use of gasoline-powered motorized farm equipment rapidly expanded during the early twentieth century. Farmers continued to enlarge fields to accommodate this machinery, removing some fences and rock rows, and constructed new storage outbuildings for mechanized farm equipment. In terms of buildings and structures during this period, as farmers adopted trucks to haul their goods to market, garages became common features on farmsteads. Corn cribs and silos remained common, and silo building traditions changed during the first half of the century. Wooden silos were replaced by tile block silos during the 1920s, followed by concrete silos in the 1940s. Many farmers also constructed milk houses, often directly adjacent to or attached to their dairy barns. During the 1930s, farmsteads and residences along Old Mine Road North likely began receiving overhead electrical utilities via New Deal-era federal agencies like the REA.

Stone rows built during earlier periods remained in place, and other small-scale features that accompanied farmsteads along Old Mine Road North included various types of wooden and metal fencing. Additionally, the Daughters of the American Revolution (DAR) erected a stone marker at the entrance to the Westbrook-Bell property in 1934, commemorating the historic significance of the site and of Old Mine Road.

Aerial photographs from 1931 show that farmsteads often contained a cluster of outbuildings near the main house (Figure 2.34). This cluster arrangement was typically surrounded by large agricultural fields, and several farmsteads have rectilinearly arranged orchards. Some of the farmsteads are situated close to the edge of Old Mine Road North, while several are set back from the main road and accessible via small auxiliary roads. In general, the land on the west side of Old Mine Road North consists primarily of cleared agricultural fields with small, forested plots. The east side of Old Mine Road North, which is more heavily sloped, has a more balanced mixture of cleared agricultural fields and forested areas. Some of these forested areas were likely former agricultural fields that had returned to natural succession after farmers sold or abandoned them, but the agricultural character of the landscape remains readily apparent in the aerial photograph.

Apart from new agricultural outbuildings on active farmsteads, very limited residential construction occurred during this period and most residential construction was in the form of additions or alteration to existing structures. Many struggling farmers sold their property, and numerous farmsteads were converted into seasonal vacation homes, such as Heron's Nest and the Anson Johnson House. As former farmsteads were converted into vacation homes, their landscapes changed accordingly. While some property owners rented fields to neighboring farmers or tenant farmers, the landscapes surrounding the main house became more highly manicured, designed for aesthetic and leisurely purposes.

502. Clemensen, "Preliminary Historic Resource Study," 275.
503. Clemensen, "Preliminary Historic Resource Study," 275–76.
504. "Brooklyn Botanic Garden Record" XXIV, no. 1 (January 1935): 139.

Figure 2.34. 1931 aerial photograph of Old Mine Road North. Note the numerous agricultural fields along the west side of Old Mine Road North, as well as the more balanced mixture of open fields and scattered forest on the east side of Old Mine Road North. Also note the cluster arrangements typical of farmsteads along the road. Old Mine Road has been traced in yellow (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation by WLA Studio).

Based on 1930s aerials, it appears that the overall route and footprint of Old Mine Road North closely aligns with its current position. The material composition of the road during this period is unknown. By 1917, the new macadam Tuttles Corner/Dingmans Road (County Route 560) was close to completion, intersecting with Old Mine Road North just east of the Dingmans Ferry Bridge. In 1926, residents along Old Mine Road North petitioned to have the road improved and graveled, suggesting that the road was unimproved at that time. A WPA publication from 1939 described Old Mine Road North as graveled, with small sections of macadam, indicating that some road improvements had occurred by that time.

Throughout the early twentieth century, Old Mine Road North was subject to several road improvement projects, and structures built during this period include various types of culverts and guard rail and cable systems. Stone, concrete, and metal are the primary culvert materials found along Old Mine Road North dating to this period, with stone and concrete likely predating metal examples. From 1930 through the 1950s, the WPA initiated a series of road improvements projects on other sections of Old Mine Road, and the metal culverts found along Old Mine Road North are of the same materials and design. The concrete guard rail posts and steel cable systems found along Old Mine Road North also closely resemble those built along other sections of Old Mine Road during this era of road improvements. In the early 1950s, the five-way intersection at the north end of Old Mine Road North in Montague was reconfigured. The Brick House Hotel and several other historic buildings were demolished using eminent domain.

In terms of intersections that still exist along Old Mine Road North, the three-way intersection of Walpack Road and Old Mine Road appears in its current location on a 1931 aerial photograph. Old Mine Road turns south at the intersection; Walpack Road continues to the southeast. The 1931 aerial photograph shows the southern leg of Old Mine Road curving slightly to the northeast as it joins the intersection. This alignment and the location of the road remains consistent in historic aerial photographs to present day. The intersection of Old Dingmans Road and Old Mine Road North appears in the 1931 aerial photograph. The intersection remained in this location and with this configuration for several decades. By

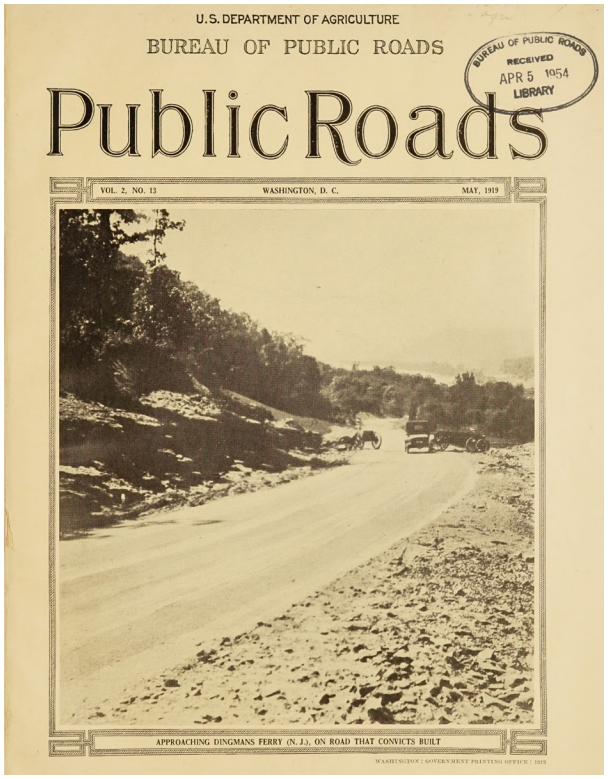

U.S. DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
BUREAU OF PUBLIC ROADS RECEIVED APR 5 1954 LIBRARY
Public Roads
VOL. 2, NO. 13 WASHINGTON, D. C. MAY, 1919
APPROACHING DINGMANS FERRY (N. J.), ON ROAD THAT CONVICTS BUILT
WASHINGTON : GOVERNMENT PRINTING OFFICE : 1919

Figure 2.35. 1919 cover of *Public Roads* magazine with a photo entitled "Approaching Dingman's Ferry (N.J.) on a Road that Convicts Built," (Source: W. G. Thompson, "New Jersey Maintains Three Convict Road Camps; Plans to Expand System That Has Shown Value," *Public Roads).*

1919, Sussex County had begun construction on a new road connecting Layton to Dingmans Ferry (later known as Tuttles Corner Dingmans Ferry Road/CR 560) (Figure 2.35).[505] While USGS maps from this time period do not correctly show this alignment and continue to show Old Dingmans Road, as the east–west route in this area, by 1927, a Sussex County road map show this alignment was in place, creating the intersection configuration with Old Mine Road North that is in place today.

The location of the Mettler Road intersection was recorded in the 1931 aerial photograph. The intersection also appears on a 1943 USGS topographic map. In 1943 map, Mettler Road meets Old Mine Road on an acute angle from

505. W. G. Thompson, "New Jersey Maintains Three Convict Road Camps; Plans to Expand System That Has Shown Value," *Public Roads*, May 1919, 29–32. The issue of convict labor on road construction in New Jersey deserves study. While there is no evidence that Sussex County used convict labor for construction projects on Old Mine Road North, it is evident per this publication that that was the case on adjacent roads. Sussex County established convict labor camps during the 1910s and 1920s for road construction projects. Future research may reveal a connection between this practice and Old Mine Road North.

the north. The same condition and alignment of road exists today. Van Ness Road and its intersection with Old Mine Road North appear on the 1931 aerial photograph and a 1943 USGS topographic map. By 1956, an aerial photograph shows Old Mine Road's alignment shifting slightly as the road enters the intersection of the north. Old Mine Road has a gentler curve leading into the intersection that continues through the intersection before the road continues to the south, indicating that a road project improved drivability of this intersection sometime in the early 1950s. Later aerial photographs from the 1950s and early 1960s show no substantial changes to the layout of the intersection after 1956.

The Jager Road/Old Mine Road intersection appears again on the 1913 USGS topographic map for Milford, Pennsylvania. The map shows the T-shaped intersection and the distinctive curve in Old Mine Road North as it traveled slightly southeast while approaching the intersection from the north. South of the intersection, Old Mine Road North curved back to the southwest. The 1931 aerial photograph also shows the intersection with Jager Road in its current location. Aerial photographs from the 1950s and early 1960s show no substantial changes to the two roads or the intersection.

By 1913, as shown on a USGS topographic map from that year, the intersection at U.S. 206 had become a five-way intersection. A 1913 map also shows Old Mine Road North entering the intersection more from the southwest. A 1932 right-of-way survey shows Old Mine Road curving slightly north as it approaches this intersection. A 1944 USGS topographic map shows that U.S. 206 had been enlarged and improved by that year. It was symbolized as a "secondary, hard surface, all weather road," compared with Old Mine Road North, which was symbolized as "loose surface graded, dry weather."

In terms of roads that are not active present-day, the road known as Penn Avenue appears on a 1931 aerial photograph. The 1931 aerial photograph shows two roads approaching the Ennis House from Old Mine Road North. One road cut diagonally from the southeast across a field between the Ennis House and Old Mine Road North. A second road, approximately four hundred feet north of the diagonal road, led almost straight from Old Mine Road North to the north side of the Ennis House along the border between two fields. Once past the Ennis House, the road curved to the northwest and then curved back to the west and continued toward the Delaware River. Neither road appears on the 1913 USGS topographic map, but the diagonal road approaching the Ennis House from the southeast does appear on a 1944 and 1958 USGS topographic map. Comparing aerial photographs taken in 1931 and 1956 shows that the southern, diagonal drive was abandoned prior to 1956, and the straighter, northern route along the border between two fields became the primary drive toward the Ennis House. The southern, diagonal drive was barely visible in the 1956 aerial photograph and not visible today from the Old Mine Road North roadway. The straighter, northern drive was visible in aerial photographs from the 1950s and 1960s. Minisink Cemetery Road (MP 4.87) appears on the 1931 aerial photograph. The road, which was lined with trees in 1931, provided access to the Minisink/Westbrook Cemetery. The road continued west, passing through fields toward the Delaware River. The road appears again in aerial photographs from the 1950s and 1960s. The road also appears on a 1959 USGS topographic map. Van Etten Road appears on a 1913 map of Sussex County intersecting Old Mine Road from the east near the Black Farm. On the 1913 map, Van Etten Road formed a T-shaped intersection with Old Mine Road North. A 1931 aerial photograph also shows the road, but by 1931 Van Etten Road featured a distinct curve to the south just before the Old Mine Road North intersection. Van Etten Road intersected Old Mine Road North as the road curved south, essentially joining the road on axis to its southbound alignment.

Component Landscapes

Bevans-Hellwig Farm (ca. 1796, MP0.0)

The Bevans-Hellwig Farm was converted into a vacation home during the 1930s. A small rear wood-framed addition was built around this time, attached to the rear wall of the fieldstone kitchen wing.[506]

An aerial photograph from 1931 shows large agricultural fields surrounding the Bevans-Hellwig Farm. The 1931 aerial also shows a small rectilinear

506. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 721–22.

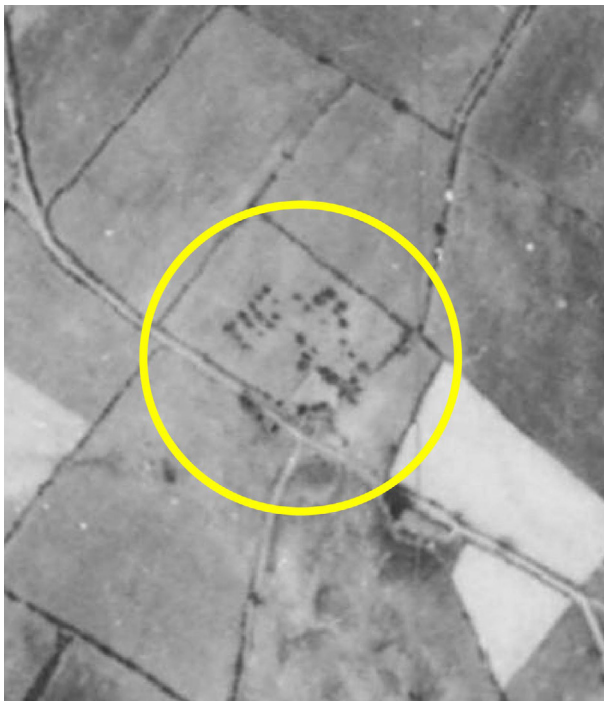


Figure 2.36. 1931 aerial of the Bevans-Hellwig property, shown inside the yellow circle. Note the small rectilinear orchard northwest of the farm (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Figure 2.37. 1931 aerial of Heron's Nest, shown in the yellow circle. Note the scattered tree coverage northwest of the property. (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

orchard northwest of the house, and it is possible that there are several outbuildings clustered around the farmstead (Figure 2.36). According to Clemensen, outbuildings that historically existed on the property included two barns, a privy, and a tool shed (none of these outbuildings are extant).

Heron's Nest (ca. 1830, Mettler Road)

Heron's Nest underwent extensive changes during the early twentieth century. By the 1930s, Frank Stoll purchased the property and converted it to a summer home. Stoll constructed stucco additions to the west and north sides of the house to expand interior spaces. Stoll also constructed a two-car garage and workshop building with a second-floor apartment north of Heron's Nest in 1932. During the 1930s, Stoll added a retaining wall made of river stones, a small pond with a decorative concrete bridge, and rubble stone wall on the property.[507]

An aerial photograph from 1931 shows large agricultural fields surrounding Heron's Nest. The fields northwest of Heron's Nest show some scattered tree coverage (Figure 2.37). It is possible these plots returned to natural succession by this time and were beginning to reforest.

John Wesley Van Auken House (ca. 1760, Mettler Road)

An unknown party built a small entryway stoop on the Van Auken House sometime around 1900. The entryway stoop has wood box columns and simple, unadorned entablatures. No other additions are known to have occurred during this period.[508]

1931 aerial images show the Van Auken House surrounded by cleared agricultural fields. A large barn is positioned west of the house. Pictures of this barn are included in a 1974 architectural survey. The barn appears to be wood framed with a stone foundation (it is unknown if this barn is still extant).[509] The 1931 aerial shows a small orchard east of the house (Figure 2.38). It appears that the overall profile of Mettler Road has changed very little since this period.[510]

507. Clemensen, "Preliminary Historic Resource Study," 275-276.

508. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 752.

509. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 755–56.

510. Historic Aerials, 1931, https://www.historicaerials.com/viewer.

Figure 2.38. 1931 aerial of the John Wesley Van Auken House, shown in the yellow circle. Note the large barn situated west of the house and the rectilinear orchard east of the house (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

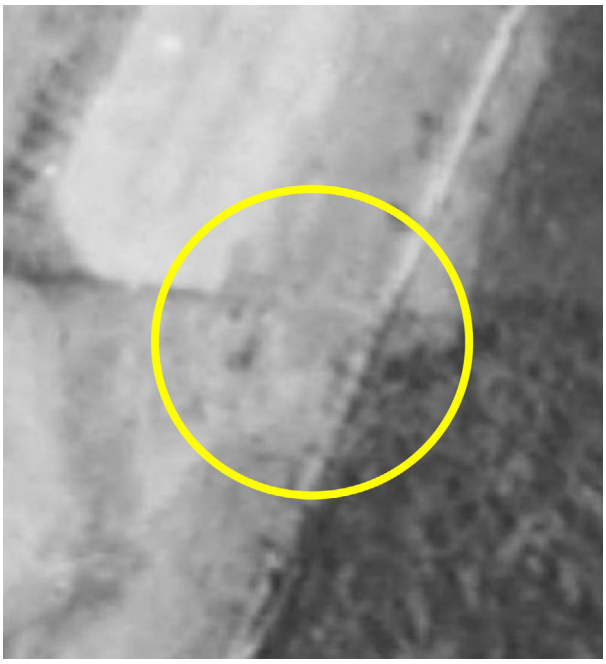


Figure 2.39. 1931 aerial of Mettler Cemetery, shown in the yellow circle. Note that open fields surround the cemetery on the north, south, and west sides at this time (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Mettler Cemetery (ca. early nineteenth century, MP 1.65)
Mettler Cemetery remained in use during this period. The number of burials and the presence of any notable landscape features during this period are unknown. 1931 aerials indicate that the cemetery was surrounded by open fields at this time (Figure 2.39).

Depue House (ca. 1780, MP 2.8)
According to a 1970 HABS report, George W. Depue built a large two-story, wood-framed addition on the rear elevation of the Depue House sometime during the early twentieth century (this addition is no longer extant). The HABS report also includes several undated historic photographs. One photograph shows a southeast oblique view of the Depue House. The rear wood-framed addition is not yet present. The front yard is bound by a wood picket fence. Eight members of the Depue family are standing in the foreground of the picture, alongside five horses and one horse carriage.[511] There are no visible outbuildings in this photograph. Old Mine Road North appears to be a dirt road at the date of the photo (Figure 2.40).

Another undated photograph shows the east elevation of the building. The wood picket fence is present in this photograph, and Old Mine Road North appears to be a dirt road. A wood post and rail fence is visible on the opposite side of Old Mine Road North, facing the Depue House. There are no visible outbuildings in this photograph (Figure 2.41).

Another undated photograph taken from the east side of Old Mine Road North, positioned up on the ridge above the property shows an open, agricultural landscape. Additionally, this photo shows outbuildings and fences areas situated opposite the main house, on the east side of the road (Figure 2.42).

A 1931 aerial image shoes a large rectilinear orchard north of the Depue House (Figure 2.43).

511. Park personnel have identified these individuals as members of the Depue family.

Figure 2.40. An undated photograph of the Depue House. Note that Old Mine Road North appears to be a dirt road at this point. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 2.41. An undated photograph of the Depue House. Note that Old Mine Road North appears to be a narrow dirt road at this point. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 2.42. An undated photograph of the Depue House property, facing west. Note the large agricultural fields and multiple outbuildings. Note the open view toward the Delaware River and the mountains beyond. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 2.43. 1931 aerial of the Depue House, shown in the yellow circle. Note the rectilinear orchard north of the house. (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation by WLA Studio).

Anson Johnson House (ca. 1840, MP 4.2)
There is limited information available about the history of the Anson Johnson House during this period. At an unknown date, sometime between the 1950s and the 1970s, the owners removed a two-story porch from the facade of the house and replaced it with a one-story shed roof porch (Figure 2.44). A 1931 aerial photograph shows the Anson Johnson House surrounded by large agricultural fields, with a rectilinear orchard north of the house. It also appears that there may have been several large outbuildings behind the house (Figure 2.45). As noted, park personnel and the NJHPO estimate that the shed outbuilding was built around the same time as the main house, based on the structures form, construction methods, and fieldstone foundation, and likely functioned as a barn.

William Ennis House (est. 1751, MP 4.6)
An undated historic photograph shows the Ennis House prior to having any addition. In the photograph, the house is surrounded by a wooden post and rail fence. The photograph also shows two small outbuildings situated behind the dwelling (Figure 2.46). A 1931 aerial image shows the Ennis House surrounded by large agricultural fields on all sides. There are several outbuildings positioned west and northwest of the Ennis House (Figure 2.47). The Ennis farmstead is situated along an auxiliary road on the west side of Old Mine Road North.

A photograph taken for a 1937 HABS report shows a small wood-framed, shed roof addition on the south elevation of the building, likely constructed circa 1900 (Figure 2.48).[512] According to the 1970 HABS report, a second wood-framed addition was added around 1952.[513]

Figure 2.44. Undated photograph of the Anson Johnson House showing a two story porch across the facade of the building. Outbuildings are visible on both the north and south sides of the house. There is fencing apparent on the south side of the house. DEWA staff identify this photograph as dating to the 1950s (Source: DEWA Archives).

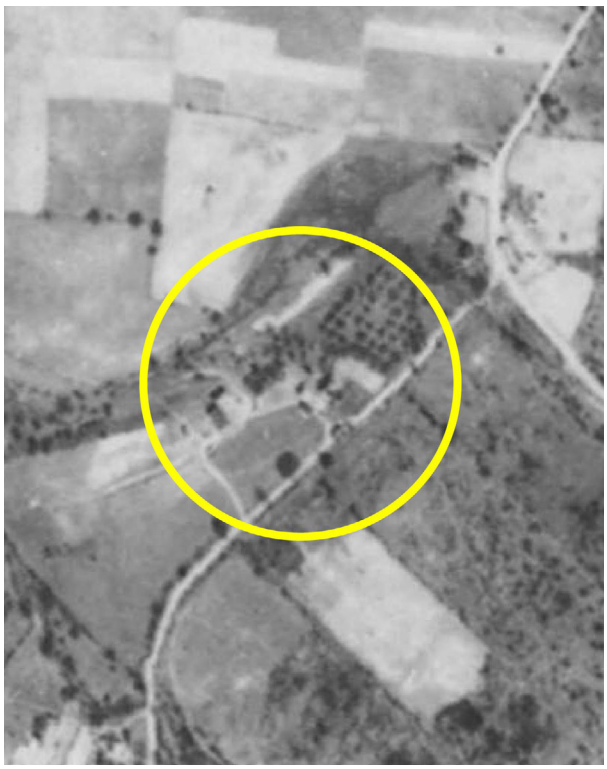


Figure 2.45. 1931 aerial of the Anson Johnson House, shown in the yellow circle. Note the large agricultural fields surrounding the property and the orchard northeast of the house. (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

512. "Draft Historic Buildings Strategy," 29.
513. Wesley Shank and William C. Badger, "William Ennis House," Historic American Buildings Survey (Sandyston Township, Sussex County, New Jersey: Department of the Interior, Heritage Conservation and Recreation Service, 1970).

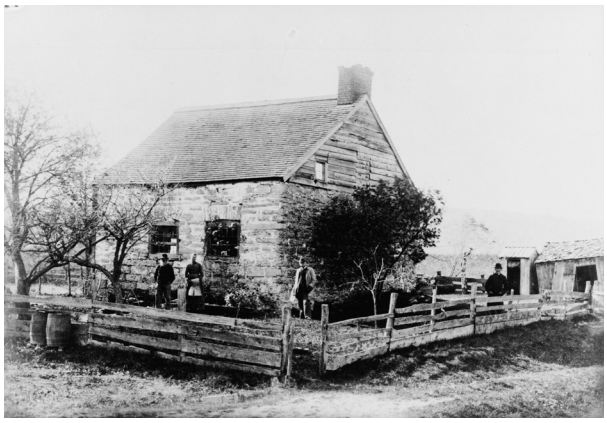


Figure 2.46. An undated photograph of the Ennis House prior to later additions. Note the wooden post and rail fence and the two small outbuildings behind the house. From Wesley Shank and William C. Badger, "William Ennis House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0823/).

Figure 2.47. 1931 aerial of the Ennis House, shown in the yellow circle. Note the large agricultural fields, fence lines, and outbuildings. (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation by WLA Studio).

Figure 2.48. A 1937 photograph of the William Ennis House. Note the wood-framed shed roof addition. From Wesley Shank and William C. Badger, "William Ennis House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0823/).

Figure 2.49. An undated photograph of the Westbrook-Bell House. Note the two brick chimneys in either gable end. From Wesley Shank and William C. Badger," Johannes Westbrook House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0147/).

Westbrook-Bell Farm (ca. pre-1730, MP 5.14)

The Westbrook-Bell House underwent several changes during the early twentieth century. A historic image taken around the turn of the century shows the building with two brick chimneys at either gable end (Figure 2.49). HABS photos taken in 1937 indicate that the owners had removed both of these chimneys and replaced the brick chimney in the east gable with a concrete block chimney (Figure 2.50).[514] During the early twentieth century, an unknown party constructed a small wood-framed addition on the north elevation of the building, abutting the earlier stone wing addition.[515]

Figure 2.50. A 1937 photograph of the Westbrook-Bell House. Note the owner has removed the two brick chimneys, and a concrete block chimney in the east gable replaces it. From Wesley Shank and William C. Badger, "Johannes Westbrook House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0147/).

514. Rebecca M. Cybularz, "Westbrook-Bell House," Historic Structure Assessment Report (Sussex County, NJ: Delaware Water Gap National Recreation Area, February 2015), 2.11-2.12.
515. Shank and Badger, "Johannes Westbrook House."

Figure 2.51. 1931 aerial of the Westbrook-Bell Farm, shown in the yellow circle. Note the large agricultural fields surrounding the house and the numerous outbuildings. Also note the large rectilinear orchard northeast of the property (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Figure 2.52. 1931 aerial of the Black Farm, shown inside the yellow circle. Note that the property is surrounded by large agricultural fields and the presence of several large outbuildings (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Aerial images from 1931 show the Westbrook-Bell House with cleared agricultural fields on its north, south, and east sides (Figure 2.51). There is a rectilinear orchard north of the main house. Additionally, there is a cluster of outbuildings positioned around the house. There are four large outbuildings east of the Westbrook-Bell House (two of which are still extant), and one large outbuilding south of the house. Smaller outbuildings were likely present but are not visible on the aerials.

The Westbrook-Bell farmstead is situated along an auxiliary road on the west side of Old Mine Road North. The road moves west through the farmstead before curving south and roughly following the contour of the riverbank.[516]

Black Farm (ca. mid to late eighteenth century, MP 5.3)

The Black Farm underwent several notable changes during the early twentieth century. According to a historic structure report that documented the Black Farmhouse, the owners enclosed a side porch and added a rear bathroom shortly before World War II.[517] A 1931 aerial photograph shows the Black Farm surrounded by large agricultural fields. South of the main house, there are several large outbuildings (two of which are still extant). There is also a rectilinear orchard southwest of the building cluster. The creek bed north of Black Farm has more tree coverage than the surrounding area (Figure 2.52).

516. Historic Aerials, 1931, https://www.historicaerials.com/viewer.

517. Dodd, "The Black/Minisink Farmhouse," 46–47.

Minisink Dutch Reformed Church & Cemetery (ca. pre-1737, MP 7.38)

The Minisink Dutch Reformed Church cemetery remained during this period. The number of burials and the presence of any notable landscape features during this period are unknown. 1931 aerials indicate that the area around the Minisink Dutch Reformed Cemetery was forested at this time (Figure 2.53). John Hacon Van Sickle, a founding member of the Sussex County Historical Society installed a small stone marker that reads "Minisink Church 1737" in 1913.[518]

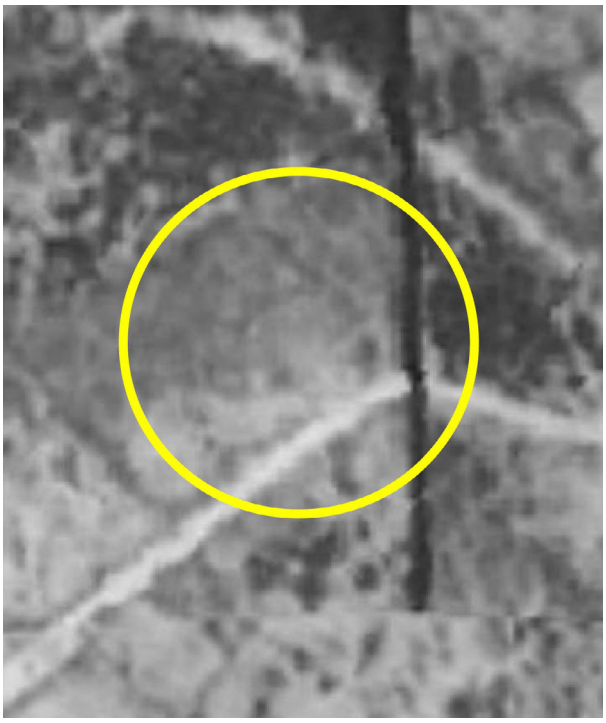
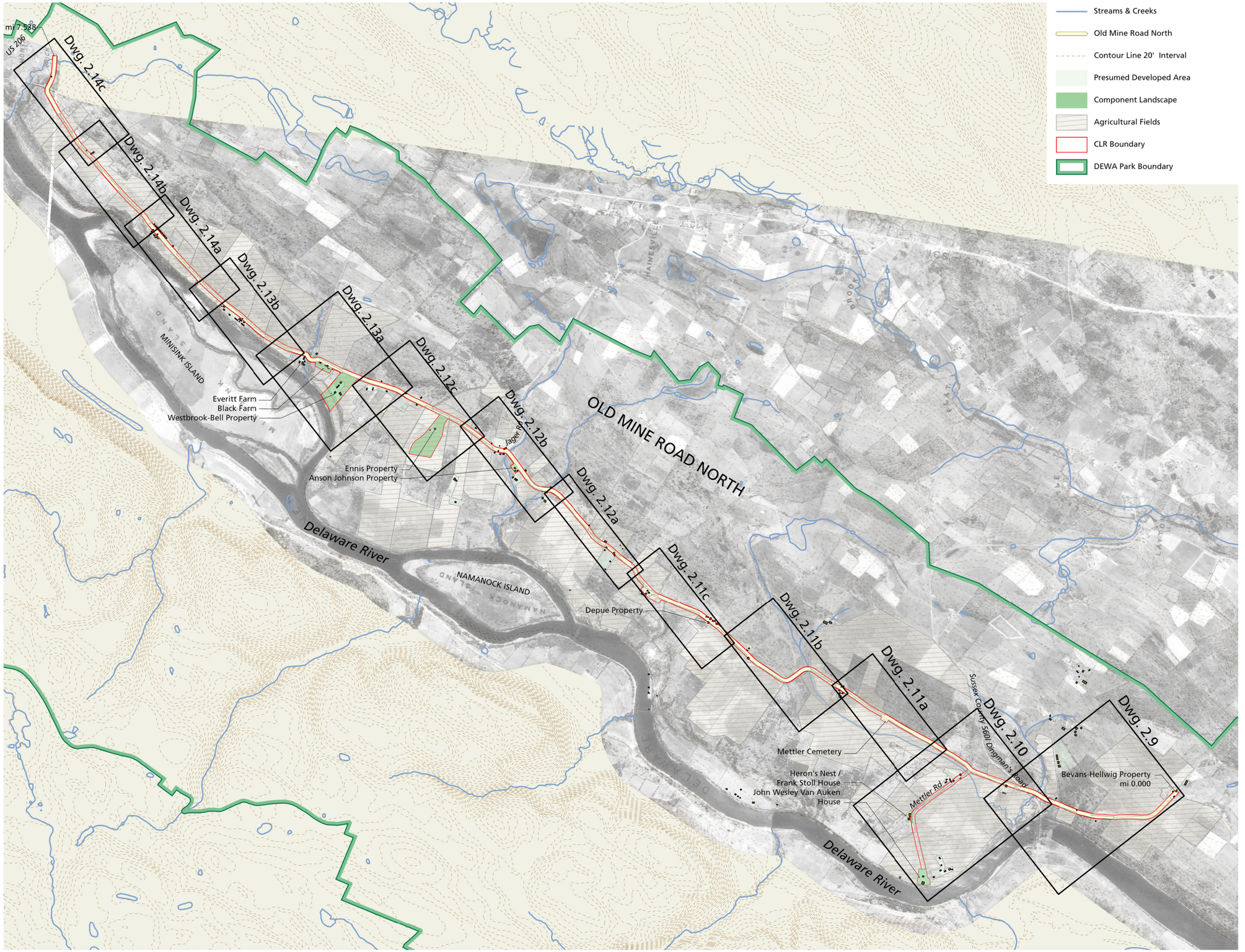


Figure 2.53. 1931 aerial of the Minisink Dutch Reform Cemetery, shown inside the yellow circle. Note that the surrounding area is forested (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

518. "John Van Sickle a Key Figure in County History," *New Jersey Herald*, accessed February 14, 2024, https://www.njherald.com/story/lifestyle/2009/01/10/john-van-sickle-key-figure/4071214007/.



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Overview

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

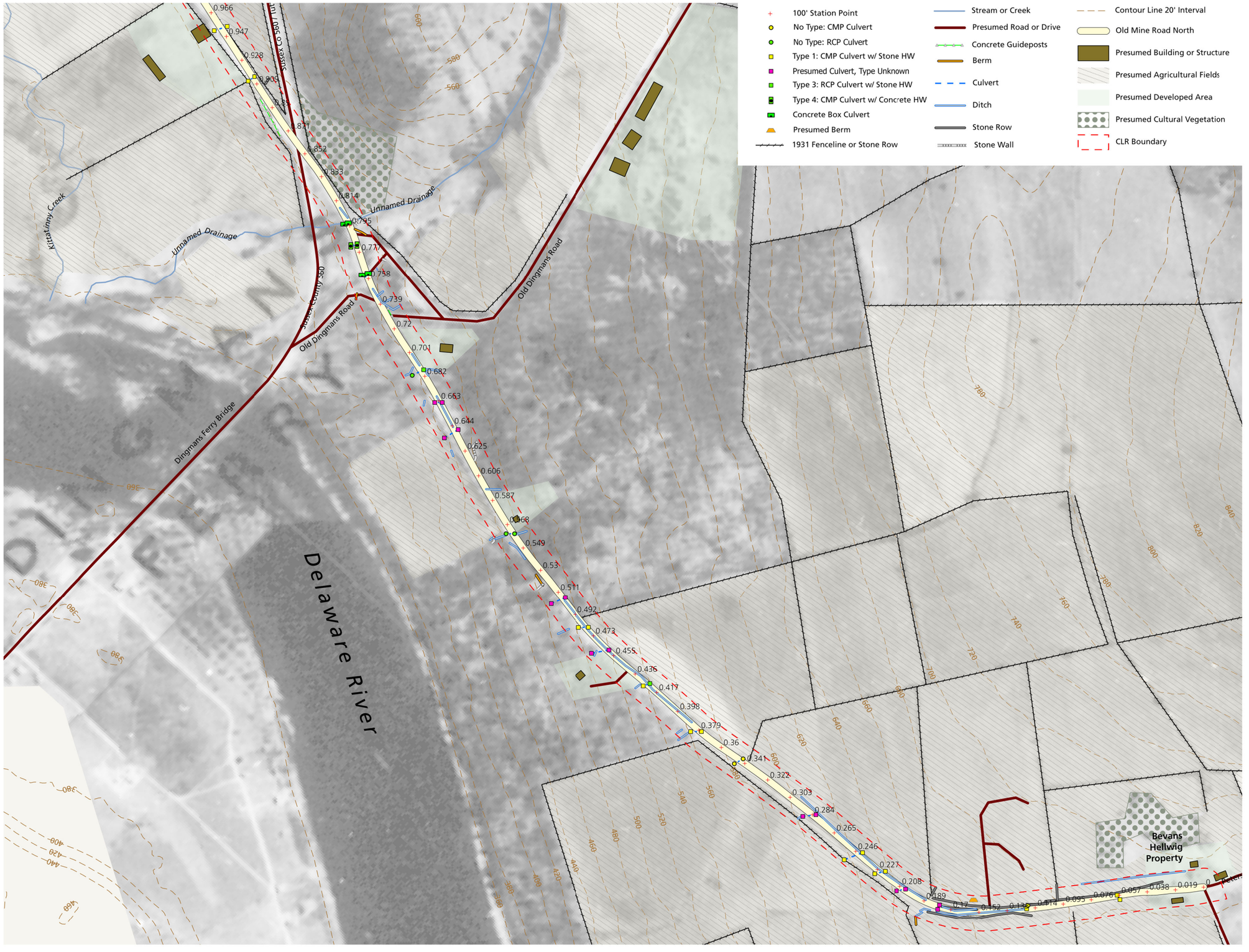
WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status

0 500 1,000 2,000 Feet

Drawing 2.8



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Mile 0.000 to 0.966

National Park Service

Olmsted Center for Landscape Preservation

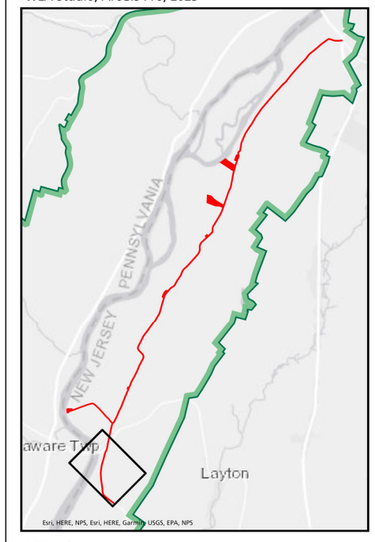
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretch and manipulated historic imagery. There may be discrepancies with spatial features alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.9

- 100' Station Point
- Type 1: CMP Culvert w/ Stone HW
- Presumed Culvert, Type Unknown
- Type 3: RCP Culvert w/ Stone HW
- Type 4: CMP Culvert w/ Concrete HW
- Concrete Box Culvert
- Presumed Berm
- Guidepost
- 1931 Fenceline or Stone Row
- Stream or Creek
- Presumed Road or Drive
- Concrete Guideposts
- Berm
- Culvert
- Ditch
- Stone Row
- Stone Wall
- Contour Line 20' Interval
- Old Mine Road North
- Presumed Building or Structure
- Presumed Agricultural Fields
- Presumed Developed Area
- Presumed Cultural Vegetation
- CLR Boundary
- DEWA Park Boundary

Heron's Nest / Frank Stoll House

Heron's Nest Garage

John Wesley Van Auken House

Mettler Road

Kittatinny Creek

Sussex County 650 / Tuttles Corner / Dingmans Road

Old Dingmans Road

Unnamed Drainage

Delaware River

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Mile 0.739 to 1.407

National Park Service

Olmsted Center for Landscape Preservation

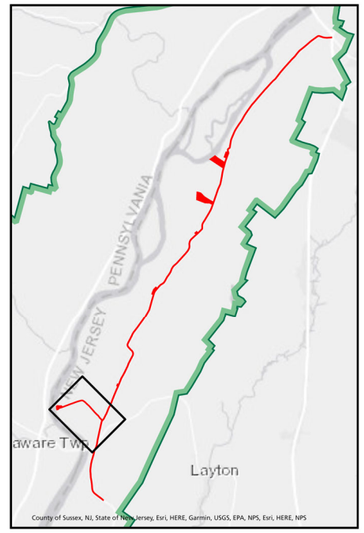
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

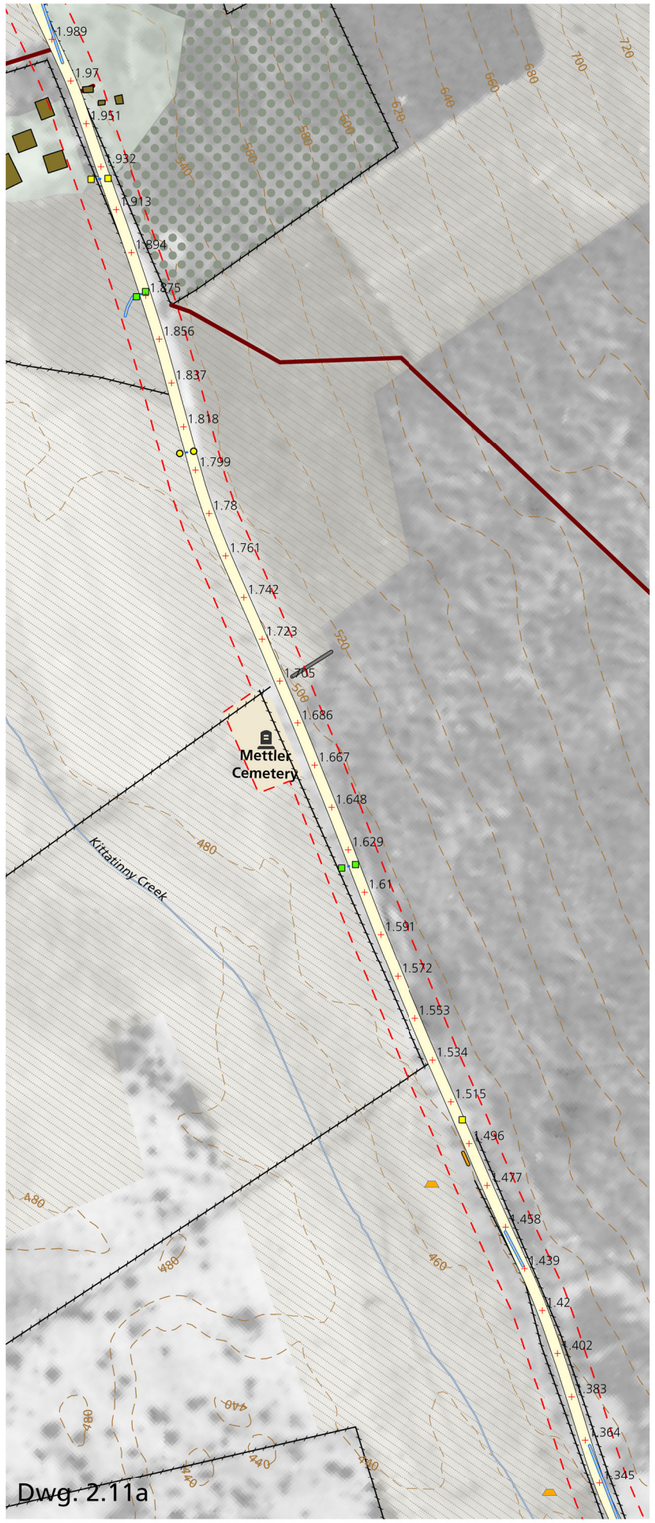


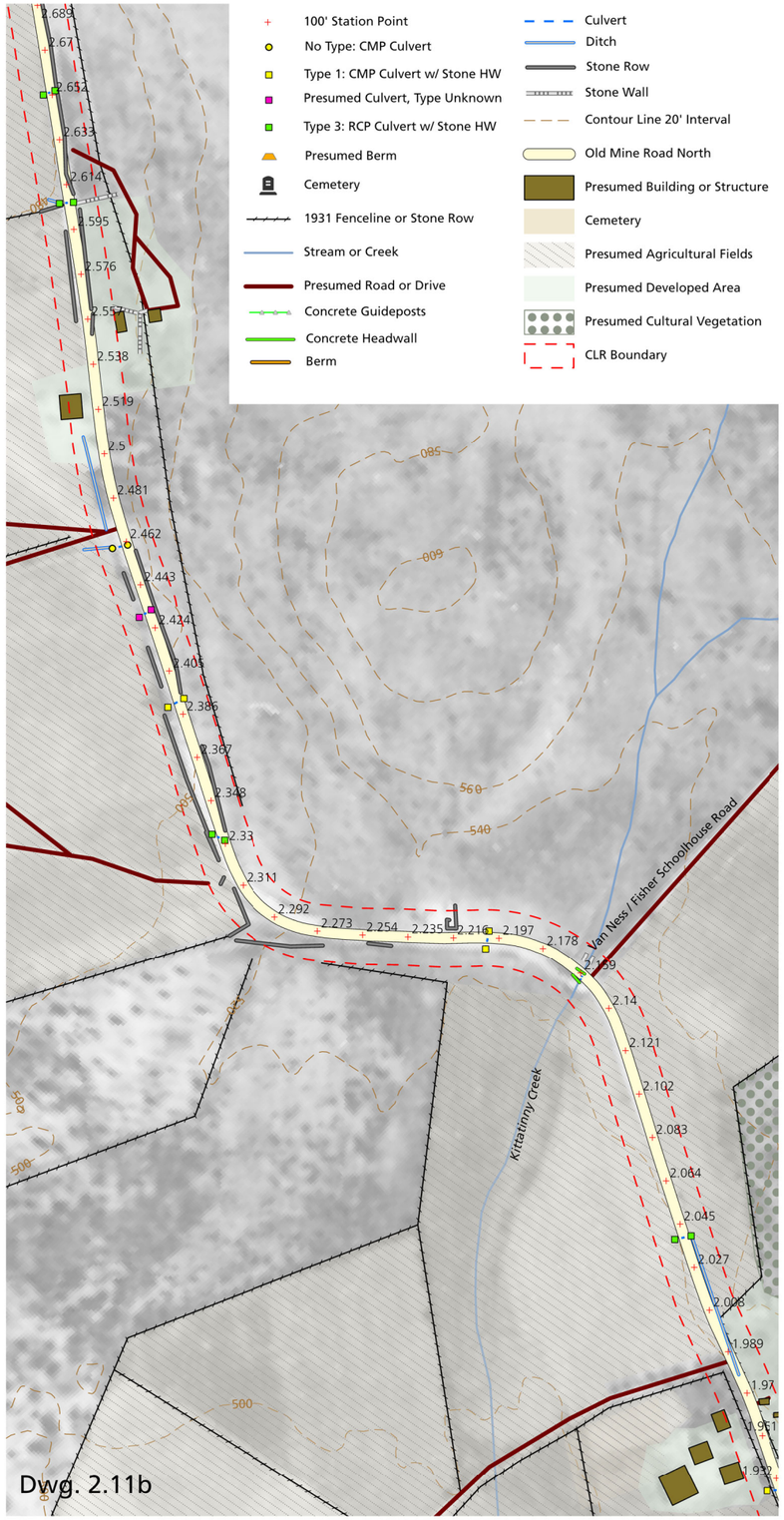
NOTES

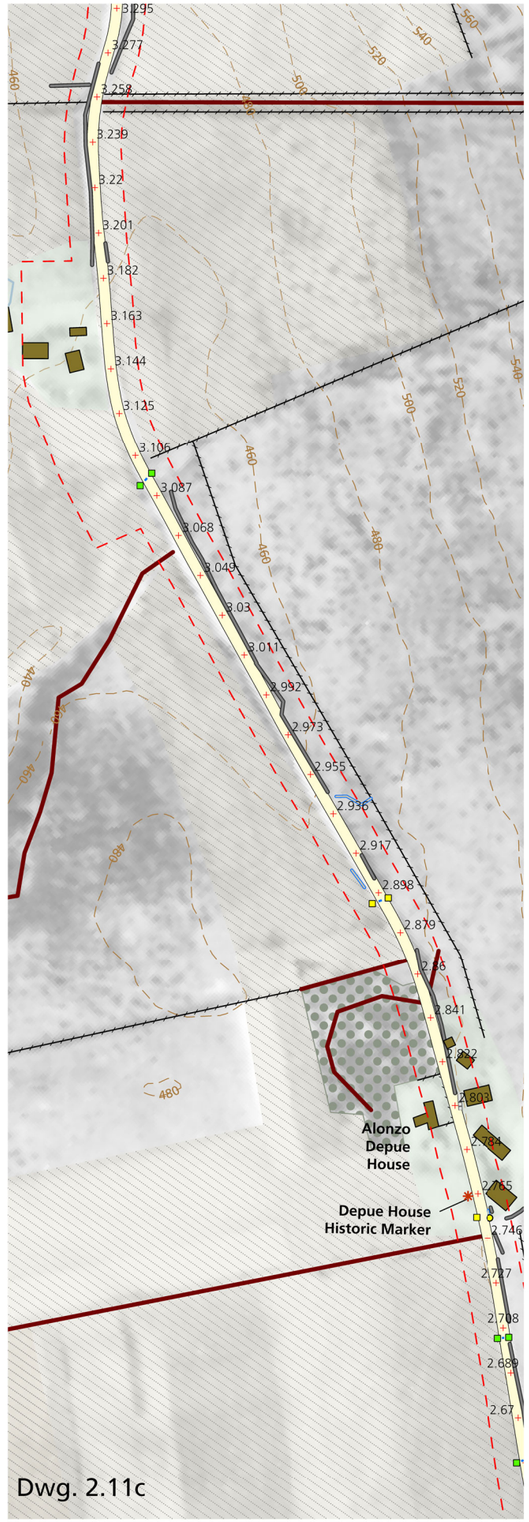
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretch and manipulated historic imagery. There may be discrepancies with spatial features alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.10







Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Mile 1.345 to 3.295

National Park Service

Olmsted Center for Landscape Preservation

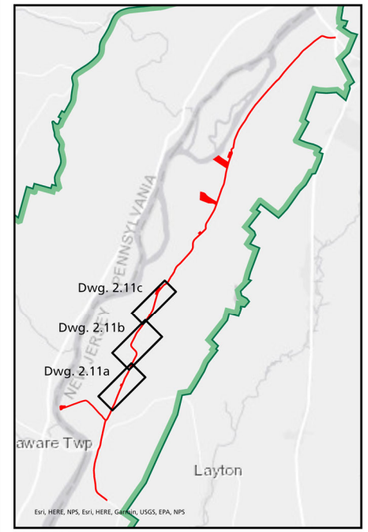
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

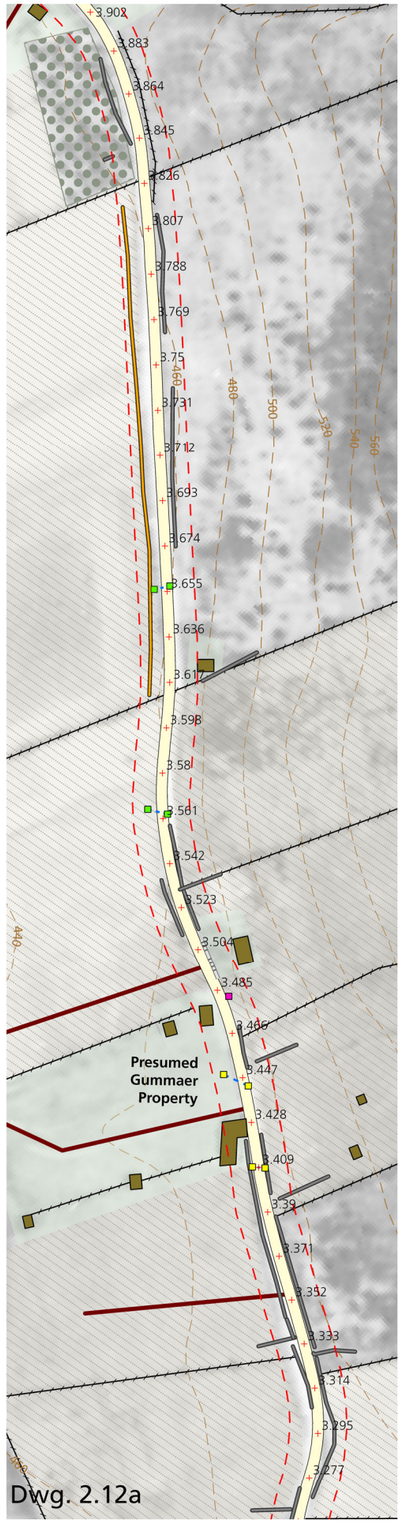


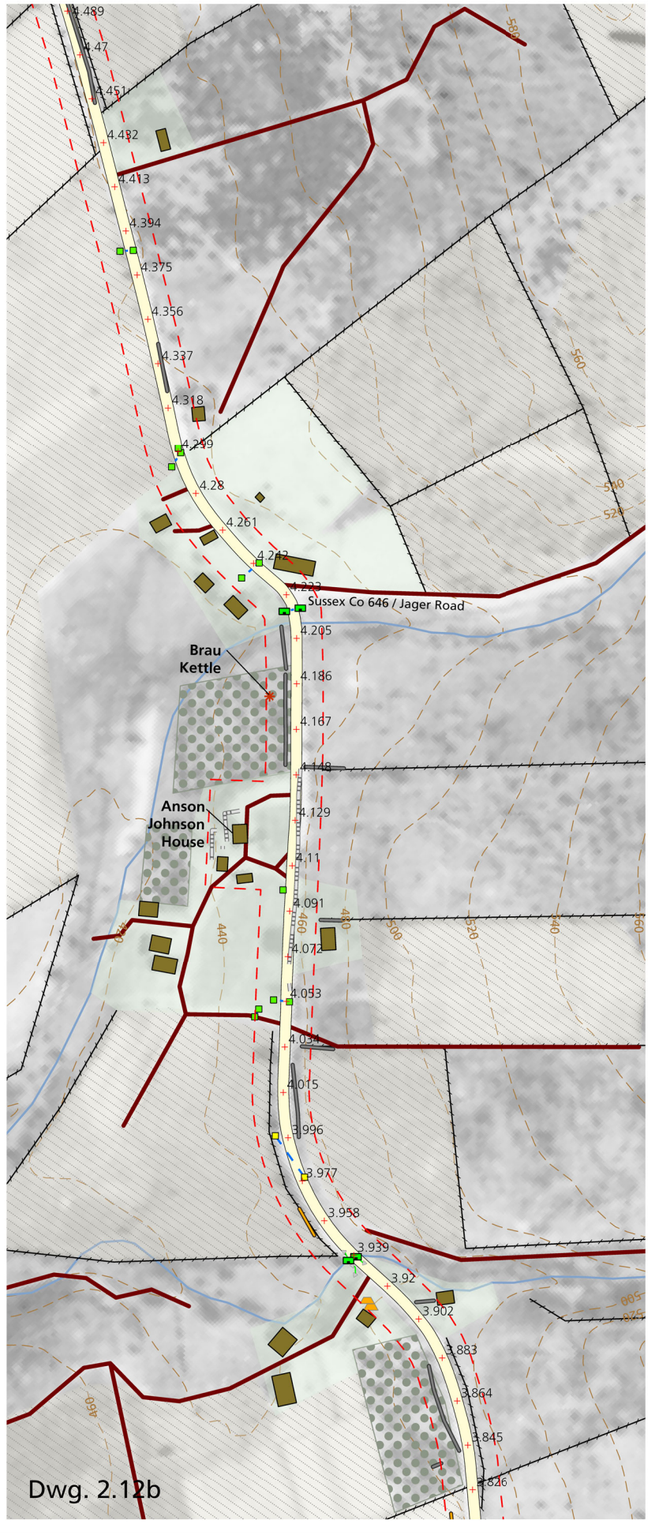
NOTES

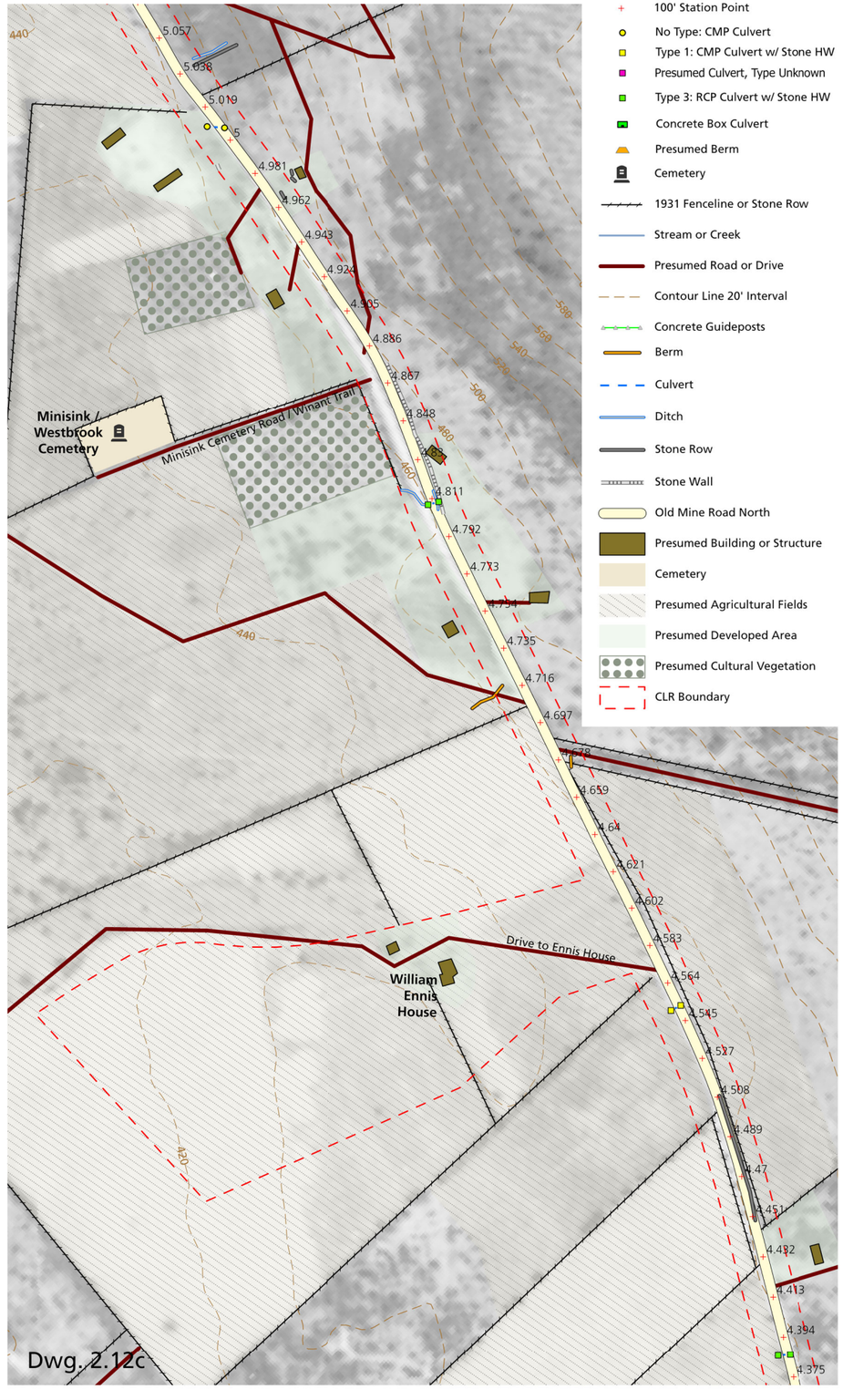
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretch and manipulated historic imagery. There may be discrepancies with spatial features alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.11







- 100' Station Point
- No Type: CMP Culvert
- Type 1: CMP Culvert w/ Stone HW
- Presumed Culvert, Type Unknown
- Type 3: RCP Culvert w/ Stone HW
- Concrete Box Culvert
- Presumed Berm
- Cemetery
- 1931 Fenceline or Stone Row
- Stream or Creek
- Presumed Road or Drive
- Contour Line 20' Interval
- Concrete Guideposts
- Berm
- Culvert
- Ditch
- Stone Row
- Stone Wall
- Old Mine Road North
- Presumed Building or Structure
- Cemetery
- Presumed Agricultural Fields
- Presumed Developed Area
- Presumed Cultural Vegetation
- CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Mile 3.277 to 5.057

National Park Service

Olmsted Center for Landscape Preservation

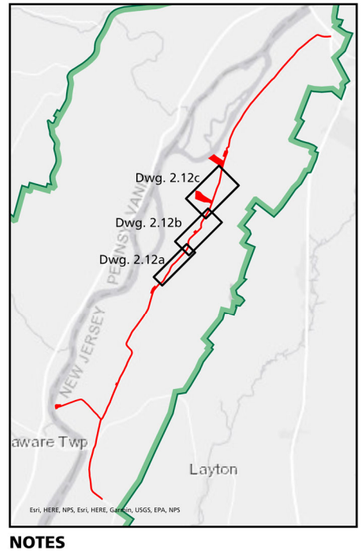
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

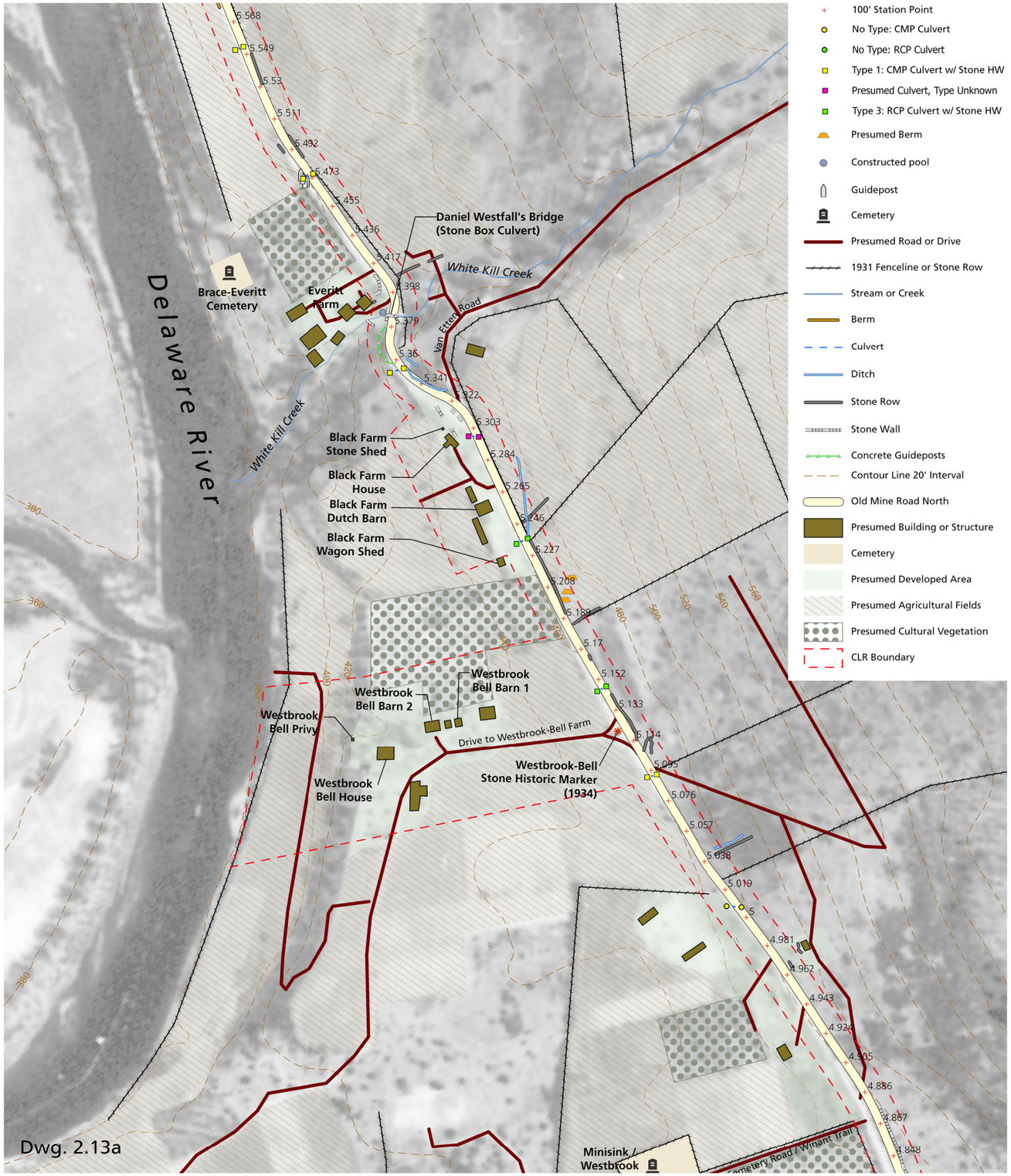


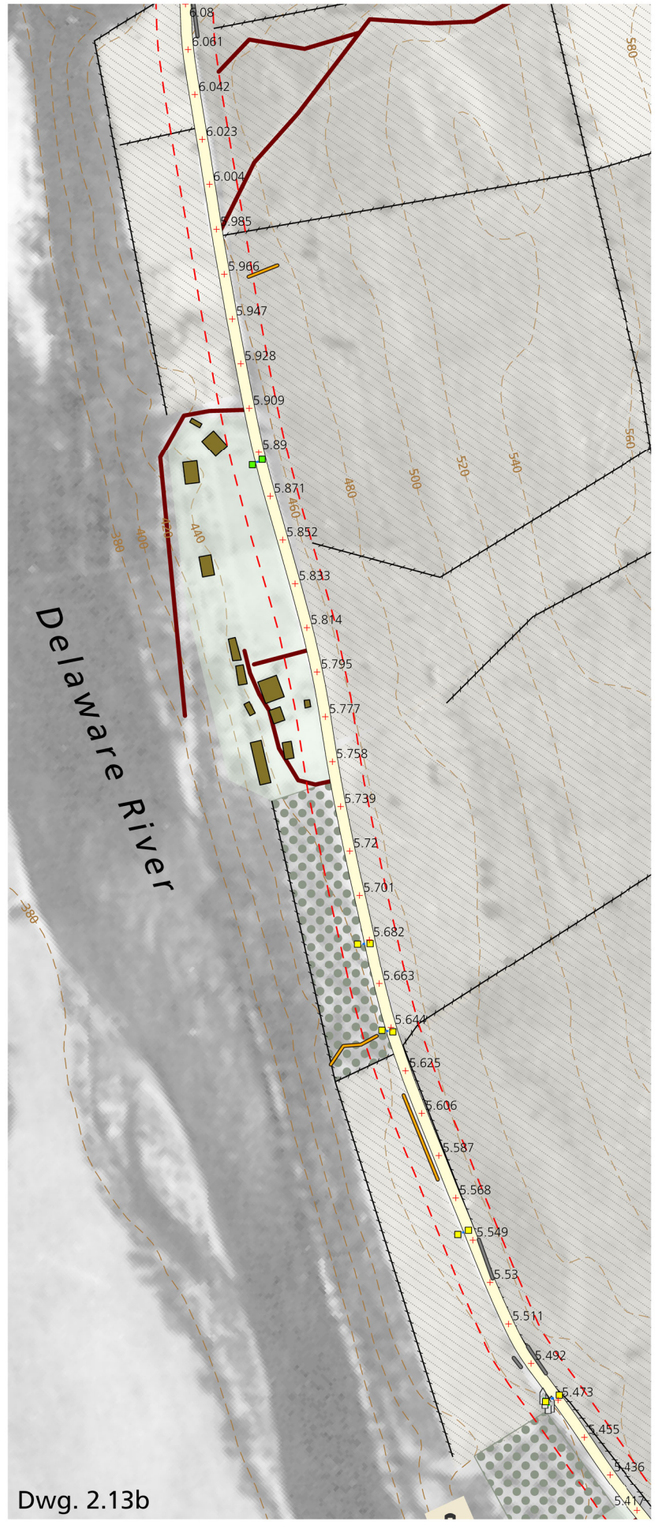
NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretch and manipulated historic imagery. There may be discrepancies with spatial features alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.12





- 100' Station Point
- No Type: CMP Culvert
- No Type: RCP Culvert
- Type 1: CMP Culvert w/ Stone HW
- Presumed Culvert, Type Unknown
- Type 3: RCP Culvert w/ Stone HW
- Presumed Berm
- Constructed pool
- Guidepost
- Cemetery
- Presumed Road or Drive
- 1931 Fenceline or Stone Row
- Stream or Creek
- Berm
- Culvert
- Ditch
- Stone Row
- Stone Wall
- Concrete Guideposts
- Contour Line 20' Interval
- Old Mine Road North
- Presumed Building or Structure
- Cemetery
- Presumed Developed Area
- Presumed Agricultural Fields
- Presumed Cultural Vegetation
- CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Mile 4.848 to 6.08

National Park Service

Olmsted Center for Landscape Preservation

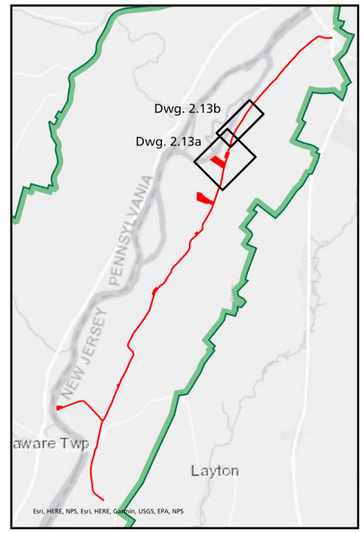
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

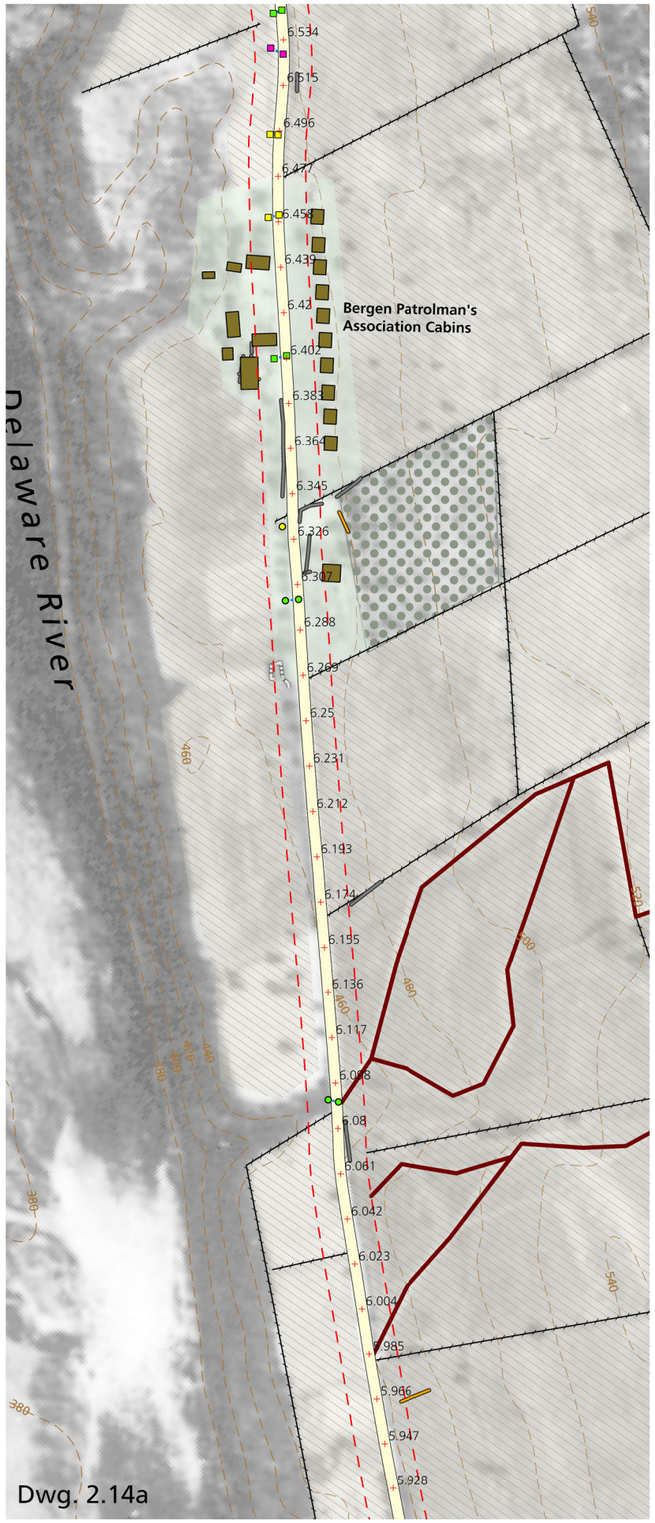


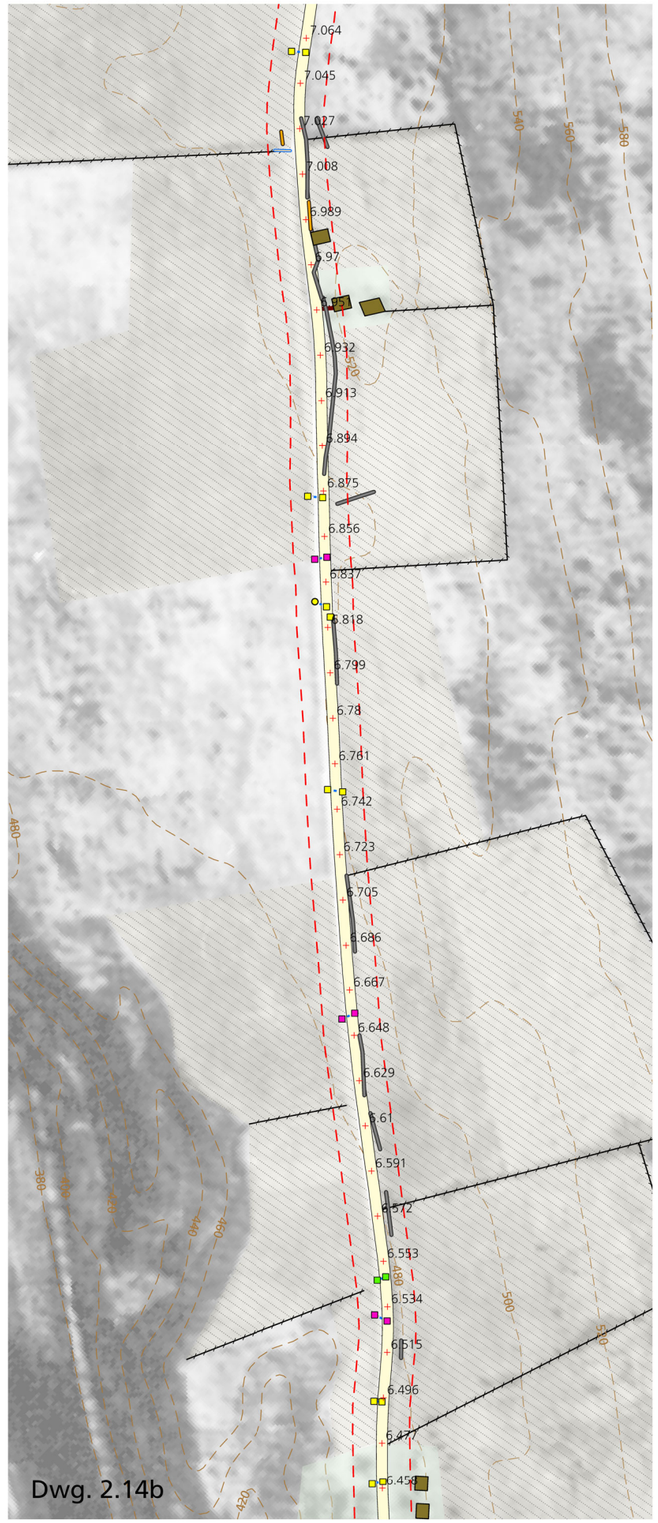
NOTES

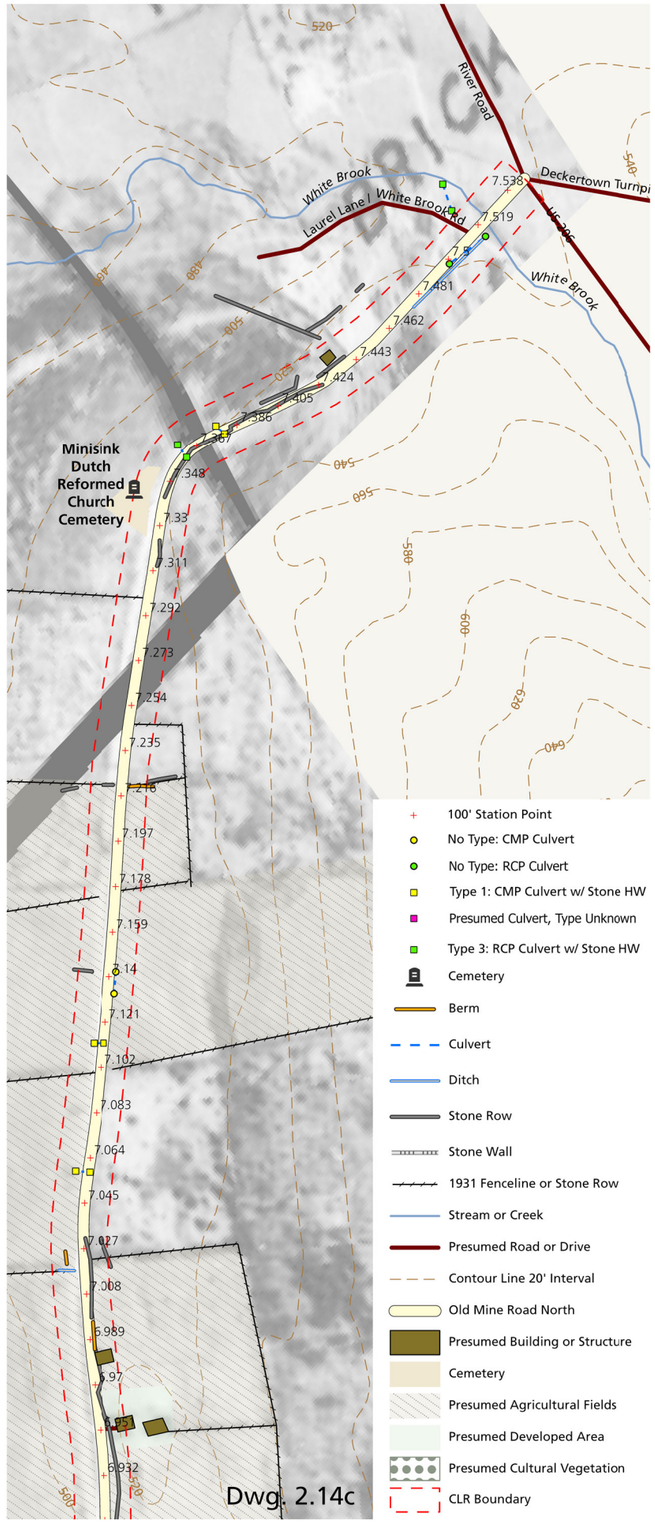
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretch and manipulated historic imagery. There may be discrepancies with spatial features alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.13







- 100' Station Point
- No Type: CMP Culvert
- No Type: RCP Culvert
- Type 1: CMP Culvert w/ Stone HW
- Presumed Culvert, Type Unknown
- Type 3: RCP Culvert w/ Stone HW
- Cemetery
- Berm
- Culvert
- Ditch
- Stone Row
- Stone Wall
- 1931 Fenceline or Stone Row
- Stream or Creek
- Presumed Road or Drive
- Contour Line 20' Interval
- Old Mine Road North
- Presumed Building or Structure
- Cemetery
- Presumed Agricultural Fields
- Presumed Developed Area
- Presumed Cultural Vegetation
- CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1900-1955 Period Plan, Mile 5.928 to 7.538

National Park Service

Olmsted Center for Landscape Preservation

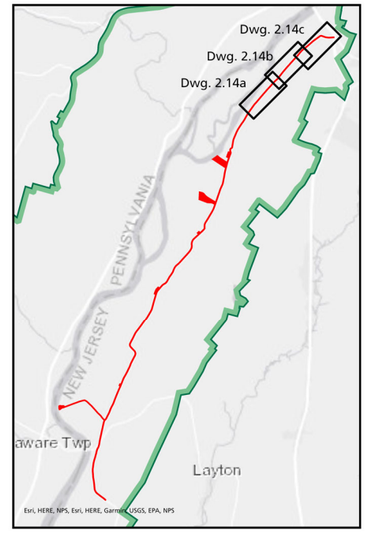
www.nps.gov/oclp

SOURCES

1. 1931 Aerial Photograph, historicaerials.com
2. Delaware Mine Road Map (Sandyston and Montague TWPS) Sussex County, NJ. 1932

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1 :31,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretch and manipulated historic imagery. There may be discrepancies with spatial features alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.14

Old Mine Road and the Tocks Island Dam Project (1955–1973)

Dam Building, Flooding, and Federal Intervention

Throughout the eighteenth and nineteenth century, water supply and water quality were chronic problems facing American cities. Water sources were often polluted, unpotable, and vectors for diseases such as typhoid and cholera. Water was also a crucial resource to fight urban fires, which were deadly and destructive. In response to these issues, large American cities began forming public water systems during the early nineteenth century. Philadelphia established its first waterworks in 1801, followed by New York City in 1835.[519] However, these systems were inadequate to address the long-term water needs of these major urban areas. During the latter half of the nineteenth century, New York City's population was increasing rapidly, and city dwellers were also using more water per person, "increasing consumption on a per capita basis." Meanwhile, Philadelphia's water sources had become "grossly polluted" due to the human refuse and industrial waste that was dumped into the Delaware and Schuylkill Rivers.[520] During early twentieth century, New Jersey also faced water supply issues as the northern portion of the state became more densely populated, reaching an "annual growth rate greater than that of New York City" by 1920.[521]

Facing mounting water supply issues, Pennsylvania, New York, and New Jersey all devoted state resources to begin investigating potential long-term solutions, including large-scale dam and reservoir construction projects. In addition to a clean and reliable water source, dam and reservoir construction also provided opportunities for hydroelectric power generation. By the turn of the century, the use of electricity was expanding rapidly, particularly in large cities, and the combined utility of a dam and reservoir system would have made it especially appealing to states with large, ever-growing urban centers.[522]

During the 1920s, Pennsylvania, New York, and New Jersey all found a common interest in the Delaware River. In 1923, they joined to form the Delaware River Treaty Commission. The Delaware River Treaty Commission attempted to create a compact agreement, between the three states, ensuring that they "shared equally in the waters of the Delaware River Basin above Port Jervis," and "Below Port Jervis, the Delaware was shared equally between Pennsylvania and New Jersey." The agreement also called for the creation of the Tri-State Delaware River Commission, whose purpose "was to conduct comprehensive water-resources planning, collect stream data, and perform various regulatory functions."[523] Ultimately, however, these three states failed to reach a permanent agreement and a legal battle upholding their respective rights to the river ensued. In 1931, the U.S. Supreme Court ruled that each state had a right to the water, "based on the principle of equitable apportionment."[524] Equitable apportionment is the water law doctrine that governs the U.S. Supreme Court's allocation of interstate waters (usually interstate rivers) between or among states.

Over the next twenty years, dam building efforts in the Delaware River Valley continued to stall. In 1927, the Secretary of War was tasked with creating a report about streams and rivers that could be utilized to generate electricity, "in conjunction with navigation, flood control, and irrigation needs." These studies, referred to as the "308 Reports," were produced by the U.S. Army Corps of Engineers (USACE), and eight reports focused on locations in the Delaware River Valley. The USACE identified Tocks Island and Walpack Bend on the Delaware River as potential reservoir locations, but Tocks Island was "by far the largest, with 214 billion gallons of planned storage." In either location, "the Minisink Valley was considered ideal because the valley was not 'occupied by railways or extensive and highly valuable improvements.'" However, the federal government did not immediately

519. Richard C. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam* (University Park, Pennsylvania: The Pennsylvania State University Press, 1987), 11–12.
520. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 11–12.
521. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 15.
522. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 7.
523. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 16–17.
524. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 22.

pursue these plans. The onset of the Great Depression depleted state funds for these types of improvement projects, and researcher Richard C. Albert notes that "At this time federal participation in water projects was still very limited," and "none of the dam projects justified federal participation." Pennsylvania did request "a $33 million loan from the Federal Public Works Administration for beginning dam construction," but the federal government did not grant the request.[525]

In 1936, Pennsylvania, New York, and New Jersey formed the Interstate Commission on the Delaware River Basin, referred to as "Incodel." Incodel studied water pollution, planned for water conservation, and outlined parameters for development along the Delaware River. Delaware joined Incodel in 1938. In addition to Incodel, there were several federal agencies, state agencies, and private interest groups advocating for dam and canal construction projects on the Delaware River.[526] Their efforts persisted through the early 1950s, but these efforts proved unsuccessful.

Ultimately, the major impetus for meaningful action was flood control, not water supply or hydroelectricity. In 1936, two large storms caused widespread flooding in the Delaware River Valley, causing serious flooding in the river's numerous tributaries. The federal government responded by enacting the Flood Control Act of 1936, which "expanded the federal role in flood control and assigned the responsibility to the U.S. Army Corps of Engineers."[527] In August of 1955, the Delaware River Valley was hit by two successive hurricanes, Hurricane Connie and Hurricane Diane. When the second hurricane hit, the ground was already saturated with water from the previous storm, and "runoff was extremely heavy since there was simply no place for all the water to go." During the second storm, "maximum flooding occurred on both the Delaware River *and* its tributaries." On Brodhead Creek, which runs through East Stroudsburg, Pennsylvania, "floodwaters destroyed a summer camp, killing thirty-seven women and children, and flooding in the watershed accounted for one hundred deaths." Flooding along the Delaware River itself did not result in any deaths, but the property damage was extensive. Of the five hundred million dollars in damage caused by Hurricane Diane nationwide, an estimated 20 percent was incurred along the Delaware River Valley.[528]

In response to the disastrous 1955 flood, Pennsylvania Representative Francis Walter called on the governors of Pennsylvania and New Jersey to address the matter, and "In his telegrams, Walter urged the construction of long-proposed dams at Chestnut Hill, Belvidere, and Walpack Bend for flood control."[529] Albert summarizes the long-term significance of the 1955 flood as follows:

> The flood of 1955 would prove to be a major turning point for the Delaware River Basin, but not for the reasons often cited. The flood did not stimulate interest or planning for a Delaware River dam. The long-standing efforts of Philadelphia, Pennsylvania, and New Jersey were being pursued vigorously even as the first raindrops fell. The twin storms Connie and Diane did demonstrate that Mother Nature could, on rare occasions, deliver a combination of natural events that could cause massive flooding. This new factor was significant because it opened the door to massive federal involvement in the Delaware River Basin.[530]

A series of public hearings were held to gather public input from people living along the Delaware River. These hearings sought to "obtain information on the extent of flood damages and to solicit opinions concerning the need for water projects." According to Albert, these meetings were unanimous in their call for the federal government to take the lead on future projects. In 1956, the USACE coordinated a comprehensive survey of the Delaware River Basin, gathering reports and input from other federal agencies, including the Office of Business Economics, the U.S. Geological Survey, the U.S. Department of Agriculture, the Federal Power Commission, the U.S. Public Health Service, the Soil Conservation Service, and the National Park Service. According to Albert, this survey

525. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 26–28.
526. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 32–34.
527. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 30.
528. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 50–52.
529. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 52.
530. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 52.

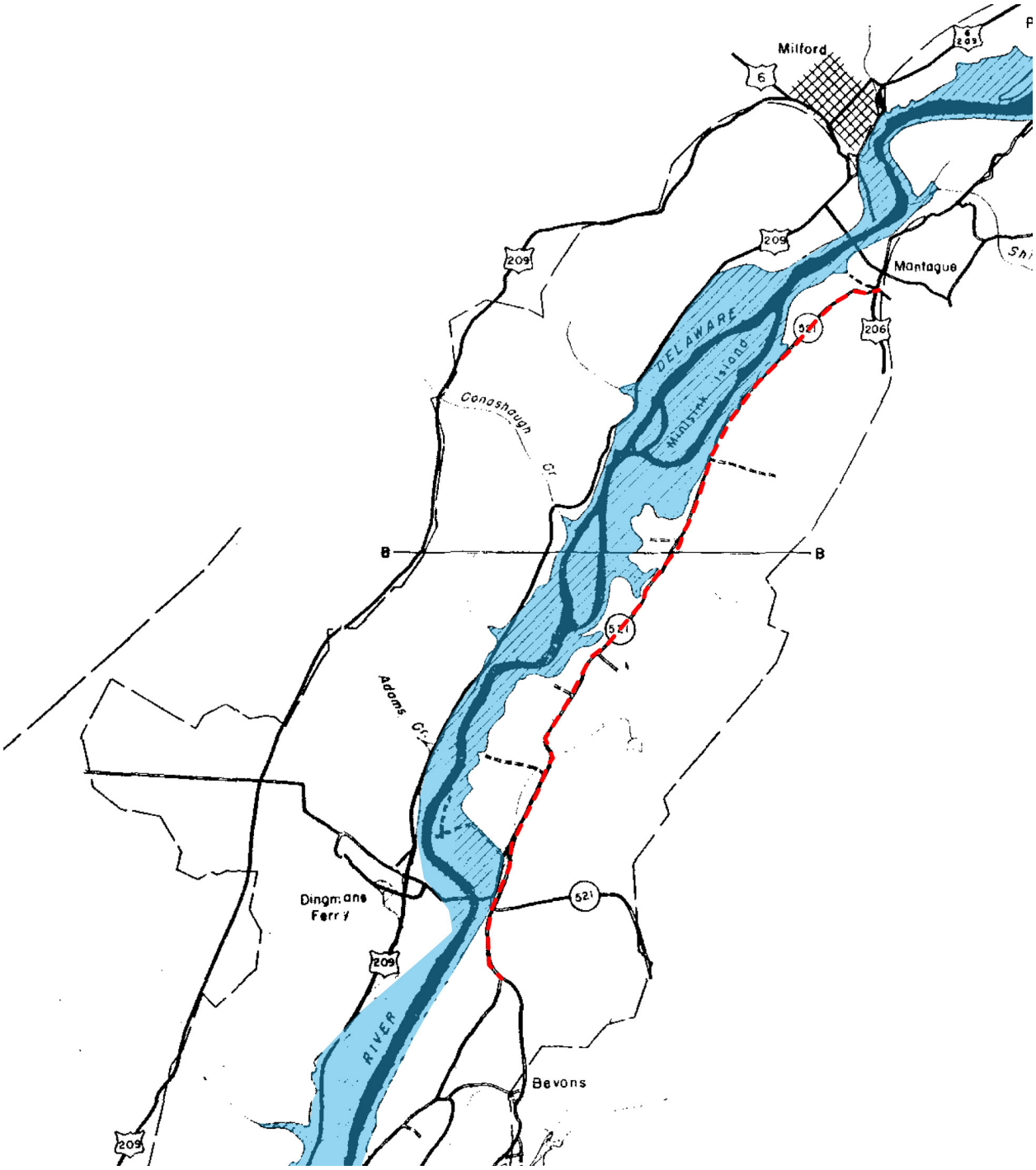


Figure 2.54. Annotated 1960 USACE map highlighting the proposed Tocks Island Dam reservoir and Old Mine Road North (Source: USACE, "Tocks Island Reservoir," Philadelphia, Pennsylvania: Philadelphia District, USACE, File No. 29099, Plate 5, June 1960).

effort "was large and uniquely comprehensive," and "It was the Corps of Engineers' first truly comprehensive river-basin planning endeavor."[531]

Tocks Island Dam and the Delaware Water Gap National Recreation Area

In February of 1957, the USACE released their feasibility and comparison study, which explored the potential of dam projects at both Tocks Island and Walpack Bend. The study concluded that Tocks Island would be the most advantageous location

531. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 55.

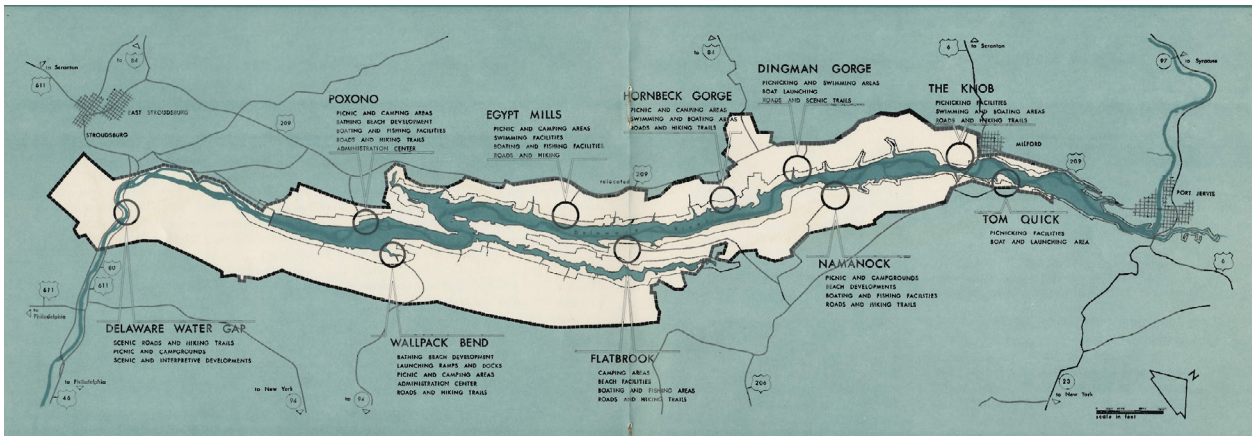


Figure 2.55. 1965 map depicting the boundaries of the Tocks Island Dam reservoir and different recreational developments proposed throughout the DWGNRA (Source: DEWA Archives, "Tocks Island National Recreation Area, A Proposal," U.S. Department of the Interior, National Park Service, 1965). (Source: DEWA Archives).

for a dam project (Figure 2.54). According to their report, a reservoir at Tocks Island would have double the water capacity of a reservoir at Walpack Bend. A reservoir located at Tocks Island would flood the Flat Brook Valley and "only cost 50 to 60 percent more" for twice the water.[532] In 1960, the USACE submitted a reservoir plan to Congress for the entire Delaware River Basin, which presented nineteen dam projects worthy of construction, and recommended eight "for immediate authorization by Congress." Among those eight projects was the Tocks Island Dam project.[533] Albert describes the Tocks Island proposal as the "queen of the eight projects," stating:

> Located on the Delaware River six miles above the Delaware Water Gap, Tocks represented over 58 percent of the intended storage capacity of the Corps' reservoir plan. Unlike the other seven projects, hydroelectric power was to be generated at Tocks. Construction costs were estimated to be $146 to $177 million, and completion was set for 1975. None of the other dam projects approached the magnitude of the Tocks Island Dam project.[534]

In August of 1962, the USACE submitted the completed *Delaware River Basin Report* to Congress and distributed it for review as House Document 522. Congress passed the Flood Control Act of 1962 on October 23, 1962, authorizing "nearly two-hundred public-works projects nationwide." Section 203 of the Flood Control Act authorized projects in the Delaware River Basin.[535] In its initial conception, the dam project was assigned several main objectives: "to provide water supply, flood control, hydroelectric-power generation, and recreation." The dam was intended to support an active pool, which would hold 134 billion gallons of water, and an inactive pool, holding 26 billion gallons of water. These pools would also function as flood mitigation during heavy rain events. The dam at Tocks Island was also to be the largest generator of hydroelectricity on the Delaware River, generating a projected 281.5 million kilowatt-hours." Recreationally, "it was estimated that almost seven million people would visit the reservoir and surrounding lands each year." According to Albert, the recreational component of the dam was "tremendously important to the dam project's economic feasibility," and "the most exciting feature of the Tocks Island Project and the easiest to sell to the public."[536]

Efforts to establish a national recreation area at the Tocks Island Dam began in the early 1960s, and in the summer of 1962, Representative Frances E. Walter introduced a bill for the creation of the Tocks Island National Recreation Area, while Senator Joseph S. Clark introduced a companion bill to the Senate (Figure 2.55). Although these early iterations died in Congress, the 1965 versions introduced to the House and Senate

532. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 55.
533. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 63–64.
534. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 64.
535. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 67.
536. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 69–70.

were successful. Endorsed by President Johnson and renamed the Delaware Water Gap National Recreation Area, Congress signed the bill into law on September 1, 1965.[537] Albert summarizes the provisions of the law as follows:

> Public Law 19-158, which created the Delaware Water Gap National Recreation Area, was quite simple – only two and a half pages long. The law gave the Secretary of the Interior $37.4 million to acquire approximately 47,675 acres of land and $18.2 million to construct recreation facilities. The 47,675 acres represented additional federal land acquisition above the 24,000 acres authorized previously for the Tocks Island Dam Project. Most of the 72,000 acres that would make up the Delaware Water Gap National Recreation Area (DWGNRA [DEWA]) was privately owned. This land would be acquired by purchase, or, failing that, by condemnation… The job of acquiring the land was given to the Corps of Engineers since it would be acquiring land for the dam and reservoir project anyway.[538]

Almost immediately, however, the Tocks Island Dam project ran into trouble. Most pressing were the serious site limitations facing the project. In 1942, boring tests conducted at Tocks Island determined that there was not adequate stable bedrock at the site to support a large concrete dam.[539] In 1957, however, the USACE determined that a dam was possible at this location if an "earth-fill dam" was used.[540] After the dam project was authorized by Congress in 1962, the USACE began scouting locations for the dam and conducting additional boring tests in 1964. Quickly, the USACE determined that the geological makeup of the site would be extremely difficult to build on, because "At any one location the mix of till, drift, lake, and alluvial deposits was extremely varied," and "Each represented a special problem for dam building." The lake deposits were particularly challenging because they "were sensitive to dynamic loading and, under stress, could lose strength and even liquify." Eventually, the USACE selected a location approximately one hundred feet south of Tocks Island as the best option, even though it was still "far from ideal."[541]

In addition to engineering issues, the Tocks Island Dam project also faced funding challenges. According to Albert, the projected cost of the project continued to balloon, and there was even speculation that the USACE had purposefully "underestimated the costs of the dam to ensure congressional authorization." Initially projected to cost $90 million, the estimated cost had more than doubled by 1969, reaching over $200 million. Albert notes that these rising costs were due to a variety of factors. Apart from inflation, $16 million could be attributed to the geological challenges of the site, and necessary "protective works in the upper part of the reservoir pool added another $14 million." An additional $12 million was due to "Inadequate estimates of the amount of cemeteries, highways, schools, and utility lines that needed relocation," and "Land acquisition cost estimates increased by $15 million." Finally, wildlife mitigation projects would cost another $8 million.[542] In response to the drastic price increase, the project was delayed in 1969. Federal budgets were already strained by the ongoing cost of the Vietnam War, and "A war costing $32,000 per minute did not leave much room for expensive dam projects."[543]

A major obstacle to the fruition of the Tocks Island Dam project and DEWA was public opposition from people living in and around the proposed project area. Albert points out that the area intended to be a "Wilderness Recreation Area" was actually home to "2,400 to 2,600 homes (including seasonal homes), 25 summer camps and sportsmen's clubs, 100 to 125 farms, 100 to 200 nonfarm businesses, and dozens of public buildings, including at least 7 churches and 3 schools." Additionally, there were "More than 5,000 graves and numerous historic buildings scattered throughout the area."[544] Opposition from landowners and invested parties in the area was immediate. An early and vocal opponent on the project was Nancy Shukaitis, whose family had

537. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 83–85.
538. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 85.
539. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 31.
540. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 55.
541. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 71–72.
542. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 75–76.
543. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 79.
544. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 113.

lived in the Delaware River Valley since the 1700s. Shukaitis traveled to Washington, DC multiple times to testify before Congress in opposition of the dam, and she convinced Congress to hold public hearings for local residents to voice their opinions. Locals that were in opposition to the Tocks Island Dam project joined to form the Delaware Valley Conservation Association (DVCA), with Shukaitis acting as director. An estimated one thousand people from the area joined DVCA, and they were "the primary organization fighting Tocks Island Dam" for the next several years.[545]

The DVCA worked to organize public opposition to counter the "boosterism of the pro-Tockers," gave public speeches, organized letter writing campaigns, and published advertisements in local papers. They gathered signatures for petitions to lobby the government and sought support from conservation organizations like the Sierra Club and Friends of Earth. In 1966, the DVCA filed a class-action suit representing 604 plaintiffs, suing the "Secretary of the Army, the Secretary of the Interior, and the Corps' chief of engineers." The lawsuit was unsuccessful, but the DVCA was not dissuaded.[546]

In 1966, Charlie Koons was serving as president of the DVCA. Their campaign to stop the dam was covered by the *Scrantonian Tribune* in October of that year, alongside a full-page spread of articles reporting on various issues related to the Tocks Island Dam project. In the article about DVCA, Koons and a petition filed by the DVCA refuted the notion that the area could be classified as "wilderness." According to the DVCA:

> Nothing could be further from the truth.
>
> In order to construct the dam and create the recreation area it will require the removal of 9,000 law abiding, tax paying property owners and their families.
>
> It will require usurping the properties of excellent farms, hotel, motels, churches, school, numerous boy scout camps, resorts, private youth and adult camps, waterfall attractions, public beaches and even whole villages. It will require the breaking up of traditional American cultural communities and the shattering of a large segment of American heritage.[547]

Koons also mentioned the geological challenges of the site and is quoted as saying, "the poor geologic foundation for a massive dam at Tocks Island has long been commonly known as such inasmuch as the very site was rejected in 1929 for this very reason." Koons went on to accuse the government of purposefully focusing on land acquisition around the perimeter of DEWA, using these properties as leverage to request funds for the remaining interior properties at a later date. Koons also points out that the recreational character of the area is already well-established, and the government's use of recreation as a justification for the dam project is disingenuous.[548]

In 1967, Nancy Shukaitis was elected as a County Commissioner in Monroe County, Pennsylvania. Her election was seen as "a major victory for the local anti-Tocks forces." Joan Matheson, another leader in the movement that emerged from the DVCA, was a science fiction author and invested community member. In response to the Tocks Island Dam, Matheson established a small, self-published newspaper called *The Minisink Bull* to distribute anti-dam building messages. According to Albert, Matheson was "one of the most formidable opponents of the Tocks Island Dam," and her paper was "unconventional, cause-oriented, and antiestablishment." Albert describes her publications as "both crude and clever," often employing humorous wordplay and cartoons to convey her message.[549]

Over time, campaigning by the DVCA eroded public support for the Tocks Island Dam project, while also inspiring new concern for the potential environmental ramifications of the project. In 1970, the Pennsylvania Chapter of the Sierra Club formed a coalition of activists to form the Save the Delaware Coalition. Organizations involved included "Trout Unlimited, the Wilderness Society, the National Wildlife Federation, and others."

545. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 113–14.
546. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 115–16.
547. "Conservationists Opposing Tocks Project Carry Fight to President," *The Scrantonian Tribune*, October 1, 1966.
548. "Conservationists Opposing Tocks Project Carry Fight to President."
549. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 116–17.

Local sportsmen's groups were concerned about the impact to fish populations, while the local DAR chapter protested the loss of historical resources.[550]

Early Planning and Mitigation Efforts

Despite ongoing local and nationwide activism opposing the dam, the federal government continued preparing for the coming dam project. In 1966, the National Park Service published a *Master Plan for the DWGNRA* [DEWA]. The master plan is introduced alongside a caveat that it may be subject to future revisions following the "finalization of the design and operation of Tocks Island Dam."[551] Despite the air of uncertainty surrounding the Tocks Island Dam project, the 1966 master plan treats the Tocks Island Dam as a certainty.

The stated objective of the 1966 master plan for DEWA reads as follows:

> The concept upon which this plan is based is that of providing opportunities for active outdoor recreation based on use of area resources to the fullest extent commensurate with preservation of the resources. Resources available for recreation include the reservoir and other water surfaces, extensive mountainous terrain, flora and fauna and natural and historic features.[552]

The 1966 master plan outlines three primary objectives of the National Park Service at DEWA: Visitor Use, Resources Conservation, and Communication. Visitor use goals include establishing the various facilities and infrastructure necessary to accommodate people and the various visitor activities provided by the recreation area. In addition to the water recreation provided by the reservoir pool, visitor activities mentioned in the 1996 master plan include camping, picnicking, hiking, sightseeing, hunting, and fishing. Resource conservation goals include research, evaluation, and documentation efforts to establish what resources exist within DEWA and to establish management strategies for these resources so that they can be preserved and maintained. Resource conservation refers to natural, cultural, and scenic resources that exist within DEWA. Communication goals described in the 1966 master plan include providing visitors with information about the park, as well as different interpretive and educational opportunities.[553]

The 1966 master plan outlines several important physical and ecological resources needing specific management strategies including water and aquatic life, ecological conditions and vegetation patterns, wildlife habitats, and geological features. Discussing the present character of the landscape at that time, the 1966 master plan subdivides DEWA into four broad categories, stated as:

1. Forested areas (about 75%)
2. Pasture, orchards and meadows (about 18%)
3. Old fields (6%)
4. Special plant communities (1%)[554]

The 1966 master plan describes several landscape management strategies to preserve the character of DEWA. Citing the expectation that "pleasure driving" will be a popular activity, the master plan proposes more deliberate roadside landscaping, with a concentration of dogwoods and rhododendrons in these areas. The master plan calls for continued maintenance of "hemlock groves, cliff flora, shale flora, rhododendron thickets, swamp and marsh areas" to maintain their health and aesthetic appeal for visitors. The master plan also promotes the maintenance of historic agricultural landscapes and old fields to halt natural succession and retain historic agricultural characters of those areas for their "scenic appeal."

According to the 1966 master plan, the retention and maintenance of these landscapes is important for the wildlife species living in DEWA. Noted mammal species include white-tailed deer, black bears, porcupines, snowshoe hares, cottontail rabbits, beaver, woodchucks, chipmunks, red and gray squirrels, bobcats, opossums, raccoons, mink, otter, skunks, red and grey foxes, and muskrat. Bird

550. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 118–19.
551. "The Master Plan: Delaware Water Gap National Recreation Area" (United States Department of the Interior, National Park Service, 1966), 1.
552. "The Master Plan: Delaware Water Gap National Recreation Area," 3.
553. "The Master Plan: Delaware Water Gap National Recreation Area," 3.
554. "The Master Plan: Delaware Water Gap National Recreation Area," 4.

species present in DEWA include grouse, turkey, woodcock, hawks, plover, pileated woodpeckers, snowy owl, horned lark, and ravens. Reptilian species include an estimated twelve species of turtle, as well as two species of lizards, and fifteen species of snakes.[555]

The 1966 master plan identifies two primary types of cultural features: archeological sites and historic structures. In preparation for the Tocks Island Dam project and flooding in the valley, the master plan calls for an archeological survey and inventory, with "the ultimate objective of selecting certain key sites for archeological salvage." Regarding historic structures, the master plan prescribes research, field survey, and documentation "to make sure that all structures and other works of man of any historical significance are identified," and "all historic structures within area boundaries should be recorded in measured drawings and photographs for permanent record purposes." Those buildings within the flood zone that demonstrate exceptional historic or architectural merit should be relocated, and those within the park boundary outside of the flood zone should be retained. Additionally, the NPS should use historic buildings for interpretive purposes and other park needs whenever possible.[556]

According to the master plan, the NPS expected ten million visitors annually, primarily during the summer months. During the peak season, 150,000 visitors were anticipated daily.[557] According to Albert, this expectation far exceeded actual visitation numbers for other NPS sites, half of which did not receive upward of 150,000 visitors annually.[558] To accommodate such a high volume of visitors, park infrastructure was a top priority. In the master plan, Old Mine Road is described as a having a dual purpose as both an interpretive element and a key piece of infrastructure. Plans for Old Mine Road are described as follows:

> This is reputed to be the oldest road in the region, dating back to the 17th century. Pending further research this road, several miles of which will serve as a principal park road, and its associated structures will receive selected interpretation. If possible an authentic section, free of traffic, should be retained for its interpretive and recreative values.[559]

Although the description does not directly state which section of Old Mine Road would be utilized as a "principal park road," an accompanying "Visitor Use Plan" map indicates that Old Mine Road North would be used for "sightseeing (pleasure driving)." The use of automobiles on this section of the road indicates that it would be the so-called principal park road. Additionally, the map contains references to several historic buildings and sites along Old Mine Road North, including the Everitt House, Black Farm, the Westbrook-Bell House, the Ennis House, Fort Nomanock, and Fort Westbrook. The inclusion of these buildings and sites suggests that they would be subject to some degree of interpretation for visitor experience.[560] However, the description and accompanying map fail to clarify how the NPS would manage an "authentic" section of Old Mine Road in terms of usage, maintenance, and materials.[561]

The 1966 master plan contains several detailed plan view drawings of recreation developments slated to be built along Old Mine Road North, which is collectively referred to as the 'Minisink Section' (Figure 2.56).[562] The Minisink Section was slated to include three recreational sites: Sandyston, Namanock, and Minisink. The 1966 master plan describes this area as follows:

> This includes the area between the Flatbrook entrance and the entrance from U.S. 206 across the reservoir from Milford. Access is from either of these entrances via the interior circulation road which generally follows the alignment of the

555. It should be noted that DEWA does not have any known populations of snowshoe hares or snowy owls. Also, the 1966 master plan omitted the presence of bald eagles, which do reside within DEWA.
556. "The Master Plan: Delaware Water Gap National Recreation Area," 6.
557. "The Master Plan: Delaware Water Gap National Recreation Area," 13.
558. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 86.
559. "The Master Plan: Delaware Water Gap National Recreation Area," 14.
560. "The Master Plan: Delaware Water Gap National Recreation Area," 14–16.
561. "The Master Plan: Delaware Water Gap National Recreation Area," 14.
562. Note that these plan view drawings are presented as if the Tocks Island Dam was completed. Consequently, banks are shown to be along the edge of the reservoir pool rather than the Delaware River, and do not match existing riverbank profiles.

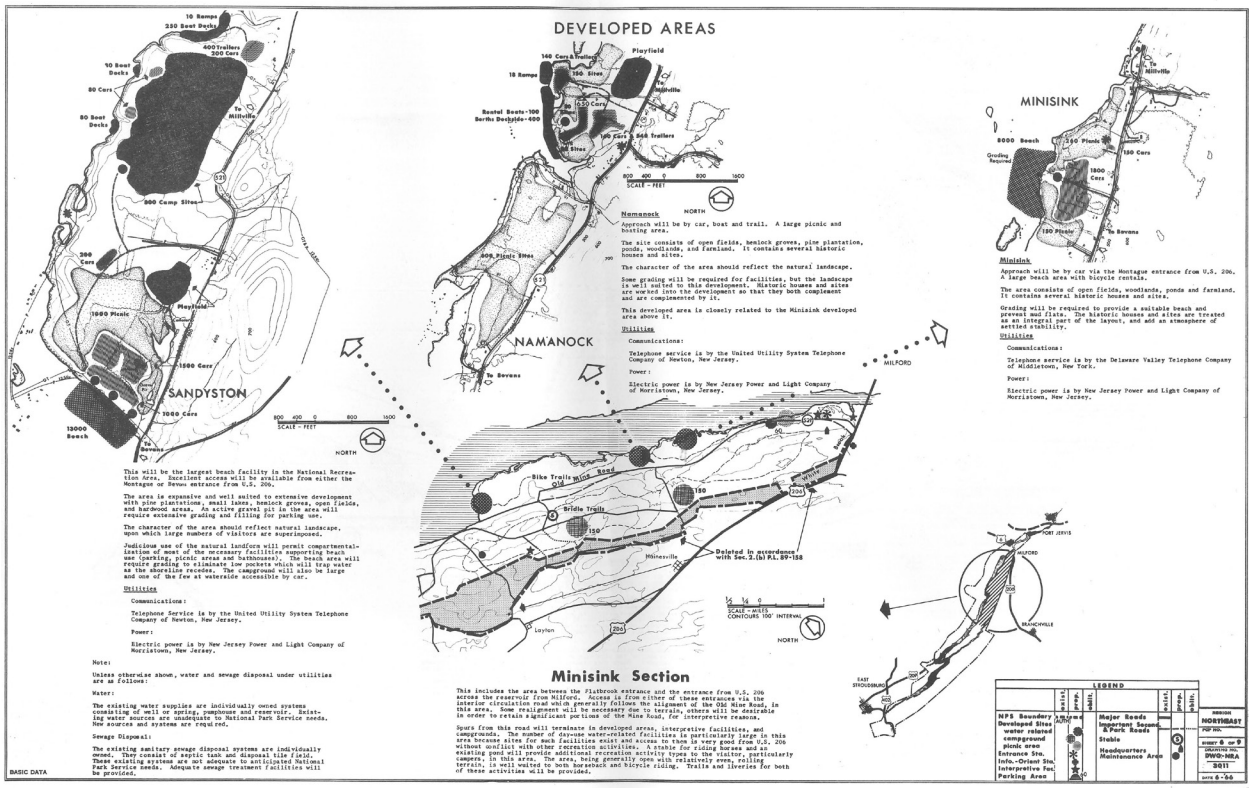


Figure 2.56. Proposals for recreational developments along Old Mine Road North. From "The Master Plan: Delaware Water Gap National Recreation Area," United States Department of the Interior, National Park Service, 1966 (Source: DEWA Archives).

> Old Mine Road, in this area. Some realignment will be necessary due to terrain, others will be desirable in order to retain significant portions of the Mine Road, for interpretive reasons.
>
> Spurs from this road will terminate in developed areas, interpretive facilities, and campgrounds. The number of day-use water-related facilities is particularly large in this area because sites for such facilities exist and access to them is very good from U.S. 206 without conflict with other recreation activities. A stable for riding horses and an existing pond will provide additional recreation activity types to the visitor, particularly campers, in this area. The area, being generally open with relatively even, rolling terrain, is well [suited] to both horseback and bicycle riding. Trails and liveries for both of these activities will be provided.[563]

The proposed 'Sandyston' site contains a large recreational beach and campground along the bank of the reservoir pool. Its proposed location was just north of Dingmans Ferry and near present-day Mettler Road (neither of which are extant in this hypothetical plan). The proposed plan contains a large beach, several parking lots, a large picnic area, room for eight hundred campsites, and several hundred boat docks along the bank of the reservoir. The landscape would include "pine plantations, small lakes, hemlock groves, open fields, and hardwood areas." The plan also includes a new access road north of Mettler Cemetery. The master plan notes that the proposed development would require extensive grading to create the recreational beach and to address an "active gravel pit" on the site.[564]

The proposed 'Namanock' site is also positioned along Old Mine Road North, north of the Sandyston site. The Namanock site was slated to include six hundred picnic sites, several parking lots, a large play field, boat ramps, rental boat sites, and four hundred boat berths. According to the plan, the Namanock site would be accessible via car, boat, or trail. The landscape would include "open fields, hemlock groves, pine plantation, ponds, woodlands, and farmland." The 1966

563. "The Master Plan: Delaware Water Gap National Recreation Area," 26.

564. "The Master Plan: Delaware Water Gap National Recreation Area," 26.

master plan also notes the presence of several historic houses in this area and proposes that "Historic houses and sites are worked into the development so that they both complement and are complemented by it."[565]

The northernmost area in the Minisink Section along Old Mine Road North would be the 'Minisink' site. The Minisink site would contain a smaller recreational beach, several large picnic areas, and a parking lot. The 1966 master plan notes the presence of several historic houses in this area, which should be "treated as an integral part of the layout" to create a feeling of "settled stability." The landscape in this area would feature "open fields, woodlands, ponds and farmlands."[566]

Between 1967 and 1971, HABS staff documented several historic properties within the DEWA boundary. The USACE provided funding while the National Park Service supervised the project. Properties situated along Old Mine Road North surveyed by HABS included the Ennis House, the Depue House, the Westbrook-Bell House, and the Everitt House. The HABS surveys include brief architectural descriptions, developmental histories, architectural drawings, and photographs. Of these resources, all are extant except the Everitt House (demolished ca. 1975).[567]

Land Acquisition Controversy

Federal land acquisition for the Tocks Island Dam project in the Delaware River Valley officially began in 1967. Landowners in the valley had few options. They could either negotiate a sale price with government appraisers, or they could refuse, at which point the government would condemn and seize the property. Owners that chose to sell had three secondary courses of action; they could remain in the house for one-year, they could claim salvage right and move the house to a different location, or they could opt for twenty-five-year life tenancy agreement (this option was only available to those properties outside of the proposed flood zones).[568]

Immediately, residents met the land acquisition process with resistance and frustration. According to Albert, the park boundary for DEWA was inconsistent, and people suspected that it was designed to exclude the property of "certain influential persons and businesses." The suspicions of local people were often confirmed by the inconsistent appraisals for properties throughout the valley, and Albert notes that "The price paid for an individual property appeared to be influenced by who owned it and not by its comparable worth." Accusations of bias and unfair treatment of property owners would continue throughout the land acquisition process.[569]

Albert describes multiple reasons property owners felt cheated during the negotiations process. Fundamentally, many did not feel that the offers they received were reflective of true market value. Albert notes that the pending dam project essentially depressed property values in the area, lowering the market value of people's houses. Additionally, the proposed sale prices were based on multiple factors, including the age and "business acumen" of the seller, not solely market value. The government was "under no obligation to pay the highest possible price," and limited government funds meant lower offer prices. Sellers were also confronted with higher property values outside of the DEWA boundary and rising mortgage rates nationwide, which further complicated attempts to buy new property.[570]

Albert also notes that negotiators representing the government had inconsistent approaches and some may have been dishonest with residents. Describing the inconsistent treatment of residents and the challenges they faced, Albert says the following:

> Another problem was the variety of persons that the government had to deal with. Some had special circumstances that could be not handled by inflexible government purchasing

565. "The Master Plan: Delaware Water Gap National Recreation Area," 26.
566. "The Master Plan: Delaware Water Gap National Recreation Area," 26.
567. John M. McRae, "Everitt House," Historic American Buildings Survey (Montague Township, Sussex County, New Jersey: Department of the Interior, Heritage Conservation and Recreation Service, 1970).
568. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 132–33.
569. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 133.
570. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 133.

> policies. Others had never traveled outside the area, had never bought or sold real estate, had no idea of what their property was worth, and did not understand the finer points of the whole process. Good and bad Corps negotiators also existed. Many persons were treated kindly, but some people complained about high-pressure tactics, harassment, and duplicity.[571]

The condemnation process posed steeper challenges. The selling prices offered by the government were not guaranteed and going to court during the condemnation process created an opportunity for the price to be lowered even further. Property owners were also burdened with the cost of hiring representation, and "Going to court was not a viable alternative for elderly people who could not travel, for people tied to jobs, or for others in special circumstances." The potential risks and uncertainty of the condemnation process dissuaded many from pursuing that route.[572]

For many residents, the land acquisition process resulted in feelings of instability and uncertainty. The undue stress of being forced to move was often compounded by the "feeling of being cheated." According to Albert, "A general impression exists that the stress of the Tocks Island process resulted in the premature death of many elderly persons," and "At least one suicide resulted from the land-acquisition process."[573] Researcher Jim Alexander confirms this occurrence while discussing the fate of valley resident Isaac Dunlap, whose property was condemned. In response to the condemnation, Dunlap committed suicide. He was seventy-eight at the time of his death.[574] The *New York Times* covered Dunlap's death, discussing the general turmoil and hardship in the wake of the failed dam project. According to the *New York Times* article, Dunlap "walked out to his favorite spot above Tom's Creek, where he had fished and hunted all his life" and shot himself.[575]

Annie Oftedal's story is another tragedy that emerged out of the Delaware River Valley in the wake of the dam project. According to Alexander, Oftedal and her husband built a small cottage at Crater Lake 21, where they retired. During the acquisition process, Oftedal claimed that she agreed to a life tenancy in exchange for a low sale price, but the government reneged on this agreement and "classified her as an 'adverse tenant.'"[576] Despite the Park's attempt to find her replacement housing, Oftedal refused to leave her home. In time, the Park Service declined to plow her access road in the winter, leaving her isolated and dependent on her neighbors to bring her food.[577] When Annie Oftedal passed away in 1986, she had no neighbors left and her body was not discovered for several months.[578]

As the land acquisition continued, depopulation created new challenges. The looming dam construction project and the large-scale transition in ownership left the area in a state of jurisdictional flux. During this time, Albert notes that the area suffered from a general lack of road maintenance, as well as a decline in police and fire services. According to Alexander, many locals "believed that some roads were cut off just to encourage holdouts to leave." Frustrated by the lack of road maintenance being done by the USACE, Walpack resident Frank Dascoll posted a sign on a local road in the new park boundary that read "The Lousy Army Corps of Engineers is Responsible for this Terrible Road."[579]

Many of the acquired houses, once empty, became victims of vandals and scavengers. Arson became an increasingly common and particularly destructive occurrence, and "Between June 1970 and June 1972. . .about three dozen buildings in the valley were burned."[580] The fear of these many possible threats was compounded by "several cases in which government demolition teams accidentally destroyed the wrong house,"

571. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 134.
572. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 134.
573. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 135.
574. James Alexander, Jr., "Legacy of Hurt: Eminent Domain at Tocks Island," Jim Alexander's Quest, 2023, https://jimquest.com/writ-history-tocks-domain/.
575. Shayna Panzer, "Minisink: Dream or Nightmare?," *The New York Times*, June 10, 1979, https://www.nytimes.com/1979/06/10/archives/new-jersey-weekly-minisink-dream-or-nightmare-the-minisink-dream-or.html.
576. Alexander, Jr., "Legacy of Hurt: Eminent Domain at Tocks Island."
577. Panzer, "Minisink: Dream or Nightmare?"
578. Alexander, Jr., "Legacy of Hurt: Eminent Domain at Tocks Island."
579. James Alexander, Jr., "The Breakdown of Law, Order and Social Fabric During the Tocks Island Project," Jim Alexander's Quest, 2023, https://jimquest.com/writ-history-tocks-law/.
580. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 134.

and "remaining residents, many of them elderly, became afraid to leave their homes for fear that something would happen in their absence."[581] According to Alexander, residents at the time remember instances of scavengers "riding up and down the Old Mine Road, looking for empty or abandoned houses to strip anything of value."[582]

In addition to vandalism and theft, so-called "squatters occupied many of the newly vacated houses in the Delaware River Valley." Many of the squatters who lived in the valley were really renters who remained in the valley past their lease dates. By 1969, the USACE was in possession of numerous empty houses and the dam project was still well into the future. To offset the lack of property tax revenue during the interim period, the USACE offered short-term leases for the vacant properties by publishing newspaper advertisements. Among these newspapers was *The Village Voice*, which attracted a counterculture readership. In response to the USACE advertisement, a group of young counterculture 'hippies' moved to the valley, where they leased a property "containing a large farmhouse, numerous cottages, and fertile river bottomland." These new residents dubbed the property "Cloud Farm" and established a small commune. Soon, Cloud Farm attracted more young counterculture arrivals, and "By the summer of 1970, there were no more houses vacant on the New Jersey side of the river," and Cloud Farm-adjacent tenants spread to USACE-owner properties on the Pennsylvania bank of the Delaware River. Many of these houses were not actually rented out, and their new residents were squatting illegally.[583]

The USACE decided to let the leases for the New Jersey properties expire in 1970, and the renters were evicted by the New Jersey State Police. To prevent the return of the squatters, the USACE demolished many of the houses on the New Jersey side of the river.[584] However, many of the squatters simply relocated to the USACE-owned properties in Pennsylvania. Albert describes the scene as follows:

> The territory of the Pennsylvania squatters was a five-mile section of River Road beginning several miles north of Shawnee-on-the-Delaware and running to near Walpack Bend. About two dozen houses and the historic Zion Lutheran Church were occupied by various families and groups of individuals. The church, located on a hill overlooking the valley, was renamed the "Church of Ecology," and marijuana grew in its cemetery. Scattered among the houses were tent camps, Indian teepees, homemade structures, and variety of innovative hippie homes, including one geodesic dome built on a raft in the Delaware River.[585]

Over the next several years, the squatter community expanded, as hundreds of young people traveled to the area between 1971 and 1973. Albert notes that the squatters were opposed to the Tocks Island Dam and were adherents to a "back-to-the-land" philosophy. The squatters established small-scale farms to feed themselves, where they maintained gardens and raised "chickens, goats, rabbits, pigs, cows, and other livestock."[586]

While the squatters were busy trying to establish their own utopia, they faced growing hostility from the local communities, particularly from those people who had been forced from their homes to make way for the dam. Crime, particularly arson, was often blamed on the newcomers, and the dynamic between the squatters and the locals became increasingly fearful and antagonistic. Two people were injured by gunfire from unknown assailants, and their provisions were burned during targeted acts of arson.[587]

Between 1970 and 1973, the squatters resisted repeated eviction attempts, and tensions between the squatters and government agents mounted. As the situation gained media coverage, more attention was drawn to the general discord becoming characteristic of the Tocks Island Dam project.[588] The squatters were finally evicted for good on February 24, 1974. After the squatters were removed, "federal bulldozers leveled all the

581. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 134.
582. Alexander, Jr., "The Breakdown of Law, Order and Social Fabric During the Tocks Island Project."
583. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 135–36.
584. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 136.
585. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 136.
586. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 137–38.
587. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 138–39.
588. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 139–41.

buildings" and "Dozens of Squatter animals were left to wander the area." Among those evicted were four pregnant women, newborn infants, and several babies and young children, all pushed from make-shift houses into the cold. According to Albert, "The Squatter eviction generated a great deal of bad publicity for the Corps of Engineers," and many viewed their eviction as "unnecessarily brutal."[589]

As they had done after the New Jersey squatters were evicted, the USACE went on a demolition campaign to ensure that the squatters could not return. In their haste, however, federal agents demolished a house they were not supposed to, destroyed several important historic buildings, and gutted the Zion Lutheran Church. In the wake of this accelerated destruction, "Nancy Shukaitis, the Delaware Valley Conservation Association, the Sierra Club, and the New Jersey Public Interest Research Group obtained a restraining order stopping all further demolition." According to Albert, "The wanton destruction of historic buildings generated even worse publicity than the evictions."[590]

Deauthorization of the Tocks Island Dam Project

Following the passage of the National Environmental Policy Act (NEPA), signed by President Nixon on January 1, 1970, the Tocks Island Dam project would be subject to new oversight and increased scrutiny. Because the dam was not yet under construction, any construction that would occur in the future would require an environmental impact statement to identify potentially adverse impacts of the project.[591] Under NEPA, the law required consideration of a no-action option in the environmental impact. For the Tocks Island Dam project and DEWA, "the Corps [USACE] questioned whether scrapping Tocks Island Dam would lead to the deauthorization of the DWGNRA [DEWA]," and according to Albert, no one knew the answer.[592]

In 1971, the NPS produced *A Natural System Plan for the Delaware Water Gap National Recreation Area*. This study evaluated the potential for a national recreation area along a river, rather than a lake. The findings indicated that this was a viable option, and the plan "deemphasized reservoir recreation and promoted recreational pursuits like canoeing, river swimming, hiking, winter sports, environmental education, and other outdoor activities." While it was not entirely clear if DEWA could exist without Tocks Island Dam because they were legally conjoined, it was evident that DEWA had recreational potential with or without a dam and reservoir.[593]

Throughout the early 1970s, the Tocks Island Dam project was in a state of limbo, fraught with controversy and repeated delays. As the situation dragged on, Congress became increasingly impatient. In 1974, Congress designated one-and-a-half million dollars for a comprehensive study of the project "to resolve the dam controversy" once and for all. No additional funds would be granted for land acquisition until the study was completed. To ensure that the pro-Tocks and anti-Tocks sides were represented, the study was to be conducted by the USACE with input from and in cooperation with the Delaware River Basin Commission (DRBC).[594]

Draft copies of *The Comprehensive Review Study of the Tocks Island Lake Project and Alternatives* was released in the spring of 1975. The study was organized into five main sections, each subject to public input meetings. Mina Hamilton Haefele, the head of the DVCA at the time, was an outspoken and well-informed attendee at these public input meetings.[595] Like many of Delaware River Valley residents, Haefele and her family were forced to vacate their historic farmhouse on the Pahaquarry Flats to make way for the dam. In Alexander's research about the Tocks Island Dam project, Haefele is quoted, saying "I hated it when those homes were bulldozed, the crunching sounds they made was like hearing your mother moan." Haefele returned to the area after attending university at Harvard, and she dedicated herself to stopping

589. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 141–42.
590. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 142.
591. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 80.
592. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 121.
593. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 123.
594. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 131.
595. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 144–45.

the Tocks project.[596] According to Albert, Haefele "spent hundreds of hours studying the project and had visited the New York City offices of the consultants," and she was quick to point out the study's weaknesses.[597]

On July 31, 1975, the DRBC gathered for a summit meeting, attended by the governors of Pennsylvania, New Jersey, and Delaware, as well as representatives for the governor of New York. Voting on behalf of their respective state, the governors voted against the Tocks Island Dam with a three to one margin. Pennsylvania was the only state that was still in favor of the dam.[598] Bills to deauthorize the dam were introduced to Congress in 1974 and 1977, but both were unable to make it past the public works committees of the House and Senate. Activists began seeking alternative routes to deauthorize the dam.[599]

Following the passage of the Wild and Scenic Rivers Act in 1968, the government created the National Wild and Scenic Rivers System. The National Wild and Scenic Rivers System was to include rivers with outstanding qualities related to their beauty, recreational importance, ecological importance, and cultural or historical importance. One requirement for rivers to be incorporated into the system was that they be free flowing and without obstruction. According to Albert, this language was deliberate, and "the system was designed to complement (or counter) the proliferation of federal dams being authorized in the 1960s. The section of the Delaware River north of Port Jervis was identified as one of twenty-seven potential rivers that could be adopted into the system."[600]

In 1977, Pennsylvania Representative Peter Kostmayer and New Jersey Senator Clifford P. Case introduced companion bills that expanded the identified section of the Delaware River to include both the Upper and Middle Delaware. A hearing on the House bill was held on November 1, 1977, in New Hope, Pennsylvania. Three hundred and fifty people attended the House National Parks and Insular Affairs Committee, and Haefele presented the hearing with a petition of three thousand signatures that supported incorporating the Upper and Middle Delaware into the National Wild and Scenic Rivers System. Impressed by the public support, the chair of the committee incorporated Kostmayer's bill into the National Parks and Recreation Act of 1978. Following a heated congressional debate and unsuccessful attempts to remove the inclusion of the Middle Delaware, the bill successfully passed through the House and the Senate. President Jimmy Carter signed the National Parks and Recreation Act into law on November 10, 1978, and the Upper and Middle Delaware River was officially incorporated into the National Wild and Scenic Rivers System.[601]

The river's inclusion in the National Wild and Scenic River System was not an official deauthorization, but it did reduce the likelihood of any future dam construction projects on the river. Recognizing that dam building would be an uphill battle, parties from New York, New Jersey, Pennsylvania, and Delaware grew concerned about their long-term access to water from the Delaware.[602] Government officials from Pennsylvania were concerned about adequate water supplies without the Tocks Island Dam. A drought period from 1980 to 1981 worsened these fears, briefly reviving discussions about building the dam.[603] Despite ongoing debates, officials abandoned plans to pursue the Tocks Island Dam and decommissioned the project in 1992.[604]

Transportation Networks During the Tocks Island Project Period

Old Mine Road

In anticipation of the Tocks Island Dam project, the NPS began purchasing private property within the proposed DEWA boundaries in 1967. As the

596. Alexander, Jr., "Legacy of Hurt: Eminent Domain at Tocks Island."
597. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 145.
598. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 146.
599. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 147–49.
600. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 149–50.
601. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 150–52.
602. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 155–56.
603. Albert, *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*, 162.
604. "Foundation Document, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River" (United States Department of the Interior, National Park Service, October 2014).

objections of impacted property owners and concerned parties mounted in opposition, the Tocks Island Dam project stalled throughout the 1970s. During this protracted and contentious transfer of ownership, officials did not actively maintain local roads. Additionally, the NPS decommissioned many spur roads on properties they purchased. The public confronted the NPS with accusations that they intentionally neglected road maintenance to discourage property owners from attempting to stay in the area.[605]

Despite accusations of negligence during the property acquisition process, Old Mine Road was an integral part of future plans for DEWA. Old Mine Road North would be a central north–south circulation system within the recreation area and would a be sightseeing attraction for driving tours. Additionally, the 1966 master plan for DEWA proposed several developed recreational sites along Old Mine Road North, and a well-maintained road would have been imperative to accommodate visitors.

Landscape Summary

During this period, many of the natural systems and features of the Old Mine Road North area remained unchanged. Because the Tocks Island Dam project never came to fruition, the Delaware River and its tributaries remained unimpounded, and they remained in their historic configuration. Wooded areas continued to contain a relatively similar mix of species as they did in previous periods while many former agricultural fields became infilled with successional vegetation.

As a result of the Tocks Island Dam project, the federal government began to purchase or condemn many of the privately held properties in the area, and the Delaware River Valley became increasingly depopulated. The lack of residential and agricultural occupation along Old Mine Road North resulted in changes to the character of the corridor. As the area became more depopulated, access to municipal services declined. In terms of circulation, the government decommissioned many small auxiliary roads. During the administrative transition from local to federal ownership, many of the main roads in and around the projected flood area received little to no maintenance and became neglected. In general, the alignment and orientation of Old Mine Road North did not change during this period. While it remains unknown when crews initially paved the road, historic photographs indicate that it was paved with asphalt by 1966.[606] The culverts and guard posts with rail cables built in previous periods remained. Overhead electrical utility systems also remained in place during this period.

At the beginning of this period, many farmsteads along Old Mine Road North maintained their traditional cluster arrangements, consisting of a main house surrounded by outbuildings. While most of these farmsteads were vacated and many were destroyed during the 1970s in preparation for the Tocks Island Dam project, several retained their historic cluster arrangement and historic outbuildings. Photographs show that many small-scale features associated with these historically agricultural landscapes, including fencing and stone rows, remained in place. However, the overall agricultural character of the area was substantially altered by increased vegetation and a widespread return to natural succession, which diminished historically open viewsheds.

Commemorative features in place by this period include the DAR commemorative marker at the Westbrook-Bell House, built in 1934, and a metal historic marker installed at the Westbrook-Bell House in 1968.

Residents vacated numerous buildings along Old Mine Road North during this period, and many buildings subsequently burned down. Squatters temporarily inhabited others. Seeking to prevent the squatters from occupying abandoned properties, the federal government also demolished numerous vacant homesteads. Based on historic aerials from 1931, there were approximately seventy-five to one hundred buildings and outbuildings located on the Old Mine Road North corridor (Figure 2.34). By 1984, there were an estimated twenty-five (Figure 2.57). Examples

605. Alexander, Jr., "The Breakdown of Law, Order and Social Fabric During the Tocks Island Project."

606. Elizabeth G. C. Menzies, *Before the Waters: The Upper Delaware Valley* (Rutgers University Press, 1966), 30, 55 contains photographs showing that Old Mine Road North was already paved by 1966. A photograph on page 55 also depicts the concrete guard rail posts at the intersection of Old Mine Road North and CR 560.

Figure 2.57. 1984 aerial photograph of a portion of Old Mine Road North. Note the marked increase in forested areas and the loss of historic buildings and structures (Source: Historic Aerials, https://www.historicaerials.com/viewer).

of structures lost during this period include the Gumaer property (Figure 2.58), the Everitt Property (Figure 2.59), and ten small vacation cabins mentioned in *The WPA Guide to 1930s New Jersey* (Figure 2.60).

The impact on the landscape of the Tock Island Dam Project is visible in aerial photographs dating to 1957, 1970, and 1984. In terms of land use and vegetation, the 1957 aerial shows a mixture of open agricultural fields and forested areas (Figure 2.61). Several former agricultural fields appear to be in a period of transition in 1957, indicating a decline in agricultural use, and by 1970 these fields are filled with successional vegetation (Figure 2.62). In these aerials, most of the remaining agricultural fields

Figure 2.58. 1974 picture of the outbuildings on the Gumaer property. Based on historic aerials, these buildings were no longer extant by 1984 (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service).

Figure 2.59. 1971 HABS photograph of the Everitt House, taken by George A. Eisenman. According to the HABS report, the Everitt House was demolished ca. 1975. From John M. McRae, "Everitt House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1971 (Source: Library of Congress, https://www.loc.gov/item/nj0141/).

Figure 2.60. 1957 aerial showing ten vacation cabins formerly extant along Old Mine Road North. Presumably, these buildings were removed in preparation for the Tocks Island Dam project (Source: Historic Aerials, https://www.historicaerials.com/viewer).

are located along the west side of Old Mine Road North.

While research did not produce a set of aerials that closely corresponded with the later stages of Tocks Island Dam project land acquisition period, the impact of federal ownership is clear in aerial photographs taken in 1984 (Figure 2.57). By this time, numerous farmhouses, residential buildings, and outbuildings that were present in 1957 and 1970 aerials are no longer extant. This likely speaks to the large number of houses that were lost to fire or demolition during the federal land acquisition period.

Pine Road (MP 7.29) appears in an aerial photograph from 1963. The road was part of a residential subdivision extending from Old Mine Road North west toward the Delaware River. Laurel Lane (MP 7.51) appears on an aerial photograph from 1963. The road was part of a residential subdivision extending from Old Mine Road west toward the Delaware River. In the early-1950s, the state of New Jersey reconfigured the tangled five-way intersection to streamline the path of U.S. 206. A 1956 aerial photograph shows Old Mine Road North curving north just prior to the intersection to meet U.S. 206 on a slight angle from the southwest. Between 1963 and 1969, based on aerial photographs from those years, Old Mine Road North was straightened and the intersection with U.S. 206 shifted about thirty-three feet to the south.

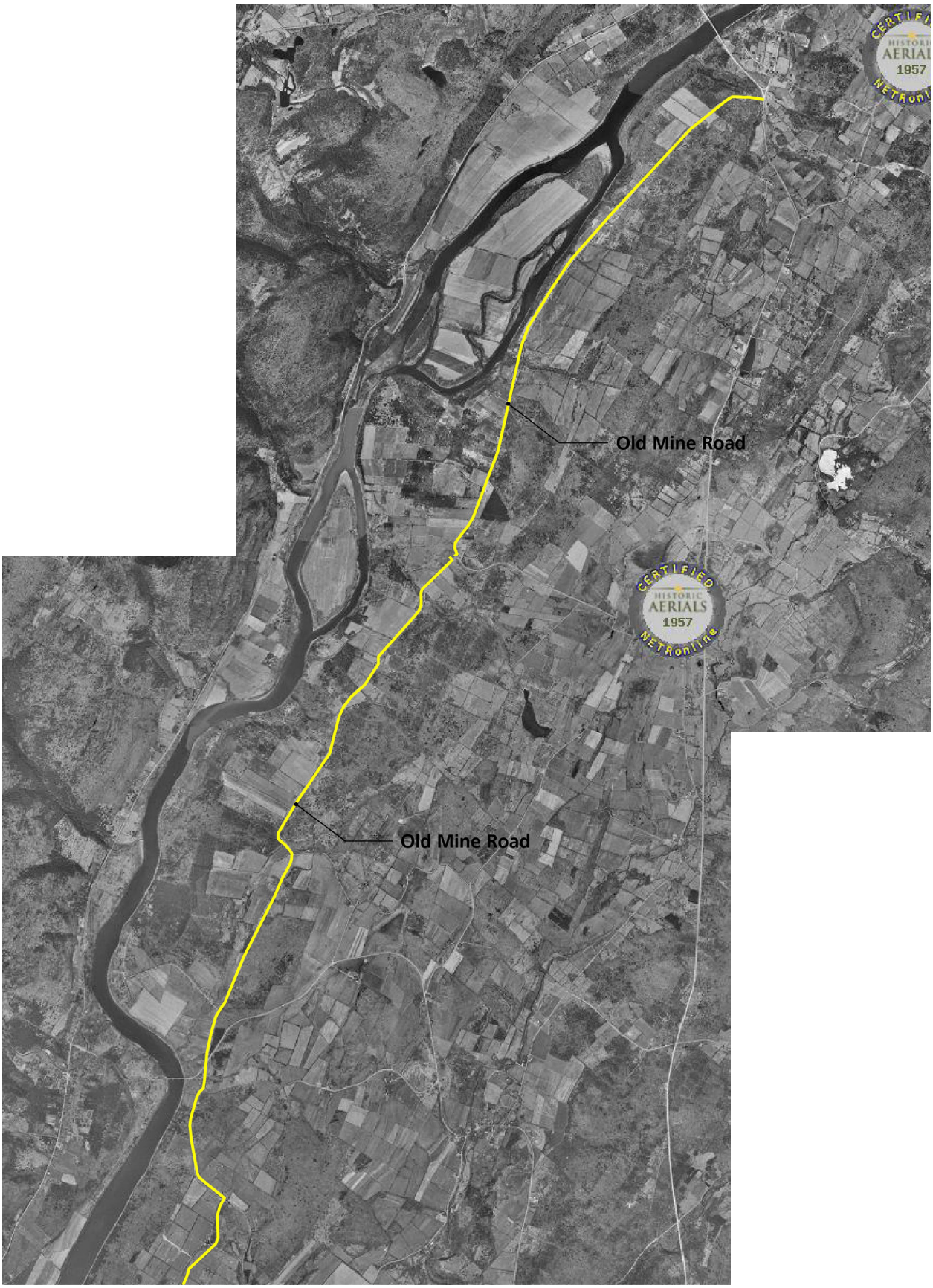


Figure 2.61. 1957 aerial photograph of Old Mine Road North. Note the mixture of open agricultural fields and forested areas. Several former agricultural fields are returning to natural succession, indicating a decline in agricultural activity (Source: Historic Aerials, https://www.historicaerials.com/viewer).

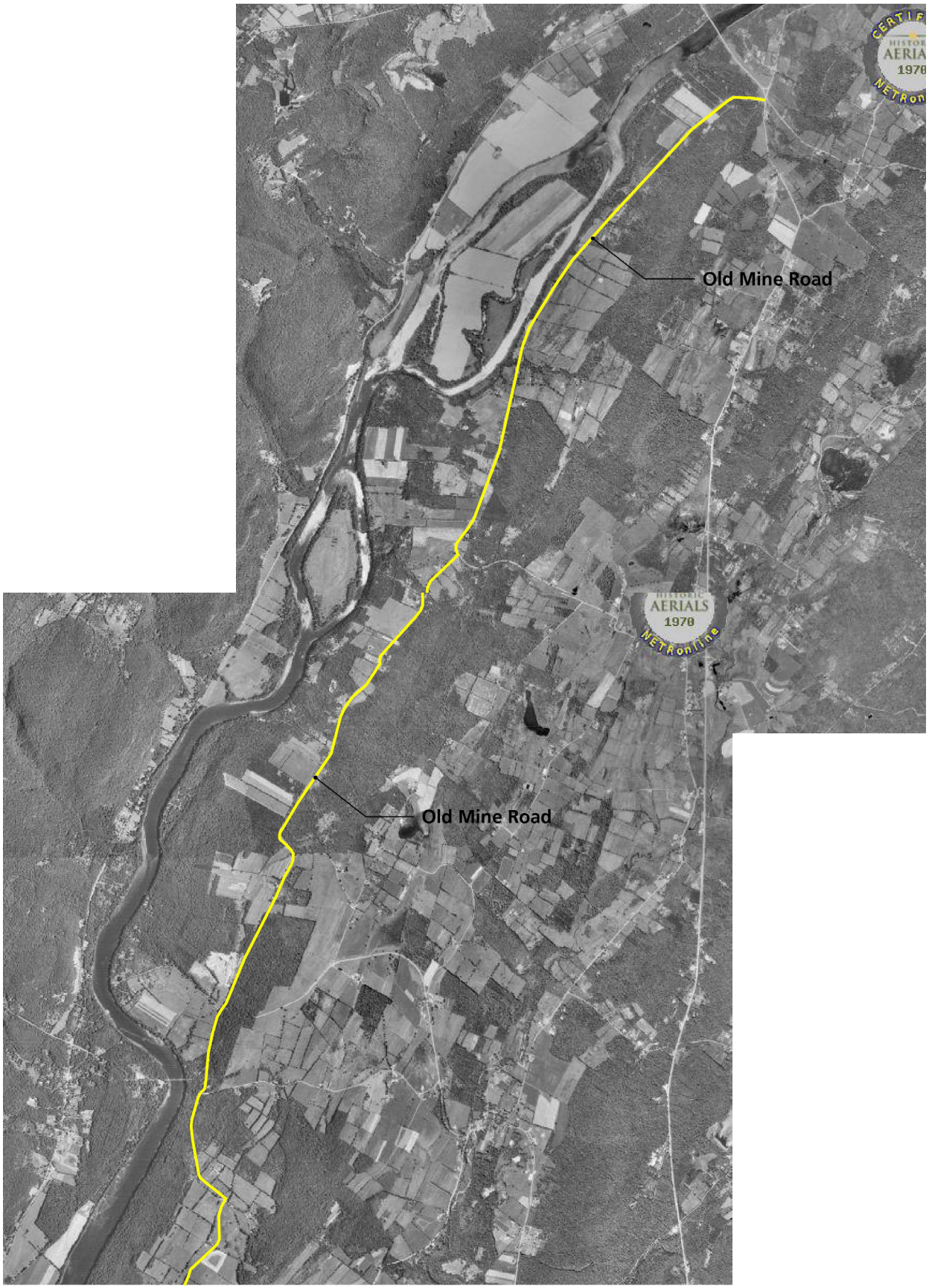


Figure 2.62. 1970 aerial photograph of Old Mine Road North. Note the marked increase in forested areas (Source: Historic Aerials, https://www.historicaerials.com/viewer).

Component Landscapes

Bevans-Hellwig Farm (ca. 1796, MP0.0)

The previous owners of the Bevans-Hellwig farmstead vacated the property when it was acquired by the federal government in preparation for the Tocks Island Dam project. In 1974, the NPS surveyed historic resources within the DEWA boundary, including the Bevans-Hellwig Farm. Photographs included in the 1974 survey include images of the two-story frame wing, the one-and-a-half story fieldstone kitchen wing, and the one-story wood-framed rear addition. The two-story frame building retains simple architectural details, including decorative sidelights, decorative trim, and turned porch supports, while the exterior has been encased in tarpaper with a faux-brick pattern (Figure 2.63). The fieldstone kitchen wing is shown to have a non-historic picture window on its west elevation (Figure 2.64), an enclosed porch on its east elevation, and dormer windows on both sides of the roof slope (Figure 2.65). The survey also includes a picture of a large Pennsylvania Bank barn located at the property, which is described as "one of the most handsome in the Park Area" (Figure 2.66). The survey notes other outbuilding noted to be present include a privy and a tool shed.[607] None of these historic outbuildings are extant today.

An aerial photograph from 1970 shows large agricultural fields with fencerows surrounding the Bevans-Hellwig Farm (Figure 2.67). The small rectilinear orchard present in the 1931 aerial is no longer present by this time. Several small outbuildings clustered around the main house are also visible in the 1970 aerial.

607. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 721–27.

Figure 2.63. 1974 photograph of the two-story frame wing on the Bevans-Hellwig House. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.64. 1974 photograph of the west elevation of the Bevans-Hellwig kitchen. Note the non-historic picture window and gabled dormer. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.65. 1974 of the east elevation of the Bevans-Hellwig House. Note the enclosed porch on the east elevation of the fieldstone kitchen. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.66. 1974 photograph of the Pennsylvania Bank barn on the Bevans-Hellwig property. This barn is no longer extant. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

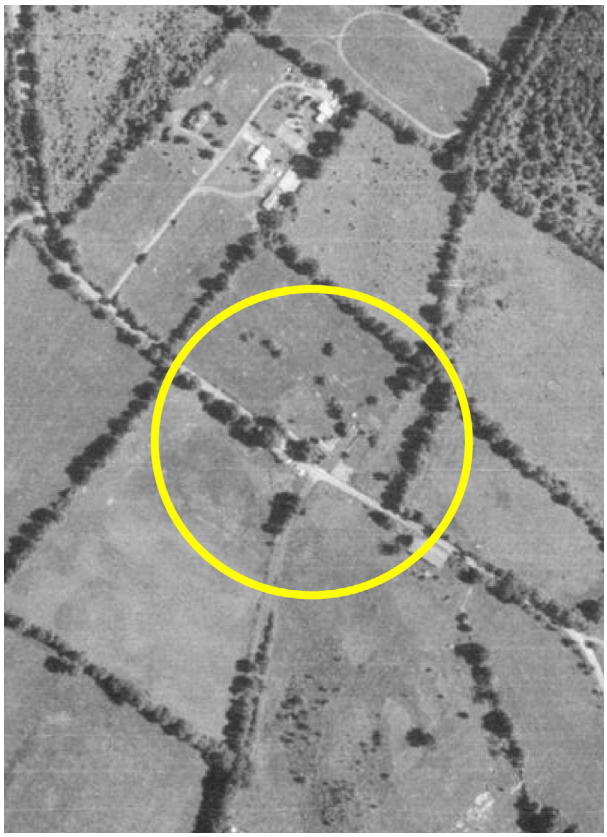


Figure 2.67. 1970 aerial image of the Bevans-Hellwig property, shown inside the yellow circle. Note the large agricultural fields, fencerows, and outbuildings. The orchard visible in the 1931 aerial is no longer present at this point in time (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Heron's Nest/Frank Stoll House (ca. 1830, Mettler Road)

During this period, the previous owners of Heron's Nest vacated the property when the federal government acquired it in preparation for the Tocks Island Dam project. In 1974, the NPS surveyed historic resources within the DEWA boundary, including Heron's Nest. According to the 1974 survey, Robert Welsh rehabilitated and redecorated the house during the 1960s and 1970s. Photographs included in the 1974 survey show the main house and the circa 1932 garage apartment (Figure 2.68, Figure 2.69, and Figure 2.70).[608]

An aerial photograph from 1970 indicates that the landscape around Heron's Nest property has become more heavily forested and portions of the property have either returned to natural succession or planted with conifer plantation rows (Figure 2.71). The large agricultural fields present in the 1931 aerial photograph are no longer present around Heron's Nest.

608. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 758–61.

Figure 2.68. 1974 photograph of the front elevation of Heron's Nest/Frank Stoll House. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.69. 1974 photograph of the rear elevation of Heron's Nest/Frank Stoll House. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.70. 1974 photograph of the garage apartment at the Heron's Nest. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.71. 1970 aerial of Heron's Nest, shown inside the yellow circle. Note that the surrounding landscape has become more heavily forested (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

John Wesley Van Auken House (ca. 1760, Mettler Road)

The owners of the John Wesley Van Auken House did not sell their property to the federal government. In 1974, the NPS surveyed historic resources within the DEWA boundary, including the John Wesley Van Auken House. Photographs included in the 1974 survey show the main house and a large wood-framed barn (Figure 2.72 and Figure 2.73). In the photographs, two large trees frame the main entrance on the facade of the main house. The 1974 survey also notes the presence of a small shed and a riverside rental cottage (it is unknown if these outbuildings are still extant).[609]

Aerial photographs from 1970 show a more heavily vegetated landscape around the property and it appears that the owners planted trees in rows along circulation features (Figure 2.74). It is possible that the landscape had become more ornamental by this time.

609. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 752–57.

Figure 2.72. 1974 photograph of the John Wesley Van Auken House. Note the two large trees framing the main entrance. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.73. 1974 photograph of the historic barn located on the Van Auken property. (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 2.74. 1970 aerial of the Van Auken property, shown inside the yellow circle. Note that the landscape has become more heavily vegetated (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

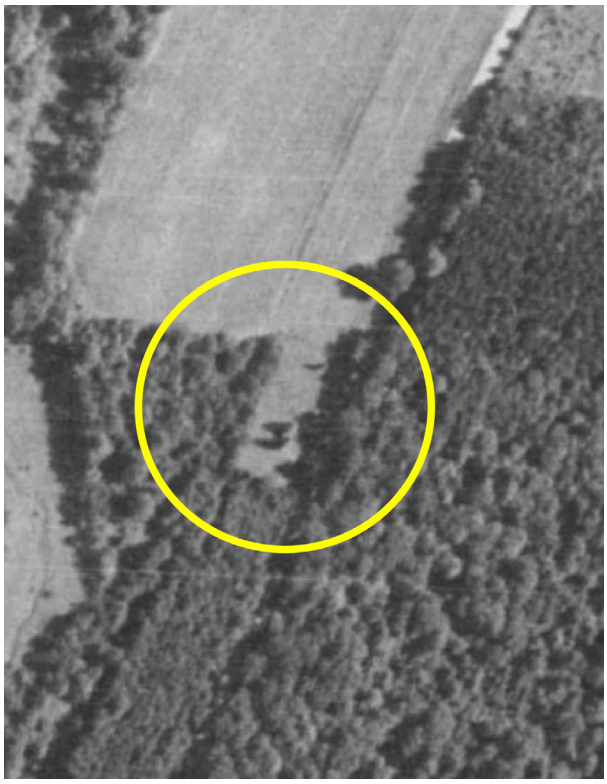


Figure 2.75. 1970 aerial of Mettler Cemetery, shown inside the yellow circle. Note that the landscape has become more forested, particularly south of the cemetery (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Mettler Cemetery (ca. early nineteenth century, MP 1.65)

Mettler Cemetery remained in place during this period. The number of burials and the presence of any notable landscape features during this period are unknown. By 1970, it appears that the landscape south of Mettler Cemetery has become more heavily forested (Figure 2.75). The cemetery remained active with new burials during this period.

Depue House (ca. 1780, MP 2.8)

During this period, the previous owners of the Depue House vacated the property when the federal government acquired it for the Tocks Island Dam project. In 1970, HABS surveyed the building. The HABS survey report contains numerous photographs showing the conditions of the property. The large early twentieth-century wood-framed rear addition is present in these photographs (Figure 2.76). Another HABS photograph of the facade of the Depue House shows Old Mine Road North, which by this time has been paved and painted with a center line (Figure 2.77).

Figure 2.76. 1970 photograph of the Depue House, taken by George Eisenman. Note the large two-story, wood-framed addition. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 2.77. 1970 photograph of the Depue House, taken by George Eisenman. Note that Old Mine Road North has been paved and has a painted center line. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

In 1974, the NPS surveyed historic resources within the DEWA boundary, including the Depue House. No photographs of outbuildings are included in the 1974 survey.[610] In general, conditions shown in the 1974 survey photographs closely resemble those present in the 1970 HABS photographs.

Aerial photographs from 1970 show large agricultural fields west and southwest of the property, and there are several large outbuildings opposite the house on the east side of Old Mine Road North (Figure 2.78). In general, the land on

610. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 764–69.

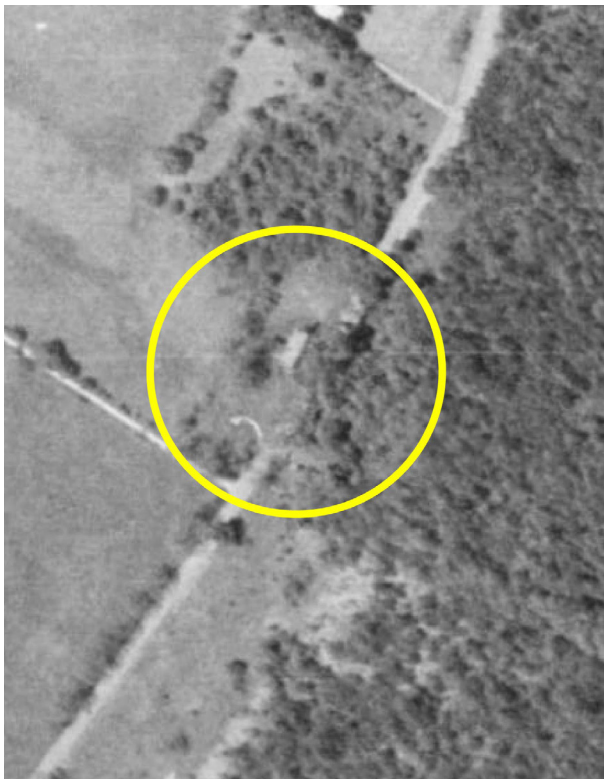


Figure 2.78. 1970 aerial of the Depue House, shown inside the yellow circle. Note that fields on the opposite side of Old Mine Road North have been allowed to return to natural succession (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Figure 2.79. Undated view of the Anson Johnson House, which by the time of this photograph has a one story porch. There is a stone or concrete walk leading to the porch from the drive, which appears to be unpaved. DEWA staff attribute the date of this photograph to the 1970s (Source: DEWA).

the east side of Old Mine Road North has become more heavily vegetated and returned to natural succession.

Anson Johnson House (ca. 1840, MP 4.2)

The previous owners of the Anson Johnson House vacated the property when the federal government acquired it in preparation for the Tocks Island Dam project. By the 1970s, the owners had removed the two-story porch from the facade of the house and replaced it with a one-story porch (Figure 2.79). The 1974 *DEWA Historical Architectural Survey* did not include a survey for the Anson Johnson House. No known additions or alterations were made to the Anson Johnson House during this time. It is possible that the existing shed at the Anson Johnson property was constructed by this time, but its date of construction remains unknown.

1970 aerial photographs show the Anson Johnson House surrounded by open agricultural fields bound by fencerows (Figure 2.80).

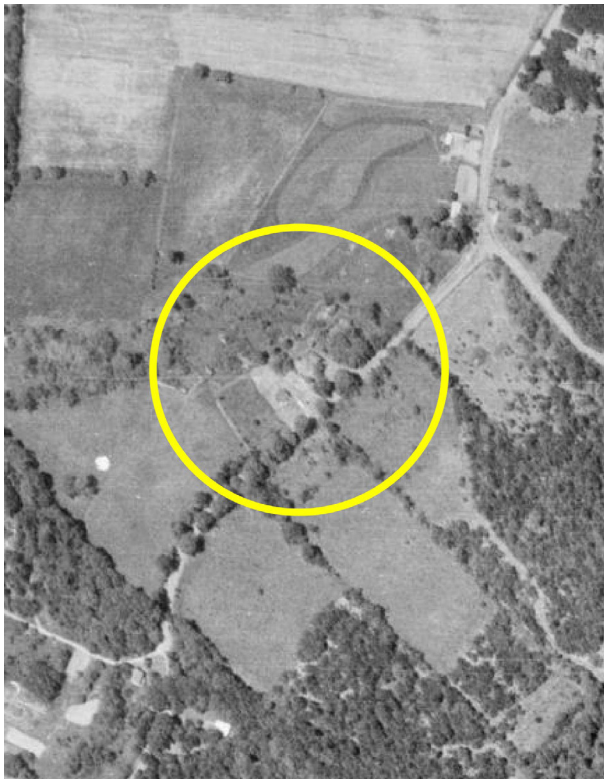


Figure 2.80. 1970 aerial of the Anson Johnson House, shown inside the yellow circle. Note the large agricultural fields and fencerows (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

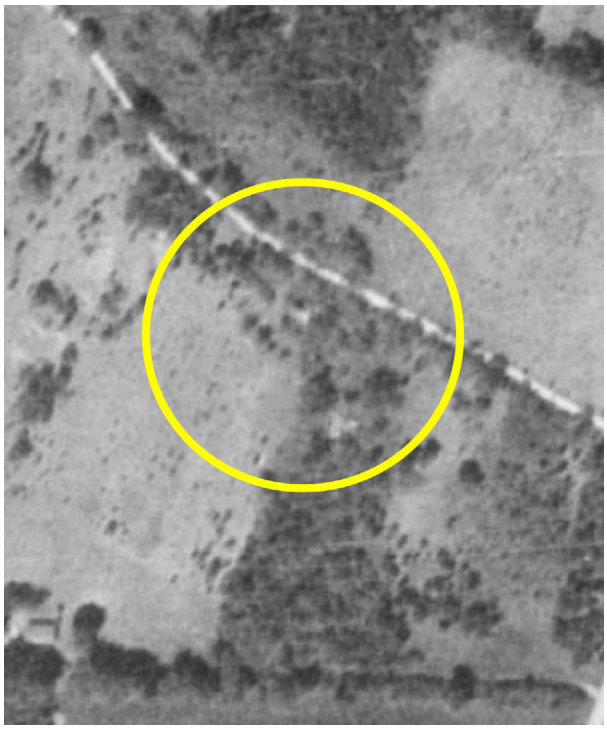


Figure 2.81. 1970 aerial of the Ennis House, shown inside the yellow circle. Note that the area directly surrounding the house has scattered forested areas (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

William Ennis House (1751, MP 4.6)

The previous owners of the William Ennis House vacated the property when the federal government acquired it in preparation for the Tocks Island Dam project. In 1970, HABS surveyed the Ennis House. According to the HABS report, Dr. Hans Semanta constructed another addition circa 1952 during his ownership of the house. The HABS report does not include photographs of the William Ennis, nor does it provide context shots showing the character of the surrounding landscape.[611] The 1974 *DEWA Historical Architectural Survey* did not include a survey for the Ennis House.

1970 aerials show the Ennis House situated in a more heavily wooded area. Large agricultural fields are located north and west of the house, but they are not as close to the building as they are on other farmsteads (Figure 2.81). It is possible that the Ennis House property had not been a productive agricultural landscape for some time prior to federal acquisition.

Figure 2.82. 1970 photograph showing the south and east elevations of the Westbrook-Bell House. From Wesley Shank and William C. Badger, "Johannes Westbrook House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0147/).

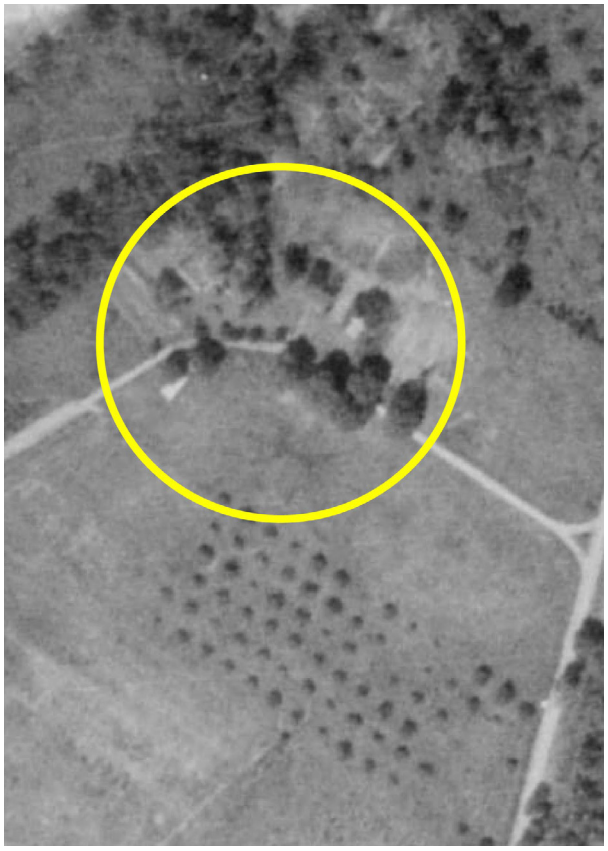


Figure 2.83. 1970 aerial of the Westbrook-Bell House, shown inside the yellow circle. Note that one outbuilding has been demolished, and a new rectilinear orchard has been established south of the farmstead (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

611. Shank and Badger, "William Ennis House."

Westbrook-Bell Farm (ca. pre-1730, MP 5.14)
The previous owners of the Westbrook-Bell Farm vacated the property when the federal government acquired it in preparation for the Tocks Island Dam project. In 1970, HABS surveyed the Westbrook-Bell House (Figure 2.82). The HABS report did not record any major additions or alterations made to the property during this period. HABS photographs of the Westbrook-Bell property do not include photographs of outbuildings or context shots showing the surrounding landscape characteristics, and the 1974 *DEWA Historical Architectural Survey* did not include a survey for the Westbrook-Bell House.[612]

Aerial photographs from 1970 show the Westbrook-Bell House with cleared agricultural land on its south and east sides (Figure 2.83). There are three large outbuildings east of the Westbrook-Bell House (two of which are still extant). Note that the owners had demolished the fourth, easternmost outbuilding (present in the 1931 aerials) by this time. The rectilinear orchard north of the Westbrook-Bell House present in the 1931 aerial photograph is no longer present. There is a new rectilinear orchard south of the Westbrook-Bell House present in the 1970 aerial.

Black Farm (ca. mid to late eighteenth century, MP 5.3)
The previous owners of the Black Farm vacated the property when the federal government acquired it in preparation for the Tocks Island Dam project. The Black Farm was not included in the 1970 HABS survey or the 1974 *DEWA Historical Architectural Survey*. No known additions or alterations were made to the Black Farm House during this time. The historic outbuildings that are extant on the property were in place by this period, and research did not reveal information about other outbuildings that may have existed or been constructed during this period.

An undated photograph shows Black Farm after Old Mine Road North was paved. The road is lined by a wood post and wire fence, and there are overhead powerlines visible in the photograph. The east side of Old Mine Road North appears to be more heavily vegetated and forested (Figure 2.84).

Figure 2.84. An undated photograph of Black Farm. Note wooden post and wire fencing lining the road and the overhead power lines. Old Mine Road North is paved at the time this photograph was taken. The grading for the road is apparent at photo left, there is a two- to three-foot shoulder of fill (Source: DEWA Archives).

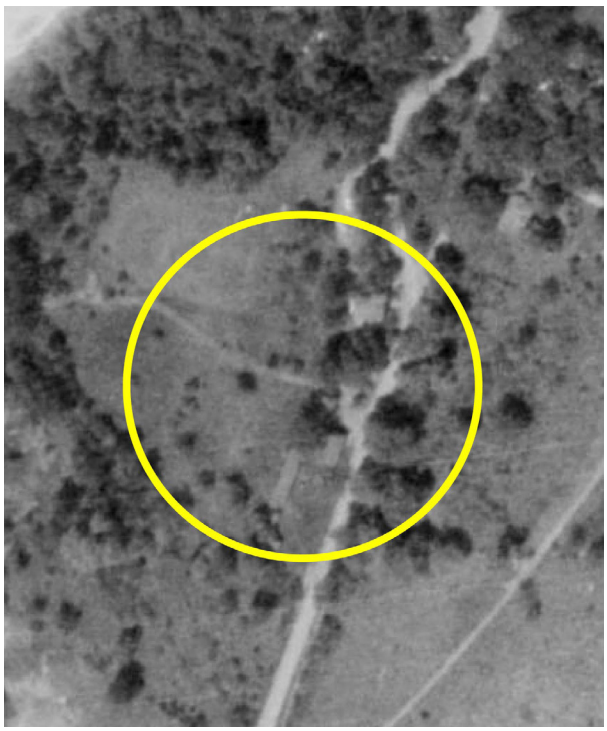


Figure 2.85. 1970 aerial of the Black Farm, shown inside the yellow circle. Note that the landscape is more heavily vegetated by this time, and former agricultural fields have begun returning to natural succession (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

1970 aerials show the Black Farm situated in a more heavily wooded area. Many of the large agricultural fields that were present in 1931 aerial images have become forested and begun to return to natural succession (Figure 2.85). It is possible that the Black Farm had not been a productive agricultural landscape for some time prior to federal acquisition.

612. Shank and Badger, "Johannes Westbrook House."

Minisink Dutch Reformed Church & Cemetery (ca. pre-1737, MP 7.38)

The Minisink Dutch Reformed Church cemetery remained during this period. The number of burials and the presence of any notable landscape features during this period are unknown. 1970 aerial images show a densely forested landscape surrounding the Minisink Dutch Reformed Cemetery (Figure 2.86).

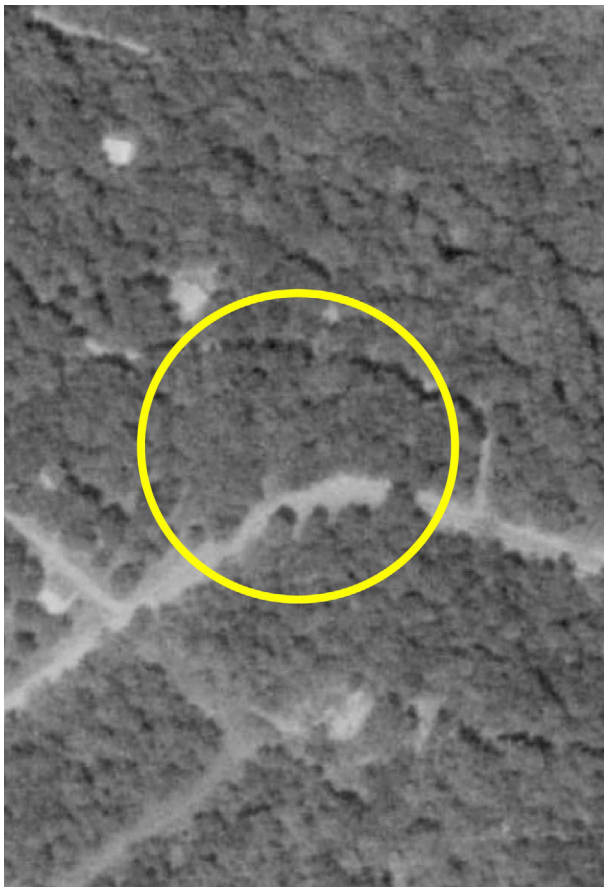


Figure 2.86. 1970 aerial showing the location of the Minisink Dutch Reformed Cemetery, shown inside the yellow circle. Note that the cemetery is surrounded by dense forest (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotation added by WLA Studio).

Page intentionally left blank

mi 7.538

Dwg. 2.21c
Dwg. 2.21b
Dwg. 2.21a
Dwg. 2.20b
Dwg. 2.20a
Dwg. 2.19c
Dwg. 2.19b
Dwg. 2.19a
Dwg. 2.18c
Dwg. 2.18b
Dwg. 2.18a
Dwg. 2.17
Dwg. 2.16

Black Farm
Westbrook-Bell Farm
Ennis House
Anson Johnson House
Depue House
Mettler Cemetery
Heron's Nest
Frank Stoll House
Van Auken House
Sevans Hellwig House
mi 0.000

OLD MINE ROAD NORTH

Delaware River
Delaware River

CR 560 Dingmans Road
Old Dingmans Road
Mettler Road

20 Ft Contours
Old Mine Road
Streams & Creeks
Presumed Developed Area
Presumed Building or Structure
Component Landscape
DEWA Park Boundary
CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Overview

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023.

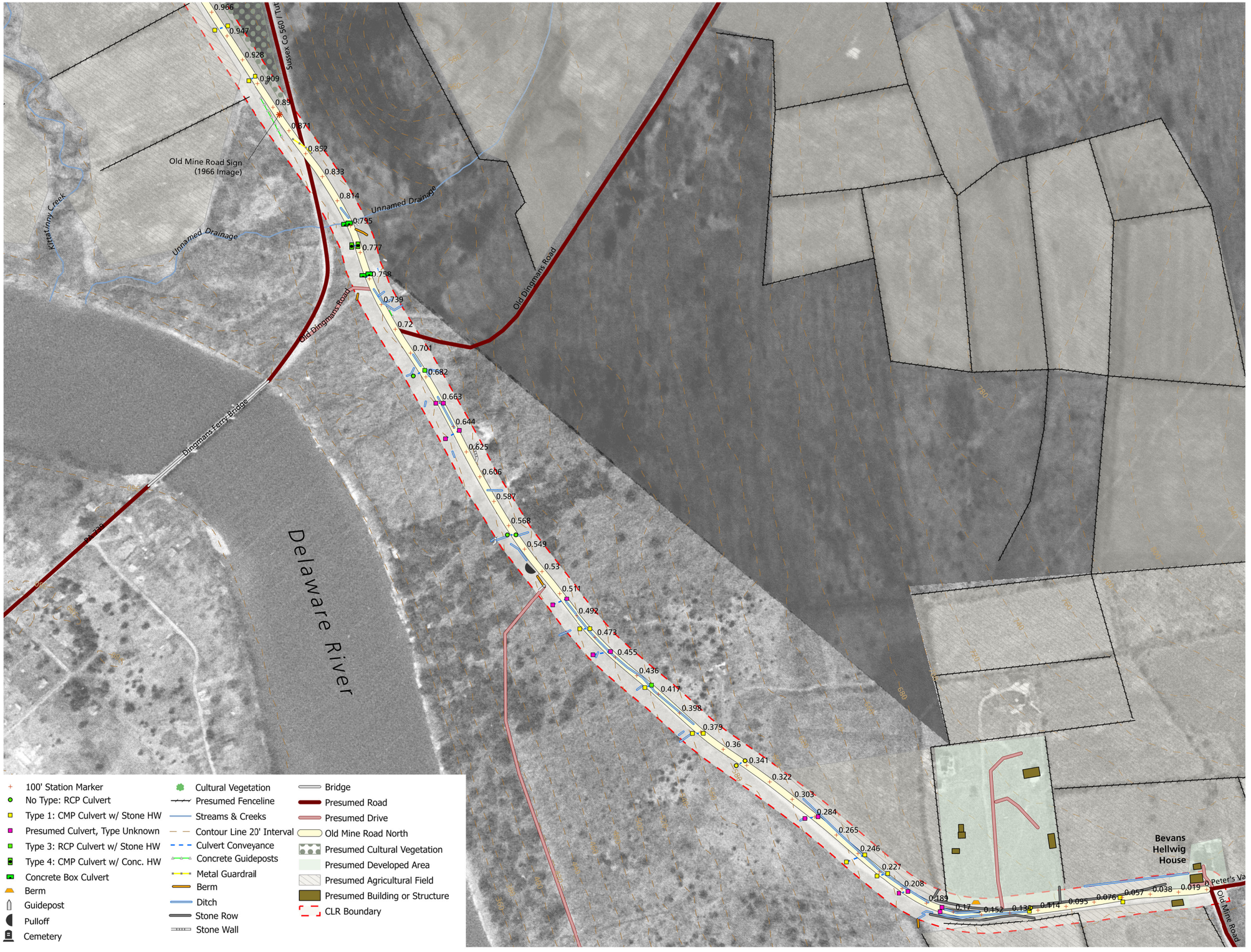
DRAWN BY

WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

Drawing 2.15



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Mile 0.000 to 0.966

National Park Service

Olmsted Center for Landscape Preservation

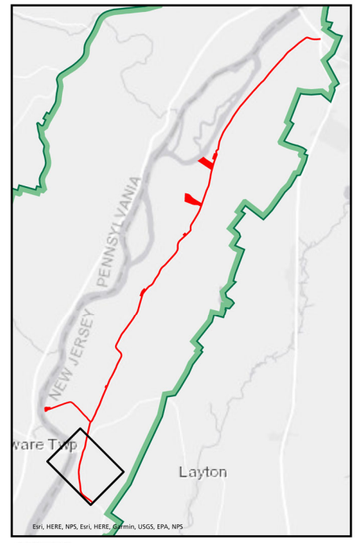
www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023. 1. 1957 Aerial Photograph

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.16

- 100' Station Marker
- Type 1: CMP Culvert w/ Stone HW
- Presumed Culvert, Type Unknown
- Type 3: RCP Culvert w/ Stone HW
- Type 4: CMP Culvert w/ Conc. HW
- Concrete Box Culvert
- Berm
- Cultural Vegetation
- Culvert Conveyance
- Concrete Guideposts
- Metal Guardrail
- Berm
- Ditch
- Stone Row
- Stone Wall
- Presumed Road
- Presumed Drive
- Presumed Fenceline
- Streams & Creeks
- Contour Line 20' Interval
- Old Mine Road North
- Presumed Cultural Vegetation
- Presumed Building or Structure
- Presumed Developed Area
- Presumed Agricultural Field
- CLR Boundary

Layton Quarry
ca. 1960s

Heron's Nest /
Frank Stoll House

Heron's
Nest
Garage

Mettler Road

Kittatinny Creek

John Wesley
Van Auken
House

Old Mine Road Sign
(1966 Image)

Unnamed Drainage

Sussex Co 560 / Tuttles Corner / Dingmans Road

Old Dingmans Road

Delaware River

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Mile 0.739 to 1.402

National Park Service

Olmsted Center for Landscape Preservation

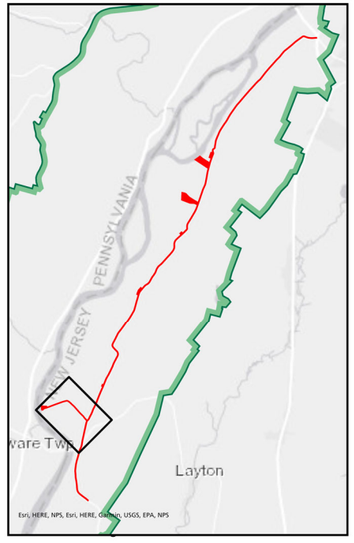
www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023. 1. 1957 Aerial Photograph

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

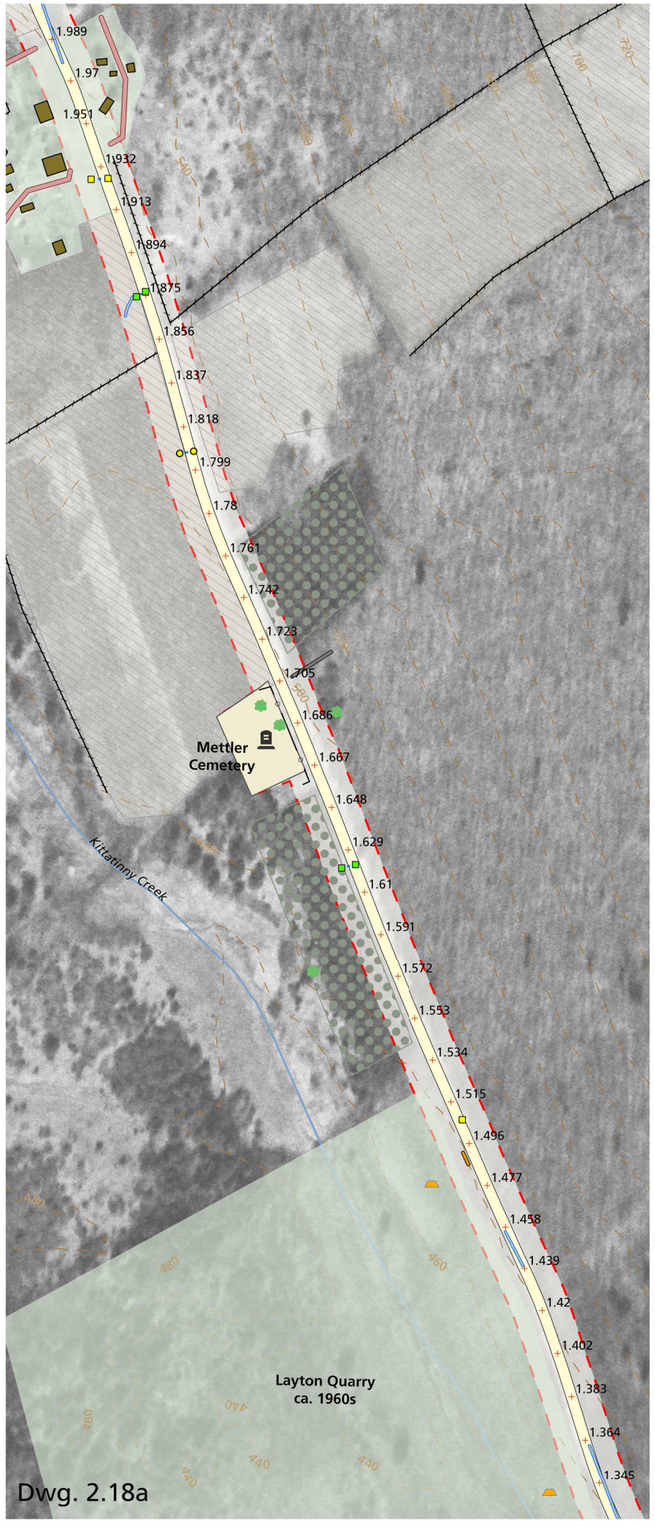


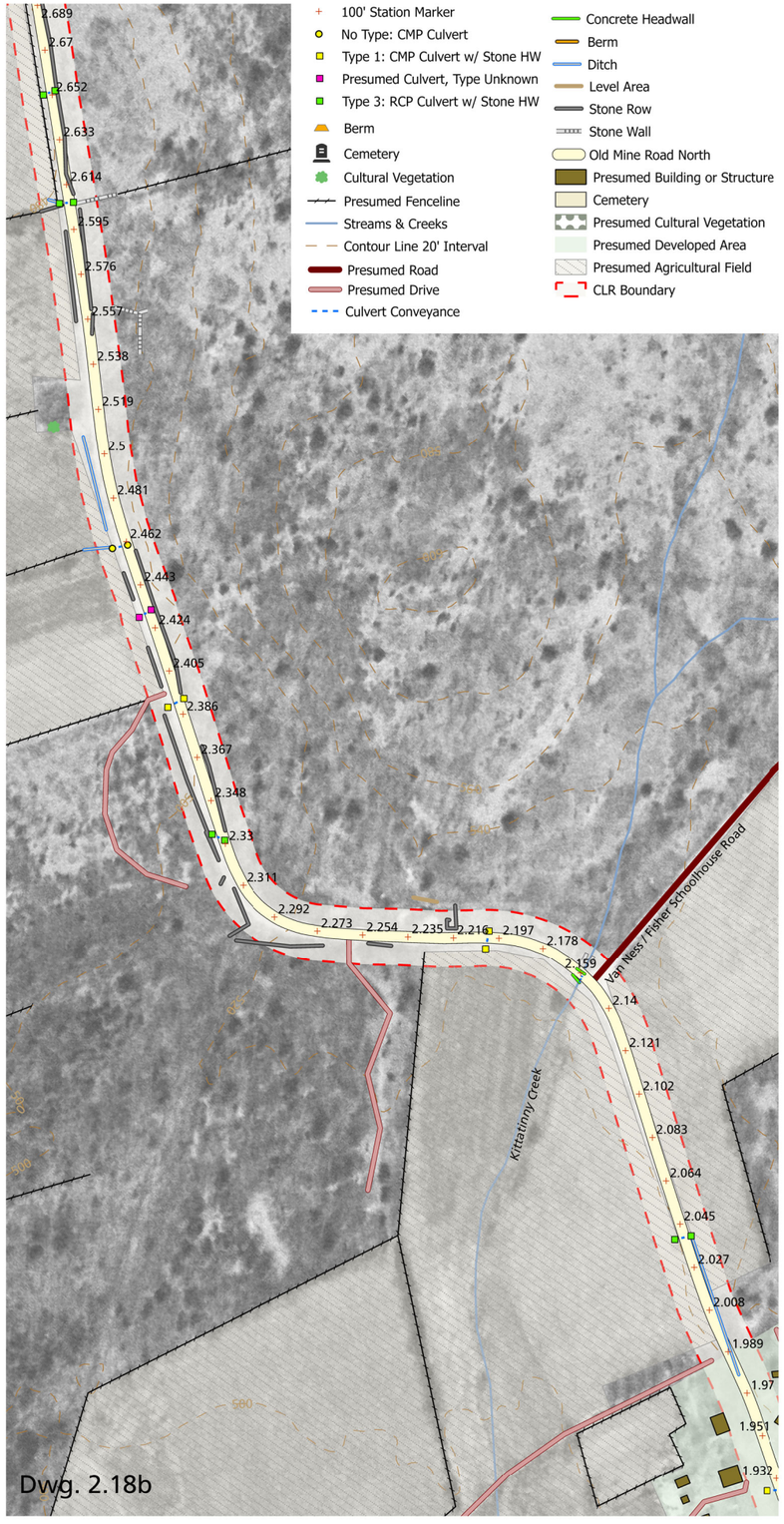
NOTES

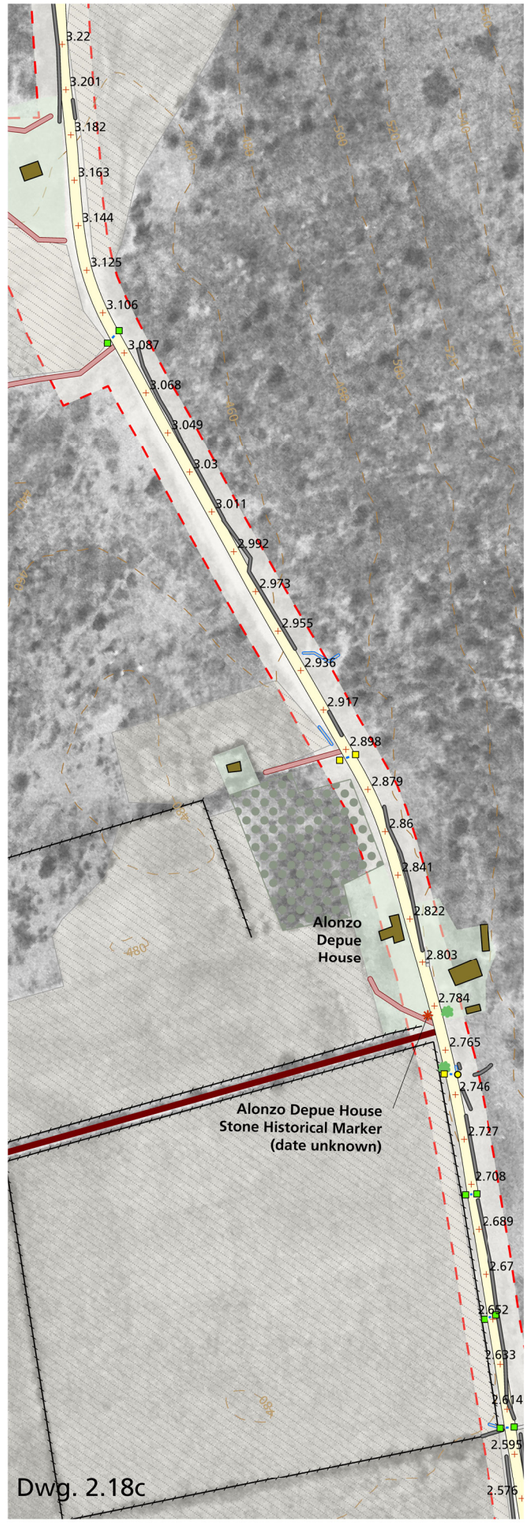
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.17







100' Station Marker
No Type: CMP Culvert
Type 1: CMP Culvert w/ Stone HW
Presumed Culvert, Type Unknown
Type 3: RCP Culvert w/ Stone HW
Berm
Cemetery
Cultural Vegetation
Presumed Fenceline
Streams & Creeks
Contour Line 20' Interval
Presumed Road
Presumed Drive
Culvert Conveyance
Concrete Headwall
Berm
Ditch
Level Area
Stone Row
Stone Wall
Old Mine Road North
Presumed Building or Structure
Cemetery
Presumed Cultural Vegetation
Presumed Developed Area
Presumed Agricultural Field
CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Mile 1.345 to 3.295

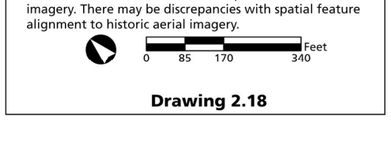
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023. 1. 1957 Aerial Photograph

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

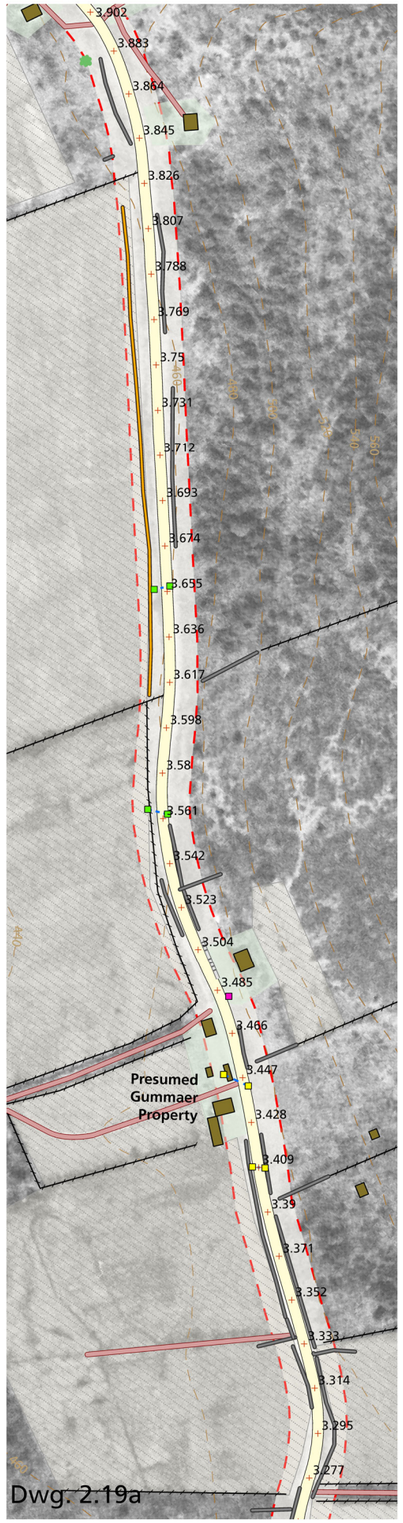


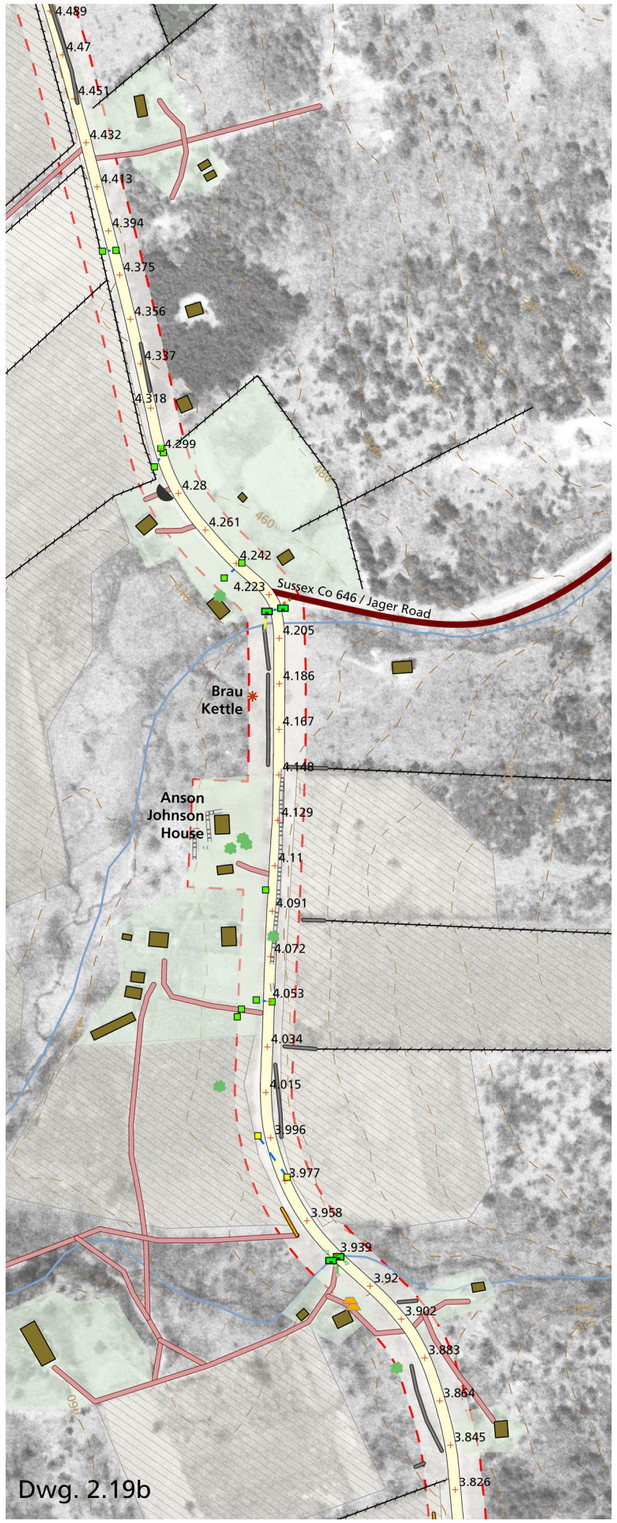
NOTES

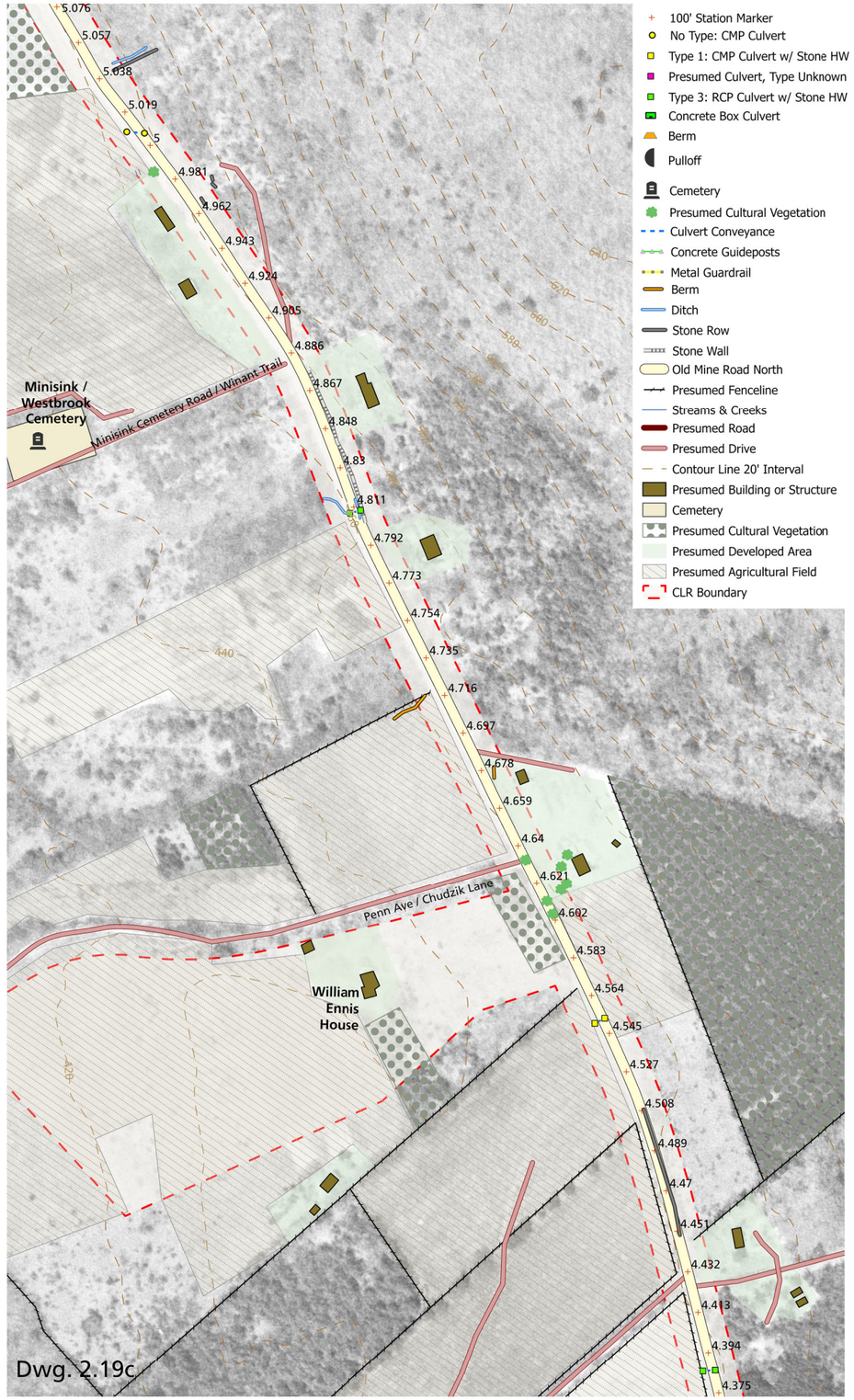
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.18







100' Station Marker
No Type: CMP Culvert
Type 1: CMP Culvert w/ Stone HW
Presumed Culvert, Type Unknown
Type 3: RCP Culvert w/ Stone HW
Concrete Box Culvert
Berm
Pulloff
Cemetery
Presumed Cultural Vegetation
Culvert Conveyance
Concrete Guideposts
Metal Guardrail
Berm
Ditch
Stone Row
Stone Wall
Old Mine Road North
Presumed Fenceline
Streams & Creeks
Presumed Road
Presumed Drive
Contour Line 20' Interval
Presumed Building or Structure
Cemetery
Presumed Cultural Vegetation
Presumed Developed Area
Presumed Agricultural Field
CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Mile 3.277 to 5.076

National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023. 1. 1957 Aerial Photograph

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.19

Delaware River

Brace-Everitt Cemetery

Everitt Farm

Daniel Westfall's Bridge (Stone Box Culvert)

White Kill Creek

Van Etten Road

Black Farm Stone Shed

Black Farm House

Black Farm Dutch Barn

Black Farm Wagon Shed

Westbrook Bell Barn 1

Westbrook Bell Barn 2

Westbrook Bell Privy

Westbrook Bell House

Drive to Westbrook-Bell Farm

Westbrook Bell Stone Marker (1934) Metal Marker (1968)

Minisink / Westbrook Cemetery

Minisink Cemetery Road / Winant Trail

Dwg. 2.20a

- 100' Station Marker
- No Type: CMP Culvert
- Type 1: CMP Culvert w/ Stone HW
- Presumed Culvert, Type Unknown
- Type 3: RCP Culvert w/ Stone HW
- Berm
- Constructed pool
- Guidepost
- Cemetery
- Presumed Cultural Vegetation
- Ravine
- Culvert Conveyance
- Concrete Guideposts
- Timber Guardrail
- Berm
- Ditch
- Stone Row
- Stone Wall
- Presumed Fenceline
- Contour Line 20' Interval
- Streams & Creeks
- Presumed Road
- Presumed Drive
- Old Mine Road North
- Presumed Agricultural Field
- Presumed Developed Area
- Presumed Cultural Vegetation
- Cemetery
- Presumed Building or Structure
- CLR Boundary

Delaware River

Dwg. 2.20b

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Mile 4.848 to 6.08

National Park Service

Olmsted Center for Landscape Preservation

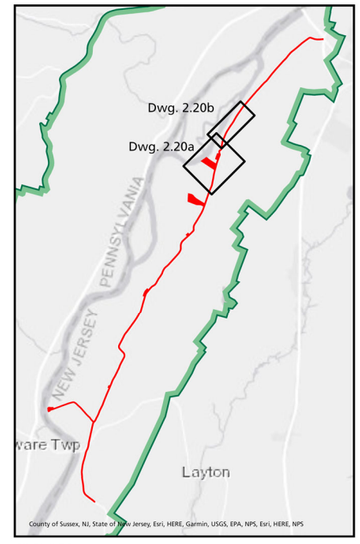
www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023. 1. 1957 Aerial Photograph

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

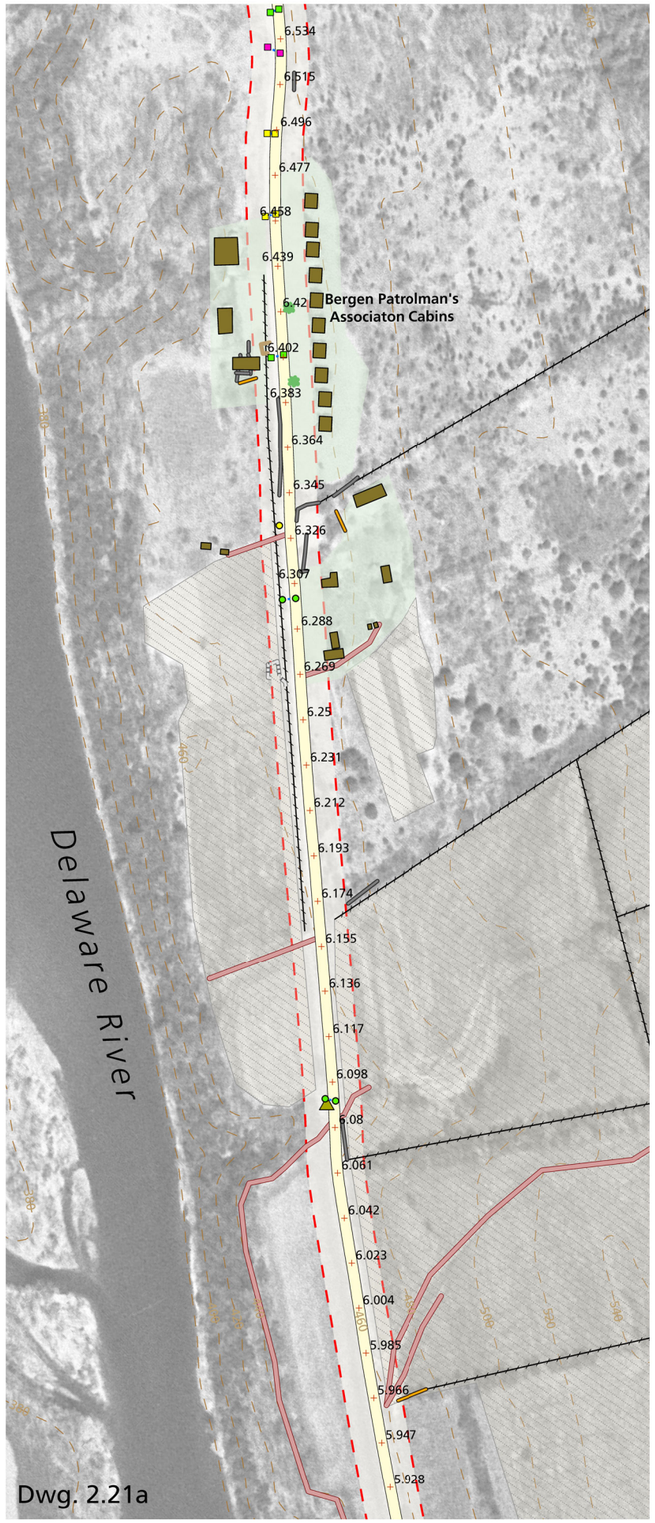


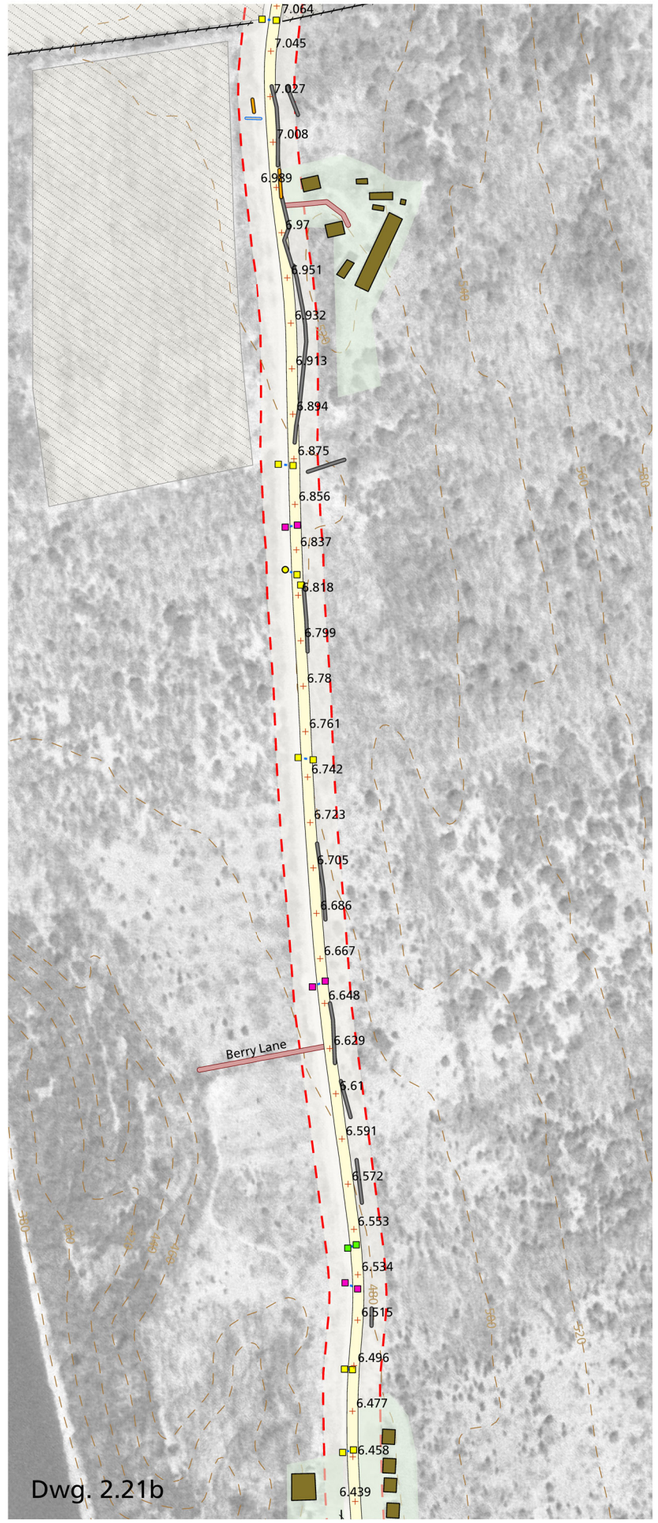
NOTES

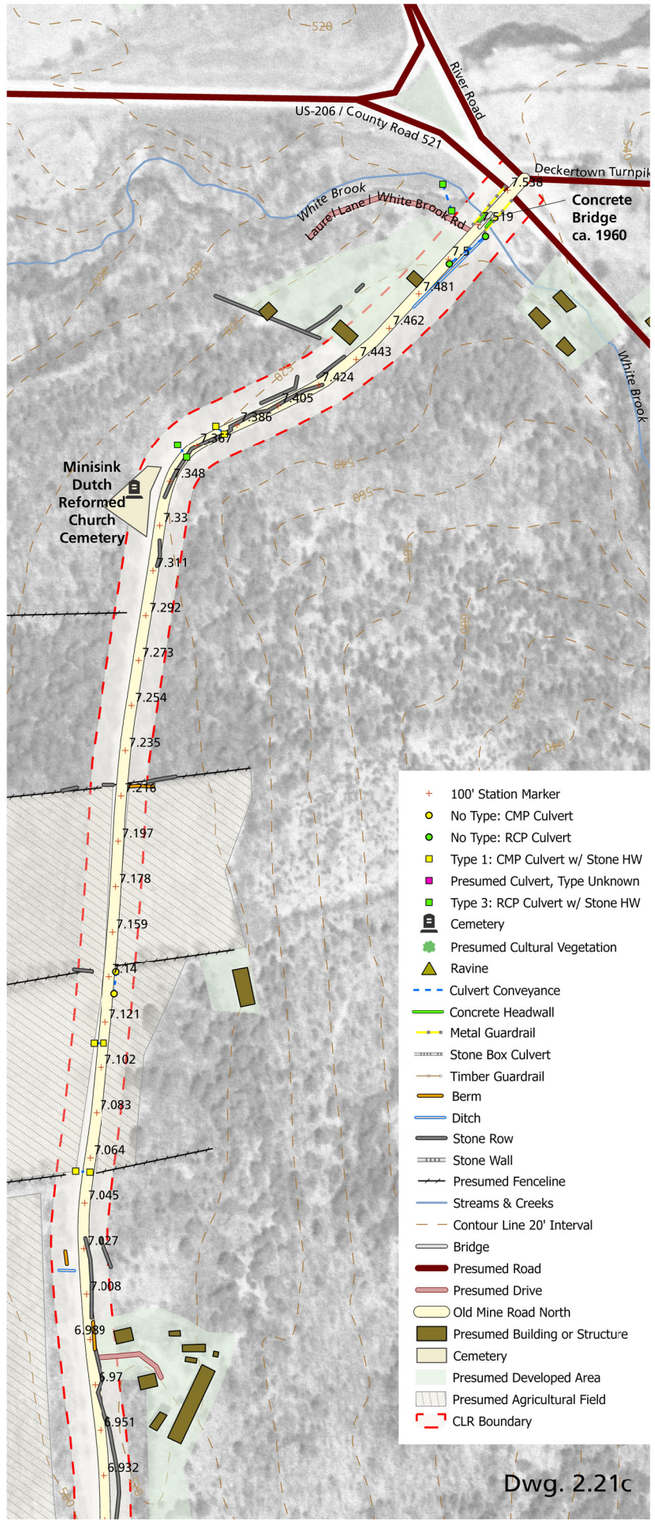
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.20







Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

1955-1973 Period Plan, Mile 5.928 to 7.538

National Park Service

Olmsted Center for Landscape Preservation

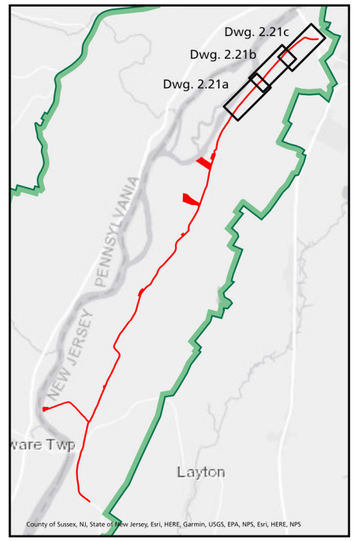
www.nps.gov/oclp

SOURCES

1. 1957 Aerial Photograph, Aerial Single Frames, Courtesy of the US Geological Survey.
2. 1971 Aerial Photograph, Aerial Single Frames, courtesy of the US Geological Survey.
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020.
4. Field Review, 2023. 1. 1957 Aerial Photograph

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status
7. This is a representation of modern spatial data reconciled with stretched and manipulated historic imagery. There may be discrepancies with spatial feature alignment to historic aerial imagery.

0 85 170 340 Feet

Drawing 2.21

Delaware Water Gap National Recreation Area (1973–present)

National Park Service Ownership and Management

1973 Historic Base Map Report

In 1973, historic preservationist Lenard E. Brown of the Denver Service Center completed a "Historical Base Map" report for DEWA. The report provides a general history of the park, including information about precontact people who lived in the area, as well as early European exploration, colonialism, and the formation of Old Mine Road. The report also highlights several notable villages and sites within the park, including Flatbrookville, Walpack, Shapanack, Peters Valley, Bevans, Nomanock, and Minisink, as well as notable structures within those locations.[613]

1974 Architectural Survey

In 1974, the USACE and the NPS conducted a thorough architectural survey of historic buildings located within the DEWA boundary (most, but not all, of the historic houses within DEWA were surveyed). Historical architect John Bruce Dodd compiled the 1974 *Delaware Water Gap National Recreation Area Historical Architectural Survey* and organized the data into Volumes I and II. Volume I addressed those resources on the Pennsylvania side of the park, while Volume II addresses those on the New Jersey side of the park.

Each building survey contains information about the current or previous owners; the building's history (date of construction, dates of additions, and potential significance); an architectural description (floor plans, interior and exterior materials, architectural style, and potential significance); photographs and descriptions of notable outbuildings; and recommendations for future uses. Each entry has a parcel number, which corresponds to a property map of DEWA, showing property boundaries and owner information. The recommendations included in the 1974 survey are organized into Categories I-VIII, described as follows:

I. Those buildings which are sufficiently significant to be eligible for nomination to the National Register of Historic Places. These should be relocated, if that is necessary for their preservation.

II. Buildings to be used by the National Park Service until it becomes impractical, from a management or economic standpoint to use them. At that point the NPS policies for declaring properties surplus will be applied, if demolition, relocation or removal is being considered.

III. Buildings not to be nominated to the National Register, but recommended for relocation, for interpretive uses.

IV. Buildings within the proposed pool area which should be held until such time as the dam is built. These are buildings of quality which it would not be feasible to relocate.

V. Buildings which lack historical or architectural significance, and may be removed.

VI. Buildings which should be saved but which are not considered individually eligible for nomination to the National Register.

VII. Buildings which may be removed after significant materials have been salvaged by the National Park Service.

VIII. Building whose exteriors should be stabilized to prevent further deterioration.[614]

In the Old Mine Road North study area, the 1974 survey addresses the Bevans-Hellwig House, Heron's Nest, the John Wesley Van Auken House, and the Depue House. The survey does not include descriptions or photographs of Mettler Cemetery, the William Ennis House, the Westbrook-Bell House, the Black Farm, and Minisink Dutch Reformed Cemetery.

The 1974 survey recommends the fieldstone kitchen portion of Bevans-Hellwig House for

613. Brown, "Historical Base Map, Delaware Water Gap."

614. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume I," iv.

preservation under Category VI, while the remainder of the main house is recommended for salvage under Category VII. The report recommends stabilization of the large barn on the Bevans-Hellwig property under Category VIII and future preservation under Category VI.[615]

The 1974 survey recommends the main house at Heron's Nest for Category IV, leaving it in place until the construction of the Tocks Island Dam. The main house at Heron's Nest is described as a building of good quality, but the report notes it is not "feasible to relocate."[616] The garage apartment at Heron's Nest is recommended for Category II, to be used by the NPS until no longer practical.[617]

The report recommends the John Wesley Van Auken House and barn for Category IV, to be held in place until construction of the Tocks Island Dam.[618] The John Wesley Van Auken House and barn are described as buildings of good quality but are not considered "feasible to relocate."[619]

The 1974 survey recommends the Depue House for Category I.[620] Under Category I, the Depue House is viewed as potentially eligible for listing on the National Register of Historic Places and should be relocated if necessary to spare the building from the flood zone.[621]

It is unclear to what extent the NPS followed these recommendations once the USACE fully transferred management of DEWA to the NPS in 1978. Regardless, the 1974 survey provided the NPS with a detailed and comprehensive inventory of historic resources within the DEWA boundary, and it likely helped inform the management recommendations and strategies proposed in a 1978 *General Management Plan*.

615. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 727.
616. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume I," iv.
617. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 761.
618. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 757.
619. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume I," iv.
620. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," 769.
621. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume I," iv.

1977 Bevans-Hellwig House Historic Structure Report

In 1977, Denver Service Center personnel Sarah M. Sweetser completed historic structure reports (HSRs) on three historic buildings within DEWA, including the "Small Stone House at Roberts Farm," the Armstrong House, and the Bevans-Hellwig House. The HSR for the Bevans-Hellwig House contains photographic documentation of the building's site plan, the interior floor plan, and the building's interior and exterior materials and conditions. In the HSR, Sweetser determines that the stone portion of the building (the extant Bevans-Hellwig kitchen) is the oldest portion of the building, estimating its date of construction to circa 1830. Based on this assessment, Sweetser writes that "if it was decided that restoration would be too hypothetical and unwarranted, the NPS might consider tearing the gram structure down and leaving the stone walls, cleaned of trim, as a ruin."[622]

1978 General Management Plan

In 1978, the USACE transferred ownership of the property acquired for the Tocks Island Dam project to the NPS for management as a national recreation area.[623] That year, building on and adapting the 1966 master plan, the NPS published a *Draft General Management Plan* (GMP) for DEWA. Although the Tocks Island Dam was still a remote possibility, the 1978 GMP was developed "for a free-flowing Delaware River," with provisions that future versions of the document could change if the federal government decided to pursue the dam project at some point in the future.[624]

As stated in the 1978 GMP, the express purpose of DEWA was "to provide for public outdoor recreation and for preservation of the scenic, scientific, and historic features of the area." One of the primary goals expressed in the GMP was the completion of the land acquisition process. In addition to the 16,800 acres of land previously owned by the USACE, DEWA also needed to acquire 9,162 acres from state and

622. Sweetser, "Small Stone House, Robert Farm; Armstrong House; Bevins-Hellwig House," 111–12.
623. "General Management Plan, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River" (Pennsylvania and New Jersey: United States Department of the Interior, National Park Service, 1987), 1.
624. "Draft General Management Plan, Delaware Water Gap National Recreation Area" (Pennsylvania-New Jersey: United States Department of the Interior, National Park Service, 1978), 3.

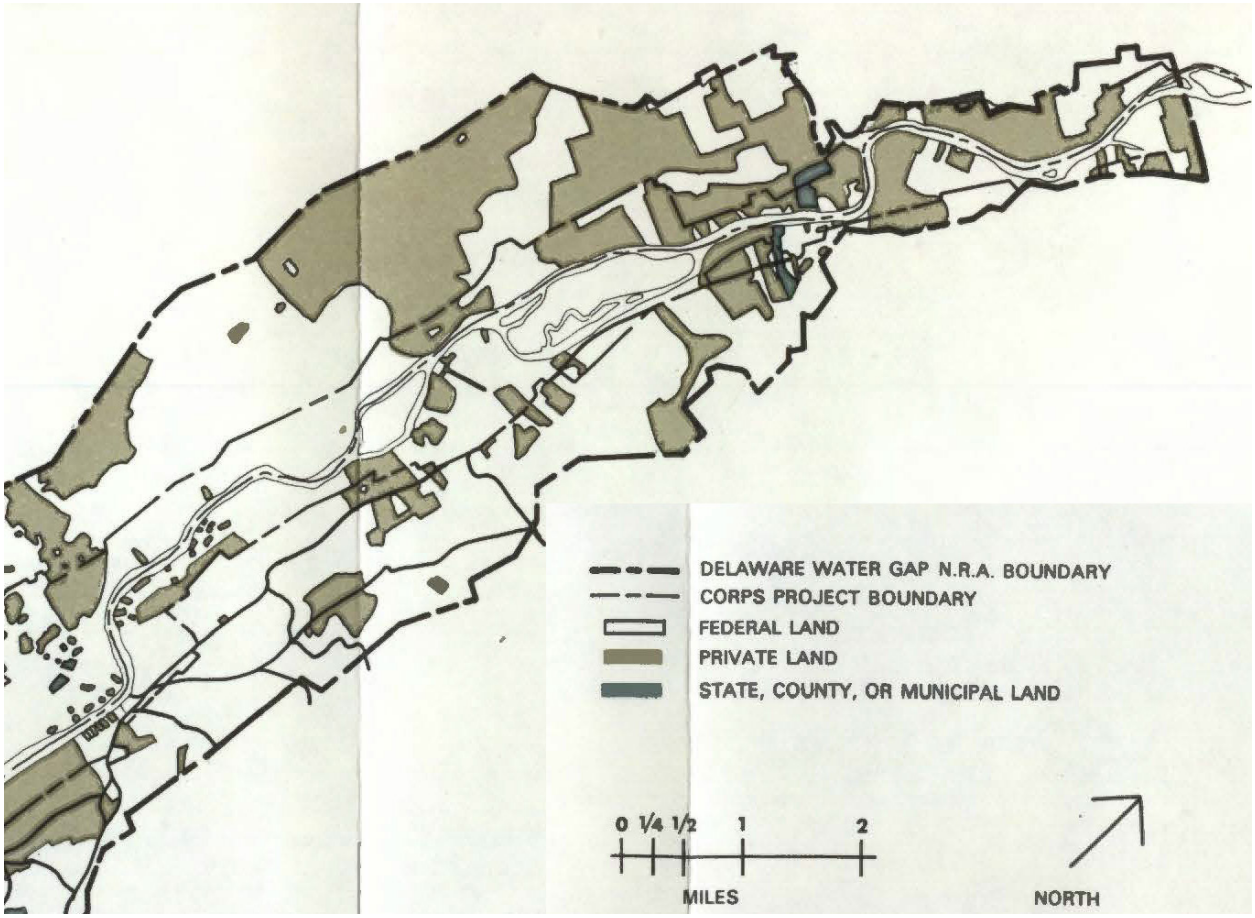


Figure 2.87. A portion of a 1978 General Management Plan map showing land status and ownership in the Old Mine Road North vicinity (Source: NPS, 1978 DEWA GMP).

local governments, as well as 11,974 acres of privately owned property within the legislated DEWA boundary. For privately owned residential properties, the NPS would "grant noncommercial, residential tenancies on a case-by-case basis." For commercial and recreational properties, the NPS would "Permit the continuance of the existing use of Walpack Inn, Turn General Store, Fernwood, and Shawnee and Cliffside Golf Courses," (located outside the Old Mine Road North study area) with the long-term plan to acquire these properties if their commercial uses ended at any point.[625] The "Land Status" map included in the 1978 GMP illustrates which sections of land within the DEWA boundary are owned by the federal government, state agencies, or private citizens (Figure 2.87). It appears that there were numerous parcels along Old Mine Road North that were still privately owned by this time.[626]

Other goals of the 1978 GMP include natural resource management and cultural resource management. Natural resource management priorities included geologic features, vegetation, wildlife, water quality, air quality, and fire management. The GMP prohibited further extractive mining, while allowing limited shale collection at former quarry sites for interpretive purposes. Concerning vegetation, the GMP emphasizes the importance of native and rare or endangered plants that may be found in the area. Native species are to be perpetuated except on "historic sites where exotics of the period are permitted" and in areas where native plants "cannot meet such needs as erosion control and resistance to human wear." The GMP also proposes a vegetation survey to identify rare and endangered plants, including the small whorled pogonia (*Isotria medeoloides*), American globe-flower (*Trollius laxus*), white lady slipper (*Cypripedium candidum*), Allegheny plum (*Prunus alleghaniensis*), and dragontail fern (*Asplenium ebenoides*). In addition to natural vegetation,

625. "Draft General Management Plan," 7.
626. "Draft General Management Plan, Delaware Water Gap National Recreation Area," 83.

the GMP also notes that continued agricultural activities will be allowed for those with Special Use Permits. Hunting, trapping, and fishing in DEWA were to be regulated and permitted in accordance with the laws of New Jersey and Pennsylvania.[627]

The cultural resources management goals of the 1978 GMP are as follows:

> Maintain and protect historic structures and archaeological sites owned by the National Park Service and the Corps of Engineers.
>
> Acquire the remaining unowned structures and sites within the national recreation area boundary. Grant no salvage rights. Consider a full range of techniques including special use permits to determine the most economical and feasible method of retaining existing structures.
>
> Seek controls to protect the facade and other parts of the historic fabric on properties under tenancy. Provide technical assistance on preservation of historic resources to property owners who desire it.
>
> Reevaluate structures to determine if significant qualities that merited inclusion on the National Register of Historic Places are still intact upon federal acquisition.
>
> Keep acquired structures occupied by their present inhabitants until the national recreation area requires their use. Where feasible, assign compatible management functions to unoccupied, newly acquired historic structures.[628]

The cultural resources management plan in the GMP outlines five primary methods of treatment for historic sites and structures:

> Stabilize or restore
>
> Continue adaptive-type use or occupation
>
> Adapt for administrative or educational use
>
> Stabilize or restore exterior only
>
> Record pertinent information about the structure and leave it standing as a discovery site unless or until public safety considerations mandate removal.[629]

Discussing the architectural character of DEWA, the 1978 GMP notes that the area is generally defined by vernacular architecture, characteristic of a rural setting that developed slowly over time while generally adhering to a utilitarian mindset.[630] The GMP identifies the Old Mine Road corridor as a potential historic district, and historic resources located along Old Mine Road North included the Black Farm, the Westbrook-Bell House, the William Ennis House, the Anson Johnson House, the Depue House, Mettler Cemetery, and the John Wesley Van Auken House. Describing these resources, the 1978 GMP says the following:

> a) Black Farmhouse. The 2-1/2-story frame house on stone basement, with clapboard siding, dates from the federal period. The overall design is reminiscent of New England or Georgian styles, rather than the typical Dutch styles of the upper Delaware Valley. The site has been farmed since the 18th century.
>
> b) Westbrook-Bell House. The second of the Minisink Village survivals, it is of like construction, was built earlier (dating from the first of quarter of the 18th century), and has been more radically altered. It is probably the oldest house in the Delaware Water Gap National Recreation Area. Near the Westbrook-Bell house are the still partially visible ruins of Fort Westbrook, a fortified residence used during the French and Indian War for the protection of neighboring states.
>
> c) William Ennis House. This greystone house with frame and siding gables was built in 1751 and is one of the two remaining houses that made up legendary 18th-century Minisink Village. It is a surviving outpost of early settlement, as well as an example of little-changed and unpretentious period architecture. Between the Old Mine Road and the Delaware river, near Nomanock Island, are the ruins of Fort Nomanock, one of the major defensive structures built and manned by the New Jersey Colonial government during

627. "Draft General Management Plan," 7–10.
628. "Draft General Management Plan," 11–12.
629. "Draft General Management Plan," 12.
630. "Draft General Management Plan," 213.

the French and Indian War. Unlike the "house forts," it was specifically built as a fort and had a small regular detachment of soldiers.

d) Anson Johnson House. The 2-story center-hall house, dating from about 1840, has an exposed stone chimney-back at the first-floor level as a distinguishing feature.

e) Depue House. The Depue family was one of the first to settle in the upper Delaware Valley in the early 18th century. The interior of the elongated 2-story stone house has been seriously vandalized, but numerous important early farmhouse features remain.

f) Mettler Cemetery. This cemetery dates from the early 19th century and typifies the many small family burying grounds that dot the area.

g) John Wesley Van Auken House (Ennis Ferry House). This 1760, 1-1/2-story frame and clapboard structure with an 1850, 2-story addition and porch served as the first ferry house in the Dingman area. It also was a popular overnight stop for log rafting down the Delaware. A paneled frieze between the front's eyebrow windows adds architectural interest as the national recreation area's only such design feature.[631]

According to the 1978 GMP, the historic value of these resources lies in their collective ability to present "a cross section of architecture, transportation, and settlement in the Delaware Valley."[632] A "Cultural Resources Survey" map pinpoints the locations of these resources along Old Mine Road North. All the historic resources listed in the 1978 GMP along Old Mine Road North are still existing.[633]

The 1978 GMP includes several maps illustrating existing conditions, land ownership, and future management plans. The "Existing Conditions" map only highlights two features along Old Mine Road North, including a youth hostel south of Namanock Island and the Minisink ranger substation south of Minisink Island (no additional information about the Minisink ranger substation is provided).[634]

To improve visitor circulation, the GMP outlines future road management decisions and strategies throughout DEWA. According to the GMP, ten miles of Old Mine Road was slated to be closed to vehicular traffic and "restored to its original condition." Unfortunately, the GMP does not provide an explanation about the meaning of "original condition." North–south circulation on the New Jersey side of DEWA would incorporate "portions of the Old Mine Road." The proposed partitioning of the Old Mine Road is illustrated in the "Road and Access Map." Unfortunately, the 1978 GMP does not elaborate further about the existing conditions or materials along Old Mine Road at the time.[635] The 1978 GMP does note that "Major road rehabilitation will be carried out as existing roads are taken over by the federal government," but does not provide specifics about materials and methods.[636]

As depicted in the "Road and Access Map," the portion of Old Mine Road south of Walpack Bend was to be retained and used for vehicular traffic. The NPS would retain and use Old Mine Road North, beginning at the intersection of what is now Walpack Road and Old Mine Road North and terminating at Montague, for vehicular traffic. The section in between, from Peters Valley (Bevans) to Walpack Bend, would be closed to vehicular traffic. A small portion of this section near Peters Valley would become an administrative road, while the remainder would be closed to all vehicular traffic. Presumably, this is the section of road that would be reverted to is "original condition." Along Old Mine Road North, there are several spur roads that are designated for closure to vehicular traffic, while portions of Mettler Road and Van Ness Road would be limited to administrative use.[637]

The 1978 GMP also contains several appendix maps that feature proposed land uses, management zones, development plans, and proposed interpretive and recreational sites. In the "Use and Interpretation Plan," the GMP identifies several potential recreational sites along or near the Old Mine Road North corridor, including Dingmans

631. "Draft General Management Plan," 219–20.
632. "Draft General Management Plan," 219.
633. "Draft General Management Plan," 71.
634. "Draft General Management Plan," 81.
635. "Draft General Management Plan," 19–20.
636. "Draft General Management Plan," 109.
637. "Draft General Management Plan," 75.

Ferry, Sandyston Beach, Namanock, and Minisink. These recreation sites appear to be borrowed from the 1966 master plan and adapted to a river-oriented setting. Proposed uses at Dingmans Ferry include picnicking and field sports. At the end of Mettler Road, the map proposes the location for Sandyston Beach, used for swimming, picnicking, and field sports. (The NPS never developed Sandyston Beach.) Minisink is identified as a suitable location for picnicking and field sports, and Namanock is listed as a site for "canoe camping." The GMP identifies the kettle holes south of Namanock Island as a place for cultural interpretation, and Old Mine Road is listed as an educational resource.[638]

A "General Development Plan" map included in the 1978 GMP provides additional information about proposed uses along Old Mine Road North. Old Mine Road North is depicted as an existing road, while many of the proposed use sites are close to the edge of the river, along a "countryside trail" that runs along the bank of the Delaware River (Figure 2.88). The Sandyston Beach site is located at the end of Mettler Road and is projected to have a "bathing beach, 200 picnic sites, 450 car parking, sports field, [and] fisherman/canoe ramp." Approximately one mile north of the proposed Sandyston Beach site is the proposed 'Adams' site, which was to include "20 car parking [and] fisherman/canoe ramp." The Adams site is positioned at the intersection of the countryside trail and an existing spur road off Old Mine Road North (this spur road no longer exists).[639]

The "General Development Plan" map shows the location of an existing youth hostel on the west side of Old Mine Road North, south of Namanock Island.[640] The youth hostel, also referred to as the Merle and Ruth Blair House, was "likely erected shortly after the Blairs acquired the property in 1961." The main house was a one-and-a-half story, wood-frame building with Colonial Revival architectural details. The 19.42-acre property also contained "a garage, a woodshed, and toolhouse or garden shed."[641] The NPS acquired the property in 1970 and subsequently leased it as a youth hostel. According to park personnel, the NPS demolished the main house and outbuildings in 2011.[642]

At the north end of Namanock Island, there is a proposed recreation site slated to have fifty canoe campsites. On Old Mine Road North, just south of Minisink Island, there is another proposed recreation site, containing "50 picnic sites, 75 car parking, canoe put-in, [and] sports field." There are two proposed recreation sites north of Minisink Island, including "White Brook," which would contain "15 car parking" and the "Sussex" site, which would have a "canoe put-in [and] 5 car parking." The proposed Sussex site is at the bank of the Delaware River, where a gate and vegetation blocks the vehicular road. The former roadbed provides a pedestrian route.[643]

It does not appear that the NPS implemented any of the proposed developments along Old Mine Road North after the publication of the 1978 GMP.

Park Management During the 1980s

1980 Old Mine Road Historic District

In 1980, a portion of Old Mine Road within DEWA was listed in the National Register of Historic Places as a historic district. A twenty-six mile stretch of Old Mine Road is included in the nomination, with the northern boundary of the district falling at the terminus of Old Mine Road North at U.S. 206. The southern boundary of the district falls at the Copper Mine Inn in Pahaquarry Township, Warren County. According to the nomination, in determining the boundary, "every effort has been made to restrict the district to a portion lying on or close to the original alignment" of Old Mine Road.[644]

The National Register of Historic Places nomination describes a majority of Old Mine Road as a "rural secondary road," excepting a 3.1-mile

638. "Draft General Management Plan," 15.
639. "Draft General Management Plan."
640. "Draft General Management Plan."
641. "Merle and Ruth Blair House," Intensive-Level Architectural Survey Forms for Miscellaneous 2006-2012 Projects in the Delaware Water Gap National Recreation Area (Sussex and Warren Counties, New Jersey: New Jersey Department of Environmental Protection, Historic Preservation Office, 2012 2006).
642. Chiara A. Palazzolo, "Youth Hostel off of OMR," June 21, 2023.
643. "Draft General Management Plan."
644. "Old Mine Road Historic District."

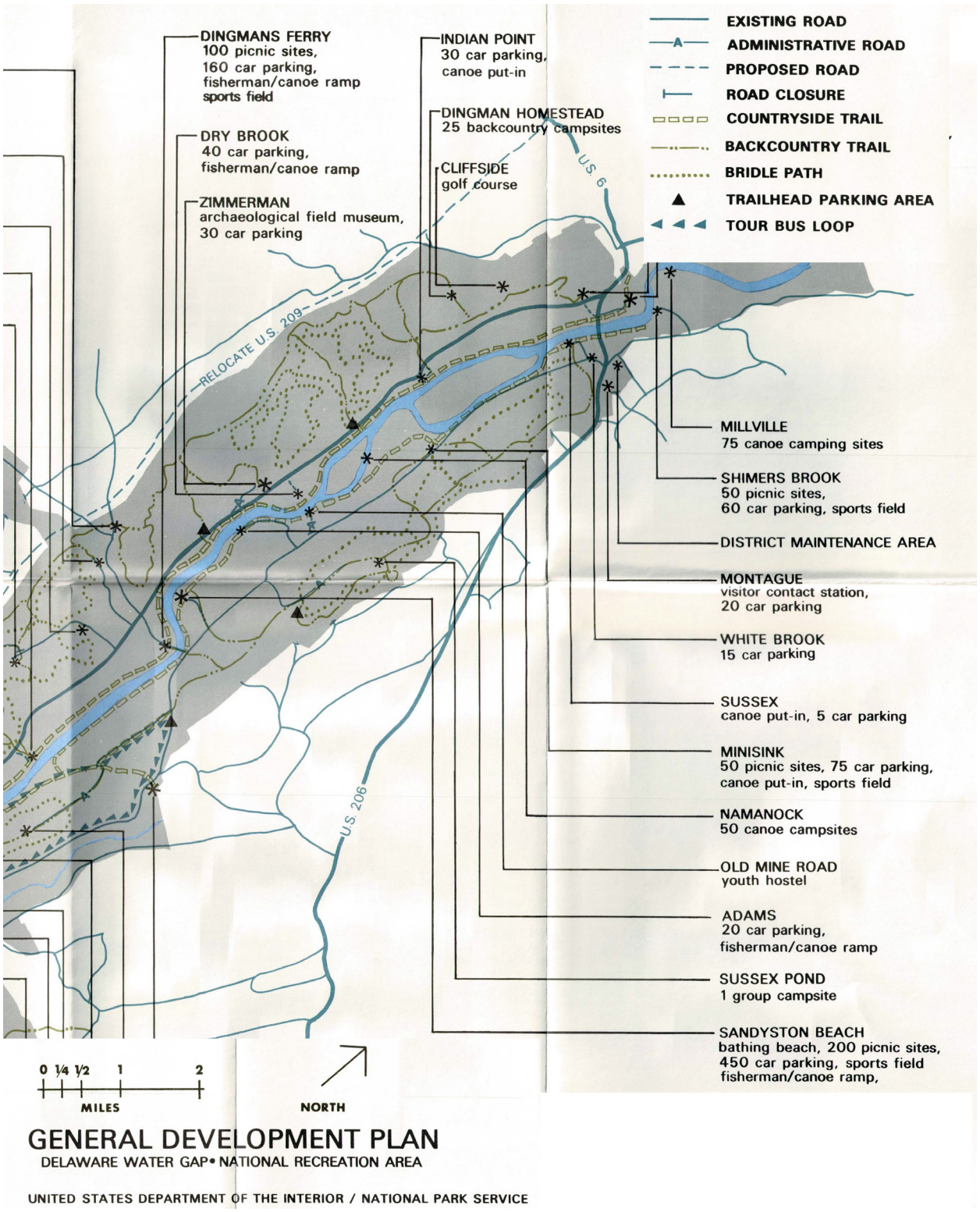


Figure 2.88. A portion of a 1978 General Management Plan map showing the general development plan in the Old Mine Road North vicinity (Source: NPS, 1978 DEWA GMP).

portion that runs through the Walpack Township. The nomination describes this section as "little more than one car wide, with a rutted, unimproved surface" (this section of road corresponds with the section that was to be closed to vehicular traffic in the 1978 GMP). Photographs included in the nomination indicate that Old Mine Road North had been paved by this point. Research has not produced documentation confirming who funded these road improvements, or when they were completed.[645] Historic documentation indicates that ownership of the road was not officially transferred to the NPS until 1983, so the road was likely paved by either Sussex County or the New Jersey Department of Transportation at some point prior to NPS acquisition.[646]

Discussing the significance of the Old Mine Road district, the nomination provides a brief history of the road, its ties to Native American trails, and its importance to colonial-era settlement in the Delaware River Valley. According to the nomination, the road's long history has "put an imprint on the valley that exists very tangible to the present, and belies its seemingly ordinary and unimportant appearance." The physical characteristics of the area that encouraged settlement during the eighteenth and nineteenth centuries, "snug valleys, steep wooded ridges, fertile floodplains and profusion of swiftwater streams," are the same qualities that limited growth during post–Civil War industrialization and kept the area rural and underdeveloped. The variety and utilitarian qualities of the historic architecture along Old Mine Road demonstrate how the district maintained a rural, agricultural character that developed slowly over time. The nomination cites mid-twentieth-century vacation homes and a gravel quarry as the most pressing intrusions to the historic character of the district.[647] The gravel quarry was operated by the Layton Sand, Gravel, & Concrete Company.[648]

The Old Mine Road Historic District nomination identifies several "landmark" properties situated along Old Mine Road to be included in the district. Along Old Mine Road North, these properties include the Black Farm, the Westbrook-Bell House, the Ennis House, the Anson Johnson House, the Depue House, Mettler Cemetery, and the John Wesley Van Auken House. This list of resources is in keeping with those identified in the 1978 GMP as "cultural resources." Resources omitted include the Minisink Reformed Church Cemetery and Heron's Nest.[649]

1980s Proposed Road Projects

In 1983, *The Daily Record* reported that Sussex County had officially ceded ownership of a 6.7-mile section of Old Mine Road (referred to as the "Delaware Mine Road"). The portion of road described in the article is Old Mine Road North, running "from the Dingmans Ferry Bridge to Route 206, near the Milford Bridge." The article notes that there was controversy surrounding this decision. Supporters argued that relinquishing ownership of Old Mine Road North would allow Sandyston and Montague townships to concentrate extra funding on more heavily trafficked roads. Ralph Devries, a retired engineer and amateur historian, opposed the decision. Devries, who "said many of his friends were forced to sell their homes and land to the federal government," believed that this decision would give the government and power companies more leverage should they decide to pursue the Tocks Island Dam project in the future.[650]

During the mid-1980s, the NPS produced a series of maps depicting transportation systems within DEWA. A 1984 "Existing Roads and Trails Map" shows the location and materials of roads and trails throughout the national recreation area (Figure 2.89). Old Mine Road North is labeled as an "NPS Administered Public Road (paved)." Mettler Road and Jager (or Jaeger) Road are also labeled as paved NPS roads, while Van Ness Road is labeled as an "NPS Administered Public Road (dirt)." Van Ness Road and Jager Road are both shown to connect Old Mine Road North to U.S. 206. A majority of the other spur roads along Old Mine Road North are labeled as either as "NPS Administered Fire/Administrative Road," or as an "NPS Administered Public Road (dirt)." There is one unnamed non-NPS road at the south end of Minisink Island that

645. "Old Mine Road Historic District."
646. Lawrence Ragonese, "Sussex County Gives up 7 Miles of Roads in Water Gap Area," *The Daily Record*, January 12, 1983.
647. "Old Mine Road Historic District."
648. "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," Project Map, Segment 88.
649. "Old Mine Road Historic District."
650. Ragonese, "Sussex County Gives up 7 Miles of Roads in Water Gap Area."

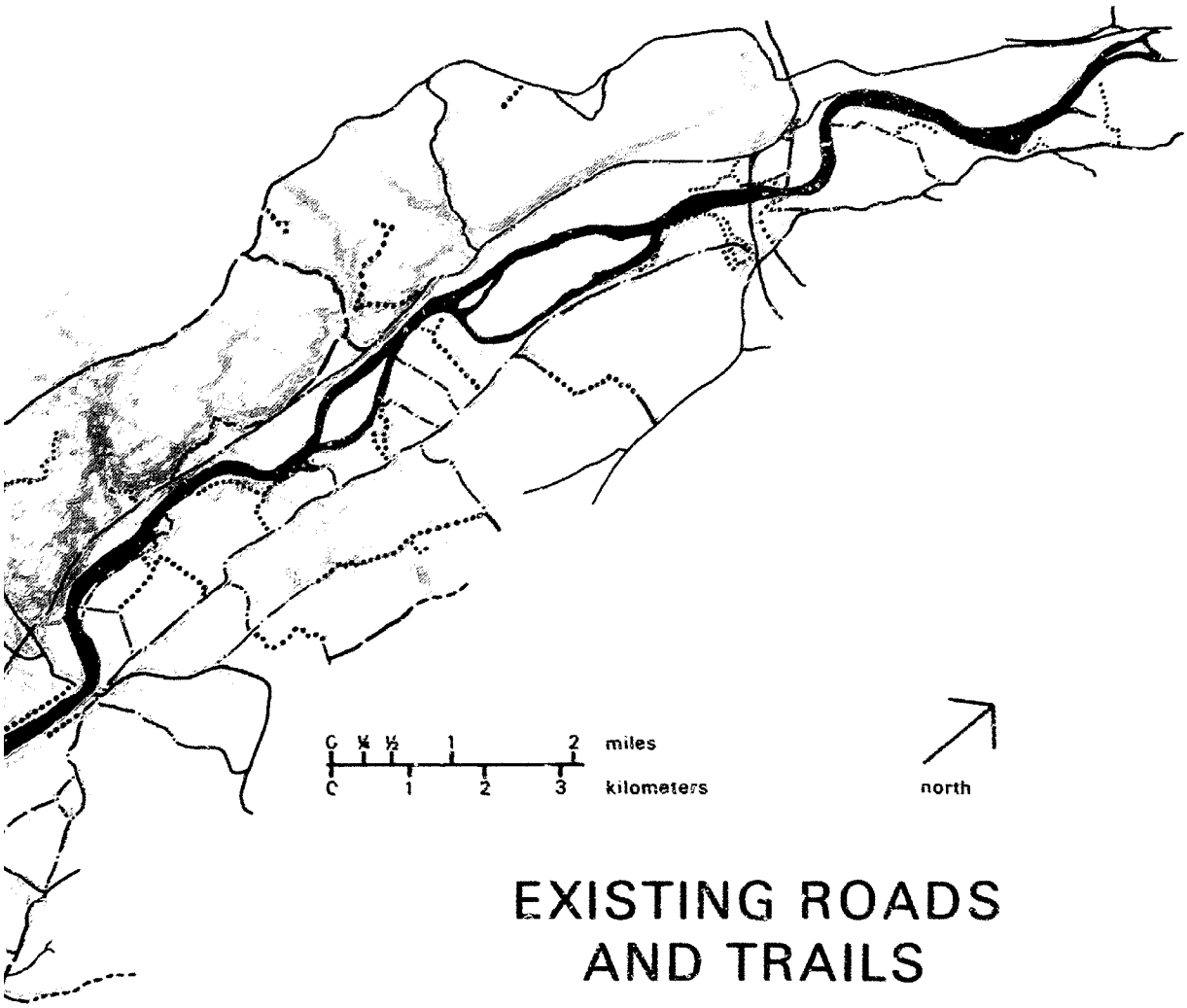


Figure 2.89. Portion of a 1984 NPS map showing existing roads and trails in the Old Mine Road North area. The dotted lines denote "NPS administered fire/administration roads" (Source: NPS, Existing Roads and Trails, ETIC 620-20028-270014).

ran east–west and connected Old Mine Road to U.S. 206 (possibly former Van Etten Road).[651]

The NPS published two road alternatives maps in 1984: "Roads Alternative 1" and "Roads Alternative 2." The "Roads Alternative 1" map shows Old Mine Road North as a paved road, open to the public year-round. The map labels Mettler Road as an unpaved, administrative road. The map labels Van Ness Road and Jager Road as "Permanently Closed." There is a spur road that runs near the Ennis House that is listed as unpaved and open seasonally.[652] "Roads Alternative 2" lists Mettler Road as paved and open year-round, with several paved extension roads that would also connect to Old Mine Road North. This map lists Jager Road as paved and open year-round and shows Van Ness Road as paved and open seasonally. The map shows the road running past the Ennis House (referred to as Chudzik Lane by park personnel) as unpaved and open seasonally. There is also a paved administrative road shown south of Minisink Island.[653]

A 1984 "Roads Proposal" map appears to recommend features of both the "Roads Alternative 1" and "Roads Alternative 2" maps. The "Roads Proposal" map labels Old Mine Road

651. "Existing Roads and Trails" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984).

652. "Roads Alternative 1" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984).

653. "Roads Alternative 2" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984).

North, Mettler Road, and Jager Road as paved and open to the public year-round. This map labels Van Ness Road as open seasonally. The map labels the road that runs alongside the Ennis House as an unpaved administrative road. A spur road north of the Ennis House is shown as permanently closed, and a spur road south of the Ennis House is listed as an unpaved administrative road. The map labels an additional spur road north of Mettler Road as permanently closed.[654]

In 1986, the NPS produced another "Existing Roads and Trails" map. This map labels Old Mine Road North "NPS Administered Public Road (paved)." The map labels Mettler Road and Jager Road paved public roads. The map labels Van Ness Road and the road that runs alongside the Ennis House as "NPS Administered Public Road (dirt)." The map shows three other spur roads that are NPS administered and unpaved, and several labeled as an "NPS Administered Fire/ Administrative Road." The map shows an NPS administered dirt road running to the approximate location of the present-day Namanock Recreation Site. The administrative roads off Mettler Road shown in the 1984 "Existing Roads and Trails" map are not depicted on the 1986 "Existing Roads and Trails" map. Additionally, the non-NPS road connecting Old Mine Road North and U.S. 206 toward the north end of Minisink Island (possibly former Van Etten Road) appears to be closed by 1986.[655]

The NPS also produced two alternative roads maps, and one "Roads Proposal" map in 1986. In "Roads Alternative 1," the NPS proposes reverting Mettler Road to an unpaved seasonal road, and permanently closing auxiliary roads off Mettler Road. The road by the Ennis House and a new road to the Namanock Recreation Site would also be unpaved seasonal roads. "Roads Alternative 1" also proposes permanently closing Van Ness Road, Jager Road, the unnamed road north of Jager Road, and all other spur roads along Old Mine Road North.[656] The "Roads Alternative 2" map proposes paving Mettler Road and its auxiliary roads, paving Jager Road, and paving the road the Namanock Recreation Site, all of which would be open year-round. Van Ness Road would be paved and open seasonally, and the unnamed road north of Jager Road would be unpaved and open seasonally. The road by the Ennis House and a spur road south of that would be unpaved and seasonal. There would also be a paved administrative road toward the south end of Minisink Island.[657]

A 1987 "Existing Roads and Trails" map indicates that these proposals were not implemented, and there had been no substantial changes since the previous 1986 "Existing Roads and Trails" map was produced.[658]

1987 General Management Plan

Like the 1978 GMP, the NPS wrote the 1987 GMP with the understanding DEWA would be oriented around the Delaware River, not the Tocks Island Dam reservoir. The purpose of the 1987 GMP was to provide a management framework for the next ten years to ensure that the federal government actualized the expressed purposes of DEWA. The 1987 GMP states three main goals of DEWA, listed according to their priority:

> (1) Public outdoor recreation benefits;
>
> (2) Preservation of scenic, scientific, and historic features contributing to public enjoyment;
>
> (3) Such utilization of natural resources as in the judgment of the Secretary of the Interior is consistent with, and does not significantly impair, public recreation and protection of scenic, scientific, and historic features contributing to public enjoyment.[659]

The 1987 GMP establishes three primary resource categories: natural, cultural, and scenic. Natural resources include plant life, wildlife, mineral resources, water resources, and unique physical landscapes such as wetlands and floodplains. The primary management goal for natural resources

654. "Roads Proposal" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984).
655. "Existing Roads and Trails" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1986).
656. "Roads Alternative 1" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1986), 1.
657. "Roads Alternative 2" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1986), 2.
658. "Existing Roads and Trails" (Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1987).
659. "General Management Plan," 3.

in DEWA is preservation.[660] Cultural resources include archeological resources and sites as well as historic resources, including buildings, structures, and sites. Management goals for archeological sites include research and documentation, as well as protection from potential disturbance, vandalism, and looting. For the multitude of historic resources located throughout DEWA, the 1987 GMP outlines a tiered, hierarchical approach to management. In general, "A representative spectrum of these properties will be preserved to show how man has adapted to and changed the Delaware Valley landscape." Based on their individual historic or architectural significance, resources would receive various levels of treatment, subject to restoration, preservation, stabilization, rehabilitation, benign neglect, or removal.[661]

Along Old Mine Road North, the 1987 GMP identifies the following historic resources: the Black Farm, the Westbook-Bell House, the William Ennis House, the Anson Johnson House, and the Depue House (Heron's Nest and the Van Auken House are not included). According to the 1987 GMP, the Westbrook-Bell House, William Ennis House, and Anson Johnson House were selected for "Preservation," defined in the GMP as "the application of measures, including maintenance, to sustain existing form, integrity, and material of structures and settings (excluding reconstruction, restoration of lost features, or removal of accretions)." The Black Farm and Depue House are both recommended for benign neglect, or "undertaking no treatment to preserve or stabilize a structure beyond that necessary to ensure public safety." According to the GMP, benign neglect was determined appropriate for those resources with minimal significance, which could not justify the cost of preservation, rehabilitation, or restoration. In these cases, "These structures will be recorded and allowed to deteriorate (that is, no treatment to preserve or stabilize a structure beyond that needed for public safety will occur). In time the sites will revert to a natural condition."[662] The Van Auken House is noted to be privately owned. Should the NPS acquire the property, the 1987 GMP proposes adaptive reuse of the building to support recreational and/or interpretive activities at Sandyston Beach.[663] All of the notable cultural resources along Old Mine Road North are identified on a "Cultural Resources" map included in the GMP.[664]

The 1987 GMP outlines an adaptive reuse strategy for historic buildings, which could serve as administrative or interpretive spaces for the NPS. Historic resources could also be leased to private parties, so long as they were used for "compatible activities" that did not threaten the integrity of the building. According to the GMP, "Continued adaptive use or occupation of a structure or site will provide protective, visual, and sometimes interpretive benefits."[665] According to park personnel, the Westbrook-Bell House, Anson Johnson House, and William Ennis House were all used as permanent and seasonal staff housing for park employees during the 1990s and early 2000s.[666]

The 1987 GMP also advocates for the retention of cultural landscapes throughout DEWA. Historical agricultural land use patterns and existing vegetation near historic structures would be retained, and "Outbuildings, farm support structures, and fence rows will be kept wherever possible to maintain farmsteads and existing landscape configurations."[667] Specific locations for this treatment along Old Mine Road North are not identified in the 1987 GMP.

The scenic resources in DEWA consist of the views pertaining to different vegetative, topographic, and historic land use patterns throughout the area. The primary goal of scenic resources management is to "conserve the scenic qualities of the recreation area while enhancing the diversity of wildlife habitat and recreational opportunities." The 1987 GMP describes the environment as "mosaic of color, texture, scales, and edges, all resulting from many years of human use." To retain this 'mosaic,' landscape management strategies such as permitted farming, tree cutting, and in some cases non-intervention, are necessary.[668]

Major visitor use goals outlined in the 1987 GMP include visitor orientation and information programs, natural and cultural resource

660. "General Management Plan," 23–25.
661. "General Management Plan," 27–31.
662. "General Management Plan," 29–31.
663. "General Management Plan," 35.
664. "General Management Plan," 83.
665. "General Management Plan," 32.
666. DEWA park personnel provided this information.
667. "General Management Plan," 33.
668. "General Management Plan," 36–37.

interpretation, and various recreational activities. Visitor orientation and information programs generally refer to different wayfinding and expository installations to assist visitors as they navigate and use the park, including information about "Recreational activities, fees, schedules and amount of time needed, equipment and physical capabilities required, safety precautions, and regulations." The 1987 GMP notes that key wayfinding installations and informative signage will be located at key entrance points throughout DEWA. In addition to installations throughout the park, visitors will also have access to informational packets and brochures at visitor centers.[669]

Interpretive activities were meant to shape how visitors understood and interacted with the natural and cultural resources throughout the park. Natural resource interpretive goals include educating visitors about the geological forces that formed the Delaware River Valley, as well as providing information about the area's plant and animal life. The 1987 GMP recommends "wayside exhibits, talks, or guided walks" and visitor brochures to help visitors navigate and understand DEWA's natural resources.[670]

Cultural resource interpretation was meant to include information on the long history of human activity in the area, discussing the Delaware River Valley's Native American history, colonial-era settlement, and the "various phases of development in the valley through agriculture, transportation, and architecture." Interpretive installations for cultural resources were to include "wayside exhibits," handouts and brochures, interpretive trails, as well as concerts and traditional crafts demonstrations, such as quilting or weaving. The plan says that Native American resources may be used for display purposes, but archeological sites would not be identified for visitors to ensure that they are not disturbed.[671]

The primary recreational activities identified by the 1987 GMP include water recreation, driving tours, trail systems, and camping. Water activities would include "canoeing, tubing, fishing, motorboating, and swimming." Dedicated swimming areas with beaches and lifeguards were already present at sites in Milford and Smithfield, while "a new beach will be developed at Sandyston," next to Dingmans Ferry.[672] As noted previously, plans for a dedicated swimming beach at the Sandyston site were present on the 1978 draft GMP as well. It does not appear that the plans for the Sandyston site were actualized.

The 1987 GMP notes that "sight-seeing and pleasure driving" are popular activities among park visitors, particularly during the warmer months. Capitalizing on this trend, the 1987 GMP proposes the development of driving tours throughout DEWA. To assist visitors, "tour routes will be shown on park maps, and road signs will be posted to mark routes; interpretive brochures and wayside exhibits will also be provided."[673] Old Mine Road is identified as a good roadway for driving tours, and the 1987 GMP notes that it would serve as the primary north–south circulation for the New Jersey side of DEWA.[674]

The 1987 GMP also identifies various trail uses as popular visitor experiences at DEWA, including hiking, cycling, and horseback riding. According to the GMP, all these groups would benefit from an expanded trail system. The GMP proposes that "various old roads that are no longer needed for vehicle access will be made available" and converted to trails. For hikers, the portion of the Appalachian Trail running through DEWA would serve as the primary trail system, with auxiliary thru-trails providing access to different areas of the recreation area.[675] In addition to serving driving tours, the 1987 GMP notes that Old Mine Road would also serve as a bike trail.[676]

For campers, the 1987 GMP notes that DEWA already has several developed camping sites that meet the present demand. The GMP proposes the need for a few additional camping sites, and notes that any new developments would be "dispersed and limited in size to avoid direct competition with the many commercial and nonfederal developed campgrounds in the vicinity." Concessioners would be contracted to help run developed campgrounds within DEWA. For "backcountry" campers, the GMP proposes a permit system to "help disperse

669. "General Management Plan," 38–39.
670. "General Management Plan," 39–40.
671. "General Management Plan," 39–41.
672. "General Management Plan," 41–42.
673. "General Management Plan," 42.
674. "General Management Plan," 63.
675. "General Management Plan," 42.
676. "General Management Plan," 58.

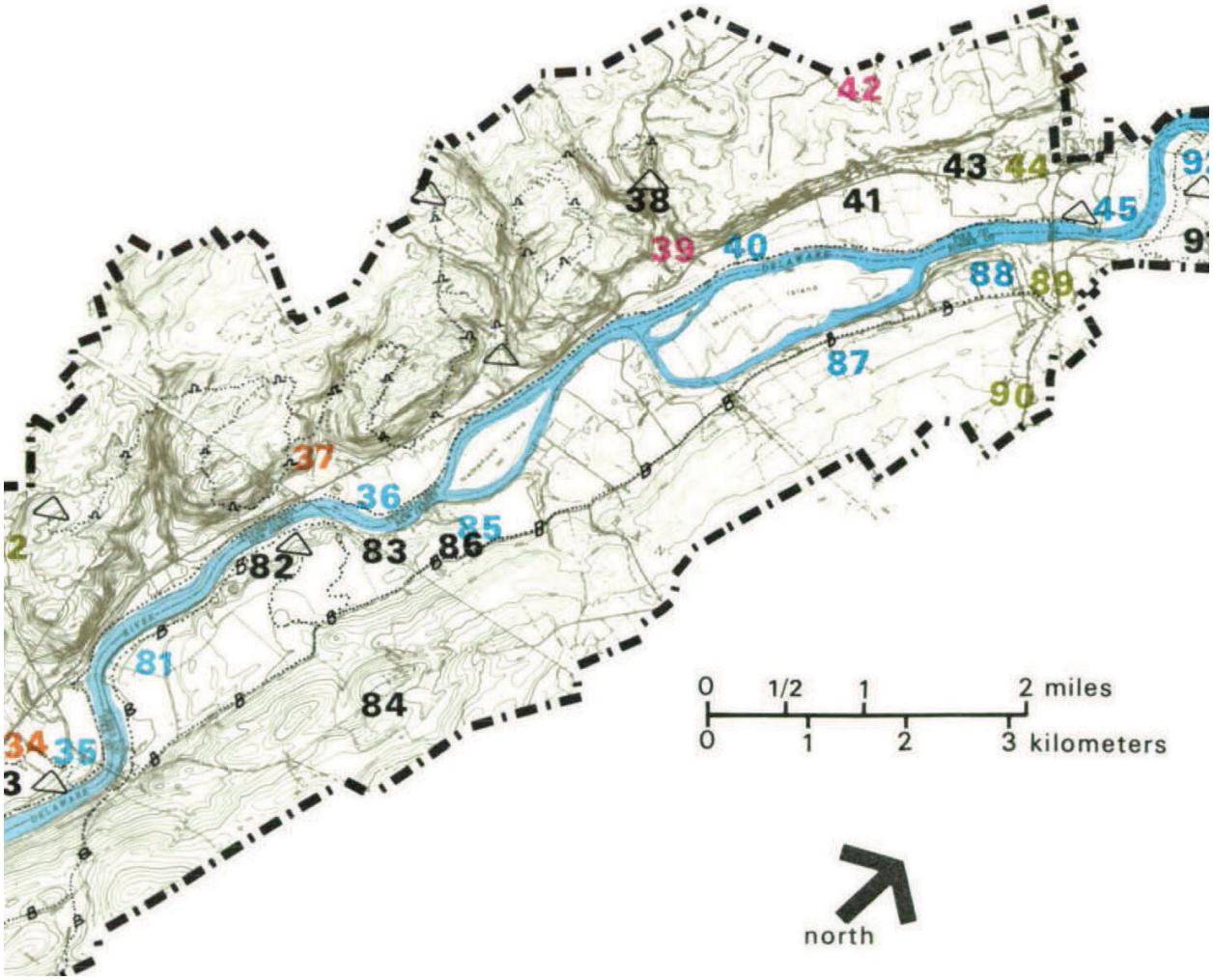


Figure 2.90. Portion of a map from the 1987 DEWA GMP showing proposed and existing amenities along Old Mine Road North. "81" is the proposed location of Sandyston Beach, "82" is the proposed location of Kettle Holes Campground, ""83" is the proposed expansion of the Sandyston Canoe Campsites, "85" is the proposed location of the Namanock fishing and boat/canoe launch,"86" is the existing site of the Old Mine Road Youth Hostel, "87" is the proposed Minisink canoe put-in, "88" is the proposed location of the White Brook canoe put-in, and "89" is the proposed location of a visitor contact and information kiosk (Source: NPS, 1987 DEWA GMP).

use and prevent overuse of particularly fragile areas."[677]

The 1987 GMP identifies several visitor use development sites along Old Mine Road North, including Sandyston Beach, Kettle Holes Campground, Sandyston Canoe campsites, Namanock, the Old Mine Road youth hostel, Minisink, White Brook, and the U.S. 206 entrance (Figure 2.90). The rough locations of these sites are shown on the "General Development" Map. In addition to a constructed beach site, Sandyston Beach would contain a total of ten restroom facilities, a parking lot large enough to accommodate two hundred cars and ten buses, one hundred picnic spots, a large play field, and canoe launch spots. The Kettle Holes Campground would contain one hundred campsites and six restroom facilities, managed by a concessioner. The Sandyston canoe campsite would be expanded, adding two additional canoe campsites, bringing the total at the site to ten. At the Namanock site, 1987 GMP proposes building a boat launch and a fifteen-car parking lot with one restroom facility. The NPS would maintain the Old Mine Road youth hostel (also known as the Merle and Ruth Blair House) and provide upgrades to the entrance road.[678] The GMP notes that the youth hostel received 640 visitors the prior year.[679] The GMP proposes that the NPS build a canoe launch and a small five-car parking lot at the Minisink site and

677. "General Management Plan," 43.

678. "General Management Plan," 56.
679. "General Management Plan," 88.

at the White Brook site. At the U.S. 206 entrance, the 1987 GMP proposes a new visitor information kiosk.[680] It is unclear if the NPS pursued any of these plans, but of the sites proposed along Old Mine Road North, only the Namanock Recreation Site is currently developed for visitor use.

Park Management During the 1990s

1990 Comprehensive Preservation Plan

In January 1990, the Cultural Resource Group of Louis Berger & Associates, Inc. produced a Comprehensive Preservation Plan for historic resources within DEWA. The NPS commissioned the preservation plan to fulfill provisions stated in the 1987 GMP mandating the protection of cultural resources. The preservation plan outlines three primary categories with which to classify and evaluate resources: historic, architectural, and archeological.[681] As stated in the preservation plan:

> The Plan (1) identifies a series of archaeological and historic properties; (2) specifies a procedure for National Register nomination and review of properties still privately held; (3) requires ongoing survey for archaeological resources; (4) calls for "a historic resources study [that will]… identify historical themes and contexts"…; and (5) outlines a program of management strategies, including adaptive reuses and stabilization measures for various historic buildings and complexes. The study has been completed in accordance with the goals and objectives set forth in the General Management Plan and fulfills some of the survey and research needs specified therein.[682]

The preservation plan identifies three historic contexts: agriculture, village development, and resorts/recreation. Within the agricultural theme, the plan pinpoints distinct property types, including farmsteads and agricultural processing buildings or structures. The preservation plan identifies farmsteads as being composed of three primary parts: "the farm complex; the fields and pastures, demarcated by fences and stone walls; and a woodlot."[683] Remnant buildings and structures associated with this property types include farmhouses, outbuildings, and "specialized activity areas." Outbuildings include things such as "barns, stables, wells, outkitchens, privies smokehouses, and springhouses," while specialized activity areas refer to spaces like "yards, vegetable gardens, orchards, and trash dumps."[684] Agricultural processing buildings are those related to agricultural industries, including "gristmills, sawmills, distilleries, limekilns, slaughterhouses, tanneries, and carding/woolen mills."[685]

The preservation plan identifies research needs for these types of resources, as well as preservation recommendations. The preservation plan notes that it would be beneficial to compare farmstead development in the Delaware River Valley to comparable agricultural areas. Additionally, the plan recommends research into early settler ethnicity and the potential impact on "architectural expressions" in the area. The preservation plan also calls for an updated architectural survey and archeological investigations of agricultural properties and sites. Specifically, the preservation plan calls for archeological investigations of agricultural properties within the Old Mine Road Historic District.[686]

Noting the importance of transportation for all the major historic themes, the preservation plan calls for the development of a "Transportation Historic Context" for DEWA.[687] The research needs identified in the preservation plan appear to have informed later research projects for DEWA, including A. Berle Clemensen's "Preliminary Historic Resource Study," completed in 1996.

680. "General Management Plan," 56.
681. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning Historic Period Cultural Resources Delaware Water Gap National Recreation Area" (Philadelphia, Pennsylvania: United States Department of the Interior, National Park Service, Mid-Atlantic Regional Office, January 1990), I-1.
682. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," I-3–4.
683. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," I-28–29.
684. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," I-30.
685. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," I-32.
686. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," I-37–39.
687. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," I-77.

The preservation plan goes on to make significance and integrity evaluations for properties throughout DEWA for individual listing on the National Register of Historic Places. Heron's Nest, not previously included in the Old Mine Road Historic District, was among those considered for individual listing. According to the preservation plan, Heron's Nest is significant architecturally because "It represents the remodeling of a nineteenth century rural residence for vacation/leisure use in the second quarter of the twentieth century."[688] To date, Heron's Nest has not been individually listed in the National Register of Historic Places, but in 2007, the NJHPO found the property individually eligible.

1991 Historic Architectural Assessments

In 1991, an architectural assessment evaluated additional historic resources and considered their individual eligibility for listing in the National Register of Historic Places. John Bowie Associates along with the Cultural Resource Group at Louis Berger & Associates prepared the "Historic Architectural Assessments."

Within the Old Mine Road North study area, the 1991 assessment identifies the Bevans-Hellwig House as a potentially eligible resource. Although the report notes that the building's architectural integrity has been compromised and it could not be considered individually eligible, the Bevans-Hellwig House could be eligible if listed as a contributing resource to the Old Mine Road Historic District. The Old Mine Road Historic District boundary increase (October 2, 1991) included the Bevans-Hellwig property.

1993 Minisink Historic Landmark District Listing

In 1993, the Minisink Historic Landmark District was listed in the National Register of Historic Places. The Minisink Historic Landmark District is located on and around Minisink Island, containing a total of 1,320 acres spread across both sides of the river. The district includes nineteen archeological sites and one building, the Westbrook-Bell House. According to the nomination, the Minisink Historic Landmark District is significant as a "major center of an Indian social network stretching from the Connecticut Valley to Ohio Country, the most prominent and best documented Munsee Indian community of its era, and the single most important Indian community in the Middle Delaware River valley during historic contact times." According to the nomination, resources contained within the Minisink Historic Landmark District account for nearly eight thousand years of human activity in the area.[689]

1993 Black Farm Historic Structure Report

In 1993, the NPS commissioned a HSR for the main house at the Black Farm. Architect John Bruce Dodd and architectural historian Cynthia A. Hinson completed the report. The report includes a brief developmental history of the Delaware River Valley and Old Mine Road, as well as a more detailed history of the Black Farm property. The report also includes in-depth documentation of the main house's exterior and interior conditions and structural systems, which are then used to inform recommendations for repair needs, cost estimates, preservation strategies, and potential future uses.[690] According to park personnel, the NPS carried out a recommendation for the removal of exterior porches, and it is possible that several other recommended repairs were made based on the 1993 Black Farm HSR.[691]

1995 Pahaquarry Copper Mine Cultural Landscape Report

In 1995, the NPS published a CLR for the Pahaquarry Mine site, located in the Old Mine Road Historic District, south of Old Mine Road North. The NPS completed the CLR to fulfill goals expressed in the 1987 GMP, which identified a need for expanded visitor facilities at the site.[692] The CLR provides a detailed and thorough history of the site, with an emphasis on settlement, transportation, and extractive industries, particularly mining. The document profiles notable historic buildings and structures at the site and provides an evaluation of the Pahaquarry Mine's integrity. Finally, the CLR offers several recommendations for resource treatment, including stabilization and preservation strategies.[693]

688. The Cultural Resource Group Louis Berger & Associates, Inc., "Comprehensive Preservation Planning," III-45.

689. "Minisink Historic District," 4–6.
690. Dodd, "The Black/Minisink Farmhouse."
691. Park personnel provided this information.
692. Burns Chavez and Clemensen, "Pahaquarry Copper Mine," 7.
693. Burns Chavez and Clemensen, "Pahaquarry Copper Mine," v-vii.

Although the Pahaquarry Mine CLR does not address resources located along Old Mine Road North, it does provide additional historic context about the history of Old Mine Road and the surrounding road system. Additionally, it provides valuable information about extractive industries that were historically important in the area.

1996 Preliminary Historic Resources Study

In 1996, the NPS published the "Preliminary Historic Resource Study," written by A. Berle Clemensen. As mentioned previously, the "Preliminary Historic Resource Study" appears to address many of the research needs identified in the 1990 *Comprehensive Preservation Plan*. The "Preliminary Historic Resource Study" provides a detailed history of DEWA. The report organizes the history of the recreation area thematically, and historic themes include Native American history; European settlement patterns; agricultural activities and lifeways; transportation, trade, and industry; village development; extractive industries, including mining, timbering, and quarrying; and recreation. For each historical theme, the study identifies significant resources within DEWA. Identified resources have an assigned historic context, an evaluation of integrity and significance, a history of ownership where available, as well as a brief history and physical description. The plan also includes relevant census data for agricultural properties. This report includes documentation of many of the component landscapes along Old Mine Road North that are included in this document.

1996 Depue House Historic Structure Report

In 1996, the NPS commissioned a HSR for the Alonzo Depue House. Architect John Bruce Dodd, historical architectural specialist Anne Kathleen Sullivan, and historian Ronald J. Dupont Jr. completed the report. The report includes a brief developmental history of the Delaware River Valley, Sandyston Township, and the Depue House. The report also includes in-depth documentation of the building's exterior and interior conditions and structural systems, which are then used to inform recommendations for repair needs, cost estimates, preservation strategies, and potential future uses.[694]

694. Dodd, Sullivan, and Dupont, "The DePue House," i-ii.

1999 Draft Trails Plan, General Management Plan Amendment, and Environmental Impact Statement

In June 1999, the NPS published a draft of a GMP Amendment, as well as a Trails Plan and Environmental Impact Statement for DEWA. In November, the NPS published an Updated Trails Plan and an Abbreviated Environmental Impact Statement following a public input period, supplementing the June 1999 GMP Amendment. According to the General Management Plan Amendment, the 1987 GMP was still the primary guidance document for DEWA. The purpose of the 1987 GMP Amendment was to update the 1987 GMP and "replace the section of the 1987 GMP that deals with trails."[695]

The updated trails plan from September 1999 proposes three primary alternatives to the existing trail system at DEWA. Alternative A refers to the continuation of current management strategies for the trail systems, and "provides a baseline for comparison with the other alternatives." Alternative B would establish a new "parkwide trail system" composed of four interconnected trail systems. This would double the length of the existing trail system and provide the "greatest opportunities for hiking, biking, cross-country skiing, and equestrian activities." Alternative C is less ambitious than Alternative B and would establish smaller independent trail networks throughout DEWA.[696] According to park personnel Alternative B was selected as the preferred plan in 2000.[697]

Park Management During the Early 2000s

2005 River Road System Cultural Landscape Inventory

In 2005, the NPS published a cultural landscape inventory (CLI) for the River Road system, which includes Old Mine Road North. Several different private consultants and NPS employees contributed to the CLI, which was completed in phases over a five-year period beginning in 2000. As noted in the CLI, the River Road system includes Old Mine Road, the Columbia Walpack

695. "Draft Trails Plan, General Management Plan Amendment, and Environmental Impact Statement" (United States Department of the Interior, National Park Service, June 1999), 1.
696. "Final Trails Plan, Abbreviated Environmental Impact Statement" (U.S. Department of the Interior, National Park Service, November 1999), iii-iv.
697. Park personnel provided this information.

turnpike, State Route 615, and Pompey Ridge Road. The CLI provides a brief developmental history; a comprehensive inventory of historically significant landscapes and resources along the River Road system; descriptions of the natural environment, including topography, vegetation, and wildlife; and an analysis of the different resources, in which they are listed as contributing, non-contributing, or undetermined. The CLI mentions several of the component landscapes located on Old Mine Road North, but the history is broad, addressing the entire River Road system, and not specifically the features at Old Mine Road North.

2006-2012 Intensive Architectural Surveys

Between 2006 and 2012, the NPS surveyed numerous historic architectural resources located in Sussex and Warren counties in New Jersey, within the boundaries of DEWA. The surveys do not include any component landscapes along Old Mine Road North.

Park Management, 2010–present

2011 New Jersey Historic Roads Study

In 2011, the New Jersey Department of Transportation (NJDOT) and Federal Highway Administration commissioned the *New Jersey Historic Roadway Study*. KSK Architects Planners Historians, Inc., Armond Corporation, Inc., and Michael Baker, Jr. Inc. completed the study. The purpose of the study was to create a framework for evaluating the significance and integrity of historic roadways throughout New Jersey and their eligibility for listing on the National Register of Historic Places. In turn, this study would aid government agencies and private consultants working on historic or potentially historic roadways in the state.

The *New Jersey Historic Roadway Study* identifies roads throughout New Jersey that are significant at a statewide level. The study also outlines several developmental periods and historic contexts of transportation development within the state to help assess an individual roadway's historic significance and integrity. The developmental period identified within the study includes the Early Roads Era (1621–1815), the Internal Improvements Era (1790–1889), the Good Roads Era (1870–1917), and the Highway Era (1891–1947). The study also identifies numerous associated resource types, including roadway and roadside elements, which are common along historic roadways. Although the *New Jersey Historic Roadway Study* does not identify Old Mine Road as a significant road, the document provides a valuable framework for evaluating the road's significance and integrity, placing it within the context of roadway history throughout the state of New Jersey and informing the statewide contexts detailed in this CLR.

2014 Foundation Document

The 2014 *DEWA Foundation Document* provides guidance for planning and management initiatives within the national recreation area. The foundation document provides explanations about the purpose and significance of DEWA. According to the foundation document, the purpose of DEWA is "to preserve the natural, cultural, and scenic resources and values of the Delaware River valley and provide opportunities for resource-based recreation, education, and enjoyment in close proximity to the most densely populated region of the country." The foundation document's explanation of DEWA's significance is multi-faceted, including natural, cultural, archeological, scenic, and recreational resources. The Fundamental Resources and Values of DEWA include the Delaware River and its tributaries; the Delaware River Valley as a landscape that represents changing land use and settlement patterns; numerous and diverse archeological sites; natural habitats; geological features; access to recreational opportunities; and scenic landscapes. The document states that Old Mine Road Historic District is a fundamental resource and value providing "evidence of changing land use, settlement patterns, and lifeways."[698] The document states that Old Mine Road should be included in a future corridor management plan as a planning need and recommends conducting a CLR for the road.[699]

2016 Historic Resource Survey Forms and Updates to Determinations of Eligibility

In 2016, NPS staff resurveyed the Old Mine Road Historic District to include updated documentation of contributing resources, as well

698. "Foundation Document, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River," 6.
699. "Foundation Document, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River," 14.

as new documentation for previously unevaluated resources contained within the district. Staff recorded each resource on an individual survey form, which contains photographs of the resource; location and site maps; written descriptions of the resource and its setting; and notes about architectural style, building type, exterior materials, historic use, current use, condition, integrity, eligibility, significance, and National Register of Historic Places listing status. The 2016 survey includes documentation of several component landscapes along Old Mine Road North, including the Ennis House, the Anson Johnson House, the Westbrook-Bell House, and the Black Farm.

During the 2016 resurvey, NPS staff found that two sheds in the Old Mine Road North study area, one at the Ennis House and one at the Anson Johnson House, did not have sufficient historic integrity and should be considered non-contributing. The report describes the Ennis House shed as being in poor condition with compromised "integrity of materials and workmanship." Additionally, the survey notes that the Ennis House shed, which dates to 1936, "does not significantly represent or contribute to any of the currently-defined areas of significance for Old Mine Road Historic District."[700] According to the 2016 resurvey, the Anson Johnson shed did not have "integrity of materials, design, and workmanship." The shed's date of construction is also unknown, so the NPS was unable to determine whether the shed is representative of the Old Mine Road Historic District's identified areas of significance.[701]

2020 Updates to Determinations of Eligibility

In 2020, the NJHPO addressed a letter to the superintendent of DEWA about potential changes to the Old Mine Road Historic District. In the letter, the NJHPO concurs with recommendations made by DEWA to extend the period of significance "to 1965, when the Tocks Island Dam project was authorized by the United States Congress."[702] The letter incorrectly states that the federal government authorized the Tocks Island Dam project in 1965. The Tocks Island Dam project was authorized in 1962, and DEWA was authorized in 1965. The letter also indicates that the New Jersey Historic Preservation Office and DEWA are in agreement about the outbuildings at Heron's Nest, which should be considered contributing to the property's individual eligibility for National Register of Historic Places listing.[703] In contrast to DEWA recommendations, the NJHPO states that the Ennis House shed and Anson Johnson House shed both retain sufficient integrity to be considered contributing.[704]

2021 Historic Buildings Strategy Draft

In 2021, the NPS published a draft of a *Historic Buildings Strategy* (HBS) report. The purpose of the report is to provide a "strategy that prioritizes funding and preservation efforts for historic buildings with Delaware Water Gap National Recreation Area ('the park') based on historic significance, condition, interpretive value, and potential for adaptive reuse."[705] The HBS notes that there are 286 individual historic buildings in DEWA, many of which are clustered or grouped in historic properties, of which there are ninety-seven. The HBS organizes these historic resources into four categories: A, B, C, and D. The categories are described as follows:

> Category A properties are the most historically significant properties in the park, are in good or fair condition and have high interpretive value…
>
> Category B properties are often not as historically significant as Category A properties but are in good or fair condition and have high or moderate interpretive value…
>
> Category C properties may have some historic significance but are in fair or poor condition and have fair or poor interpretive value…
>
> Category D properties are in fair to poor condition and have poor interpretive value…[706]

According to the HBS, the NPS should prioritize available funding for preservation and rehabilitation of Category A properties. The NPS would also prioritize these properties for adaptive

700. "Historic Resource Survey Forms," 23.
701. "Historic Resource Survey Forms," 34.
702. Katherine Marcopul to Sula Jacobs, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area, Historic Properties Management Plan," February 25, 2020, 3, Delaware Water Gap National Recreation Area..
703. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 6–7.
704. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 4.
705. "Draft Historic Buildings Strategy," i.
706. "Draft Historic Buildings Strategy," i.

reuse and interpretive programs. The report recommends that the NPS rehabilitate Category B properties and convert them for adaptive reuse or interpretive purposes, although properties in this category may have less overall integrity. The NPS could rehabilitate and reuse Category C properties if funded by an outside party or lessee. If no outside party expresses interest, these properties will be demoted to Category D. Category D properties would not be actively preserved by the NPS.[707]

Several of the component landscapes along Old Mine Road North are included in the HBS. Each entry contains a photo, a brief description, and an explanation of the property's significance. The Anson Johnson House, Black Farm, Ennis House, and Westbrook-Bell House are all classified under Category A. The Depue House is classified under Category B, while the Bevans-Hellwig kitchen is listed under Category C. Heron's Nest is listed under Category D. Buildings and sites not owned by the NPS, including Mettler Cemetery, the John Wesley Van Auken House, Minisink Dutch Reformed Church site and Cemetery, are not included in this report.[708]

The NPS has engaged in several projects to repair culverts along the Old Mine Road North corridor during its ownership of the road. In some cases, they have replaced metal or concrete culverts with high density polyethylene plastic (CPP) pipes. At these locations, the NPS usually installed dry-stacked stone headwalls reinforcing the inlet size. Research did not reveal compliance documentation or construction dates associated with these culvert replacements.

In 2018, the NPS completed an "Assessment of Actions having an Effect on Historic Properties" form, which describes a project to repair the stone culvert near the Black Farm. The project proposes emergency repairs to prevent deterioration of this historic resource. Repairs were to include:

> Remove top course of stone to ensure positive drainage off the roadway and over the wall
>
> Repair approximately 5' of wall (centered on guiderail post by resetting stone with mortar)
>
> Provide means to drain backfill with weep holes at bottom of wall
>
> Backfill behind wall with ¾" of clean stone to 12" below asphalt elevation
>
> Place and compact 8" dense grade aggregate above clean stone[709]

The NPS completed this work in December 2017. According to park personnel, the NPS installed a steel back timber guardrail in at the Black Farm culvert in 2012, replaced a steel W-beam guardrail and one wood post guardrail. There is a steel W-beam guardrail at the intersection of Old Mine Road and Jager Road, with guard rails present on both sides of Old Mine Road.[710] There are three remnant steel posts, which are attached to the concrete guide rail posts at this location. The date of the concrete and steel post installation is unknown, but the concrete guide rails match details dating to the late 1940s and 1950s found in other segments of Old Mine Road.

Landscape Summary

Overall, natural systems and features during this period remained unchanged except for reforestation or successional forest growth. The karst topography of the area means that new drainages occasionally appear, and there is a new emergent drainage pattern that appears to have emerged during the last decade on the east side of Old Mine Road North near MP 0.78. The NPS maintains forested areas, but successional growth has continued to change the makeup of the vegetation along the corridor as woody species take over former agricultural fields and farmstead areas. The quarry located at MP 1.44 ceased operations, and the NPS filled in some areas of the quarry (Figure 2.91).

The NPS recognized the scenic and recreational value of Old Mine Road North during its initial planning stages for DEWA. The NPS did not alter the location or configuration of the road during this period (Figure 2.92, Figure 2.93). The NPS

707. "Draft Historic Buildings Strategy," 22.
708. The NPS owns the extant Minisink Dutch Reformed Church in Montague.
709. Michael Owens, "Assessment of Actions Having an Effect on Historic Properties, Emergency Repairs to Black-Minisink Culvert Headwall on Old Mine Road - PEPC ID: 79899" (Bushkill, PA: Delaware Water Gap National Recreation Area, May 2, 2018), 1.
710. Park personnel provided this information.

Figure 2.91. 1977 photograph of the quarry on the west side of Old Mine Road North, which was still active in 1977. Since that time, the NPS has allowed revegetation, but the site remains unreclaimed (Source: Old Mine Road Historic District National Register Nomination, 80000410).

Figure 2.92. 1977 photograph of Old Mine Road North around MP 4.8, view to south. Note that at this point, successional vegetation has already started to intrude in agricultural fields and the road is paved and striped (Source: Old Mine Road Historic District National Register Nomination, 80000410).

Figure 2.93. 1977 photograph of Old Mine Road North, view to south at approximately MP 3.2 (Source: Old Mine Road Historic District National Register Nomination, 80000410).

repaved the road occasionally, but research did not reveal the dates of paving projects along the corridor. To maintain and preserve Old Mine Road North, the NPS completed a project to upgrade culverts along Old Mine Road North. In 2018, this included a project to make emergency repairs to the culvert just north of the Black Farm. During the NPS period, as culverts collapsed or became damaged, the NPS replaced or repaired them with modern materials including some with corrugated high density polyethylene plastic.

The NPS has added multiple small-scale features to the Old Mine Road North corridor during its ownership and management of the road. The NPS has installed regulatory and warning signs along the route to control traffic. They have also installed wayfinding signs to direct visitors to points of interest in DEWA. These signs are typically located at intersections.

Historical groups have also added small-scale features to the corridor. In 2003, the Sussex County Historic Marker program replaced an existing marker at the Westbrook-Bell Farm (Figure 2.94). The Walpack Historical Society erected a historic marker at the Depue House in 2003 (Figure 2.95). As noted, the NPS installed a steel back timber guardrail in at the Black Farm culvert in 2012 and replaced a steel W-beam guardrail and one wood post guardrail. The intersection of Old Mine Road and Jager Road has retained steel W-beam guard rails, located on either side of Old Mine Road. Guard rails dating to the NPS period exist on Old Mine Road North near the Dingmans Ferry Road intersection. Research did not reveal which agency (county or federal) installed this feature, but the group that installed them likely did so to improve safety near this intersection which features steep slopes adjacent to the road. Except for the Black Farm culvert area, the NPS has maintained the concrete guide posts that exist throughout the corridor.

At some point during the NPS period, an unknown entity (possibly Sussex County) installed a fence around the Mettler Cemetery. It is unknown if this was a replacement of a pre-existing fence. The NPS installed control gates at many of the road remnants along the corridor leading to trails

Figure 2.94. Sussex County Historic Marker program sign at Westbrook-Bell Farm entrance. The group erected this sign in 2003 (Source: WLA Studio, 2023).

Figure 2.95. Walpack Historical Society marker at the Depue House. The group erected this sign in 2003 (Source: WLA Studio, 2023).

or recreation areas. The NPS also installed a waterless, non-flush vault toilet restroom facility at the Namanock Recreation Site.

Numerous historic buildings were lost to fire or demolition during the 1970s, and evidence of human settlement along Old Mine Road North has become much less apparent than it would have been historically. There were significantly fewer clusters of farms remaining along the road in this section by 1980. The NPS has allowed many of the agricultural fields associated with former farmsteads to return to natural succession, giving the area a heavily vegetated and densely forested landscape and limiting views toward the Delaware River. The NPS has retained select fields along the west side of Old Mine Road North for agricultural use by local farmers under the terms of a Special Use Permit.

The NPS decommissioned numerous auxiliary roads, driveways, and agricultural access that serviced former farmsteads and residential buildings. Over time, park visitors began utilizing these remnant driveways and road traces as pull-offs and turnouts. The only auxiliary roads that are currently accessible by vehicle off Old Mine Road North include Mettler Road, Van Ness Road, the Namanock Recreation Site access road, the Ennis House access road (Chudzik Lane), the Westbrook-Bell access road, and Jager Road.

Component Landscapes

Bevans-Hellwig Farm (ca. 1796, MP0.0)

The Bevans-Hellwig Farm property underwent substantial changes during this period. The NPS removed the two-story wood-framed wing. All that remains of this section of the house is a stone and brick firebox, which belonged to the chimney in the east gable on the two-story frame wing. The NPS also removed the one-story frame addition on the north wall of the fieldstone kitchen. The NPS removed both gabled dormers on the roof of the fieldstone kitchen and the enclosed screen porch on the west elevation of the kitchen. Additionally, the NPS infilled the non-historic picture window with stone to mirror the surrounding exterior material. Site managers replaced or repaired the stone exterior on four elevations of the kitchen building. The windows are partially covered by wood ventilation panels. The large Pennsylvania barn is no longer extant.

Aerial images from 2022 show a heavily vegetated and forested landscape surrounding the Bevans-Hellwig Farm property. There is an undeveloped area south of the property, but it does not appear to be an agricultural field.[711]

Heron's Nest / Frank Stoll House (ca. 1830, Mettler Road)

Heron's Nest did not undergo substantial changes during this period. It appears that the NPS made little physical intervention or stabilization at the property. The main house and outbuilding both show signs of physical deterioration. The NPS has

711. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.

Figure 2.96. 1977 photograph of the Depue House with Old Mine Road North in the foreground, view to southwest. Note the presence of vegetation at the road and small-scale features such as the fenceposts in the foreground (Source: Old Mine Road Historic District National Register Nomination, 80000410).

boarded shut some, but not all, of the doors and windows with plywood.

Aerial images from 2022 show a heavily vegetated and forested landscape surrounding Heron's Nest property.[712]

John Wesley Van Auken House (ca. 1760, Mettler Road)
The John Wesley Van Auken House is still privately owned and maintained. The building's exterior appears to be well-maintained with a few notable changes. The owners removed two large trees that historically framed the building and installed an asphalt driveway in front of the main entrance. It is unknown if the historic outbuildings are still extant.

Aerial images from 2022 show an open lawn area and ornamental plantings surrounding the Van Auken House.[713]

Mettler Cemetery (ca. early nineteenth century, MP 1.65)
Mettler Cemetery is an active cemetery and is privately maintained. The cemetery contains a mixture of historic and modern grave markers. The cemetery maintains a rectilinear burial pattern in which most graves face east. The boundary of the cemetery is bound by chain-link fencing on the east edge. The north, south, and west edges are bound by fencerow vegetation. The cemetery remains active, with burials dating to as recently as 2017.

Arial images from 2022 show dense forest on the east, west, and south sides of Mettler Cemetery and a large agricultural field directly north of the cemetery.[714]

Depue House (ca. 1780, MP 2.8)
The Depue House underwent substantial changes during this period (Figure 2.96). The NPS removed the large two-story frame addition on the rear of

712. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.
713. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.
714. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.

Figure 2.97. 1977 view of the Ennis House, showing the north elevation (Source: Old Mine Road Historic District National Register Nomination, 80000410).

the building and covered most of the doors and windows with plywood or wood ventilation panels. The outbuildings on the opposite side of Old Mine Road North no longer exist.

Aerial images from 2022 show dense forest and vegetation surrounding the Depue House. Opposite the Depue House, the west side of the road where the former outbuildings were located has become entirely forested. The area north of the Depue House has also become densely forested. There are three large agricultural fields east and southeast of the Depue House that are maintained under Special Use Permits.[715]

Anson Johnson House (ca. 1840, MP 4.2)
The Anson Johnson House did not undergo substantial changes during this period, and the building is showing signs of physical deterioration. The wood-framed upper floor of the Anson Johnson Shed is showing signs of severe damage and deterioration. The roof and east elevation wall have partially collapsed.

As noted, the NPS used the Anson Johnson House as permanent and seasonal housing for DEWA employees during the 1990s and early 2000s. The NPS installed metal waste receptacles on the property for residents during this time.[716] According to park personnel, the NPS is currently evaluating the Anson Johnson House for rehabilitation, which would include repair and in-kind replacement of historic fabric. The purpose of the rehabilitation project is to make the house suitable for occupancy.[717]

Aerial images from 2022 show dense forest and vegetation surrounding the Anson Johnson House.[718]

715. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.

716. DEWA park personnel provided this information.
717. Park personnel provided this information.
718. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.

Figure 2.98. 1977 photo of the Westbrook-Bell House as recorded for the Old Mine Road Historic District National Register Nomination (Source: Old Mine Road Historic District National Register Nomination, 80000410).

William Ennis House (1751, MP 4.6)
The William Ennis House underwent minimal change during this period (Figure 2.97). The NPS has boarded shut most of the windows with plywood or ventilation panels. A 2016 Historic Resource Survey form shows a shed roof porch with square wood porch supports on the west elevation of the building.[719] This porch is no longer extant. The Ennis Shed deteriorated during this period.

As noted, the NPS used the William Ennis House as permanent and seasonal housing for DEWA employees during the 1990s and early 2000s.[720] According to park personnel, the Ennis House has received numerous rehabilitation and maintenance projects over time, including the in-kind replacement of the cedar shingle roofing material. Additionally, the NPS is currently in the preliminary planning phase of a rehabilitation project for the Ennis House.[721]

Aerial images from 2022 show dense forest and vegetation surrounding the William Ennis House.[722]

Westbrook-Bell Farm (ca. pre-1730, MP 5.14)
The Westbrook-Bell Farm has undergone few changes during this period. The main house has remained relatively unchanged (Figure 2.98). The NPS has covered the lower sashes of several first-floor windows with ventilation panels. The historic privy and two historic barns are still extant. The NPS has decommissioned an auxiliary road that ran southwest from the property (visible in historic aerials).

As noted, the NPS used the Westbrook-Bell Farm main house as permanent and seasonal housing for DEWA employees during the 1990s and early 2000s. The NPS installed metal waste receptacles on the property for residents during this time.[723] According to park personnel, the Westbrook-Bell House has received numerous rehabilitation and

719. "Historic Resource Survey Forms," 9.
720. DEWA park personnel provided this information.
721. Park personnel provided this information.
722. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.
723. DEWA park personnel provided this information.

maintenance projects, including the repointing of stone walls, reinforcing framing, and in-kind repair and replacement of the wood shake roof. A *Historic Structure Treatment Report* was conducted in 2015 to identify future needs and assist planning for additional maintenance work.[724]

Aerial images from 2022 show dense forest and vegetation surrounding the Westbrook-Bell House.

Black Farm (ca. mid to late eighteenth century, MP 5.3)
The Black Farm underwent several notable changes during this period. According to park personnel, exterior porches were removed in accordance with recommendations included in the 1993 HSR, and it is possible that other recommended repairs were made around this time.[725] However, the building is showing signs of physical deterioration including the degradation of wood siding and biological growth on the roof. At some point, there was substantial water damage resulting in discoloration where the rear wing addition connects to the main house. The NPS has covered most of the doors and windows with plywood or wood ventilation panels. According to park personnel, the Black Farm House has received stabilization efforts in recent years, including in-kind replacement of cedar shingle roofing in 2016.[726]

The large Dutch Barn remained in place, while the Black Corn Crib and Spring House became deteriorated to the point of near collapse. The west wall of the Spring House collapsed at an unknown date, but references to this condition are present as far back as Clemensen's 1996 preliminary historic resource study. Other outbuildings noted by Clemensen at that time included a second barn, chicken coop, and storage shed. The NPS removed these buildings sometime between 1996 and 2023.[727]

Aerial images from 2022 show dense forest and vegetation surrounding the Black Farm.[728]

Minisink Dutch Reformed Church & Cemetery (ca. pre-1737, MP 7.38)
The Minisink Dutch Reformed Cemetery is not active. There are an unknown number of graves, and clear delineation of the boundaries of the cemetery are not visible. Many of the markers became degraded at an unknown date, and some became weathered to the point that they are illegible.

Aerial images from 2022 show dense forest and vegetation surrounding the Minisink Dutch Reformed Cemetery.[729]

724. Park personnel provided this information.
725. Park personnel provided this information.
726. Park personnel provided this information.
727. Clemensen, "Preliminary Historic Resource Study," 93–94.
728. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.
729. Google Earth Aerial Imagery, 2022, https://earth.google.com/web/.

Existing Conditions

Introduction

The focus of this study is Old Mine Road North, a section of roadway within Delaware Water Gap National Recreation Area (DEWA) in Sussex County, New Jersey (Figure 3.1). DEWA contains 71,028 acres in total, including the Middle Delaware River and spanning either side of the Delaware River in both New Jersey and Pennsylvania. Old Mine Road North is part of a larger road system, which extends south into DEWA on the east side of the Middle Delaware River. The study area for this project includes Old Mine Road North beginning at US-206 near Montague, New Jersey, and continues 7.58 miles south to the intersection with Old Mine Dirt Road.

The study boundary for this Cultural Landscape Report (CLR) is coterminous with the polygon enclosing the Old Mine Road National Register District (Old Mine Road North section), but in no instances is the study area less than fifty feet, measured horizontally, from the outer edges of the pavement surface (referred to as the "road prism").[730] Resources and landscape elements beyond the study area are shown on project mapping as context but were not considered within the scope of work.

Within the Old Mine Road Historic District, there are ten individual historic component landscapes, deserving their own detailed documentation. In this CLR, the intent is to describe and document the roadway itself. The component landscapes are described briefly within the context of the roadway and are not individually documented at the level of detail of the roadway. These component landscapes are worthy of their own full documentation projects, which is not covered by the scope of this CLR.

This section of the CLR inventories the existing conditions of the site using a combination of contemporary photographs, plan view graphics, and narrative description. This inventory organizes the site features by landscape characteristic, which are the "tangible and intangible aspects of an inventory unit which have either influenced the history of the development of the landscape, or are the products of its development respectively."[731] The National Park Service (NPS) identifies thirteen landscape characteristics. These landscape characteristics are defined as follows:

- Natural Systems and Features: Natural aspects that often influence the development and resultant form of a landscape.
- Spatial Organization: Arrangement of elements creating the ground, vertical, and overhead planes that define and create spaces.
- Land Use: Organization, form, and shape of the landscape in response to land use.
- Cultural Traditions: Practices that influence land use, patterns of division, building forms, and the use of materials.
- Cluster Arrangement: The location of buildings and structures in the landscape.
- Circulation: Spaces, features, and materials that constitute systems of movement.
- Topography: Three-dimensional configuration of the landscape surface characterized by features and orientation.
- Vegetation: Indigenous or introduced trees, shrubs, vines, ground covers, and herbaceous materials.
- Buildings and Structures: Three-dimensional constructs such as houses, barns, garages, stables, bridges, and memorials.
- Views and Vistas: Features that create or allow a range of vision, which can be natural or designed and controlled.
- Constructed Water Features: The built features and elements that utilize water for aesthetic or utilitarian functions.

730. The "road prism" is defined as the pavement surface itself and fifty feet measured horizontally, from the outer edges of the pavement surface.

731. Robert R. Page, "National Park Service Cultural Landscapes Inventory Professional Procedures Guide" (U. S. Department of the Interior, National Park Service Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, January 2009), 74.

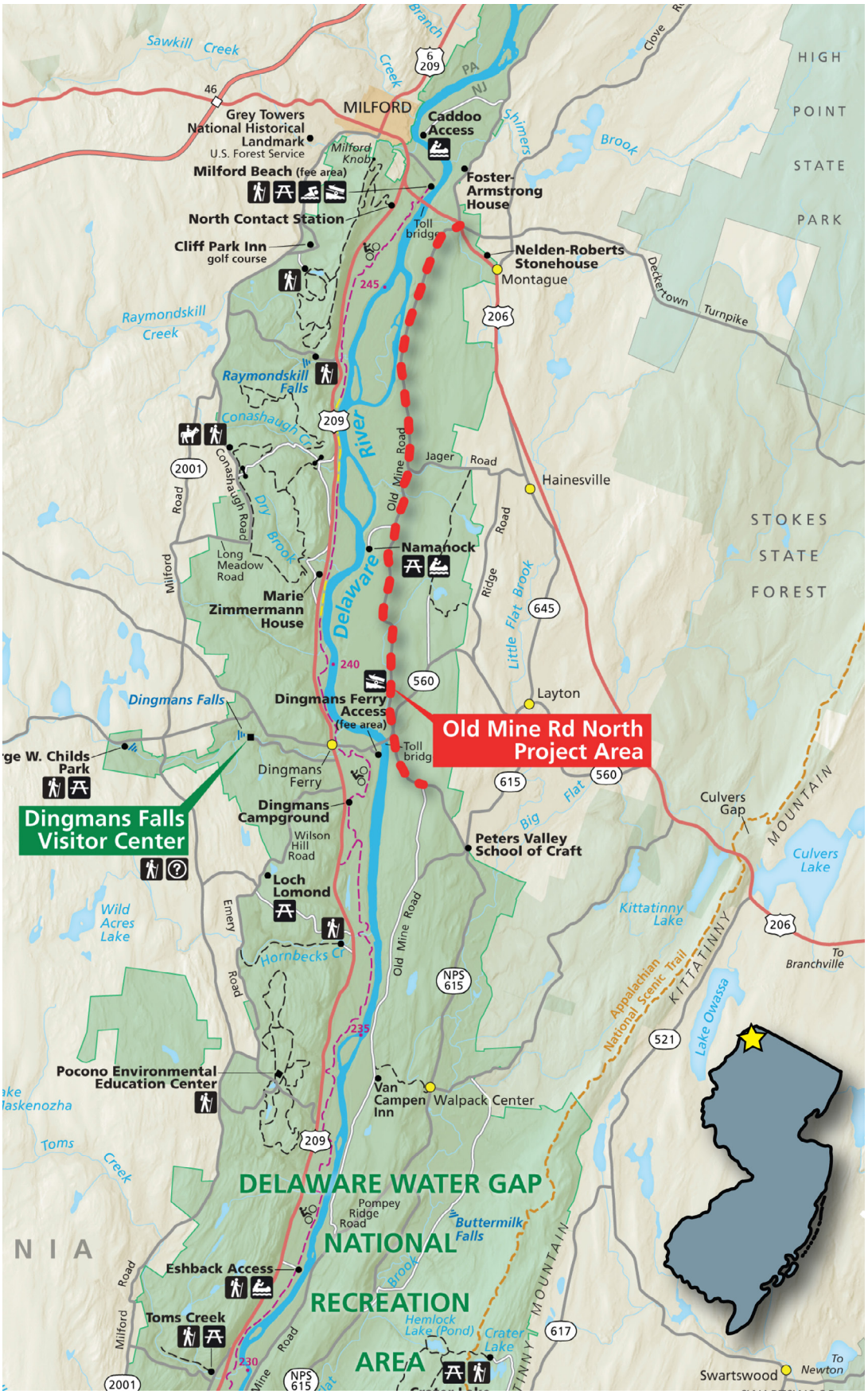


Figure 3.1. The study area extends from the intersection of Peters Valley-Wagonwheel Road and Old Mine Road North to the intersection of Old Mine Road and US-206 in the Delaware Water Gap National Recreation Area (Source: NPS, annotated by WLA Studio, 2023).

- Small-Scale Features: Elements that provide detail and diversity combined with function and aesthetics.
- Archeological Sites: Sites containing surface and subsurface remnants related to historic or prehistoric land use.

While most sites contain at least several of the thirteen characteristics, "not all characteristics are always present in any one landscape."[732] The Old Mine Road North landscape contains all thirteen landscape characteristics.

The consultant team conducted mapping of the features described in this narrative in 2023. Mile points in this document narrative and mapping corresponds to linear referencing along DEWA Route 0015 as inventoried in the Federal Highway Administration (FHWA) Office of Federal Lands Road Inventory Program (RIP). Mile point 0.00 is located at the southern end of the study area. Mapping of this documentation is shown on Drawings 2.1 through 2.7 included at the end of this chapter.

Natural Systems and Features

Climate

Northwestern New Jersey, where DEWA is located, is cooler than other parts of the state, with a Warm-Hot Summer humid continental climate. According to the National Oceanic and Atmospheric Administration National Centers for Environmental Information 2022 State Climate Summary for New Jersey,

> New Jersey's climate is characterized by moderately cold and occasionally snowy winters and warm, humid summers. There is a west-to-east contrast of temperatures, with cooler temperatures in the higher elevations of the northwest and warmer temperatures in the east near the coast. Temperature differences from the northwest to southeast are most noticeable in the winter. The northern elevated highlands and valleys experience colder temperatures and more annual average precipitation than the rest of the state. Average minimum temperatures in January range from 15° to 20°F in the northwest to 25° to 30°F along the coast. A similar temperature gradient exists for average maximum temperatures in July—cooler summertime temperatures of 80° to 85°F occur in the northwestern corner and temperatures between 85° and 90°F occur in the rest of the state. The statewide annual average precipitation is 47.6 inches. There is a north-south precipitation gradient as well, with the north-central portion of the state averaging around 50 inches of precipitation and the coastal region averaging 40–45 inches.[733]

Current climate change models anticipate that there will be a general rise in overall temperatures in the next century, accompanied by "increases in the number of extremely hot days and decreases in the number of extremely cold days."[734] Precipitation events are also expected to increase and become more intense in the coming decades, especially in the winter and spring months, which poses an increased risk of flooding. According to data from the Cooperative Institute for Satellite Earth System Studies and the National Environmental Modeling and Analysis Center, spring precipitation may increase as much as 10 to 15 percent by the middle of the twenty-first century.

Physiography and Ecoregion

DEWA is within the Ridge and Valley physiographic province which extends from southeastern New York to central Alabama. The Ridge and Valley province is characterized by parallel ridges and low lying valleys that are the result of "extreme faulting and folding events" during Appalachian mountain-building periods.[735] The Old Mine Road North corridor at DEWA is within the Northern Glaciated Limestone Ridges, Valleys, and Terraces Level IV ecoregion (Figure

732. Page, "National Park Service Cultural Landscapes Inventory Professional Procedures Guide," 53.

733. NOAA National Centers for Environmental Information, "New Jersey," State Climate Summaries, 2022, https://statesummaries.ncics.org/chapter/nj/.

734. NOAA National Centers for Environmental Information, "New Jersey."

735. Ron Witte and Donald Monteverde, "Geologic History of New Jersey's Valley and Ridge Physiographic Province," *New Jersey Geological and Water Survey*, 2012, https://www.state.nj.us/dep/njgs/enviroed/infocirc/valley-ridge.pdf.

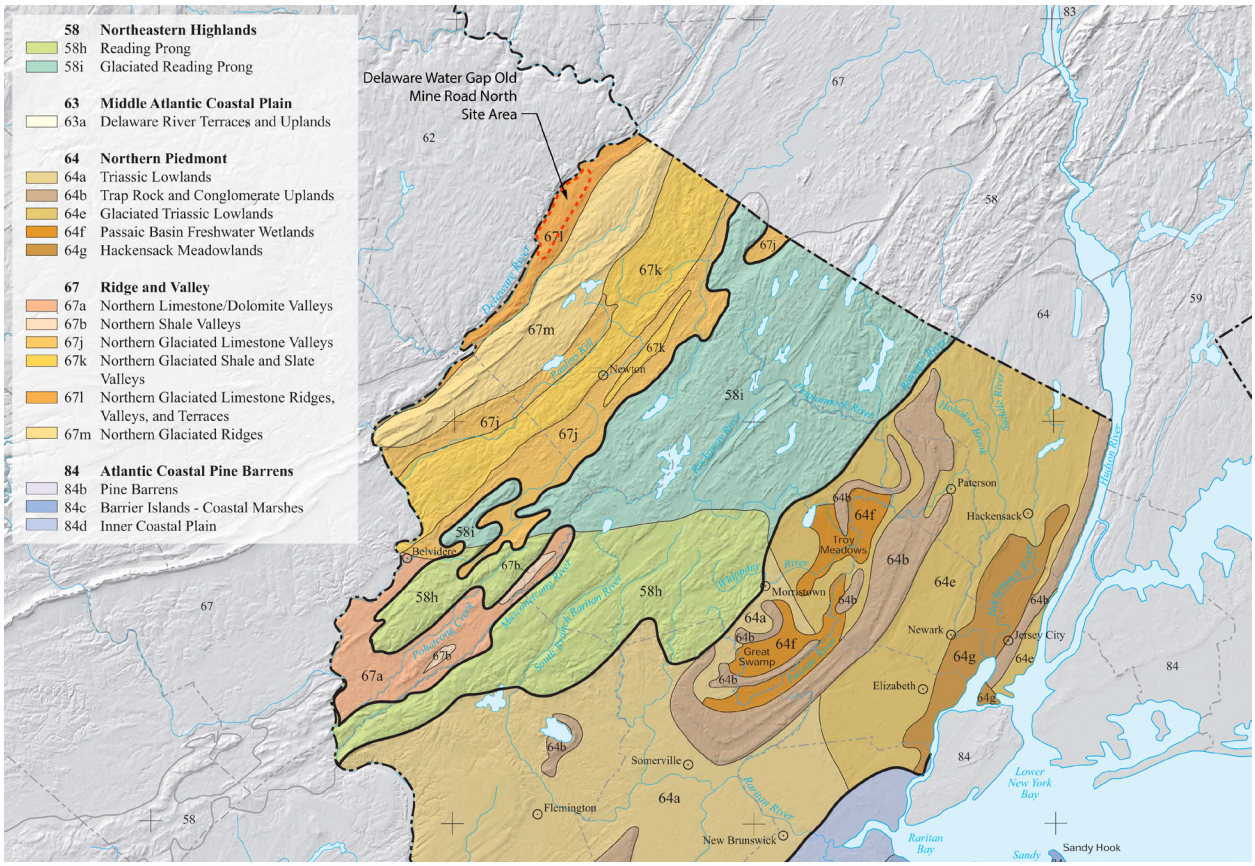


Figure 3.2. The site area is within the 67l Northern Glaciated Limestone Ridges, Valleys, and Terraces Level IV ecoregion (Source: Alan J. Woods (Oregon State University), James M. Omernik (US Geological Survey), and Brian C. Moran (Indus Corporation,) "Draft Level III and IV ecoregions of New Jersey Map," Jan 2007, US EPA).

3.2).[736] This ecoregion includes the "Minisink Valley, Flatbrook Valley, Walpack Ridge, and the terraces of the Delaware River."[737] Sedimentary rock types, including limestone, sandstone, and shale covered by glacial drift, underlie the Delaware River Valley and Walpack Ridge. The Delaware River terraces, found west of Old Mine Road North, are "composed of alluvial sands, alluvial gravels, and lacustrine silts" and rise "100 feet above the river."[738] The Delaware River serves as the western boundary for the ecoregion. Native vegetation is typically mixed oak and hardwood forests, which are interspersed with agricultural and other land uses.[739]

Geology and Soils

DEWA is named for the Delaware Water Gap, the point where the Delaware River cuts through Kittatinny Mountain to create a natural crossing point through the Appalachian Mountain range. The water gap is a notable geologic feature and a distinct regional landmark (Figure 3.3). The water gap is located approximately twenty-five miles south of Dingmans Ferry and the Old Mine Road North study area. According to a recent geologic resources inventory for DEWA, "Deformation of the bedrock during Appalachian mountain-building episodes hundreds of millions of years ago created an area of structural weakness in the rock. Erosion was concentrated in this weaker area, leading to the formation of the Gap. Other gaps in the region formed in a similar manner but lack the scale and grandeur of the park's namesake feature."[740]

736. Alan J. Woods, James M. Omernik, and Brian C. Moran, Draft Level III and IV Ecoregions of New Jersey, 1: 500 000 (US EPA, n.d.).
737. Alan J. Woods, James M. Omernik, and Brian C. Moran, "Level III and IV Ecoregions of New Jersey" (US EPA, January 2007), 10.
738. Woods, Omernik, and Moran, "Level III and IV Ecoregions of New Jersey," 10.
739. Woods, Omernik, and Moran, "Level III and IV Ecoregions of New Jersey," 10.
740. "Geologic Resources Inventory Report," Natural Resource Report (Delaware Water Gap National Recreation Area: National Park Service, Natural Resource Stewardship & Science, 2013), vii.

Figure 3.3. Delaware Water Gap National Recreation Area is named for the distinct geologic feature located approximately twenty-two miles south of the site area (Source: NPGallery, Asset ID: 8F6C2116-1DD8-B71B-0B263EA6BB948F8F, 2010).

The *DEWA Geologic Resource Inventory Report* continues,

> The bedrock underlying Delaware Water Gap National Recreation Area was deposited during the Ordovician, Silurian, and Devonian periods, about 450 to 359 million years ago. The rocks were originally sediments (lime, mud, sand, and gravel) deposited in a basin west of the highlands that formed during Appalachian mountain building events along the eastern margin of North America. Much more recently, during the past 2 million years, ice age glaciers beveled highlands, carved troughs, and deposited outwash, till, and moraines. Younger surficial units consist of unconsolidated alluvium (gravel, sand, silt, and clay) deposited by streams, colluvium collecting at the bases of slopes, and swamp and marsh deposits. These rocks and unconsolidated deposits underlie the landforms that influence ecosystems and historical development at Delaware Water Gap National Recreation Area.[741]

The report lists the Delaware Water Gap, Glacial Deposits and Features, Paleontological Resources, Type Sections, Folds and Faults, Sedimentary Features, Taconic Unconformity, Waterfalls, Cave and Karst, and Geologic Connections to Park Stories and Resources as particularly significant geologic resources within the recreation area.[742]

The soils of DEWA are underlain by bedrock composed of a "highly variable mixture of sedimentary rock types" including slate, shale, sandstone, and limestone.[743] Due to the unique range of exposed sedimentary rock types at DEWA, several Type Sections, or a reference exposure of a stratigraphic unit, have been collected at the park.[744]

Due to the abundance of geologic resources in the area, there is a long history of mining and quarrying activities on the DEWA landscape. This has resulted in the creation of Abandoned Mineral Lands (AML) sites with features such as "adits, prospects, shafts, structures, surface mines, tunnels, waste rock piles, and a well."[745] The park has thirty-eight total AML sites, including the former Layton quarry/gravel pit on the west side of Old Mine Road North at MP 1.3 (See *Land Use*).

Soils on the eastern side of Old Mine Road North are primarily from the Walpack Series. Walpack soils are well drained (Hydrologic Soil Group B) fine sandy loam to silt loam or gravelly silt loam in texture and very stony, with 8 to 15 percent slopes found on "drumlins and deep till deposits between bedrock ledges on Walpack Ridge, which is composed of a highly variable mixture of sedimentary rock types."[746] Walpack soils are classified as not prime farmland. Soils on the western side of Old Mine Road North are primarily from the Hazen-Paulins Kill Complex. Hazen-Paulins Kill soils are found in outwash deltas with slopes ranging from 0 to 45 percent and are very deep, very well drained (Hydrologic Soil Group A), and very stony.[747] These soils are primarily loam to fine sandy loam in texture and classified as prime farmland. The boundaries of most cultivated fields on the western side of Old Mine Road North align with the distribution of Hazen classified soils.

Hydrology

Delaware River and Water Gap

The Delaware River is a major free flowing (unimpounded) river that runs from New York southward to form the border between

741. "Geologic Resources Inventory Report," vii.
742. "Geologic Resources Inventory Report," viii.
743. University of California Davis, "Soilweb," https://casoilresource.lawr.ucdavis.edu/gmap/, September 3, 2020.
744. "Geologic Resources Inventory Report," 14.
745. "Geologic Resources Inventory Report," 32.
746. University of California Davis, "Soilweb," https://casoilresource.lawr.ucdavis.edu/gmap/, April 17, 2023.
747. Natural Resource Conservation Service, United States Department of Agriculture, "Web Soil Survey," July 1, 2020, https://casoilresource.lawr.ucdavis.edu/gmap/.

Figure 3.4. A new drainage pattern is emerging from the hillside east of Old Mine Road North at MP .78. The drainage flow originates from a spring further up the hillside, view to east (Source: WLA Studio, 2023).

Pennsylvania and New Jersey, before emptying into the Delaware Bay in Delaware. The river is a drinking water source for nearly 4 percent of the United States population, including the cities of Philadelphia and New York City. The Delaware River Basin has ten sub-watersheds which drain over 13,000 square miles across four states. DEWA is within the Upper Central Delaware River sub-watershed which includes parts of Sussex and Warren Counties in New Jersey and parts of Pike, Monroe, and Northampton Counties in Pennsylvania.

Over one hundred major and minor tributaries of the Delaware River exist in the park.[748] Old Mine Road North is within the Upper Delaware Watershed Management Area and the Walpack Bend/Montague Riverfront HUC 11 watershed.[749] All smaller drainages crossing Old Mine Road North are part of this watershed, and flow from east to west across the roadway toward the Delaware River. The entirety of the Old Mine Road North corridor drains to the west.

Creeks, Streams, and Drainages

Unnamed Drainages Near Dingmans Road (MP .761, .78, .798)

There is a small permanent drainage, which crosses Old Mine Road at MP .761 and passes through a concrete box culvert (Figure 3.4). According to park staff, this is sometimes called Dingmans Spring or Dingmans Ferry Spring. There appears to be a newly forming drainage or ephemeral spring, which crosses Old Mine Road at MP .78 and passes through a corrugated metal pipe culvert with concrete wing walls. According to DEWA staff, there appeared to be several iterations of historic landscape modifications to redirect water from that spring, most recently with an earthen berm that has

748. Carolyn G. Mahan et al., "Assessment of Natural Resources and Watershed Conditions for Delaware Water Gap National Recreation Area and Upper Delaware Scenic and Recreational River" (Fort Collins, Colorado: U.S. Department of the Interior, July 2011), 13.

749. New Jersey Department of Environmental Protection, "Land Resource Protection Web Application," n.d., https://njdep.maps.arcgis.com/apps/webappviewer/index.html.

Figure 3.5. A new emergent drainage pattern is partially flooding the east side of the roadway before reaching the culvert at MP .78. View to south (Source: WLA Studio, 2023).

been compromised. Nearby, a drainage is forming down the hillside at MP .798 where an ephemeral spring has relocated its course. The spring is largely redirected with an earthen berm to flow toward a concrete box culvert, though some of the flow has escaped the berm. The new drainage was observed flooding the edge of the roadway in dry conditions (Figure 3.5).

Kittatinny Creek (MP 2.159)

Kittatinny Creek crosses Old Mine Road at MP 2.159 through three metal culverts with a concrete headwall (Figure 3.6). According to park personnel, Kittatinny Creek was historically called "Skunk Run."[750]

Unnamed Drainage South of Jager Road/ "Sandyston Creek" (MP 3.939)

There is an unnamed drainage crossing Old Mine Road .25 miles south of Jager Road that eventually converges with another drainage west of Old Mine Road. The drainage passes through a large concrete box culvert (pre-1965) with concrete guide rails, which are consistent with those dating to details

750. Park personnel provided this information.

Figure 3.6. Kittatinny Creek crosses Old Mine Road at MP 2.159 through three metal culverts with concrete headwalls. View to north (Source: WLA Studio, 2023).

Figure 3.7. An ephemeral drainage (dry in image) crosses Old Mine Road North just south of Jager Road at MP 4.237. View to east (Source: WLA Studio, 2023).

from other sections of Old Mine Road from the late 1950s.[751] The New Jersey Department of Environmental Protection (NJDEP) refers to this waterway as Sandyston Creek.[752]

Ephemeral Drainage at Jager Road (MP 4.205-4.223)

There is an ephemeral drainage crossing Old Mine Road near Jager Road that eventually converges with another drainage west of Old Mine Road (Figure 3.7). The drainage passes through a large concrete box culvert (pre-1965) and was dry during field observations.

751. George Harper, "Plans of Proposed Reconstruction of River Road - Section No. 7, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, December 1, 1959), 2, Delaware Water Gap National Recreation Area.

752. "Sandyston Creek On Old Mine Road (NJDEP_BFBM-01438743) Site Data in the Water Quality Portal," National Water Quality Monitoring Council, n.d., https://www.waterqualitydata.us/provider/STORET/NJDEP_BFBM/NJDEP_BFBM-01438743/.

Figure 3.8. A drainage historically known as White Kill crosses Old Mine Road North through a stone box culvert at MP 5.387. View to west (Source: WLA Studio, 2023).

Figure 3.9. White Brook crosses Old Mine Road North through a bridge at MP 7.52. View to west (Source: WLA Studio, 2023).

Figure 3.10. Brau Kettle is a historic hydrologic feature located just west of Old Mine Road North at MP 4.167–4.186. View to east (Source: WLA Studio, 2023).

White Kill Near Black Farm/Everitt Farm (MP 5.379-5.398)
White Kill (historic name) crosses Old Mine Road just north of the Black Farm at MP 5.227-5.341 (Figure 3.8). The drainage passes through a large, mortared stone box culvert to a circular constructed stone pond before continuing southward down the hillside.

White Brook (MP 7.52)
White Brook crosses Old Mine Road at MP 7.52 near US 206, passing beneath bridge #4320-016P (Figure 3.9).

Karst Features

Most of the known karst features in the DEWA landscape are located on a limestone outcrop known as the Onodaga Formation on the northwest-facing slope of Walpack Ridge within the vicinity of the study area, between Dingmans Ferry and US 206.[753] Karst features in DEWA include sinkholes, sinking streams, small caves, and springs. Karst features are the result of dissolution of limestone and other soluble rocks by groundwaters.

Brau Kettle (MP 4.167-4.186)
One notable karst feature is the historic sinkhole/spring fed pond and drainage known as Brau Kettle, located on the west side of Old Mine Road North (Figure 3.10). The spring fills a largely circular depression roughly six to eight feet deep and twenty feet across, then drains down the hillside to the west of Old Mine Road. The depression fluctuates seasonally and with rainfall, sometimes appearing dry and sometimes filled with water. Reportedly, the name derives from the phenomenon of water bubbling up from the bottom of the sinkhole, appearing as a boiling kettle. The pond is possibly fed by sinking spring which originates east of Old Mine Road.[754] The historic Brau Kettle was reportedly a landmark during the colonial period and is a well-known local curiosity.

Ecology

The Middle Delaware River, as an unimpounded river, is an aquatic habitat with high ecological integrity for the region. In addition to the Delaware River, the park unit also contains a variety of terrestrial ecosystems, primarily forested uplands, aquatic ecosystems, and associated features, including "Kittatinny Ridge, Pocono Plateau, NJ Highlands, waterfalls, hemlock ravines, rhododendron glades, rare riparian and wetland plant communities, upland native grasslands, high diversity of Neotropical breeding birds, high density of black bears, and rich assemblages of reptiles and amphibians."[755]

The DEWA environment supports diverse wildlife including twenty-four species of reptiles such as the timber rattlesnake (*Crotalus horridus*), Eastern box turtle (*Terrapene carolina carolina*), and common five-lined skink (*Plestiodon fasciatus);* 26 species of amphibians including the spotted salamander (*Ambystoma maculatum*), and Eastern newt (*Notophthalmus viridescens*). Scientists have identified over 260 species of birds along the river corridor including the bald eagle (*Haliaeetus Leucocephalus*) and peregrine falcon (*Falco peregrinus*). The environment also supports dozens of mammal species including porcupine (*Erethizon dorsatum*), white-tailed deer (*Odocoileus virginianus*), American mink (*Neovison vison*), grey fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), several species of bats, coyote (*Canis latrans*), bobcat (*Lynx rufus*), American black bear (*Ursus americanus*), North American beaver (*Castor canadensis*), and Eastern grey

753. Ron Witte and Donald Monteverde, "Karst in the Delaware Water Gap National Recreation Area," *New Jersey Geological Survey Newsletter*, Unearthing New Jersey, 2, no. 1 (2006): 5.
754. Witte and Monteverde, "Karst in the Delaware Water Gap National Recreation Area," 5.
755. Natural Resource Conservation Service, United States Department of Agriculture, "Web Soil Survey," 3.

Figure 3.11. The spatial organization of Old Mine Road North is defined by the route of the roadway, which closely hugs the base of Walpack Ridge (right), leaving the flat arable land west of the roadway open for agricultural use (left). View to north (Source: WLA Studio, 2023).

squirrel (*Sciurus carolinensis*).[756] The consultant team encountered several species during field investigations, including porcupine, Eastern racer snake (*Coluber constrictor*), mink, and deer.

Spatial Organization

The spatial organization of the Old Mine Road North corridor relates to the alignment of the roadway, which was constructed in response to the natural landform and topography. Between the eastern bank of the Delaware River and Walpack Ridge, a terrace forms a narrow linear corridor, which created a natural path for the alignment of Old Mine Road North. The roadway travels north to south along the terrace, which fluctuates in width along the length of the corridor roughly parallel to the path of the Delaware River.

The spatial organization of historic features within the Old Mine Road North corridor relates to the roadway alignment. Historically, the road provided an access point to both fertile agricultural lands and to mineral resources along this corridor. The archeological remains of historic farmsteads, fields, and homesites indicate that these features were often located close to or immediately adjacent to the roadway. As the primary corridor through the area, parcel boundaries were created in relationship to both the roadway and the river. Due to the topography, there are few crossroads leading into this area. Most remaining buildings and archeological remains are located on the west side of the roadway, where the flatter land provided more suitable building sites. Agricultural fields are also located on the flatter western side of the roadway, while the eastern side of the roadway is largely forested (Figure 3.11). Agricultural fields are commonly separated by stone rows or stone fences, usually accompanied by a tree line, which often indicates a parcel boundary running perpendicular to the roadway. Currently, much of the roadway travels through a dense forest canopy, with fields or intersecting roads or waterways providing the only breaks in the overhead canopy and views to the surrounding landscape.

756. "Nature," National Park Service, Delaware Water Gap National Recreation Area, n.d., accessed May 12, 2023.

Land Use

Farming

Farmland is still in active use along the Old Mine Road North corridor. A survey of DEWA agricultural fields indicates the location of lands formerly or actively managed under a special use permit.[757] The fields are managed for either crop/farmland, open space, or wildlife uses. The special use permit boundaries roughly correspond with the existing unforested fields or open woodlands that punctuate the corridor and provide openings in the viewshed.

Residential

Hundreds of farmsteads, permanent homes, and vacation cottages were formerly located along the Old Mine Road corridor. Currently, there are only a few remaining active residences in the Old Mine Road North study area. There is an active residence at 40 Old Mine Road, Sandyston Township, at MP .339 on the east side of Old Mine Road. There is an inactive residence, known as the "Lutz House" at 200 Old Mine Road, at MP 5.114. There are also several active residences on Mettler Road, including the Van Auken House.

Mineral Extraction

There are extensive landforms and tailings associated with the former Layton quarry/gravel pit along the west side of Old Mine Road between MP 1.3 and MP 1.5, just north of Mettler Road. Vehicular access to the roadway associated with the former quarry is blocked by a modern metal gate. The quarry was decommissioned after the survey of Old Mine Road for the National Register of Historic Places nomination, sometime in the late 1970s.

Cemetery

There are four known cemeteries along Old Mine Road North.

Mettler Cemetery

Mettler Cemetery is located at MP 1.667-1.705 on the west side of Old Mine Road. Mettler Cemetery is discussed further under *Component Landscapes*.

757. DEWA GIS Data, provided to contractor.

Minisink/Westbrook Cemetery

The Minisink/Westbrook Cemetery is located on the west side of Old Mine Road. The cemetery is outside of the study area but is accessible from Old Mine Road.

Brace-Everitt Cemetery

The Brace-Everitt Cemetery is located at approximately MP 5.455-5.473 on the west side of Old Mine Road. The cemetery is outside of the study area but is accessible from Old Mine Road. The cemetery is associated with the Everitt family whose home and farmstead were formerly at this location.

Minisink Dutch Reformed Church Cemetery

Minisink Dutch Reformed Church Cemetery is located at MP 7.33-MP 7.348 on the west side of Old Mine Road. Minisink Dutch Reformed Church Cemetery is discussed further under *Component Landscapes*.

Cultural Traditions

Farming

Farming remains an active use on the Old Mine Road North corridor. The park maintains active agricultural special use permits for cropland and hay fields. The park identifies corn, wheat, hay, and oats as the principal crops grown within the park boundary.

Outdoor Recreation

Visitors to DEWA can enjoy several outdoor activities including hiking, picnicking, swimming, paddling, boating, fishing, hunting, cross country skiing, horseback riding, ice and rock climbing, and cycling. Old Mine Road North is a popular route for cyclists as there is minimal vehicle traffic along the roadway.

Historic Preservation/Interpretation

The NPS has, in recent decades, shown a renewed interest in the tradition of historic preservation practiced in the area for multiple centuries. Historic preservation allowed buildings such as the Depue House to remain standing since the eighteenth century. The cultural tradition of historic preservation prior to NPS ownership was

interrupted by land acquisition and demolition activities related to the Tocks Island Dam project but has since been renewed by the NPS. Historic interpretation along the road corridor is limited to a few historical markers.

Forest Management

The NPS actively manages the forests at DEWA for overall forest health and to reduce fire risk. Prescribed burning, thinning, and the removal/treatment of invasive exotic species are all activities associated with this tradition.

Cluster Arrangement

Black Farm Cluster

The Black Farm is the only cluster of buildings visible from Old Mine Road North. The cluster includes the Black Farm House, the Black Farm Dutch Barn, the Black Farm Wagon Shed, and the Black Farm Spring House. These buildings are in a row as close as fifteen feet from the edge of pavement between MP 5.227-MP 5.341 on the west side of Old Mine Road. Two mortared stone walls associated with the Black Farm House are within five feet of the roadway. The Black Farm is discussed in more detail in the *Component Landscapes*.

Westbrook-Bell Farm Cluster

Located about six hundred feet from Old Mine Road North, the Westbrook-Bell Farm building cluster is not readily visible from the road prism, but it includes a group of landscape features at the end of a gravel drive. The farm cluster includes the circa eighteenth-century house with later additions, two circa nineteenth-century barns, and a circa twentieth-century privy. The Westbrook-Bell Farm is discussed in more detail in the *Component Landscapes*.

Circulation

Old Mine Road is a historic roadway that people constructed to connect to the farmsteads on fertile agricultural land on the New Jersey side of the Delaware River Valley long before the advent of the automobile. As the corridor became a more densely populated area and motor vehicles became the dominant mode of transportation, Old Mine Road received several improvements. The roadway evolved from a dirt surface to an improved gravel surface and later a paved surface. Those building the road adjusted the vertical and horizontal alignment of the corridor to provide a safer driving experience and to provide positive drainage along the road. The roadway functions today as an infrequently traveled leisure route used by both motorists and cyclists and as an access road for recreation areas and agricultural lands. The roadway was not intentionally designed as a scenic leisure route, and thus, it is missing some of the typical features found on NPS park roads such as pullouts for maintained views and vistas and historic site waysides. Deferred maintenance, drainage design deficiencies, and weathering have produced fair to poor surface pavement conditions along the corridor, reducing the functionality of the route.[758] The NPS does not perform winter maintenance along Old Mine Road North from Mettler Road north to U.S. 206, meaning that access to this stretch of road is limited after severe weather. Roadway grading and construction is discussed further in *Topography*.

Roadway Classification, Traffic, and Design Speed

According to the New Jersey Department of Transportation, the roadway is functionally classified as a local roadway and currently accommodates passenger, light maintenance, and recreational vehicles, as well as farm equipment such as tractors.[759] Average traffic data was estimated in a 2018 geotechnical report as two thousand vehicles per day in the four peak months (June through September) and one hundred vehicles per day in the off-peak months. The report estimated that 5 percent of the average traffic volume is produced by trucks or recreational vehicles while 95 percent of traffic volume is produced by passenger vehicles.[760] Signs at MP 00.777 and MP 07.462 regulate that commercial vehicles are prohibited from entering the roadway.

758. AmerCom Corp, "Pavement Design Report," Geotechnical Report (Delaware Water Gap National Recreation Area: National Park Service, November 2018), 14.
759. AmerCom Corp, "Pavement Design Report," 11.
760. AmerCom Corp, "Pavement Design Report," 11.

Figure 3.12. At MP 0.0, Old Mine Road turns ninety degrees at the intersection of Peters Valley-Wagonwheel Road, continuing south of the study area (at right). Peters Valley-Wagonwheel Road continues east at the origin of the study area (left). View to southeast (Source: WLA Studio, 2023).

The design speed of the roadway is thirty-five miles per hour along the length of the study area with one exception. At the narrow curve near the Black Farm between MP 5.227-5.341 the speed limit is fifteen miles per hour.

Intersections

Peters Valley-Wagonwheel Road (MP 0.0)

The study area begins at the three-way intersection of Peters Valley-Wagonwheel Road and Old Mine Road North near the Bevans-Hellwig site (Figure 3.12). At this intersection, Old Mine Road North travels northwest, and Old Mine Road South turns ninety degrees at the intersection to continue southwest to the Delaware Water Gap. Peters Valley-Wagonwheel Road continues southeast from Old Mine Road North approximately one mile to terminate at the Peters Valley School of Craft.

Old Dingmans Road (MP .67)

Old Dingmans Road is a paved asphalt road that meets Old Mine Road North at MP .67 (Figure 3.13). The road continues east of Old Mine Road North for approximately 1.5 miles to the town of Layton, New Jersey. The road was formerly connected to Dingmans Ferry Bridge. Old Dingmans Road no longer functions as a through street. According to park personnel, the road was closed following a storm event that damaged the roadway. Currently, the road is blocked by several downed trees.

Figure 3.13. Old Dingmans Road intersects Old Mine Road North at MP .67. The road is paved, but is not actively maintained within DEWA, as evidenced by downed trees blocking the roadway. View to east (Source: WLA Studio, 2023).

Sussex County Road 560/Tuttles Corner Dingmans Road (MP .86)

Tuttles Corner Dingmans Road begins in Layton, New Jersey, and continues west to cross the Delaware River to Pennsylvania via the Dingmans Ferry Bridge. Old Mine Road North crosses Dingmans Road at MP .86 at a skewed angle four-way intersection (Figure 3.14, Figure 3.15). Steep grade changes occur at the intersection, and vehicle speeds can make this crossing difficult from either side of Old Mine Road North. Steep, road-side slopes on the northwestern corner of the intersection are protected by a steel guard rail, which extends from Dingmans Road to the stop sign on the southbound side of Old Mine Road North. A small round sign facing the southbound lane of Dingmans Road identifies the Old Mine Road intersection. Confusingly, a street sign visible from the northbound lane identifies Old Mine Road as “Peters Valley Road,” with wayfinding signs directing motorists to the Peters Valley Craft Center.

Figure 3.14. Old Mine Road North crosses Dingmans Road/ State Route 560 at MP .852. View to southwest (Source: WLA Studio, 2023).

Figure 3.15. There is a sharp grade change on the northwest corner of the intersection of Old Mine Road North and Dingmans Road. View to north (Source: WLA Studio, 2023).

Figure 3.16. Mettler Road spurs off the west side of Old Mine Road North at MP 1.155. There are active residences on Mettler Road. View to north (Source: WLA Studio, 2023).

Figure 3.17. Van Ness Road spurs off the east side of Old Mine Road North at MP 2.14-2.159. Van Ness Road is a paved through road but not marked with signage. View to east (Source: WLA Studio, 2023).

Mettler Road (MP 1.16)

Mettler Road intersects the west side of Old Mine Road North at MP 1.16 to form a three-way intersection (Figure 3.16). The road continues west for approximately .58 miles to terminate at the driveway of the John Wesley Van Auken House and Van Auken Road. Mettler Road is paved and has several active residences along it.

Layton Gravel Pit Drive (MP 5.15)

There is a former access road to the Layton Gravel Pit location dating to the 1960s on the west side of Old Mine Road. The road trace is gated and travels approximately five hundred feet southeast of Old Mine Road North.

Van Ness Road/Fisher School House Road (MP 2.16)

Van Ness Road intersects Old Mine Road North at a three-way intersection on the east side of the road at MP 2.16 (Figure 3.17). The intersection occurs just south of the Kittatinny Creek crossing and is not marked by signage from either direction on Old Mine Road North. Van Ness Road is a short, paved connector road, which travels east from Old Mine Road North along a branch of Kittatinny Creek for approximately .5 miles to connect to Upper Ridge Road.

Youth Hostel Access Road (MP 3.174)

A gravel roadway at MP 3.174 leads to the former Youth Hostel site off of Old Mine Road North (Figure 3.18). A sign indicates the area is now used for cross country skiing.

Road to Namanock Recreation Site (MP 3.46)

The Namanock Recreation Site access road spurs off the west side of Old Mine Road North at MP 3.46 to form a three-way intersection (Figure 3.19). The gravel road continues west for approximately .33 miles southwest to terminate at the Namanock

Figure 3.18. A gravel roadway spurs off the west side of Old Mine Road North at MP 3.174. This roadway leads to the former site of the Youth Hostel, and it is now used as a cross country skiing and hiking route. View to west (Source: Hunter, Ryan. "Old Mine Road Pedestrian Survey." Bushkill, PA: Delaware Water Gap National Recreation Area, 2022).

Figure 3.19. A gravel roadway leads to the Namanock Recreation Area from Old Mine Road North. The roadway spurs off the west side of Old Mine Road North at MP 3.447. View to west (Source: WLA Studio, 2023).

Figure 3.20. Jager Road is a paved through road which intersects Old Mine Road North at MP 4.223. View to southeast (Source: WLA Studio, 2023).

Figure 3.21. The driveway to the Ennis House spurs off this gravel drive, Chudzik Lane, which extends west from Old Mine Road North at MP 4.621-4.64. View to west (Source: WLA Studio, 2023).

Recreation Site on the eastern bank of the Delaware River.

Sussex County Road 646/Jager Rd (MP 4.24)

Jager Road intersects Old Mine Road North at a curved three-way intersection on the east side of the road at MP 4.24 (Figure 3.20). The intersection occurs just north of the creek crossing near the Anson Johnson House. Steep slopes on the southeast and southwest corners of the intersection are protected by a steel guard rail, which connects to the concrete box culvert just south of the intersection. Because Jager Road approaches Old Mine Road North at a skewed angle along a curve in the road, the turn apron is approximately one hundred feet wide at the mouth of Jager Road. Jager Road is paved and travels east from Old Mine Road North, generally following the creek for approximately one mile to connect to Ayers Road and Sandyston, New Jersey. The centerline of Jager Road is striped, with a stop sign on the northbound lane of the intersection at Old Mine Road North. There is no street sign identifying the road from either direction.

Penn Avenue/Chudzik Lane to Ennis House (MP 4.65)

A gravel road, formerly named "Penn Avenue," spurs off the west side of Old Mine Road North at MP 4.621 (Figure 3.21). Internally, NPS refers to this road as Chudzik Lane. The driveway to the Ennis House is accessed from this gravel road approximately 425 feet west of Old Mine Road North. The gravel road continues .75 miles west to terminate near where the Delaware River splits at the northern tip of Namanock Island.

Figure 3.22. Vehicular access to the Minisink Cemetery Road/Winant Trail and the Minisink/Westbrook Cemetery is restricted by a metal gate at MP 4.867-4.886. View to west (Source: Hunter, Ryan. "Old Mine Road Pedestrian Survey." Bushkill, PA: Delaware Water Gap National Recreation Area, 2022).

Figure 3.23. A gravel driveway leads to the Westbrook-Bell Property from Old Mine Road North at MP 5.133. View to northwest (Source: WLA Studio, 2023).

Figure 3.24. Van Etten Road is a gravel drive which spurs off Old Mine Road North at MP 5.322. View to northeast (Source: WLA Studio, 2023).

Figure 3.25. An unnamed gravel road spurs off the west side of Old Mine Road North at MP 5.568. Park visitors used this road for river access, but it is not an official recreational access road maintained by the park. View to southeast (Source: WLA Studio, 2023).

Minisink Cemetery Road/Winant Trail (MP 4.87)

Minisink Cemetery Road is a well-cleared dirt road on the west side of Old Mine Road North at MP 4.87 which leads to the Minisink/Westbrook Cemetery approximately five hundred feet west of the road (Figure 3.22). Internally, NPS refers to this road as Winant Trail.[761] A metal NPS-era gate prevents vehicular entry to the road with a sign that states "do not block access." The road is not identified by signage.

Drive to Westbrook-Bell Farm (MP 5.16-5.17)

A gravel driveway leading to the Westbrook-Bell Farm is located at MP 5.16 to MP 5.17 on the west side of Old Mine Road North (Figure 3.23). The driveway travels approximately six hundred feet west of Old Mine Road North to the historic site. The driveway has dual entrances from the road, with two historical markers identifying the historic site set between them.

Van Etten Road (MP 5.35)

A gravel road spurs off the east side of Old Mine Road North at MP 5.35 (Figure 3.24). The roadbed travels approximately six hundred feet east of Old Mine Road North. This feature follows a historic road alignment.

River Access Road/Minisink Access Road (MP 5.568)

A gravel road spurs off the west side of Old Mine Road North at a clearing near MP 5.568 (Figure 3.25). Internally, NPS refers to this road as the Minisink Access Road. The road provides recreational access to the Delaware River. There is no signage identifying this road. According to park personnel, the full length of this road is not maintained, and it functions primarily as a pedestrian pathway.

761. Park personnel provided this information.

Figure 3.26. An unnamed gravel road spurs off the west side of Old Mine Road North at MP 6.117. View to west (Source: WLA Studio, 2023).

Figure 3.27. The former Pine Road trace is located at MP 7.292. The roadway still appears on park roadway maintenance logs, but NPS does not actively maintain this route. View to west (Source: WLA Studio, 2023).

Figure 3.28. Laurel Lane spurs off Old Mine Road North at MP 7.519 and continues southwest to follow White Brook. View to northwest (Source: WLA Studio, 2023).

Figure 3.29. U.S. Highway 206 marks the end of the study area at MP 7.519-7.538. View to east (Source: WLA Studio, 2023).

Unpaved Road (MP 6.18)

An unpaved road spurs off the west side of Old Mine Road North at MP 6.18 (Figure 3.26). This road is likely a remnant driveway or a farm access road.

Pine Road (MP 7.34)

An inactive road trace spurs off the west side of Old Mine Road North at MP 7.34 (Figure 3.27). Downed trees and leaf litter currently block the road. The road remains identified as an active road titled "Unpaved Route (Pine Road)" in the "Route Milepost Log for Route 0015 in the 2020 Road Inventory and Condition Assessment of Paved Routes report (Cycle 6)."[762] According to park personnel, this road was constructed in the late 1950s to provide access to a planned residential development called Crystal Beach, which never materialized. Crystal Beach was supposed to provide residents with beach access along the planned Tocks Island Dam reservoir.[763]

Laurel Lane/White Brook Road (MP 7.56)

A gravel road spurs off the west side of Old Mine Road North just south of White Brook at MP 7.56 (Figure 3.28). The road follows the creek edge northwest for an unknown distance outside the study area. There is no signage identifying this road. According to park personnel, this road was constructed in the late 1950s to provide access to a planned residential development called Crystal Beach, which never materialized.[764] Internally, NPS refers to this road as White Brook Road.

762. "DEWA Cycle 6 Final Report," Road Inventory and Condition Assessment of Paved Routes, Federal Lands Highway Road Inventory Program (Delaware Water Gap National Recreation Area: Federal Highway Administration Eastern Federal Lands Highway Division, May 2020), 7–12.

763. Park personnel provided this information.

764. Park personnel provided this information.

Figure 3.30. A designated turnout at MP 5.36-5.379 is lined by concrete guide posts spanned by steel cable. View to west (Source: WLA Studio, 2023).

Figure 3.31. This gravel pull-off at MP 4.223-4.242 is at the location of a former homesite. View to west (Source: WLA Studio, 2023).

Figure 3.32. A gravel pull-off at MP 7.443-7.462 with a paved apron off the west side of Old Mine Road North. View to south (Source: WLA Studio, 2023).

Figure 3.33. An active gravel driveway to the "Lutz House" at MP 5.114. View to east (Source: Hunter, Ryan. "Old Mine Road Pedestrian Survey." Bushkill, PA: Delaware Water Gap National Recreation Area, 2022).

US Highway 206/County Road 650 (Deckertown Turnpike)/River Road (MP 7.58)

The northern terminus of Old Mine Road North is located at the southwest corner of the five-way intersection of US Highway 206, River Road, and Sussex County Road 650/Deckertown Turnpike (Figure 3.29). The intersection is misaligned, with Old Mine Road North oriented perpendicular to US Highway 206 but offset from the entrance to Deckertown Turnpike on the opposite side of the intersection. The northbound stop sign on Old Mine Road North is set back approximately thirty-eight feet from the intersection.

Turnouts and Informal Pull-Offs

There are designed turnouts lined by concrete guide posts with steel cable at MP .739, MP 5.36-5.379 (Figure 3.30). The 1932 road survey and the location of a ditch on the east side of Old Mine Road show that the turnout at MP 5.36-5.379 is likely the former alignment of Old Mine Road North, but now it serves as a place for cars to await passage across the Black Farm/Minisink culvert, which is only wide enough for one car at a time.

There are several informal pull-offs along Old Mine Road North. The pull-offs are mostly areas of pavement at former homesites along the corridor that vary in shape, size, and depth. Some of the gravel areas are large enough to accommodate parked cars. Occasionally, these areas function as informal parking areas along the road. Park staff note that visitors use these areas for parking throughout the year but especially during hunting season. The placement of the pull-offs typically relates to former drive or farm road locations (where building clusters are no longer extant). There are pull-offs at the location of former driveways or homesites at MP 4.223-4.242, MP 4.28 (Figure 3.31). There are guide rails placed at the pull-offs at MP .568, MP .644, MP 1.705, MP 1.932-1.951, MP 3.92, MP 6.761-6.78, and MP

Figure 3.34. The cut and fill grading of this road trace at MP .511 is clearly visible. View to west (Source: WLA Studio, 2023).

7.443 (Figure 3.32). Eleven total pull-offs were identified along the road.

Gravel/Earth Driveways

There are numerous short gravel access drives spurring off the roadway. Most driveways are indicated by a paved asphalt apron (Figure 3.33). The drives are typically used for tractor access to adjacent agricultural fields or by NPS fire management and maintenance.

Road Traces

There are numerous remnant road and driveway traces along the length of the corridor (Figure 3.34). Road traces are former vehicular circulation features which are no longer active. Road traces can be difficult to discern in the landscape, but typically are identifiable by a break in the tree canopy and topographic changes. They can also be identified by changes in the character of trees and vegetation, which may vary in appearance from their surroundings in species, age, height, and/or density. These discrepancies are often caused by soil compaction and disturbances. The NPS has intentionally blocked many former driveways and access roads using downed trees or mounds of dirt to prevent visitor access. Some blocked roads appear to function as pedestrian trails.

Figure 3.35. A steep ravine leads to the Delaware River west of the study area. View to west (Source: WLA Studio, 2023).

Topography

Natural Topographic Features

The alignment of Old Mine Road North follows a terrace between the base of Walpack Ridge and the bank of the Delaware River. From the east bank of the river, the landform rises steeply to a relatively level terrace. The terrace has historically been used as farmland, and while there was historic development on both sides of the road, the majority occurred in the fertile and arable area west of the roadway. The terrace narrows at the northern end of the study area, where the Delaware River splits to flow around Minisink Island between MP 5.3 and MP 6.7. In some places, the terrace is only two hundred feet wide before the landform slopes steeply down to the riverbank. From the terrace, the landform rises steeply east of the road to form Walpack Ridge, which extends the length of the corridor. The terrace extends from White Brook to Dingmans Ferry Bridge, south of which Walpack Ridge runs adjacent to the river. The Old Mine Road North corridor follows the base of this ridgeline to Dingmans Ferry, then the roadway climbs eastward up Walpack Ridge to avoid the steep grades along the riverfront.

The rapid movement of water down the steep mountain grades of Walpack Ridge has formed deep ravines in some locations (Figure 3.35). The areas with the greatest elevation change along the roadway occur at stream crossings. Often, the flow of these streams forms a narrow ravine with steep side slopes.

Engineered Topography–Roadway Design Principles

While Old Mine Road North generally follows the base of Walpack Ridge, significant grading occurred during the roadway's construction to smooth the vertical and horizontal alignment of the roadway while retaining as much arable area west of the roadway as possible. Additionally, drainage features were incorporated into the roadway system to shed stormwater from the surface and convey it through a series of ditches and culverts, which generally outlet west of the roadway.

Cross Section

The typical cross section of Old Mine Road North is a twenty-foot-wide paved road with ten-foot travel lanes and minimal shoulders. The surface is striped intermittently with a centerline and fog lines at the edge of the road. The roadway cuts into the grade along much of the corridor, closely following the base of Walpack Ridge and is leveled with fill on the downslope side of the roadway. There is typically a swale or ditch on the east side of the roadway. The total right-of-way is thirty feet wide.

According to a geotechnical report addressing the northern portion of the study area (north of Dingmans Ferry Road), the existing pavement consists of a three- to four-inch-thick bituminous concrete surface course underlain by a granular subgrade material consisting of "Dark/Grayish/ Light Brown/Gray CMF [course, medium to fine] SAND, little-to-and mf [medium to fine] Gravel, trace-to-and Silt, occurring directly below the BC [base course] pavement layer… These granular subgrade soils are classed in accordance with AASHTO [American Association of State Highway and Transportation Officials] as soil types A-1-a through A-2-4."[765] The subgrade soils are "classified as light brown/gray Clayey SILT, occasional little-to-and mf Gravel…classed in accordance with AASHTO as soil types A-2-6 through A-6."[766] The report does note pavement variations, the report's pavement core data summary notes thicknesses of five to ten inches in several borings.[767]

Archeological monitoring for a potential future construction project found that at boring position 23 (located in the south bound lane, south of Westbrook-Bell Farm), a buried historic road surface was intact at twenty-four to thirty-seven inches deep. Beneath the pavement there was a gravel base course and sand with aggregate present. At boring position 28, geotechnical experts observed multiple layers of asphalt pavement that were nine inches thick, potentially including early pavement episodes.[768]

The road's driving surface is crowned at the centerline with variable cross slopes. A system of vegetated ditches and culverts crossing the roadway are intended to conduct drainage away from the road surface; however, surface and subsurface drainage characteristics are inadequate along the roadway, contributing to the poor pavement conditions.[769]

Cut and Fill

The cut and fill construction method was used to smooth the vertical alignment of the roadway, whereby material removed from elevated areas was used to fill in lower lying areas. Evidence of cut and fill is visible along nearly the entire length of Old Mine Road North (Figure 3.36). Typically, the eastern side of the roadway is cut into the hillside, and the western side of the roadway is built up with fill. However, there are areas where the road is close to or at grade with the western side of the roadway. This is particularly evident at the locations of historic homesites.

Horizontal/Vertical Alignment

The overall elevation of Old Mine Road ranges between a highpoint of approximately 680 feet above sea level near the southern end of the study area at the intersection of Peters Valley-Wagonwheel Road to a low point of approximately 420 feet near its intersection with Dingmans Road. From the intersection of Old Mine Road and Peters Valley-Wagonwheel Road, the southern end of the study area, the road steadily descends as it travels northward .9 miles toward the intersection with Dingmans Road, descending from approximately 680 feet to approximately 420 feet above sea level. From this intersection, the road ascends over the next mile to approximately 520 feet above sea

765. AmerCom Corp, "Pavement Design Report," 7.
766. AmerCom Corp, "Pavement Design Report," 7.
767. AmerCom Corp, "Pavement Design Report."
768. Jennifer Palmer, "Old Mine Road North and South Geotechnical Borings, Notes from Archeological Monitoring," October 2, 2018–October 9, 2018. DEWA staff provided notes to CLR contractor.
769. AmerCom Corp, "Pavement Design Report," 12.

Figure 3.36. Cut and fill grading is clearly visible at this location where Old Mine Road North carves through the ridgeline. View to south (Source: WLA Studio, 2023).

level near the intersection with Van Ness Road. Traveling northward for two miles, Old Mine Road traverses a series of slight rises and descents, but it generally follows the 470-foot contour until the intersection with Jager Road where the road declines into a drainage valley to approximately 450 feet above sea level. Traveling northward a mile from Jager Road, Old Mine Road remains mostly between the 460- and 480-foot contours while navigating slight rises and descents based upon local topography. Old Mine Road descends to approximately 450 feet above sea level while traversing the drainage valley north of the Black Farm, where it crosses a bridge and begins to gently ascend for the next two miles to approximately 520 feet above sea level at its intersection with US Highway 206/County Road 650.

Based on draft construction drawings for Old Mine Road North, dated 2020 with a survey of existing conditions, the typical cross section of the road features a crown along its centerline with a "2 percent and variable" cross slope toward the pavement edge.[770] Old Mine Road North's vertical alignments on sections shown on the plans vary from relatively level along long stretches to moderately steep as the road approaches crests or descends into sags. Long sections of the road (e.g., sections between Van Ness and Jager Roads) have a barely perceptible slope of less than 2 percent. The grades at steeper sections of the road, for example the slope down toward and up out from the bridge at the Black Farm, increase to 8 to 10 percent. The vertical curves flatten at the top or bottom of hills to improve the grade transition and, presumably, to increase a driver's sight distance.

Although research did not reveal historic engineering drawings for maintenance and improvement projects along Old Mine Road North, these grades conform to the grades shown on construction drawings from 1941 on a section of Old Mine Road that is south of the study area

770. National Park Service, "Pavement Improvements for Old Mine Road, Rt. 15, Delaware Water Gap N.R.A.," 95% Submittal, June 26, 2020, Drawing No. 620-139340.

Figure 3.37. Superelevation is a roadway design feature that improves the safety of a turn. Superelevation is visible at this turn, where the roadway slopes from right to left into the turn. View to north (Source: WLA Studio, 2023).

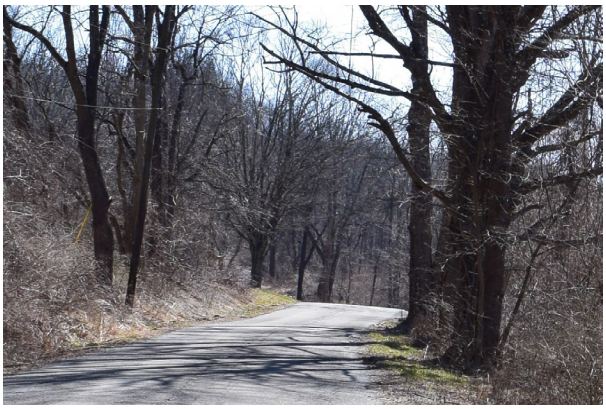


Figure 3.38. Some turns do not employ superelevation, such as at this location where the roadway slopes from left to right out of the turn, which creates a more dangerous roadway condition. View to south (Source: WLA Studio, 2023).

Figure 3.39. Old Mine Road North is designed with a series of ditches on the downslope side of the roadway which collect stormwater and convey it to a culvert passing beneath the roadway (at right). View to north (Source: WLA Studio, 2023).

within Walpack Township.[771] These construction drawings show existing and proposed grades. The proposed grades commonly smooth out abrupt rises and dips in the terrain. Proposed grades shown on the plans range from less than 1 percent on relatively level areas to between 6 percent and 8 percent on the most severe slopes.

Horizontal alignment roughly follows the edge of Walpack Ridge for large portions of the road. The roadway curves sharply at several points to navigate steep grades, typically at stream crossings. There are sharp curves at MP 2.159-MP 2.35, MP 3.935-4.0, MP 4.237-4.32, MP 5.3-5.45, and MP 7.358-7.5. The sharpest curve (curve radius fifty feet) and grades occur at MP 5.387, where the road diverts around the ridge and a creek crossing just north of the Black Farm. The roadway narrows at this point, which is indicated by signage in both directions.

Superelevation

Superelevation is an engineering term for tilting or banking the roadway upward on the outer side of a curve to improve driving safety. Superelevation allows vehicles to maintain traction and retain more speed when approaching a turn. Superelevation appears to have been applied in some areas of the roadway, but original engineering documents for the road have not been located (Figure 3.37, Figure 3.38). The pavement visibly slopes away from the inside of several horizontal curves in multiple areas.

Stormwater Conveyance System

The roadway topography is engineered to shed water away from the road surface during storm events. The driving surface is crowned at the centerline, which directs water to either the downslope side of the driving surface or to a ditch running parallel to the road. Water enters the ditch and flows downhill to a culvert, which conveys water beneath the road to an outlet on the downslope side (Figure 3.39). From the outlet point, a ditch on the downslope side conveys water westward, until it dissipates as sheet flow downhill from the road. Uphill from some stream crossings, a ditch conveys ground water to a lateral underdrain running parallel to the road, which outlets directly to the stream. There are some areas where the roadway is lower than the surrounding grade, which results in flooding and ponding water and damage to the road surface.

771. Harvey Snook, "Plans of Proposed Reconstruction of River Road - Section 3 and 4, Walpack Township, Sussex County, New Jersey" (Bushkill, PA, February 27, 1941), Delaware Water Gap National Recreation Area.

Figure 3.40. This graded and leveled area marks the location of a former homesite. View to north (Source: WLA Studio, 2023).

Figure 3.41. Depressions like this one (marked with a white dashed line at center) indicate former land disturbing activities like demolition of a structure. View to north (Source: WLA Studio).

Figure 3.42. This earthen berm (indicated with a white dashed line) at MP .78 running parallel with Old Mine Road North (at left) directs the flow of a spring northward to a large culvert. View to north (Source: WLA Studio, 2023).

Cultural Topography

Cultural topography within the Old Mine Road North corridor includes graded and leveled areas, depressions, road traces, plowed fields, earthen berms, and unreclaimed quarry sites. The locations of these features are too numerous to include in narrative format and are included in the existing conditions mapping. Graded and leveled areas are distinguishable from the surrounding grade at the locations of some former homesites along the roadway (Figure 3.40). Depressions left after the removal of buildings reveal the locations of some former homesites (Figure 3.41). At dozens of points along the roadway, trace roads and former driveways are identifiable by their remnant road grading. Cut and fill and leveled areas remain markers of the former land use (Figure 3.36). Agricultural fields throughout the corridor have been graded and leveled by plowing for cultivation. Plow lines are visible across the fields.

In some areas the landform adjacent to Old Mine Road North is bermed above the natural grade. Berms are found on both sides of Old Mine Road North, both parallel and perpendicular to the road. Some bermed areas are piled with a mix of earth and stone, likely the result of agricultural practices of removing rocks from field areas. Along Old Mine Road North, berms are not a typical engineered roadway structure; however, in some instances, the berm is parallel to the roadway and accompanied by a ditch or swale, which redirects water to a culvert so that it may pass beneath the roadway (Figure 3.42). At MP 5.677, there is an approximately fifty-foot-long berm. According to park personnel, this berm is a recent feature created during remediation project in 1996 to remove a large quantity of surplus military equipment, including smoke pellets and signal flares, that had been buried on the property by a previous owner (Figure 3.43).[772]

772. Park personnel provided this information.

Figure 3.43. This curving berm with trees planted along it marks the location of the 1996 remediation project to removed buried surplus military material. View to west (Source: WLA Studio, 2023).

Figure 3.44. Tailings and mounded landforms from the former Layton quarry/gravel pit quarry on the west side of Old Mine Road North. View to north (Source: WLA Studio, 2023).

The former Layton quarry/gravel pit is between MP 1.307 and MP 1.5. The landform in this area is severely disturbed with large mounds, berms, and drainage ditches extending beyond the study area. Some of these landforms appear to redirect the drainage flow of Kittatinny Creek. There is also a large pile of gravel tailings approximately two hundred feet long and one hundred feet wide near MP 1.364-1.402 on the west side of the roadway (Figure 3.44).

Vegetation

Much of the corridor along Old Mine Road North was formerly fields or cropland, farmsteads, residences, pine plantations, or managed woodlands. Naturalized forest cover now dominates the corridor and views from the road are no longer the same experience as the period of significance. Under the stewardship of the NPS, even naturalized forests can be actively managed landscapes.

The forest character along the corridor ranges from successional forest, mature hardwood forest, dense mature pine plantation, and small areas of hemlock dominated forest on steep terrain not suitable for building or agriculture. The bulk of the forest along the corridor is less than one hundred years old, with some areas being less than fifty years of age. In addition to naturalized forest, the corridor is dotted with cultural vegetation including managed tree lines, wolf trees, ornamental shrubs and groundcovers, and patches of spring ephemeral bulbs, which identify the location of current and former roads, field lines, property boundaries, homesites, and farmsteads.[773] In some cases, cultural vegetation is the only visible evidence of the site's former use.

Natural Vegetation

A 2007 Vegetation Mapping Inventory Project documented sixty-nine vegetation associations within Delaware Water Gap National Recreation Area. Vegetative diversity is the result of microclimates, geology and soils, moisture, topographic features, and land use history.[774]

Along the Old Mine Road North corridor, several vegetation associations are present. Vegetation associations found within the vicinity of the roadway include: Eastern White Pine - Successional Hardwood Forest, Northern Red Oak - Mixed Hardwood Forest, Northeastern Modified Successional Forest, Silver Maple Floodplain Forest, Dry Oak - Mixed Hardwood Forest, Successional Eastern White Pine Woodland, Successional Shrubland, Red Maple - Sweet Birch Hardwood Forest, Eastern Hemlock - Northern Hardwood Forest, Eastern Red-cedar Forest, Red Maple Palustrine Forest, Black Walnut Bottomland Forest, Dry Eastern White Pine - Oak Forest, Sugar

773. A wolf tree is defined as a tree that is much older than the surrounding trees in the area, usually distinguishable by its size, height, and width.
774. Stephanie J. Perles, Gregory S. Podniesinski, E. Eastman, et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 1 of 2," Technical Report (Philadelphia, PA: United States Department of the Interior, National Park Service, Northeast Region, 2007), vii.

Figure 3.45. The typical composition of a Northern Red Oak-Mixed Hardwood Successional Forest in DEWA (Source: Perles, Stephanie J., Gregory S. Podniesinski, E. Eastman, Lesley A. Sneddon, and Sue C. Gawler. "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 2 of 2." Technical Report. Philadelphia, PA: United States Department of the Interior, National Park Service, Northeast Region, 2007, 103).

Figure 3.46. Dense thorny exotic invasive vegetation limited field investigations in some parts of the study area. View to north (Source: WLA Studio, 2023).

Maple - American Beech - Sweet Birch Forest, and Wooded Successional Old Field.[775]

The northern section of the road is predominantly Northeastern Modified Successional Forest and Northern Red Oak - Mixed Hardwood Forest (Figure 3.45).[776] The Northeastern Modified Successional Forest association "occurs on former agricultural land and other disturbed or degraded sites in which early successional and weedy tree species have established. This association also often contains abundant invasive shrubs and herb species, as well as thick vines that twine through the canopy and groundstory."[777] The most common native species found in this association are green ash (*Fraxinus americana*), Eastern black walnut (*Juglans nigra*), bigtooth aspen (*Populus grandidentata*), black locust (*Robinia pseudoacacia*) Eastern red cedar (*Juniperus virginiana*), Virginia creeper (*Parthenocissus quinquefolia*), and white snakeroot (*Ageratina altissima* var. *altissima*). Invasive exotic species dominate the shrub and groundcover layer in this association, with the most common species including autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*), Japanese barberry (*Berberis thunbergia*), oriental bittersweet (*Celastrus orbiculatus*), spotted ladysthumb (*Polygonum persicaria*), garlic mustard (*Alliaria petiolata*), and Japanese stiltgrass (*Microstegium vimineum*).[778]

Like the Northern Modified Successional Forest, other successional vegetation associations including Eastern White Pine - Successional Hardwood Forest, Successional Eastern White Pine Woodland, Successional Shrubland, and Wooded Successional Old Field Forest types are associated with former homes, fields, and farmsteads.

Other vegetation associations along the roadway more closely resemble a native forest composition, such as the Northern Red Oak - Mixed Hardwood Forest. This vegetation association is a dry-mesic forest common in DEWA occurring on "gentle to moderate slopes with variable aspect."[779] The most abundant species in this association are Northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), red maple (*Acer rubrum*), pignut hickory (*Carya glabra*), American hornbeam (*Carpinus caroliniana*), American witch hazel (*Hamamelis*

775. Perles, Podniesinski, Eastman, et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 1 of 2," 39.
776. Stephanie J. Perles, Gregory S. Podniesinski, Lesley A. Sneddon, et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 1 of 2," Technical Report (Delaware Water Gap National Recreation Area: National Park Service, March 2007), 39, VIIS Archive.
777. Perles, Podniesinski, Eastman, et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 1 of 2," 78.
778. Stephanie J. Perles et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 2 of 2," Technical Report (Philadelphia, PA: United States Department of the Interior, National Park Service, Northeast Region, 2007), 78.
779. Perles et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 2 of 2," 103.

Figure 3.47. A hemlock dominated grove on a steep hillside near Mettler Road on the east side of Old Mine Road North. View to east (Source: WLA Studio, 2023).

Figure 3.48. This irregular tree line grew up along a stone row marking the boundary of two fields. View to southwest (Source: WLA Studio, 2023).

virginiana), Northern spicebush (*Lindera benzoin*), American hop-hornbeam (*Ostrya virginiana*), lowbush blueberry (*Vaccinium pallidum*), mapleleaf viburnum (*Viburnum acerifolium*), mayapple (*Podophyllum peltatum*), Pennsylvania sedge (*Carex pensylvanica*), swan's sedge (*Carex swanii*), Eastern hayscented fern (*Dennstaedtia punctilobula*), and Christmas fern (*Polystichum acrostichoides*). Invasive exotic species including Japanese barberry (*Berberis thunbergia*) and garlic mustard (*Alliaria petiolate*) are also common in this association. Dense stands of thorny multiflora rose, and Japanese barberry exist in many locations on the road corridor (Figure 3.46).

Eastern Hemlock Forests are notable for their distinctive character along the roadway (Figure 3.47). Eastern Hemlock – Northern Hardwood Forests occur "in steep ravines and along north-facing lower slopes throughout the park" with a canopy "dominated by Eastern hemlock (*Tsuga canadensis*) with sweet birch (*Betula lenta*) and/or sugar maple (*Acer saccharum*) as codominants."[780] NatureServe currently ranks the global conservation status of hemlock forests as G4, "apparently secure;" however, hemlock forest populations continue to decline in eastern North America due to the spread of hemlock woolly adelgid (*Adelges tsugae*) and other climate change related impacts.[781] At Delaware Water Gap National Recreation Area, the decline is accelerated by other stressors including recent droughts and pests like elongate hemlock scales (*Fiorinia externa* Ferris). Park managers at DEWA have actively monitored the spread of hemlock woolly adelgid since 1993 and as of 2010 had treated approximately ten thousand trees in the park.[782] Despite these efforts, hemlock stands continue to decline and will eventually result in a loss of biodiversity and ecosystem transformation, ultimately leading to changes in recreation and aesthetic resources.

Encroaching vegetation immediate to the road edge for much of the corridor has had a detrimental effect on both the road condition and to the views available from the road, particularly toward the west. Vegetation and roots expand onto the road pavement, creating cracking and deterioration on road edges. Organic matter from vegetation has infilled ditches along the road, impeding proper drainage. Tree canopy extends over the road, which prevents the sun from melting snow. Park staff have noted that this condition forces more snow plowing, which speeds up road deterioration.

Cultural Vegetation

Munsee Ethnobotany

There are many species, mostly native to this region, which are present in the corridor and the areas surrounding, which are plants, which the Native Americans who formerly lived in this region consider important. These plants include

780. Perles et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 2 of 2," 173.

781. "Tsuga Canadensis," NatureServe Explorer, April 20, 2023, https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.131718/Tsuga_canadensis.

782. Richard A. Evans, "Hemlock Ecosystems and Hemlock Woolly Adelgid at Delaware Water Gap National Recreation Area" (Delaware Water Gap National Recreation Area: Hemlock Program, 2003), 1.

Figure 3.49. This intentional tree line was planted with regular spacing on the west side of Old Mine Road North. View to north (Source: WLA Studio, 2023).

Figure 3.51. A patch of Japanese pachysandra growing near a stone wall in location of the former Everitt House at MP 5.4. View to south (Source: WLA Studio, 2023).

Figure 3.50. The presence of wolf trees indicates that the area was formerly an open clearing or field, such as at this former farmstead. View to west (Source: WLA Studio, 2023).

many wild or domesticated species used in medicinal, religious, and other uses. Examples of these plants, still present at DEWA today include horsemint or beebalm (*Monarda* sp.), black walnut (*Juglans nigra*), honey locust (*Gleditsia tricanthus*), jimsonweed (*Datura*), ironweed (*Vernonia* sp.), and persimmon (*Diospyros virginiana*). Practitioners of traditional medicine also used various oak (*Quercus* sp.) and black cherry (*Prunus serotina*), sassafras (*Sassafras albidum*) for internal medicine.[783] Traditional plants used for food, which still exist in the area include onion (Allium sp.), dandelion (*Taraxarum officinale*), and milkweed (*Asclepias syriaca*), as well as numerous edible fungi. Fruits include paw-paw (*Asimina triloba*) and black haw (*Viburnum prunifolium*).[784] There are numerous tree and herbaceous species located in the area that the Munsee people considered "ceremonial agents" such as Eastern red cedar (*Juniperus virginiana*), redbud (*Cercis canadensis*), and blackjack oak (*Quercus marilandica*).[785]

Tree Lines/Fencerows/Allées

Throughout the Old Mine Road North corridor, there are trees planted in rows. There are rows of trees with intentional spacing along the edge of the roadway, along drives, lining property boundaries, and fence lines. Rows of trees are often irregularly spaced along fence lines, indicating that the trees self-seeded and were allowed to remain (Figure 3.48). Planted tree lines are often composed of the same tree species and are typically older than the surrounding tree canopy, indicating that the tree line predates the surrounding forest (Figure 3.49). Fieldwork identified rows of white oak (*Quercus alba*), Eastern red cedar (*Juniperus virginiana*), white pines (*Pinus strobus*), and mixed oaks along the roadway.

Wolf Trees

Wolf trees are individual specimen trees that are much older than the forest surrounding them. There are wolf trees in successional forests growing on former pasturelands and homesites. Wolf trees

783. George A. Hill Jr. and Jim Rementer, "Delaware Ethnobotany," 2015, 8–13, https://delawaretribe.org/wp-content/uploads/DEL-ETHNOBOTANY-Hill.pdf.

784. Hill and Rementer, "Delaware Ethnobotany," 13–17.

785. Hill and Rementer, "Delaware Ethnobotany," 18–21.

Figure 3.52. Cultural vegetation such as this grouping of boxwoods and hemlock help identify locations of former homesites along the corridor (Source: WLA Studio, 2023).

Figure 3.53. Cultural vegetation and depressions at this clearing mark the location of a former homesite at MP 4.242. View to west (Source: WLA Studio, 2023).

Figure 3.54. The only mown turfgrass areas along the corridor are located at historic component landscapes such as the Depue House. View to southwest (Source: WLA Studio, 2023).

are characterized by their wide, open canopy, which indicates that the tree formerly grew in open conditions (Figure 3.50). Wolf trees provide habitat for numerous wildlife species with their spreading limbs, hollows, and cavities. Several wolf trees were identified along the roadway, including very large multi-trunked white pines. The multi-trunk form is caused by damage from the white pine weevil (*Pissodes strobi*), which attacks the terminal leader of young trees growing in direct sunlight.[786]

Cultural Vegetation at Former Homesites and Historic Component Landscapes

At former homesites along the roadway, one visible indication of former land use is cultural vegetation. Spring bulbs like snowdrops (*Galanthus nivalis*) and patches of spreading groundcover like pachysandra (*Pachysandra terminalis*) and periwinkle (*Vinca minor*) are located at the ruins of former homesites along the roadway (Figure 3.51). Groupings of common landscape trees and shrubs were also found at these sites, such as Eastern red cedar, large oaks, arborvitae (*Thuja occidentalis*), and boxwood (*Buxus sempervirens*) (Figure 3.52). Many of these common landscape plants are also found in the historic component landscapes along the roadway. Another landscape condition common to both former homesites and component landscapes is a cleared area with weedy turfgrass groundcover (Figure 3.53). At historic component landscapes, park staff mow the turfgrass to allow visitor access (Figure 3.54).

Ornamental Plantings at Non-historic Sites

There are a few active residences along the Old Mine Road North corridor. A wide clearing of mown turfgrass surrounds the residence at MP .339, and there are planting beds at the driveway entrance.

Agricultural Fields

There are numerous agricultural fields along the Old Mine Road North corridor which provide breaks in the tree canopy and views to the surrounding landscape. DEWA maintains Special Use Permits with local farmers for agricultural use of the fields. Some fields are classified by the NPS as serving a mowing, brushing, wildlife, or open space use. Fields are found almost exclusively on the western side of the road, where the terrain is more level, and the native soils are better suited to agriculture. Fields typically extend perpendicular to the roadway and are frequently bound by a fence or stone row and lined with trees (Figure 3.55). Fields are typically accessible via gravel or grass drives from Old Mine Road North.

786. "White Pine Weevil," Penn State Extension, April 20, 2023, https://extension.psu.edu/white-pine-weevil.

Figure 3.55. The NPS maintains agricultural special use permits with local farmers to cultivate fields along the roadway. View to west (Source: WLA Studio, 2023).

Conifer Plantations

Stands of evergreen trees planted in uniform rows along the corridor are classified as "Conifer Plantations" in the 2007 Vegetation Mapping Inventory Project for DEWA.[787] The stands are densely planted, with little to no understory vegetation due to the limited natural light reaching the groundstory (Figure 3.56). The stands range in age, with some less than forty years old, while others exceed eighty years of age. The stands are dominated by either "Eastern white pine (*Pinus strobus*), red pine (*Pinus resinosa*), Norway spruce (*Picea abies*), Scotch pine (*Pinus sylvestris*), blue spruce (*Picea pungens*), or larch (*Larix* spp.)."[788]

Figure 3.56. Remnant pine plantations are located intermittently along the roadway, such as this mature stand (at left) near Mettler Cemetery. View to north (Source: WLA Studio, 2023).

787. Perles et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 2 of 2."
788. Perles et al., "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 2 of 2," 3.

Buildings and Structures

Buildings

Extant historic buildings along Old Mine Road North are discussed in the *Component Landscapes* section of this report.

Roadway Structures

Culverts

There are four typical types of pipe culverts found along Old Mine Road North. Each type varies by length and diameter based on capacity. In some areas, one end of a culvert has been replaced with a different material. Typically, the culvert inlet is reinforced by dry-stacked local fieldstone headwalls, and the outlet is not reinforced. Either by erosive forces or intentional construction, there are swales at the outlet of most culverts. In some areas, significant erosion has created a gullying effect downhill of the outlet. The locations of these culverts are too numerous to include in narrative format and are included in the existing conditions mapping.

There is no definitive construction date for most of the culverts along Old Mine Road North due to the lack of construction documentation for this stretch of road. There are construction drawings dated to 1937 for one concrete box culvert, located at Jager Road (MP 4.237). The construction of this culvert is similar to the other concrete box culverts along Old Mine Road North, so these types of box culverts may have similar dates of construction.

In general, the metal and pipe culverts may pre-date the 1960s. Drawings dating to the 1930s through the 1950s for other road projects in this area show the use of these materials for culverts. In some cases, along Old Mine Road North, culvert headwall details match those found in construction documents for projects on other sections of Old Mine Road, described in the Site History section

Figure 3.57. Type 1 culverts consist of a metal culvert with a stone headwall, typically on the inlet side (Source: WLA Studio, 2023).

Figure 3.58. Type 2 culverts consist of a corrugated plastic culvert with a stone headwall, typically on the inlet side (Source: WLA Studio, 2023).

Figure 3.59. Type 3 culverts consist of a precast concrete culvert with a stone headwall. Culverts range in diameter (Source: WLA Studio, 2023).

Figure 3.60. Type 4 culverts consist of a metal culvert with a board-formed concrete headwall on the inlet and outlet sides. Type 4 culverts have been replaced in several areas and several were found discarded near the roadway (Source: WLA Studio, 2023).

Figure 3.61. At least one culvert along the roadway is composed of an RCP culvert with a board-formed concrete headwall on both the inlet and outlet sides. This type is uncommon along the roadway (Source: WLA Studio, 2023).

Figure 3.62. A board-formed concrete box culvert in poor condition is located at MP .761 (Source: WLA Studio, 2023).

Figure 3.63. This board-formed concrete box culvert at MP .791 is flanked by dry-stacked stone retaining walls and appears to have replaced an earlier stone box culvert (Source: WLA Studio, 2023).

Figure 3.64. Three large metal culverts with board-formed concrete headwalls convey Kittatinny Creek beneath Old Mine Road North at MP 2.159. The west headwall is in very poor condition and showing major fracturing. View to southeast (Source: WLA Studio, 2023).

Figure 3.65. The Kittatinny Creek culvert at MP 2.159 as viewed from Old Mine Road North. View from Van Ness Road to northwest (Source: WLA Studio, 2023).

Figure 3.66. A concrete box culvert with concrete guard rails conveys an unnamed drainage south of Jager Road at MP 3.935. View to south (Source: WLA Studio, 2023).

of this report (see Figure 2.29). Road crews in the United States typically did not use plastic culvert materials until the late 1960s and early 1970s. Road crews may have replaced some pipe culvert materials in kind over time. Research did not reveal the dates of these replacements.

Type 1: Metal Culverts with Stacked Stone Inlet Headwalls
Type 1 culverts are composed of corrugated galvanized steel (CMP) with dry-stacked stone headwalls reinforcing the inlet side (Figure 3.57).

Type 2: Plastic Culverts with Stacked Stone Inlet Headwalls
Type 2 culverts are composed of corrugated high density polyethylene plastic (CPP) with dry-stacked stone headwalls reinforcing the inlet side (Figure 3.58).

Type 3: Concrete Culverts with Stacked Stone Inlet Headwalls
Type 3 culverts are composed of reinforced concrete (RCP) with dry-stacked stone headwalls reinforcing the inlet side (Figure 3.59).

Type 4: Metal Culverts with Concrete Headwalls
Type 4 culverts are composed of a galvanized steel culvert (CMP) reinforced with a rectangular board-formed concrete headwall with no wing walls (Figure 3.60). Typically, the headwalls are on both the inlet and outlet sides. In some locations, the remains of these culverts can be found lying nearby a repaired culvert.

No Type Culverts
There are some culverts that do not have an associated headwall or otherwise conform to a recurring typology. Examples include four RCP culverts and nine CMP culverts with no headwalls. One culvert is composed of an RCP culvert with rectangular board-formed concrete headwall and no wing walls (Figure 3.61). No other instances of this type of culvert were located within the Old Mine Road North corridor.

Concrete Box Culvert (MP .761)
There is a board-formed concrete box culvert at MP .761 with no guard rails at the road (Figure 3.62). The box culvert has flush wing walls and appears to have been repaired at least once. The concrete is cracked and failing on the west side. A small permanent drainage flows through the culvert.

Concrete Box Culvert (MP .791)
There is a board-formed concrete box culvert at MP .791 with no guard rails at the road (Figure 3.63). The box culvert has flush wing walls. The culvert appears to be in fair condition with cracking and spalling in some areas. The culvert is flanked on the east side by dry-stacked stone retaining walls and a wide dry streambed, which appears to have formerly carried significant drainage. A berm parallel to Old Mine Road directs a spring toward the culvert from the south.

Concrete Headwall with Three Steel Culverts at Kittatinny Creek (MP 2.159)
There are three thirty-six-inch diameter corrugated steel culverts with board-formed concrete headwalls at MP 2.159 (Figure 3.64, Figure 3.65). The headwall has an angled wing wall and is approximately seventy-two inches high and fifteen feet long. The concrete is cracked and failing on the west side. The pavement is eighteen feet wide at the point crossing the culvert, and there are no guard rails.

Concrete Box Culvert with Concrete Guard Rail (MP 3.939)
There is a concrete box culvert with angled concrete wing walls and an integrated concrete guard rail at MP 3.939 (Figure 3.66). The guard rail is approximately seventy-eight inches long and thirty inches tall. The box culvert is approximately ninety-one inches wide. The culvert is flanked by concrete guide posts on either side. The crossing is approximately twenty-four feet wide.

Concrete Box Culvert with Concrete Guard Rail at Jager Road (MP 4.237)
There is a concrete box culvert with angled concrete wing walls and an integrated concrete guard rail at MP 4.237 (Figure 3.67, Figure 3.68). The guard rail is approximately thirty-three inches tall. The box culvert is approximately seventy-four inches wide and eighty inches tall. The culvert appears to be the same age and design of the culvert at MP 3.95. Steel guard rail flanks the culvert on the southwest and northeast sides.

Figure 3.67. The concrete box culvert at MP 3.95 has flared wing walls on the east side and straight wing walls on the west side. View to southeast (Source: WLA Studio, 2023).

Figure 3.68. A concrete box culvert with concrete guard rails at MP 4.237 conveys an unnamed drainage at MP 4.237 just south of Jager Road. View to southwest (Source: WLA Studio, 2023).

Stone Box Culvert between Black Farm and Everitt Farm/Daniel Westfall's Bridge (MP 5.379)

There is a substantial mortared stone box culvert at MP 5.379 (Figure 3.69, Figure 3.70). The culvert is approximately four feet tall and eighteen feet long on the east side and approximately nine feet tall and forty-five feet long on the west side. On the west side, the wall has an integrated projection that appears to provide additional reinforcement to the outlet. A steel and wood guard rail tops the culvert along both sides. The paved width of the roadway is approximately fifteen feet across the culvert, with twenty-one feet total width between the guard rails. In historic records, this box culvert is referred to as Daniel Westfall's Bridge, as it abutted the property of Daniel Westfall, and it is one of the oldest documented crossing points on Old Mine Road North, existing as early as 1771.[789] It is unknown if any portion of the extant stone culvert dates to 1771, or if was preceded by a different structure. There appear to be two different construction techniques used for the existing culvert (Figure 3.69). The culvert appears to reflect several building campaigns where workers possibly widened the outlet and inlet sides of the culvert. These west and east end sections have stone slab construction, and the outlet side differs slightly in height from the core of the culvert, which is mortared stone construction. This condition may indicate two building campaigns and may be associated with road widening, but the date of this construction or addition is unknown. The west retaining wall of the culvert shows multiple repair areas, including patching with mortar in multiple locations that appears to be of different ages. It also appears that a portion of the wall may have collapsed at some point, and owners or road engineers rebuilt it, potentially adding a concrete pier to part of the structure. Further investigation by a structural engineer may reveal additional information.

Bridges

Concrete Bridge at White Brook- Bridge #4320-016P (MP 7.519-7.538)

There is one bridge on Old Mine Road North, which crosses White Brook at the north end of the park boundary, one-tenth mile south of US Route 206 in Montague (Figure 3.71). The US Department of Transportation lists the bridge as Bridge #4320-016P.[790] The bridge (circa 1960) is single-span, prestressed concrete box beam construction, with a 28.3-foot-wide bridge deck with angled wing walls. The bridge spans approximately nineteen feet across White Brook and is lined with steel guard rails flanked by four hazard marker signs. The bridge appears to be in good condition.

789. "Sussex County Book of Roads, Book A, 64-65," 1772; "Minisink Valley Genealogy: The 1753 - 1845 Boundary Line Records of Sussex & Warren Counties," *Minisink Valley Genealogy* (blog), accessed January 5, 2024, https://minisinkvalleygenealogy.blogspot.com/2016/05/the-1753-1845-boundary-line-records-of.html.

790. US DOT Bridge Inspection Report, November 7, 1997.

Figure 3.69. (Top) The west/outlet of the mortared stone box culvert at MP 5.387 conveys White Kill beneath Old Mine Road North to a stone-lined pond, Figure 3.76. View to southeast (Source: WLA Studio, 2023). (Bottom, left) The same mortared stone box culvert without water. This view shows evidence of two apparent building campaigns and methods of construction of the culvert. The top of the culvert appears to be stone slab construction, with the core of the culvert being mortared stone construction (Source: NPS, 2018). (Bottom, right) The west/outlet stack stone retaining wall associated with this culvert shows evidence of multiple repair campaigns including added mortar (arrow) and possibly the addition of a concrete pier (rectangle) (Source: WLA Studio, 2023).

Figure 3.70. (Top) The east/inlet side of the mortared stone box culvert at MP 5.387. View to west (Source: WLA Studio, 2023). (Bottom) The same box culvert without water (Source: NPS, 2018).

Figure 3.71. White Brook crosses Old Mine Road North through a concrete bridge at 7.56. View to northwest (Source: WLA Studio, 2023).

Utilities

There are likely many underground utilities along the Old Mine Road North corridor related to the pre-1965 residential development along the roadway. The locations of these abandoned underground utilities are undocumented for the most part. DEWA does possess a drawing showing the location of buried utilities within the Old Mine Road North project area. The date of the drawing is unknown, but it depicts aerial and buried telephone lines on the northern section of the study area, near the intersection with U.S. 206.

Overhead Power Lines

Overhead power lines exist along the roadway, servicing several of the developed properties in the corridor. The overhead utility lines along the Old Mine Road North corridor generally consist of pine poles set along the roadway with primary wires on single cross arms mounted to the top of the poles. The wooden utility poles appear to be approximately forty feet tall; typical spacing is around three hundred feet apart. These wires lead to transformers on intermittent poles and then to secondary service drops servicing individual properties along the corridor. Occasionally, the poles include guy wires, especially at intersections. Line connections are capped with insulators. Most lines appear to be power lines. Occasionally, utility poles have guy wires affixed to the ground to structurally support the pole (Figure 3. 72). There are overhead utilities along much of the Old Mine Road North corridor; however, the utilities are routed through the woods for long stretches and are not visible from the roadway.

There are power poles and overhead power lines on the east side of Old Mine Road North within the study area starting at MP 0.0, continuing from a line leading north from Old Mine Road South (also known as Old Mine Dirt Road). Power lines cross Old Mine Road at MP .19 and continue along the west side of the corridor to MP .323 where they service a residence at 40 Old Mine Road. At the intersection of Old Mine Road and Sussex County Road 560/Tuttles Corner Dingmans

Figure 3.72. Representative example of a utility pole. View looking southeast towards the intersection of Old Mine Road and Jager Road (Source: WLA Studio, 2023).

Road (MP .86), overhead utilities exist at the northwest corner of the intersection and extend northward along the west side of the road until its intersection with Mettler Road. The utility poles are set approximately twenty-five feet off the edge of pavement in this section. At the intersection of Old Mine Road and Mettler Road (MP 1.16), the overhead utility lines pass over Old Mine Road and continue northward along the east side of the road; however, the utility lines are set back into the woods and were not observable from the roadway. Overhead utility lines are visible passing over Van Ness Road/Fisher School House Road (MP 2.16) on the east side of Old Mine Road but continue northward through the woods unobservable from the roadway. Overhead utility lines reappear south of the Depue House (MP 2.8) crossing overhead from the east to the west side of the roadway. The utility lines follow along the west side of the road passing in front of the Depue House before crossing back across the roadway to the east side of the road. The overhead utility lines continue along the east side of the road before passing through the woods becoming unobservable from the roadway.

The utility lines pass from the east to west side of the road south of the Ennis House (MP 4.6). The lines pass over the driveway to the Ennis House and continue northward for approximately one thousand feet before passing over Old Mine Road to the east side of the roadway. The overhead utilities are mostly unobservable from the roadway traveling north until the vicinity of the Westbrook-Bell House (MP 5.14), where the lines are visible along the east side of the roadway. The overhead lines cross back to the west side of the road just south of the Black Farm (MP 5.3), pass along the road in front of the house, before crossing back to the east side of the road just north of the farmstead. The utility lines presumably continue northward on the east side of the road through the woods until they emerge close to the intersection with Highway 206.

Non-roadway Structures

Stone Rows and Walls

The locations of stone walls and rows are too numerous to include in the narrative format and are included in the existing conditions mapping.

Stone Retaining Walls

There are a few extant mortared stone retaining walls, generally in poor condition, which were formerly associated with residences or farmsteads. There is a substantial stone wall, at MP .63, constructed of mortared rounded river boulders (Figure 3.73). The wall is located along the top of the ridge on the east side of the roadway and appears to have provided a level area for a former residence. There are also dry-stacked fieldstone retaining walls at several locations along the roadway (Figure 3.74). All other stone retaining walls along the road are described in the *Component Landscapes* sections.

Stone Rows

There are extensive constructions of stone rows along the boundaries of fields and property lines in the entire study area (Figure 3.75). The stone rows are constructed of loose fieldstone piled in linear formations, sometimes mixed with earth to form mounded rows. These features are distinct from stone walls in that the stones were not intentionally stacked, but rather loosely piled in a linear arrangement. The stone rows were formed by the practice of farmers clearing rocks from the land to create arable fields. The stone rows are often accompanied by a parallel tree line.

Building & Structure Ruins

The ruins of buildings and structures are considered archeological sites for the purposes of this CLR. Refer to *Archaeological Sites* for a discussion of these resources.

Figure 3.73. A mortared river stone retaining wall atop the hill at MP .63 (top left of image). View to south (Source: WLA Studio, 2023).

Figure 3.74. A typical dry-stacked stone retaining wall along Old Mine Road North. View to east (Source: WLA Studio, 2023).

Figure 3.75. A typical stone fencerow in the Old Mine Road North corridor (Source: WLA Studio, 2023).

Figure 3.76. (Left) A stone-lined circular pool at the western outlet of the box culvert at MP 5.379-5.398 (Source: WLA Studio, 2023). (Right) View of the dry stacked stone wall that creates the pool, possibly a former mill feature (Source: NPS, 2018).

Constructed Water Features

Stone Pool and Dam at MP 5.379-5.398

There is a series of constructed stone features on the west side of Old Mine Road North that modify the flow of the unnamed drainage (historically known as White Kill or Abraham Westfall's Mill Brook) at MP 5.379-5.398. At the foot of the stone box culvert on the west side of Old Mine Road North, a submerged curving dry-stacked stone wall slows the flow of water, creating a rounded pool (Figure 3.76). Approximately forty-five feet downstream, a curved dry-stacked stone dam approximately four feet high spans the width of the stream channel, slowing water in this area. A rectangular stone foundation and what appears to be an axle remain on the north side of the drainage, possibly the remains of the grist mill structure built by Daniel or Abraham Westfall.[791]

Stone Armoring

There are several examples of drainages and ditches lined with rock armoring for erosion control. There are examples of both dry-stacked stone retaining walls built into the side of a stream channel to protect the side slopes from scouring (Figure 3.77) and rock armoring at the base of a drainage or ditch to prevent gullying (Figure 3.78).

791. James P. Snell and W. Woodford Clayton, History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers (Philadelphia, Pennsylvania: Everts & Peck, 1881), 368; Westfall's Mill is mentioned in sources as White Kill in a NJ - NY boundary map of 1769 according to "Minisink Valley Genealogy: The 1753 - 1845 Boundary Line Records of Sussex & Warren Counties," *Minisink Valley Genealogy* (blog), accessed January 5, 2024, https://minisinkvalleygenealogy.blogspot.com/2016/05/the-1753-1845-boundary-line-records-of.html.

Figure 3.77. Some culverts have rock armoring on the outlet side to prevent erosion on the hillside (Source: WLA Studio, 2023).

Figure 3.78. Rock armoring along a creek channel at MP .795. View to north (Source: WLA Studio, 2023).

Views and Vistas

Along the length of Old Mine Road North, a traveler experiences a variety of views. Two types of views predominate: framed axial views along the road and occasional panoramic views towards surrounding landscape features. It should be noted that none of the views appear to be intentionally created as part of the layout of the roadway. There are, for example, no pulloff areas designed to provide vantage points for visitors along the roadway.

The views along Old Mine Road North are an important aspect of the roadway's character and contribute to a visitor's experience. A dense cover of woods grows along the sides of much of the roadway, which limits lateral views along long stretches of the road. Additionally, the roadway itself is narrow with a limited shoulder and sloping terrain along its eastern side, which further focuses views along its length (Figure 3.79). While axial views along the road corridor are the most characteristic aspect, the undulating topography and corresponding curving alignment of the road frequently interrupts or limits the long views down the road.

Multiple informal views of the surrounding landscape exist along Old Mine Road North. Lateral views toward nearby roadside features and distant natural features occur at various locations along the corridor. There are locations where, because of the thin understory of adjacent woods, views are available toward natural and cultural landscape features along the sides of the road. Views are available, for example, of natural topographic features, particularly along drainageways that cross underneath the road. Additionally, views are available from the roadway in numerous locations of historic stone walls. These occur on both the east and west side of the road, but they are particularly notable on the east side where the rising terrain increases their visibility (Figure 3.80). Views from the road through adjacent woods change during the year depending upon the condition of leaf cover. Views are more available during the winter before trees and shrubs leaf out. Views of buildings and structures located near the roadway are also available, facilitated by the management of vegetation that keeps the views open to travelers along the road. Notable examples of these include views of the Depue House, views into the Black Farm, and views along the entrance drive toward the Westbrook-Bell Farm.

Infrequent breaks in roadside vegetation provide glimpses of long views towards distant points. Notable examples of long views from Old Mine Road North include those available across adjacent agricultural fields toward the ridgeline forming the western edge of the Delaware River Valley (Figure 3.81). There are six different locations along Old Mine Road North where open fields provide views towards the west. These occur around MP 1.08, 2.405-2.519, 3.617-3.826, 4.242-4.413, 7.064-7.197. Some of the fields extend close to the western edge of Old Mine Road North; this condition offers a relatively unobscured view to the west. In other locations, narrow strips of trees grow between the roadway and the field, creating a veil through which one looks across the field towards the distant mountain ridge. These views change during the year and are reduced during the growing season when trees leaf out.

Small-Scale Features

Roadway Small-Scale Features

Signs & Markers

The locations of these signs and markers are typically too numerous to include in the narrative format and are noted in the existing conditions mapping.

Historic Markers

There are four historic markers along the Old Mine Road North corridor. The Daughters of the American Revolution installed a concrete marker with a copper plaque at the entrance to the Westbrook-Bell Farm in 1934. The plaque, which identifies Old Mine Road and other notable area history, faces east toward the Old Mine Road North. The concrete is in fair condition, though the plaque has oxidized, staining the concrete. A metal Sussex County, New Jersey, historical marker in the same location identifies the Westbrook-Bell House and family history. The Sussex County Historic Marker program replaced the marker in 2003, which was first installed in 1968. A granite marker in front of the Depue House recognizes Alonzo M. Depue and his societal contributions. The

Figure 3.79. Views along the corridor are restricted by dense tree canopy and tight curves in several locations (Source: WLA Studio, 2023).

Figure 3.80. Representative view of stone walls crossing sloping terrain on east side of Old Mine Road (Source: WLA Studio, 2023).

Figure 3.81. Agricultural fields provide open views to the surrounding landscape (Source: WLA Studio, 2023).

Walpack Historical Society replaced this marker in 2003 (Figure 3.82). A flat stone set upright with four drilled holes located just south of the Depue House is the original marker (installation date unknown, Figure 3.83).

Regulatory and Warning Signs

There are multiple types of regulatory and warning signs on the Old Mine Road North corridor. These signs inform drivers of roadways rules and hazards. Examples include stop signs, speed limits, roadway conditions, caution signs, etc. Regulatory signs are modern and conform to Manual on Uniform Traffic Control Devices (MUCTD) standards.

Wayfinding Signs

Wayfinding signs direct visitors to points of interest in DEWA. Wayfinding signs are typically located near intersections. Wayfinding signs conform to NPS UniGuide design standards, and are typically brown with white lettering, mounted on wood 4×4 posts (Figure 3.84). There is a sign reading "Entering Delaware Water Gap National Recreation Area" four hundred feet west of the intersection with U.S. 206.

Guide Rails, Guard Rails, and Guide Posts

There are several types of guide rails, guard rails, and guide posts along the roadway corridor. At the intersection of Dingmans Road, there are modern corrugated steel guard rails lining the northwest and northeast corners of the intersection, with caution striping on the end terminals (Figure 3.85). The end terminal on the northwest corner is damaged. An older corrugated steel guard rail type is installed on either side of the bridge crossing at White Brook, located at MP 7.58 (Figure 3.86). These guard rails are in fair condition and exhibit surface rusting. At the Black Farm, modern steel and timber guardrails are installed on both sides of the stone culvert crossings (Figure 3.87). These guard rails are supported by steel I-beam posts, with pressure treated timber cross rails. These guard rails are in good condition.

There are several locations along the corridor where stream crossings and gravel pulloffs are lined by pyramidal concrete guide posts, sometimes retaining a steel cable spanning between the posts (Figure 3.88). The precast concrete posts are three-sided, with chamfered edges and a pyramidal top. Steel loops are cast into the posts

Figure 3.82. A granite marker dedicated to Alonzo Depue in front of the Depue House along Old Mine Road North (Source: WLA Studio, 2023).

Figure 3.84. A typical wayfinding sign on the Old Mine Road North corridor (Source: WLA Studio, 2023).

Figure 3.86. The north side of the bridge at White Brook is protected by older steel guard rails. View to west (Source: WLA Studio, 2023).

Figure 3.83. A stone marker just south of the Depue House, which is the former historic marker for Alonzo Depue. View to southwest (Source: WLA Studio, 2023).

Figure 3.85. The intersection at Dingmans Road is protected by steel guard rails. There is a section of concrete guide posts with steel cables visible in this photograph as well, but these features are in poor condition. View to south (Source: WLA Studio, 2023).

Figure 3.87. There are wood and steel guard rails along the Old Mine Road North corridor. View to north (Source: WLA Studio, 2023).

Figure 3.88. Concrete and steel guide posts at a pulloff along the west side of Old Mine Road North. View to north. Note that three types of guard rails and guide posts exist at this one location (Source: WLA Studio, 2023).

at two points, which are threaded with heavy steel cable. The posts are three feet tall and are typically spaced seven to ten feet apart. Though the date of installation is unknown, these concrete guide posts are similar in detail and construction to those shown on drawings for other sections of Old Mine Road dating to the 1950s.[792] At the pulloff area south of the culvert near Black Farm, there is a mix of three types of guard rails and guide posts. The timber and steel guard rail on the west side of the road terminates at the south end of the stone culvert at this location. Then, there are three steel guide posts with steel cables, connected to a set of six concrete posts.

Non-Roadway Small-Scale Features

Fences

The locations of fences are too numerous to include in the narrative format and are noted in the existing conditions mapping.

Remnant Fencing

There are remnant sections of fencing at several points along the roadway. The remnant fencing includes both wood and metal posts, typically with woven or barbed wire fencing (Figure 3.89, Figure 3.90). Remnant fencing is associated with former agricultural or residential uses and typically indicates the former edges of fields and pastures.

Chain Link Fencing

There is one section of vinyl-coated steel chain link fencing surrounding the Mettler Cemetery (Figure 3.91). The fencing is 4 feet high and 225 feet long, with concrete set posts. The fencing marks the eastern boundary of the cemetery. There is a double gate entry at the center of the fence secured by a padlock. The fencing is within 10 feet of the roadway.

Gates and Gate Posts

There are several gates restricting the entrances to smaller dirt and gravel roads intersecting Old Mine Road North. Several informal gates have been created with set timber or metal posts spanned by a cable or rope (Figure 3.92). These informal gates are generally in poor condition and serve little function other than to indicate a former road trace. There are also several contemporary metal gates formed from brown metal tubing which date to the NPS era and mark the location of active roads (Figure 3.93).

Waste Receptacles

There are NPS-issued waste receptacles at two component landscapes within the Old Mine Road North corridor, including the Westbrook-Bell House and the Anson Johnson House. The waste receptacles are rectangular brown metal bearproof boxes permanently affixed to a concrete pad.

Archeological Sites

There are numerous archeological resources throughout DEWA. Identified archeological sites within the park represent Paleoindian, Archaic, and Woodland periods of occupation, as well as later periods of Munsee Lenape occupation, European colonialism, and American history through the twentieth century.

In an effort to best protect and preserve these cultural resources, specific locational information for archeological resources will not be included in this document.

Minisink Historic Landmark District

Old Mine Road North is the eastern boundary of the Minisink National Historic Landmark District (NHL), which includes 1,320 acres of federally owned land within DEWA. According to the Minisink Historic District National Historic Landmark nomination, Minisink "was the most important Munsee Indian Community for much of

792. Harper, "Plans of Proposed Reconstruction of River Road - Section No. 7, Walpack Township, Sussex County, New Jersey," 2.

Figure 3.89. Remnant metal post and barbed wire fencing on the east side of Old Mine Road across from the Black Farm (thin brown posts at edge of trees) (Source: Hunter, Ryan. "Old Mine Road Pedestrian Survey." Bushkill, PA: Delaware Water Gap National Recreation Area, 2022).

Figure 3.90. Remnant wood post and woven wire fencing is common throughout the corridor (Source: WLA Studio, 2023).

Figure 3.91. The Mettler Cemetery is enclosed on three sides by a green chain link fence. View to north (Source: WLA Studio, 2023).

Figure 3.92. A typical informal gate along Old Mine Road North, constructed of a cable between two wooden posts (Source: Hunter, Ryan. "Old Mine Road Pedestrian Survey." Bushkill, PA: Delaware Water Gap National Recreation Area, 2022).

Figure 3.93. A typical NPS installed metal gate on the Old Mine Road North corridor (Source: WLA Studio, 2023).

the seventeenth and eighteenth centuries. Today, Minisink remains one of the most extensive, best preserved, and most intensively studied archeological locales in the Northeast."[793] The Westbrook-Bell House is the only contributing standing structure within the historic district.

Previously Identified Archeological Sites

There are multiple identified archeological sites along the Old Mine Road North corridor, including five sites that contribute to the Minisink National Historic Landmark District. [794] These sites contain both pre- and post-contact artifacts relating to Native American occupation in the Middle Delaware River Valley.

A 2023 archeological survey has identified six new archaeological sites and multiple isolated finds within the Old Mine Road North project area. These sites require further study to determine eligibility for listing in the National Register of Historic Places.[795]

Building Ruins

There are numerous building foundations in various states of ruin in the Old Mine Road North corridor. Building ruin types include mortared stone foundations, poured concrete foundations, and large depressions related to ground disturbance (Figure 3.94, Figure 3.95). The construction dates and developmental histories are unique for each site, though most of the buildings were either destroyed by arson or demolished by the US Army Corps of Engineers in the 1970s during land acquisition activities for the Tocks Island Dam project. Individual parcel developmental histories were not in the scope of this CLR, but many of these features are described below in *Component Landscapes*. For the purposes of this CLR, any building ruin dating to pre-1965 is considered a contributing landscape feature.

Building Remnants

During field investigations, scattered remains of construction materials and building elements were found throughout the project boundary. In most cases, these items were not directly associated with a depression or discernible building ruin. The locations of these features are too numerous to include in narrative format and are included in the existing conditions mapping.

Utility Remnants

During field investigations, the remains of site utilities including spigots, well access pipes, electrical service, and terracotta pipe were identified. The locations of these features are too numerous to include in narrative format and are included in the existing conditions mapping.

Structure Ruins

During field investigations, the remains of structures including abandoned septic tanks, wells, and stone retaining walls (both mortared and dry-stacked) were identified in the project area (Figure 3.96, Figure 3.97). The abandoned septic tanks and wells are large open voids which could potentially pose a safety risk for visitors and trap wildlife. The locations of these features are too numerous to include in narrative format and are included in the existing conditions mapping. There are remnant berms and linear stone features (see *Buildings and Structures* for descriptions) from past agricultural practices, that may also be considered archeological features.

793. "Minisink Historic District," National Historic Landmark Nomination (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, 1993), 24.
794. Dovetail Cultural Resource Group, "Phase I Archeology Survey of the Old Mine Road North and South Project Areas [DRAFT]" (National Park Service, April 7, 2023).
795. Dovetail Cultural Resource Group, "Phase I Archeology Survey of the Old Mine Road North and South Project Areas [DRAFT]."

Figure 3.94. Mortared stone foundation remnants of former homesites are frequent along the Old Mine Road North corridor (Source: WLA Studio, 2023).

Figure 3.95. This concrete and stone foundation is the remains of a barn at the Black Farm. View to northwest (Source: WLA Studio, 2023).

Figure 3.96. There are several abandoned open septic tanks throughout the study area (Source: WLA Studio, 2023).

Figure 3.97. There are several abandoned open wells within the study area (Source: WLA Studio, 2023).

Component Landscapes

According to the NPS Cultural Landscapes Inventory Professional Procedures Guide, a component landscape is "a definable physical area within the boundaries of a landscape that is listed on, or eligible for listing on the National Register of Historic Places. A component landscape contributes to the significance of the landscape and may be individually eligible for the National Register. A component landscape warrants individual documentation to adequately record the physical character of the overall landscape and can be further subdivided into smaller features."[796] The primary scope of this CLR focused on recordation of the road corridor of Old Mine Road North, and the component landscapes did not receive the same level of recordation. Because they are important to the developmental history of the primary resource focus of this document, an overview of each component landscape is provided below.

796. Page, "National Park Service Cultural Landscapes Inventory Professional Procedures Guide," 1–5.

Figure 3.98. The Bevans-Hellwig property at MP 0.0. View to northeast (Source: WLA Studio, 2023).

Figure 3.99. This fieldstone building is the only remaining building on the Bevans-Hellwig property. View to north (Source: WLA Studio, 2023).

Bevans-Hellwig Property LCS ID:009539 (MP 0.0)

According to the "River Road System Cultural Landscapes Inventory," the Bevans-Hellwig property was constructed as a farm in 1796 and converted to summer home in 1930s.[797] The only remaining building on the Bevans-Hellwig property is a circa 1830 side-gabled fieldstone building measuring eleven feet by twenty feet with a wood shingle roof and a brick chimney (Figure 3.98, Figure 3.99). According to the 2021 DEWA Historic Buildings Strategy report, "The façade features a wood plank door and a small window with a two-pane fixed sash and a louvered vent. One gable end has a window opening high in the gable while the other has a small, wood-frame opening that offset and is enclosed with plywood and a small louvered vent. The rear elevation has a window similar to the façade. The Bevans-Hellwig House was originally a one-room house constructed circa 1830. Beginning around 1850, it served as a kitchen attached to the rear of a larger house (now removed)."[798] The larger main house associated with the Bevans-Hellwig property is no longer extant, though a stone chimney from this building remains. A set of concrete stairs leading to the property from Old Mine Road North also remains. Surrounding the kitchen are remnant stone and concrete slab foundations. The NPS maintains a mown turfgrass area surrounding the building and site.

797. Shaun Eyring et al., "River Road System, New Jersey, Cultural Landscapes Inventory," October 2005, 1–55, Delaware Water Gap National Recreation Area.

798. "Draft Historic Buildings Strategy" (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, July 2021), 80.

Heron's Nest/Frank Stoll House (Mettler Road)

Heron's Nest (also known as the Frank Stoll House) is located approximately .38 miles west of Old Mine Road North on the northeast side of Mettler Road.

Heron's Nest/Frank Stoll House

Heron's Nest is a two-story fieldstone and frame building originally constructed in 1830, with 1860 and 1930s additions (Figure 3.100, Figure 3.101).

The eastern half of the house is a circa 1830 fieldstone two-story building, while the western half of the house is an 1860 frame addition with a 1930s stuccoed exterior. A fieldstone chimney projects from the center of the roofline, or western portion of the original house. The roof is clad with slate shingles. The northern façade has several one-story frame additions on the rear of the house with a smaller river stone chimney. The additions are in various states of decay. A concrete retaining wall projects from the north wall, holding the grade for a leveled area on the northeast corner of the house.

Figure 3.100. The south elevation of the Heron's Nest property on the east side of Mettler Road. View to north. Note the stone retaining wall creating a level front yard area at right (Source: WLA Studio, 2023).

Figure 3.101. The north elevation of Heron's Nest is severely deteriorated. View to south (Source: WLA Studio, 2023).

Figure 3.102. Heron's Nest Garage is just west of the driveway to Heron's Nest. View to northwest (Source: WLA Studio, 2023).

The original fieldstone building is built into the grade on the east side, with two-tiered fieldstone and concrete retaining walls forming an upper level. A one-story stone wing (roof collapsed) connects to the main house from the upper level. The upper level is accessible via a set of stone stairs set between the tiered levels and a stone retaining wall that projects southeast from the house. The river stone retaining wall is capped with concrete and extends from the south façade of the building along Mettler Road, creating a leveled front yard. The yard is lined with a row of shrubs along the roadway. The western side of the house is surrounded by a row of mature arborvitae, which somewhat obscure the view of the building from the roadway. A stone runnel carries a spring from the center of the yard to outlet west of the site.

Heron's Nest Garage

A driveway from Mettler Road west of the main house provides access to a circa 1932 two-story garage apartment constructed by Frank Stoll (Figure 3.102). The garage apartment is a bent-gabled Craftsman style building with a mortared river stone first story and a stuccoed frame built second story. The south gable has a projecting shed addition, which increases the overhead area in the upstairs apartment. The roof is slate shingled with a river stone chimney projecting from the west end of the gable. The main entry on the east façade has arched garage door openings on the first floor, with the remains of a porch above.

John Wesley Van Auken House (Mettler Road)

The John Wesley Van Auken House is a privately owned active residence located approximately .6 miles west of Old Mine Road North at the end of Mettler Road (Figure 3.103). The house is a circa 1760 one and one-half story side-gabled Georgian frame building with an asphalt roof and clapboard siding. Two brick chimneys project from either end of the gable. The house is built into the grade with a two-story shed roof addition off the rear (west elevation) of the house dating to circa 1850. The south elevation has a projecting two-story shed roof porch. A row of five frieze band windows on the east (front) façade are a unique architectural feature. The heavy box post front stoop is a circa 1900 addition. The façade was formerly flanked by two large oaks, which have since been removed and replaced with an asphalt parking pad. The property has several outbuildings, including a shed with a stone foundation north of the house and a modern shed west of the house. A bank barn and riverside cottage present in a 1974 Architectural Reconnaissance survey may still be present on the property, but this was not verifiable during field investigations. The home appears to be in good condition.

Mettler Cemetery (MP 1.65)

The Mettler Cemetery is located at MP 1.65 on the west side of Old Mine Road (Figure 3.104). The cemetery is approximately 115 feet deep by 240 feet long. The cemetery boundaries are marked by a chain link fence on the eastern side and a line of mature trees of various species on the north, west, and south sides. The fence has a chain link double gate at the center, with a small wooden sign affixed to the gate identifying the cemetery. Within the cemetery, ornamental plantings including yucca (*Yucca filamentosa*), viburnum (*Viburnum* spp.), arborvitae, and other woody shrubs are scattered among the burial markers which relate to individual burial sites. Mature arborvitae roots are uplifting burial markers in some areas. A row of burials at the eastern edge of the cemetery appears to extend to the chain link fence, near the roadway. Many of the burials in the cemetery bear the same surnames as listed historic structures within the district, including Depue, Bevans, Stoll, and others. The burials appear to date from mostly the nineteenth and twentieth centuries. The cemetery is a private inholding and not managed by the park.

Depue House LCS ID: 009540 (MP 2.8)

The Depue House is a two-story cellar gabled fieldstone structure with wood shingles, three brick chimneys, and a stuccoed exterior (Figure 3.105, Figure 3.106). The original house was a small one-story stone structure dating to circa 1780, which was extended circa 1810 to the two-story form. An early twentieth-century addition formerly projecting from the west elevation has since been removed by the NPS. The south gable end has a small projecting

beehive oven, a unique architectural feature. The majority of the approximately 80-foot by 150-foot site is maintained as mown turfgrass. Two mature hemlock trees flank the northeastern and southeastern corners of the house. A modern granite historical marker dedicated to Alonzo Depue is in front of the house facing Old Mine Road North.

Figure 3.103. The John Wesley Van Auken House is a privately owned home on Mettler Road. View to west (Source: WLA Studio, 2023).

Figure 3.104. The cemetery markers at Mettler Cemetery are arranged loosely in rows, view to north, Old Mine Road North is in the background photo right (Source: WLA Studio, 2023).

Figure 3.105. The northwest corner of the Depue House. View to southeast (Source: WLA Studio, 2023).

Anson Johnson House LCS ID: 082381 (MP 4.2)

The Anson Johnson House is a Greek Revival two-story center hall side-gabled frame house with a stone cellar dating to circa 1840 (Figure 3.107, Figure 3.108). The house has an asphalt shingled roof with two brick chimneys on the gable ends and clapboard siding. The lower portion of the south chimney is exposed fieldstone, a distinguishing feature of the house. The northern elevation has a partial hipped roof one-story addition. The portico is a later addition circa mid to late twentieth century. The grade on the north and west sides of the building are built up into two tiered and leveled areas, which are retained by three- to four-foot-tall dry-stacked stone retaining walls. These walls tie into the foundation of a small barn/shed south of the main house. The frame portion of the shed is in poor condition and is partially collapsed, though the fieldstone basement level is intact. Most of the site (which is approximately 175 feet by 230 feet) is maintained as mown turfgrass, with scattered mature evergreen shrubs in the front yard and a row of oaks on the northwestern edge of the property. During field investigation, snowdrop bulbs were emerging from the grassy area in front of the house. A gravel driveway enters from Old Mine Road North at the south end of the site. An NPS-issued bearproof waste receptacle is located near the house.

Figure 3.106. The Depue House is located close to the roadway. View to northwest (Source: WLA Studio, 2023).

Figure 3.107. The east facade of the Anson Johnson House, set back from Old Mine Road North. View to southwest (Source: WLA Studio, 2023).

William Ennis House (Ennis House) LCS ID: 009541 (MP 4.621)

The Ennis House is a one and one-half story rubble stone cottage constructed in 1751 by William Ennis, with two frame additions dating to circa 1900 and 1952 (Figure 3.109, Figure 3.110).[799] The house is set back approximately four hundred feet from the west side of Old Mine Road North. The cottage has three separate gabled rooflines and a small shed roof off the rear addition, with wood shingles on the original section, asphalt shingles on the two additions, and clapboard siding on the gable ends. Two brick chimneys project from the roofline. The front entrance of the house is located on the east façade, in the 1900 addition. Most of the site is maintained as cleared and mown turfgrass, with some larger trees in the yard, surrounded by successional forest. The circular driveway to the house is accessed via a gravel road which spurs off Old Mine Road North at MP 4.65. There is a small shed near the house with a deteriorated asphalt shingle roof and drop siding in very poor condition (Figure 3.111). The shed dates to 1935.[800]

Figure 3.108. Terraced stone retaining walls off the rear (west) elevation of the Anson Johnson House. View to east (Source: WLA Studio, 2023).

799. "Draft Historic Buildings Strategy," 29.

800. "Draft Historic Buildings Strategy," 29.

Figure 3.109. The Ennis House faces Old Mine Road North but is set off from the roadway. View to northwest (Source: WLA Studio, 2023).

Figure 3.110. The Ennis House has received multiple additions. View to northeast (Source: WLA Studio, 2023).

Figure 3.111. There is a small shed in poor condition at the Ennis House property (Source: WLA Studio, 2023).

Westbrook-Bell Farm LCS ID: 009542 (MP 5.133)

The Westbrook-Bell Farm includes the circa eighteenth-century house with later additions, two circa nineteenth-century barns, and a circa twentieth-century privy. The house and barns were documented in a 2015 Historic Structure Assessment Report.[801]

801. Rebecca M. Cybularz, "Westbrook-Bell House," Historic Structure Assessment Report (Sussex County, NJ: Delaware Water Gap National Recreation Area, February 2015).

Westbrook-Bell House

The Westbrook-Bell House is a one and one-half story L-shaped Dutch colonial stone house with a steeply pitched gabled roof clad with wood shingles (Figure 3.112). The house has a late eighteenth-century one-story ell addition and an early twentieth-century one-story kitchen addition. The main portion of the house dates to circa 1725 and employs coursed masonry construction with quoining. The east and west elevations feature clapboard siding on the gable ends, with a twentieth-century exterior stuccoed concrete masonry unit chimney on the center of the east gable. The circa late eighteenth-century ell addition is distinguishable from the earlier section

Figure 3.112. The east elevation of the Westbrook-Bell House. View to west (Source: WLA Studio, 2023).

Figure 3.113. Barn # 2 (left) and barn #1 (right) at the Westbrook-Bell Farm. View to northeast (Source: WLA Studio, 2023).

Figure 3.114. A small privy at the Westbrook-Bell Farm. View to northwest (Source: WLA Studio, 2023).

of the house by its random course rubble stone construction.[802] The rear (west) elevation has a small circa twentieth-century shed roof addition with drop siding set on an older stone foundation (former kitchen). The addition faces a modern concrete patio. A second brick chimney projects from the center of the eighteenth-century ell on the west elevation. Windows are both six over six and nine over six. The upper story windows on the west elevation are irregularly spaced on the gable end.

802. Cybularz, "Westbrook-Bell House," 2.4.

Westbrook-Bell Farm Outbuildings

Southeast of the main house is barn #2, an early to mid-nineteenth-century "side-gable, timber-frame barn, which measures twenty-six feet wide by forty feet long, has a roughly squared fieldstone foundation, vertical board siding, and an asphalt-shingle-clad roof" (Figure 3.113).[803] Just southeast of barn #2 is barn #1, an early to mid-nineteenth-century "gable-front timber-

803. "Draft Historic Buildings Strategy," 65. Note: The report incorrectly identifies this building as Barn #1, it is identified as Barn #2 in the 2015 Westbrook Bell HSR.

frame barn that measures twenty-one feet six inches wide and thirty feet deep. The barn has a fieldstone foundation, vertical board siding with some battens, and a corrugated steel roof" (Figure 3.113).[804] Northwest of the main house is a small circa twentieth-century one-story frame privy with asphalt shingles "that sits on a "U" shaped concrete foundation" (Figure 3.114).[805]

Westbrook-Bell Site

The Westbrook-Bell Farm site is located approximately 550 feet west of Old Mine Road North, accessed by a gravel driveway at MP 5.14. The site is maintained as a cleared and mown turfgrass area with scattered trees, surrounded by dense successional forest. An NPS installed bearproof waste receptacle is in front of the main house.

Black Farm LCS ID: 082392 (MP 5.3)

The Black Farm is located adjacent to the west side of Old Mine Road North at MP 5.3. The property contains four remaining buildings, one building foundation, and multiple stone wall structures.

804. "Draft Historic Buildings Strategy," 65.
805. "Draft Historic Buildings Strategy," 65.

Black Farm House

The Black Farm House is a two and one-half story Greek Revival frame building (circa 1842) with clapboard siding set on a stone foundation, which predates the building (circa 1750) (Figure 3.115, Figure 3.116). The house consists of a banked side-gabled center hall main block facing Old Mine Road North, with a two-story gabled rear wing that formerly had a circa twentieth-century addition off the rear (west) elevation. The NPS removed this portion of the building. The east elevation has a later (circa late nineteenth-century) centered cross gable addition and has an original recessed paneled entry door surrounded by two sidelights and a transom. The cornice lines are wide and highly detailed with gable end returns. The roof is asphalt shingled, with a brick chimney projecting from the south gable end. A 1993 historic structure report documents the Black Farm House.[806]

806. John Bruce Dodd, "The Black/Minisink Farmhouse," Historic Structure Report (Sandyston Township, Sussex County, New Jersey: Delaware Water Gap National Recreation Area, 1993).

Figure 3.115. The Black Farm House is located close to Old Mine Road North. View to southwest (Source: WLA Studio, 2023).

Figure 3.116. The Black Farm House is banked on the east side, with a two-story rear wing. View to north (Source: WLA Studio, 2023).

Figure 3.117. A small stone springhouse north of the Black Farm House. There is a stone retaining wall southeast of the springhouse. View to north (Source: WLA Studio, 2023).

Black Farm Springhouse/Shed

The Black Farm Springhouse/Shed is a small stone building located at the north end of the property, just north of the Black Farm House. The springhouse is random course fieldstone construction with a gabled roof and wood shingles. The southeast corner of the springhouse ties into a stone retaining wall that spans between the springhouse and the Black Farm House. The construction date of the springhouse is undetermined (Figure 3.117).

Black Farm Dutch Barn

The Black Farm Dutch Barn is a circa 1750-1775 four-bay true form Dutch barn located just south of the Black Farm House and very close to Old Mine Road North (Figure 3.118). The barn is front gabled with a central aisle and wagon doors on the gable ends. The barn is of timber-frame construction with mortise and tenon joinery, clapboard siding, and a wood shingled roof, set on a banked random course stone foundation. This barn is rare within the county, as one of one three surviving structures of this type.

Black Farm Corn Crib (a.k.a. Wagon Shed)

The Black Farm Corn Crib or Black Farm Wagon Shed is a gabled frame building with wood shingles and horizontal gapped siding on the sides and vertical plank siding on the gable ends (Figure 3.119). The building is set on a stone pier foundation. The construction date of the building is undetermined.

Black Farm Concrete and Stone Barn Foundation

The concrete and stone foundation of the Black Farm Concrete and Stone Barn remains are located between the Black Farm Dutch Barn and Black Farm Corn Crib/Wagon Shed (Figure 3.95). The building was demolished at an unknown date. The interior of the foundation is overgrown with trees.

Other Black Farm Structures

There are two mortared rubble stone freestanding walls flanking the entry to the Black Farm House, near Old Mine Road North. The walls are approximately two feet high. A stone retaining wall approximately four to five feet high spans between the north foundation wall of the house and the springhouse, creating a terraced front yard area. A sloping mortared stone wall retains the grade on the south side of the main block of the Black Farm House. The wall is approximately three feet high at the house, sloping back to grade south of the house. The remains of an open concrete well or septic tank structure are located just west of the ramp.

Black Farm Site

The site is maintained as a mostly mown turfgrass area, with scattered trees and a few shrubs. There is a historic white oak on the eastern side of Old Mine Road North across from the farm site. The western edge of the site area is overgrown with vines and exotic invasive shrubs. An informal gravel pulloff area is located just north of the Black Farm Dutch Barn.

Figure 3.118. The Black Farm Dutch Barn is a rare type in Sussex County, NJ. View to southwest (Source: WLA Studio, 2023).

Figure 3.119. There is a smaller building south of the Dutch Barn, known as the Black Wagon Shed or Corn Crib. View to south (Source: WLA Studio, 2023).

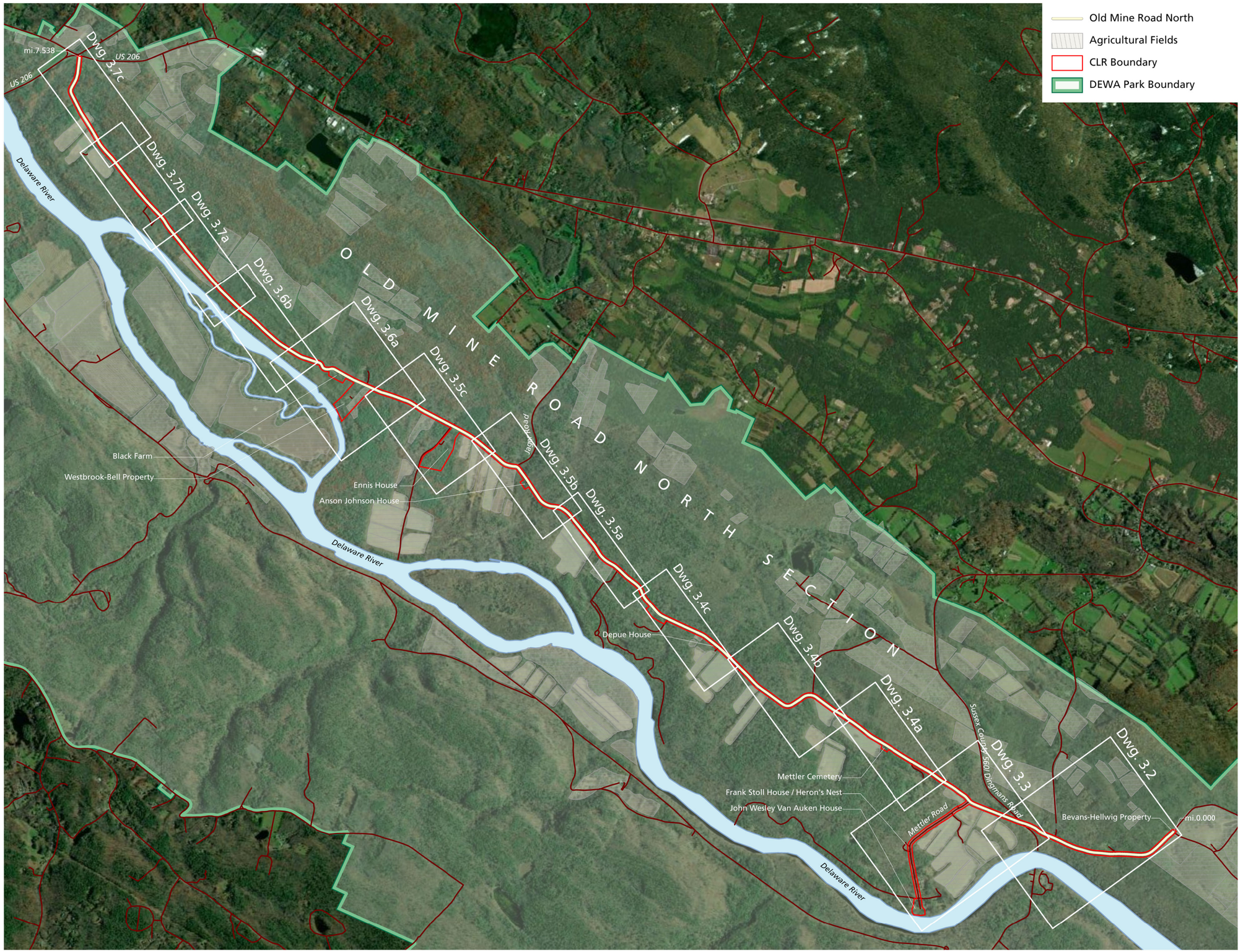
Minisink Dutch Reformed Church Cemetery (MP 7.33-7.348)

The Minisink Dutch Reformed Church Cemetery, located at MP 7.33-7.348 on the west side of Old Mine Road North, is not owned or managed by the NPS (Figure 3.120, Figure 3.121). The boundaries are not marked, and the number and extent of the burials is unknown. There are several engraved headstones close to the roadway, mostly dating to the nineteenth century. Many other burial sites are marked only by natural stones and small depressions, laid in a series of roughly concentric arcs radiating from the center of the cemetery. A modern granite marker engraved "Minisink Church 1737," American flags, and small Revolutionary War markers identify the cemetery. The cemetery is not identified in the New Jersey Historic Preservation Office Database.

Figure 3.120. The Minisink Reformed Church Cemetery is easily missed along the roadway, most of the markers are simply laid stones without engraving. View to southwest (Source: WLA Studio, 2023).

Figure 3.121. Detailed view of a marker in the Minisink Reformed Church Cemetery. Note the broken marker in photo left (Source: WLA Studio, 2023).

Page intentionally left blank



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Overview

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

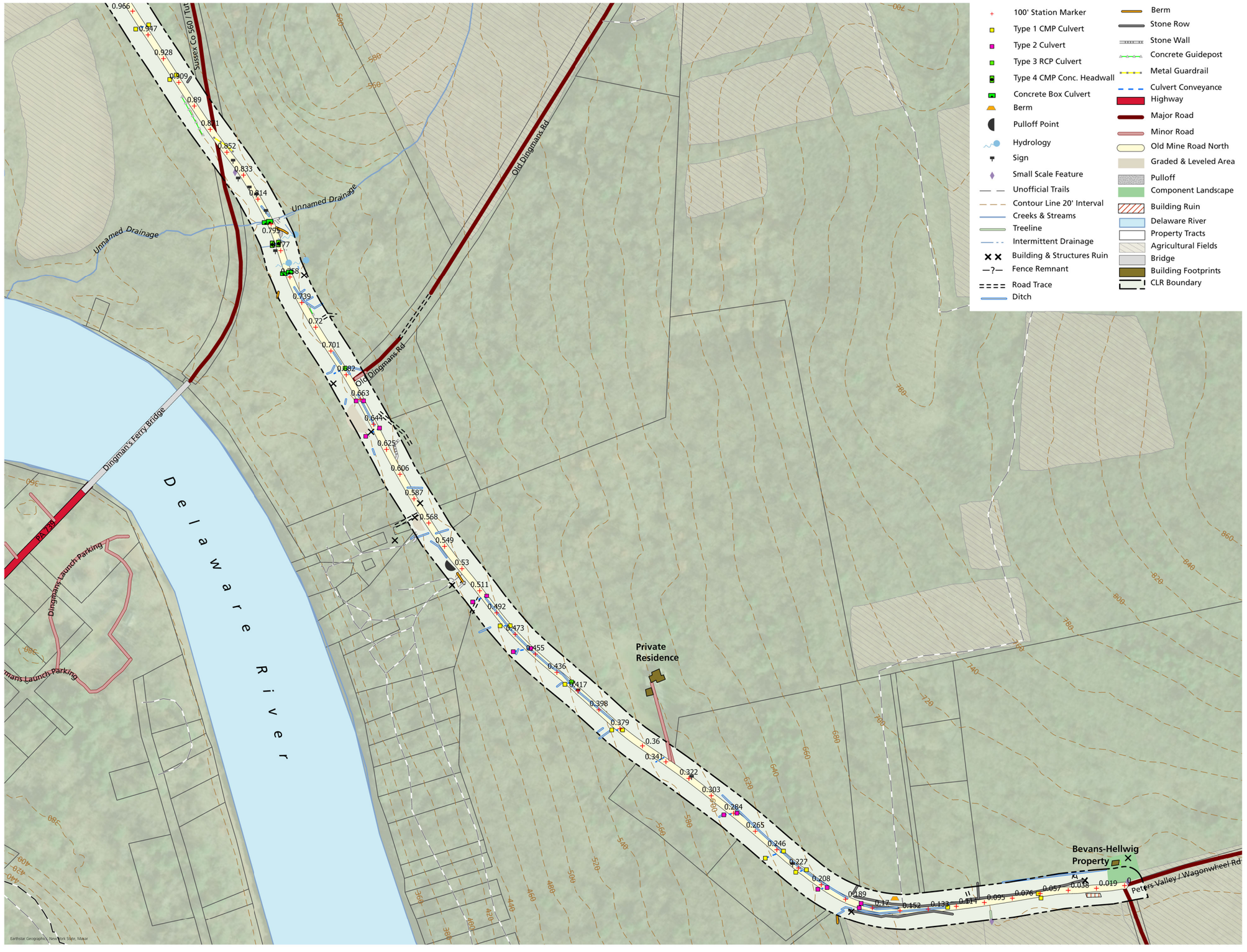
WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

0 500 1,000 2,000 Feet

Drawing 3.1



- 100' Station Marker
- Type 1 CMP Culvert
- Type 2 Culvert
- Type 3 RCP Culvert
- Type 4 CMP Conc. Headwall
- Concrete Box Culvert
- Berm
- Pulloff Point
- Hydrology
- Sign
- Small Scale Feature
- Unofficial Trails
- Contour Line 20' Interval
- Creeks & Streams
- Treeline
- Intermittent Drainage
- Building & Structures Ruin
- Fence Remnant
- Road Trace
- Ditch
- Berm
- Stone Row
- Stone Wall
- Concrete Guidepost
- Metal Guardrail
- Culvert Conveyance
- Highway
- Major Road
- Minor Road
- Old Mine Road North
- Graded & Leveled Area
- Pulloff
- Component Landscape
- Building Ruin
- Delaware River
- Property Tracts
- Agricultural Fields
- Bridge
- Building Footprints
- CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Mile 0.000 to 0.966

National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

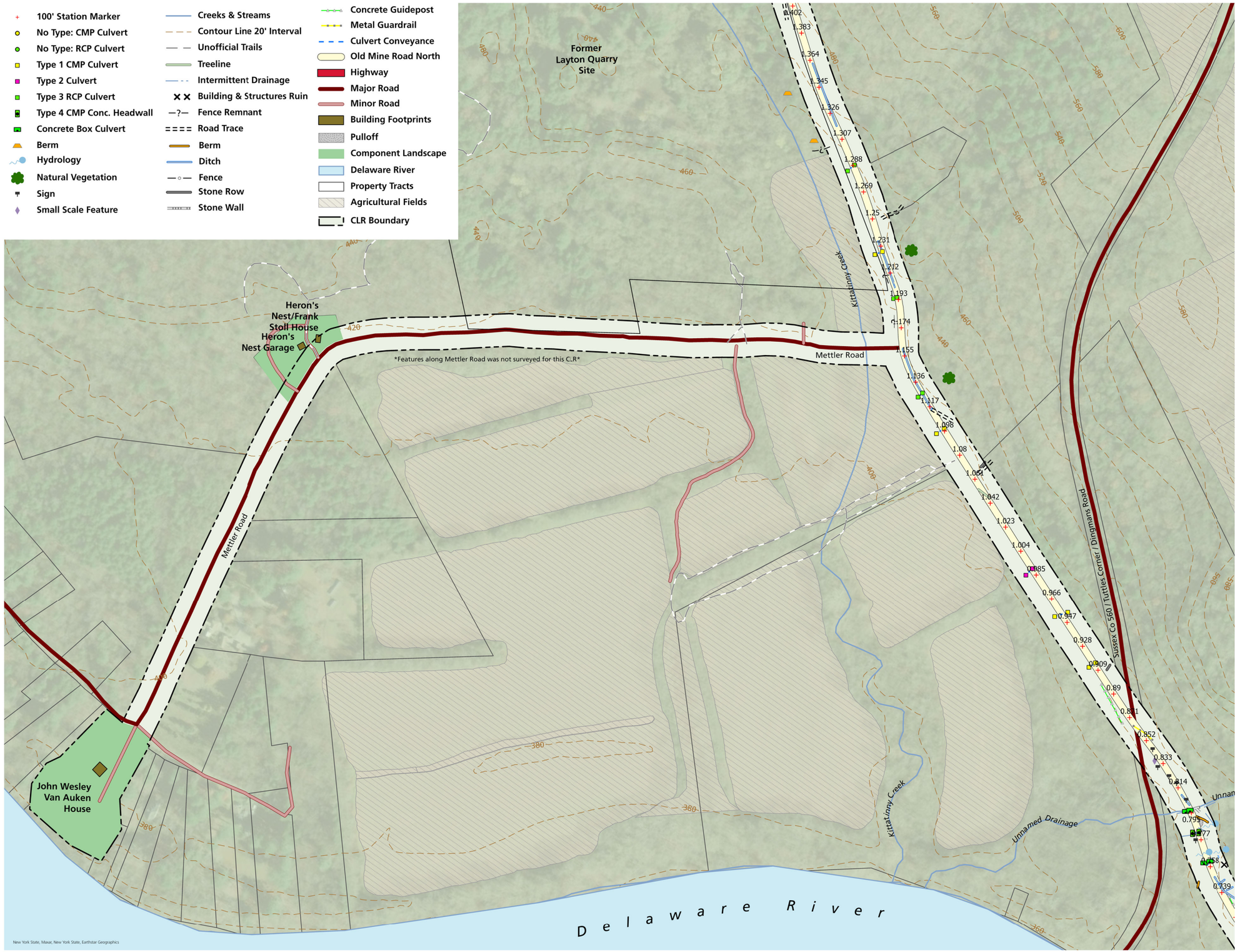
0 85 170 340 Feet

Drawing 3.2

- 100' Station Marker
- No Type: CMP Culvert
- No Type: RCP Culvert
- Type 1 CMP Culvert
- Type 2 Culvert
- Type 3 RCP Culvert
- Type 4 CMP Conc. Headwall
- Concrete Box Culvert
- Berm
- Hydrology
- Natural Vegetation
- Sign
- Small Scale Feature

- Creeks & Streams
- Contour Line 20' Interval
- Unofficial Trails
- Treeline
- Intermittent Drainage
- Building & Structures Ruin
- Fence Remnant
- Road Trace
- Berm
- Ditch
- Fence
- Stone Row
- Stone Wall

- Concrete Guidepost
- Metal Guardrail
- Culvert Conveyance
- Old Mine Road North
- Highway
- Major Road
- Minor Road
- Building Footprints
- Pulloff
- Component Landscape
- Delaware River
- Property Tracts
- Agricultural Fields
- CLR Boundary



New York State, Maxar, New York State, Earthstar Geographics

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Mile 0.739 to 1.402

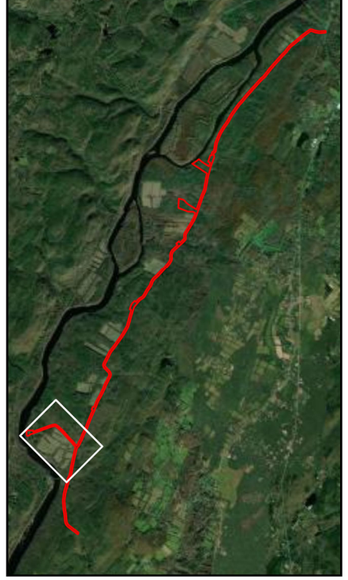
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landvnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

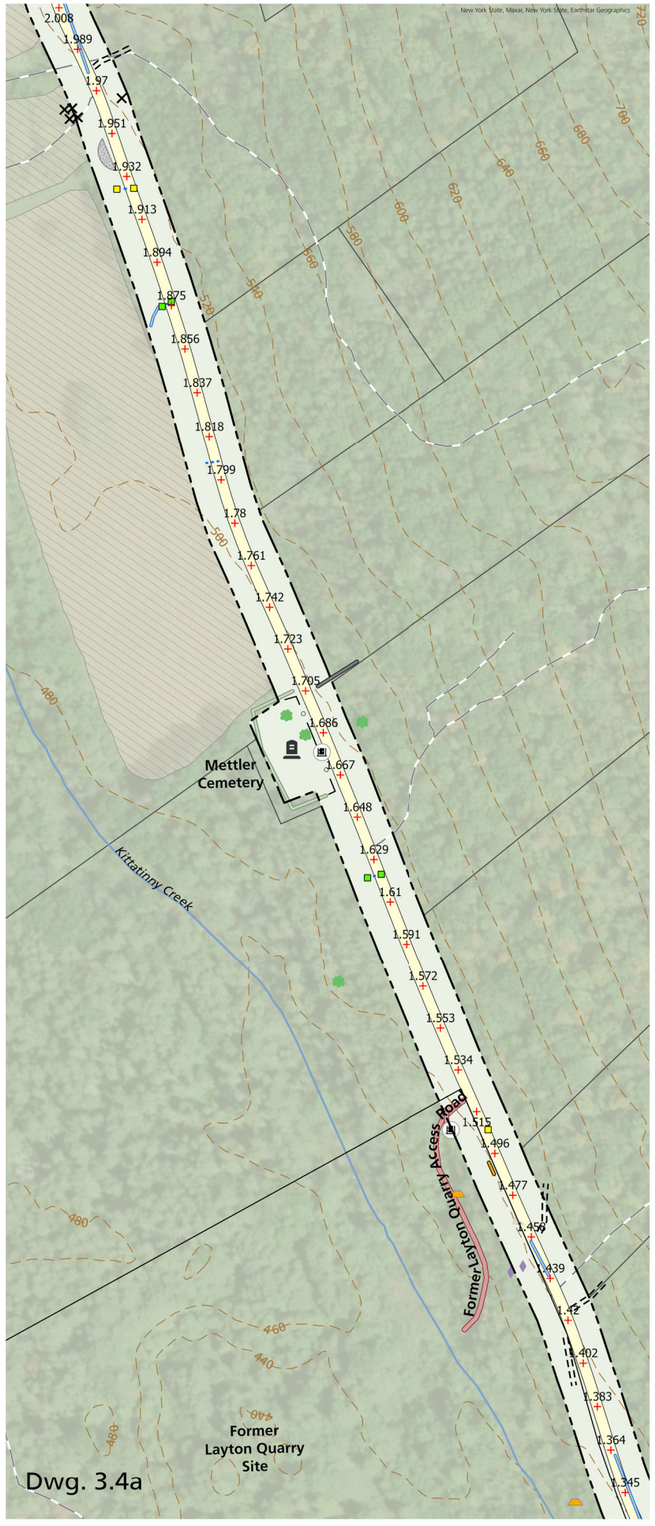


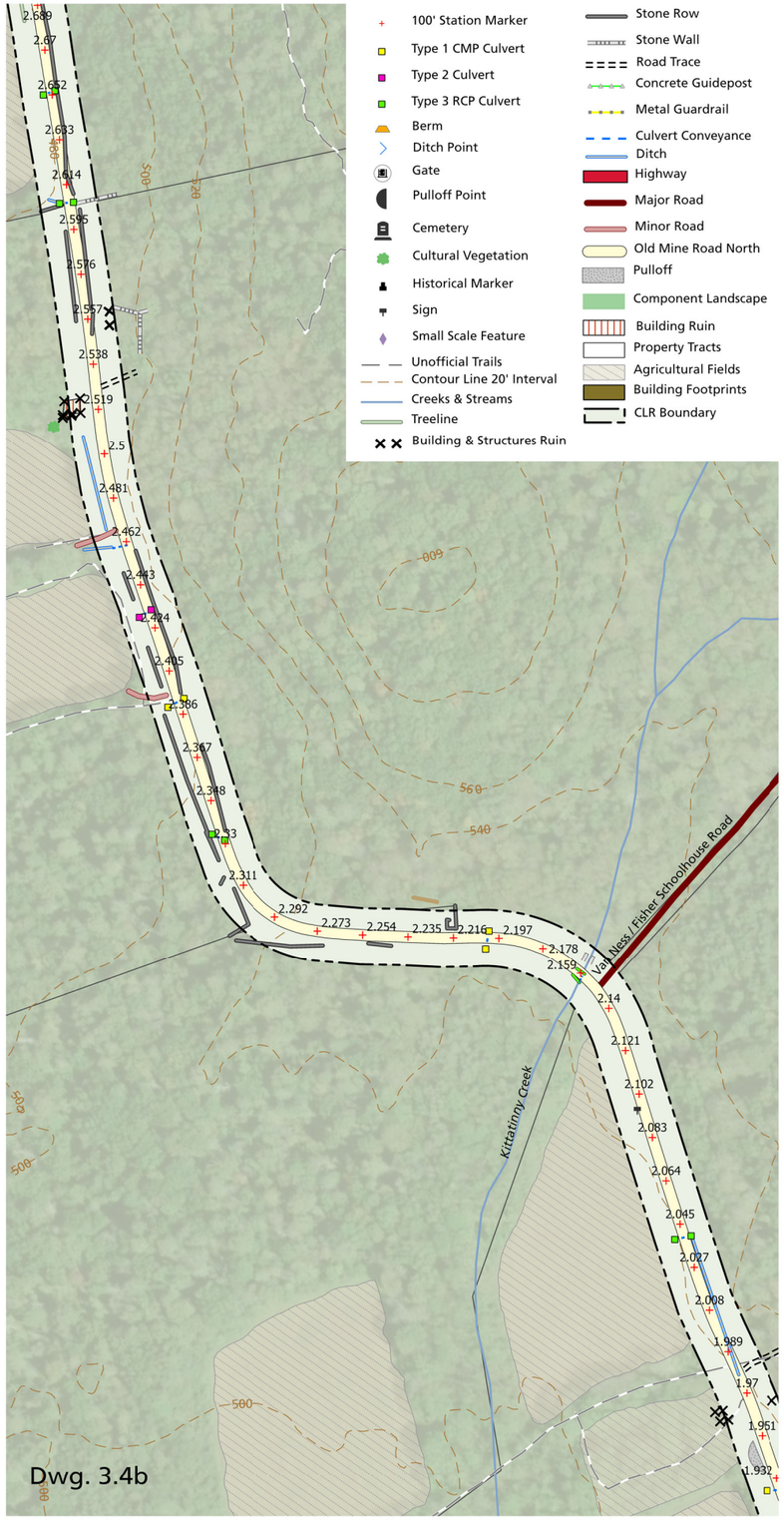
NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.
7. Small-scale features along Mettler Road were not surveyed for this project.

0 85 170 340 Feet

Drawing 3.3





100' Station Marker
Type 1 CMP Culvert
Type 2 Culvert
Type 3 RCP Culvert
Berm
Ditch Point
Gate
Pulloff Point
Cemetery
Cultural Vegetation
Historical Marker
Sign
Small Scale Feature
Unofficial Trails
Contour Line 20' Interval
Creeks & Streams
Treeline
Building & Structures Ruin
Stone Row
Stone Wall
Road Trace
Concrete Guidepost
Metal Guardrail
Culvert Conveyance
Ditch
Highway
Major Road
Minor Road
Old Mine Road North
Pulloff
Component Landscape
Building Ruin
Property Tracts
Agricultural Fields
Building Footprints
CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Mile 1.345 to 3.295

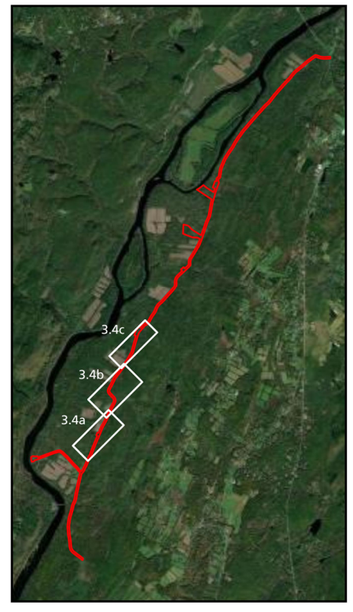
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

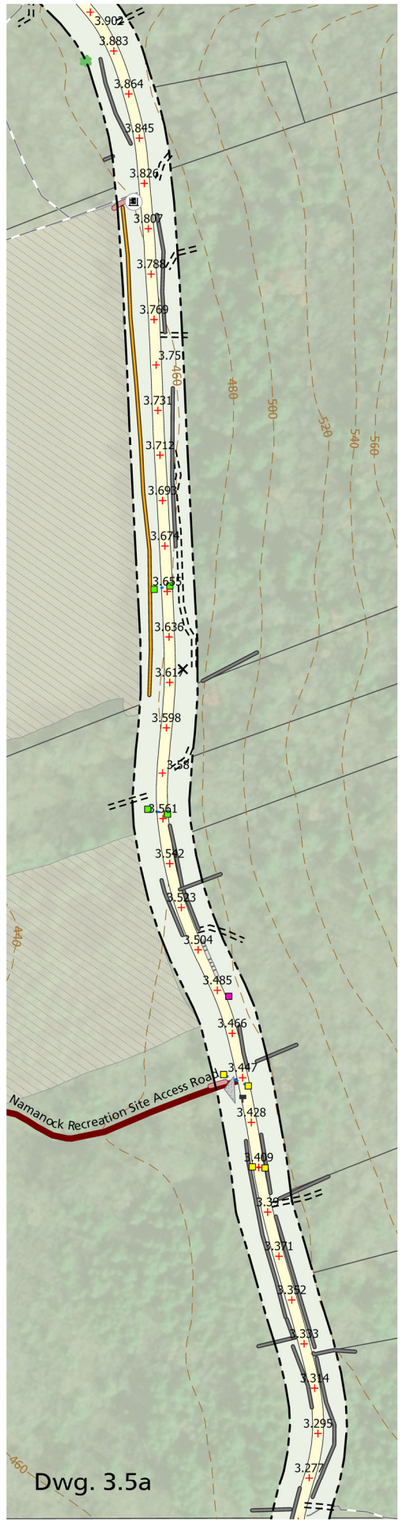


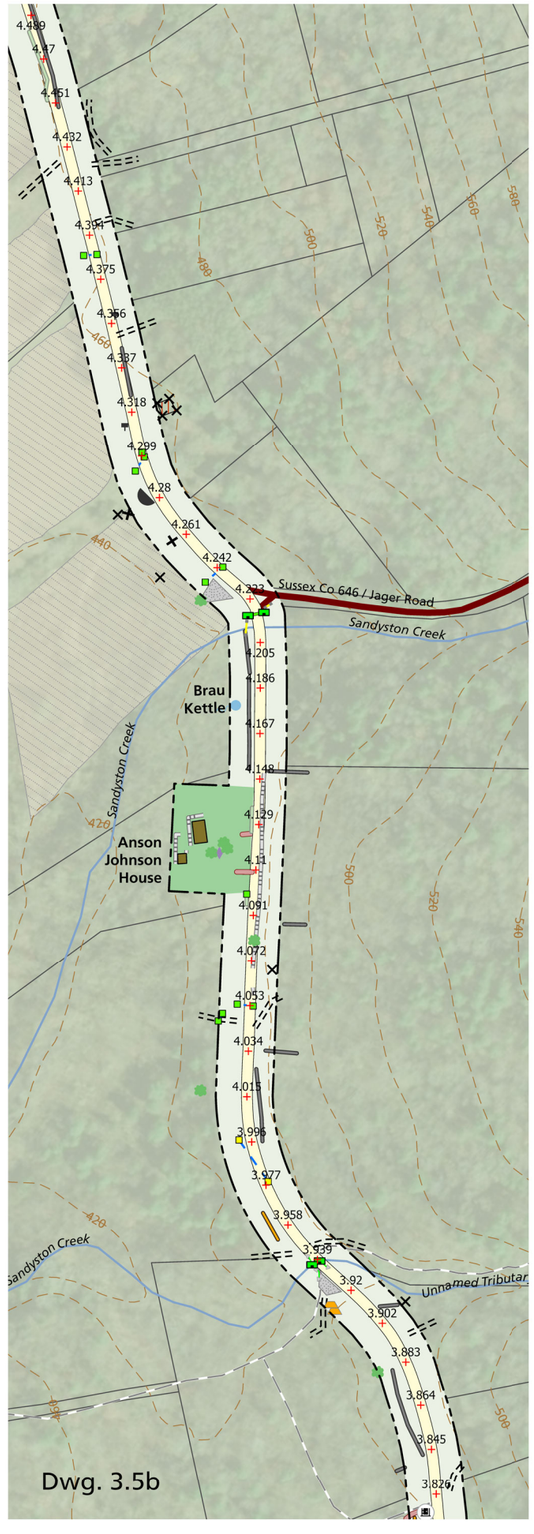
NOTES

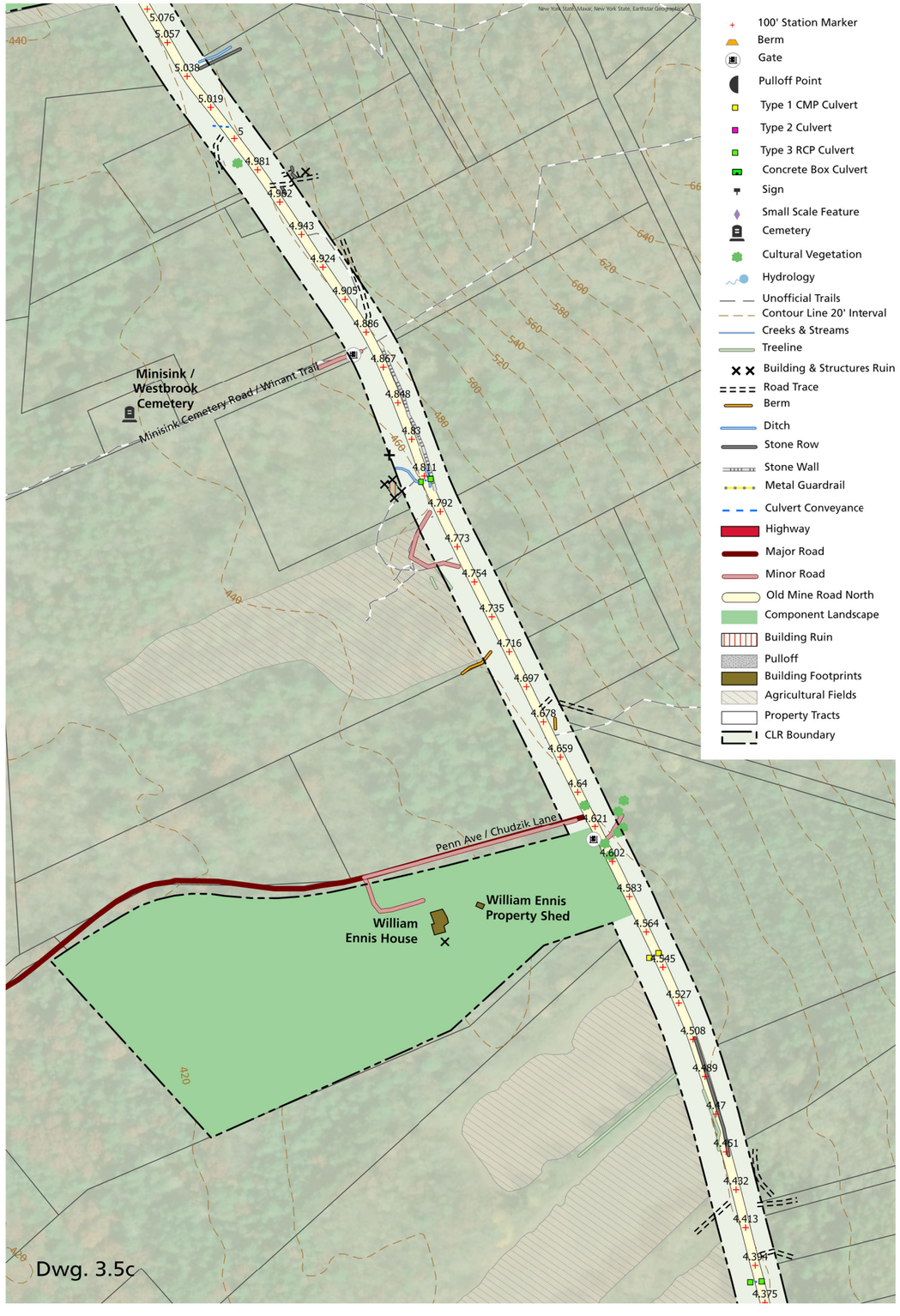
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

0 85 170 340 Feet

Drawing 3.4







100' Station Marker
Berm
Gate
Pulloff Point
Type 1 CMP Culvert
Type 2 Culvert
Type 3 RCP Culvert
Concrete Box Culvert
Sign
Small Scale Feature
Cemetery
Cultural Vegetation
Hydrology
Unofficial Trails
Contour Line 20' Interval
Creeks & Streams
Treeline
Building & Structures Ruin
Road Trace
Berm
Ditch
Stone Row
Stone Wall
Metal Guardrail
Culvert Conveyance
Highway
Major Road
Minor Road
Old Mine Road North
Component Landscape
Building Ruin
Pulloff
Building Footprints
Agricultural Fields
Property Tracts
CLR Boundary

Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Mile 3.277 to 5.076

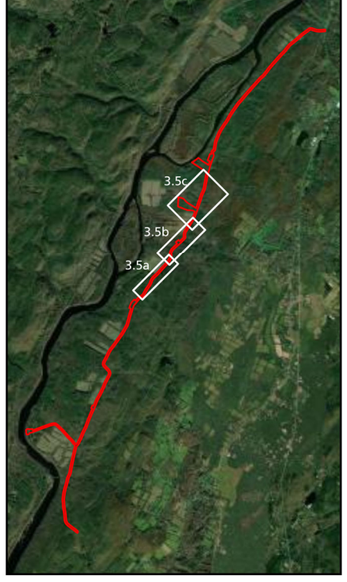
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

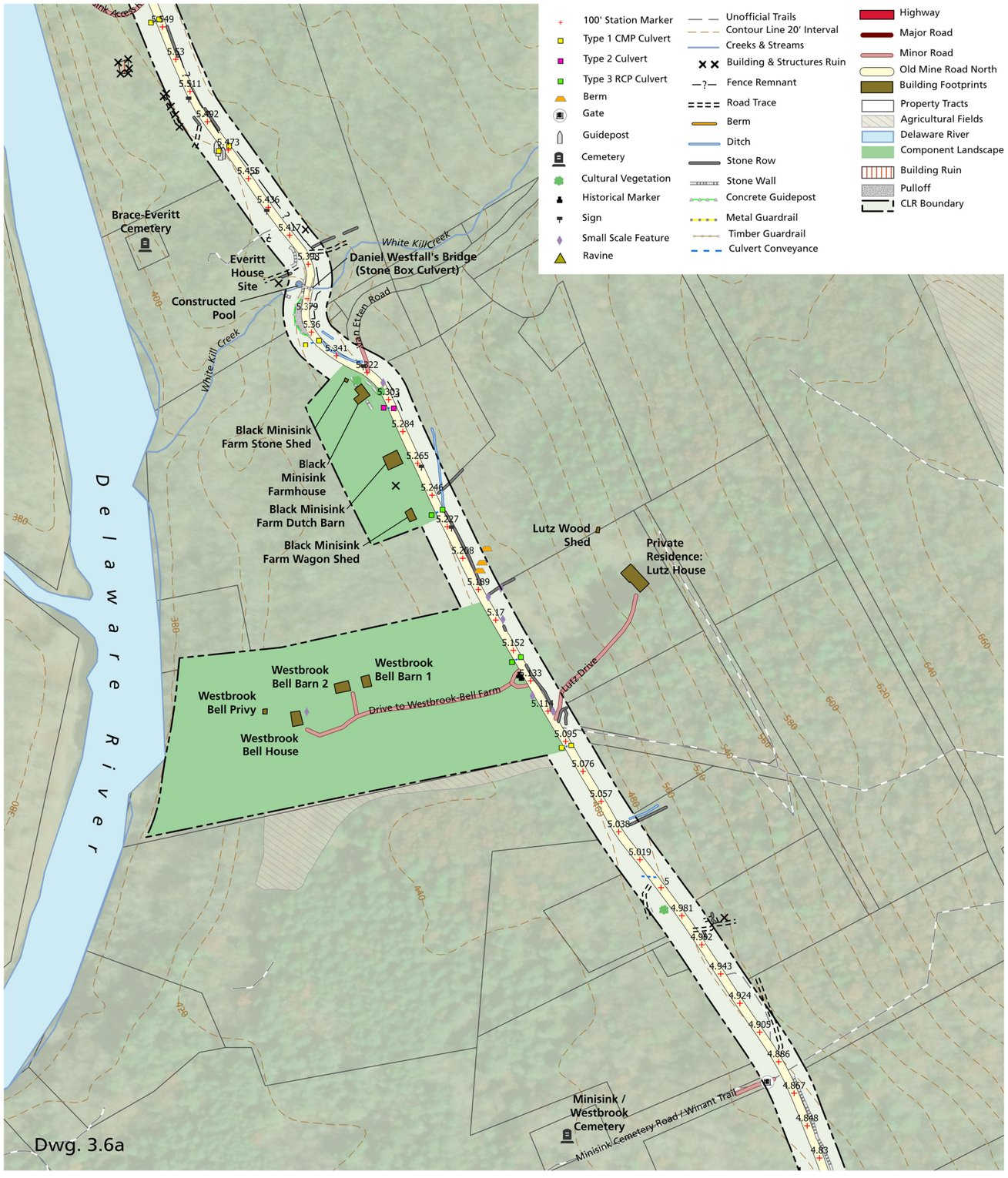


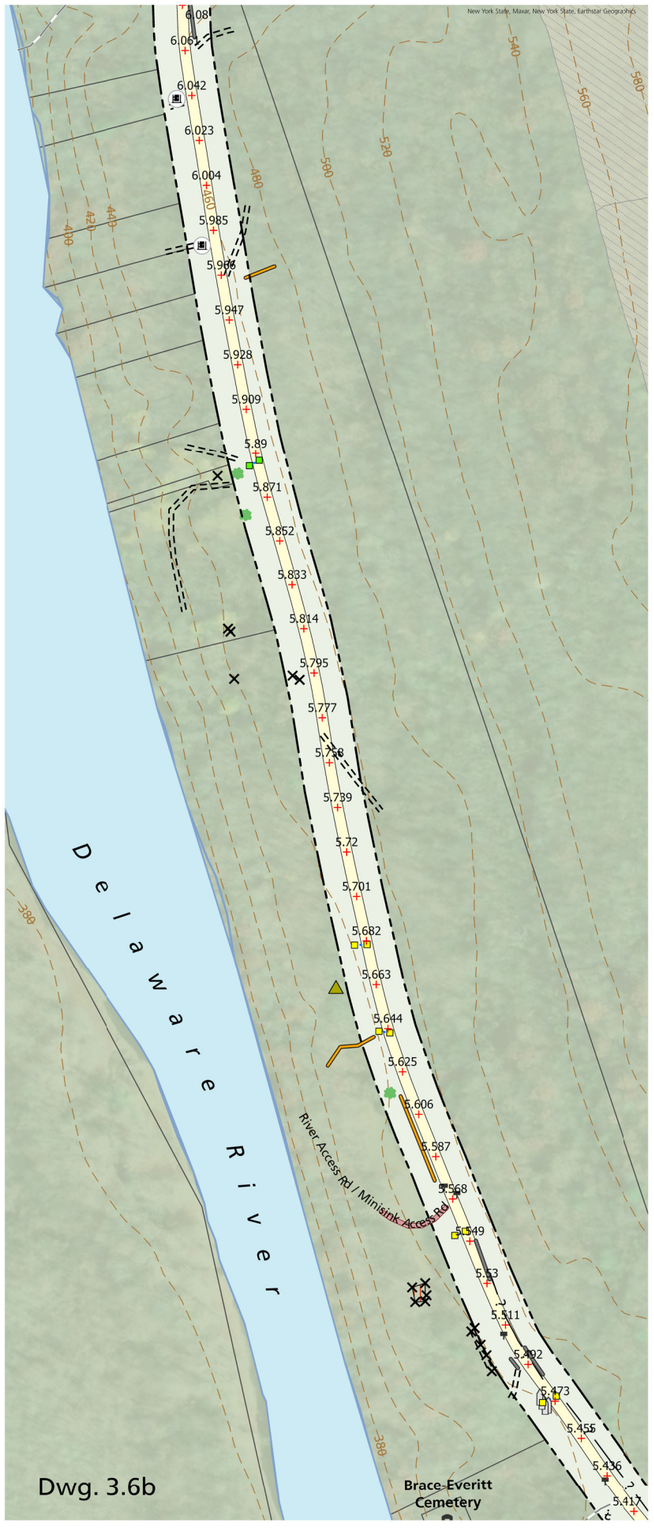
NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

0 85 170 340 Feet

Drawing 3.5





Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Mile 4.848 to 6.08

National Park Service

Olmsted Center for Landscape Preservation

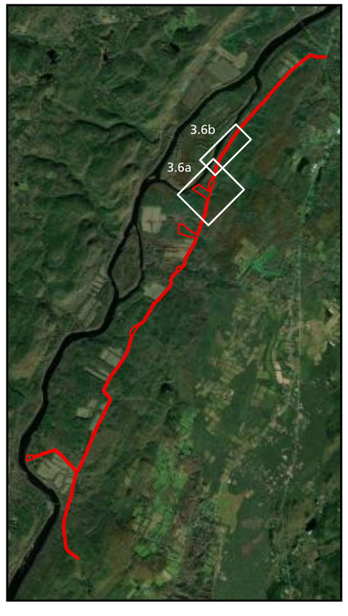
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

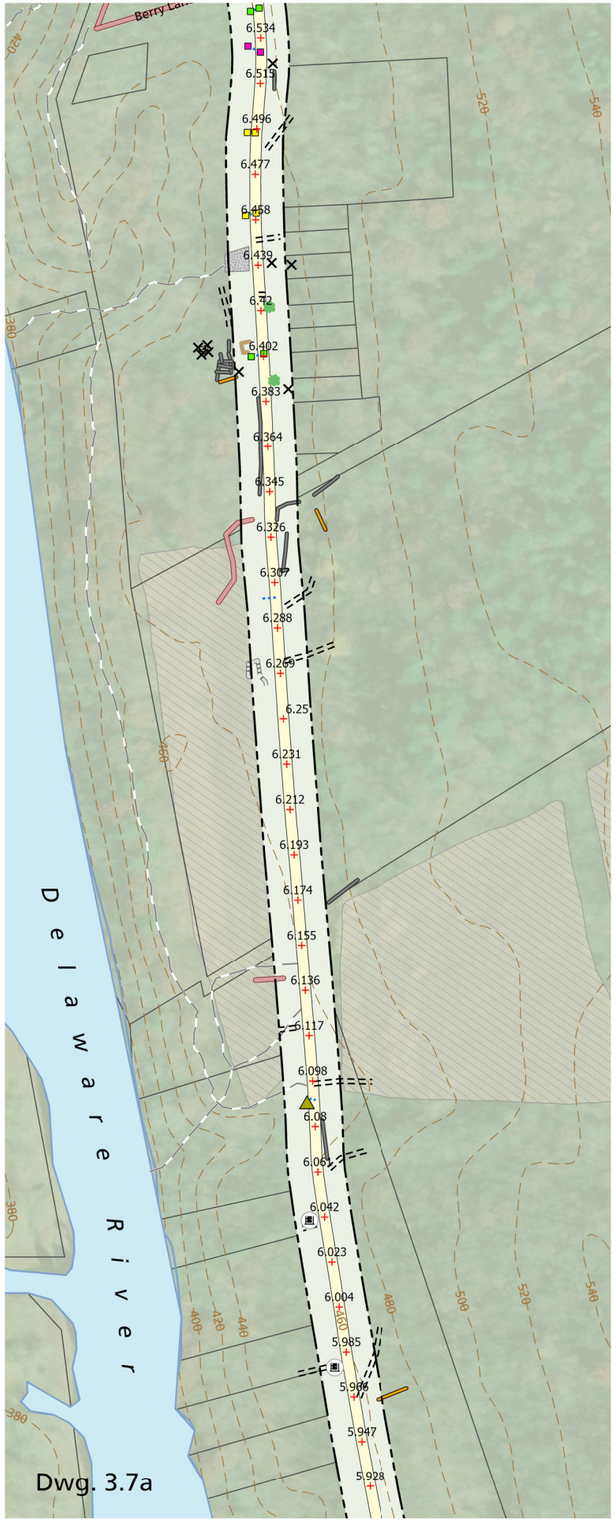


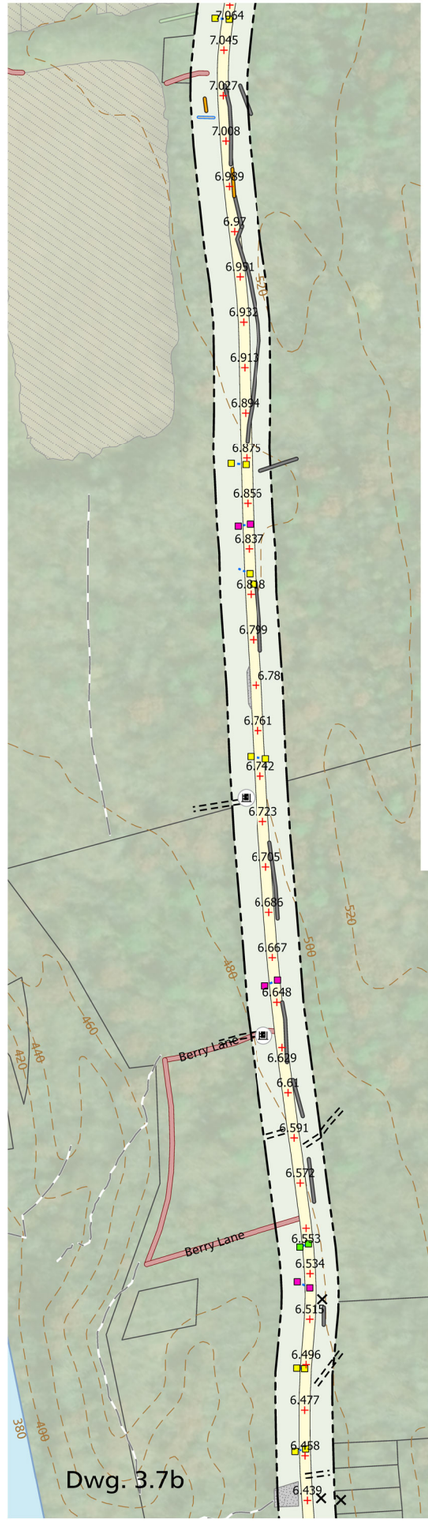
NOTES

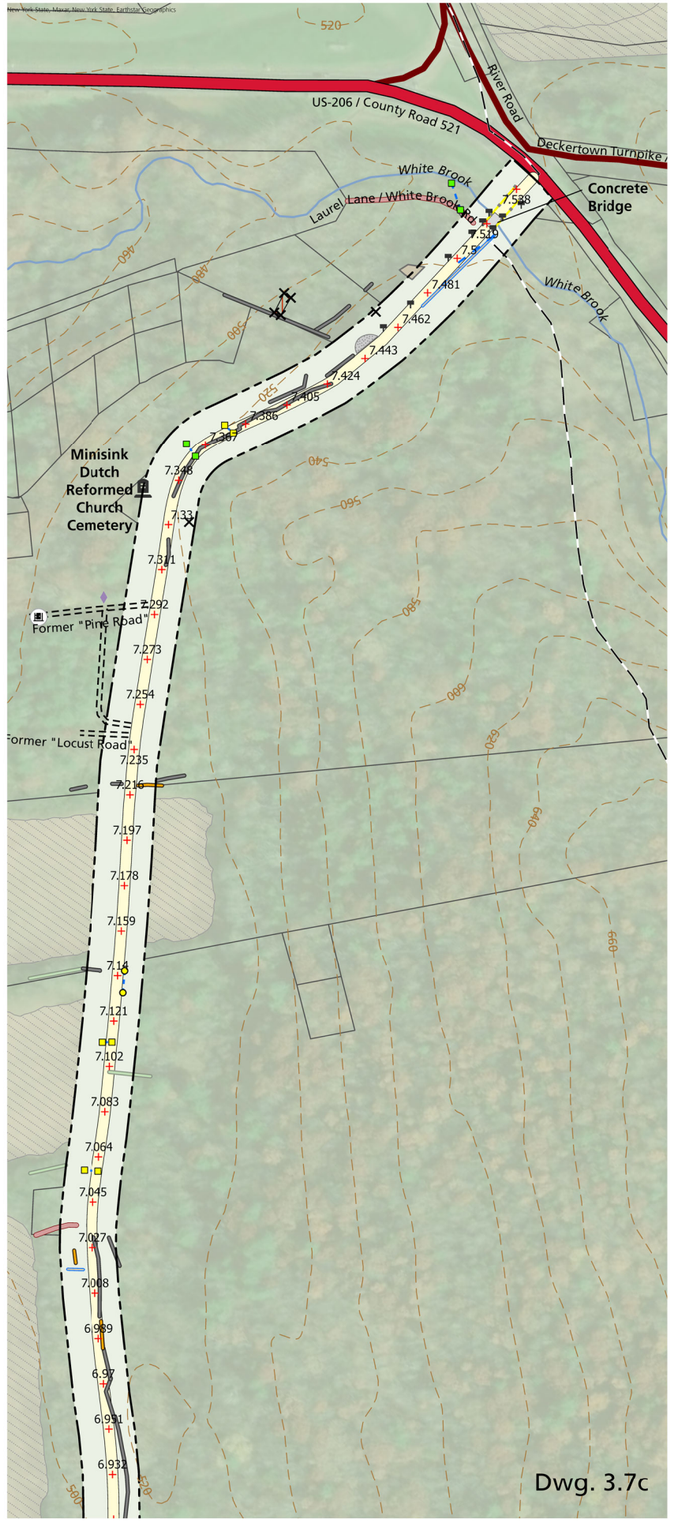
1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

0 85 170 340 Feet

Drawing 3.6







Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Existing Conditions, Mile 5.928 to 7.538

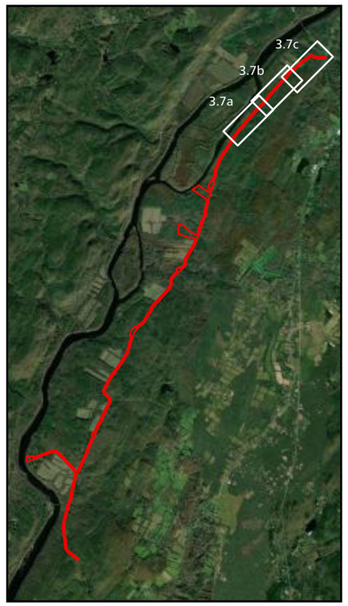
National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP CRGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023



NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

0 85 170 340 Feet

Drawing 3.7

Analysis and Evaluation

Introduction

For cultural landscapes such as Old Mine Road North, documenting existing conditions and analyzing and evaluating natural and human-made historic resources is critical in the development of a strategy for their management and treatment. Cultural landscape analysis involves two primary activities: evaluating historic significance and assessing historic integrity. Both use criteria developed by the National Register of Historic Places for evaluating the significance and integrity of historic buildings and landscapes. The evaluation of historic significance identifies the important historical associations of the property, as well as its architectural, archeological, and social value. The property's significance is tied to a discrete period of time (period of significance) in which its important contributions were made and the broader historic contexts (historic context themes) within which the activities that occurred on the property may be placed. The analysis and evaluation section considers the site's history within recognized historic contexts to determine its contribution to the broad patterns of American history. It is important to note that historic resources, particularly cultural landscapes, change over time. As a result, a cultural landscape may have several areas of historic significance and multiple periods of significance. In order to determine whether a landscape feature contributes to the historic significance of the landscape at Old Mine Road North, this chapter compares the existing conditions of landscape features to its understood condition during the historic period.[807] The objective of this analysis is to identify the specific features associated with the historic period and assess to what degree they continue to convey their historic significance.

To aid in this assessment, landscape features are categorized based on their contribution to the understanding of the historic character of the landscape during the period or periods of significance (in this case, the historic period 1600–1965). These categories are contributing, non-contributing, missing, and undetermined.

Contributing landscape features survive from the period of significance and continue to reflect their historic appearance and function. Non-contributing landscape features include those added to the site after the period of significance or that no longer retain enough physical integrity to convey their historic appearance or function. Missing features existed during the period of significance but have been removed, destroyed, or cannot be recognized in their current condition. Undetermined include features whose age cannot be determined or whose contribution to the historic landscape is unknown. Please refer to the table at the end of this chapter for a summary of this information.

The process to identify landscape elements follows a National Park Service methodology that categorizes all landscape elements as one of thirteen landscape characteristics:

Archeological Sites
Buildings and Structures
Circulation
Arrangement of Buildings
Constructed Water Features
Cultural Traditions
Land Use
Natural Systems and Features
Other
Small-Scale Features
Spatial Organization
Cluster Arrangement
Topography
Vegetation
Views and Vistas

Landscape characteristics are the "tangible and intangible aspects of an inventory unit which have either influenced the history of the development of the landscape, or are products of its development, respectively." Further, "these aspects individually and collectively give a landscape its historic character and aid in the understanding

807. Use of the phrase 'historic period' is adopted from *Cultural Landscapes Inventory Professional Procedures Guide* (2009). For the purposes of this document, the terms 'historic period' and 'period of significance' are used interchangeably.

of its cultural importance."[808] Based on this understanding of the landscape, National Register of Historic Places methodology aids in establishing a site's significance.

National Register Evaluation

The National Historic Preservation Act of 1966 authorized the creation of the National Register of Historic Places as the official list of the nation's historic places worthy of preservation. The National Park Service is responsible for maintaining the list and coordinating with public and private entities to identify, evaluate, and protect America's historic and archeological resources. The National Park Service has developed criteria for evaluating historic resources to determine their eligibility for listing in the National Register. The National Register Criteria for Evaluation examine a property's age, integrity, and significance.

To be considered historic, a property typically needs to be at least fifty years old, though exceptions can be made for certain properties. In terms of integrity, as *A Guide for Cultural Landscape Reports* explains, "historic integrity of a cultural landscape relates to the ability of the landscape to convey its significance. The National Register defines seven aspects of integrity that address the cohesiveness, setting, and character of a landscape, as well as the material, composition, and workmanship of associated features. Historic integrity is assessed to determine if the landscape characteristics and associated features, and the spatial qualities that shaped the landscape during the historic period, are present in much the same way as they were historically."[809] Accounting for change in a landscape—a natural occurrence—is integral to the evaluation process. As the *Guide* notes, "it is important not only to consider changes to the individual [landscape] feature, but how such changes affect the landscape as a whole."[810]

The property must also be associated with historic events, activities, or developments that were important in the past. The National Register identifies the type of significance of a property based on the following criteria:

> Criterion A: Association with events that have made a significant contribution to the broad patterns of our history; or
> Criterion B: Association with the lives of persons significant in our past; or
> Criterion C: Embodiment of the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> Criterion D: Yielding or potential to yield information in history or prehistory.

A site may be significant in any or all of these four criteria. Based on these criteria, a statement of significance can be drafted for a site.

808. Robert R. Page, "National Park Service Cultural Landscapes Inventory Professional Procedures Guide" (U. S. Department of the Interior, National Park Service Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, January 2009), 7–4; 53.

809. Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, "A Guide to Cultural Landscape Reports: Contents, Process, and Techniques" (U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998), 71.

810. Page, Gilbert, and Dolan, "A Guide to Cultural Landscape Reports: Contents, Process, and Techniques," 72.

National Register Documentation

Old Mine Road North is part of the Old Mine Road Historic District, listed in the National Register of Historic Places in 1980 (NRIS ID 80000410). The district is listed significant under National Register Criteria A, C, and D in the areas of Archeology, Agriculture, Architecture, Commerce, Exploration/Settlement, and Transportation. An update to the Determination of Eligibility from the New Jersey Department of Environmental Protection, Historic Preservation Office (NJHPO) dated February 25, 2020, states that the areas of significance should also include Entertainment/Recreation.[811] Currently the National Register of Historic Places nomination suggests significance at the local level, but subsequent documentation of Old Mine Road Historic District proposes a state level of significance.[812]

In the areas of Agriculture and Exploration/Settlement, the Old Mine Road Historic District is significant under Criterion A for late eighteenth century through early twentieth century patterns of human occupation and use of the land in the Upper Delaware River Valley. This significance is conveyed by agricultural field patterns, the alignment of the Old Mine Road along the Delaware River, points of crossing the river, and the layout of residential and agricultural buildings along the road.

In the areas of Transportation and Commerce, the Old Mine Road Historic District is significant under Criterion A for the development of the road and its alignment on the east bank of the Delaware River.

In the area of Entertainment/Recreation, the Old Mine Road Historic District is significant under Criterion A for its association with tourism in the early nineteenth through twentieth century, when visitors frequented the area from nearby urban centers. The development of Delaware Water Gap National Recreation Area continues this use.

In the area of Architecture, the Old Mine Road Historic District is significant under Criterion C for the buildings along the corridor, which are examples of various styles of residential and agricultural architecture. These buildings include those at the Black Farm, constructed in the mid- to late eighteenth century; the buildings at Westbrook-Bell Farm, constructed beginning circa 1725, the Ennis House, constructed in 1751; the Anson Johnson House, constructed in 1840; the Depue House, constructed circa 1780; and the John Wesley Van Auken House, constructed in 1760.

Under Criterion D, the Old Mine Road Historic District possesses national significance in the area of Archeology. The area has yielded and has the potential to yield additional information about the history of the agrarian and frontier lives of early New Jersey residents, as well as the development of Old Mine Road and the various transportation technologies and materials used to construct, alter, and update the road over time.[813]

The Old Mine Road Historic District is documented as encompassing 687 acres. The Old Mine Road North study area follows an approximately 7.58 mile section of Old Mine Road south of its intersection with U.S. 206 near Montague, New Jersey. Features related to Old Mine Road North and located in the component landscapes are listed in the National Register of Historic Places. According to the NPS, "the National Register is the official list of the nation's historic properties considered worthy of preservation. . .. These properties tell stories that are important to a local community, the residents of a specific state, or to all Americans.

811. Katherine Marcopul to Sula Jacobs, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area, Historic Properties Management Plan," February 25, 2020, Delaware Water Gap National Recreation Area.
812. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," Cultural Landscapes Inventory (U.S. Department of the Interior, National Park Service, October 2005), 1.14.
813. According to park personnel, archeological monitoring of other segments of Old Mine Road has shown that subsurface archeological features were buried and preserved as historic roads were improved in the twentieth century. Buried road beds have been found in profile when road cuts were made to install new culverts. Archeological investigation of other sections of Old Mine Road have recorded a highly compacted dirt road surface more than three feet below the modern road surface.

Properties must possess historic integrity."[814] The NPS explains, "properties designated as National Historic Landmarks tell stories that are important to the history of the entire nation, not just local communities or states. These properties possess a high degree of historic integrity."[815] The following component landscapes in the study area are listed as contributing features of the Old Mine Road Historic District:

Black Farm (ca. 1775/1850)
Westbrook-Bell Farm (1725)
Ennis House (1751)
Anson Johnson House (1840)
Depue House (1780)
Mettler Cemetery (1800s)
John Wesley Van Auken House (also known as the Ennis Ferry House) (1760)

The NJHPO has mapping indicating the location of resources that are contributing to the Old Mine Road Historic District and properties that are individually eligible for the National Register of Historic Places. Figure 4.1 and Figure 4.2 show the location of such resources within the project study area.

814. National Park Service, "The National Register of Historic Places and the National Historic Landmarks Program - National Historic Landmarks (U.S. National Park Service)," August 31, 2018, https://www.nps.gov/subjects/nationalhistoriclandmarks/nr-and-nhl.htm.
815. National Park Service, "The National Register of Historic Places and the National Historic Landmarks Program - National Historic Landmarks (U.S. National Park Service)."

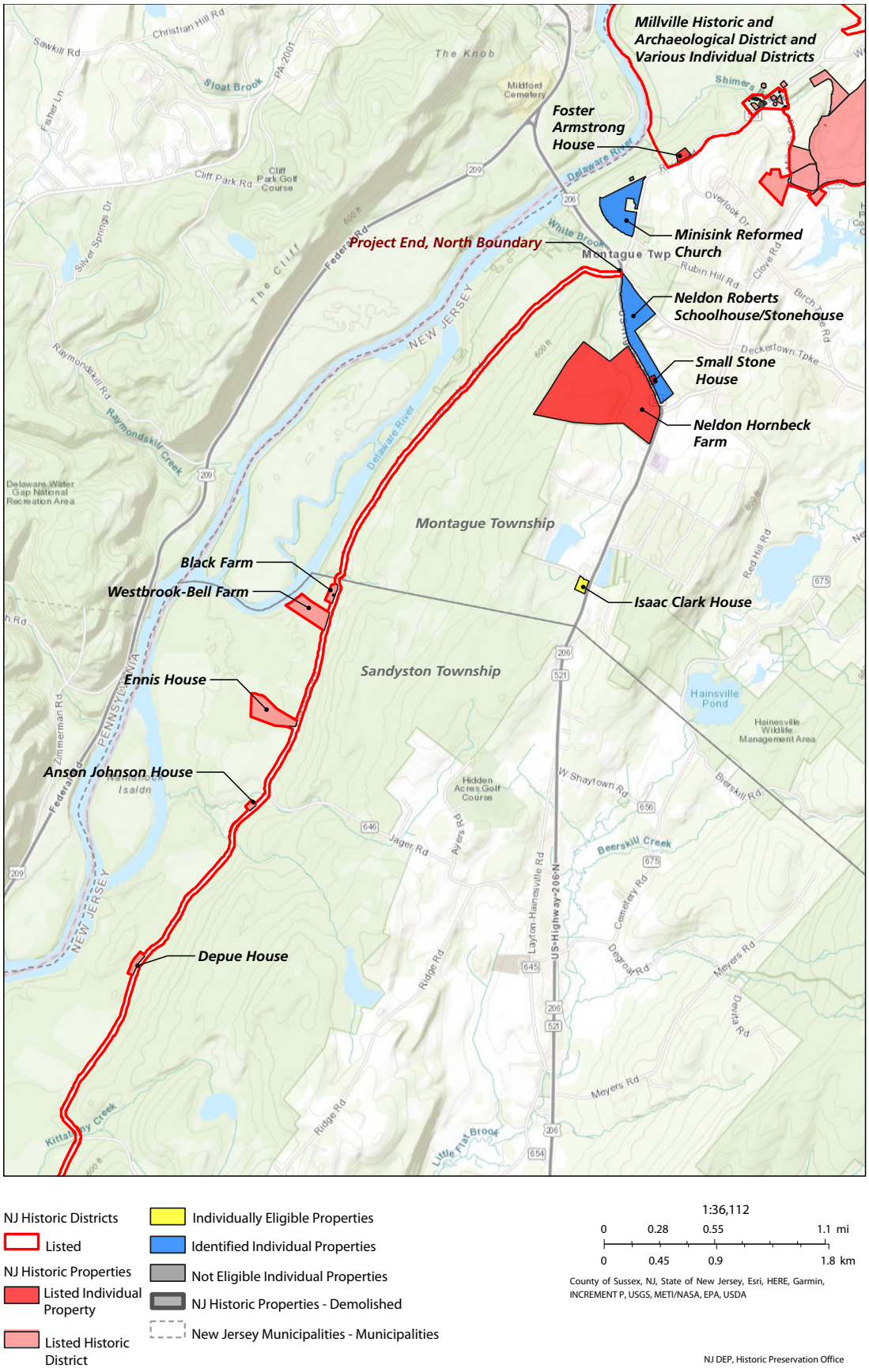


Figure 4.1. Map of the north end of the project area showing the National Register District boundary (red line) and its contributing features (labeled features). The Westbrook-Bell House, which contributes to the Old Mine Road Historic District and Minisink National Historic Landmark District, is individually eligible. The Black Farm Dutch Barn, which contributes to the Old Mine Road Historic District, is also individually eligible (Source: Lucy, NJ CRGIS Online Viewer, 2023).

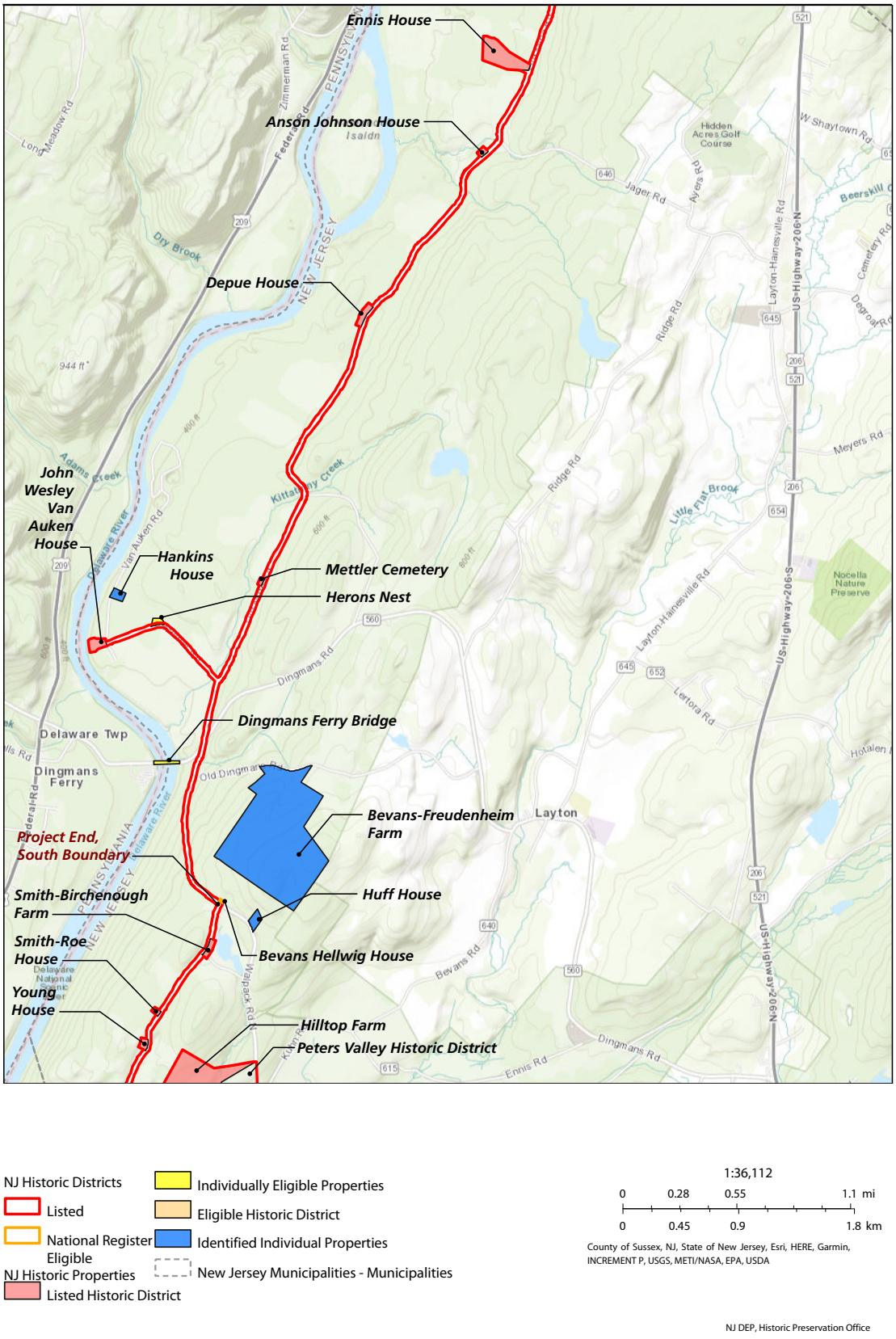


Figure 4.2. Map of the south end of the project area showing the National Register District boundary (red line) and its contributing features (labeled features). There is a resource eligible for inclusion in the Old Mine Road Historic District as a part of a future boundary increase (Bevans-Hellwig House) and a resource eligible for individual listing on the National Register (Heron's Nest) within the project area (Source: Lucy, NJ CRGIS Online Viewer, 2023).

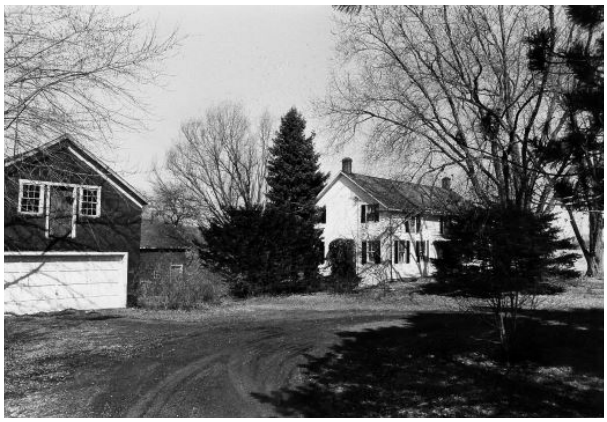


Figure 4.3. Example of changes to a component landscape since the end of the historic period. The Anson Johnson House and property in 1977 (L) and 2023 (R). Note the removed garage by 2023. The drive and some cultural vegetation is still apparent in the landscape (Source: Old Mine Road Historic District National Register Nomination, 80000410 and WLA Studio, 2023).

Component Landscapes

The primary scope of this Cultural Landscape Report (CLR) focused on recordation of the road corridor of Old Mine Road North. The component landscapes within the study area did not receive the same level of recordation or analysis. Because they are important to the developmental history of Old Mine Road North, an overview of each component landscape is provided below. Additional analysis is provided in the Landscape Feature Inventory Table following this section.

Bevans-Hellwig Property (ca. 1796, LCS ID: 009539, mi. 0.00)

The building at the Bevans-Hellwig property is a contributing feature to the Old Mine Road Historic District under National Register Criteria A and C. The property is classified as "Prioritization Category C" in the 2021 *Delaware Water Gap National Recreation Area (DEWA) Historic Buildings Strategy Report*, meaning "rehabilitation and adaptive reuse would only be possible if an entity (i.e., partner or potential lessee) comes forward with the funding to rehabilitate and maintain the building, and a viable plan for its use. The National Park Service would not make any further investment in preservation maintenance on the buildings on these properties but would mitigate any safety hazards as they occur."[816]

Heron's Nest/Frank Stoll House (ca. 1830, Mettler Road)

Both buildings at Heron's Nest are in fair to poor condition. The Heron's Nest site is in a state of severe deterioration. The New Jersey State Historic Preservation office determined the house to be eligible for the National Register of Historic Places in 2007 "under the established agricultural and recreation/farms purchased as summer residences contexts," referring to a 1996 Preliminary Historic Resource Study for DEWA.[817] In a 2016 Determination of Eligibility, the garage was recommended as an additional eligible structure under the same criteria as Heron's Nest, as a part of the same property altered during the same period. In the 2021 *DEWA Historic Buildings Strategy Report*, the property was classified as Prioritization Category D, which has "the lowest priority for long-term preservation and investment."[818]

John Wesley Van Auken House (ca. 1760, Mettler Road)

The John Wesley Van Auken House was listed in the National Register of Historic Places in 1980 as a contributing feature to the Old Mine Road Historic District, with local significance. The John Wesley Van Auken House is privately owned and maintained, and it is the only component landscape that has retained its residential function.

Mettler Cemetery (ca. early nineteenth century, MP 1.65)

Mettler Cemetery, privately owned, was listed in the National Register of Historic Places in 1980 as a contributing feature to the Old Mine Road

816. "Draft Historic Buildings Strategy" (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, July 2021), 80.

817. John J. Donahue to Katherine Marcopul, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area," December 9, 2016, Delaware Water Gap National Recreation Area.

818. "Draft Historic Buildings Strategy," 80.

Historic District, with local significance. The cemetery remained active after the historic period and contains a mixture of historic and modern gravesites.

Depue House (ca. 1780, LCS ID: 990540, MP 2.8)
The Depue House was listed in the National Register of Historic Places in 1980 as a contributing feature to the Old Mine Road Historic District, with local significance. In the 2021 *DEWA Historic Buildings Strategy Report*, the property was classified as Prioritization Category B, which is defined as "buildings possess sufficient historic significance, have continuing use or viable potential adaptive reuses, or other values to merit their long-term preservation. Category B properties should be preserved or stabilized over the long term."[819]

Anson Johnson House (ca. 1840, LCS ID: 082381, MP 4.2)
The Anson Johnson House was listed as a contributing resource to the Old Mine Road Historic District in 1980 with local significance (Figure 4.3). The 1980 National Register nomination survey form recommends the shed as a non-contributing feature due to a lack of integrity, however a 2020 New Jersey Historic Preservation Office Determination of Eligibility update disagrees with the National Register assessment and argues that shed retains enough integrity to contribute to the district.[820] The house was classified as Prioritization Category A in the 2021 *DEWA Historic Buildings Strategy Report*. The report describes the maintenance strategy for Category A buildings as follows: "Category A properties will be the highest priority for periodic maintenance and are repaired as needed. These properties possess central importance in defining or maintaining the historic, architectural, or cultural character of the park and surrounding area. … Category A properties have considerable potential for sustainable or adaptive use either by the park or by others."[821] The shed is identified in the *Historic Buildings Strategy Report* as a non-contributing structure.

William Ennis House (ca. 1751, LCS ID: 009541, MP 4.6)
The Ennis House is a contributing resource to the Old Mine Road Historic District. The 1980 National Register nomination survey form recommends the shed as a non-contributing feature due to a lack of integrity; however, a 2020 NJHPO Determination of Eligibility update disagrees with the National Register assessment and argues that shed retains enough integrity to contribute to the district.[822] According to the 2021 *DEWA Historic Buildings Strategy Report*, the property is classified as Prioritization Category A, indicating that it has "the highest priority for long-term preservation and investment."[823]

Westbrook-Bell Farm (ca. pre-1730, LCS ID:009542, MP 5.14)
The property formerly included three additional buildings which are no longer extant. All extant buildings and structures at the property are contributing to the Old Mine Road Historic District. The Westbrook-Bell House is also listed as the only contributing structure in the Minisink NHL district. The house was built for Johannes Westbrook Jr., one of earliest settlers in the region. The New Jersey SHPO recommended the Westbrook-Bell House for individual listing in the National Register of Historic Places "under Criteria A, C, D for association with early settlement of the Delaware Water Gap and as an example of a significant property type, the Dutch Colonial stone house," with a proposed period of significance of 1725–1965, pending further research.[824] In the 2021 *DEWA Historic Buildings Strategy Report*, the property is classified as Prioritization Category A, as "a typical and well-preserved example of early colonial Dutch domestic architecture."[825]

Black Farm (ca. mid to late eighteenth century, LCS ID: 082392, MP 5.3)
All extant buildings and structures at the Black Farm are listed as contributing features to the Old Mine Road Historic District. In addition, a 2020 SHPO Determination of Eligibility argued that the Black Farm Dutch Barn is eligible for individual

819. "Draft Historic Buildings Strategy," 74.
820. Katherine Marcopul to Sula Jacobs, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area, Historic Properties Management Plan," February 25, 2020, Delaware Water Gap National Recreation Area, 4.
821. "Draft Historic Buildings Strategy," 74.
822. Katherine Marcopul to Sula Jacobs, "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area, Historic Properties Management Plan," February 25, 2020, Delaware Water Gap National Recreation Area, 4.
823. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 10.
824. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 5.
825. "Draft Historic Buildings Strategy," 65.

listing under Criterion C "as a surviving example of an important building type and method of construction," with a "high degree of integrity of location, design, materials, workmanship, feeling, and association."[826] The property is classified as Prioritization Category A in the 2021 DEWA Historic Buildings Strategy Report.[827]

Minisink Reformed Cemetery (ca. pre-1737, MP 7.38)
Minisink Reformed Cemetery, which is privately owned, has not been listed in the National Register of Historic Places and does not have a Determination of Eligibility from NJHPO. The cemetery was active during the historic period and contains historic gravesites and markers. The extent of the burials at the cemetery is unknown.

Period of Significance

The period of significance for the Old Mine Road Historic District is broadly defined as beginning circa 1600 and continuing into the twentieth century. The update to the Determination of Eligibility from the NJHPO states that the areas of significance should also include Entertainment/ Recreation, and that the period should extend to "when the Tocks Island Dam project was authorized by the United States Congress." The letter incorrectly states that the Tocks Island Dam project was authorized in 1965. The Tocks Island Dam project was authorized in 1962.[828] However, 1965 is the year and act of Congress authorized DEWA, and the park was established. The actual designation of the park in 1965 represents a significant change in how these properties were managed and used under federal ownership. A Cultural Landscape Inventory for the River Road system, which includes Old Mine Road North, proposes that the period of significance should begin circa 1710, which corresponds to the earliest documented construction associated with the road system."[829]. For this CLR uses a period of significance of 1600 to 1965 for evaluating Old Mine Road North.

826. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020, 5.
827. "Draft Historic Buildings Strategy," 28.
828. Marcopul to Jacobs, "Updates to Determination of Eligibility," February 25, 2020.
829. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," 1.13-14. Note: A 1710 period of significance beginning excludes the Native American context for the road.

Evaluation of Historical Integrity

The National Register of Historic Places defines integrity as the ability of a property to convey its historic significance through seven aspects of physical resources: location, design, setting, materials, workmanship, feeling, and association.[830] The following evaluation of integrity for Old Mine Road North is based on a period of significance of 1600 to 1965. This evaluation assesses the historic integrity of the cultural landscape of Old Mine Road North, which is contained within the larger Old Mine Road Historic District.

Location
The National Register of Historic Places defines location as the place where a historic property was constructed or the place where a historic event occurred. This section of Old Mine Road is in its original location. By 1931, when the road was first captured in an aerial photograph, the alignment of the road was in its current configuration. The road remains within the right-of-way surveyed in 1932. Engineering improvements have slightly altered the layout of several intersections and made minor modifications to its width and profile. Despite these minor changes to the width and horizontal alignment, Old Mine Road North retains integrity of location.

Design
The National Register of Historic Places defines design as the combination of elements that create the form, land, space, structure, and style of a historic property. The Old Mine Road North cultural landscape retains many design elements related to various eras of improvement to the road, including the engineered topography, profile, and associated drainage features of the roadway itself. The remainder of the cultural landscape is largely a vernacular landscape, which evolved organically over time. The roadway passes several component cultural landscapes. Several buildings within these component landscapes retain integrity of design, despite alterations made over time. However, many buildings that existed along the road during the period of significance are missing today. While the grading, pitch, and vertical alignment of the road

830. National Park Service, "How to Apply the National Register Criteria for Evaluation," National Register Bulletin (U.S. Department of the Interior, 1997), 144–45, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

have remained similar to their condition during the period of significance, the design of the road itself is diminished in areas where engineered drainage ditches have infilled and no longer convey water away from the road. More significantly, the loss of features associated with homesites and farmsteads alongside the roadway has adversely impacted the spatial relationships that defined the character, purpose, and use of the road during the period of significance. These changes to the surrounding landscape diminish the overall integrity of design of Old Mine Road North.

Setting

The National Register of Historic Places defines setting as the physical environment of a property and the overall character of its location. The current setting of Old Mine Road North is rural, with forested areas and some agricultural areas flanking the road. Old Mine Road North winds its way through the landscape, largely following the natural topography with a rising hillside to the east and a relatively flat floodplain to the west. The road crosses many tributaries draining into the Delaware River, passing through distinctive, steep-sided stream valleys. These natural systems and features remain and contribute to the cultural landscape's setting.

For much of the historic period, the land adjacent to the road was open, cultivated farmland. Views from the road during most of this period were, therefore, across open farm land and toward the Delaware River Valley to the west. During the second half of the 1900s, agricultural use of adjacent lands declined, allowing large swaths of open farmland to become filled with successional forests. As a result, the predominant setting for the roadway transitioned from an open, agrarian setting to a more naturalized, wooded setting.

At the end of the period of significance, there were many more privately-owned residential properties along the roadside. These properties featured a variety of building types and small-scale features, which are no longer present. Only a few buildings remain along Old Mine Road North. There are few locations along the roadway with active agricultural fields that allow views toward the Delaware River and the mountains beyond. Overall, the setting of Old Mine Road North remains rural and bucolic reflecting the period of significance; however, the loss of building clusters associated with farmsteads, the extensive loss of views toward the Delaware River, and the overall lack of agricultural features such as fields and orchards undermine the road's ability to convey its original purpose and function. The loss of these features also deprives the road of character defining spatial relationships between it, adjacent open spaces, and former farmsteads. Therefore, the cultural landscape does not retain integrity of setting to the period of significance.

Materials

The National Register of Historic Places defines materials as the physical elements that give form to a historic property. For Old Mine Road North, materials date to several eras of construction of the road itself. The road was continuously maintained and improved throughout the period of significance, evolving from a dirt path to a gravel road and then to a modern paved asphalt roadway with graded subgrade base materials. It is unknown what year Sussex County initially paved the road. It is documented to have been paved by 1966, and it appears, based on the condition of the pavement captured in photographs from that year, that paving of the road occurred within the period of significance. In addition to changes to the paved surface, regular maintenance alongside the road also resulted in upgrades to other features including its drainage structures. Existing road-related construction materials dating to the period of significance include roadside swales, concrete and metal pipe culverts, concrete and stone box culverts, bridges, and remnant subgrade materials beneath the pavement.

The surrounding cultural landscape within the Old Mine Road North roadway study area, including adjacent component landscapes (Bevans-Hellwig House, Heron's Nest/Frank Stoll House, John Wesley Van Auken House, Mettler Cemetery, Depue House, Anson Johnson House, William Ennis House, Westbrook-Bell Farm, and Black Farm), retain some materials from the period of significance. Material evidence from historic farmsteads along the route include stone rows, stone retaining walls, building ruins, fences, wolf trees, and fence line vegetation.

Despite the survival of these remnant features, the fact remains that the current cultural landscape is missing historic materials from dozens of homesites and farmsteads that once lined the roadway and were demolished and removed both

during and after the historic period. These missing homesites and farmsteads exist today mainly as archeological sites.[831] The extensive loss of so many above ground historic features along the roadway undermines Old Mine Road North's ability to convey how physical elements were constructed and the materials used to build these physical features during the period of significance. For this reason, Old Mine Road North does not retain integrity of materials to the period of significance.

Workmanship

The National Register of Historic Places defines workmanship as the physical evidence of the crafts and methods of construction used during the period of significance. Period workmanship is evident in many features along Old Mine Road North. In particular, the poured concrete box culverts and one stone box culvert display workmanship of their respective eras. Several features along Old Mine Road North are consistent with construction methods shown on Works Progress Administration (WPA)-era and post-WPA-era construction drawings for other portions of Old Mine Road. These features include the poured concrete box culverts, concrete headwalls at metal culverts under the road, and concrete guide posts.

Surviving buildings adjacent to and visible from the road reflect the styles and materials popular among different waves of European colonists moving to this area of New Jersey during the historic period. However, many homesites and farmsteads that existed alongside the road during the historic period are missing today. Accordingly, many landscape features including buildings, structures, and small-scale features are missing from the Old Mine Road North roadway.

Despite the main buildings being gone, the remnant stone walls and numerous stone rows along the edges of former fields and property lines reflect the construction practices of farmers in this area during the eighteenth and nineteenth centuries, although some of the stone rows have been disturbed by tree growth and encroaching vegetation. While many features that would convey historic workmanship are missing today, there are many surviving landscape features, especially those associated with the road itself, that accurately reflect construction and engineering principles of their time. For these reasons, Old Mine Road retains a diminished aspect of integrity of workmanship to the period of significance.

Feeling

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the survival and presence of physical features that, taken together, convey the property's historic character. For Old Mine Road North, the feeling of the historic period remains evident in some of the historic road engineering features that remain and continue to reflect early periods of road construction techniques through the mid-twentieth century. Conversely, changes to land use along Old Mine Road North have adversely affected the historic character of the landscape along the roadway. For example, the decline of agricultural use of parcels along the roadway has resulted in open fields being overtaken by woody vegetation. As a result, the loss of views across fields and toward the Delaware River Valley adversely impacts the feeling of the site. Similarly, many houses and farm structures that existed along the roadway are missing today. Also, the NPS has deferred maintenance on some buildings, resulting in them being in poor physical condition. The removal of many buildings and small-scale features, the deteriorated physical condition of surviving buildings, and the changes to vegetation and views along the corridor result in Old Mine Road North no longer possessing integrity of feeling to the period of significance.

Association

Association is the direct link between an important historic event or person and a historic property. Old Mine Road North continues to be associated with the agricultural history of New Jersey through Special Use Permits that allow for the continued use of a few agricultural fields. Additionally, there are buildings and stone rows visible from the road that reflect European settlement of the area, which establishes an association with that historic context. Archaeological resources that support the theory that the road may have been built near an active Lenape settlement site provide an association with the contact period. Old Mine Road North is also associated with the history of transportation along the Delaware River in New

831. While these sites are not mentioned in the National Register nomination or the Determination of Eligibility updates, they should be considered as contributing under Criterion D.

Jersey. The road design includes many features that characterize historic principles of road engineering and construction through time. Many of these features, including historic stone and concrete culverts, remain in place or have been repaired or replaced in-kind over time. Overall, Old Mine Road North retains integrity of association to the period of significance.

Summary Evaluation of Integrity

Overall, the Old Mine Road North landscape retains integrity of location and association with integrity of workmanship and design present, but diminished. The landscape retains sufficient physical features from the historic period to convey Old Mine Road North's historic significance. Loss of integrity in workmanship, setting, feeling, and materials is largely due to changes along the sides of the road within the roadway. These include changes in land use, the revegetation of former agricultural land, and the extensive loss of landscape features associated with the numerous farmsteads and homesites that once lined the roadway.

Cultural Landscape Evaluation

This section evaluates the Old Mine Road North landscape according to National Park Service cultural landscape assessment methods, which employ a framework of landscape characteristics. These methods provide a more detailed assessment of changes to a historic landscape's character than is possible through the National Register Criteria alone. Each landscape characteristic describes specific features in the Old Mine Road North landscape, both present and missing, and evaluates changes made to these features since the end of the period of significance (1965) when the Tocks Island Project was authorized by Congress.

The historic landscape of Old Mine Road North is composed of features related to the continuous historical period between circa 1600 and 1965. The natural and built features of the cultural landscape convey this complex historical period, extending from precontact Lenape habitation of the area to the arrival of European colonists and the subsequent expansion of agricultural activity, extractive industries, and recreational pursuits throughout the landscape. These activities were facilitated by the gradual evolution of Old Mine Road, which changed in response to technological advancements, population fluctuations, and changing needs.

An evaluated inventory of all existing landscape features in the Old Mine Road North study area is provided in Table 4.1. The table identifies historic landscape features and evaluates their significance as either contributing to or non-contributing to the Old Mine Road Historic District. This report focuses on the road and features adjacent to it. Note that a full evaluation of cultural landscape features in the component landscapes is not provided in this report, as these historic landscapes are deserving of detailed documentation in their own right, beyond the scope of this report.

Natural Systems and Features

Natural systems and features are natural aspects of the site that influence the development and resultant form of a landscape. Features include geomorphology, geology, hydrology, ecology, climate, and native vegetation.

Historic Condition (ca. 1600–1965)

Prior to European colonists moving to the area in the early 1700s, natural systems and features were a dominant characteristic of the Old Mine Road North landscape. Before the 1710s, the Munsee Lenape people's impact on natural systems and features included hunting and fishing, using fire to clear land for agricultural plots, planting maize fields, and establishing dispersed hamlet communities connected by foot paths. During the 1600s, most of the area would have had mixed oak-hickory forests, with smaller areas of pine and hemlock forest. Streams and creeks carved through the landscape, draining to the Delaware River. Once they began to arrive in the area during the 1710s to 1730s, European colonists cleared forests and meadows on the flat and fertile terraces east of the Delaware River for agricultural fields, in some cases on land previously farmed by native people. Later waves of colonists cleared the hilly and rocky forested land on Walpack Ridge to the east of the study area. Natural forest successional processes were interrupted by repeated clearing and cultivating throughout the historic period. At some point, creeks and waterways were channelized to travel beneath the roadway through culverts or bridges, altering their natural flow. The natural

drainage patterns of the area were interrupted by roadway grading on Old Mine Road North and site development for houses and farmsteads. Geologic resources of the area were identified and exploited by various mining operations throughout the historic period. Toward the latter end of the historic period, natural forest successional processes began to retake abandoned fields and reforest areas with less desirable farmland. As the agricultural use of the area waned, newcomers sought recreational and leisure experiences offered through the scenic beauty of the naturalized landscape.

Walpack Ridge, located east of the study area, is a defining natural feature of Old Mine Road North, roughly paralleling the Delaware River. Settlers farmed the floodplain area between the ridge and the river. As humans developed farmsteads and homesites in the valley, a trail and later a road connecting these sites developed on the west slope of the ridge. Later, engineers and road builders refined the route, but it continued to roughly parallel this natural feature.

The Delaware River formed the primary drainage feature for the Old Mine Road North study area. All tributaries led to the watercourse, which was located west of Old Mine Road North. The Delaware River created flat and fertile terraces over time, and these topographic features located west of Old Mine Road North influenced settlement and agricultural patterns. The federal government pursued a project to impound the river in the mid-twentieth century. This effort was known as the Tocks Island Dam project. The government never constructed the dam, so the river remained unimpounded. The existing system of drainages and waterways east of the Delaware River provided water for agricultural development along the Old Mine Road North corridor, influencing settlement and farming patterns. The natural drainage patterns of the site were interrupted by roadway grading on Old Mine Road North and site development for houses and farmsteads. Over time, as Old Mine Road North developed, people constructing the road channelized drainages so that they would travel beneath the roadway. The creation of small and large culverts or bridges altered their natural flow.

Kittatinny Creek (MP 2.159) formed one of the primary drainage features in the south-middle portion of Old Mine Road North during the historic period. Originating east of the study area, the road crossed the creek near the Van Ness Road intersection, necessitating the construction of culverts and a crossing for the road. A culvert appears at this location on a 1932 survey of Old Mine Road North.

White Kill (MP 5.38) formed one of the primary drainage features in the north-middle portion of Old Mine Road North during the historic period. Originating east of the study area, the road crossed the creek north of the Van Etten Road intersection, necessitating the construction of a stone culvert crossing for the road. This crossing is one of the oldest recorded crossings located along Old Mine Road North, referred to as Daniel Westfall's Bridge in road returns dating to the early 1770s. At some point, the owners of an adjacent farm constructed a low, small dam creating a small pool west of Old Mine Road North. It is possible the stone pool and dam structure are related to a grist mill Daniel Westfall constructed on the creek during the eighteenth century.

White Brook (MP 7.52) formed one of the primary drainage features on the northern edge of Old Mine Road North during the historic period. Originating east of the study area, the road crossed the creek just south of the U.S. 206 intersection, necessitating the construction of a bridged crossing for the road. This crossing appears on a 1932 survey of Old Mine Road North. A realignment of the road between 1963 and 1969, meant that engineers constructed a new creek crossing, but the hydrology of the creek remained largely unchanged with this road realignment.

Brau Kettle (MP 4.17) is a karst feature that was reportedly a landmark during the colonial period and is a well-known local curiosity. The name derived from a condition where after a heavy rain, people can view water bubbling up from the bottom, which gives it its name Brau (Dutch for brewing or boiling kettle).[832] Though Brau Kettle does not appear on any known historic maps, the feature has been a local landmark since the colonial period.

832. Richard Dalton, "Caves of New Jersey" (Department of Environmental Protection, New Jersey Geological Survey, 1976), https://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin70.pdf.

Post Historic and Existing Condition

Following federal acquisition of the land along Old Mine Road North, many of the agricultural fields flanking the roadway became fallow and were slowly overtaken by natural successional processes. Residential occupation along the road also ceased, and numerous residential structures and outbuilding were demolished or lost to the elements. Recreational uses along Old Mine Road North continued into the post historic period, and the NPS allowed natural processes to reclaim much of the previously managed landscape. As a result, most of the study area adjacent to the roadway is now forested, except for a few special use permit agricultural fields. Today, Walpack Ridge remains a defining feature of the Old Mine Road North landscape.

The hydrology adjacent to and crossing Old Mine Road North is consistent with historic period conditions, though some drainage patterns have changed, causing flooding in some areas along the roadway and dry creek beds in other areas. The climate of New Jersey now is not dramatically different from the historic period, though current climate change models anticipate that there will be a general rise in overall temperatures and precipitation events in the next century. The future climate change related impacts to the landscape's natural systems and features are hard to predict, though increased flood risk potential is likely, which will impact the site's drainage patterns. Within DEWA, natural systems and processes continue largely unhindered by major development or impactful land use activities, as they did for much of the historic period.

"Most of the karst features in DEWA lie in the middle section of Walpack Ridge between Dingmans Ferry and U.S. Route 206."[833] Brau Kettle is a karst feature and "a sinkhole approximately twenty feet in diameter and eight feet dep, grass-covered, except for a small area at the bottom consisting of rocks up to a half-foot in size."[834]

Evaluation

Forest successional processes had begun to retake abandoned fields during the historic period. Following federal acquisition of the site, these processes increased as more agricultural land went uncultivated. Decades of regrowth have produced a largely forested landscape in an area that was once characterized by open fields and farmsteads. Though this trend has changed the visual character of the roadway immensely, the natural systems and features within the Old Mine Road North study boundary were a defining aspect of the landscape during the historic period and remain so today. The natural beauty of the area drew visitors during the late nineteenth century and through the twentieth century, which contributed to the development of the site as a national recreation area. The Delaware River Valley, with its tributaries, forest, and dramatic landforms, are part of the same natural systems that existed at the site prior to 1965, although natural forest regrowth has altered the area's visual character. Overall, the site's natural systems and features contribute to the historic setting of Old Mine Road North. However, it should be noted that continued naturalization has the potential to fully obscure the historically agrarian landscape of Old Mine Road North.

Walpack Ridge's western slope continues to form the "uphill" or east side of Old Mine Road North, reflecting the location of the road and its adjacent features during the historic period. Today, the main stem of the Delaware River is the longest undammed river in the eastern United States. The river corridor preserves essential habitat for the sustained health of plant and animal communities, including special status species. The unimpounded river is in its historic location and condition and continues to reflect the historic period.

The hydrology adjacent to and crossing Old Mine Road North is consistent with historic period conditions, though some drainage patterns have changed, causing flooding in some areas along the roadway, and dry creek beds in other areas. Though human intervention has altered some of the micro drainage patterns, the majority of the drainages and tributaries continue to flow toward the Delaware River and continue to contribute to the natural scenery and setting, reflecting the historic period. Features include Kittatinny Creek, White Kill, and White Brook. Though karst landscapes are ever changing, Brau Kettle remains in its original location, west of Old Mine Road North, and reflects the road's historic setting.

833. Ron Witte and Donald Monteverde, "Karst in the Delaware Water Gap National Recreation Area," *New Jersey Geological Survey Newsletter,* Unearthing New Jersey, 2, no. 1 (2006): 5.
834. Dalton, "Caves of New Jersey."

Spatial Organization

Spatial organization is the three-dimensional character of a landscape formed by the ground, vertical, and overhead planes.

Historic Condition (ca. 1600–1965)

The Delaware River is both a natural barrier and corridor, the line that demarcated the territory between Pennsylvania and New Jersey, and an axis from which development spurred in the region. The topographic conditions created during the formation of the Delaware River Valley largely defined the spatial organization of Old Mine Road North and its surrounding development. During the historic period, European homesteaders recognized the agricultural potential of the flat and fertile area between the Delaware River terrace and the steep slopes of Walpack Ridge, as the Munsee Lenape people had before European arrival. Despite the erroneous mythology surrounding the road's origins as the result of Dutch copper mining, historical evidence clearly indicates that Old Mine Road North developed organically alongside agricultural settlement patterns during the early eighteenth century. The road follows the base of the ridgeline, reserving the narrow terrace extending toward the river for agricultural while ensuring that the roadway would not be too steep to traverse. Old Mine Road North served as the primary circulation axis through the area, and residential development organized around it. Historic parcel boundaries, houses and farmsteads, auxiliary roads, tree lines, and fields were all oriented in relationship to Old Mine Road North.

The land west of Old Mine Road North is generally flatter. As a result, historic homesites, fields, and farmsteads concentrated on this more easily developed side of the roadway. Almost all the remaining historic buildings in the study area are on the west side of the roadway. Later waves of homesteaders established farms on the less desirable and steeply sloped eastern side of the roadway, seeking any available land.

The roadway was likely surrounded by a densely forested overhead canopy at the beginning of the historic period, which gradually opened to a wide viewshed across the valley as farmers cleared more forests for fields. Farmers moved large stones from the land and placed them in rows along the roadway and along property lines perpendicular to the roadway, forming a visual pattern of spatial organization in relationship to the roadway. As the area developed, trees grew up along the stone rows, further delineating the boundaries between fields and property lines, and farmers often situated fence lines along stone rows. Farmers did retain woodlots for lumber, firewood, and other uses, especially on inarable embankments and ravines. A 1931 aerial photograph shows the extent of fields and forested areas along the road by that time, with small farmsteads generally clustered close to the roadway. By the end of the historic period, aerial imagery indicates that several former fields had been released to succession, and there were numerous auxiliary roads, driveways, and homesites lining the extent of the roadway.

Post Historic and Existing Condition

Following the historic period, the topographic conditions of the overall landscape and the roadway corridor remained in place, except for the former Layton quarry/gravel pit on the west side of the roadway near Mettler Road which heavily modified the landform in that area. The spatial organization of the built environment did change following federal acquisition of the site. As numerous houses and farmsteads lining the roadway were demolished by the US Army Corps of Engineers, several fields became fallow, and successional forests overtook much of the area. The regrowth of the forested land area narrowed the viewshed surrounding the roadway, creating a dense overhead canopy along much of the roadway. The NPS retained agricultural Special Use Permits on some historic fields, maintaining an open viewshed in these areas. Stone rows, tree lines, and large wolf trees remain in the forest as markers of the former spatial organization. Remnants of building foundations and other structures provide visual indications of the former arrangement of homesites along the roadway. Road traces, now blocked by downed trees or earthen mounds, are faint indicators of the former circulation spurs on Old Mine Road North.

Evaluation

At present, historic spatial organization patterns are still evident in many areas along the roadway. The roadway retains its historic alignment and relationship to the surrounding topography. The remaining buildings, structures, and ruins along the roadway corridor help communicate the historic spatial organization of homesites and farmsteads.

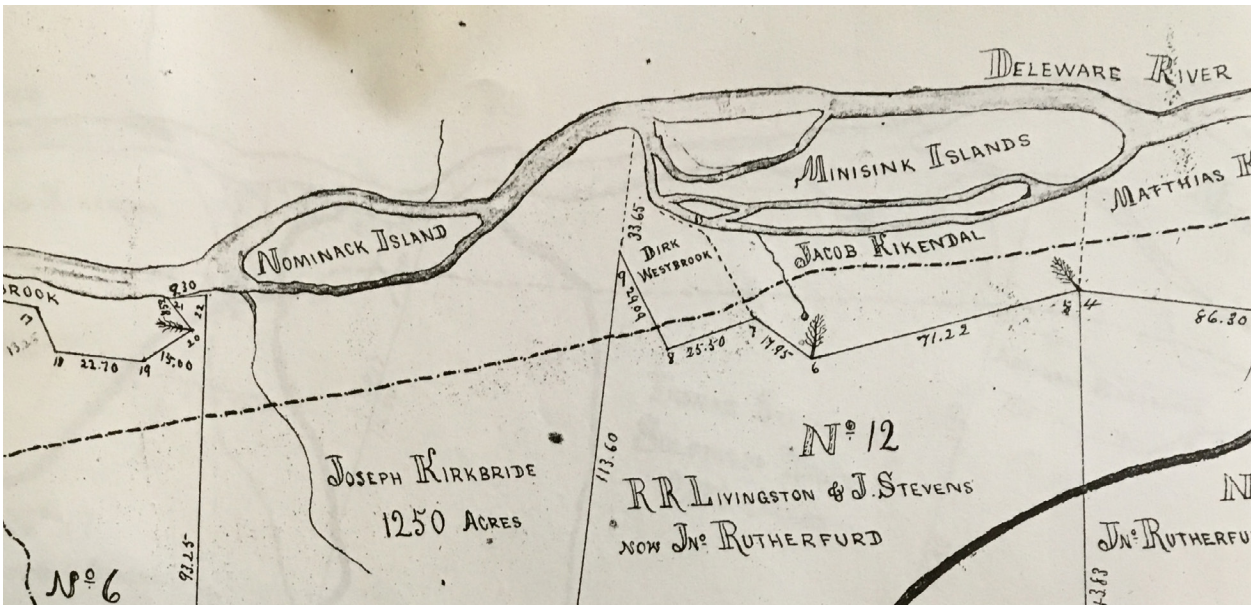


Figure 4.4. 1872 map "Copied from a Map Owned by John D. Everitt," by Ge. E. Hursh. Note the use of large trees as markers for parcel boundaries (Source: DEWA Archives).

The historic alignment of property boundaries and agricultural fields is still visible by the remaining stone rows and tree lines, even where fields have since been overtaken by forest. Past agricultural fields are also evidenced by different types and compositions of successional vegetation, which may vary between fields that were abandoned at different times or fields adjacent to forested areas that were never cleared. Despite the loss of historic fabric, the historic configuration of the road and its surroundings is still evident; thus, the existing spatial organization contributes to the historic setting of Old Mine Road North.

Land Use

Land Uses are the principal activities in the landscape that have formed, shaped, or organized the landscape because of human interaction.

Historic Condition (ca. 1600–1965)

Earlier histories often attributed the construction of Old Mine Road to seventeenth century Dutch copper miners. However, modern historians have dispelled this narrative as local lore. Rather, historical evidence suggests that Old Mine Road North developed organically throughout the eighteenth century, gradually extending southward along the New Jersey bank of the Delaware River to accommodate incoming European colonists. Due to the presence of copper deposits and other geologic resources in the area, there is a notable history of mining ventures and quarrying activities in other areas of the DEWA landscape. However, there is little evidence of mineral extraction activities within the study area during the historic period, except for the former Layton quarry/gravel pit at MP 1.3, which appears to have been active sometime between 1957–1963. There are sand quarry pits visible in LIDAR imagery outside the road prism off Minisink Cemetery Road/Winant Trail (MP 4.88).

State, county, and township political boundaries changed throughout the historic period, which may have been of little consequence to this remote farming community somewhat removed from the centers of major economic development in the state. Early surveyors of Old Mine Road North used natural landmarks such as trees and large stones to define parcel boundaries (Figure 4.4). In general, parcel boundaries were determined by topographic conditions and proximity to the roadway.

The primary land use practices along Old Mine Road North during the historic period were agriculture and homesteading and outdoor recreation and leisure activities. Old Mine Road developed organically alongside agricultural settlement patterns, gradually extending southward alongside the river to provide access to potential farmland. European colonists were attracted to the fertile flat lands of the Delaware River terrace, which had long been cultivated by the Munsee

Lenape people that preceded them. The earliest waves of European newcomers in the 1700s cleared land for cultivation or cultivated land previously cleared by the Lenape. This practice continued into the nineteenth century. By 1900, much of the land adjacent to Old Mine Road North was cleared, but there were still some pockets of forest (Figure 4.5). European homesteaders typically established their farmsteads near the roadway, retaining the land west of the road, where the terrain was flat and easier to cultivate, for fields and pasture. Many farmsteads included open cultivated fields, pastures, and fruit orchards. Early farmers grew a variety of crops, including corn, wheat, rye, oats, buckwheat, and flax. Fruit orchards were also common features on farmsteads, as were herb and vegetable gardens. Common livestock animals included oxen, horses, cattle, pigs, sheep, and poultry, and many farmers supplemented their diets with wild game.

As the population increased during the late eighteenth and early nineteenth century, new arrivals established farmsteads on the sloped, rocky terrain on the east side of Old Mine Road North. While clearing these areas for cultivation,

Figure 4.5. Portion of a 1900 map showing the forested areas around Old Mine Road North (noted in red). Note the limited amount of forested area adjacent to the roadway (Source: Rutgers University, Smock and Vermeule, 1900).

farmers collected fieldstones and stacked them to form stone rows. These stone rows were used to demarcate property lines and field boundaries and became common features throughout the landscape. Farmers removed some of these stone rows as they expanded their fields to accommodate new agricultural machinery during the nineteenth and twentieth centuries. During the mid to late nineteenth century, many farmers transitioned to dairying, growing greater amounts of hay and corn, and building a variety of outbuildings to accommodate milking equipment and feed/silage stores. Additionally, the introduction of mechanized farm equipment and personal automobiles led to the construction of new storage sheds and garages on farmsteads. By the late nineteenth century, many farmers were unable to compete in the marketplace and abandoned their farmsteads. While many open cultivated fields returned to a state of natural succession, many stone rows and fencerows were left in place (Figure 4.6, Figure 4.7).

In general, commercial activities were concentrated in nearby towns and villages, which contained various types of mills, distilleries, craftsmen, general stores, and other establishments. However, historic maps indicate that there were some commercial land uses occurring along Old Mine Road North during the historic period. The 1860 "Map of Sussex Co., New Jersey" by Griffith Morgan Hopkins Jr., for example, shows a blacksmith shop at the north end of Old Mine Road North (Figure 4.8). According to the map, the blacksmith was on the east side of the road, just south of White Brook. The map also shows a distillery on Van Ness Road, just outside of the project area, and at the south end of Old Mine Road North, the map shows a store directly across the road from the Bevans-Hellwig property.

Social institutions that existed along Old Mine Road North included churches and schools. During the eighteenth century, the Minisink Dutch Reformed Church established a church building and cemetery on the west side of Old Mine Road North, toward the north end of the study area. Historic maps depict two schools along the corridor, one near the Westbrook-Bell House and another near Van Ness Road. Both the Minisink Dutch Reformed Church and the two schools had ceased operations prior to the end of the historic period.

There are multiple burial sites and cemeteries located along Old Mine Road North. In addition to the cemetery at the site of the Minisink Dutch Reformed Church, burial sites along the Old Mine Road North corridor that date to the historic period include the Minisink/Westbrook Burial Ground, the Brace-Everitt Cemetery, and Mettler Cemetery.

The dispersed farming community of the Delaware River Valley changed as the commercial viability of farming waned in the region toward the latter end of the nineteenth century. During the nineteenth century, the bucolic agrarian and mountainous landscape came to be recognized for its tourism potential. Outdoor recreation and leisure activities became land use practices along Old Mine Road North during the early nineteenth century. Initially, attraction to the area was spurred by romantic illustrations of the Delaware River Valley. By the mid-nineteenth century, several hotels and other accommodations had been established throughout the valley, offering tourist outdoor experiences like hiking, fishing, and boating excursions. Bicycle tours along Old Mine Road, and later automobile tours, also became popular pastimes among summer vacationers. Most hotels and inns were in village centers, but some farmers also capitalized on the tourism industry by renting rooms to summer vacationers. By the early twentieth century, struggling farmers sold their property to buyers who converted the farmsteads to vacation homes. As a result, the landscape characteristics of these properties changed. As their agricultural use became somewhat secondary, these properties became less utilitarian and more ornamental. Heron's Nest, for example, was an agricultural property converted into a second home, at which point it acquired a more ornamental landscape design appropriate for its use as a leisure setting. By the time the US Army Corps of Engineers began acquiring land for the Tocks Island Dam project in 1967, the Old Mine Road North corridor was dotted with dozens of historic farmsteads, cabins, and vacation homes.

Beginning in the 1920s, the Boy Scouts of America established numerous Boy Scout camps on the New Jersey side of the Middle Delaware River Valley, including Camp Weygadt, Camp Minsi,

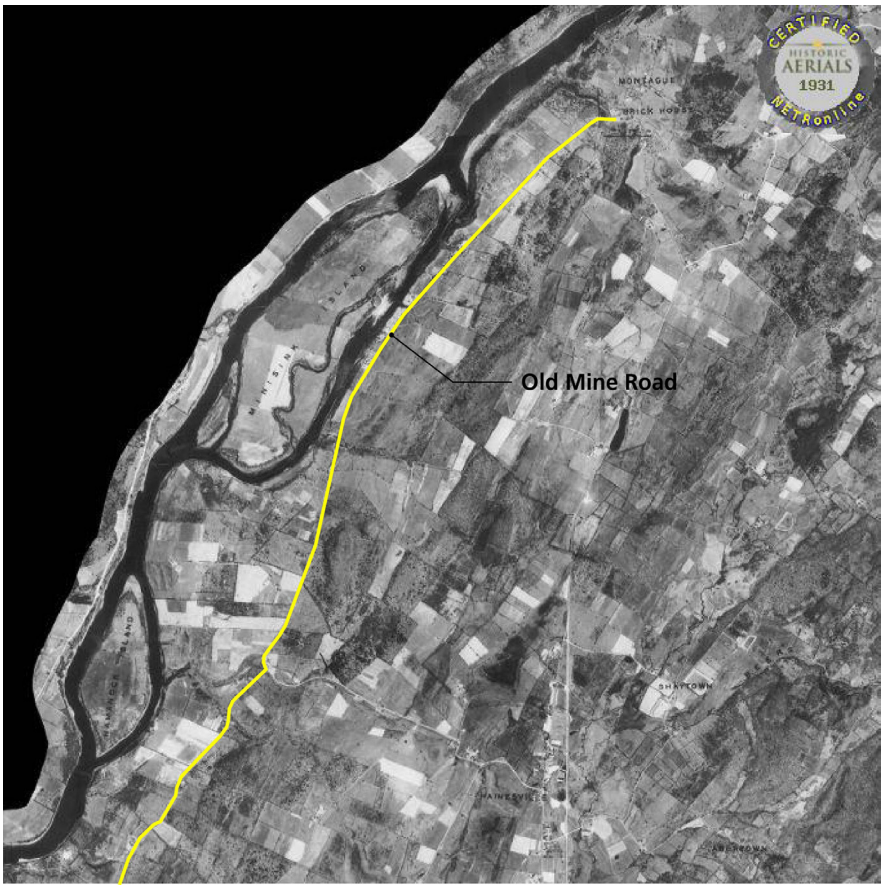


Figure 4.6. Historic aerial photograph from 1931. Note the numerous agricultural fields along Old Mine Road North (Source: Historic Aerials, https://www.historicaerials.com/viewer).

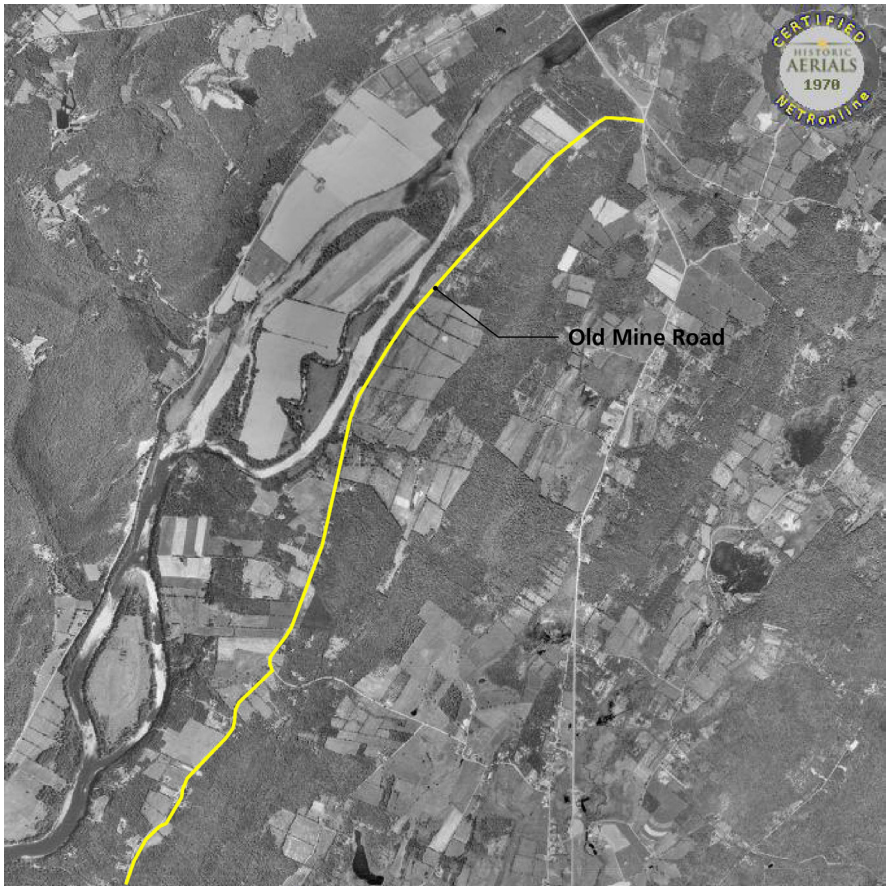


Figure 4.7. Historic aerial photograph from 1970. Note the increase in forested areas along Old Mine Road North (Source: Historic Aerials, https://www.historicaerials.com/viewer).

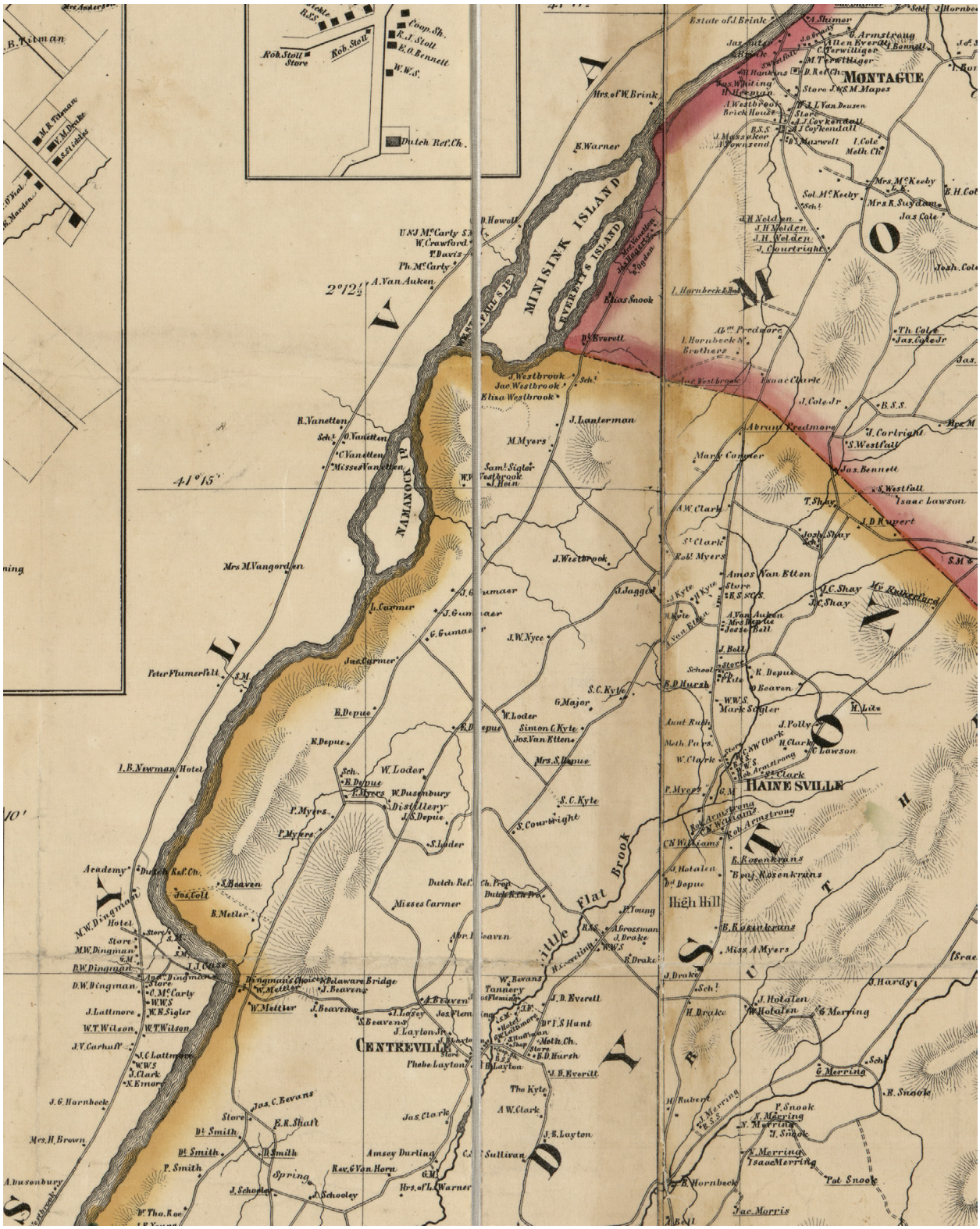


Figure 4.8. 1860 map showing the location commercial establishments along Old Mine Road North. From Griffin Morgan Hopkins, Jr.,"Map of Sussex Co., New Jersey: from actual surveys & records.," Philadelphia: Carlos Allen, M.D., Publisher, 1860 (Source: Library of Congress, https://www.loc.gov/item/2012593681/).

Camp Pahaquarra, Camp Mohican, Camp No-Be-Bo-Sco, Camp Ken-Etiwa-Pec, and Camp Cowaw. The creation of numerous Boy Scout camps speaks to popularity of the Middle Delaware River Valley as a recreation landscape. Although none of these Boy Scout camps were located within the project area, it is possible that the Boy Scouts did interact with or use Old Mine Road North for various camp-related activities.

Post Historic and Existing Condition

Following federal acquisition of land along the Old Mine Road North corridor, residential land uses remained but were limited to a small number of private inholdings within DEWA. The US Army Corps of Engineers razed many historic residences and farmstead outbuildings. Large quantities of formerly agricultural land was abandoned and returned to natural succession. Historic residences and farmstead buildings that escaped demolition ceased to serve a residential or agricultural purpose and have been kept vacant. The NPS did retain some historic agricultural fields along the west side of Old Mine Road North, which are actively leased to local farmers. The presence of active agricultural fields is reflective of agricultural land use traditions practiced along Old Mine Road North during the historic period. However, the acreage under cultivation is much smaller than it was throughout the historic period. Many of the stone rows and fencerows historically used to demarcate property lines and field boundaries are still extant along Old Mine Road North, however they are partially obscured due to increased vegetation and forest regrowth.

Use of the former Layton quarry/gravel pit operation near Mettler Road continued through the 1970s, after which the site was abandoned. The site has since returned to natural succession and been obscured by tree growth.

The cemetery use that existed during the historic period remains along Old Mine Road North. Mettler Cemetery is still active and contains a mixture of historic and modern gravesites. Though it is no longer visible from Old Mine Road North, the Sandyston Township Historical Society still actively maintains the Minisink/Westbrook Burial Ground (Ancient Minisink Cemetery). The Brace-Everitt Cemetery has become obscured by vegetation and forest encroachment. The Minisink Dutch Reformed Church Cemetery directly abuts Old Mine Road North and is still visible, but the boundaries and gravesites are not clearly defined. The Minisink Dutch Reformed Church is no longer extant and was removed during the historic period after the congregation relocated to a new church in Montague, north of the study area.

Recreational use of the area has continued since the end of the historic period, albeit in a different form, as the activities permitted within DEWA are restricted by the National Park Service. Common recreational activities that occur along Old Mine Road North include scenic driving, motorcycling, hiking, camping, picnicking, canoeing, and fishing. Old Mine Road North is also still frequented by cyclists, as it was during the historic period, and Old Mine Road North is a popular route for cyclists as there is minimal vehicle traffic along the roadway. The residential, long-term vacation land use pattern that existed in the form of vacation homes and rental cottages during the historic period is no longer present; and Old Mine Road North's history as a vacation destination is not readily apparent.

The NPS actively manages the forests at DEWA for overall forest health, to reduce fire risk, and to promote successional forest for wildlife habitat. Prescribed burning, thinning, and the removal/treatment of invasive exotic species are all activities associated with this tradition.

Evaluation

Of the land uses that existed during the historic period, agricultural, burial, and recreational land uses persist into the present. Agricultural land use practices are still evident on the open cultivated fields that are actively maintained along the corridor. However, the acreage under cultivation is much smaller than it was throughout the historic period. The remaining fields, though much fewer, do contribute to the historic setting and feeling of Old Mine Road North.

While the nature of the recreational land use has changed somewhat since the historic period, a variety of different historic recreational land uses are still practiced along Old Mine Road North.

Although residential land uses continue on a handful of private inholdings within the study area, a majority of the residential land use pattern has been lost. Overall the use of potentially habitable

residential sites is missing from the cultural landscape.

Use of the Layton quarry/gravel pit operation near Mettler Road continued through the 1970s, after which the site was abandoned and left unreclaimed. The site has since returned to natural succession and been obscured by tree growth. According to the National Register nomination for the Old Mine Road Historic District, the former Layton quarry is intrusive and non-contributing.

Institutional land use patterns, including religious and educational uses, ceased prior to the end of the historic period, and these uses are no longer present along Old Mine Road North.

Despite the loss of the historic residential land use pattern along Old Mine Road North, several other historic land use practices have persisted into the present that help communicate the land use history of Old Mine Road North.

The cemetery use present during the historic period remains along Old Mine Road North. Mettler Cemetery is still active and contains a mix of historic and modern gravesites. The Brace-Everitt Cemetery has become obscured by vegetation and forest encroachment. The Minisink Dutch Reformed Church Cemetery abuts Old Mine Road North and is still visible, but the boundaries and gravesites are not clearly defined.

Cultural Traditions

Cultural Traditions are the practices that have influenced the development of the landscape in terms of land use, patterns of land division, building forms, stylistic preferences, and the use of materials.

Historic Condition (ca. 1600–1965)

European colonists often built houses in the vernacular architectural traditions of their place of origin. The construction methods and forms of the Black Farm Dutch Barn, Ennis House, and Westbrook-Bell House are examples of Dutch architectural traditions introduced during the early colonial period. Later waves of English incomers introduced the I-House domestic architectural form, present at the Black Farm House, the Anson Johnson House, and the John Wesley Van Auken House. By the post-revolutionary period, architectural traditions along the Old Mine Road North began to reflect broader national trends, such as the popular adoption of the Federal style as seen at the Black Farm main house.

Toward the end of the historic period, historical advocacy groups in the area began to recognize the historical importance of Old Mine Road North and its adjacent resources. The Daughters of the American Revolution recognized the historical significance of the Westbrook-Bell Farm and erected a stone marker at the entrance drive in 1934. Around the end of the historic period, public opposition to the Tocks Island Dam mounted around concerns about the potential loss of historical and natural resources.

Post Historic and Existing Condition

There are several historic farmsteads along Old Mine Road North that reflect Dutch and English architectural traditions introduced by European colonists during this historic period. The Westbrook-Bell House, the Ennis House, and the Dutch Barn at the Black Farm are all good extant examples of Dutch architectural traditions. Meanwhile, the Anson Johnson House, John Wesley Van Auken House, and the main house at the Black Farm are good examples of English architectural traditions.

After federal acquisition and the creation of DEWA, the NPS established a strategy to preserve and interpret park resources. Architectural resources were organized on a tiered system, with preservation treatment approaches based on the resources' integrity, significance, and condition. Unfortunately, however, preservation maintenance for many the remaining buildings along Old Mine Road North has been minimal. Standard home maintenance practices that contribute to long-term preservation were interrupted by federal land acquisition. As a result, many of the extant buildings along Old Mine Road North are in poor condition. Historic and cultural interpretation along Old Mine Road North is limited to a few historical markers.

Evaluation

The extant architectural resources and component landscapes serve as important physical representations of Dutch and English architectural and cultural traditions. Old Mine Road North is still in its general historic location,

only slightly altered via grading and straightening at various points during this historic period. The tradition of historic preservation has continued to the present, albeit limited. Many of the historic resources located along Old Mine Road North have not received adequate maintenance and are in poor condition, threatening their long-term preservation.

Cluster Arrangement

Cluster Arrangements refer to the location and patterns of buildings, structures, and associated spaces in the landscape.

Historic Condition (ca. 1600–1965)

Several different types of cluster arrangements were present along Old Mine Road North throughout the historic period, including farmstead clusters and village clusters. Village clusters were located at the north and south ends of Old Mine Road North. At the north end, a small community developed around the Brick House Hotel, established ca. 1776 (this village was later referred to as Montague). At the south end of Old Mine Road North there was a small crossroads community known as Bevans, named for the Bevans family that established a farmstead there. South of Bevans, just outside the project area, there was a larger village called Peters Valley. Historically, village clusters in the Delaware River Valley developed in a linear pattern, consisting of buildings along a central roadway. Montague was centered along a portion of the Old Mine Road System just north of the project area, while Peters Valley was clustered along roads adjacent to Old Mine Road.

Farmstead cluster arrangements along Old Mine Road North typically consisted of an assemblage of outbuildings organized around the main dwelling. Outbuildings within in a cluster often included cattle barns, hog barns, corn cribs, silos, sheds, garages, and milk houses, among others. The types of outbuildings varied over time and spoke to the types of goods different farms produced. Dairying, for example, became more common during the mid to late nineteenth century, and cluster arrangements on dairy farms often featured multiple silos to accommodate large quantities of cattle feed. Meanwhile, the advent of motorized farm equipment during the early twentieth century led to the construction of additional storage sheds. The widespread adoption of personal automobiles around this time was often accompanied by new garage outbuildings.

An aerial photograph from 1931 shows approximately nineteen farmstead clusters along Old Mine Road North (Figure 4.9). The farmstead clusters are often located directly alongside the road, and some span both sides of Old Mine Road North. Extant properties known to have had cluster arrangements during the historic period include the Bevans-Hellwig Farm property (MP 0.0), the Heron's Nest property (Mettler Road), the John Wesley Van Auken House property (Mettler Road), the Depue House property (MP 2.8), the Anson Johnson House property (MP 2.4), the Ennis House property (MP 4.6), the Westbrook-Bell House property (MP 5.14), and the Black Farm property (MP 5.3).

The Bevans-Hellwig property dates to the late eighteenth century. The Bevans-Hellwig farmstead cluster was known to have contained a main house (composed of multiple additions), two barns, a privy, and a tool shed. A 1931 aerial photograph suggests that other outbuildings were also clustered around the main dwelling, but research has not uncovered additional information about these buildings (Figure 4.10).

The original portion of the Heron's Nest property dates to circa 1830. During the 1930s, a garage outbuilding with a second-floor apartment was constructed on the property. A 1931 aerial photograph suggest that other outbuildings were also clustered around the main dwelling, but research has not uncovered additional information about these buildings (Figure 4.11).

The John Wesley Van Auken House property dates to circa 1760. A large barn on the property is known to date to the historic period and is visible in a 1931 aerial photographs (Figure 4.12). By the 1970s, a small shed and rental cottage were also located on the property (it is possible that these outbuildings also date to the historic period but were not documented until the 1970s).

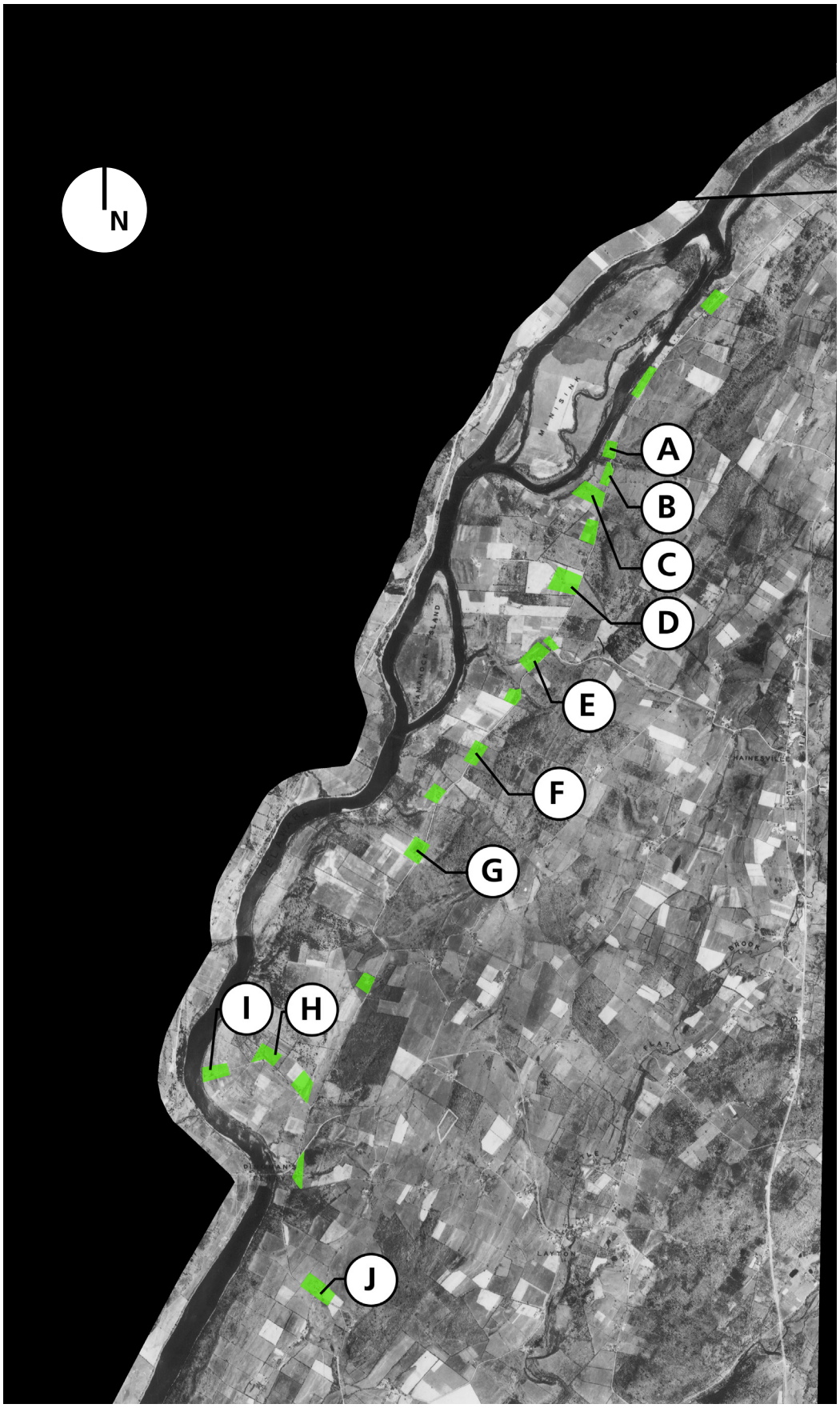


Figure 4.9. Farmstead clusters present in 1931 are highlighted in green. Known farm names include A) Everitt, 2) Black, 3) Westbrook-Bell, D) Ennis, E) Anson Johnson, F) Gumaer, G) Depue, H) Heron's Nest, I) Van Auken, J) Bevins-Hellwig (Source: Historic Aerials, https://www.historicaerials.com/viewer, annotated by WLA Studio, 2023).

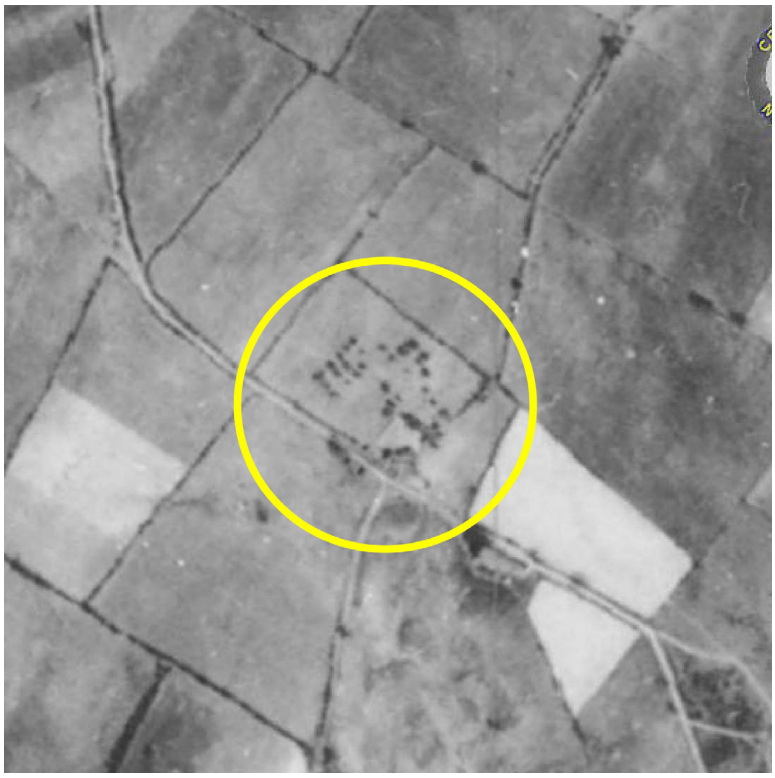


Figure 4.10. 1931 aerial photograph of the Bevans-Hellwig property, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

Figure 4.11. 1931 aerial photograph of Heron's Nest, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

Figure 4.12. 1931 aerial photograph of the John Wesley Van Auken House, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

Figure 4.13. 1931 aerial photograph of the Depue House, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

The Depue House property dates to circa 1780. Oral histories indicate the original barn was demolished sometime around 1880, following the construction of a new barn and corn crib in 1876. An undated historic photograph shows outbuildings positioned on the opposite side of Old Mine Road North from the main dwelling. A 1931 aerial photograph suggests that other several outbuildings were clustered around the main dwelling, but research has not uncovered specific information about these buildings (Figure 4.13).

The Anson Johnson House property dates to circa 1840. A small shed (possibly a barn) on

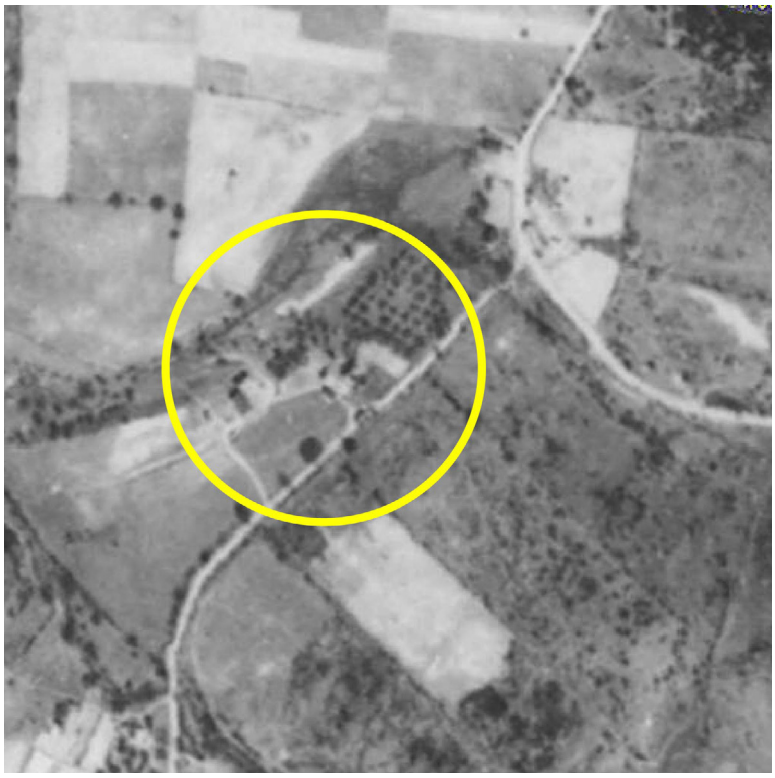


Figure 4.14. 1931 aerial photograph of the Anson Johnson House, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

Figure 4.15. 1931 aerial photograph of the Ennis House, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

the property is known to date to the historic period and is visible in a 1931 aerial photograph. This photograph suggests that several other outbuildings were clustered around the main dwelling, but research has not uncovered specific information about these buildings (Figure 4.14).

The Ennis House property dates to 1751. An undated historic photograph shows several two small outbuildings clustered around the main dwelling, and a 1931 aerial photograph indicates that several outbuildings were present (Figure 4.15). Research has not uncovered specific information about these buildings.

Figure 4.16. 1931 aerial photograph of the Westbrook-Bell Farm, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/ viewer; annotated by WLA Studio).

Figure 4.17. 1931 aerial photograph of the Black Farm, shown in the yellow circle (Source: Historic Aerials, https://www.historicaerials.com/viewer; annotated by WLA Studio).

The Westbrook-Bell House property predates 1730, likely built circa 1725. A barn is known to have existed on the property by 1730. A 1931 aerial photograph show several large outbuildings clustered around the main house, but research has not uncovered specific information about these buildings (Figure 4.16).

The main house at the Black Farm property dates to circa 1842 but was built on the foundation of an older house. Historic outbuildings known to have existed within the Black Farm farmstead cluster include a stone springhouse, a large Dutch barn, and smaller secondary barn, and a corn crib/wagon shed. Based on a 1931 aerial photograph, it is possible that other outbuildings were present during the historic period, but research has not uncovered specific information about these buildings (Figure 4.17).

Post Historic and Existing Condition

The village clusters located at the north and south ends of Old Mine Road North are no longer extant, and most of the historic farmstead clusters located along Old Mine Road North have been lost. The US Army Corps of Engineers (USACE) removed most of these farmstead clusters during the early 1970s. Of the nineteen farmstead clusters visible along Old Mine Road North on a 1931 aerial photograph, only eight have portions of their clusters that are still extant (Figure 4.18).

A majority of the eight remaining farmstead clusters have lost all or most of their outbuildings, to the extent that their historic cluster arrangement is no longer legible (the John Wesley Van Auken House is on private property, and the current state of its historic cluster arrangement is unknown).

The only farmsteads with a substantial portion of their historic farmstead clusters remaining are the Westbrook-Bell property and the Black Farm property. Two large barns and privy are extant at the Westbrook-Bell House, and elements of the historic cluster arrangement around the main dwelling are still evident. At the Black Farm, the large Dutch barn, corn crib/wagon shed, and stone spring house are extant and help illustrate the historic cluster arrangement on this property. Additionally, there is a large concrete foundation that marks the location of a former outbuilding at the Black Farm, just south of the Dutch barn.

Evaluation

Unfortunately, most of the cluster arrangements that existed during the historic period are no longer extant. Of the historic farmstead clusters identified on the 1931 aerial photograph, only the Westbrook-Bell property and the Black Farm have retained enough intact historic material to effectively communicate their historic cluster arrangement.

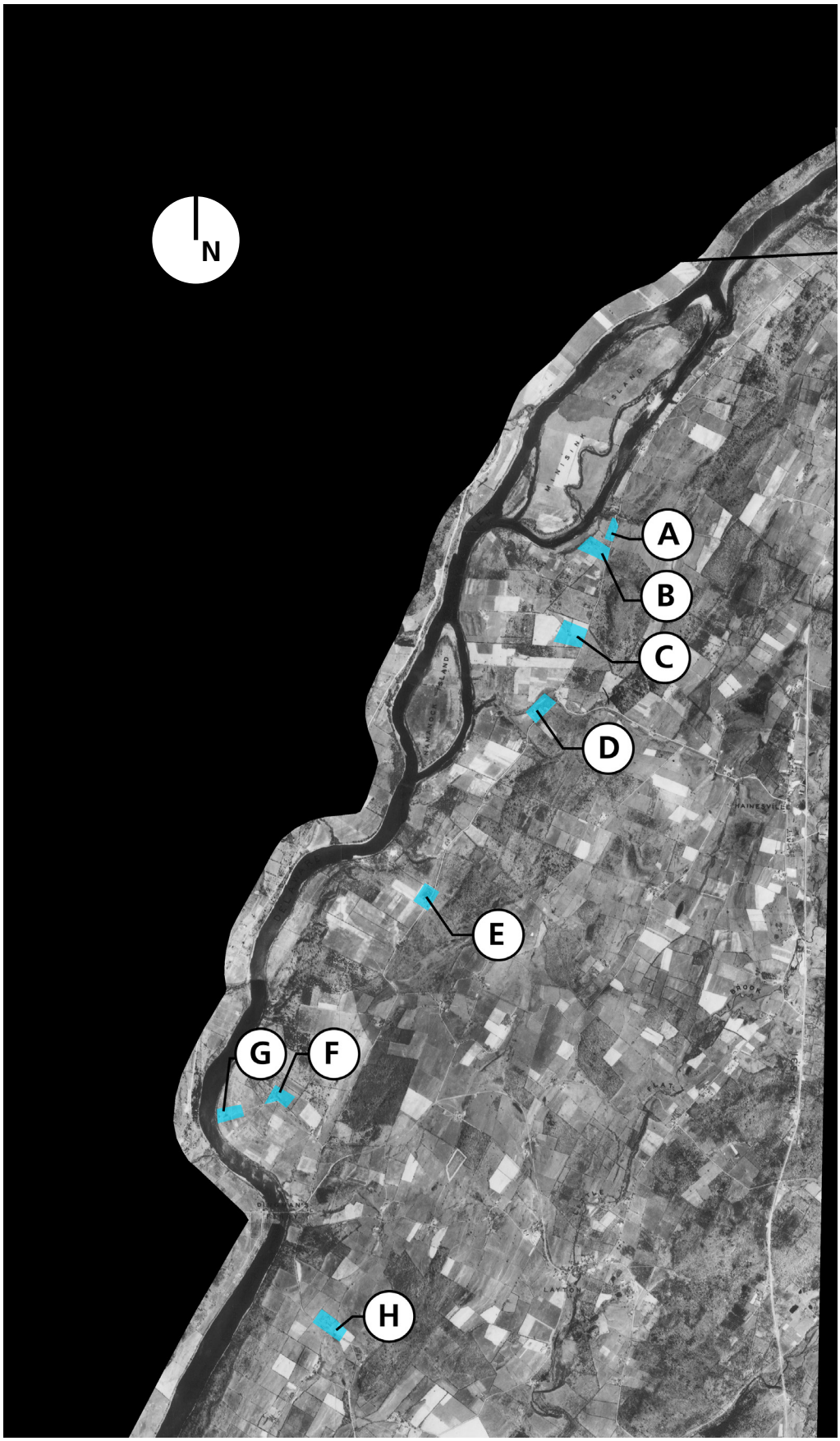


Figure 4.18. Farmstead clusters that are still extant or partially extant are highlighted in blue. Known farm names include A) Black, B) Westbrook-Bell, C) Ennis, D) Anson Johnson, E) Depue, F) Heron's Nest, G) Van Auken, H) Bevins-Hellwig (Source: Historic Aerials, https://www.historicaerials.com/viewer, annotated by WLA Studio, 2023).

Circulation

Circulation refers to the spaces, features, and applied material finishes which constitute systems of movement in a landscape.

Historic Condition (ca. 1600–1965)

As stated previously, Old Mine Road North developed organically throughout the late seventeenth and eighteenth centuries, gradually extending southward to accommodate European colonists settling along the New Jersey side of the Delaware River. During the early part of the historic period, the road was likely a narrow trail that widened with increased usage as the local population grew and commercial activity increased during the colonial period. Most early maps of New Jersey during the colonial period do not depict Old Mine Road, though it is known that early European colonists, primarily Dutch homesteaders, were moving southward into the Minisink area by the end of the seventeenth century.

Infrastructural improvements in the Old Mine Road North area were limited prior to the 1770s. During the colonial era, local governments administered road maintenance and construction project, which were funded through general taxes. Roads remained rudimentary during this period, making wagon travel difficult and often impractical. The Delaware River was often a more reliable means of transportation, and ferry services crossed the Delaware River at several points along Old Mine Road, while flat-bottomed Durham boats were used to haul goods downriver to large urban markets.

During the early to mid-nineteenth century, privately-owned turnpike companies oversaw most large-scale road construction and improvements projects, while local roads like Old Mine Road continued to fall under the purview of local governments. When local New Jersey governments embarked on road building projects during the colonial period, road return reports were filed containing the recommendations of six court appointed surveyors. Two road return reports were recorded in January 1772 that include surveyed bearings and distances of the preferred alignment of what became known as Old Mine Road North. One return, recorded in Sussex County Road Book A on page 64-65, describes the section of present-day Old Mine Road North going north from White Kill. The surveyors began their survey at a bridge over the creek, which they called "Westfalls Bridge." The second return, recorded in Sussex County Road Book A on page 66, surveys the road from "the upper line of Walpack Township" to "Westfalls." According to one of these road return reports, the purpose was "to layout out roads that may be most advantageous to the inhabitants, and also profitable to foreigners." The other return mentions making roads that were "most advantages to travelers." These comments suggest the surveyors considered the location of existing farmsteads, laying out roads to conveniently connect to them but minimizing encroachment onto their property. Second, the report implies they attempted to layout roads easily traversable, which meant using the natural topography to minimize steep slopes that would be potentially impassible in poor weather conditions. These two road return reports do not describe the road's width, but rights-of-way during the colonial period were typically a multiple of a rod (16.5 feet). The right-of-way refers to the roadway, as well as the land adjacent to the road that is secured and reserved for construction and maintenance projects, such as drainage features and the road shoulder. There are likely some areas along Old Mine Road where the right-of-way width varies. For example, according to the Sussex County Book of Road, Book A, page 202, the right-of-way width for a portion of Old Mine Road south of the study area was four rods wide, measuring approximately sixty-six feet in width.

In 1846, the New Jersey state government passed legislation establishing standards for local road construction, but there was no adequate funding source, and local roads remained poor through the nineteenth century. By the turn of the century, the New Jersey state government passed a series of legislative acts that established funding, administration, and standards for roadway construction and improvement projects. During the 1920s and 1930s, evidence suggests that Old Mine Road North was subject to limited roadway improvements, including grading, straightening, drainage structures, and the application of a macadam surface treatment, which were becoming common cultural practices throughout the Northeast with the increase in automobile use and advocacy for Good Roads. In 1932, when the Township of Sandyston requested that Sussex

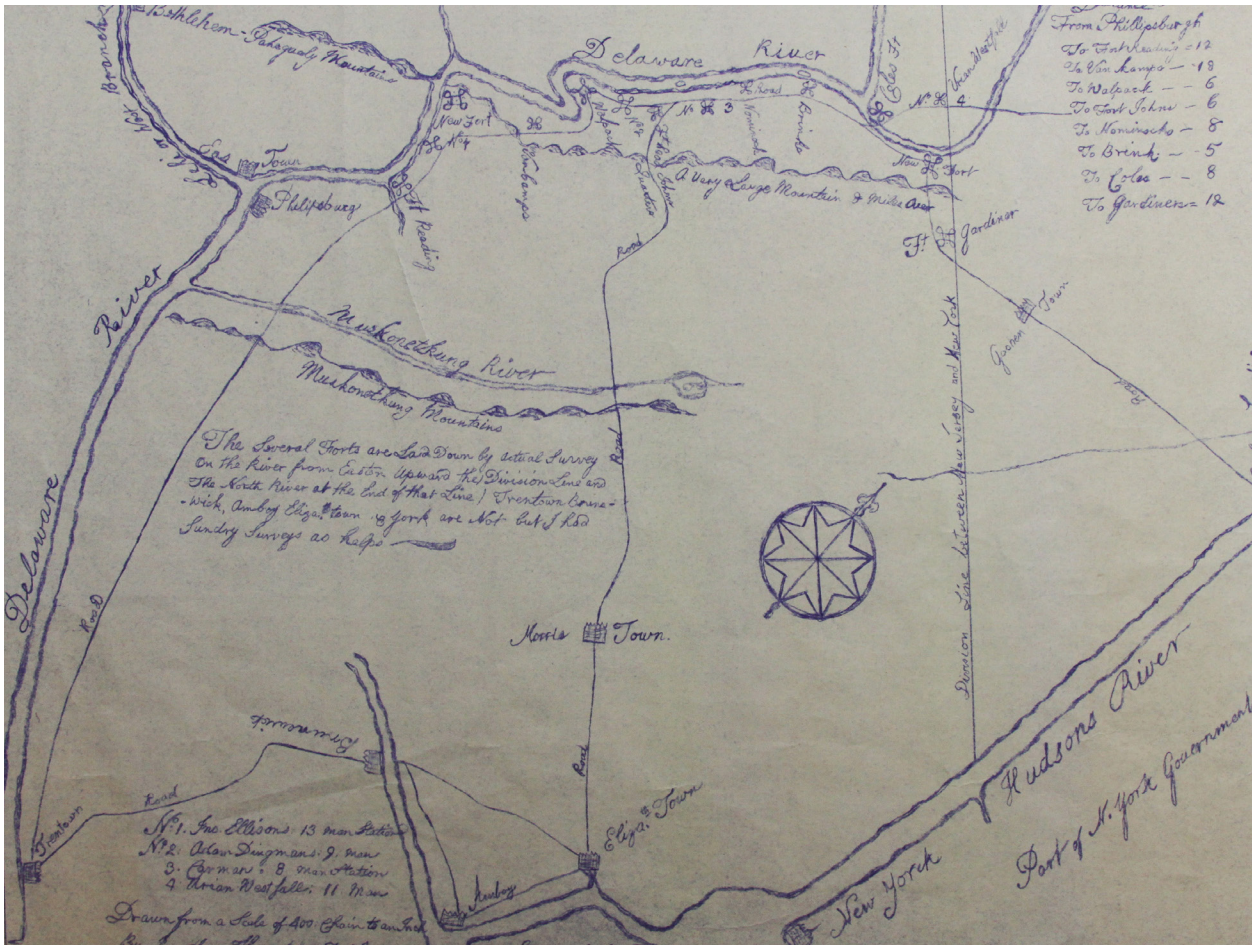


Figure 4.19. 1758 map produced by Jonathan Hampton, with fort/blockhouse locations shown along a road in the location of Old Mine Road North (Source: DEWA Archives).

County take over responsibility of Old Mine Road North, a survey of the road records its right-of-way as two rods, measuring thirty-three feet wide.

Circulation Maps

The Johnathan Hampton Map of 1758 appears to be the first map depicting a roadway in the approximate location of Old Mine Road North (Figure 4.19). The rudimentary map, created during the French and Indian War, shows a roadway connecting several forts and identifies the location of forts at "Walpack" and "Nominock." In contrast, a 1768 map of "The provinces of New York, and New Jersey" by Holland, et al., does not depict Old Mine Road, instead showing two roads running from the Brick House area, with one going east to Sussex and the other southeast to Walpack. These roads roughly align with the present-day Deckertown Turnpike and U.S. 206. Similarly, a 1777 map, "The Provinces of New Jersey, divided into East and West," by Faden, et al., does not show Old Mine Road south of the Brick House area (Figure 4.20). Like the 1768 map by Holland, et al., the 1777 map shows roads leading from Brick House to Sussex and Walpack. Notably, however, the 1777 map does show the portion of Old Mine Road North of Brick House, running to Port Jervis (north of the project area). The map does not depict Old Mine Road North south of Brick House, but it does indicate that the intersection at the north end of the study area was an established feature by that date. Also, it should be noted that this map places the location of "Minisink" settlement closer to the actual location of the Brick House settlement. Likely, the Minisink settlement was concentrated around the Brick House area, with farmsteads scattered along Old Mine Road south of that point.

Old Mine Road North appears on the 1781 Andrew Skinner map, "A map containing part of the Provinces of New York and New Jersey" (Figure 4.21). Old Mine Road North is unlabeled and follows the eastern bank of the Delaware River. This map shows Old Mine Road extending from

Figure 4.20. 1777 map, "The Province of New Jersey, divided into East and West," by William Faden, Bernard Ratzer, and Gerard Bancker. Note that Old Mine Road is depicted between Brick House and Port Jervis (Source: Library of Congress, https://lccn.loc.gov/74692203).

north of Port Jervis to a location south of Walpack Bend, ending at a crossing point labeled "Wallpack Ferry." This map also depicts the locations of several forts along Old Mine Road built during the French and Indian War, as well as a military supply route established by Johnathan Hampton to supply the forts during the conflict.

Samuel Lewis's 1795 map, "State of New Jersey," clearly shows Old Mine Road and identifies the locations of the Dingman family residence, and the Sandyston and Montague townships. This map shows Old Mine Road extending south of the Pahaquarry Mines and Abraham Van Campen's house before crossing the river just north of the Water Gap, where Daniel Shoemaker operated a ferry. In the 1795 map, Old Mine Road does not extend past the rock outcrop known as "Indian Ladder," but historical documentation states that a footpath extended beyond this feature. (Figure 4.22).[835]

The 1860 "Map of Sussex Co., New Jersey" by Griffith Morgan Hopkins, Jr. depicts the towns of Brick House, Montague, Bevans, and Peter's Valley, with Old Mine Road North spanning between them (Figure 4.23), From the southern terminus of Old Mine Road North, the route of present-day Peters Valley Road leads from a fork in Old Mine Road at Bevans, south to the town of Peter's Valley. Heading north, the next intersection occurs at present-day Old Dingmans Road, which is identified as "Dingman's Choice & Delaware Bridge." The third iteration of the Dingmans Ferry Bridge was in service between 1857–1862. Mettler Road is depicted as a dashed line, perhaps

835. Brodhead, *The Delaware Water Gap: Its Scenery, Its Legends and Early History*, 50–51.

indicating that it was a dirt road or infrequently traveled. Van Ness Road and Jager Road intersect with Old Mine Road in what appears to be their current alignments. At the north end of the study area, Old Mine Road North terminates at a four-way intersection at the town of Brick House/ Montague, a well populated area. Several other crossroads converge in Montague, and Tappan Road continues north from Montague to a bridge crossing at the Delaware River to Milford, Pennsylvania.

Figure 4.21. 1781 map showing ownership along Old Mine Road North by Skinner et al. The map has been annotated to show the approximate location of additional features (Source: Library of Congress, https://lccn.loc.gov/gm71005417).

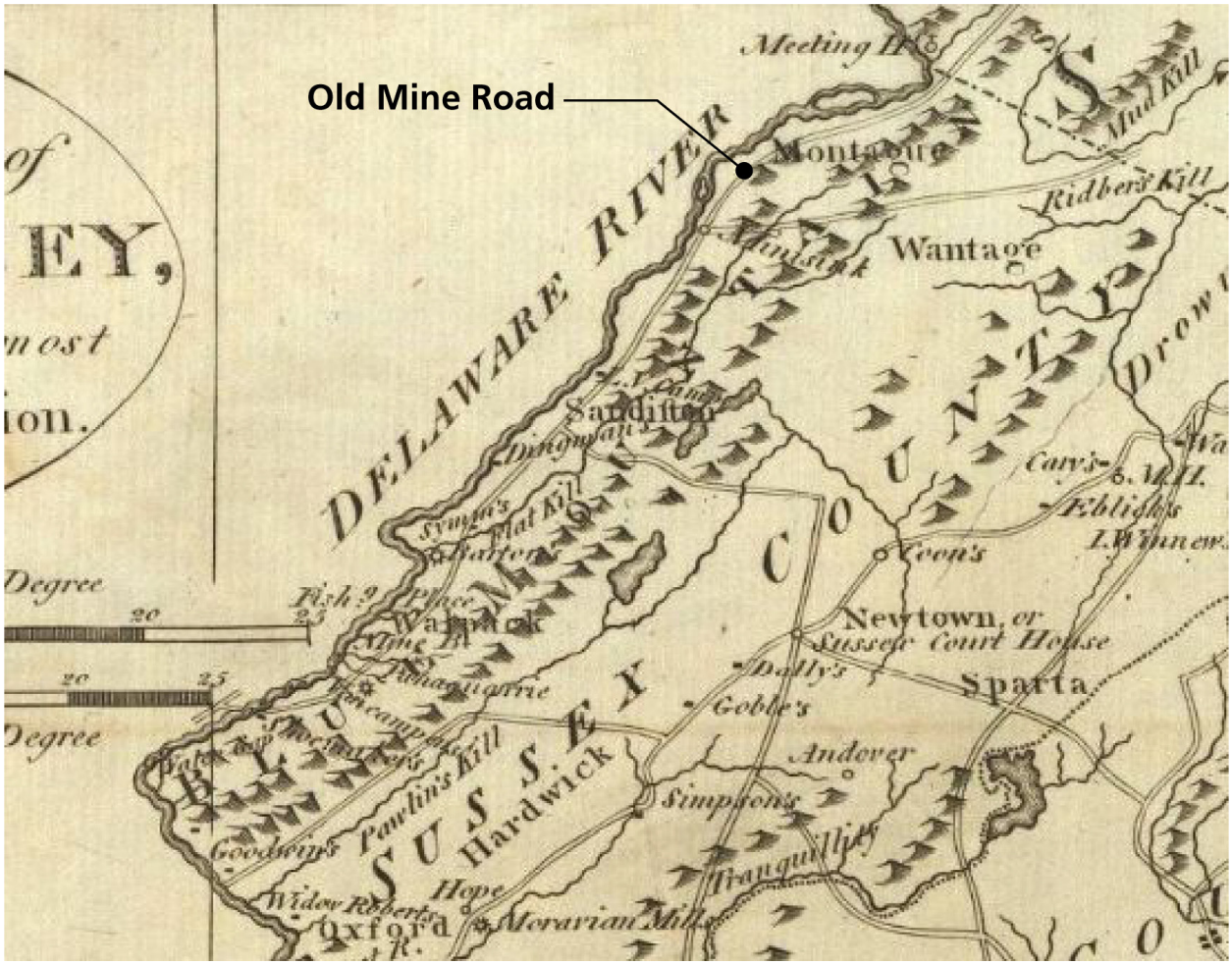


Figure 4.22. A portion of a 1795 map by Samuel Lewis showing the section of Old Mine Road south of Walpack Bend (Source: David Rumsey Map Collection, https://www.davidrumsey.com/luna/servlet/detail/ RUMSEY~8~1~126~10013: The-State-of-New-Jersey-Compiled-fr).

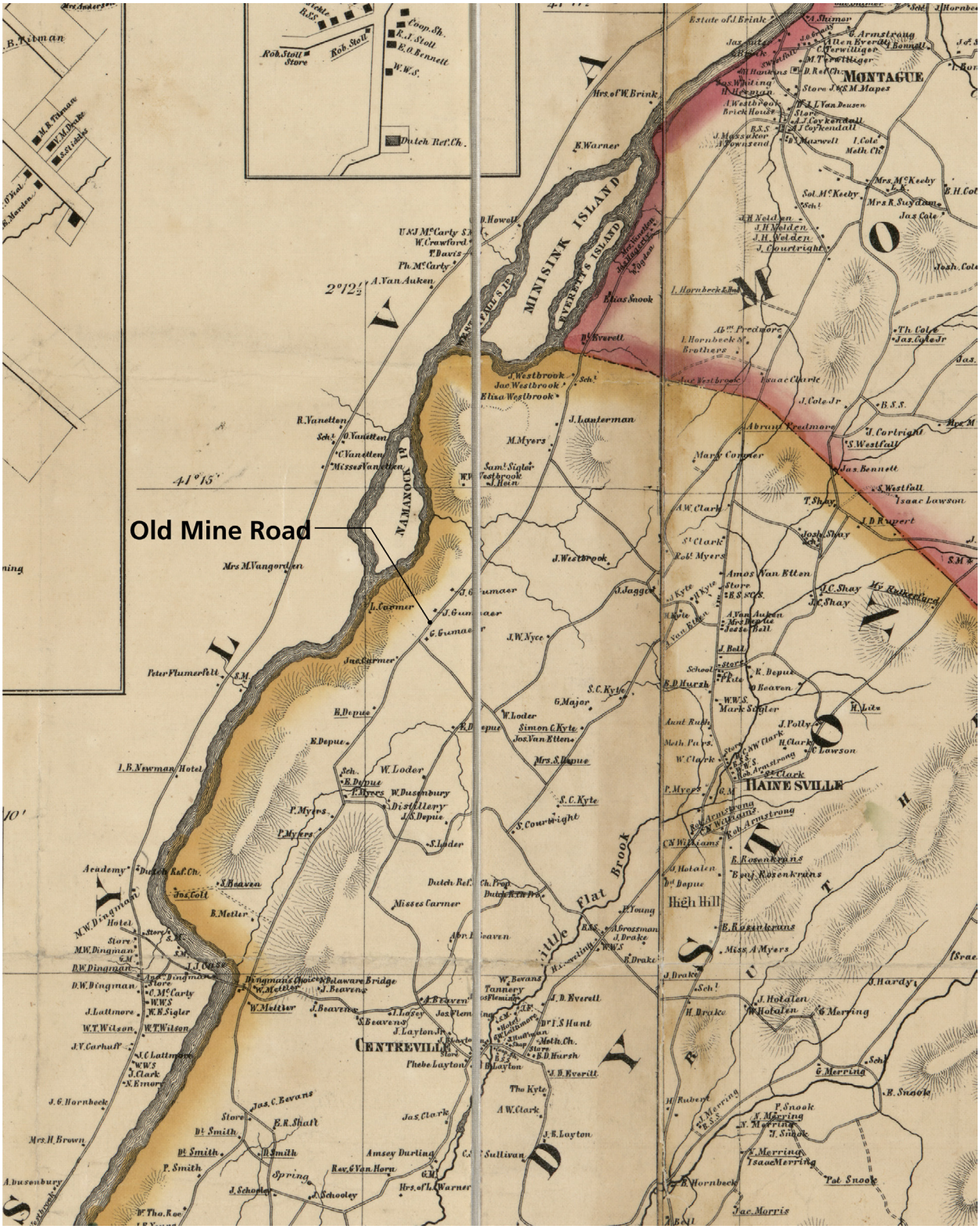


Figure 4.23. 1860 map showing the location of owners along the Old Mine Road North corridor (Source: Library of Congress, https://www.loc.gov/item/2012593681/).

An 1872 parcel boundary map by George E. Hursh, copied from a map by John D. Everitt, depicts Old Mine Road North and the property boundaries and houses along it (Figure 4.24, Figure 4.25, and Figure 4.26). No road names, towns, or bridges are labeled on the map. At the north end of the map, the Brick House in Montague is shown at a five-way intersection. Old Mine Road North intersects with two larger roads (denoted by thicker lines) corresponding with the present-day routes of U.S. 206 and Deckertown Turnpike. The route of U.S. 206 is shown crossing the Delaware River at a bridge between Milford and Montague. Heading south on Old Mine Road, the next intersection appears to be present-day Van Ness Road. The next intersection shown is Old Dingmans Road, with Dingmans Ferry Bridge shown crossing the Delaware River. Old Mine Road North continues south past the road to Dingmans Ferry, and a spur road is shown leading southward from Old

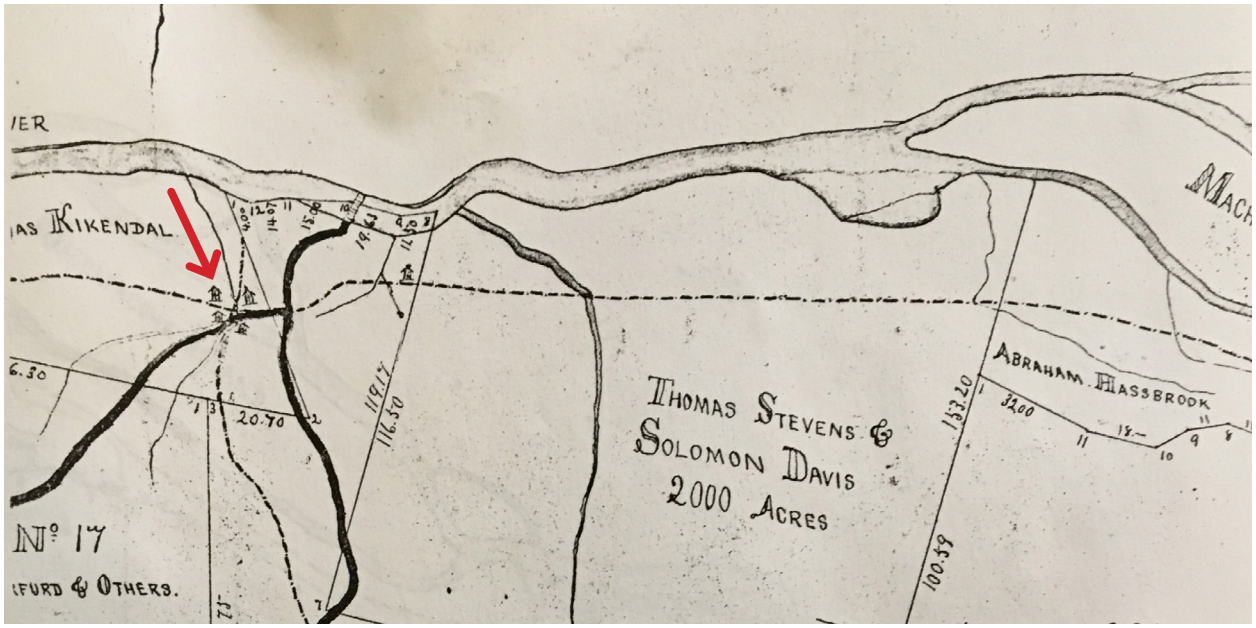


Figure 4.24. Ge. E. Hursh, *Copied From a Map Owned by John D. Everitt*, March 4, 1872; The Brick House settlement is visible at the north end of Old Mine Road North, in the top-left corner of the map (arrow) (Source: Delaware Water Gap National Recreation Area Archives).

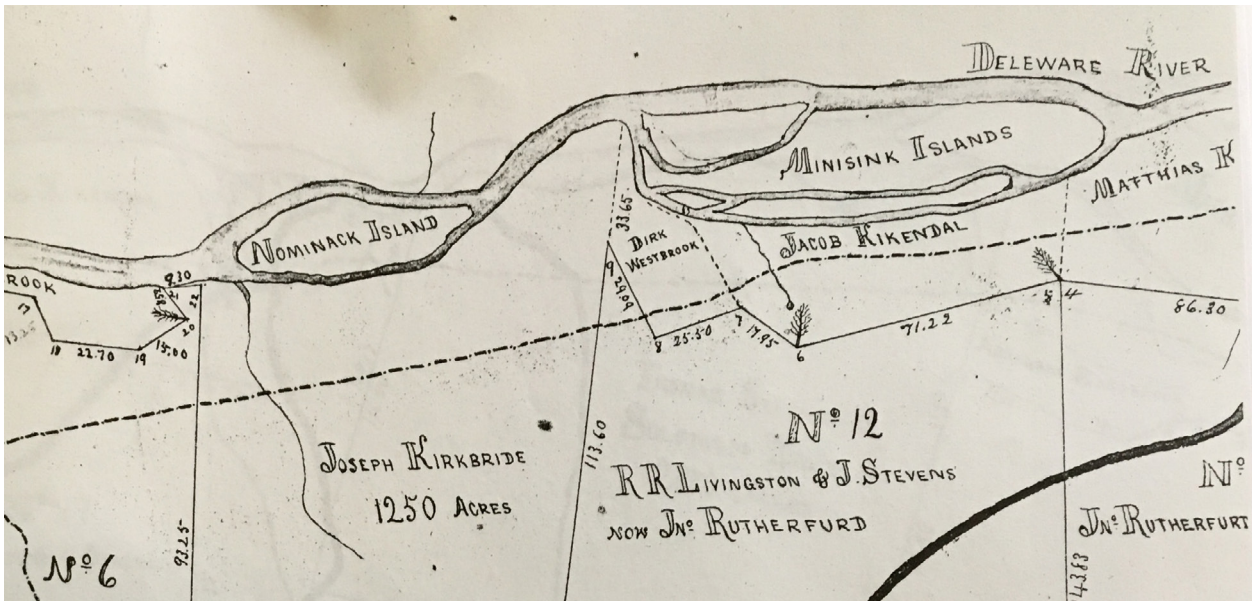


Figure 4.25. Ge. E. Hursh, *Copied From a Map Owned by John D. Everitt*, March 4, 1872 (Source: Delaware Water Gap National Recreation Area Archives).

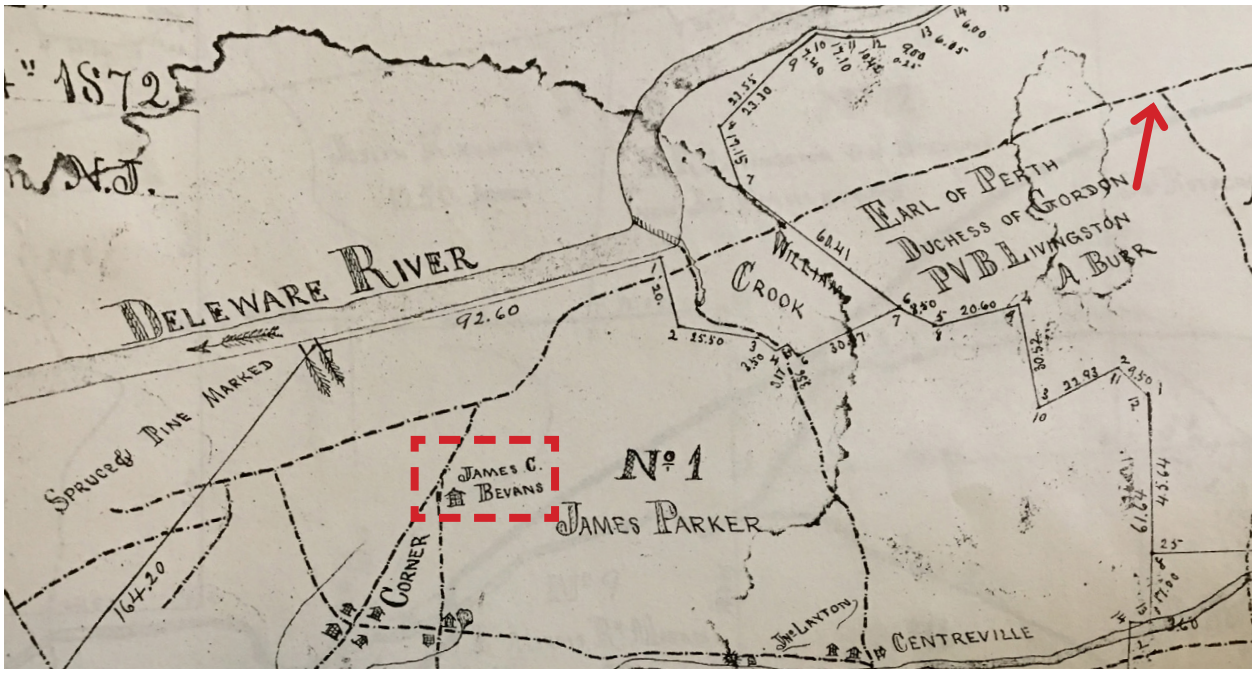


Figure 4.26. Ge. E. Hursh, *Copied From a Map Owned by John D. Everitt*, March 4, 1872; Note the location of the James C. Bevans farmstead as a crossroads at the south end of the project area (rectangle). Note the Van Ness Road intersection north of Dingmans Ferry (arrow) (Source: Delaware Water Gap National Recreation Area Archives).

Mine Road North to run parallel to the river. The southern end of Old Mine Road North is identifiable by the intersection at James C. Bevans house.

An 1872 "Topographical Map of Sussex Co., New Jersey" depicts Old Mine Road and identifies the Bevans Post Office, Dingmans Ferry Post Office, Sandyston, and Montague Post Office (Figure 4.27). The map also indicates the presence of several school buildings along Old Mine Road North. This map indicates that Van Ness Road, Jager Road, Van Etten Road, and two other crossroads all intersected Old Mine Road by that date. The two unknown roadways crossed east–west between Old Mine Road and Ridge Road on either side of Jager Road, but the exact location of these roadways is unknown.

By the 1910s, spur roads leading west from Old Mine Road North begin to appear on USGS Topographic Quadrangle Maps (USGS maps). In 1932, the townships of Montague and Sandyston passed resolutions requesting that Sussex County take over the responsibility of maintaining Old Mine Road. By 1944, USGS maps show several spur roads on the west side of Old Mine Road North between Minisink Island and Nomanock Island. By 1958, the network of spur roads along Old Mine Road North had expanded, with clusters of new houses lining the roads at the river's edge between Namanock Island and Minisink Island. This type of development appeared to continue through the early 1960s. Between 1957 and 1963, aerial photographs show roads for a planned development called Crystal Beach at the north end of the study area (this subdivision never materialized).[836] Several parallel drives extend off either side of Old Mine Road North, as well there being two parallel roadways along the Delaware River's edge. Throughout this period, secondary roadways extended primarily off the west side of Old Mine Road North to access newly developed areas along the riverbank.

In the early 1950s, the state of New Jersey reconfigured the tangled five-way intersection at Montague, near the location of the historic Brick House Hotel, to streamline the path of U.S. 206. Using eminent domain, the state of New Jersey demolished the Brick House Hotel to make way for the realigned highway and a new bridge between Montague-Milford. The new highway opened in 1953. Other historic buildings in the small village of Brick House/Montague were demolished as

836. Information about Crystal Beach was provided by park personnel.

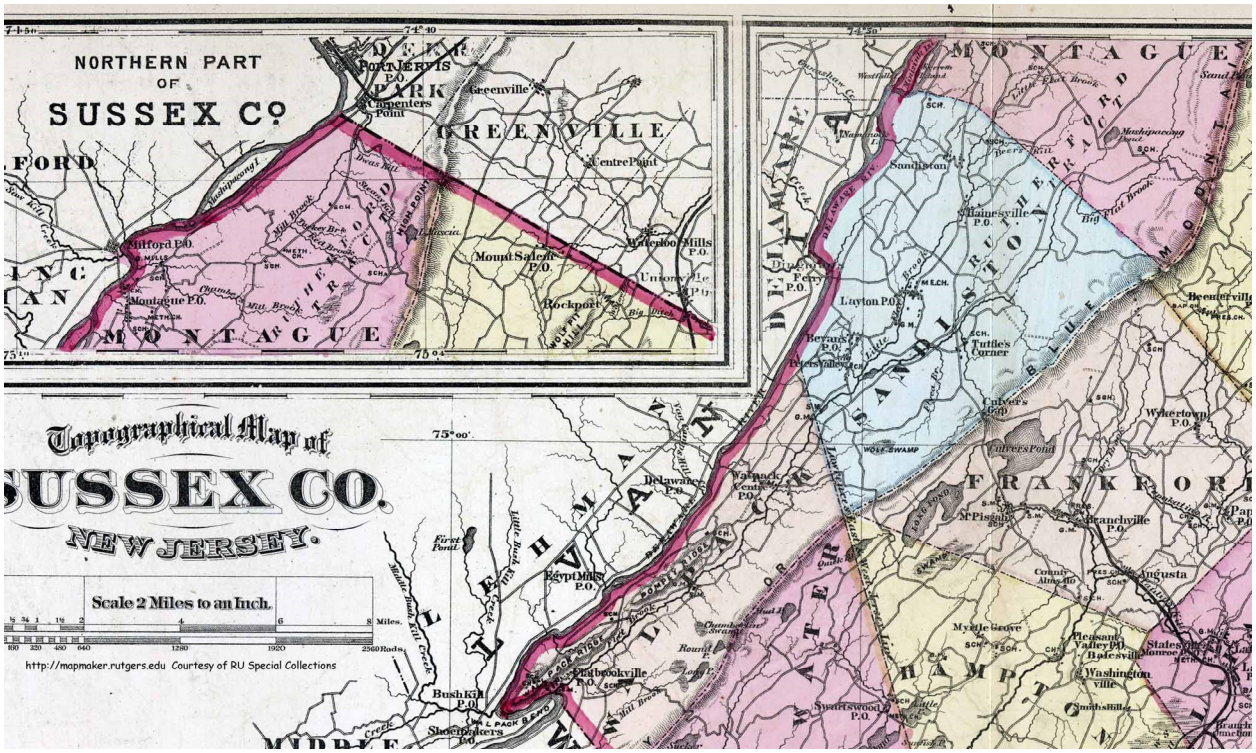


Figure 4.27. 1872 "Topographic Map of Sussex Co., New Jersey," showing the location of several village clusters, post offices, schools, and auxiliary roads along Old Mine Road North (Source: Rutgers University Special Collections Library, https://mapmaker.rutgers.edu/SUSSEX_COUNTY/OldSussex.html).

part of the Tocks Island Dam project.[837] This project and subsequent repaving and widening of U.S. 206 altered the historic configuration of the intersection between Old Mine Road North and the highway. Subsequently, because of its awkward angle, Old Mine Road North became a noticeably secondary circulation route.

According to an article published by *The Daily Record* in 1983, Sussex County officially relinquished control of the 6.7-mile stretch of Old Mine Road between Dingmans Ferry and Route 206, granting it to the NPS.

Roadway Elements and Design

The Old Mine Road North roadway includes the strip of land encompassing the right-of-way through which the road passes and all the roadway elements the land contains. In addition to the road surface, other roadway elements commonly found within the study area include various functional features of the roadway, including culverts, guide rails, drainage features, and signs. These are more fully discussed in other sections of this report.

The road remained unimproved for much of its history and was likely similar to most other roads typical in the region during the colonial period through the late nineteenth century. Before earth-moving and large-scale grading technology became widely available, roads typically followed the grade of the natural topography. Grading and drainage improvements were rare.[838] The Site History chapter discusses national movements promoting road improvements and how the state of New Jersey passed several pieces of legislation in the late nineteenth and early twentieth centuries intended to improve the quality of roads in the state. New construction engineering standards also appeared nationally and in New Jersey during this same period.

In 1895, an article entitled "Stone Roads in New Jersey" by civil engineer E. G. Harrison advocated for several road construction standards. He recommended crowning the road in the center to drain water to roadside ditches. Harrison

837. "Milford Bridge Dedicated," *The Courier-News*, December 31, 1953.

838. KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc., "New Jersey Historic Roadway Study" (Trenton, NJ: New Jersey Department of Transportation, January 2011), 24.

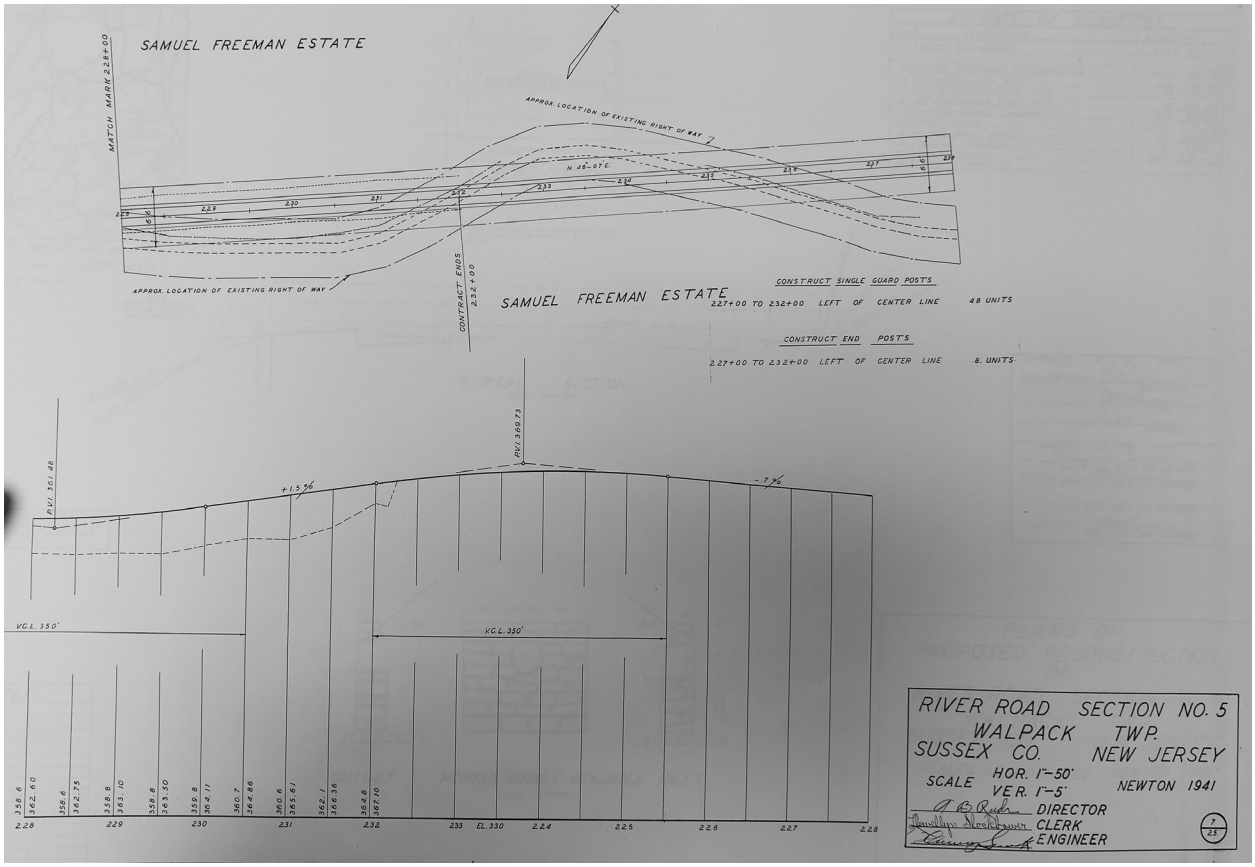


Figure 4.28. 1941 drawing for a section of Old Mine Road (not Old Mine Road North) showing horizontal and vertical alignment. This detail is present along Old Mine Road North (Source: DEWA Archives, Harper "River Road - Section No. 5, Walpack Township, Sussex County, New Jersey," Bushkill, PA, 1941).

promoted the grading of roads to eliminate severe slopes and abrupt peaks and valleys, writing that "Wherever it is possible the hills should be cut and low places filled, so that the maximum grade will not exceed 5 or 6 feet rise in 100 feet [5 to 6 percent]."[839] Between 1924 and 1939, WPA funds were used for grading, construction, and improvements on segments of Old Mine Road both north and south of the study area.[840] Between 1934 and 1959, the county and state approved a series of "Plans of Proposed Reconstruction" drawings for these sections of Old Mine Road. These drawings show typical construction details and specifications for the roadway and related roadside structures. The construction documents employ design standards, including crowned road surfaces, drainage ditches, and manageable slopes, that echo those proposed by Harrison in 1895.

Construction plans dated 1941 in the DEWA Archives show the existing and proposed vertical and horizontal alignments of a section of Old Mine Road in Walpack Township south of the Old Mine Road North study area. Across the project area, steep peaks at the tops of hills are cut and flattened; the bottoms of hills and slumps in the road are filled. In general, the profile of the proposed road is smoothed, and slopes are maintained below 5 percent. Changes to the horizontal alignment are less dramatic but follow similar principles. The redesigned road eliminates steep curves, replacing them with longer, more gentle curves (Figure 4.28). Other roadside elements appearing on the construction drawings include roadside swales, drainage features with concrete and mortar rubble headwalls, and guideposts. These construction drawings provide typical cross sections of the road. The proposed road profile features a parabolic surface with a six-inch crown at the centerline of the road that slopes to the two road edges. The 1941 drawings does not show existing conditions. An earlier construction document set does show existing and proposed cross sections of another

839. E. G. Harrison, "Stone Roads in New Jersey," in Historical and Technical Papers on Road Building in the United States (Washington, DC, 1895), 23–27.
840. National Park Service, "Delaware Water Gap National Recreation Area River Road System, New Jersey," 24.

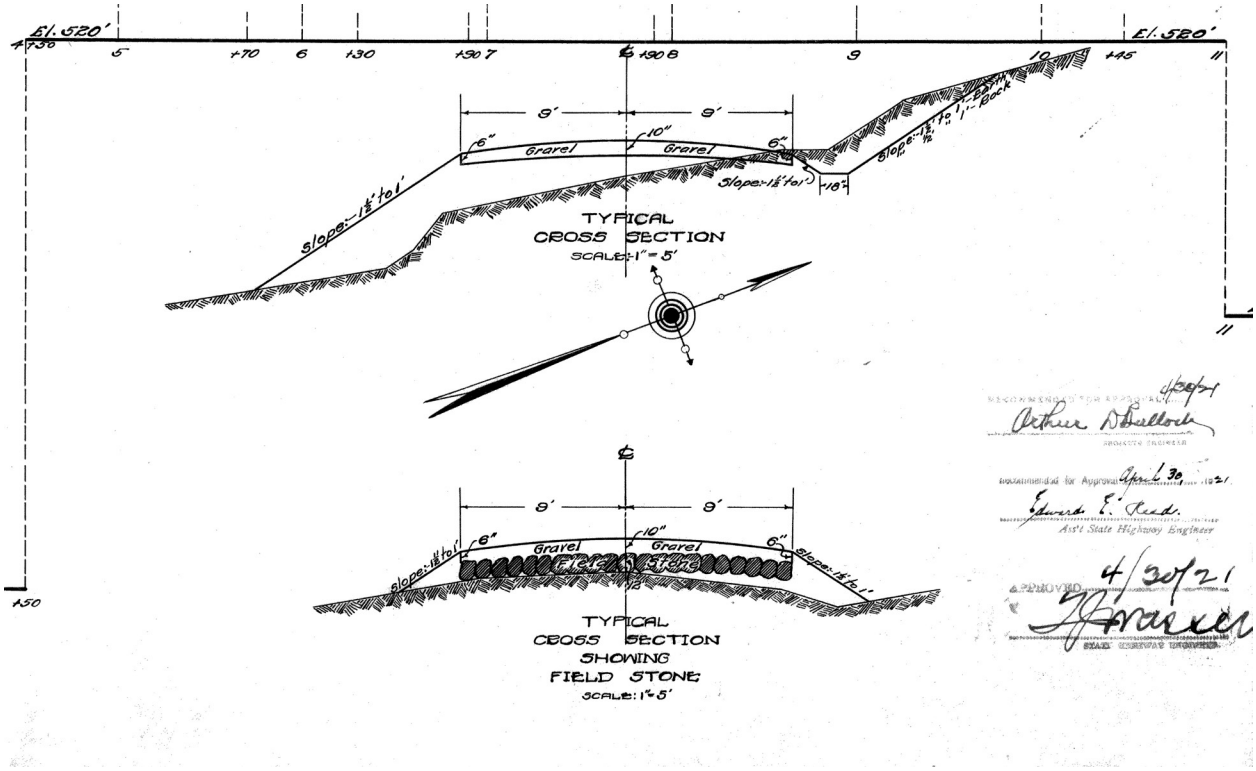


Figure 4.29. 1921 drawing for a section of Old Mine Road (not Old Mine Road North) showing typical cross section of road (Source: DEWA Archives, Montague Township Road #2, Sussex County, New Jersey," Bushkill, PA, March 1921).

section of Old Mine Road. This set, dated 1921, includes the section of road leading north of Montague toward Port Jervis. The "Typical Cross Section" shows how the reconstructed roadbed replaced a severe cross slope (Figure 4.29).

Older historic maps do not provide information on the material present on the Old Mine Road surface. As discussed, the state of New Jersey passed several pieces of legislation in the late nineteenth and early twentieth centuries to fund road improvements. In the first decade of the 1900s, for example, Sussex County had funds to improve county roads, which included adding macadam surfaces. A 1926 article in *The Courier News* references residents along Old Mine Road complaining about the condition of the road, and discussing the cost of replacing gravel, suggesting that the surface have not yet been paved.[841]

In 1932, Sussex County assumed control of those sections of Old Mine Road located in Montague and Sandyston Townships, including the Old Mine Road North study area. The resolutions passed in the two townships refer to the road having been "improved with County aid," but they do not specify the nature of the improvements.[842] In 1932, the section of Old Mine Road between Dingmans Ferry and Montague was subject to a right-of-way survey to reflect current road conditions. These survey drawings show the general dimensions of the roadway and associated right-of-way, which is consistently thirty-three feet wide.[843] The survey drawings also show the locations of buildings along the road, large culverts, important marker trees, and show that there is a "guard rail post" at the south end of Old Mine Road North, where it intersects with the road to Dingmans Ferry. The survey drawings do not, however, indicate the material composition of this section of Old Mine Road.[844]

841. "Plainfield Woman Urges State Highway Commission Improve The Sussex County Road," *The Courier News*, May 19, 1926.

842. Sussex County Board of Commissioners, "Resolution, Taking Over Delaware Mine Road, Montague Township," December 30, 1932, Sussex County Deed and Records Room

843. "Delaware Mine Road, Sandyston & Montague TWPS., Sussex, Co., New Jersey," 1932, Sussex County Deed and Records Room.

844. "Delaware Mine Road, Sandyston & Montague TWPS., Sussex, Co., New Jersey."

In 1939, the WPA's Federal Writers' Project published "The WPA Guide to 1930s New Jersey," which included a driving tour of Old Mine Road. When describing the road, the guide states: "Road graveled with small stretches macadamized. . .," indicating that a majority of the road was gravel, interspersed with small section of macadam surface.[845] Additional evidence that the road was largely gravel comes from a 1944 USGS map that symbolizes Old Mine Road and Jager Road as "loose surface graded, dry weather" roads, contrasting with U.S. 206 which is shown as a "secondary, hard surface, all weather road." Spur roads off Old Mine Road are symbolized as dirt roads. When Sussex County and state of New Jersey engineers approved plans to reconstruct other sections of Old Mine Road between 1934 and 1959, the plans called for a compacted gravel surface that varied between ten and twelve inches in depth.

Historic American Buildings Survey (HABS) photographs taken in 1970 of historic buildings along Old Mine Road North show the road paved with asphalt. The exact date of it being paved is unknown, but the condition of the pavement in 1970 suggests that it was several years old by that time and installed during the period of significance.

Post Historic and Existing Condition

During the years immediately following the end of the historic period (1965) and amid the controversy surrounding the Tocks Island Dam project, local officials reportedly did not actively maintain local roads. The intersection of Old Mine Road North and US Highway 206 was shifted a short distance south when Old Mine Road North was straightened during construction of a new bridge over White Brook around 1968. During the process of acquiring property to create DEWA, the NPS decommissioned many spur roads along Old Mine Road on properties they purchased. However, according to DEWA management documents, the NPS recognized the historic significance and operational value of Old Mine Road North as a scenic route in the park, as evidenced by the 1978 and 1987 GMPs. The 1978 GMP for DEWA noted that "Major road rehabilitation will be carried out as existing roads are taken over by the federal government," but does not provide specifics about materials and methods.[846] Ten years later, the 1987 GMP identified Old Mine Road as a good roadway for driving tours and noted that it would serve as the primary north–south circulation for the New Jersey side of DEWA.[847]

Auxiliary roads that are currently accessible by vehicle include Mettler Road, Van Ness Road, the Namanock Recreation Site access road, the Ennis House access road, the Westbrook-Bell access road, and Jager Road. All auxiliary roads are accessible on foot. Through the decades, the NPS repaved Old Mine Road North and installed plastic culverts along the roadway to improve drainage. It is unclear when the road was paved due to lack of documentation. While most of the metal and concrete culverts and associated headwalls that exist today along Old Mine Road North date to the historic period, the NPS apparently installed thirteen plastic culverts under the road after the end of the historic period. The dates of their installations are unknown for lack of documentation, but this type of plastic culvert was not widely available for use until after 1965. Compliance documentation does exist for a project to repair the stone culvert near the Black Farm.

Today, there are numerous widened pull-off areas along Old Mine Road North that are used by visitors for day parking. Some of these parking areas were established where there was once a driveway or an auxiliary road that are no longer extant. These pull-off parking areas are not formally designated circulation features and do not appear to be engineered, but rather developed over time through repeated use.

Evaluation

During the historic period, as now, roadways provided the essential means for people to access places and move between them. Old Mine Road North, as the only north–south corridor through the area, remains an axis from which secondary and auxiliary roadways spur off from and property lines are oriented toward.

845. Works Progress Administration, *The WPA Guide to 1930s New Jersey* (New Brunswick, New Jersey: Rutgers University Press, 1939), 473.

846. "Draft General Management Plan, Delaware Water Gap National Recreation Area" (Pennsylvania-New Jersey: United States Department of the Interior, National Park Service, 1978), 109.

847. "General Management Plan, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River" (Pennsylvania and New Jersey: United States Department of the Interior, National Park Service, 1987), 63.

The 1795 map by Samuel Lewis shows the existence of and general route of Old Mine Road. The scale of the map does not provide sufficient detail with which to compare the depicted alignment and the existing alignment of Old Mine Road. In 1932, the section of Old Mine Road North between Tuttles Corner Dingmans Road and Montague within the study area was subject to a right-of-way survey to reflect current road conditions at that time. These survey drawings show the general dimensions of the roadway and associated right-of-way, which is consistently thirty-three feet wide. Additionally, a 1931 aerial photograph captures the route of the road in that year. Comparing the 1931 aerial photograph and 1932 survey with current conditions, it appears that the alignment of Old Mine Road North has remained essentially unchanged from the early 1930s. The alignment of the roadway, which was established during the historic period and has not substantially changed, contributes to the historic significance of Old Mine Road North.

Dozens of road traces and remnant driveways intersecting Old Mine Road North indicate that the roadway and surrounding area was formerly much more populated. The major intersections of roads present at the end of the historic period remain today. These intersecting roads include, going south to north, Walpack Road, Sussex County Road 560 / Tuttles Corner Dingmans Road, Mettler Road, Van Ness Road / Fisher School House Road, Sussex County Road 646 / Jager Road, and US Highway 206. Several secondary roads, road traces, and driveways also persist from the historic period. These include Old Dingmans Road trace, Penn Avenue to Ennis House, Minisink Cemetery Road/Winant Trail, Drive to Westbrook-Bell Farm, Van Etten Road, Pine Road trace, and Laurel Lane trace. Current NPS roads, including Recreation Area Access Road and Road to Namanock Recreation Site, reuse former farm roads that appear on a 1931 aerial photograph. Numerous farm roads and driveways that led off from Old Mine Road North to privately-owned parcels remain legible on the landscape but are currently inaccessible by car (they are traversable on foot). A few of the intersections between Old Mine Road North and these historic roads changed over time. The intersection between Old Mine Road North and Old Dingmans Road, for example, shifted southward a few hundred feet between 1957 and 1963, during the historic period. The intersections along Old Mine Road North with roads present during the historic period contribute to the historic significance of this resource. The pull-off areas that have developed along the side of the road do not contribute to the historic significance of Old Mine Road North.

Additionally, the Old Mine Road North roadway, as it appears today, reflects layers of improvements as the road evolved over time. The most significant period of recent improvement occurred between 1934 and 1959 when many of the roadside elements existing today were constructed. The culverts, headwalls, guideposts, road profiles, and pavement widths are consistent with construction drawings prepared for other sections of Old Mine Road outside the study area during this period. The existing profile of the road, with a center crown that slopes to the road edges, and the road width appear to have been established during the historic period and contribute to the historic significance of the site. The drainage features, including culverts and headwalls, are more fully evaluated in other sections of this report. Because they contribute to the overall character of the roadway, those features added during the historic period contribute to the historic significance of Old Mine Road North. The modern drainage features, installed after the end of the historic period, do not, however, contribute to the historic significance of the site.

Topography

Topography is the three-dimensional configuration of the landscape surface characterized by features (such as slope and articulation) and orientation (such as elevation and solar aspect).

Historic Condition (ca. 1600–1965)

Natural Topography

Old Mine Road North is situated along a level terrace at the base of the Walpack Ridge, the west side of Kittatinny Mountain. Walpack Ridge runs north to south and spans the length of the Old Mine Road North corridor. The land on the east side of Old Mine Road North gradually rises up the side of the ridge, while the land on the west side of Old Mine Road North is relatively flat. The width of the terrace varies, narrowing toward the north end of Old Mine Road North. The western edge of the terrace slopes steeply down to the riverbank. The underlying geology of the landscape created deep east–west ravines in some locations along

Old Mine Road North, and it is possible that water traveling down the slope of the Walpack Ridge has deepened these ravines over time.

Engineered Topography
Various user groups augmented the topography of Old Mine Road North throughout the historic period, and the topography of Old Mine Road North was largely in place as it exists today by the end of the historic period. Old Mine Road North developed organically throughout the eighteenth century, gradually extending southward to accommodate European colonists settling along the New Jersey side of the Delaware River. During the 1600s until surveyors recorded the road in 1772, the road was likely a narrow trail that gradually widened with increased usage, accommodation a growing population and increased commercial activity in the region. Colonial road construction methods relied on legs, rods, and centerlines. Centerlines ran through the center of the road, and each leg was a length of road that followed the centerline in any given direction. The road width was measured in rods, with each rod measuring 16.5 feet. Typically, colonial roads ran parallel to ridgelines, and centerlines shifted frequently to adjust to existing topography rather than regrading the ground. Local commissioners and appointed surveyors administered road construction and maintenance efforts, which were typically as minimal as possible and performed on an as necessary basis. Although generally beholden to topography, property boundaries also influenced road alignment, which often skirted along the edges of different landholdings to avoid impacting property owners.

Local road maintenance practices remained generally the same during the federal period. Local road projects often had little funding, and local roads were also dependent on the willingness of nearby citizens to assist in road maintenance efforts. Although state legislation mandated that local residents either work to maintain the road or pay a tax penalty, public workdays were often unproductive, and in general, most publicly managed roads in New Jersey suffered from poor maintenance. In 1846, the New Jersey state government tried to rectify some of these issues with the passage of the New Jersey Roads Act, which contained stipulations about standard construction methods of local roads. However, Old Mine Road North and the larger River Road system remained narrow, unpaved, and unimproved.

By the turn of the century, the state of New Jersey passed a series of legislations that established administrative agencies, consistent public funding, and design/construction standards for roadway construction projects throughout the state. By this time, roads also began incorporating new surface materials, such as macadam and asphalt. Any major grading or topographic changes that occurred along Old Mine Road North during the historic period likely began around this time. While research did not uncover direct evidence or documentation of road construction projects along Old Mine Road North during the twentieth century, there is evidence to suggests that a series of road improvements projects occurred prior to the end of this historic period, likely involving leveling and regrading.

Generally, the topography of Old Mine Road North was created by a cut and fill construction method, whereby material removed from elevated areas was used to fill in lower lying areas. However, there are several segments where the road is at grade, and fill was necessary. The topography of Old Mine Road North was in place by the end of the historic period.

Cultural Topography
Examples of cultural topography that existed along Old Mine Road North during the historic period include graded and leveled areas, auxiliary roads, agricultural fields, earthen berms, and the former Layton quarry/gravel pit. Numerous farmsteads and homesites existed along Old Mine Road North during the historic period. Often, homesteaders constructed buildings and outbuildings on leveled, graded areas. Some homesites were situated above depressions, which were dug to create cellar or basement spaces. Auxiliary roads, including driveways and field access roads, were leveled and graded to provide access to homesites and farmsteads along Old Mine Road North. Many farmers also leveled nearby terrain to create plowable agricultural fields, as needed. The terrain on the west side of Old Mine Road North is generally level and flat, while the terrain on the east side of Old Mine Road North slopes steeply toward the Walpack Ridge. Grading and leveling projects would have been necessary more often along the east side of Old Mine Road North throughout

the historic period. Farmers and residents along Old Mine Road North also constructed raised earthen and stone berms to gather or redirect water as needed. The former Layton quarry/gravel pit active at the end of the historic period (Between MP 1.307 and MP 1.5) had unique topographic qualities that are not reflective of the conditions along the majority of Old Mine Road North during the historic period, such as large gravel mounds.

Post Historic and Existing Condition

The natural topographic features along Old Mine Road North that existed during the historic period are still extant. The level terrace on the west side of Old Mine Road North and steep slope of the Walpack Ridge on the east side of Old Mine Road North are both still present and legible topographic features. Additionally, the deep east–west ravines created by rapidly moving water are still extant and have continued to deepen since the end of the historic period.

The grading and topography of Old Mine Road North was largely in place by the end of the historic period, and there have not been any substantial changes to the road's topography since the end of the historic period. Currently, Old Mine Road North is twenty feet wide, with ten-foot travel lanes and minimal shoulder, and the total right-of-way is thirty-three feet wide. The roadway follows the base of the Walpack Ridge and cuts into the grade along much of the corridor, and evidence of the cut and fill construction method is still visible along the roadway corridor. The road's surface is crowned at the centerline to shed water, which is then collected by a system of vegetated ditches and culverts that drain water away from the road's surface. There is evidence that these drainage systems are not adequate and have contributed to deteriorating pavement conditions over time.

There are numerous cultural topographic features still present along the Old Mine Road North corridor, including graded and leveled areas, depressions, trace roads, leveled fields, earthen berms, and topographic features associated with the large former Layton quarry/gravel pit. Graded and leveled areas distinguishable from the surrounding grade at the locations of some former homesites along the roadway, while depressions indicate settling from land disturbance, such as demolition of buildings. At dozens of points along the roadway, trace roads and former driveways are identifiable by their remnant road grading. Many earthen and stone berms remain in place along the Old Mine Road North corridor. The former quarry site has large gravel mounds, berms, and drainage ditches that extend beyond the limits of the study area, and there is a large pile of gravel tailings approximately two hundred feet long and one hundred feet wide running along the west side of Old Mine Road North (MP 1.364-1.402).

Evaluation

A majority of the grading and topographic characteristics of Old Mine Road North and the adjacent landscape extant today date to the historic period. The natural topographic characteristics largely remain the same as they existed during the historic period, as does the engineered topography. The cultural topography helps communicate the locations of historic homesites and farmsteads that existed during the historic period but are no longer extant, providing a visual reference to the history of human settlement along the Old Mine Road North corridor. Without these cultural topographic features, this history would be less evident.

Vegetation

Vegetation refers to the deciduous and evergreen trees, shrubs, vines, ground covers and herbaceous plants, and plant communities, whether indigenous or introduced in the landscape.

Historic Condition (ca. 1600–1965)

During the colonial period, European homesteaders concentrated their settlements and agricultural fields along the lower terraces on the west side of Old Mine Road North, where the ground was relatively flat and more fertile. The earliest waves of European residents cleared land for cultivation or cultivated land previously cleared by the Lenape. Crops grown by colonial-era farmers included spring wheat, corn, rye, oats, buckwheat, and flax. Farmers primarily grew corn as livestock feed, and flax was used to manufacture clothing. Farmers at that time did not use fertilizer or rotate crops, frequently exhausting the soil. Infertile fields were abandoned and often repurposed for livestock. Many farms also had fruit orchards. Fruit was eaten in season, dried, fermented, and used to feed livestock. Vegetable and herb gardens were also common features on farmsteads. Wood fencerows were often used to demarcate field and property boundaries.

Figure 4.30. Example of a wood fence row along Old Mine Road North. View to north (Source: WLA Studio, 2023).

During the nineteenth century, soil management practices improved considerably. Farmers began rotating crops, managing soil quality, and using fertilizers. Farmers continued to grow buckwheat, oats, rye, and corn. Spring wheat was replaced by winter wheat during this period, and potatoes were introduced as a staple crop. Corn production increased considerably to provide feed for dairy cattle, while flax production declined considerably as linen fabrics were phased out in favor of cotton and wool. As dairying increased during the nineteenth century, increased acreage was devoted to pasture and hay production for cattle. Farmers continued to use wood fencerows to demarcate field and property boundaries, although some were removed to expand agricultural fields (Figure 4.30). Orchards and gardens were maintained through this period.

During the early to mid-twentieth century, agricultural activity along Old Mine Road North steadily declined. A map from 1900 shows there were several mapped forested areas both east and west of Old Mine Road North, including along White Brook, west of Minisink Island, along Sandyston Creek, and several places to the south (Figure 4.5). Many farms continued to grow corn, while the production of buckwheat, wheat, rye, and oats became less common. Many struggling farmers decided to sell their property, and numerous farmsteads along Old Mine Road North were converted into second homes and summer retreats. This transition was accompanied by important changes in landscaping practices on these formerly agricultural properties. While some owners rented out their agricultural fields to neighbors or tenant farmers, numerous former agricultural fields were left fallow and returned to natural succession, while others were planted with conifer stands. The landscapes surrounding domestic buildings became much more ornamental and intentionally designed; and flower beds, ornamental trees, shrubbery, and formal entry allées became more common during this period.

Post Historic and Existing Condition

After the authorization of the Tocks Island Dam project in 1962 and the subsequent authorization of the Delaware Water Gap National Recreation Area in 1965, the federal government began to acquire properties within the park. Under NPS management, a select number of agricultural

fields were retained and offered to farmers for agricultural use, while most of the land along Old Mine Road North became dominated by naturalized forest cover. The forest character along the corridor ranges from successional forest, mature hardwood forest, dense mature pine plantation, and small areas of hemlock dominated forest on steep terrain not suitable for building or agriculture. The bulk of the forest along the corridor is less than one hundred years old, with some areas being less than fifty years of age.

There are numerous examples of cultural vegetation dating to the historic period along Old Mine Road North, including tree lines, wolf trees, landscape and ornamental plants, agricultural fields, and conifer plantations. Tree lines are trees intentionally planted in a row. During the historic period, tree lines were used to demarcate property boundaries, act as fencerows for agricultural fields, or form formal allées framing entranceways. Tree lines can be regularly, or irregularly spaced, and irregular tree rows often indicate that the trees self-seeded. Typically, tree lines are composed of a single tree species and are older than the surrounding tree canopy. Tree lines along Old Mine Road North contain rows of white oak (*Quercus alba*), eastern red cedar (*Juniperus virginiana*), white pines (*Pinus strobus*), and mixed oaks. Wolf trees are individual specimen trees that are much older than surrounding forest. Wolf trees are distinguishable by their size and wide, open canopy, which indicates that the tree formerly grew in an open condition, such as a pasture or homesite. Several wolf trees exist along Old Mine Road North, including several very large multi-trunked white pines.

The locations of former homesites and component landscapes are marked by the presence of cultural vegetation, such as flowering spring bulbs like snowdrops (*Galanthus nivalis*) and patches of spreading groundcover like pachysandra (*Pachysandra terminalis*) and periwinkle (*Vinca minor*), as well as groupings of common landscape trees and shrubs, such as eastern red cedar, large oaks, arborvitae (*Thuja occidentalis*), and boxwood (*Buxus sempervirens*). Former homesites and component landscapes also have weedy turfgrass groundcover in cleared areas.

As mentioned, the NPS maintained several agricultural fields dating to the historic period by issuing Special Use Permits to farmers for continued cultivation. These agricultural fields create breaks in the tree canopy and provide open views of the surrounding landscape. Fields are found almost exclusively on the western side of the road, where the landscape has less relief, and the soils are better suited to agriculture. Fields typically extend perpendicular to the roadway and are frequently bound by a fence or stone row and lined with trees. The remaining fields maintain their historic configurations based on visible evidence appearing in aerial photographs of the site dating to the historic period.

Conifer plantations began to appear along Old Mine Road North by the end of the historic period, and many are still extant. The plantation stands are densely planted, with little to no understory vegetation due to limited sunlight on the ground story. The stands range in age, with some less than forty years old, while others exceed eighty years of age, and include a variety of pines, spruce, and larch varieties.

Historic aerials show that successional vegetation was already underway by 1965 in former agricultural fields. Comparing aerial photographs from 1963 and 2019 aerials, the change varies by the area. It appears that the federal government maintained many of the larger agricultural fields while smaller ones were no longer farmed or mowed. The largest fields are still clear today. More fields are grown in now continuing north to the south end of Minisink Island, but there also there are still some large fields allowed to remain cleared. Continuing north, there is a large area of successional vegetation regrowth in the narrow river terrace segment east of Minisink Island, but also there are still several agricultural fields remaining on the north end of Old Mine Road North.

Figure 4.31. Example of changes to the character of vegetation along Old Mine Road North in 1977 (L) and 2023 (R). The photographs are both near the entrance to the Westbrook-Bell Farm, facing southwest. The 1977 photograph was taken just north of the entrance, while the 2023 photo was taken at the entrance (Source: Old Mine Road Historic District National Register Nomination, 80000410 and WLA Studio, 2023).

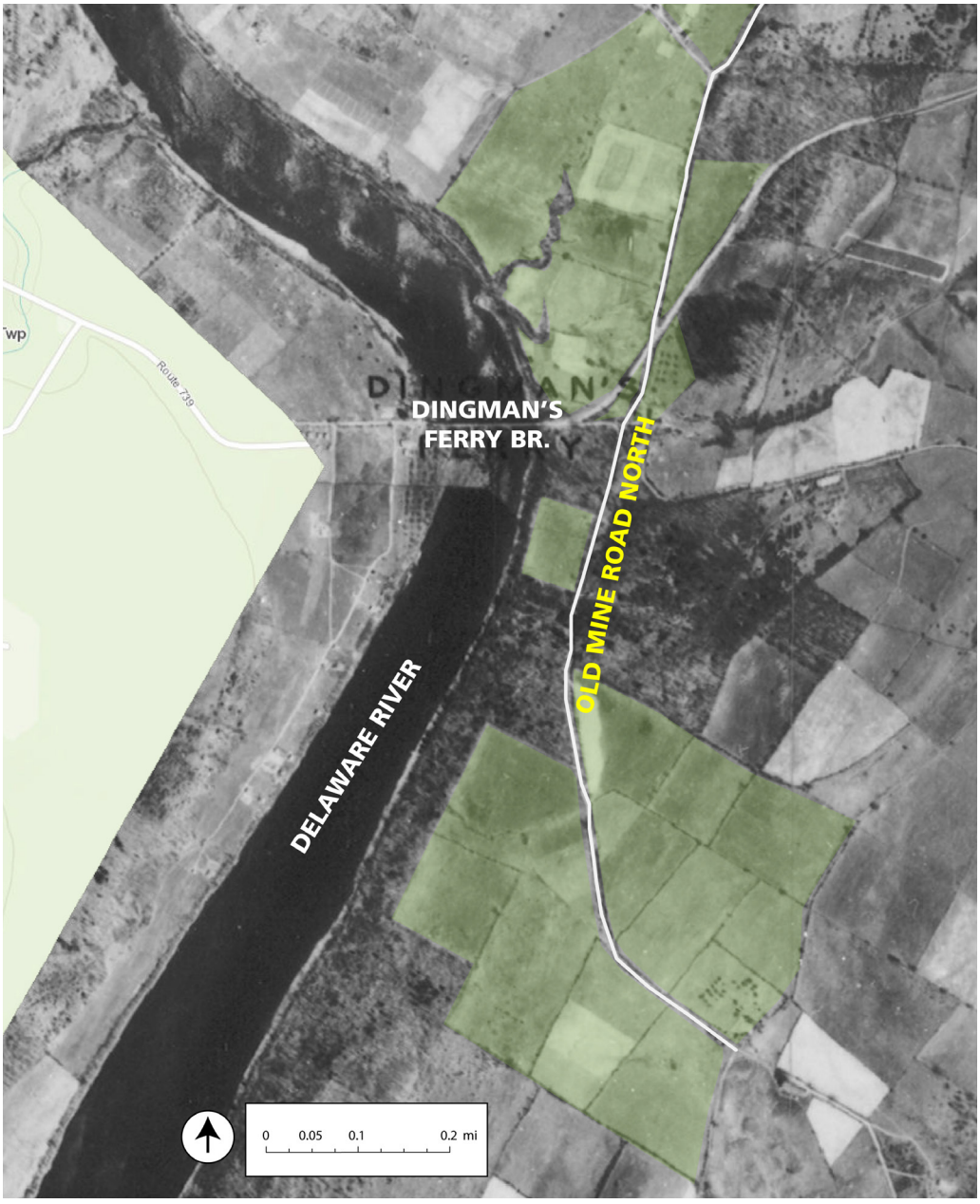


Figure 4.32. 1931 aerial photograph, highlighted to show the extent of fields adjacent to Old Mine Road North (Source: NJ DEP, Historic Preservation Office, annotated WLA Studio 2023).

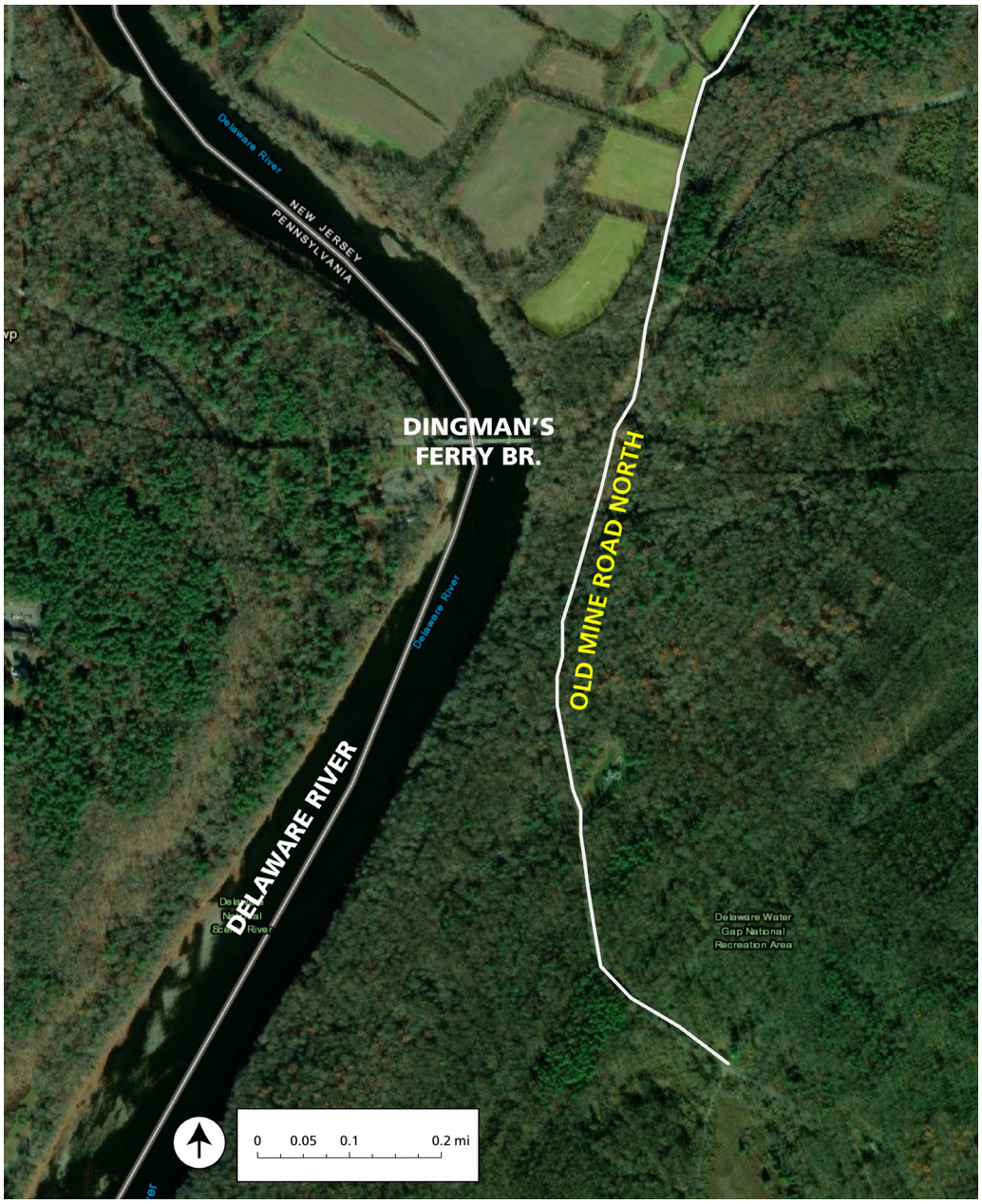


Figure 4.33. 2020 aerial photograph. Note the heavy vegetation and loss of agricultural fields south of Dingmans Ferry, as well as the now noncontiguous agricultural fields north of Dingmans Ferry (Source: NJ DEP, Historic Preservation Office, annotated 2023 WLA Studio).

Evaluation

The gradual return to naturalized forest cover began toward the end of the historic period and accelerated under NPS and USACE management after the end of the historic period (Figure 4.31). Although they represent only a fraction of what existed historically, the remaining agricultural fields along Old Mine Road North help communicate the corridor's history as an active agricultural landscape (Figure 4.32, Figure 4.33). Similarly, the tree lines and wolf trees also help communicate the historic locations of open fields that may or may not still be extant. Cultural vegetation along the Old Mine Road North corridor is a valuable tool for the identification of former homesites that were lost after the end of the historic period, and in many cases, cultural vegetation is the only visible evidence of the site's former use. Missing from the corridor from the historic period are the many open agricultural fields with pockets of forested areas that provided views toward the Delaware River from Old Mine Road during the historic period. Toward the end of the historic period when much of the farming along the corridor had been abandoned, many of these areas had begun to return to successional forest. Since 1965, that

successional growth has matured, creating denser pockets of more forested vegetation. Therefore, there are now many missing early successional forest areas dating to the late historic period as well.

Buildings and Structures

The elements primarily built for sheltering any form of human activities are buildings; and the functional elements constructed for other purposes than sheltering human activity are structures. Engineering systems are also structures, and mechanical engineering systems may be distinguished from structural engineering systems:

- Mechanical engineering systems: conduct utilities within the landscape (such as power lines, hydrants, culverts).
- Structural engineering systems: provide physical stabilization in the landscape (such as retaining walls, dikes, foundations).

Historic Condition (ca. 1600–1965)

Buildings and structures that existed along Old Mine Road North during the historic period include a variety of residential, agricultural, and institutional buildings; roadway-related structures, including culverts and bridges; utility structures such as power lines; and non-roadway structures, such as stone rows and retaining walls.

Buildings along Old Mine Road North included various types of buildings associated with farmsteads, primarily main dwellings, and different types of outbuildings. A 1931 aerial photograph shows approximately nineteen farmsteads, each with multiple buildings, located along the Old Mine Road North corridor. Institutional buildings that existed along Old Mine Road North during the historic period included two school buildings and one church. Places of accommodation that existed along Old Mine Road North during the historic period included vacation houses, rental cottages, and the Brick House Hotel. Historic maps indicate that there were several commercial buildings on or in the close vicinity of Old Mine Road North during the mid-nineteenth century, including a store, a distillery, and a blacksmith shop. Toward the end of the historic period, several small commercial buildings associated with the former Layton quarry/gravel pit (at mile 1.3) were located along a small portion of Old Mine Road North.[848] These commercial buildings are no longer extant, presumably removed when the quarry ceased operations.

Residential buildings constructed during the eighteenth and nineteenth centuries often reflected the heritage of their builders. Dutch populations brought with them a tradition of stone construction, demonstrated by residences such as the Westbrook-Bell and Ennis Houses. Meanwhile, the English typically employed wood-framed construction systems, and often built two-story I-House residences. By the nineteenth century, however, building types and styles along Old Mine Road North became more reflective of broader, nationwide trends, such as the popular adoption of the Federal style for residential architecture.

Agricultural properties often contained numerous outbuildings, including cattle barns, hog barns, corn cribs, silos, sheds, garages, and milk houses, among others. The types of outbuildings varied over time and spoke to the types of goods different farms produced. As dairying became more common during the mid to late nineteenth century, for example, many farmers built milk houses and additional silos to accommodate larger numbers of dairy cows. Similarly, many farmers built additional storage sheds to house motorized farm equipment and garages for automobiles as these machines became widespread during the early twentieth century. Like residential architecture, outbuildings were occasionally reflective of their builder's heritage, as demonstrated by the large Dutch Barn at the Black Farm.

Farmsteads known to include main dwellings and agricultural outbuildings during the historic period include the Bevans-Hellwig Farm property, the Heron's Nest property, the John Wesley Van Auken House property, the Depue House property, the Gumaer property (Figure 4.34), the Anson Johnson House property, the Ennis House property, the Westbrook-Bell House property, the Black Farm property, and the Everitt property. Classified Land Files dating to the 1970s and 1980s contain information and photographs of numerous properties along Old Mine Road

848. "Classified Land Files" (U.S. Department of the Interior, National Park Service, n.d.).

Figure 4.34. 1974 photograph of the outbuildings located on the Gumaer property and a 2023 photograph showing that none of these buildings still exist (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974 and WLA Studio, 2023).

Figure 4.35. 1974 photograph of the two-story frame wing on the Bevans-Hellwig House and a similar view from 2023 (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974 and WLA Studio, 2023).

North that likely dated to the historic period and are no longer extant. Based on these records, farmsteads along Old Mine Road North contained a variety of primary residential structures and outbuildings, including horse barns, sheds, corn cribs, smokehouses, coops, garages, outhouses, and other outbuildings without a clear typology or use. Noted building materials included wood, brick, and concrete block.[849]

The Bevans-Hellwig property dates to the late eighteenth century. The Bevans-Hellwig property was known to have contained a main house (composed of multiple additions), two barns, a privy, and a tool shed. By the mid-nineteenth century, the Bevans-Helwig Farm main house consisted of a two-story wood-framed I-House building, a one-and-a-half-story fieldstone rear wing with a wood-frame addition on its rear elevation (Figure 4.35 and Figure 4.36). One of the two barns known to have existed on the property

Figure 4.36. 1974 photograph of the west elevation of the Bevans-Hellwig Kitchen. Note the non-historic picture window and gabled dormer (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

849. "Classified Land Files."

during this historic period was a large Pennsylvania Dutch barn (Figure 4.37).

The original stone construction portion of the Heron's Nest property dates to circa 1830. Sidney Bevans expanded the house around 1860, adding two wood-framed additions (Figure 4.38). By the 1930s, Frank Stoll purchased the property and converted it to a summer house. Stoll added stucco additions to the west and north sides of the house to expand interior spaces. Stoll also constructed a two-car garage and workshop building with a second-floor apartment north of Heron's Nest in 1932 (Figure 4.39).

Figure 4.37. 1974 photograph of the Pennsylvania bank barn on the Bevans-Hellwig property. This barn is no longer extant (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 4.38. 1974 photograph of the front elevation of Heron's Nest/Frank Stoll House and a 2023 photograph at the same location. Note the cultural vegetation and stone walls are in the same location as they were just after the historic period (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 4.39. 1974 photograph of the garage apartment at the Heron's Nest property (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 4.40. 1974 photograph of the John Wesley Van Auken House. Note the two large trees framing the main entrance (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 4.41. 1974 photograph of the historic barn located on the Van Auken property (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

Figure 4.42. 1970 photograph of the Depue House, taken by George Eisenman. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 4.43. 1970 photograph of the Depue House, taken by George Eisenman. Note the large two-story, wood-framed addition. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

The John Wesley Van Auken property dates to circa 1760. The Van Auken House is a one-and-a-half story wood-framed building. This building is a good example of English architectural heritage and building methods common at this time, which commonly featured wood-framed I-House domestic buildings. The Van Auken House also features notable classical architectural elements (Figure 4.40). The owners of the John Wesley Van Auken House (circa 1760) constructed a large two-story addition on the rear of the building sometime around 1850. It is possible alterations to the front entryway were made during this time as well. An unknown party built a small entryway stoop on the Van Auken House sometime around 1900. The entryway stoop has wood box columns and simple, unadorned entablatures. A large barn on the property is known to date to the historic period and is visible in a 1931 aerial photograph (Figure 4.41). By the 1970s a small shed and rental cottage were also located on the property (it is possible that these outbuildings also date to the historic period but were not documented until the 1970s).

The Depue House property dates to circa 1780. In 1810, John Nyce purchased the property from Isaac Van Auken (possibly the original builder). Around this time, John Nyce or another unknown party built a large two-story addition on the south end of the original block. The 1780 and 1810 portions of the building are both stuccoed, rough-cut fieldstone (Figure 4.42). The two-story addition has a beehive oven on its south elevation. George W. Depue built a large two-story, wood-framed

Figure 4.44. An undated photograph of the Depue House property. Note the multiple outbuildings. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 4.45. 1974 photograph of the main house located on the Gumaer property (Source: NJHPO, "Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II," U.S. Department of the Interior, National Park Service, 1974).

addition on the rear elevation of the Depue House sometime during the early twentieth century (Figure 4.43). Oral histories indicate the original barn was demolished sometime around 1880, following the construction of a new barn and corn crib in 1876. These new outbuildings were located on the opposite side of Old Mine Road North (Figure 4.44).

The Gumaer property dates to circa 1770. An unknown party built main house was circa 1770, which was later acquired by the Gumaer family in 1838, who purchased the property from Abraham Bass (Figure 4.45).[850] The main house was subject to numerous additions during the nineteenth and twentieth centuries, including two shed roof additions on either side of the original block. Outbuildings included a large barn, a chicken house, and a wagon shed (Figure 4.34).

The Anson Johnson House property dates to circa 1840. The Anson Johnson House is a representative example of the English central-hall I-House building type. There is limited information about alterations and additions made to the Anson Johnson House during the historic period. A small shed on the property is known to date to the historic period and is visible in a 1931 aerial photograph. The Anson Johnson property likely had several other outbuildings. Research did not uncover any historic photographs of the Anson Johnson House.

The Ennis House property dates to 1751. The original block of the Ennis House had stone walls and a timber-framed roof (Figure 4.46). The Ennis House is a good example of Dutch architectural heritage and building methods common at this time. The original door of the Ennis House was partially infilled with stone and converted into a window sometime during the nineteenth century, prior to 1890. By 1937 a small shed roof, wood-frame addition had been added to the south elevation of the building (Figure 4.47). A second addition was to the south elevation around 1952. An undated historic photograph shows several two small outbuildings clustered around the main dwelling, and a 1931 aerial photograph indicates that several outbuildings were present (Figure 4.46).

850. Lenard E. Brown, "Historical Base Map, Delaware Water Gap" (New Jersey: Denver Service Center, National Park Service, March 1973), 94.

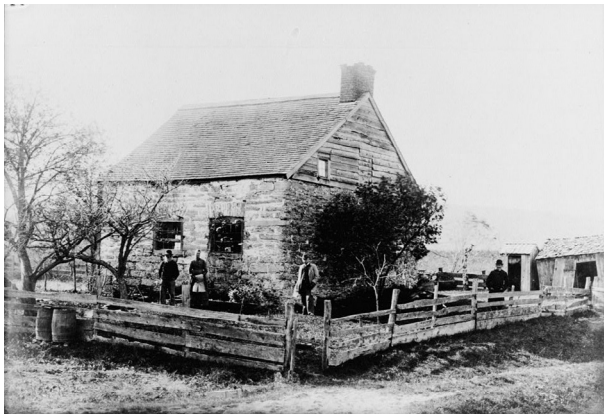


Figure 4.46. An undated photograph of the Ennis House prior to later additions. Note the two small outbuildings behind the home. From Wesley Shank and William C. Badger, "William Ennis House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0823/).

Figure 4.47. A 1937 photograph of the William Ennis House. Note the wood-framed shed roof addition. From Wesley Shank and William C. Badger, "William Ennis House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0823/).

Figure 4.48. An undated photograph of the Westbrook-Bell House. Note the two brick chimneys in either gable end. From Wesley Shank and William C. Badger, "Johannes Westbrook House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0147/).

Figure 4.49. A 1937 photograph of the Westbrook-Bell House. Note the two brick chimneys have been removed and replaced with a concrete block chimney in the east gable. From Wesley Shank and William C. Badger, "Johannes Westbrook House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0147/).

Figure 4.50. Front elevation of the Black Farm main house, taken in 1993 (Source: John Bruce Dodd, "The Black/Minisink Farmhouse," Historic Structure Report).

Figure 4.51. An undated photograph of Black Farm (Source: DEWA Archives).

The Westbrook-Bell House property predates 1730s, likely built circa 1725. The original block of the Westbrook-Bell House had stone walls and a timber-framed roof. During the late nineteenth century, a one-and-a-half story stone addition was built on the rear of the original block (Figure 4.48). The Westbrook-Bell House is a good example of Dutch architectural heritage and common historic building methods. Eliza Westbrook made significant alterations to the house during the 1860s. Under her ownership, a large central chimney was removed and replaced with two chimneys in both gable ends, and the interior was remodeled (Figure 4.49). A barn is known to have existed on the property by 1730, followed soon after by a stone blockhouse called Fort Westbrook. Several other barns and outbuildings, including a privy, were constructed on the property during the historic period.

The main house at the Black Farm property dates to circa 1842 but was built on the foundation of an older house (Figure 4.50). The Black Farm main house is a good representative example of the English I-House, which became the dominant residential building type during the nineteenth century. Shortly before World War II, a side porch was enclosed, and a rear bathroom was added. There are two historic mortared rubble stone freestanding walls framing the entry to the Black Farm main house, close to Old Mine Road North. The walls are approximately two feet high.

Figure 4.52. 1971 photograph of the Everitt House from John M. McRae, "Everitt House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1971 (Source: Library of Congress, https://www.loc.gov/item/nj0141/).

Figure 4.53. 1971 photograph of the Everitt House from John M. McRae, "Everitt House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1971 and a 2023 photograph showing the house site, where only remnants of the stone wall are visible (Source: Library of Congress, https://www.loc.gov/item/nj0141/ and WLA Studio, 2023).

Historic outbuildings known to have existed within the Black Farm farmstead cluster include a stone springhouse, a large Dutch barn, and smaller secondary barn, and a corn crib/wagon shed. An unknown party had previously built the large wood-framed Dutch barn sometime during the late eighteenth century (Figure 4.51). The date of the smaller outbuilding of unknown use (possibly a corn crib or wagon shed) and stone springhouse are undetermined, but it is possible they date to this period as well.

Construction of the Everitt House dates to or before 1750. The Everitt House was a one-and-a-half story stone structure (Figure 4.52 and Figure 4.53). The house was subject to several additions and alterations throughout the historic period. Outbuildings on the property included a barn, carriage house, and several residential cottages.

The only known church to have existed along Old Mine Road North during the historic period was the Minisink Dutch Reformed Church. It was a log church building, constructed sometime between 1740 and 1743. By 1860, historic maps indicate that two school buildings were located along Old Mine Road North. One was near the Westbrook-Bell House and the other was near Van Ness Road. Research has not uncovered descriptions about the exterior appearance, construction systems, or materials of these school buildings. The Minisink Dutch Reformed Church and both schools ceased operations during the historic period.

Places of accommodation that existed along Old Mine Road North during the historic period included a hotel, vacation houses, and rental cottages. The only known hotel to have existed alongside Old Mine Road North during the

historic period was the Brick House Hotel, located in Montague at the far north end of the corridor. The Brick House Hotel was built circa 1776 and predated the surrounding village. Hotels became more common during the nineteenth and twentieth centuries, but most were concentrated in nearby villages and towns, and none are known to have been located along Old Mine Road North. During the early twentieth century, many well-to-do vacationers began purchasing existing farmsteads and converting them to seasonal vacation homes. As a result, the landscape characteristics of these properties changed. As their agricultural purpose became somewhat secondary, these properties became less utilitarian and more ornamental. Rental cottages are also known to have existed along Old Mine Road North during the historic period. By the 1930s, there were ten white cabins with green trim, approximately one mile south of Old Mine Road North's north terminus. The John Wesley Van Auken House property also had a rental cabin by the 1970s (it is possible that this building dates to the historic period but was not documented until the 1970s).

There are numerous culvert typologies extant along Old Mine Road North that were present during the historic period, including several standard typologies and several unique, singular examples. Standard typologies observed include Type 1 (metal culverts with stacked stone inlet headwalls), Type 2 (plastic culverts with stacked stone inlet headwalls), Type 3 (concrete culverts with stacked stone inlet headwalls), Type 4 (metal culverts with concrete headwalls), and No Type (culverts that do not have an associated headwall or otherwise conform to a recurring typology). Unique and singular examples of culverts include the following: the concrete headwall with three steel culverts at Kittatinny Creek (MP 2.159); the concrete box culvert with concrete guard rail (MP 3.939); the concrete box culvert with concrete guard rail at Jager Road (MP 4.237); the stone box culvert between Black Farm and Everitt Farm, historically known as 'Westfalls Bridge' (MP 5.379).

Throughout the early twentieth century, Old Mine Road North was subject to several road improvement projects, and structures built during this period include various types of culverts and guide rail and cable systems. Stone, concrete, and metal are the primary culvert materials found along Old Mine Road North dating to this period, with stone and concrete likely predating metal examples. From 1930 through the 1950s, the WPA initiated a series of road improvements projects on other sections of Old Mine Road, and the metal culverts found along Old Mine Road North are of the same materials and design. The concrete guide rail posts and steel cable systems found along Old Mine Road North also closely resemble those built along other sections of Old Mine Road during the WPA-era of road improvements.

There is one bridge that dates to the historic period, constructed circa 1960, that spans White Brook at the north end of Old Mine Road North. The bridge is a single-span, prestressed concrete box beam construction and is approximately twenty-five feet wide, with angled wing walls. The bridge spans approximately eighteen feet across White Brook and is lined with steel guard rails. Presumably, this bridge was constructed to replace an older structure. Research has not uncovered information about the bridge predating the circa 1960 concrete bridge.

Overhead electrical utility systems present along Old Mine Road North date to the historic period. It is unknown when they were initially installed, and it is likely that they have been subject to updates, repairs, and replacement over time.

Non-roadway structures along Old Mine Road North dating to the historic period include stone rows and stone retaining walls. Stone rows were formed by farmers who gathered large quantities of field stones from rocky soil they were prepping for cultivation. The stone rows were used to demarcate property lines and field boundaries. Over time, fallow fields returned to a state of natural succession and many of the stone rows remained in place. There are several stone retaining walls along Old Mine Road North that date to the historic period. These retaining walls were likely associated with farmsteads or residences that existed along Old Mine Road North during the historic period. One substantial stone wall (at MP.63) is constructed of mortared river boulders and likely provided a level area for a former residence. There are also dry-stacked fieldstone retaining walls and mortared retaining walls at several locations along Old Mine Road North that date to the historic period.

Post Historic and Existing Condition

An unknown number of buildings were lost to arson or demolished by the USACE following federal land acquisition during the 1960s and 1970s. Of the nineteen farmsteads identified in 1930s, only eight have retained one or more of their buildings, including: the Bevans-Hellwig Farm property (ca. 1796, MP0.0), the Heron's Nest property (ca. 1830, Mettler Road), the John Wesley Van Auken House property (ca. 1760, Mettler Road), the Depue House property (ca. 1780, MP 2.8), the Anson Johnson House property (ca. 1850, MP 2.4), the Ennis House property (ca. 1751, MP 4.6), the Westbrook-Bell House property (ca. pre-1730, MP 5.14), and the Black Farm property (ca. mid to late eighteenth century, MP 5.3).

The Bevans-Hellwig property has undergone numerous changes since the end of the historic period (Figure 4.54). The only building still extant is the fieldstone kitchen. The NPS removed the two-story wood-framed wing, and all that remains of this section of the house is a stone and brick firebox, which belonged to the chimney in the east gable on the two-story frame wing. The NPS also removed the one-story frame addition on the north wall of the fieldstone kitchen. The NPS removed both gabled dormers on the roof of the fieldstone kitchen and the enclosed screen porch on the west elevation of the kitchen. Additionally, they infilled the non-historic picture window with stone to mirror the surrounding exterior material. Site managers replaced or repaired the stone exterior on four elevations of the kitchen building. The windows have been partially enclosed with wooden ventilation panels. The large Pennsylvania barn is no longer extant.

At the Heron's Nest/Frank Stoll property, few changes have been made since the end of the historic period (Figure 4.55, Figure 4.56). It appears that there has been minimal physical intervention of stabilization efforts made on site, and both the main house and garage apartment show signs of extensive physical deterioration. The NPS has boarded shut some, but not all, of the doors and windows.

Figure 4.54. The fieldstone kitchen wing of the Bevans-Hellwig House. View to the west (Source: WLA Studio, 2023).

Figure 4.55. The front elevation of the main house at Heron's Nest. View to the west (Source: WLA Studio, 2023).

Figure 4.56. The front elevation of the garage apartment at Heron's Nest. View to the northwest (Source: WLA Studio, 2023).

Figure 4.57. The front elevation of the John Wesley Van Auken House. View to the west (Source: WLA Studio, 2023).

Figure 4.58. The front elevation of the Depue House. View to the west (Source: WLA Studio, 2023).

The John Wesley Van Auken property is privately owned. The building's exterior appears to be well-maintained with few notable changes (Figure 4.57). The owners removed two large trees that historically framed the main entrance during this period and installed an asphalt driveway in front of the main entrance. It is unknown if the historic outbuildings are still extant.

The Depue House property underwent numerous changes since the end of the historic period (Figure 4.58). The NPS removed the large two-story frame addition on the rear of the building. Many of the windows have been partially enclosed with wooden ventilation panels, and the doorways have been boarded shut. The outbuildings on the opposite side of Old Mine Road North are no longer extant.

The main house and outbuildings at the Gumaer property are no longer extant. They were removed by the NPS sometime after the 1974 Historical Architectural Survey was completed (Figure 4.34).

The Anson Johnson House property has not undergone substantial changes since the end of the historic period (Figure 4.59, Figure 4.60). According to park personnel, the NPS used the Anson Johnson House for employee housing during the 1990s and 2000s. Additionally, the NPS is currently evaluation the Anson Johnson House for rehabilitation, which would include repair and in-kind replacement of historic fabric. The purpose of the rehabilitation project is to make the house suitable for occupancy.[851] The wood-framed upper floor of the shed (or barn) outbuilding has partially collapsed and needs immediate stabilization.

Figure 4.59. The front elevation of the Anson Johnson House. View to the west (Source: WLA Studio, 2023).

The William Ennis House property underwent minimal changes since the end of the historic period (Figure 4.61). According to park personnel, the NPS used the William Ennis House for employee housing during the 1990s and 2000s. The NPS has boarded shut most of the windows. A shed roof porch addition was removed sometime after 2016. According to park personnel, the Ennis House has received numerous rehabilitation and maintenance projects over time, including the in-kind replacement of the cedar shingle roofing material. Additionally, the NPS is currently in the preliminary planning phase of a rehabilitation project for the Ennis House.[852]

The Westbrook-Bell Farm property has undergone minimal changes since the end of the historic period (Figure 4.62–Figure 4.64). The NPS has boarded shut several of the first-floor windows,

851. This information was provided by park personnel.

852. This information was provided by park personnel.

Figure 4.60. The front elevation of the shed at the Anson Johnson House. View to the west (Source: WLA Studio, 2023).

Figure 4.61. The front elevation of the William Ennis House. View to the west (Source: WLA Studio, 2023).

Figure 4.62. The front elevation of the Westbrook-Bell House. View to the north (Source: WLA Studio, 2023).

Figure 4.63. The two barns at the Wesbrook-Bell property. View to the northeast (Source: WLA Studio, 2023).

and the historic privy and two historic barns are still extant. According to park personnel, the NPS used the Westbrook-Bell Farm house for employee housing during the 1990s and 2000s. Additionally, the Westbrook-Bell House has received numerous rehabilitation and maintenance projects, including the repointing of stone walls, reinforcing framing, and in-kind repair and replacement of the wood shake roof. A Historic Structure Treatment Report was conducted in 2015 to identify future needs and assist planning for additional maintenance work.[853]

Figure 4.64. The privy at the Westbrook-Bell property. View to the west (Source: WLA Studio, 2023).

853. This information was provided by park personnel.

The Black Farm has undergone several notable changes since the end of the historic period (Figure 4.65–Figure 4.70). According to park personnel, exterior porches were removed based on recommendations made in the 1993 historic structure report "The Black/Minisink Farmhouse," and it is possible that additional recommended repairs were made around this time. In 2016, in-kind repairs were made to the cedar shingle roof to help stabilize the building.[854] The building is showing signs of physical deterioration including the degradation of wood siding and biological growth on the roof. At some point, there was substantial water damage resulting in discoloration where the rear wing addition meets the main house. The NPS has boarded shut most of the windows and doorways. The corn crib/wagon shed is out of plumb and does not appear to be structurally sound. The rear wall of the stone springhouse collapsed sometime prior to 1996, and no repair efforts have been made. A second barn was removed, but the concrete foundation is still visible. Research also indicated that a chicken coop and storage shed were removed or lost since the end of the historic period. The large Dutch barn is still extant. There are also numerous historic stone retaining walls on the property that support grade changes, as well as the remains of a concrete well or septic tank.

The Everitt House and all the outbuildings on the property were demolished around 1975. Portions of a stone retaining wall situated in front of the main house are still extant (Figure 4.53).

Examples of historic culverts are still extant along the Old Mine Road North corridor. In some cases, a portion of an individual culvert have been replaced with different materials. Several culverts, particularly the larger examples made of board-formed concrete, are showing signs of physical deterioration. The bridge spanning White Brook at the north end of the Old Mine Road North corridor is still extant and appears to be in good condition. Plastic culvert materials were introduced after the end of the historic period.

Overhead electrical utility systems are still in place. It is probable that they have been subject to updates, repairs, and replacement over time.

Numerous stone rows are still extant along the Old Mine Road North corridor. There are also several mortared and dry-stacked stone retaining walls extant along the roadway. These structures suggest the location of a residence that is no longer extant. The stone retaining walls are generally in poor condition.

Evaluation

Since the end of the historic period, there has been a considerable loss of historic buildings along Old Mine Road North, and many of the extant buildings are showing signs of extensive material and structural deterioration, with several needing immediate intervention to ensure their survival. As noted, the NPS has completed various rehabilitation and maintenance projects of several buildings and is making plans to preserve these resources moving forward. Despite the loss of many historic buildings and the poor current conditions of several buildings, the extant buildings are important contributing structures and speak to the area's long history of human settlement, stretching back to the colonial era. Similarly, the stone rows and stone retaining walls help communicate the historic locations of agricultural fields and homesites. Additionally, many of the oldest culverts that have been maintained speaks to the long history of human occupation along the road, while the modern culverts and electrical utility lines speak to the history of human habitation along Old Mine Road North during the twentieth century.

Constructed Water Features

Constructed Water Features are the built features and elements which utilize water for aesthetic or utilitarian functions in the landscape.

Historic Condition (ca. 1600–1965)

Workers built a stone-lined circular pool and stone dam which slow the flow of a stream historically known as White Kill at MP 5.39 near the Everitt Farm at an unknown date during the historic period. The structures appear to have been associated with the Everitt Farm property and potentially a mill that existed in this area as early as the mid-eighteenth century associated with the Westfall family.

Earthen dams remain in a few locations along the roadway which appear to have formerly functioned

854. This information was provided by park personnel.

Figure 4.65. The front elevation of the Black Farm main house. View to the southwest (Source: WLA Studio, 2023).

Figure 4.66. The rear and side elevations of the Black Farm main house. View to the southeast (Source: WLA Studio, 2023).

Figure 4.67. The front elevation of the springhouse at the Black Farm. View to the west (Source: WLA Studio, 2023).

Figure 4.68. The rear elevation of the springhouse at the Black Farm. Note the collapsed rear wall. View to the east (Source: WLA Studio, 2023).

Figure 4.69. The Dutch Barn at the Black Farm. View to the northwest (Source: WLA Studio, 2023).

Figure 4.70. The corn crib/wagon shed at the Black Farm. View to the south (Source: WLA Studio, 2023).

as livestock or agricultural irrigation ponds. Research did not reveal the presence of any other ponds, lakes, or water features during the historic period.

Post Historic and Existing Condition

The stone pool and dam at White Kill are still extant and functioning. An unknown party drained the other agricultural ponds at an unknown date. The ponds are now only recognizable as mounded earth topographic features in the landscape.

Evaluation

The stone pool and dam still function as a constructed water feature. While the agricultural ponds no longer function as such, the presence of the earthen mounds remains an indicator of their former use. The remaining constructed water features contribute to the historic setting of Old Mine Road North.

Views and Vistas

The prospect created by a range of vision in the cultural landscape, conferred by the composition of other landscapes characteristics and associated features. Views and vistas are distinguished as follows:

- Views: The expansive or panoramic prospect of a broad range of vision which may be naturally occurring or deliberately contrived.
- Vistas: The controlled prospect of a discrete, linear range of vision, which is deliberately contrived.

Historic Condition (ca. 1600–1965)

Only a few historic images showing the landscape along Old Mine Road North exist, which limits information on specific historic views from the roadway. Historic photographs from the late eighteenth and early nineteenth centuries, and a 1931 aerial photograph reveals that much of the land within the viewshed of Old Mine Road North was under cultivation. Open fields occupied the land on both sides of the roadway and extended, in many places, all the way to the river (Figure 4.71). During the historic period, this open

Figure 4.71. 1931 aerial photograph showing Old Mine Road North (Source: www.historicaerials.com).

Figure 4.72. An undated photograph of the Depue House property. Note the largely unobstructive view west toward the Delaware River Valley and mountain range in background. "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

condition would have offered wide and expansive views in both directions but particularly to the west where the topography tends to slope down toward the river. The 1931 aerial photograph shows masses and lines of trees; trees are most found along stream corridors or along boundaries of farm fields. Additionally, trees are visible in the 1931 aerial photograph growing in areas near farmsteads. A few historic photographs of farmsteads along Old Mine Road North show that these domestic landscapes included shade trees growing in the yards around the buildings, and some farmsteads featured orchards. But in general, the character of the land along Old Mine Road North was open with an almost unbroken view westward toward the river and mountains beyond. For example, an undated historic image (likely late 1800s or early 1900s) taken from the hillside east of the Depue-Nyce farm depicts an open viewshed with a few scattered trees on both sides of Old Mine Road North. This view, essentially unobstructed toward the river and the Pocono Mountains, was the general condition of this landscape characteristic once the area had been settled and agriculture introduced into the region (Figure 4.72). Historic views from the Pennsylvania side of the Delaware River show the patterns of vegetation, open fields and pockets of forest, that allowed for views along Old Mine Road North (Figure 4.73, Figure 4.74).

Post Historic and Existing Condition

Aerial photographs from 1931 to the present illustrates a steady progression of vegetation spreading over formerly cultivated land as agricultural use of the area diminished. An aerial photograph from the 1980s shows that some fields along the roadway remained open but that vegetation had by this time filled in large swaths of land between these few, remaining, active fields (Figure 4.75). The growth of woods along the sides of the roadway limit views in both directions, perhaps most notably toward the west, obscuring the river and mountains.

Classified Land Files held by the NPS provide documentation of properties along Old Mine Road North after the end of the historic period during

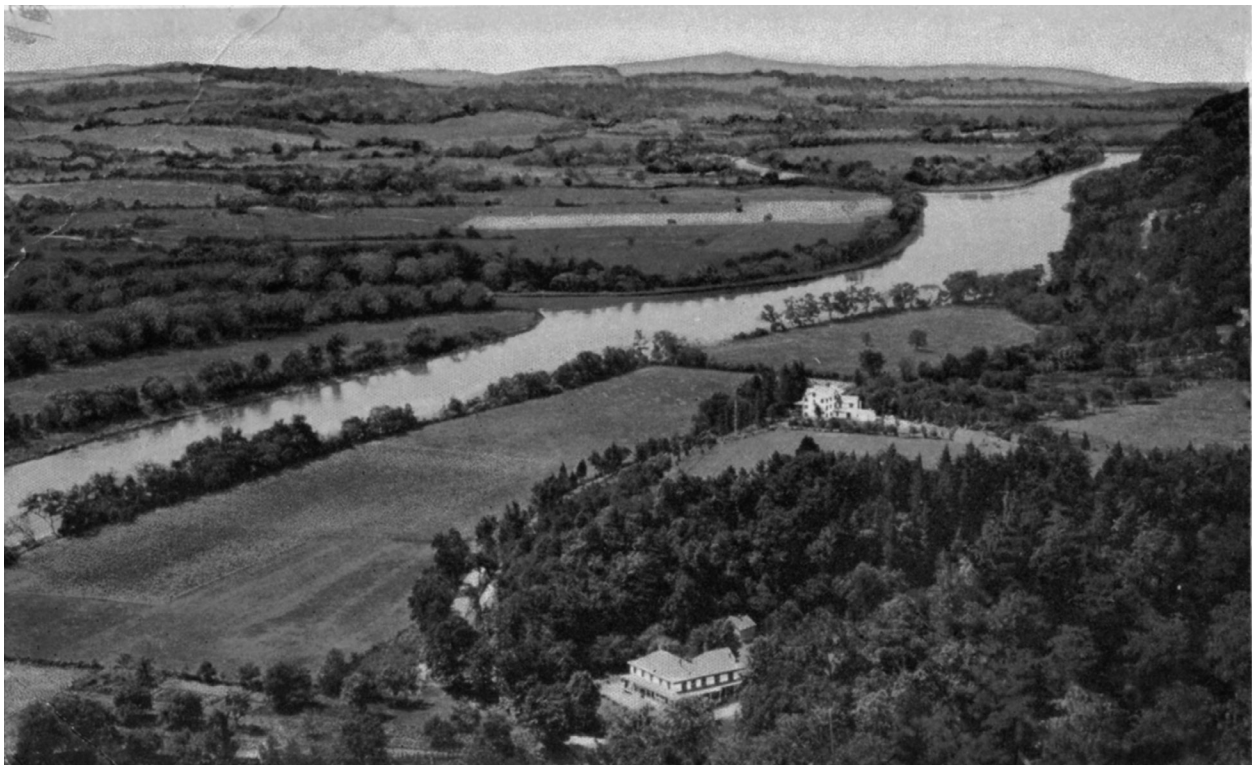


Figure 4.73. Undated postcard of "View Down the Delaware from the Cliffs," showing the Delaware River, Minisink Island, and New Jersey beyond. Though Old Mine Road North is not visible in this image, the patterns of forest and fields that provided views along the road during the historic period are apparent (Source: DEWA, McCarty Family Photos).

the 1970s and 1980s. Photographs contained within these files show a more open and less heavily vegetated/forested landscape that what exists now.[855]

By the first decade of the twenty-first century and continuing to the present (2023), reforestation has continued to fill historic fields and obscure former views from the roadway (Figure 4.76). Despite the general regrowth of woods through the project area, a few locations remain along Old Mine Road North where agricultural fields are under cultivation, which maintains an open condition conducive to providing views. These remaining fields reflect the configuration of fields seen in the 1931 aerial photograph; the width and orientation of the fields are very similar to fields seen in 1931 even though the fields are often truncated and do not extend as far away from the roadway as they did in 1931. The fields are almost exclusively on the west side of Old Mine Road North; a small section of field does cross over to the east side of the road toward the north end of the study area near its intersection with U.S. 206. The breaks in the forest associated with these open fields provide opportunities for travelers to view across the landscape toward the river valley and the mountain ridge on the opposite side of the valley. Views are generally restricted on the eastern side of the roadway due to a combination of thick forest cover and the topography which rises toward the east foreshortening any potential sight lines. There are currently views from the roadway toward cultural landscape features located near the roadway. Some views of historic buildings are present and likely similar to historic conditions. The view of Black Farmhouse from the roadway approaching the house from the north is a notable and dramatic example of this kind of view (Figure 4.77). This view is the first of its kind today for a motorist traveling south along Old Mine Road North.

These views and vistas do not appear to have been designed or deliberately created. Therefore, there are no known vistas in the Old Mine Road North landscape.

855. "Classified Land Files."

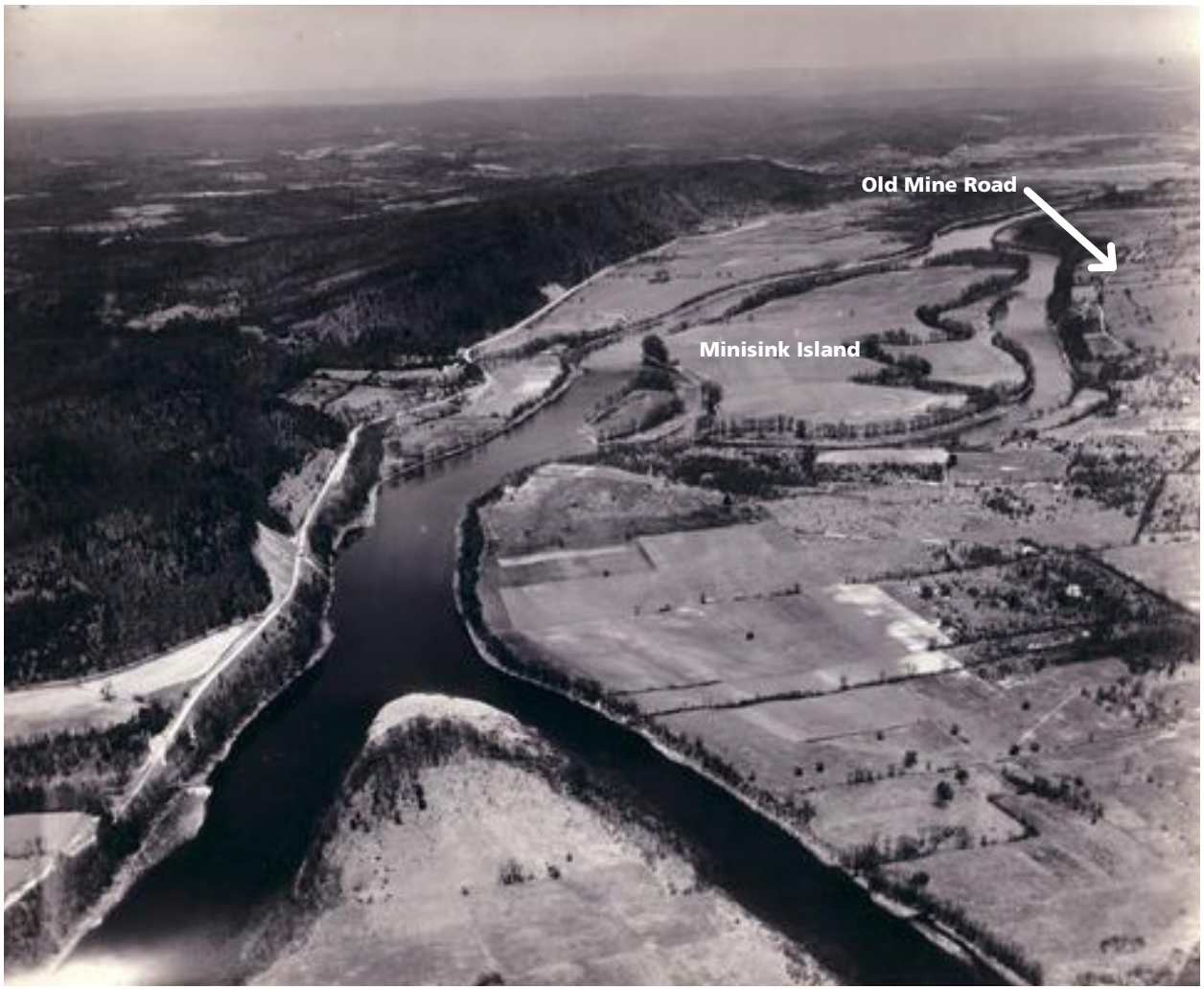


Figure 4.74. Annotated low-altitude 1930 Dallin Aerial Survey photograph showing Old Mine Road east of Minisink Island and the agricultural area between Old Mine Road and the Delaware River (Westbrook Farm) south of Minisink Island are depicted (Source: Courtesy of the Hagley Museum and Library).

Evaluation

Formerly, when much of the landscape adjacent to Old Mine Road North was being farmed, long views across the landscape existed. The regrowth of a forest along most of both sides of the roadway blocks most of the historic views. Additionally, views that existed to numerous farmsteads have been significantly reduced because of the loss of numerous buildings and structures that existed during the period of significance. Refer to the Cluster Arrangement and Buildings and Structures section for fuller discussion of missing architectural resources. However, though forest regrowth has restricted views along the corridor over time, extant agricultural fields do provide a limited number of views to the surrounding landscape from the roadway. Similarly, views of extant buildings are similar to how they were historically, in that they are visible from the roadway and unobscured. However, these views have changed in the sense that these buildings are no longer surrounded by large agricultural fields. These views contribute to the historic rural character of the Old Mine Road North cultural landscape.

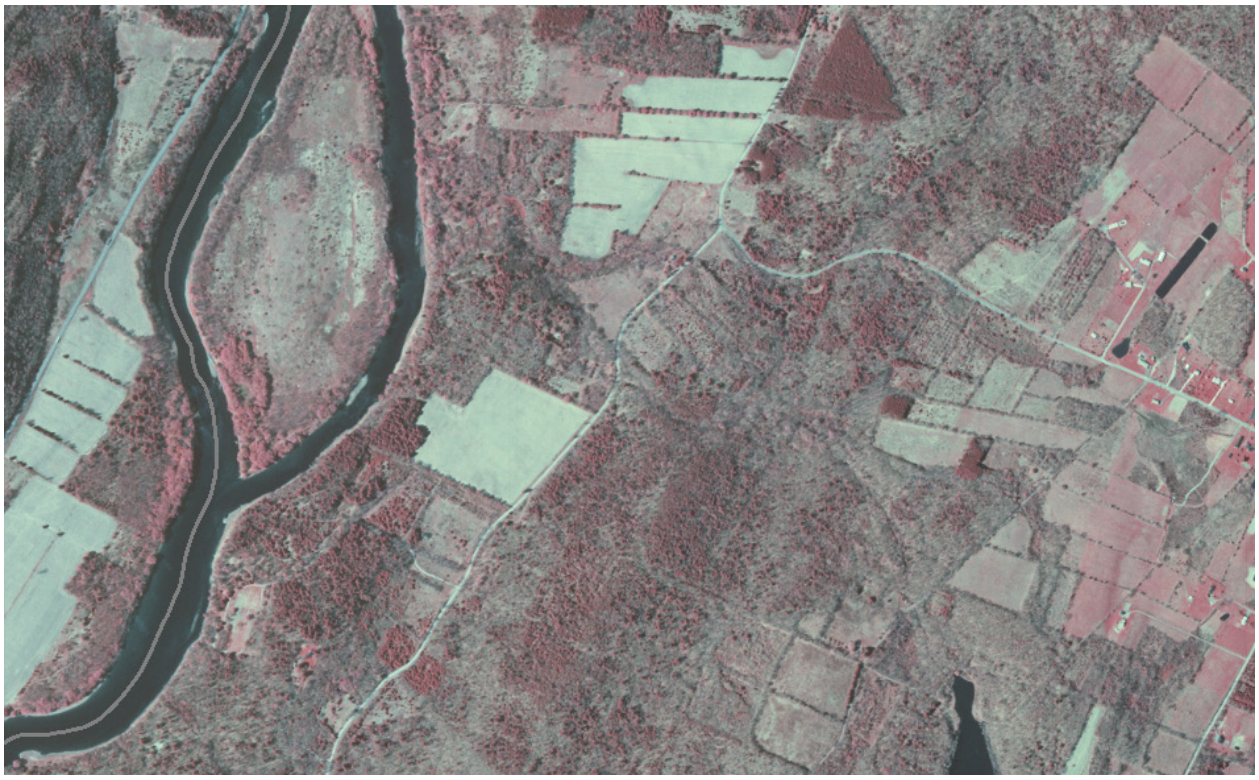


Figure 4.75. 1980s aerial photograph showing Old Mine Road North (Source: www.historicaerials.com).

Figure 4.76. 2020 aerial photograph showing Old Mine Road North (Source: www.historicaerials.com).

Figure 4.77. View looking south along Old Mine Road North to the Black Farm House (Source WLA Studio, 2023).

Small-Scale Features

Small-Scale Features are the elements which provide detail and diversity for both functional needs and aesthetic concerns in the landscape.

Historic Condition (ca. 1600–1965)

Documentation of small-scale features along the Old Mine Road North corridor during the historic period is limited. Small-scale features known to have existed along the Old Mine Road North corridor during the historic period include different types of fences, historical markers, small-scale features associated with residential landscapes, and roadside guideposts.

Residents along the Old Mine Road North corridor used a variety of different fencing types during the historic period, including split-rail fences, post and rail fences, barbed wire fences, and woven wire fences. Split-rail fencing was the earliest type constructed by residents in the area, followed by post and rail fences during the early nineteenth century. Barbed wire fences first appeared in the late nineteenth century, followed by woven wire fences in the early twentieth century. Fences were used alongside stone rows and tree lines to demarcate property and field boundaries along Old Mine Road North. Other types of fencing known to have existed along Old Mine Road North include wooden picket fences, as seen at the Depue House (Figure 4.78), and decorative metal fencing, seen at the Everitt House property (Figure 4.79).

A wooden post and rail fence is visible in an undated photograph of the William Ennis House (Figure 4.80). The fence wraps around the main house, and outbuildings behind the main house appear to be situated inside the fence. The post and rail fence at the Ennis House was removed during the historic period, sometime prior to a HABS survey in 1930. An undated photograph of the Depue House shows a wooden picket fence in front of and on the sides of the main house, and an undated photograph of the Depue farmstead shows a wooden post and rail fence behind outbuildings on the property (Figure 4.81). The wooden picket fence in front of the main house at the Depue property was removed sometime prior to the HABS survey in 1970, possibly during the historic period. An undated photograph of the Black Farm shows a woven wire fence with wooden posts along the roadway in front of the property (Figure 4.82). Old Mine Road North is paved in photograph, suggesting it was likely taken during the mid-twentieth century. It is unknown when the woven wire fence was removed.

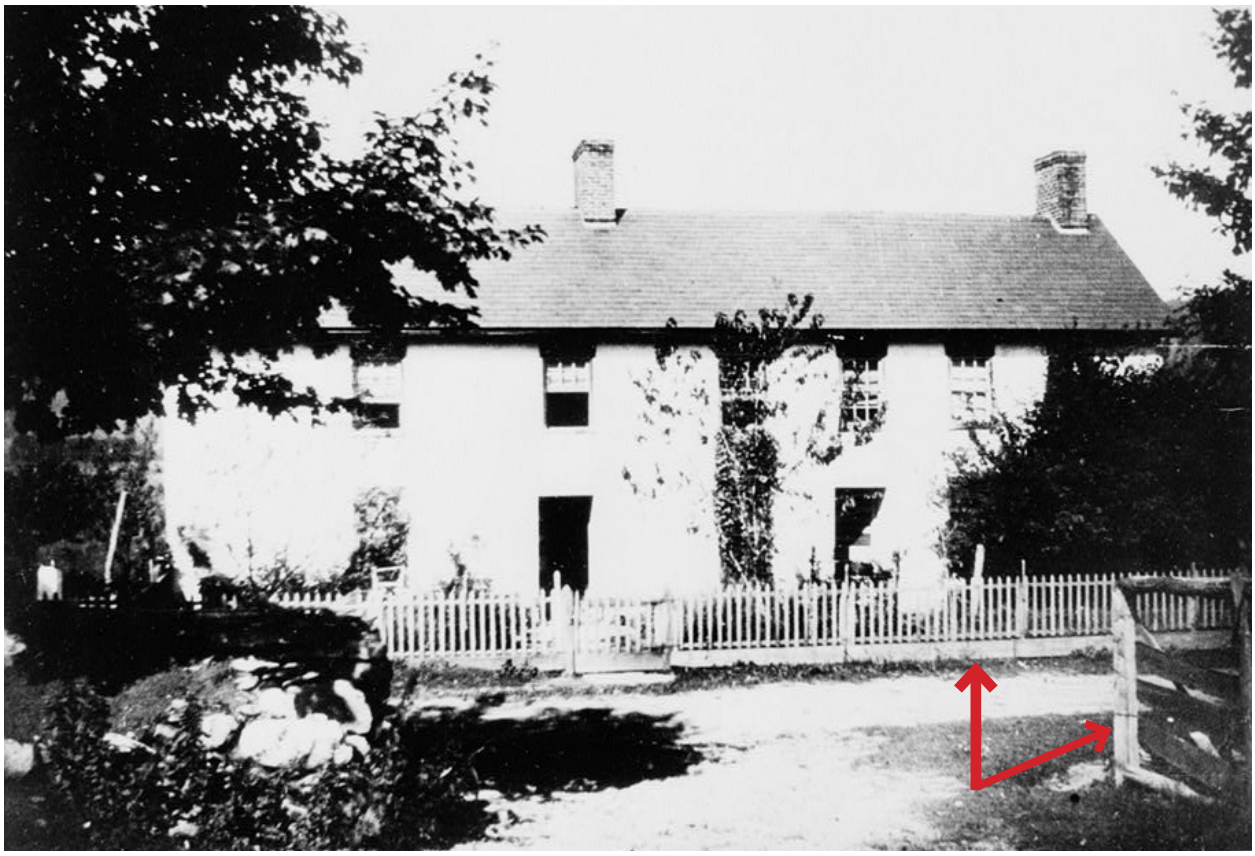


Figure 4.78. An undated photograph of the Depue House. Note the wooden picket fence, photo center and the post and rail fence, photo right. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

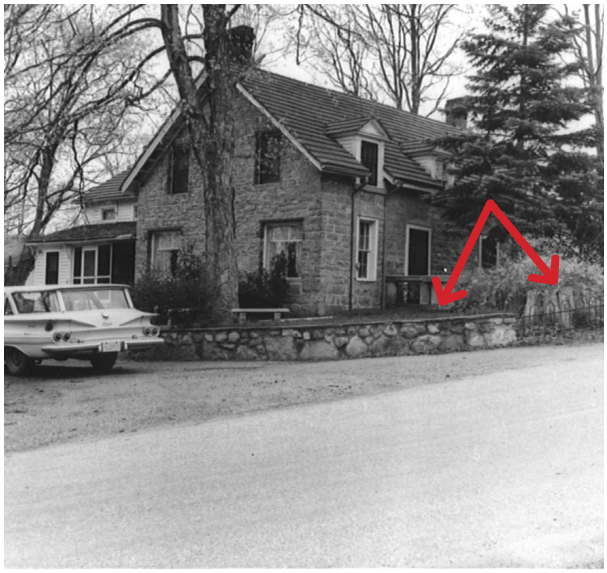


Figure 4.79. 1971 photograph of the Everitt House. Note the stone retaining wall and decorative metal fence around the front yard. From John M. McRae, "Everitt House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1971 (Source: Library of Congress, https://www.loc.gov/item/nj0141/).

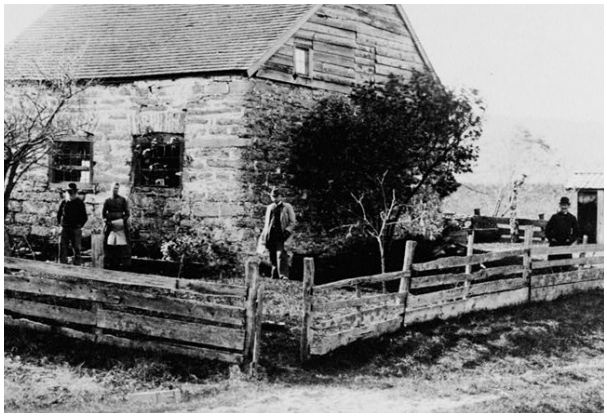


Figure 4.80. An undated photograph of the Ennis House prior to later additions. Note the post and rail fence around the property. From Wesley Shank and William C. Badger, "William Ennis House," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0823/).

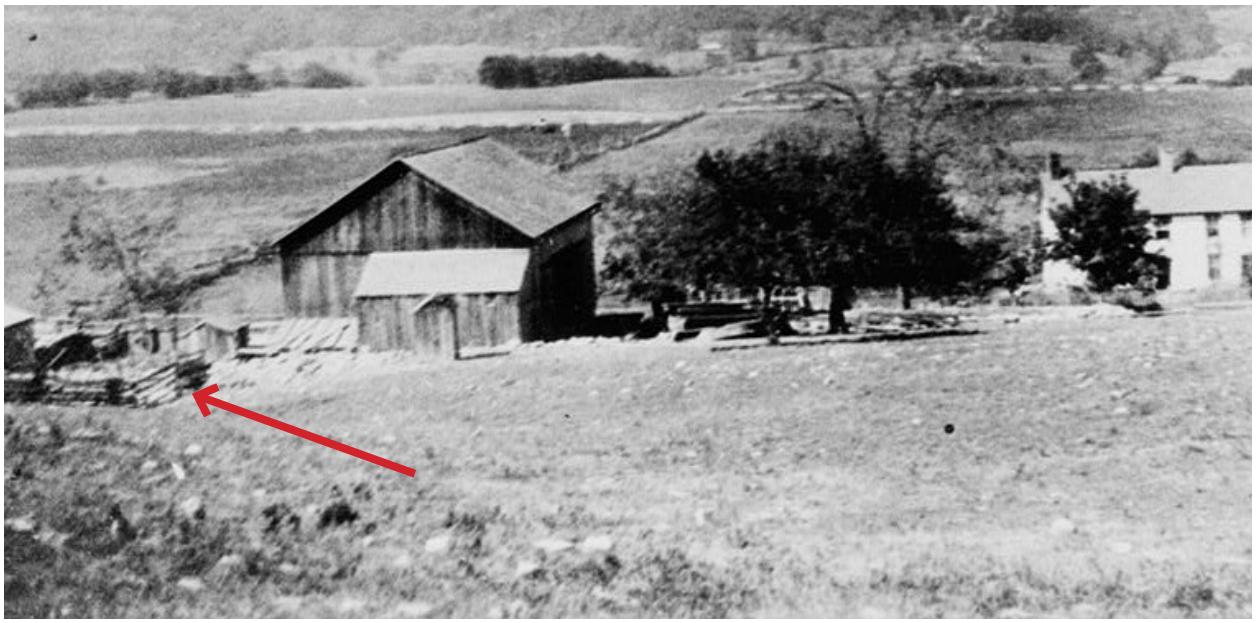


Figure 4.81. An undated photograph of the Depue House property. Note the post and rail fence near the outbuildings. From Wesley Shank, "Nyce-Depue Farm," HABS, Department of the Interior, Heritage Conservation and Recreation Service, 1970 (Source: Library of Congress, https://www.loc.gov/item/nj0137/).

Figure 4.82. An undated photograph of Black Farm. Note the woven wire fence running along Old Mine Road North. Note that by 2023, none of the fencing along the road is present (Source: DEWA Archives).

Historical markers that existed during the historic period include a concrete marker and commemorative copper plaque at the Westbrook-Bell property, a stone marker or sign at the Depue House, and a small granite marker at the former site of the Minisink Dutch Reformed Church. The Daughters of the American Revolution (DAR) erected the concrete marker at the entrance to the Westbrook-Bell property in 1934. The copper plaque provides a brief explanation of the road's history, erroneously dating it to 1650, and commemorates the Westbrook-Bell property and other significant locations nearby (Figure 4.83). *The WPA Guide to 1930s New Jersey* mentions the presence of the Westbrook-Bell marker, as well as a small granite marker at the former site of the Minisink Dutch Reformed Church. According to park personnel, the extant granite marker at the

Figure 4.83. The commemorative marker at the Westbrook-Bell property. View to the west (Source: WLA Studio, 2023).

Figure 4.84. The commemorative marker at the former site of the Minisink Dutch Reformed Church. View to the west (Source: WLA Studio, 2023).

Figure 4.85. The former historic marker south of the Depue House. View to the north (Source: WLA Studio, 2023).

Figure 4.86. The concrete stairs at the Bevans-Hellwig property. View to the north (Source: WLA Studio, 2023).

Figure 4.87. The brick and stone firebox at the Bevans-Hellwig property. View to the east (Source: WLA Studio, 2023).

Minisink Dutch Reformed Church and Cemetery is the original marker, which was donated to the site by John Van Sickle, a founding member of the Sussex County Historical Society, in 1913(Figure 4.84).[856] At the Depue House, there is a modern historic marker that references an earlier marker it replaced. Toward the south end of the property, there is a flat stone set upright with four drilled holes in each corner (Figure 4.85). This is the original commemorative marker at the Depue House. Its original installation date is unknown, but it is possible that it dates to the historic period.

Small-scale features associated with residential landscapes known to have existed during the historic period include a small set of concrete stairs and a brick and stone firebox at the Bevans-Hellwig property, a small concrete footbridge at Heron's Nest, and stone retaining wall at the Everitt House. The concrete stairs at the Bevans-Hellwig property mark the approximate location of the main entrance to the two-story wood-framed portion of the main house, which the NPS demolished sometime after 1974 (Figure 4.86). The brick and stone firebox still extant on the property belonged to the chimney in the east gable on the two-story frame wing (Figure 4.87). Frank Stoll constructed the small concrete footbridge at the Heron's Nest property, which was installed above a small decorative pond during the 1930s (Figure 4.88). The stone retaining wall at the Everitt House is still extant and visible from the Old Mine Road North (Figure 4.80).

There are numerous examples of roadside guideposts along Old Mine Road North dating to the historic period (Figure 4.89). From 1930 through the 1950s, the WPA initiated a series of road improvements projects on other sections of Old Mine Road, and the concrete guideposts and steel cable systems found along Old Mine Road North closely resemble those built along other sections of Old Mine Road during the WPA-era of road improvements. The precast concrete posts are three-sided, with chamfered edges and a pyramidal

856. This information was provided by park personnel.

Figure 4.88. The concrete footbridge at Heron's Nest. View to the west (Source: WLA Studio, 2023).

Figure 4.89. Concrete guideposts with metal cables near the Black Farm. View to the west (Source: WLA Studio, 2023).

top. Steel loops are cast into the posts at two points, which are threaded with heavy steel cable. The posts are six feet tall, with three feet set in the ground and three feet visible above ground and are typically spaced seven to ten feet apart.

Post Historic and Existing Condition

There are remnants of historic fencing found along Old Mine Road North. Remnant fencing materials include both wood and metal posts, often with woven wire or barbed wire fencing. Remnants fencing is typically found along the edges of former agricultural fields or pastures. Non-historic fencing is present at Mettler Cemetery, which is partially bound by vinyl-coated steel chain link fencing.

The historic markers known to exist during the historic period are still extant. Two modern historic markers have been added, one at the Westbrook-Bell property and the other at the Depue House. At the Westbrook-Bell property, a metal Sussex County, New Jersey, historical marker is situated next to the historic DAR marker. Sussex County Historic Marker program installed the metal marker in 2003, replacing an earlier marker that was installed in 1968. At the Depue House, the Walpack Historical Society installed a commemorative granite marker dedicated to Alonzo M. Depue in 2003, replacing the earlier marker likely positioned on the flat, upright stone south of the building.

The small-scale features associated with residential landscapes are still present. The stone steps and stone and brick firebox at the Bevans-Hellwig property indicate the former location of the now missing two-story wood-framed portion of the

main house. Meanwhile, the concrete footbridge at Heron's Nest is a good representation of that property's transformation into a vacation home during the early twentieth century.

The historic concrete guideposts are still extant in several areas along Old Mine Road North. The condition of these guideposts varies by location. Some appear to be in good condition, upright with intact metal cables, while others have lost their metal cables, been broken, or have fallen. Non-historic steel and combination timber and steel guard rails have been added at strategic locations along the roadway since the end of the historic period. Modern corrugated steel guard rails with caution striping on end terminals are located at the intersection of Old Mine Road North and Tuttles Corner Dingmans Road. Modern combination timber and steel guard rails are located at the stone culvert crossing north of Black Farm. These are composed of steel I-beam posts with pressure treated timber cross rails. The modern guard rails are in good condition.

Due to the number of agricultural or former agricultural properties along Old Mine Road North at the end of the historic period, the land adjacent to the road contained numerous fences with gated openings. Photographs from this period show several fence types, which likely had numerous openings to control property access.[857] After NPS assumed management of DEWA, they installed numerous gates and gateposts to limit visitor access on dirt and gravel auxiliary roads along the Old Mine Road North corridor. There are several examples of informal gates, made of timber or metal posts spanned by a metal cable or rope. Most of these examples are in poor condition and are located on inactive road traces. There are also more substantial modern gates, made of brown metal tubing, which mark the location of an active NPS maintenance road.

Classified Land Files held by the NPS provide documentation of properties along Old Mine Road North after the end of the historic period during the 1970s and 1980s. Photographs held within these files indicate that there was signage at the intersection of Old Mine Road and Jager Road (possibly dating to the historic period) that is no longer extant.[858]

There are numerous regulatory, warning, and wayfinding signs situated along the Old Mine Road North corridor installed after the end of this historic period. Regulatory and warning signs inform drivers of roadway rules and potential hazards, such as the speed limit and roadway conditions. Regulatory and warning signs along the Old Mine Road North corridor are modern and conform to Manual on Uniform Traffic Control Devices (MUTCD) standards. Wayfinding signs help visitors navigate the park, directing them to points of interest. These signs conform to NPS UniGuide design standards, and are typically brown with white lettering, mounted on wood 4×4 posts.

After the end of the historic period, the NPS installed waste receptacles at the Westbrook-Bell House and the Anson Johnson House, which the NPS used as employee housing during the 1990s and 2000s. The waster receptacles are rectangular brown boxes affixed to concrete pads.

Evaluation

Small-scale features along the Old Mine Road North road corridor include a mixture of historic and non-historic features. Documentation of small-scale features present along Old Mine Road North during the historic period is limited, and a majority of those known to have existed are still extant, apart from historic fencing. The historical markers, small-scale residential features, and roadside guideposts are still present and easily legible. Although most of the historic fencing has been lost, there are remnants of historic , fences that help indicate the locations of formed agricultural fields and pastures.

857. "Classified Land Files."

858. "Classified Land Files."

Archeological Sites

Archeological Sites refer to the location of ruins, traces, or deposited artifacts in the landscape, and are evidenced by the presence of either surface or subsurface features.

Historic Condition (ca. 1600–1965)

Human populations have inhabited the Delaware River Valley since the Paleoindian Period, and there are an abundance of archeological resources. During the 1700s and 1800s, the agricultural activities of colonists and farmers likely impacted an unknown number of archeological sites long Old Mine Road North. Professional excavations of archeological sites began around the turn of the nineteenth century and continued through the end of the historic period. At the same time, many archeological sites fell victim to amateur archeologists and artifact collectors who excavated sites haphazardly.

The first known archeological investigation near Old Mine Road North occurred in 1899. Maxwell Somerville, a professor at the University of Pennsylvania, "conducted the first known systematic excavations" in the Minisink area.[859] He was soon followed physician Edward S. Dalrymple, who excavated a burial site circa 1910. Neither Somerville nor Dalrymple recorded the exact locations of their excavations. In 1914, George G. Heye (founder of the Museum of the American Indian, now known as the National Museum of the American Indian) funded excavations at a burial site in the Minisink area, recovering evidence of Native American occupation, as well as post-contact items of European origin. Heye's findings drew attention to the area, and he was followed by archeologists Edward Coffin, Alanson Skinner, and Max Schrabisch during the 1920s.[860]

Unfortunately, the growing awareness of the archeological resources in the area inspired amateurs like Charles A. Philhower to begin their own excavations. Lacking any formal training as an archeologist, Philhower "gradually discovered, damaged, or destroyed hundreds of pits and human burials over the course of nearly 40 years." Philhower did not keep proper records or catalog his findings for future researchers, and he "indiscriminately mixed finds…with Indian artifacts collected from other sites and regions."[861] In 1947, archeologist William A. Ritchie conducted new excavations where Heye and Philhower had dug previously, finding numerous burials and evidence of Late Woodland-era occupation.[862]

Post Historic and Existing Condition

Following the establishment of DEWA, the NPS published the *Master Plan for the DWGNRA [DEWA]* in 1966. In preparation for the Tocks Island Dam project and flooding in the valley, the master plan called for an archeological survey and inventory, with "the ultimate objective of selecting certain key sites for archeological salvage."[863] In 1967, a team from the New Jersey State Museum began excavations in the Minisink area. Led by archaeologist Patricia Marchiando, the New Jersey State Museum team excavated a Minisink area site during the summer months from 1967 to 1969. Meanwhile, J. Revell Carr, another archeologist from the New Jersey State Museum, excavated the former location of Fort Westbrook and located the building's foundation.

In addition to the team from the New Jersey State Museum, archeologists from different universities also began excavation in the area to assist documentation efforts. Professor W. Fred Kinsey, III, from Franklin and Marshall College, surveyed sites along the Pennsylvania side of the Delaware River. During the 1970s, archeologist Herbert C. Kraft, from Seton Hall University, began excavations in the Minisink area. Kraft found that sites haphazardly handled by Philhower still had intact and valuable archeological resources. Eventually, Kraft determined that several sites were actually part of a larger, continuous site, which he referred to as the "Minisink Site."[864] In 1975, the Tocks Island Dam project was tabled and excavations along Old Mine Road North were temporarily halted. Moving forward, management plans for DEWA incorporated archeological resources as a central part of their management strategies. Archeological work by NPS staff has

859. "Minisink Historic District," National Historic Landmark Nomination (Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, 1993), 11.
860. "Minisink Historic District," 11–12.
861. "Minisink Historic District," 12.
862. "Minisink Historic District," 12.
863. "The Master Plan: Delaware Water Gap National Recreation Area" (United States Department of the Interior, National Park Service, 1966), 6.
864. "Minisink Historic District," 13–14.

continued through the post historic period to present.

There are multiple identified archeological sites along the Old Mine Road North corridor.[865] In 1993, the Minisink Historic Landmark District was listed on the National Register of Historic Places. The Minisink Historic Landmark District encompassed 1,320 acres of land on both sides of the Delaware River and contains numerous archeological sites that span eight thousand years of human occupation. A 2023 archeological survey has identified six new archaeological sites and multiple isolated finds within the Old Mine Road North project area. These sites require further study to determine eligibility for listing on the National Register of Historic Places.[866]

There are other archeological resources present along Old Mine Road North that are still undocumented, such as building ruins, building remnants, utility remnants, and structure ruins. There may also be archeological sites associated with locations of some eighteenth century buildings and structures that do not appear on historic maps of that time period. Numerous eighteenth century structures may not have survived the nineteenth century, and therefore may not have been recorded on historic maps, or those making maps may not have considered these features (such as outbuildings) worthy of recordation. Historic maps from the nineteenth century record the general location of landowners who developed farmsteads along Old Mine Road North. An aerial photograph from 1931 shows farmsteads strung along Old Mine Road North. Most were located on the west side of the road. Most farmsteads featured a cluster of buildings set a short distance from the road; and most farmsteads were typically separated from each other. The distance between farmsteads varied, ranging from .5 mile to 1 mile. There were also buildings and structures located away from Old Mine Road North. Some were houses, including for example the extant John Wesley Van Auken House; other buildings and structures appear to be agricultural buildings like barns, spring houses, or sheds. By the end of the historic period in 1965, many more buildings and structures existed along the side of Old Mine Road North, and more sites were developed on the west side of the road than on the east side. By the latter part of the historic period, the building sites were closer to each other than in 1931 as farms were subdivided and developed into residential sites. A 1963 aerial photograph shows over fifty buildings located near Old Mine Road and potentially within the Old Mine Road North study boundaries.

Present day, there are numerous building foundations in various states of ruin along the Old Mine Road North corridor. Building ruin types include mortared stone foundations, poured concrete foundations, and large depressions related to ground disturbance. Scattered remains of construction materials and building elements can also be found along the Old Mine Road North corridor. Utility remnants including spigots, well access pipes, electrical service, and terracotta pipes. Structure ruins present along Old Mine Road North include abandoned septic tanks, wells, and stone retaining walls (both mortared and dry-stacked). The construction dates and developmental histories are unique for each site. The federal government demolished most of the buildings and structures in the 1970s during land acquisition activities for the Tocks Island Dam project. Most of these resources have not been evaluated, but their sites and building remnants do have the potential to yield information in the future.

Additionally, former road traces may be considered archeological sites. For example, the road leading toward Dingmans Ferry underwent many alignment changes. There was a ferry at this site beginning in 1735. The first bridge was constructed at the ferry site in 1836 and destroyed in 1847. After a brief resumption of ferry surface, a second bridge was constructed in 1850 and destroyed circa 1855. After another brief ferry service, a third bridge was constructed in 1856, which remained standing until 1862. A fourth bridge was constructed in 1875. The different bridges and ferry locations meant that the road alignment between Old Mine Road North to the ferry evolved over time. The current intersection of Old Dingmans Road and Old Mine Road North is in its original location, it

865. Dovetail Cultural Resource Group, "Phase I Archeology Survey of the Old Mine Road North and South Project Areas [DRAFT]" (National Park Service, April 7, 2023).
866. Dovetail Cultural Resource Group, "Phase I Archeology Survey of the Old Mine Road North and South Project Areas [DRAFT]."

just does not continue west to the Delaware River from that point. There are archeological features in several segments revealing the different abandoned road alignments in this area. (See Site History for LIDAR image depicting different alignments of Old Dingmans Road west of Old Mine Road North.)

Other types of archeological features include cemeteries; quarry pits; linear stone alignments and plow berms; pathways, roadways, and driveway traces; abandoned road infrastructure remnants, both above and below surface; fences and retaining walls; dams and ponds; historic plantings, and other landscape modifications. For example, the area including Black Farm and Everitt Farm (near Daniel Westfall's Bridge) likely contains many aboveground and archeological features dating to the historic period and could inform future understanding of the evolutions of farmsteads, mills, cemeteries, and transportation in this region.

Evaluation

The abundance of archeological resources along Old Mine Road North speaks to the long history of human habitation in the Delaware River Valley. Excavation of these archeological sites began during the historic period and increased after the end of the historic period, continuing into the present as a top management priority for DEWA. Archeological resources along Old Mine Road North have the potential to yield additional information about the history of human occupation in the area. The construction dates and developmental histories for the different farmstead sites along Old Mine Road North are each unique, and they each have the potential to yield information pertaining to the historic period upon further investigation.

Analysis and Evaluation Table

The following table includes an evaluated inventory of all existing landscape features in the Old Mine Road North study area. The table identifies historic landscape features and evaluates their significance as either contributing to or non-contributing to the Old Mine Road Historic District. Mile point numbers (MP #s) correspond to linear referencing along DEWA Route 0015 as inventoried in the Federal Highway Administration's Office of Federal Lands Road Inventory Program.

TABLE 4.1
LANDSCAPE FEATURE INVENTORY: OLD MINE ROAD NORTH (OMRN)
DELAWARE WATER GAP NATIONAL RECREATION AREA

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
SPATIAL ORGANIZATION FEATURES					
Old Mine Road North Alignment along Walpack Ridge			Contributing	**Historic Condition (ca. 1600–1965):** From its inception, OMRN followed the west slope of Walpack Ridge, roughly parallel to the Delaware River, located west of the road. Paralleling these features, the trail and later road alignment roughly ran north to south, with topography generally sloping uphill on the east side and generally downhill or flat on the west side of the road corridor. Eventually, road engineers designed improvements to make traveling the road less difficult, and their designs responded to the west slope of Walpack Ridge. Because of the flatter topography along the west side of OMRN, historic features such as farmstead complexes tended to be concentrated on this side of the road. **Evaluation:** The road remains in the same location as the historic period, and the west slope of Walpack Ridge continues to define the east side of OMRN, with the uphill side of the road on the east and the downhill or flatter areas of the road on the west side of the road corridor.	
Field and Forest Patterns			Non-contributing	**Historic Condition (ca. 1600–1965):** As European colonists began to populate Sussex County, New Jersey, they established farmsteads along OMRN. Often, they demarcated property lines and field edges along the road with stone rows and fencing. Photographs from the end of the historic period show small-scale features along the road, indicating the edges of fields and parcel boundaries. Stone rows remained along the road, indicating former property lines or field edges at the end of the historic period. **Evaluation:** Stone rows and lines of trees remain along OMRN, indicating the former property lines or field edges. Although the broad viewsheds of open farmland have become forested and many of these demarcations are obscured by vegetation, many of the boundary markers that remain in place contribute to the setting and feeling of the road corridor and continue to reflect the historic period. However, the discontinuation of agriculture along most of the corridor and the lack of domestic habitation means that there is a loss of integrity of this feature.	See Drawings 2.2–2.7
CIRCULATION FEATURES					
Old Mine Road		49270	Contributing	**Historic Condition (ca. 1600–1965):** The Johnathan Hampton Map of 1758 appears to be the first map depicting a roadway in the approximate location of present-day Old Mine Road. An 1860 map of Sussex County also shows Old Mine Road, including several distinctive curves where the roadway crosses	See Drawing 2.1

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				streams and numerous intersections that still exist. Between 1934 and 1959, engineers with Sussex County and the State of New Jersey prepared several construction drawings for improvements to sections of Old Mine Road both north and south of the OMRN study area; the drawings found through research do not include OMRN. However, there are drainage features that match the construction details on these drawings, including the ditches, pipes, and headwalls found within the study area. The drawings also provide road profiles and horizontal and vertical alignments that reflect current conditions on OMRN. The preponderance of evidence leads to the conclusion that either the townships of Montague and Sandyston or Sussex County improved at least some portion of OMRN during this period along with the other sections of Old Mine Road in Sussex County. A USGS topographic map from 1956 shows the alignment of the road in the same configuration as today. The alignment of the road as seen in the 1956 USGS topographic map is slightly different from the alignment seen in earlier USGS topographic maps. The curves are noticeably smoother in the 1956 map; however, the difference may be explained by different symbology rather than a change in physical conditions and the overall horizontal alignment is very similar. Regardless, maps and aerial photographs after 1956 record no substantial changes to OMRN up to the end of the historic period except for the realignment of the north end of OMRN. Engineers realigned OMRN where it intersects US 206 sometime between 1963 and 1969. Regarding the materials of OMRN, descriptions of the road from the 1930s record it as gravel with sections of macadam paving. A 1959 USGS topographic map shows it as "medium duty," which would have been a hard surface, likely gravel, with two to three lanes. It is unclear when the roadway was paved in asphalt. It appears paved in asphalt in photographs from the 1970s. The pavement is worn and certainly not new at that time, suggesting that the paving occurred within the historic period. During the early part of the historic period, like other colonial roads, OMRN ran parallel to ridgelines, and the centerline shifted to adjust to existing topography. Local commissioners and appointed surveyors administered road construction and maintenance efforts, which were typically as minimal as possible and performed on an as necessary basis. Although generally beholden to topography, property boundaries also influenced road alignment, which often skirted along the edges of different landholdings to avoid impacting property owners. While research did not uncover construction drawings for OMRN during the twentieth century, there is evidence to suggests that a series of road improvements projects occurred prior to the end of this historic period, likely involving leveling and regrading. Engineers regraded some intersections and stream crossings between 1931 and 1956, likely affecting the vertical alignment of the road. While a 1932 survey of the road right-of way does not show the road engineering or provide “as-built” conditions, it does show that the road’s horizontal alignment included smooth curves and transitions.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				While research did not uncover construction drawings for OMRN during the twentieth century, there is evidence to suggest that a series of road improvements projects occurred prior to the end of this historic period, likely involving the creation of berms and ditches for stormwater conveyance. Engineers regraded some intersections between 1931 and 1956, likely affecting the vertical alignment of the road. Details from other portions of the River Road system show details for construction of ditches adjacent to the road including maximum and minimum slopes and distance from the paved surface. **Evaluation:** OMRN has occupied its current location since the early eighteenth century with only minor alterations to its alignment. The materials changed over time, but it was most likely paved in asphalt before 1965. Many of the drainage features and box culverts over streams appear to date from the mid-1900s, during which Sussex County was improving other stretches of Old Mine Road and the River Road system. Intersections along Old Mine Road North remain largely unchanged from the end of the historic period. Even though it is not in the location of the original intersection, the current intersection of Old Dingmans Road and OMRN was developed before the end of the historic period. These intersections are contributing features of the cultural landscape, which reflect the evolving network of roads that intersected OMRN and serviced both local residents and travelers moving through the area. The intersections also reflect the general character of Old Mine Road North in that they are narrow, sometimes at skewed angles, and do not necessarily meet modern-day engineering standards for alignment, sightlines, etc. They tend to reflect the evolution of a rural road over time that served to connect different pieces of the community with minimal engineering interventions such as heavy grading, retaining walls, etc. Many driveways along the route have been abandoned where they no longer access residential developments. These drive aprons act as informal pull-offs along the corridor. Because the current road reflects engineering, materials, and construction standards employed during the historic period, the road is a contributing feature to the historic significance of the study area. Since 1965, the vertical and horizontal alignment of OMRN has remained unchanged. The NPS has not conducted any major regrading or realignment projects. The engineered horizontal and vertical topography of the road reflects the location and design of the historic period. The engineered stormwater conveyance system of the road has changed somewhat since 1965. While the road shoulders and adjacent swales were vegetated during the historic period, the encroaching trees and organic matter impacts the ability of the system to convey water away from and under roads. Over time, engineered ditches and culverts have become sedimented, which makes them less effective.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Turnouts and Pull-offs (Former Driveway Locations)	MP 1.94 MP 3.43 MP 3.93 MP 4.23 MP 5.36 MP 6.44 MP 6.77 MP 7.44		Undetermined	**Historic Condition (ca. 1600–1965):** Research did not reveal if engineers developed turnouts along OMRN during the historic period. There may have been a turnout on the southwest side of Daniel Westfall's Bridge since this part of the road is only one lane wide. However, a historic photograph and aerial photography does not reveal documentation of that condition. The presence of 1950s guide posts at that location does indicate that this turnout dates to the historic period. **Evaluation:** It is unclear as to when the remaining existing pull-offs were developed. It seems likely that the NPS reused existing driveways to create formal locations to pull off the road. It is also possible visitors created these pull-offs over time, possibly using the locations of existing driveways because they offered an at-grade site without drainage ditches or other obstacles. The guide posts on the southwest side of the Black Farm Minisink Culvert indicate that this pullout reflects historic period design and location.	
TOPOGRAPHY FEATURES					
Topographic Features Related to Former Homesites and Farmsteads			Contributing	**Historic Condition (ca. 1600–1965):** Numerous farmsteads and homesites existed along OMRN during the historic period. People building homesteads in the area constructed buildings and outbuildings on leveled, graded areas. Some houses had a cellar or basement spaces. Auxiliary roads, including driveways and field access roads, were leveled and graded to provide access to features along OMRN. Many farmers also leveled nearby terrain to create arable agricultural fields, as needed. The terrain on the west side of OMRN, north of Tuttles Corner Dingmans Road, is generally level and flat, while the terrain on the east side of OMRN slopes toward the Walpack Ridge. Grading and leveling projects would have been necessary more often along the east side of OMRN throughout the historic period. Farmers and residents along OMRN also constructed raised earthen and stone berms to gather or redirect water on their properties as needed. **Evaluation:** There are numerous cultural topographic features present along the OMRN corridor, including graded and leveled areas, depressions, trace roads, and leveled fields associated with former homesites and agricultural areas. Graded and leveled areas are distinguishable from the surrounding grade at the locations of some former homesites along the roadway, while depressions indicate settling from land disturbance, such as demolition of buildings. At dozens of points along the roadway, trace roads and former driveways are identifiable by their remnant road grading. These remnant topographic features reflect the historic period locations of cultural features along OMRN.	See Drawings 2.2–2.7.

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
BUILDINGS AND STRUCTURES FEATURES					
Type 1: Metal Culverts (CMP) with Stacked Stone Inlet Headwalls	MP 0.05 MP 0.12 MP 0.22 MP 0.37 MP 0.47 MP 0.91 MP 0.95 MP 1.09 MP 1.22 MP 1.50 MP 1.92 MP 2.20 MP 2.38 MP 2.75 MP 2.88 MP 3.40 MP 3.40 MP 3.43 MP 3.99 MP 4.55 MP 5.08 MP 5.35 MP 5.47 MP 5.54 MP 5.63 MP 5.67 MP 6.45 MP 6.48 MP 6.74 MP 6.81 MP 6.86 MP 7.05 MP 7.10 MP 7.37	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Though no historic construction drawings for OMRN have been identified to date, plans from the 1930s through 1950s for other sections of the River Road system specify installation of metal culverts. Typical to road construction in New Jersey, these types of culverts were generally installed as cross drainage structures situated below the road's driving surface. Details from other road projects show that fill was placed to the sides of the pipe and between the pipe and the driving surface. The metal culverts were typically a round structure and could be single plate, formed, or welded. On OMRN, the inlet and sometimes the outlet ends of metal pipes are typically surrounded by stacked stone (unmortared), a typical construction treatment for protecting the ends of culverts during the historic period. Research did not reveal if this detail pre-dates federal acquisition of OMRN, but it exists throughout the corridor. **Evaluation:** Fieldwork identified this type of culvert throughout the OMRN corridor. Drainage studies and field observation for the corridor have identified that many of these structures are damaged, with outlet or inlet ends crushed, or the structure is clogged, prohibiting positive drainage. The stacked stones on the ends of the culverts are unmortared, and stones likely become dislodged over time and potentially have been restacked by maintenance crews as needed. Despite this potential alteration, overall, these metal culverts reflect historic construction techniques and materials found throughout the larger River Road system during the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Type 2: Plastic (HDPE) Culverts with Stacked Stone Inlet Headwalls	MP 0.20 MP 0.28 MP 0.45 MP 0.50 MP 0.63 MP 0.66 MP 0.99 MP 2.43 MP 3.47 MP 5.29 MP 6.52 MP 6.65 MP 6.84	LCS RJ011A	Non-contributing	**Historic Condition (ca. 1600–1965):** Though no historic construction drawings for OMRN have been identified to date, plans for other sections of the River Road system from the historic period do not show details for plastic culverts. **Evaluation:** The use of HDPE as a road building material was not widespread until the 1980s.[1] A 2017 Drainage Study notes that these culverts are NPS replacements and are therefore not reflective of the historic period.[2]	
Type 3: Concrete Culverts (RCP) with Stacked Stone Inlet Headwalls	MP 0.42 MP 0.75 MP 1.12 MP 1.19 MP 1.28 MP 1.62 MP 1.87 MP 2.03 MP 2.33 MP 2.60 MP 2.65 MP 2.69 MP 3.09 MP 3.56 MP 3.65 MP 4.05 MP 4.04 MP 4.10 MP 4.24 MP 4.29 MP 4.38 MP 4.80 MP 5.14 MP 5.23 MP 5.88 MP 6.40 MP 6.54 MP 7.35 MP 7.51	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Though no historic construction drawings for OMRN have been identified to date, plans from the 1930s through 1950s for other sections of the River Road system specify installation of concrete culverts. Typical to road construction in New Jersey, these types of culverts were generally installed as cross drainage structures situated below the road's driving surface. Details show that fill was place to the sides of the pipe and between the pipe and the driving surface. The concrete culverts were typically a round structure and could be composed of reinforced material. On OMRN, the inlet and sometimes the outlet ends of metal pipes are typically surrounded by stacked stone (unmortared), a typical construction treatment for the ends of culverts during the historic period. Research did not reveal if this detail pre-dates federal acquisition of OMRN, but it exists throughout the corridor. **Evaluation:** Fieldwork identified this type of culvert throughout the OMRN corridor. The stacked stones on the ends of the culverts are unmortared, and stones likely become dislodged over time and potentially have been restacked by maintenance crews as needed. Despite this potential alteration, overall, these concrete culverts reflect historic construction techniques and materials found throughout the larger River Road system during the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Type 4: Metal Culverts (CMP) with Concrete Headwalls	*MP. 0.51* MP 0.77 *MP 0.63* *MP 0.68*	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Though no historic construction drawings for OMRN have been identified to date, plans from1934–1942 for Walpack Township show details for board formed concrete headwall with a metal culvert. **Evaluation:** Fieldwork identified this type of culvert on the south end of OMRN, south of Tuttles Corner Dingmans Road. In some cases, concrete headwalls are discarded on the west side of the road (*locations noted in italics*). For the most part, the NPS has replaced this culvert type with Type 2 or Type 3 culverts. The remaining metal culvert with a concrete headwall reflects historic construction techniques and materials found throughout the larger River Road system during the historic period.	
No Type Culverts	MP 0.34 MP 0.69 MP 0.55 MP 1.80 MP 2.45 MP 5.00 MP 6.08 MP 6.29 MP 6.33 MP 6.82 MP 7.13 MP 7.50	LCS RJ011A	Contributing or Undetermined	**Historic Condition (ca. 1600–1965):** Though no historic construction drawings for OMRN have been identified to date, plans from1934–1942 for Walpack Township show a detail for a square concrete headwall with a metal culvert. The other culvert types do not appear in historic drawings and research did not reveal a date of installation. **Evaluation:** There are some culverts that do not have an associated headwall or otherwise conform to a recurring typology. Examples include four RCP culverts and eight CMP culverts with no headwalls. One culvert is composed of an RCP culvert with rectangular board formed concrete headwall and no wing walls. This culvert design aligns somewhat with the Type 4 headwall, but the pipe for the culvert is concrete. This culvert (MP 0.55) has historic construction details and is contributing. Research did not reveal the date of the other culverts' installation, so their contribution status is undetermined.	
Concrete Box Culvert	MP 0.76	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal drawings dating to the historic period showing the section of OMRN located south of Tuttles Corner Dingmans Road. However, by the 1920s (and likely earlier), Sussex County bridges and culverts were beginning to be constructed from concrete. County Engineer Harvey Snook designed many of the culverts in Sussex County, dating to the 1920s through 1940s, and many of those structures were concrete. There is no evidence that the culvert was designed by Snook, but its board formed construction is similar to others dating to that period. **Evaluation:** The culvert appears to pre-date 1965, and its materials, location, and workmanship reflect the historic period.	
Concrete Box Culvert	MP 0.791	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal drawings dating to the historic period showing the section of OMRN located south of Tuttles Corner Dingmans Road. However, by the 1920s (and likely earlier), Sussex County bridges and culverts were beginning to be constructed from concrete. County Engineer Harvey Snook designed many of the culverts in Sussex County, dating to the 1920s through 1940s, and many of those structures were concrete. There is no evidence that the culvert was designed by Snook, but its board formed construction is similar to others dating to that period.	

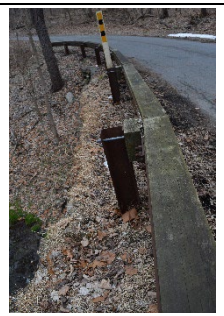
Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				Evaluation: The culvert appears to pre-date 1965, and its materials, location, and workmanship reflect the historic period.	
Concrete Headwall with Three Metal Culverts at Kittatinny Creek	MP 2.159	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal construction drawings dating to the historic period. However, a 1930s survey of this section of OMRN shows a stream crossing at this location measuring 18 feet wide. Sometime between 1931 and 1956, the intersection of OMRN and Van Ness Road appears to have been engineered and slightly widened to improve the curve at this location. Engineers may have redesigned this culvert crossing over Kittatinny Creek at that time to be wider and to meet the adjusted horizontal alignment. The board formed concrete span and abutments surrounding the three metal culverts matches the construction methodology used on other portions of OMRN and appears to date to pre-1965. **Evaluation:** The culvert appears to pre-date 1965, and its materials, location, and workmanship reflect the historic period.	
Concrete Box Culvert with Concrete Guard Rail	MP 3.93	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal construction drawings dating to the historic period for OMRN. However, a 1930s survey of this section of OMRN shows a stream crossing at this location measuring 20 feet wide. The existing crossing may date to a slight realignment of the road between 1931 and 1956. The existing culvert measures 24 feet across, and engineers may have redesigned this culvert crossing at that time to be wider and to meet the slightly adjusted horizontal alignment. The board formed concrete span and abutments matches the construction methodology used on other portions of OMRN and appears to date to pre-1965. The date of the concrete guard rail is unknown, but it appears to match the age of the rest of the top slab of the culvert. **Evaluation:** The culvert appears to pre-date 1965, and its materials, location, and workmanship reflect the historic period.	
Concrete Box Culvert with Concrete Guard Rail at Jager Rd	MP 4.23	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal construction drawings dating to the historic period for OMRN. However, a 1930s survey of this section of OMRN shows a stream crossing at this location measuring 18 feet wide. The existing crossing may date to a slight realignment of the road between 1931 and 1956. Drawings from the Sussex County deed room for this culvert date to 1937. The concrete guard rail does not appear in the drawing, so they may postdate the initial construction. The existing culvert is significantly wider than the paved surface, and engineers may have redesigned this culvert crossing at that time to be wider and to meet the slightly adjusted horizontal alignment. The board formed concrete span and abutments matches the construction methodology used on other portions of OMRN and appears to date to the late-1930s. The guard rails likely postdate the original construction, but appear to pre-date 1965. **Evaluation:** The culvert appears to date to the late 1930s, and its materials, location, and workmanship reflect the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Stone Box Culvert between Black Farm and Everitt Farm (historically referred to as Daniel Westfall's Bridge)	MP 5.38	LCS RJ011A	Contributing	**Historic Condition (ca. 1600–1965):** This crossing is one of the oldest recorded crossings along OMRN, referred to as Daniel Westfall's Bridge in road return records dating to the early 1770s. It is unknown if any of the extant material dates to crossing's original construction, or if the extant structure was preceded by an earlier crossing. Research did not reveal construction drawings dating to the historic period for OMRN. However, a 1930s survey of this section of OMRN shows a stream crossing at this location measuring 21 feet wide. Materials are not noted on that plan. Aerial photography for this area is difficult to evaluate due to tree cover, but the horizontal alignment of the road appears to be mostly unchanged from the earliest 1931 aerial photograph. The 1932 right-of-way survey of OMRN does not note the presence of the culvert, but it does indicate that the alignment of the road at this location has not changed since that time. **Evaluation:** The existing width of the culvert is approximately 21 feet wide, matching historic conditions. The culvert appears to pre-date the 1930s survey of OMRN, and its materials, location, and workmanship reflect the historic period.	
Concrete Bridge at White Brook- Bridge #4320-016P	MP 7.52		Undetermined	**Historic Condition (ca. 1600–1965):** By 1931, there was a bridged crossing at White Brook, south of what is now US 206. OMRN veered west near the northern terminus, creating a less than 90 degree intersection with what would become US 206. The 1932 Sussex County survey shows that the bridge measured about 18 feet across. Engineers constructed a bridge in this location in 1960 but reconstructed it at a later date. Sometime between 1963 and 1969, engineers realigned this intersection, necessitating the construction of a new bridged crossing at White Brook. It is unknown if this change occurred before 1965, the end of the historic period. **Evaluation:** The bridge has remained in place since installation. The bridge is 21 feet in length, spans 19 feet, and the bridge deck width is 28.3 feet. It has a prestressed concrete-box beam structure type and a cast-in-place deck. The NPS has conducted occasional maintenance and repairs to the structure. In 2011, scour and undermining at the downstream end was repaired with riprap. Because research did not reveal the construction date of the bridge, it is unknown if it is contributing.	
Stone Walls	MP 0.10-0.12, MP 0.15-0.18, MP 0.52 (40' to west), MP 0.58 (45' to west), MP 0.79 (2 walls), MP 0.061 (100' to east), MP 0.77,		Contributing	**Historic Condition (ca. 1600–1965):** As European colonists began to populate Sussex County, New Jersey, they established farmsteads along OMRN. A feature resulting from the development of agriculture and residential development in the area was the presence of stone walls to manipulate the topography to create level areas. The walls were frequently located near buildings or residential development areas, especially in zones with steep slopes. There are historic photos of stone walls where they existed near buildings including documentation at the Everitt property and the Heron's Nest. **Evaluation:** The remaining stone walls continue to reflect the early to middle part of the historic period. When OMRN became federally managed, site managers left many of the stone walls intact. Some are foundation walls of	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
	MP 1.70 (100' to east), MP 2.33-2.36, MP 2.70-2.73, MP 2.79-2.80, MP 3.18-3.26, MP 3.26-3.32, MP 3.33 (and 75' west)-3.41, MP 3.45-3.47, MP 3.51-5.53, MP 3.67-3.74, MP 3.75-3.81, MP 4.05-4.06, MP 4.07-4.15, MP 4.80-4.87, MP 4.99, MP 5.038 (100' to east), MP 5.37 (40' to west), MP 5.39-5.40, MP 6.26 (3 walls), MP 6.79-6.82, MP 6.86 (100' to east)			buildings that have been removed from the area. Though it is possible that some of the stone walls were disturbed or removed during the past fifty years, research did not reveal documentation of these types of changes. The remaining walls reflect the locations of many former farmstead areas and reflect historic construction methodologies and materials.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Stone Rows			Contributing	**Historic Condition (ca. 1600–1965):** As European colonists began to populate Sussex County, New Jersey, they established farmsteads along OMRN. A feature resulting from the development of agriculture in the area was the presence of linear piles of stones delineating farm fields. These stone rows were a result of farming practices in rocky soil, where farmers moved stones from the plowing path and set them along the edges of fields. Over time, these rows could become linear features marking the edge of a field or property. When farmers abandoned fields, and they returned to natural succession, many stone rows and fencerows were left in place. Research did not reveal any historic photographs showing stone rows along OMRN, but those present along the roadway today likely date to the historic period. **Evaluation:** The remaining stone rows continue to reflect the early to middle part of the historic period. When OMRN became federally managed, site managers left the stone rows intact. Though it is possible that some of the stone rows were disturbed or moved during the past fifty years, research did not reveal documentation of changes to the stone rows. The stone rows' materials, location, and construction methods reflect the historic period.	
CONSTRUCTED WATER FEATURES					
Stone Pool	MP 5.38		Undetermined	**Historic Condition (ca. 1600–1965):** At some point during the historic period, the owners of the property adjacent to White Kill constructed a series of stone features to modify its flow. The construction included two curved stacked stone walls spanning the width of the stream channel crating a shallow pool. It is possible early resident Daniel Westfall constructed the stone pool. Westfall lived on the adjacent property to the north and built a grist mill on the creek during the eighteenth century. **Evaluation:** The NPS has not modified or moved the stacked stone walls creating the stone pool since the historic period, and they continue to reflect historic construction techniques and materials.	
Stone Lined Creeks or Ditches	MP 0.46 MP 0.55 MP 0.55		Undetermined	**Historic Condition (ca. 1600–1965):** During the historic period, unknown parties constructed several stone-lined ditches and armored several creek beds along OMRN, south of the Tuttles Corner Dingmans Road intersection. While most of the armoring of edges of creeks is most often associated with mill sites, there is no known historic mill site at this location. These stone-lined structures may have existed on both the east and west side of OMRN and served to prevent scouring or erosion near road crossings. **Evaluation:** The stone-lined ditches and stone armoring along creek banks do not appear to have been modified or moved since the historic period, and they continue to reflect historic construction techniques and materials.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
VIEWS AND VISTAS FEATURES					
Views west across fields and clearings	MP 1.00 MP 2.44 MP 2.67 MP 3.70 MP 4.32 MP 7.10		Contributing	**Historic Condition (ca. 1600–1965):** Few historic images showing the landscape along OMRN exist, which limits information on specific historic views from the roadway. There are drawings and paintings depicting Old Mine Road during the historic period, which show an open, bucolic landscape with a backdrop of mountains. Historic photographs from the late 1800s and early 1900s and aerial photographs from 1931 reveal that much of the land within the viewshed of OMRN was under cultivation. Open fields occupied the land on both sides of the roadway and extended, in many places, all the way to the Delaware River. During the historic period, this open condition would have offered wide and expansive views in both directions but particularly to the west where the topography tends to slope down toward the river. In general, the character of the land along OMRN was open with an almost unbroken view westward toward the river and mountains beyond until former farm fields began to become reforested with successional growth in the latter historic period. Even toward the end of the historic period, photographs show that the character of the fields were more open than present-day allowing for more views toward the Delaware River and Walpack Ridge. **Evaluation:** By the first decade of the twenty-first century and continuing to the present, reforestation has continued to fill historic fields and obscure former views from the roadway. Despite the general regrowth of woods through the project area, a few locations remain along OMRN where agricultural fields are under cultivation, which maintains an open condition conducive to establishing views. These few remaining fields reflect the configuration of fields seen in the 1931 aerial photograph and continue to convey the feeling and setting of OMRN during the historic period. However, the majority of the open views toward the Delaware River, Kittatinny Ridge, and the Pocono Plateau are missing along Old Mine Road today.	
SMALL-SCALE FEATURES					
Historic Markers			Varies	*See Component Landscape Descriptions*	
Regulatory and Warning Signs			Non-contributing	**Historic Condition (ca. 1600–1965):** There is no documentation (historic photographs or maps) regarding regulatory signs, such as speed limit, traffic control, and caution warnings, along OMRN during the period of significance. **Evaluation:** Since acquisition, the NPS has installed regulatory signs along the OMRN corridor to inform visitors of corridor regulations. Research did not indicate installation dates of individual signs.	Drawings 2.2–2.7

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Wayfinding Signs			Non-contributing	**Historic Condition (ca. 1600–1965):** There is no documentation (historic photographs or maps) showing wayfinding signs along OMRN during the period of significance. **Evaluation:** Since acquisition, the NPS has installed wayfinding signs along the OMRN corridor to assist visitors in navigating the corridor. Research did not indicate installation dates of individual signs.	 Drawings 2.2–2.7
Modern Steel Guard Rails	MP 0.85-0.86, MP 4.20-4.21 (both sides), MP 5.36-5.37, MP 7.51-7.53 (both sides)		Non-contributing	**Historic Condition (ca. 1600–1965):** There is no documentation (historic photographs or maps) showing modern steel guard rails along OMRN during the period of significance. In current locations (e.g. at the intersection with CR 560), photography from the end of the historic period indicates that the rail has not been installed during that period. **Evaluation:** Since acquisition, the NPS has installed modern steel guard rails along the OMRN corridor to increase visitor safety. Research did not indicate installation dates of individual guard rails.	
Modern Steel and Timber Guard Rails	MP 5.37-5.40 (both sides of road)		Non-contributing	**Historic Condition (ca. 1600–1965):** There is no documentation (historic photographs or maps) showing a timber and steel guard rail at the stone culvert over White Kill (also known as the Black Farm Minisink culvert). **Evaluation:** The construction and materials of this guard rail appear to post-date 1965. The condition of this set of guard rails suggests an installation date of the last ten years.	
Concrete Guide Posts with Steel Cable (Guide Rail)	MP 0.725-0.73 MP 0.87-0.90 MP 3.93-3.34		Contributing	**Historic Condition (ca. 1600–1965):** Drawings for Section No. 7 of Old Mine Road, dating to 1959 have descriptions of concrete guide rail posts. These guide rails are six feet tall (3 feet above ground, and three feet below ground) and three-sided with pyramidal tops. The guide rails are spaced fifteen feet apart, attached with metal cables. These cables are attached to center posts with metal hook bolts and end posts with iron turnbuckle fasteners. According to the plans, "Cable and fittings to conform to N.J. State HWY. Dept standard specifications for road and bridge construction of 1941." Details for guide rails on OMRN match these specifications and appear to date to before 1965. **Evaluation:** The guide posts with cabling exists in three locations along	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				OMRN. Some sections of the guide posts are in poor condition with fallen or broken posts. Those that remain reflect the details shown in historic plans for other sections of Old Mine Road. In terms of road safety, the guide posts with cabling may not meet current safety FHWA safety standards, and therefore future analysis may need to include an evaluation of their safety rather than historic value.	
Fencing – Metal post with barbed wire	MP 5.28-5.30	Black Farm Wire Fencing Remnants: LCS J10659-1	Undetermined	**Historic Condition (ca. 1600–1965):** During the historic period, farmers erected fences to enclose agricultural areas to keep livestock in or out of certain areas of their property. By 1931, an aerial photograph indicates that there were hundreds of fence lines along the corridor. Over time, field patterns changed and there was less agricultural activity happening along OMRN. Property owners likely removed many of the fences. There are few historic photographs documenting the end of the historic period. Two photographs dating to 1977 show no fencing around former agricultural fields, so site managers may have removed fencing around agricultural fields after 1965, but research did not reveal recordation of that maintenance practice. **Evaluation:** The remnant fencing along OMRN reflects the historic period, as research did not reveal that the NPS has added or currently maintains or provides upkeep for fencing along the roadway, and park personnel has confirmed that they did not install this fencing. The date of origin of this fencing type is unknown, but it likely pre-dates 1965, making it reflective of historic conditions along OMRN.	
Fencing – Wire mesh or barbed wire with wood posts	MP 0.38 (remnant) MP 1.17-1.18 MP 1.20-1.21 MP 1.30 (80 feet to west) MP 5.36-5.38 MP 5.38-5.47 MP 5.48-5.53		Undetermined	**Historic Condition (ca. 1600–1965):** During the historic period, farmers erected fences to enclose agricultural areas to keep livestock in or out of certain areas of their property. By 1931, an aerial photograph indicates that there were hundreds of fence lines along the corridor. Over time, field patterns changed and there was less agriculture happening along OMRN. Property owners likely removed many of the fences. Two photographs dating to 1977 show no fencing around former agricultural fields, so site managers may have removed fencing around agricultural fields after 1965, but research did not reveal recordation of that maintenance practice. **Evaluation:** The remnant fencing along OMRN reflects the historic period, as research did not reveal that the NPS has added or currently maintains or provides upkeep for fencing along the roadway, and park personnel has confirmed that they did not install this fencing. The date of origin of this fencing type is unknown, but it likely pre-dates 1965, making it reflective of historic conditions along OMRN.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Gates and Gateposts (Multiple types)			Non-contributing	**Historic Condition (ca. 1600–1965):** There is no documentation (historic photographs or maps) showing gates and gateposts along OMRN during the period of significance. **Evaluation:** Since acquisition, the NPS has installed gates and gateposts to control visitor access to certain areas. Research did not indicate installation dates of individual gates or gateposts.	

TABLE 4.2
LANDSCAPE FEATURE INVENTORY: OLD MINE ROAD NORTH (OMRN), COMPONENT LANDSCAPES
DELAWARE WATER GAP NATIONAL RECREATION AREA
Note: The scope for the OMRN CLR did not allow for full recordation of the component landscapes. The sites and some features are described below. Additional research is needed to complete a full inventory and analysis of these component landscapes and their features. The consultant team did not have access to the John Wesley Van Auken property. All recordation of that property was conducted from aerial photography

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Bevans-Hellwig Property	MP 0.00		Contributing	**Historic Condition (ca. 1600–1965):** The Bevans-Hellwig property dates to the late eighteenth century. The Bevans-Hellwig farmstead cluster was known to have contained a main house (composed of multiple additions), two barns, a privy, and a tool shed. One of the two barns known to have existed on the property during this historic period was a large Pennsylvania Dutch barn. A 1931 aerial photograph suggests that other outbuildings were also clustered around and across OMRN from the main dwelling, but research has not uncovered additional information about these buildings. The aerial photograph shows that there was an orchard located northwest of the main dwelling. By the 1950s, aerial photographs indicate that only a few of the trees from the orchard remained. A drive and walkway are apparent in 1950s aerial photographs, connecting to OMRN, and there are additional outbuildings on the property. This condition continued to the end of the historic period. **Evaluation:** The only remaining features at the Bevans-Hellwig property dating to the historic period are one building (Bevans-Hellwig House ca. 1796), a concrete pad, a fireplace ruin, two trees at OMRN, and a set of stone steps. Stone rows north of the component landscape are likely associated with this farm. Despite the loss of landscape features since the historic period, the remaining features at the site continue to reflect the historic period.	
Bevans-Hellwig House (ca. 1796) (Building)	MP 0.00	LCS 009539	Contributing	**Historic Condition (ca. 1600–1965):** The Bevans-Hellwig House was a two-story wood-frame I-House building with a one-and-a-half story stone rear wing, and a one-story wood-framed rear addition. A 1974 Historical Architectural Survey asserts that the original portion of the Bevans-Hellwig property was the one-and-a-half story fieldstone wing, dating to circa 1770 (this is the 'Bevans-Hellwig Kitchen' building, the only remaining portion of the main house and the only extant structure of the Bevans-Hellwig property). Following the construction of the original wing, the survey posits that a larger front addition was constructed circa 1850, followed by a small rear addition constructed circa 1930. In contrast to both these possibilities, in a 1996 Preliminary Historic Resource Study, historian Clemensen speculates that the fieldstone kitchen was built between 1830 and 1850, either as a stand-alone building or as an addition to the main house. **Evaluation:** After 1974, site managers removed the two-story wood frame wing and one-story wood frame wing from the Bevans-Hellwig House. Despite the undetermined evolution of the building, the	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				remaining stone portion of the house reflects the early part of the historic period.	
Stone Steps at Bevans-Hellwig Property (MP 0.21) (Small-scale feature)	MP 0.00		Contributing	**Historic Condition (ca. 1600–1965):** The stone steps at the Bevans-Hellwig site are not recorded on any historic plans that have been located to date. The steps appear in a 1974 photograph (1974 Historical Architectural Survey), and they appear to have been in place for some time. **Evaluation:** The stone steps are located on the east side of OMRN. It does not appear that the NPS has made any changes to the feature since acquisition. The steps remain at the Bevans-Hellwig site and appear to pre-date 1965. The construction reflects the historic character of pre-1965 roadside features.	
Heron's Nest/Frank Stoll Property	Mettler Road		Contributing	**Historic Condition (ca. 1600–1965):** The original portion of the Heron's Nest property dates to circa 1830. Sidney Bevans expanded the house around 1860, adding two wood-framed additions. During the 1930s, Frank Stoll constructed a garage outbuilding with a second-floor apartment on the property. A 1931 aerial photograph suggests that other outbuildings were also clustered around the main dwelling, but research has not uncovered additional information about these buildings. There is a mortared stone retaining wall running along the north side of Mettler Road that matches the construction and apparent date of features on the Heron's Nest property. The wall curves north near the house and becomes the cheek wall for a set of stone steps leading to the upper terrace of the property. The stone steps and wall appear to date to the historic period. **Evaluation:** The only remaining features at the Heron's Nest area are the house, the garage, the retaining wall and steps, and a spring with a runnel feature. The remaining features continue to reflect the historic period.	
Heron's Nest (Building)	Mettler Road		Contributing	**Historic Condition (ca. 1600–1965):** The original portion of the Heron's Nest property dates to circa 1830. Sidney Bevans expanded the house around 1860, adding two wood-framed additions. **Evaluation:** The Heron's Nest remains in its original location, though it is in a deteriorated state. Despite its condition, the materials and workmanship of the Heron's Nest continues to reflect the historic period.	
Heron's Nest Garage (Building)	Mettler Road		Contributing	**Historic Condition (ca. 1600–1965):** During the 1930s, Frank Stoll constructed this garage outbuilding with a second-floor apartment on the property, reflecting changes to the OMRN corridor during this period from agricultural to vacation or second homes. **Evaluation:** The garage remains in its original location, though it is in a deteriorated state. Despite its condition, the materials and workmanship of the Heron's Nest Garage reflects the latter part of the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Heron's Nest Runnel (Small-scale feature)	Mettler Road		Unevaluated	**Historic Condition (ca. 1600–1965):** Because of the limited scope for component landscapes, research did not reveal any historic information about the runnel at the Heron's Nest, but based on observation, it dates to the historic period. **Evaluation:** The runnel is a stone feature, located on the south side of Mettler Road. A spring appears to occur somewhere on the north side of Mettler Road, close to the Heron's Nest. A culvert carries the water under the road, and there is a constructed stone feature where it outlets.	
John Wesley Van Auken Property	Mettler Road		Contributing	**Historic Condition (ca. 1600–1965):** The John Wesley Van Auken property dates to circa 1760. A large barn on the property is known to date to the historic period and is visible in a 1931 aerial photograph. A small shed and rental cottage were also located on the property (it is possible that these outbuildings also date to the historic period but were not documented until the 1970s). **Evaluation:** Since 1974, the owners of the property removed two specimen oak trees from the front of the house and added an asphalt driveway. The house appears to reflect its original location, materials, and workmanship reflecting construction techniques of the historic period. This property is a private inholding within DEWA.	
John Wesley Van Auken House (Building)	Mettler Road		Contributing	**Historic Condition (ca. 1600–1965):** The John Wesley Van Auken House circa 1760) is a one-and-a-half story wood-framed building. This building is a good example of English architectural heritage and building methods common during the eighteenth century, which commonly featured wood-framed I-House domestic buildings. The Van Auken House also features notable classical architectural elements. The owners of the John Wesley Van Auken House constructed a large two-story addition on the rear of the building sometime around 1850. It is possible alterations to the front entryway were made during this time as well. An unknown party built a small entryway stoop on the Van Auken House sometime around 1900. **Evaluation:** The John Wesley Van Auken House remains in its original location and appears to be in good condition. The owners made changes to the building prior to 1965, and it continues to reflect the materials, workmanship, and cultural traditions of buildings dating to the historic period.	
Mettler Cemetery	MP 1.67		Contributing	**Historic Condition (ca. 1600–1965):** It is unknown when active burials began in Mettler Cemetery but marked burials in Mettler Cemetery date to the early nineteenth century (around 1810) and include the graves of Revolutionary War Soldiers. Since that time, local residents have continued to use the cemetery for burials. **Evaluation:** Mettler Cemetery is active, with burials dating past the historic period. Grave markers are arranged in rows running north to south. The site is surrounded by a vinyl coated chain link fence. There is a sign mounted on the gate in the fence. The west side of the cemetery is enclosed by a line of trees. There is cultural vegetation associated with burials in the cemetery including arborvitae and	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				agave. There are rhododendron shrubs planted across OMRN from the cemetery. The cemetery is a private inholding within DEWA, and its features including grave markers and vegetation, reflect materials and workmanship dating to the historic period.	
Chain Link Fencing (Small-scale feature)	MP 1.65-1.70		Non-contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal if there was a fence around Mettler Cemetery during the historic period. The quality of aerial photography is low and cannot confirm or deny the presence of a fence. **Evaluation:** The fence currently located along the frontage and a portion of the sides of Mettler Cemetery is a vinyl coated chain link fence. The fence materials appear to be post-1965, and therefore they are not reflective of the historic period.	
Depue House Property	MP 2.80	Barn Foundation: LCS J10202-1 Road Trace: LCS J10202-1 Stone Walls: LCS J10202-1	Contributing	**Historic Condition (ca. 1600–1965):** The Depue House property dates to circa 1780. Oral histories indicate that the original barn was demolished sometime around 1880, following the construction of a new barn and corn crib in 1876. An undated historic photograph shows outbuildings positioned on the opposite side of OMRN from the main dwelling. A 1931 aerial photograph suggests that other several outbuildings were clustered around the main dwelling, but research has not uncovered specific information about these buildings. A barn appears to have been located across OMRN from the main house. An active agricultural access road south of the house appears to date to the historic period. **Evaluation:** The Depue House property includes a mown turfgrass area surrounding the house, located on the west side of OMRN. There is a specimen white oak located on the east side of OMRN across from the site. There is a stone foundation across OMRN that appears to match the location of a barn from the property. Stone rows near the Depue House appear to mark the former agricultural fields associated with the property. The existing historic site features, including the stone rows, barn foundation, road trace, specimen tree, and house, continue to reflect the historic period.	
Depue House (Building)	MP. 2.80	LCS 990540	Contributing	**Historic Condition (ca. 1600–1965):** The original portion of the Depue House dates to circa 1780. Around 1810, John Nyce built a large two-story addition on the south end of the original block. George Depue built a large two-story, wood-framed addition on the rear elevation of the house during the early twentieth century. **Evaluation:** After federal acquisition, site managers removed the two-story twentieth-century addition from the house. Currently, the windows and doors are boarded shut. Despite these alterations, the remainder of the house is in its original location and its materials and workmanship reflect the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Depue House Stone and Depue House Marker (Small-scale feature)	MP 2.76 MP 2.78		Non-contributing.	**Historic Condition (ca. 1600–1965):** There is an upright stone with holes drilled into it and no plaque located south of the Depue House. It appears to have previously held a plaque, but research did not reveal any record of this marker or its date of installation. It appears to date to the historic period. **Evaluation:** In 2003, the Walpack Historical Society installed a new marker with a plaque mounted to a stone in front of the Depue House. The older stone marker remains in its original location, but no longer contains a sign, and therefore does not reflect its historic condition.	
Anson Johnson Property	MP 4.12	Retaining Walls, LCS 82380 Fence Remnants LCS J10225C	Contributing	**Historic Condition (ca. 1600–1965):** The Anson Johnson property dates to circa 1840. A 1931 aerial photograph suggests that other several outbuildings were clustered around the main dwellings or across OMRN, but research has not uncovered specific information about these buildings. In addition to constructing outbuildings, at some point during the historic period property owners constructed a series of stacked stone retaining walls to create flatter areas for construction. The date of the walls is unknown, but their construction methodology and locations suggest that they date to the historic period. A 1931 aerial photograph shows that there was an extensive orchard located northwest of the main dwelling. **Evaluation:** Since acquisition, the federal government has made minimal changes to the property. The house is currently undergoing a rehabilitation project. The NPS installed a bear-resistant waste receptacle on the property for visitors, but the date of installation is unknown. The location and materials of the other features, including the stone wall behind the Anson Johnson House, reflect the historic period.	
Anson Johnson House (Building)	MP 4.12	LCS 082381	Contributing	**Historic Condition (ca. 1600–1965):** The Anson Johnson House, constructed circa 1840, is an example of the English central-hall I-House building type. There is limited information about alterations and additions made to the Anson Johnson House during the historic period. **Evaluation:** Since the historic period, the Anson Johnson House has not undergone substantial change, and the building shows signs of physical deterioration. Site managers have not removed any of the additions made to the house prior to the end of the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				The house continues to reflect the historic period. The Anson Johnson House is currently undergoing a rehabilitation project, which includes repair and in-kind replacement of historic fabric to make the home suitable for occupancy.	
Anson Johnson Shed (Building)	MP 4.12	LCS 82377	Contributing	**Historic Condition (ca. 1600–1965):** The date of construction of the Anson Johnson shed is unknown, but it is visible in a 1931 aerial photograph. The New Jersey State Historic Preservation Office (NJHPO) speculates that a shed on the property was constructed around the same time as the Anson Johnson House (circa 1840), but this date has not been confirmed. **Evaluation:** The wood-framed upper floor of the Anson Johnson Shed is showing signs of severe damage and deterioration, which has accelerated since the date of fieldwork for this project. The roof and east elevation wall have partially collapsed. According to NJHPO, "Although the date may not be confirmed, the survey form also states that the building's construction methods indicate that it may have been built around the same time as the main house. Although the building has some replacement materials, it is the opinion of the HPO that it retains sufficient integrity to contribute to the Old Mine Road Historic District."	
William Ennis Property	MP 4.62	Flagpole: LCS J10464C Barbeque: LCS J10464B	Contributing	**Historic Condition (ca. 1600–1965):** The William Ennis property dates to 1751. An undated historic photograph shows two small outbuildings clustered around the main dwelling, and a 1931 aerial photograph indicates that several outbuildings were present. Research has not uncovered specific information about these buildings. A 1931 aerial photograph shows the Ennis House surrounded by large agricultural fields on all sides. There are several outbuildings positioned west and northwest of the Ennis House. At some point the owner constructed a barbeque structure west of the house. **Evaluation:** The majority of the site is maintained as cleared and mown turfgrass, with some larger trees in the yard, surrounded by successional forest. The circular driveway to the house is accessed via a gravel road which spurs off OMRN at MP 4.65. The property maintains its original location and continues to reflect the historic period.	
William Ennis House (Building)	MP 4.62	LCS 009541	Contributing	**Historic Condition (ca. 1600–1965):** The William Ennis House was built in 1751, as indicated by an inscribe date stone on the building. The original block of the William Ennis House has stone walls and a timber-framed roof. The Ennis House is a good example of Dutch architectural heritage and common building methods. The original door of the William Ennis House was partially infilled with stone and converted into a window sometime during the nineteenth century, prior to 1890. A photograph taken for a 1937 HABS report shows a small wood-framed, shed roof addition on the south elevation of the building. At some point, the owner added a second small addition to the south end of the building, made of the same materials as the earlier addition. It is possible this addition was built around the same time or shortly after the earlier addition.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				Evaluation: The house is set back approximately four hundred feet from the west side of OMRN. The NPS has boarded shut a majority of the windows. A 2016 Historic Resource Survey form shows a shed roof porch with square wood porch supports on the west elevation of the building. This porch is no longer extant. According to park personnel, Ennis House has received numerous rehabilitation and maintenance projects over time, including the in-kind replacement of the cedar shingle roofing material. Additionally, the NPS is currently in the preliminary planning phase of a rehabilitation project for the Ennis House. Overall, the William Ennis House and its materials continue to reflect the regional Dutch-influenced building traditions dating to the historic period.	
William Ennis Shed (Building)		LCS J10464A	Contributing	**Historic Condition (ca. 1600–1965):** The William Ennis Shed dates to 1935 and has an asphalt roof with drop siding. **Evaluation:** The shed has a deteriorated asphalt shingle roof and drop siding and is in very poor condition. According to the NJHPO, "It is the opinion of the HPO that the building retains sufficient integrity to contribute to the Old Mine Road Historic District."	
Westbrook-Bell Farm	MP 5.14	Entrance Drive: LCS J8215-5D	Contributing	**Historic Condition (ca. 1600–1965):** The Westbrook-Bell Farm pre-dates the 1730s, likely built circa 1725. The main house and a barn are known to have existed on the property by 1730. A 1931 aerial photograph shows several large outbuildings clustered around the main house, but research has not uncovered specific information about these buildings. The photograph also shows a large rectilinear orchard planted north of the Westbrook-Bell House. In 1931, the farm was situated along an auxiliary road on the west side of OMRN. The road moved west through the farmstead before curving south and roughly following the contour of the riverbank. At some point, property owners planted a line of white pines along the south side of the entry drive to the farm. It is unclear what year these were planted, but they appear to be at least 50 years old. By 1970, a new rectilinear orchard was located south of the Westbrook-Bell House. **Evaluation:** The Westbrook-Bell Farm site is located approximately 550 feet west of OMRN, accessed by a gravel driveway at MP 5.14. The site is maintained as a cleared and mown turfgrass area with scattered trees, surrounded by dense successional forest. An NPS installed bearproof waste receptacle is located in front of the main house. There is a line of white pines on the south side of the driveway. The date of these trees is undetermined, but they appear to be over 50 years old. According to park personnel, the Westbrook-Bell House has received numerous rehabilitation and maintenance projects, including the repointing of stone walls, reinforcing framing, and in-kind repair and replacement of the wood shake roof. A Historic Structure Treatment Report was conducted in 2015 to identify future needs and assist planning for additional maintenance work. Overall, the	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				remaining features at the Westbrook-Bell Farm reflect the historic period.	
Westbrook-Bell House (Building)	MP 5.14	LCS 009542	Contributing	**Historic Condition (ca. 1600–1965): The** original block of the Westbrook-Bell House had stone walls and a timber-framed roof. During the late nineteenth century, the owners constructed a one-and-a-half story stone addition on the rear of the original block. Eliza Westbrook made significant alterations to the house during the 1860s. Under her ownership, a large central chimney was removed and replaced with two chimneys in both gable ends, and the interior was remodeled. There was also a wood summer kitchen, which was "added in the north corner." It is unclear if this kitchen was an interior renovation, an addition, or a stand-alone building. By 1937, the owners had removed two chimneys and replaced the chimney in the east gable with a concrete block chimney. During the early twentieth century, an unknown party constructed a small wood-framed addition on the north elevation of the building, abutting the earlier stone wing addition. The Westbrook-Bell House is a good example of Dutch architectural heritage and building methods dating to the eighteenth century. **Evaluation:** The house has remained relatively unchanged since federal acquisition. The NPS has boarded shut several of the first floor windows. The building's location, design, materials, cultural traditions, and workmanship continue to reflect the historic period.	
Westbrook-Bell Outbuildings (Buildings and Structures)		Barn 1: LCS J8215-5A Barn 2: LCS J8215-5B Privy: LCS J8215-5C	Contributing	**Historic Condition (ca. 1600–1965):** Aerial images from 1931 show a cluster of outbuildings positioned around the home, including four large outbuildings east of the Westbrook-Bell House, and one large outbuilding south of the Westbrook-Bell House. Smaller outbuildings were likely present but are not visible on the aerials. The NJHPO dates the barns to the early nineteenth century. An aerial photograph from 1970 shows three large outbuildings east of the Westbrook-Bell House (two of which are still extant). **Evaluation:** Southeast of the main house is barn #1, an early to mid-nineteenth century "side-gable, timber-frame barn, which measures twenty-six feet wide by forty feet long, has a roughly squared fieldstone foundation, vertical board siding, and an asphalt-shingle-clad roof. The barn has a fieldstone foundation, vertical board siding with some battens, and a corrugated steel roof." Just southeast of barn #1 is barn #2, an early to mid-nineteenth century "gable-front timber-frame barn that measures twenty-one feet six inches wide and thirty feet deep. The barn has a fieldstone foundation, vertical board siding with some battens, and a corrugated steel roof." Northwest of the main house is a small circa twentieth-century one-story frame privy with asphalt shingles "that sits on a "U" shaped concrete foundation." The remaining outbuildings at the Westbrook-Bell farm reflect the materials and building traditions of the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Westbrook-Bell Marker 1 (Small-scale feature)	MP 5.14		Contributing	**Historic Condition (ca. 1600–1965):** The Daughters of the American Revolution recognized the historical significance of the Westbrook-Bell Farm and erected a stone marker with a brass plaque at the entrance drive in 1934. **Evaluation:** The plaque, which identifies Old Mine Road and other notable area history, faces east toward OMRN. The concrete is in fair condition, though the plaque has oxidized, staining the concrete. The marker reflects the historic character of pre-1965 roadside features.	
Westbrook-Bell Farm Marker 2 (Small-scale feature)	MP 5.14		Non-contributing	**Historic Condition (ca. 1600–1965):** Research did not reveal that there was more than one historical marker at the Westbrook-Bell property during the historic period. **Evaluation:** In 1968, a historical society erected a sign at this location reading "Dutch colonial home built in 1726 by Johanes Westbrook, Jr. Also site of 1754 French and Indian War blockhouse." In 2003, the Sussex County Historic Marker program replaced the 1960s marker with the existing one.	
Black Farm	MP 5.31		Contributing	**Historic Condition (ca. 1600–1965):** The main house at the Black Farm property dates to circa 1842, but the owners constructed it on the foundation of an older home. A 1931 aerial photograph shows the Black Farm surrounded by large agricultural fields. South of the Black Farm House, there were several large outbuildings (two of which are still extant). There was also a rectilinear orchard south of the Black Farm. The creek bed north of Black Farm had more tree coverage than the surrounding area. An undated photograph shows Black Farm after OMRN was paved. The road was lined by a wood post and wire fence, and there were overhead powerlines visible in the photograph. The east side of Old Mine Road North appeared to be more heavily vegetated and forested. 1970 aerials show the Black Farm situated in a more heavily wooded area. Many of the large agricultural fields that were present in 1931 aerial images had become forested and begun to return to natural succession. It is possible that the Black Farm had not been a productive agricultural landscape form some time prior to federal acquisition. **Evaluation:** The site is maintained as a mostly mown turfgrass area, with scattered trees and a few shrubs. There is a historic white oak on the east side of OMRN across from the Black Farm. The west edge of the site is overgrown with vines and exotic invasive shrubs. An informal gravel pulloff area is located just north of the Black Farm Dutch Barn. Despite encroaching vegetation, the remaining features at the Black Farm continue to reflect their original location, materials, and workmanship from the historic period.	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
Black Farm House (Building)	MP 5.31	LCS 082392	Contributing	**Historic Condition (ca. 1600–1965):** The Black Farm House, an example of an English I-House, was constructed on the stone foundations of an older home at that location (circa late eighteenth century). According to a Historic Structure Report that documented the Black Farmhouse, a side porch was enclosed, and a rear bathroom was added shortly before World War II. The previous owners of the Black Farm vacated the property when the federal government acquired it in preparation for the Tocks Island Dam Project. **Evaluation**: No known additions or alterations were made to the Black Farm House after federal acquisition. In 1993, the NPS commissioned a historic structure report (HSR) for the main house at the Black Farm. Architect John Bruce Dodd and architectural historian Cynthia A. Hinson completed the report. The report includes a brief developmental history of the Delaware River Valley and Old Mine Road, as well as a more detailed history of the Black Farm. The report also includes in-depth documentation of the main house's exterior and interior conditions and structural systems, which are then used to inform recommendations for repair needs, cost estimates, preservation strategies, and potential future uses. The building is showing signs of physical deterioration including the degradation of wood siding and biological growth on the roof. At some point, there was substantial water damage resulting in discoloration where the rear wing addition meets the main house. The NPS has boarded shut most of the windows and doorways. According to park personnel, the Black Farm House has received stabilization efforts in recent years, including in-kind replacement of cedar shingle roofing in 2016. The building's location, design, materials, cultural traditions, and workmanship continue to reflect the historic period.	
Black Farm Outbuildings (Buildings and Structures)	MP 5.23-5.32	Black Farm Barn, Cold House, Corn Crib, Wagon Shed, Tool Shed Ruin, Chicken House Foundation: LCS J10659-1	Contributing	**Historic Condition (ca. 1600–1965):** An unknown party had previously built the large wood-framed Dutch barn at the Black Farm sometime during the late eighteenth century. The date of the smaller outbuilding of unknown use (possibly a corn crib or wagon shed) and stone spring house are undetermined, but it is possible they date to this period as well. Historic outbuildings known to have existed within the Black Farm cluster include a stone Black Farm Spring House, the Black Farm Dutch Barn, a smaller secondary barn, and the Black Farm Corn Crib (wagon shed). Based on a 1931 aerial photograph, it is possible that other outbuildings were present during the historic period, but research has not uncovered specific information about these buildings. **Evaluation:** The large Dutch Barn remains in place, while the Black Farm Corn Crib and Spring House have become deteriorated to the point of near collapse. The west wall of the Black Farm Spring House collapsed at an unknown date, but references to this condition are present as far back as Clemensen's 1996 Preliminary Historic Resource Study. Other outbuildings noted by Clemensen at that time included a second barn, chicken coop, and storage shed. The remains of an open	

Feature Name	Other Resource Inventory	FMSS Data (Location / Asset records)	Evaluation Status	Evaluation Narrative Historic Period: ca. 1600–1965	Graphic Reference
				concrete well or septic tank structure are located just west of the retaining wall on the south side of the Black Farm House. The NPS removed these buildings sometime between 1996 and 2023. The remaining outbuildings continue to reflect the historic period.	
Black Farm Stone Walls (Structures)	MP 5.30-5.33 (2 walls)	LCS J10659-1 LCS J10659-1	Contributing	**Historic Condition (ca. 1600–1965):** Historic photographs and maps that have been located to date do not record these retaining walls during the historic period. **Evaluation:** There are two mortared rubble stone retaining walls flanking the entry to the Black Farm House, near OMRN. The walls are approximately two feet high. A stone retaining wall approximately four to five feet high spans between the north foundation wall of the Black Farm House and Black Farm Spring House, creating a terraced front yard area. A sloping mortared stone wall retains the grade on the south side of the main block of the Black Farm House. The retaining walls at the Black Farm appear to pre-date 1965, and their construction reflects the historic character of pre-1965 farmstead features.	
Minisink Reformed Church Cemetery	MP 7.34		Contributing	**Historic Condition (ca. 1600–1965):** The Minisink Dutch Reformed Church established their congregation in 1737 and built a church sometime between 1740 and 1743 near OMRN. The congregation may have established a cemetery and met informally at this location prior to constructing the church, as the earliest discernible burial markers in the cemetery date to 1715. The original church was a log building located near a bend in OMRN. This building served the congregation in this location for ninety years until a new church was built in Montague in 1827. The original log building was sold and removed from the cemetery in 1829. A granite marker commemorating the former location of the church was installed sometime prior to the 1930s, and is references in The WPA Guide to 1930s New Jersey. Several burials were moved from the existing cemetery to the new church cemetery at that time. **Evaluation:** Since the historic period, there are no known changes to the Minisink Reformed Church Cemetery. The boundaries are not marked, and the number and extent of the burials is unknown. There are several engraved headstones close to the roadway, mostly dating to the nineteenth century. Many other burial sites are marked only by natural stones and small depressions, laid in a series of roughly concentric arcs radiating from the center of the cemetery. The granite marker mentioned in the *The WPA Guide to 1930s New Jersey* is still extant and is engraved "Minisink Church 1737." American flag sand small Revolutionary War markers also help identify the cemetery. The cemetery continues to reflect its original location at a bend in the road, and the grave markers at the cemetery continue to reflect materials and workmanship of the historic period.	

Page intentionally left blank

Bibliography

Albert, Richard C. *Damming the Delaware: The Rise and Fall of the Tocks Island Dam*. University Park, PA: The Pennsylvania State University Press, 1987.

Alexander, Jr., James. "Legacy of Hurt: Eminent Domain at Tocks Island." Jim Alexander's Quest, 2023. https://jimquest.com/writ-history-tocks-domain/.

———. "The Breakdown of Law, Order and Social Fabric During the Tocks Island Project." Jim Alexander's Quest, 2023. https://jimquest.com/writ-history-tocks-law/.

Alligood, Nekole. "The History of Delaware Nation." Delaware Nation, n.d. https://www.delawarenation-nsn.gov/history/.

AmerCom Corp. "Pavement Design Report." Geotechnical Report. Delaware Water Gap National Recreation Area: National Park Service, November 2018.

An Act to Authorize Establishment of the Delaware Gap National Recreation Area, and for other purposes, Pub. L. No. 89–158 (1965).

Associated Press. "Jersey WPA Gets $7,636,992." New York Times, June 5, 1941.

Barr, Daniel P. "Victory at Kittanning? Reevaluating the Impact of Armstrong's Raid on the Seven Years' War in Pennsylvania." *The Pennsylvania Magazine of History and Biography* 131, no. 1 (January 2007): 5–32.

Berlin, Ira. "From Creole to African: Atlantic Creoles and the Origins of African-American Society in Mainland North America." In *The Slavery Reader*, 427–62. London, England: Routledge, 2003.

Bertland, Dennis, Patricia M. Valence, and Russell J. Woodling. "The Minisink: A Chronicle of One of America's First and Last Frontiers." New Jersey and Pennsylvania: Four-County Task Force on the Tocks Island Dam Project, 1975.

Blasberg, Robert William, and Jean-Albee Everitt. "Two and One Quarter Centuries on Old Mine Road: The Historic of Minisink Reformed Church, 1737-1962," 1984. https://www.ancestry.com/search/collections/11144/.

"The Brace Site." Site Registration Program. New Jersey State Museum, Bureau of Archaeology, n.d.

Brodhead, L. W. *The Delaware Water Gap: Its Scenery, Its Legends and Early History*. Philadelphia, PA: Sherman & Co., Printers, 1870.

"Brooklyn Botanic Garden Record" XXIV, no. 1 (January 1935).

Brown, Lenard E. "Historical Base Map, Delaware Water Gap." New Jersey: Denver Service Center, National Park Service, March 1973.

Burns Chavez, Steve R., and A. Berle Clemensen. "Pahaquarry Copper Mine, Delaware Water Gap." Cultural Landscape Report. New Jersey: U.S. Department of the Interior, National Park Service, August 1995.

Caffrey, Margaret M. "Complementary Power: Men and Women of the Lenni Lenape." *American Indian Quarterly* 24, no. 1 (2000): 44–63.

The Central New Jersey Home News. "Power Line Project for Sussex County." April 18, 1937.

"Classified Land Files." U.S. Department of the Interior, National Park Service, n.d.

Clemensen, A. Berle. "Preliminary Historic Resource Study." Delaware Water Gap National Recreation Area, September 1996.

The Courier News. "Plainfield Woman Urges State Highway Commission Improve the Sussex County Road." May 19, 1926.

The Courier-News. "Milford Bridge Dedicated." December 31, 1953.

The Cultural Resource Group Louis Berger & Associates, Inc. "Comprehensive Preservation Planning Historic Period Cultural Resources Delaware Water Gap National Recreation Area." Philadelphia, PA: U.S. Department of the Interior, National Park Service, Mid-Atlantic Regional Office, January 1990.

Curry-Ledbetter, Campbell. "Women's Suffrage in New Jersey 1776-1807: A Political Weapon." The Georgetown Journal of Gender and the Law XXI, no. 705 (2020): 705–23.

Cybularz, Rebecca M. "Westbrook-Bell House." Historic Structure Assessment Report. Sussex County, NJ: Delaware Water Gap National Recreation Area, February 2015.

Dalton, Richard. "Caves of New Jersey." Department of Environmental Protection, New Jersey Geological Survey, 1976. https://www.state.nj.us/dep/njgs/enviroed/oldpubs/bulletin70.pdf.

Davis, Ren, and Helen Davis. *Our Mark on This Land: A Guide to the Legacy of the Civilian Conservation Corps in America's Parks*. Granville: OH: The McDonald & Woodward Publishing Company, 2011.

Dean, Nora Thompson. "Some of the Ways of the Delaware Indian Women." Official Web Site of the Delaware Tribe of Indians, January 24, 1983. https://delawaretribe.org/blog/2016/08/07/some-of-the-ways-of-the-delaware-indian-women/.

"Delaware Mine Road, Sandyston & Montague TWPS., Sussex, Co., New Jersey," 1932. Sussex County Deed and Records Room.

Delaware River Basin Commission. "National Wild and Scenic Rivers in the DRB," January 1, 2023. https://nj.gov/drbc/basin/wild.html.

"Delaware Water Gap National Recreation Area Historical Architectural Survey, Volume II." U.S. Department of the Interior, National Park Service, Mid-Atlantic Regional Office, 1974.

"Delaware Water Gap National Recreation Area." Geologic Resources Inventory Report. U.S. Department of the Interior, National Park Service, October 2013.

Delaware Water Gap National Recreation Area. "Nature." National Park Service, n.d. Accessed May 12, 2023.

"DEWA Cycle 6 Final Report." Road Inventory and Condition Assessment of Paved Routes. Federal Lands Highway Road Inventory Program. Delaware Water Gap National Recreation Area: Federal Highway Administration Eastern Federal Lands Highway Division, May 2020.

Dodd, John Bruce. "The Black/Minisink Farmhouse." Historic Structure Report. Sandyston Township, Sussex County, NJ: Delaware Water Gap National Recreation Area, 1993.

Dodd, John Bruce, Anne Kathleen Sullivan, and Ronald J. Dupont Jr. "The DePue House." Historic Structure Report. Sandyston Township, Sussex County, NJ: U.S. Department of the Interior, National Park Service, 1996.

Donahue, John J. Letter to Katherine Marcopul. "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area," December 9, 2016. Delaware Water Gap National Recreation Area.

Dorwart, Jeffery M. *Invasion and Insurrection: Security, Defense, and War in the Delaware Valley, 1621–1815*. Newark: University of Delaware Press, 2008.

Dovetail Cultural Resource Group. "Phase I Archeology Survey of the Old Mine Road North and South Project Areas [DRAFT]." National Park Service, April 7, 2023.

"Draft General Management Plan, Delaware Water Gap National Recreation Area." Pennsylvania-New Jersey: U.S. Department of the Interior, National Park Service, 1978.

"Draft Historic Buildings Strategy." Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, July 2021.

"Draft Trails Plan, General Management Plan Amendment, and Environmental Impact Statement." U.S. Department of the Interior, National Park Service, June 1999.

Ely, William H. J. Letter to E. Donald Sterner. "Works Progress Administration, New Jersey," April 13, 1938. WPA Misch. Records. New Jersey State Archives.

Evans, Richard A. "Hemlock Ecosystems and Hemlock Woolly Adelgid at Delaware Water Gap National Recreation Area." Delaware Water Gap National Recreation Area: Hemlock Program, 2003.

"Existing Roads and Trails." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984.

"Existing Roads and Trails." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1986.

"Existing Roads and Trails." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1987.

Eyring, Shaun, Nancy Brown, John Wright, and John Milner Associates, Inc. "River Road System, New Jersey, Cultural Landscapes Inventory," October 2005. Delaware Water Gap National Recreation Area.

"Final Trails Plan, Abbreviated Environmental Impact Statement." U.S. Department of the Interior, National Park Service, November 1999.

"Foundation Document, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River." U.S. Department of the Interior, National Park Service, October 2014.

Fuller, Wayne E. "Good Roads and Rural Free Delivery of Mail." *The Mississippi Valley Historical Review* 42, no. 1 (1955): 67–83. https://doi.org/10.2307/1898624.

Gamble, Stephanie. "Treaty Negotiations with Native Americans." Encyclopedia of Greater Philadelphia, 2015. https://philadelphiaencyclopedia.org/essays/treaty-negotiations-with-native-americans/.

"General Management Plan, Delaware Water Gap National Recreation Area and Middle Delaware National Scenic and Recreational River." Pennsylvania and New Jersey: U.S. Department of the Interior, National Park Service, 1987.

"Geologic Resources Inventory Report." Natural Resource Report. Delaware Water Gap National Recreation Area: National Park Service, Natural Resource Stewardship & Science, 2013.

Good Roads Magazine. "New Jersey Road Improvement and Repairing." May 1907.

———. "Newton, N. J." August 1909. https://babel.hathitrust.org/cgi/pt?id=mdp.39015021735850&seq=7.

———. "The Best Road Liquid Asphalt Binder, Indian Reining Company, Inc." October 1909.

Grumet, Robert. *Historic Contact: Indian People and Colonists in Today's Northeastern United States in the Sixteenth through the Eighteenth Centuries*. Norman: University of Oklahoma Press, 1995.

———. *The Lenapes*. Edited by Frank W. Porter III. New York, New York: Chelsea House Publishers, 1989.

GSA: Franklin D. Roosevelt and Conservation (Vol. 1) (Part II). "An Act for the Relief of Unemployment Through the Performance of Useful Public Work, and for Other Purposes," March 31, 1933. https://www.nps.gov/parkhistory/online_books/cany/fdr/part2.htm.

Harper, George. "Plans of Proposed Reconstruction of River Road - Section No. 7, Walpack Township, Sussex County, New Jersey." Bushkill, PA, December 1, 1959. Delaware Water Gap National Recreation Area.

Harper, Steven C. "The Map That Reveals the Deception of the 1737 Walking Purchase." The Pennsylvania Magazine of History and Biography 136, no. 4 (October 2012): 457–60.

Harrison, E. G. "Stone Roads in New Jersey." In *Historical and Technical Papers on Road Building in the United States*. Washington, DC, 1895.

Haupt, Lewis M. *A Move for Better Roads: Essays on Roadmaking and Maintenance and Road Laws*. Philadelphia: University of Pennsylvania Press, 1891.

Hill, George A., Jr., and Jim Rementer. "Delaware Ethnobotany," 2015. https://delawaretribe.org/wp-content/uploads/DEL-ETHNOBOTANY-Hill.pdf.

Hills, John, Benjamin Morgan, and Thomas Millidge. "A Sketch of the Northern Parts of New Jersey." 1781. Library of Congress Geography and Map Division. https://lccn.loc.gov/gm72003605.

Historic Aerials. "Historic Aerial Image," 1970. https://www.historicaerials.com/viewer.

"Historic Resource Survey Forms." Bushkill, PA: U.S. Department of the Interior, National Park Service, 2016.

Hodges, Graham Russell Gao. "New Jersey in the Early Republic." In *New Jersey: A History of the Garden State*, 90–114. New Brunswick, NJ: Rutgers University Press, 2015.

Hoover Presidential Library. "The Great Depression," n.d. https://hoover.archives.gov/exhibits/great-depression.

Hopkins, Griffith Morgan, Jr. "Map of Sussex Co., New Jersey: From Actual Surveys & Records." Philadelphia, PA: Carlos Allen, M.D., 1860. https://www.loc.gov/item/2012593681/.

Hugill, Peter J. "Good Roads and the Automobile in the United States 1880-1929." *Geographical Review* 72, no. 3 (1982): 327–49. https://doi.org/10.2307/214531.

Hursh, Ge. E. "Copied from a Map Owned by John D. Everitt." March 4, 1872. Delaware Water Gap National Recreation Area Archives.

"Inventory of the County Archives of New Jersey, No. 19 Sussex County (Newton)." The New Jersey Historic Records Survey. Newark, New Jersey: Division of Community Service Programs, Work Projects Administration, 1941. https://www.ancestry.com/imageviewer/collections/11250/images/dvm_LocHist002206-00001-1?ssrc=&backlabel=Return&pId=2000000000.

The Jersey City News. "Wheelmen Organize." July 30, 1896. https://www.newspapers.com/image/856077013/?match=1.

"John Van Sickle a Key Figure in County History." *New Jersey Herald*. Accessed February 14, 2024. https://www.njherald.com/story/lifestyle/2009/01/10/john-van-sickle-key-figure/4071214007/.

Kraft, Herbert C. "The Minisink Settlements: An Investigation into a Prehistoric and Early Historic Site in Sussex County, New Jersey." South Orange, New Jersey: Archaeological Research Center, March 30, 1977.

———. *The Dutch, the Indians, and the Quest for Copper: Pahaquarry and the Old Mine Road*. South Orange, New Jersey: Seton Hall University Museum, 1996.

Kraft, Herbert C., and R. Alan Mounier. "The Archaic Period in New Jersey (ca. 8000 B.C. - 1000 B.C.)," n.d. https://www.nj.gov/dep/hpo/1identify/pg_52_ArchaicPeriodNJCraft_Mounier.pdf.

———. "The Late Woodland Period in New Jersey (ca. A.D. 1000 - 1600)," n.d. https://www.state.nj.us/dep/hpo/1identify/pg_139_LateWdlndPeriodNJKraft_Mounier.pdf.

KSK Architects Planners Historians, Inc., Armand Corporation, Inc., and Michael Baker, Jr. Inc. "New Jersey Historic Roadway Study." Trenton, NJ: New Jersey Department of Transportation, January 2011.

Lattanzi, Gregory D. "The Provenance of Pre-Contact Copper Artifacts: Social Complexity and Trade in the Delaware Valley." *Archaeology of Eastern North America* 35 (2007): 125–37.

"Laws--New Jersey, 1918, Chapter 185, Section 1128." New Jersey Chapter / Session Laws. New Jersey State Library. Accessed March 21, 2023. https://www.njstatelib.org/research_library/legal_resources/historical_laws/session_laws/.

Leuchtenburg, William E. *Franklin D. Roosevelt and the New Deal*. Harper & Row, 1963.

Long Island University's Cedar Swamp Historical Society Collection at the D. Davis Schwartz Library. "1872-74 Book, Picturesque America or The Land We Live In," n.d. http://www.liucedarswampcollection.org/template1/picturesque.html.

Losee. "Plans of Proposed Reconstruction of River Road - Section No. 6, Walpack Township, Sussex County, New Jersey." Bushkill, PA, September 6, 1951. Delaware Water Gap National Recreation Area.

Lurie, Maxine N. "Colonial Period: The Complex and Contradictory Beginnings of a Mid-Atlantic Province." In *New Jersey: A History of the Garden State*, 33–63. New Brunswick, New Jersey: Rutgers University Press, 2015.

Lyon, Edwin A. *A New Deal for Southeastern Archeology*. Tuscaloosa, Alabama: University of Alabama Press, 1996.

Mahan, Carolyn G., Bruce J. Miller, Michael C. Saunders, and John A. Young. "Assessment of Natural Resources and Watershed Conditions for Delaware Water Gap National Recreation Area and Upper Delaware Scenic and Recreational River." Fort Collins, CO: U.S. Department of the Interior, July 2011.

"Map of Sussex County." Newark, NJ: The Essex Press, Inc., 1930. Special Collections and University Archives, Rutgers University Libraries. http://mapmaker.rutgers.edu/SUSSEX_COUNTY/SussexCounty_1930.jpg.

Marcopul, Katherine. Letter to Sula Jacobs. "Updates to Determination of Eligibility, Delaware Water Gap National Recreation Area, Historic Properties Management Plan," February 25, 2020. Delaware Water Gap National Recreation Area.

Marshall, Sydne B. "Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period ca. 10,000 B.C.—6000 B.C.," n.d. https://www.nj.gov/dep/hpo/1identify/pg_10_AborigianalSettleNJMarshall.pdf.

"The Master Plan: Delaware Water Gap National Recreation Area." U.S. Department of the Interior, National Park Service, 1966.

McRae, John M. "Everitt House." Historic American Buildings Survey. Montague Township, Sussex County, NJ: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1970.

McTernon, Don. "The Esopus-Minisink Way: A Brief History of the Area with an Examination of the Legend of the 'Old Mine Road,'" 1969. The Esopus-Minisink Way.

Menzies, Elizabeth G. C. *Before the Waters: The Upper Delaware Valley*. New Brunswick, NJ: Rutgers University Press, 1966.

"Merle and Ruth Blair House." Intensive-Level Architectural Survey Forms for Miscellaneous 2006–2012 Projects in the Delaware Water Gap National Recreation Area. Sussex and Warren Counties, New Jersey: New Jersey Department of Environmental Protection, Historic Preservation Office, 2012 2006.

"Millville Historic & Archaeological District (Boundary Increase)." National Register of Historic Places Nomination Form. Montague Township, Sussex County, New Jersey: U.S. Department of the Interior, National Park Service, 2013.

"Minisink Historic District." National Historic Landmark Nomination. Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, 1993.

Minisink Valley Genealogy. "Minisink Valley Genealogy: The 1753 - 1845 Boundary Line Records of Sussex & Warren Counties." Accessed January 5, 2024. https://minisinkvalleygenealogy.blogspot.com/2016/05/the-1753-1845-boundary-line-records-of.html.

Mizelle, Richard M. "Black Levee Camp Workers, The NAACP, and the Mississippi Flood Control Project, 1927-1933." *Journal of African American History* 98, no. 4 (Fall 2013).

Montclair State University, Anthropology Research. "Part 1 - Early Settlement and the Rise of Slavery in Colonial Dutch New Jersey," n.d. https://www.montclair.edu/anthropology/research/slavery-in-nj/part-1/.

Montclair State University, Anthropology Research. "Part 2 - Slavery in Early English East Jersey," n.d. https://www.montclair.edu/anthropology/research/slavery-in-nj/part-2/.

Montclair State University, Anthropology Research. "Part 3 - Slavery in Mid-18th-Century New Jersey," n.d. https://www.montclair.edu/anthropology/research/slavery-in-nj/part-3/.

Montclair State University, Anthropology Research. "Part 5 - The Struggle for Abolition," n.d. https://www.montclair.edu/anthropology/research/slavery-in-nj/part-5/.

The Morning Call. "Farmers Discard Kerosene and Candle Lamps." April 4, 1938.

Museum of Indian Culture. "The Lenape," n.d. https://www.museumofindianculture.org/copy-of-museum-resources.

National Park Service. "Delaware Water Gap National Recreation Area River Road System, New Jersey." Cultural Landscapes Inventory. U.S. Department of the Interior, National Park Service, October 2005.

———. "How to Apply the National Register Criteria for Evaluation." National Register Bulletin. U.S. Department of the Interior, 1997. https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

———. "The National Register of Historic Places and the National Historic Landmarks Program - National Historic Landmarks (U.S. National Park Service)," August 31, 2018. https://www.nps.gov/subjects/nationalhistoriclandmarks/nr-and-nhl.htm.

National Water Quality Monitoring Council. "Sandyston Creek On Old Mine Road (NJDEP_BFBM-01438743) Site Data in the Water Quality Portal," n.d. https://www.waterqualitydata.us/provider/STORET/NJDEP_BFBM/NJDEP_BFBM-01438743/.

Natural Resource Conservation Service, United States Department of Agriculture. "Web Soil Survey," July 1, 2020. https://casoilresource.lawr.ucdavis.edu/gmap/.

NatureServe Explorer. "Tsuga Canadensis," April 20, 2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.131718/Tsuga_canadensis.

New Jersey Department of Environmental Protection. "Land Resource Protection Web Application," n.d. https://njdep.maps.arcgis.com/apps/webappviewer/index.html.

The New Jersey Council for Social Studies. "Slavery in New Jersey." Social Science Docket, Winter - Spring 2016.

New Jersey Herald. "Sandyston Preps for 250th Anniversary." February 11, 2012. https://www.njherald.com/story/news/2012/02/11/sandyston-preps-for-250th-anniversary/3982099007/.

———. "Sussex County Once Had an Underground Railroad." May 1, 2016. https://www.njherald.com/story/lifestyle/2016/05/01/sussex-county-once-had-underground/4059727007/.

———. "Who Is Buried in the Walpack Black Cemetery?" February 16, 2020. https://www.njherald.com/story/lifestyle/around-town/2020/02/16/who-is-buried-in-walpack/1699296007/.

New Jersey State Highway Department, and New Jersey State Highway Commission. "Annual Report of the New Jersey State Highway Department for the Year Ending FY 1921." State Publication. Union Hill, NJ, 1921. http://hdl.handle.net/10929/27474.

Newark Star-Eagle. "Layton-Dingmans Road Work Now Awaits the Completion of Two Bridges Near Springdale." May 22, 1915.

NJDOT. "Transportation History, NJDOT 50th Anniversary." Accessed May 23, 2023. https://www.state.nj.us/transportation/about/50thanniversary/history.shtm.

NOAA National Centers for Environmental Information. "New Jersey." State Climate Summaries, 2022. https://statesummaries.ncics.org/chapter/nj/.

Nye, David E. *Electrifying America: Social Meaning of a New Technology, 1880–1940*. Cambridge, MA: The MIT Press, 1990.

Obermeyer, Brice. *Delaware Tribe in a Cherokee Nation*. Lincoln: University of Nebraska Press, 2009.

Official Web Site of the Delaware Tribe of Indians. "Frequently Asked Questions About the Lenape or Delaware Tribe," June 26, 2013. https://delawaretribe.org/blog/2013/06/26/faqs/.

"Old Mine Road Historic District." National Register of Historic Places Inventory Nomination Form. Delaware Water Gap National Recreation Area: National Park Service, U.S. Department of the Interior, 1980.

On the Delaware River, below Milford (Pa.), 1930-04-15, Hagley ID, J. Victor Dallin Aerial Survey collection (Accession 1970.200), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807.

Owens, Michael. "Assessment of Actions Having an Effect on Historic Properties, Emergency Repairs to Black-Minisink Culvert Headwall on Old Mine Road - PEPC ID: 79899." Bushkill, PA: Delaware Water Gap National Recreation Area, May 2, 2018.

Page, Robert R. "National Park Service Cultural Landscapes Inventory Professional Procedures Guide." U. S. Department of the Interior, National Park Service Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, January 2009.

Page, Robert R., Cathy A. Gilbert, and Susan A. Dolan. "A Guide to Cultural Landscape Reports: Contents, Process, and Techniques." U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998.

Pagoulatos, Peter. "Early Archaic Settlement Patterns of New Jersey." *Archaeology of Eastern North America* 31 (2003): 15–43.

———. "Paleoindian Site Location in New Jersey." *Archaeology of Eastern North America* 32 (2004): 123–49.

Paige, John C. *The Civilian Conservation Corps and the National Park Service, 1933-1942: An Administrative History*. National Park Service, 1985. www.nps.gov/parkhistory/online_books/ccc/.

Palazzolo, Chiara A. "Youth Hostel off of OMR," June 21, 2023.

Panzer, Shayna. "Minisink: Dream or Nightmare?" *The New York Times*, June 10, 1979. https://www.nytimes.com/1979/06/10/archives/new-jersey-weekly-minisink-dream-or-nightmare-the-minisink-dream-or.html.

Penn State Extension. "White Pine Weevil," April 20, 2023. https://extension.psu.edu/white-pine-weevil.

Perles, Stephanie J., Gregory S. Podniesinski, E. Eastman, Lesley A. Sneddon, and Sue C. Gawler. "Classification and Mapping of Vegetation and Fire Fuel Models at Delaware Water Gap National Recreation Area: Volume 1 of 2." Technical Report. Philadelphia, PA: U.S. Department of the Interior, National Park Service, Northeast Region, 2007.

Perth Amboy Evening News. "Report On N.J. Road Conditions." May 26, 1917.

Piehler, G. Kurt. "Depression and War." In *New Jersey: A History of the Garden State*, edited by Maxine N. Lurie and Richard Francis Veit. New Brunswick, NJ: Rutgers University Press, 2012.

Pike County Dispatch. "Electric Lights for Montague." January 14, 1926.

Pike County Press. "Notes from Sandyston." June 3, 1910.

Potter, Isaac B. *The Gospel of Good Roads: A Letter to the American Farmer*. New York: The League of American Wheelmen, 1891.

Press of Atlanta City. "Hotels of Other Resorts." June 1, 1896. https://www.newspapers.com/image/916763544/?match=9.

Ragonese, Lawrence. "Sussex County Gives up 7 Miles of Roads in Water Gap Area." *The Daily Record*, January 12, 1983.

"Roads Alternative 1." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984.

"Roads Alternative 1." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1986.

"Roads Alternative 2." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984.

"Roads Alternative 2." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, February 1986.

"Roads Proposal." Delaware Water Gap National Recreation Area: U.S. Department of the Interior, National Park Service, November 1984.

Roosevelt, Franklin D. "First Inaugural Address of Franklin D. Roosevelt." Text. Inaugural Addresses of the Presidents of the United States: from George Washington 1789 to George Bush 1989. Washington, DC: U.S. G.P.O. : for sale by the Supt. of Docs., U.S. G.P.O., 1989, March 4, 1933. https://avalon.law.yale.edu/20th_century/froos1.asp.

Russell, Emily W. B. "Vegetation of Northern New Jersey Before European Settlement." *The American Midland Naturalist* 105, no. 1 (January 1981): 1–12.

Salmond, John A. *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study*. Durham: Duke University Press, 1967.

The Scrantonian Tribune. "Conservationists Opposing Tocks Project Carry Fight to President." October 1, 1966.

Seely, Bruce E. "Engineers and Government-Business Cooperation: Highway Standards and the Bureau of Public Roads, 1900-1940." *The Business History Review* 58, no. 1 (1984): 51–77. https://doi.org/10.2307/3114528.

Shank, Wesley I. "Eighteenth-Century Architecture of the Upper Delaware River Valley of New Jersey and Pennsylvania." *Journal of the Society of Architectural Historians* 31, no. 2 (May 1972): 137–44.

Shank, Wesley, and William C. Badger. "Johannes Westbrook House." Historic American Buildings Survey. Sandyston Township, Sussex County, NJ: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1970.

———. "Nyce-Depue Farm." Historic American Buildings Survey. Sandyston Township, Sussex County, New Jersey: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1970.

———. "William Ennis House." Historic American Buildings Survey. Sandyston Township, Sussex County, New Jersey: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1970. U.S. Department of the Interior, National Park Service, September 25, 2007.

Shukaitis, Nancy Michael. *Lasting Legacies of the Lower Minisink*. East Stroudsburg, PA: Nancy Michael Shukaitis, 2007.

Skinner, Andrew, Thomas Millidge, and Oliver De Lancey. "A Map Containing Part of the Provinces of New York and New Jersey." 1781. Library of Congress Geography and Map Division. https://lccn.loc.gov/gm71005417.

Snell, James P., and W. Woodford Clayton. *History of Sussex and Warren Counties, New Jersey with Illustrations and Biographies of Prominent Men and Pioneers*. Philadelphia, PA: Everts & Peck, 1881.

Snook, and Harris. "Plans of Proposed Reconstruction of River Road, Walpack Township, Sussex County, New Jersey." Bushkill, PA, May 21, 1934. Delaware Water Gap National Recreation Area.

Snook, Harvey. "Plans of Proposed Reconstruction of River Road - Section 3 and 4, Walpack Township, Sussex County, New Jersey." Bushkill, PA, February 27, 1941. Delaware Water Gap National Recreation Area.

———. "Plans of Proposed Reconstruction of River Road - Section No. 5, Walpack Township, Sussex County, New Jersey." Bushkill, PA, September 25, 1942. Delaware Water Gap National Recreation Area.

———. "Road Map of Sussex County, New Jersey." New York: General Drafting Co., Inc., 1939. Special Collections and University Archives, Rutgers University Libraries.

———. "Road Map of Sussex County, New Jersey." New York: General Drafting Co., Inc., 1927. Special Collections and University Archives, Rutgers University Libraries.

Spanning the Gap. "Who Is Buried in the 'Slave' Cemetery?" Spring 1999. http://npshistory.com/publications/dewa/spanning-the-gap/v21-2-4.pdf.

"State Highway Department Report, 1928." Highway Department, Auditing and Accounting Bureau, Annual Reports, 1917-1931. Trenton, NJ: New Jersey State Archives, 1928.

Sussex County Board of Commissioners. "Resolution, Taking Over Delaware Mine Road, Montague Township," December 30, 1932. Sussex County Deed and Records Room.

"Sussex County Book of Roads, A-202," 1793.

"Sussex County Book of Roads, Book A, 64-65," 1772.

"Sussex County Book of Roads, Book A, 64-65," 1772.

"Sussex County Book of Roads, Book A, 64-65," 1772.

"Sussex County Book of Roads, Book A, 66," 1772.

Sweetser, Sarah M. "Small Stone House, Robert Farm; Armstrong House; Bevins-Hellwig House." Historic Structure Report. Denver, CO: Denver Service Center, U.S. Department of the Interior, National Park Service, March 1977.

"Three Maps of Northern New Jersey, with Reference to the Boundary between New York and New Jersey." 1769. Library of Congress Geography and Map Division. https://www.loc.gov/item/gm71000590/.

Thompson, W. G. "New Jersey Maintains Three Convict Road Camps; Plans to Expand System That Has Shown Value." *Public Roads*, May 1919.

University of California Davis. "Soilweb." https://casoilresource.lawr.ucdavis.edu/gmap/, September 3, 2020.

Veit, Richard. "Setting the Stage: Archaeology and the Delaware Indians, a 12,000-Year Odyssey." In *New Jersey: A History of the Garden State*, 6–32. New Brunswick, NJ: Rutgers University Press, 2015.

Veit, Richard, Gregory D. Lattanzi, and Charles A. Bello. "More Precious Than Gold: A Preliminary Study of the Varieties and Distribution of Pre-Contact Copper Artifacts in New Jersey." *Archaeology of Eastern North America* 32 (2004): 73–88.

Vosburgh, Royden Woodward. *Minisink Valley Reformed Dutch Church Records, 1716*-1830. New York: New York, Printed for the Society, 1913.

Weslager, C. A. *The Delaware Indians: A History*. New Brunswick, NJ: Rutgers University Press, 1972.

Wilkison, Kyle. "The Great Depression and New Deal, 1929-1940s," n.d. http://faculty.collin.edu/kwilkison/Resources%20for%20Students/DepressionNewDeal.html.

Williams, Lorraine E., and Ronald A. Thomas. "The Early/Middle Woodland Period in New Jersey (ca. 1000 B.C. - A.D. 1000)," n.d. https://www.nj.gov/dep/hpo/1identify/pg_103_EarlyMiddleWdlndPeriodNJWilliams_Thomas.pdf.

Witte, Ron, and Donald Monteverde. "Geologic History of New Jersey's Valley and Ridge Physiographic Province." *New Jersey Geological and Water Survey*, 2012. https://www.state.nj.us/dep/njgs/enviroed/infocirc/valley-ridge.pdf.

———. "Karst in the Delaware Water Gap National Recreation Area." *New Jersey Geological Survey Newsletter*, Unearthing New Jersey, 2, no. 1 (2006).

The Women's Project of New Jersey, Inc. *Past and Promise: Lives of New Jersey Women*. Metuchen, NJ: The Scarecrow Press, Inc., 1990.

Woods, Alan J., James M. Omernik, and Brian C. Moran. "Draft Level III and IV Ecoregions of New Jersey." 1: 500 000. US EPA, n.d.

———. "Level III and IV Ecoregions of New Jersey." US EPA, January 2007.

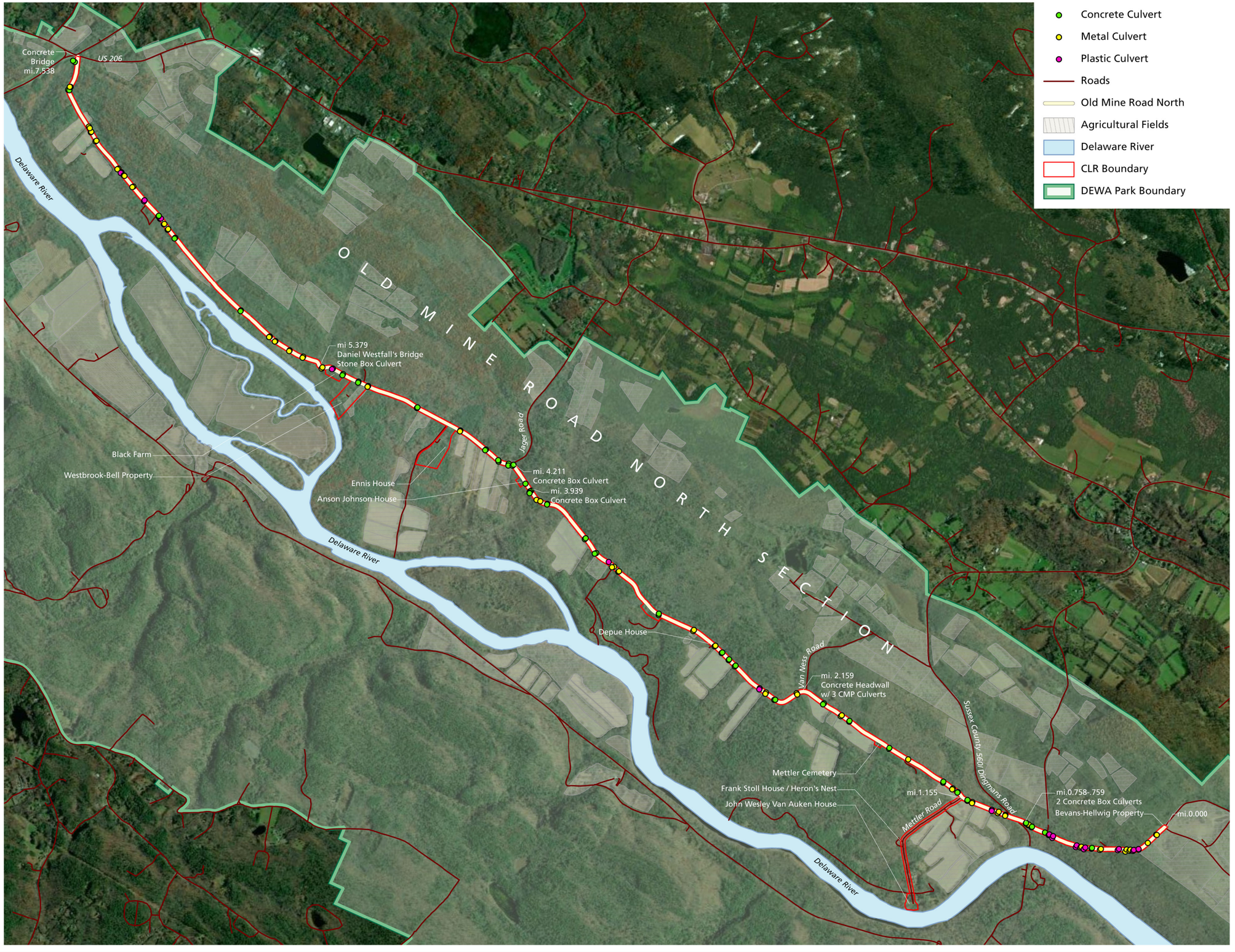
Woodson, Carter G. *Free Negro Heads of Families in the United States in 1830 Together with a Brief Treatment of the Free Negro*. Washington, DC: The Association for the Study of Negro Life and History, Inc., 1925.

Works Progress Administration. *The WPA Guide to 1930s New Jersey*. New Brunswick, NJ: Rutgers University Press, 1939.

Appendix A

Culvert Mile Point Distribution and Reconciliation

Page intentionally left blank



Cultural Landscape Report

Old Mine Road, Delaware Water Gap National Recreation Area

New Jersey

Appendix A: Culvert Distribution Diagram

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. NPS DEWA Army Corps Distributed Geodatabase
2. LUCY NJDEP ORGIS Old Mine Road Historic District Boundary
3. Hunter, Ryan. NPS Old Mine Road Pedestrian Survey: PMIS 251562, PEPC 80976, 2020
4. NPS Landsnet Boundaries and Tracts
5. WLA Studio Intensive Cultural Landscape Field Survey, March 2023

DRAWN BY

WLA Studio, ArcGIS Pro, 2023

NOTES

1. Geographic Projection: State Plane NAD83 2011
2. All features shown in approximate location, feature scale exaggerated for visibility.
3. Scale: 1:4,000
4. Route stationing depicted in decimal miles at 100' intervals.
5. DEWA-0015 route alignment derived from FHWA RIP Cycle 6 shapefile (captured by vehicle traveling in northbound lane).
6. See Appendix A for table of all culverts by station point, description of culvert types and contribution status.

0 500 1,000 2,000 Feet

Drawing A.1

ANALYSIS OF CULVERT LOCATIONS NOTED IN FHWA RIP CYCLE 3 ROAD FEATURE DATA FOR DEWA OMRN-ROUTE 0015 (RECONCILED WITH 2023 CLR FIELD SURVEY FINDINGS)

The Olmstead Center provided the contractor with a table and shapefile from FHWA RIP Cycle 3 Road Feature Data (ca. 2002) of DEWA-0015 (OMRN) which included the location of culverts along Old Mine Road North. Contractor verified the location and material type of each culvert in the field and noted discrepancies with the RIP data. It was found that the mile point (MP) stationing listed in the table usually corresponded to field-located culverts along the roadway, with some discrepancies. However, the shapefile provided had apparently been corrupted by an unknown spatial distortion, which depicted the culverts in the wrong geographic location along the roadway, typically 120-160' south of the station point listed in the attribute table. The contractor reprojected the shapefile from the WGS 1984 to NAD 1983 (2011) geographic coordinate system, which did not correct the spatial distortion. The distortion was inconsistent and cannot be attributed to a different point of beginning or other obvious error in the stationing. The contractor generated stationing for the CLR maps from the same OMRN-0015 route shapefile used to generate the FHWA RIP stationing. The route begins at the intersection of OMRN and Peter's Valley/ Wagonwheel Road (0.000) and ends at the intersection of US-206 (7.548). For each culvert (Identified in CRGIS data as Cultural Resource Structure Lines), a field was added to the attribute table to notate the corresponding FHWA RIP mile point (MP) if applicable. Please see DEWA OMRN CLR CRGIS data for more information, including images of mapped culverts.

Identified Culvert Types

- Type 1: Corrugated Metal Pipe (CMP) w/ Stone Headwall (Contributing)
- Type 2: Corrugated Plastic Pipe (CPP) w/ Stone Headwall (Non-Contributing)
- Type 3: Reinforced Concrete Pipe (RCP) w/ Stone Headwall (Contributing)
- Type 4: CMP w/ Concrete Headwall (Contributing)
- Concrete Box Culvert (Contributing)
- No Type (NT) CMP Culvert No Headwall (Contributing)
- No Type (NT) RCP Culvert No Headwall (Likely Contributing
- Stone Box Culvert (Contributing)

RIP MP	**EVENT**	**EVENT_DESC**	**Location Verified?**	**Discrepancies?**	**Culvert Type**	**Notes**
0.053	CUL	CULVERT	yes		Type 1	
0.117	CUL	CULVERT	yes		NT CMP	
0.176	CUL	CULVERT	yes		Type 2	
0.203	CUL	CULVERT	yes		Type 2	
0.227	N/A	N/A	added	MISSING FROM RIP	Type 1	
0.241	CUL	CULVERT	yes		Type 1	
0.282	CUL	CULVERT	yes		Type 2	
0.339	CUL	CULVERT	yes		NT CMP	
0.376	CUL	CULVERT	yes		Type 1	
0.421	CUL	CULVERT	yes		Type 3	Type 1/Type 3
0.458	CUL	CULVERT	yes		Type 2	
0.478	CUL	CULVERT	yes		Type 1	
0.504	CUL	CULVERT	yes		Type 2	
0.561	CUL	CULVERT	yes		NT RCP	
0.64	CUL	CULVERT	yes		Type 2	
0.66	CUL	CULVERT	yes		Type 2	

RIP MP	**EVENT**	**EVENT_DESC**	**Location Verified?**	**Discrepancies?**	**Culvert Type**	**Notes**
0.682	CUL	CULVERT	yes		Type 3	
0.75	CUL	CULVERT	NO	WAS NOT LOCATED		
0.761	CUL	CULVERT	yes		Conc. Box Culvert	North of Old Dingmans Road
0.78	CUL	CULVERT	yes		Type 4	
0.798	CUL	CULVERT	yes		Conc. Box Culvert	Unnamed Drainage S of Dingmans Road
0.873	CUL	CULVERT	NO	WAS NOT LOCATED		At Dingmans Road
0.91	CUL	CULVERT	yes		Type 1	
0.947	CUL	CULVERT	yes	location slightly off	Type 1	
0.986	CUL	CULVERT	yes		Type 2	
1.095	CUL	CULVERT	yes	location slightly off, mp1.1	Type 1	
1.126	CUL	CULVERT	yes		Type 3	
1.159	CUL	CULVERT	NO	WAS NOT LOCATED		At Mettler Road
1.193	N/A	N/A	added	MISSING FROM RIP	Type 3	
1.224	CUL	CULVERT	yes		Type 1	
1.287	CUL	CULVERT	yes		Type 3	
1.361	CUL	CULVERT	NO	WAS NOT LOCATED		near quarry
1.502	CUL	CULVERT	yes	station correct, RIP spatial distortion.	Type 1	Only located east side of culvert
1.621	CUL	CULVERT	yes	station correct, RIP spatial distortion.	Type 3	
1.807	CUL	CULVERT	yes	station correct, RIP spatial dist.	NT CMP	
1.875	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
1.926	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
2.038	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
2.159	CUL	CULVERT	yes	station correct, RIP spatial dist.	Conc. Headwall 3 Culvert CMP	Kittatinny Creek
2.197	N/A	N/A	NO	MISSING FROM RIP	Type 1	
2.329	CUL	CULVERT	yes	location slightly off, mp 2.33	Type 3	
2.39	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
2.429	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 2	

RIP MP	**EVENT**	**EVENT_DESC**	**Location Verified?**	**Discrepancies?**	**Culvert Type**	**Notes**
2.46	CUL	CULVERT	yes	station correct, RIP spatial dist.	NT CMP	
2.605	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
2.652	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
2.702	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
2.755	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	Only located west side of culvert
2.892	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
2.968	CUL	CULVERT	NO	WAS NOT LOCATED		
3.091	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
3.408	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
3.441	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
3.484	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 2	Only located east side of culvert
3.56	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
3.653	CUL	CULVERT	yes	location slightly off 3.656, RIP spatial dist. Appx. 112 feet	Type 3	
3.717	CUL	CULVERT	NO	WAS NOT LOCATED		
3.935	CUL	CULVERT	yes	station correct, RIP spatial dist. 125 feet	Conc. Box Culvert	Unnamed Tributary to Sandyston Creek
3.976	CUL	CULVERT	yes	station correct, RIP spatial dist. 114 feet	Type 1	east end, same culvert as 3.966
3.996	CUL	CULVERT	yes	3.996 is outlet of previous culvert	Type 1	west end, same culvert as 3.976
4.05	CUL	CULVERT	yes	station correct, RIP spatial dist. 121 feet	Type 3	
4.101	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	Only located west side of culvert

RIP MP	**EVENT**	**EVENT_DESC**	**Location Verified?**	**Discrepancies?**	**Culvert Type**	**Notes**
4.211	CUL	CULVERT	yes	station correct, RIP spatial dist.	Conc. Box Culvert	Before Jager Road
4.237	CUL	CULVERT	yes	station correct, RIP spatial dist. 127′	Type 3	
4.301	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
4.383	CUL	CULVERT	yes	station correct, RIP spatial dist. 130′	Type 3	
4.55	CUL	CULVERT	yes	station correct, RIP spatial dist. 135′	Type 1	
4.808	CUL	CULVERT	yes	station correct, RIP spatial dist. 127′	Type 3	
5.005	CUL	CULVERT	yes	station correct, RIP spatial dist. 138′	NT CMP	
5.09	CUL	CULVERT	yes	station correct, RIP spatial dist. 142′	Type 1	
5.146	CUL	CULVERT	yes	station correct, RIP spatial dist. 139′	Type 3	
5.235	CUL	CULVERT	yes	station correct, RIP spatial dist. 150′	Type 3	
5.296	CUL	CULVERT	yes	station correct, RIP spatial dist. 152′	Type 2	
5.351	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
5.38	CUL	CULVERT	yes	station correct SOUTH end, RIP spatial dist.	Stone Box Culvert	At Black Farm
5.387	CUL	CULVERT	yes	NORTH end	Stone Box Culvert	At Black Farm
5.474	CUL	CULVERT	yes	station correct, RIP spatial dist. 153′	Type 1	
5.551	CUL	CULVERT	yes	station correct, RIP spatial dist. 170′	Type 1	
5.642	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
5.677	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
5.885	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
6.087	CUL	CULVERT	yes	station correct, RIP spatial dist.	NT RCP	
6.297	CUL	CULVERT	yes	station correct, RIP spatial dist.	NT RCP	

RIP MP	**EVENT**	**EVENT_DESC**	**Location Verified?**	**Discrepancies?**	**Culvert Type**	**Notes**
6.328	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	Only located west side of culvert
6.399	CUL	CULVERT	yes	location slightly off, mp 6.402	Type 3	
6.458	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
6.492	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
6.526	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 2	
6.545	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
6.657	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 2	
6.748	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
6.823	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
6.847	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 2	
6.874	N/A	N/A	yes	MISSING FROM RIP	Type 1	
7.055	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
7.112	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
7.358	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 3	
7.379	CUL	CULVERT	yes	station correct, RIP spatial dist.	Type 1	
7.5	N/A	N/A	yes	MISSING FROM RIP	NT RCP	
7.518	BRS	BRIDGE START	yes	station correct	Concrete Bridge	
7.524	BRE	BRIDGE END	yes	station correct	Concrete Bridge	

Page intentionally left blank

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

TIC Number: 692/192733
Old Mine Road North
Cultural Landscape Report
Delaware Water Gap National Recreation Area
April 2024

Page intentionally left blank

National Park Service
U.S. Department of the Interior

Delaware Water Gap National Recreation Area
P.O. Box 2
Bushkill, PA 18324
www.nps.gov/dewa

EXPERIENCE YOUR AMERICA ™