Chapter 3: Affected Environment

This chapter describes the affected environment where resources are expected to experience environmental impacts by the actions proposed in the alternatives (NPS). These resources were identified during the public scoping process and through consultation with park staff and park partners.

3.1 Water Resources

The most significant and defining features in the Park are its water resources. The Cuyahoga River, its adjacent floodplain and tributary streams, and an array of wetlands create a landscape unique to the surrounding developed region. This section describes the water resources that may be affected by the proposed action.

3.1.1 River and Tributary Resources

More than 25 miles of the Cuyahoga River pass through the Park. The Cuyahoga River drains more than 800 square miles of Northeastern Ohio and 6.5% of this drainage is within the Park. Valley walls and tributary ravines characterize the watershed with steep forested slopes rising 100 to 600 feet above the floodplain. According to topographical maps published by the U.S. Geological Survey, more than 20 perennial streams totaling over 200 miles in length exist within the Park boundary. One tributary, Tinkers Creek, drain an area larger than 40 square miles while all other tributaries range between 2 and 20 miles. Additional unmapped ephemeral streams and headwater steams also exist. The park also contains approximately 1600 acres of wetlands, thousands of acres of floodplains, and many lakes and ponds throughout the park.

Known internationally as the “river that burned,” the Cuyahoga River is on the rebound. At one time industrial pollution prohibited the survival of aquatic species. Today a rich diversity of wildlife thrives, and include some fish that are moderately or completely intolerant of pollution. As the river flows through forests and restored landscapes, the Cuyahoga’s water quality continues to improve but full recovery is impacted by combined sewer overflows, runoff from fields and development (NPS, 2011b).

Surveys conducted by the NPS, Cleveland Metroparks and Metro Parks, Serving Summit County have identified some watersheds with an abundance of high quality headwater streams and the presence of aquatic species that indicate healthy water resource conditions. These include Salt Run, Boston Run, Stanford Run, Dickerson Run, Sagamore Creek, Columbia Run, Brandywine Creek, and a small tributary near the NPS Central Maintenance Area.

Water Quality. Water quality standards for Cuyahoga River and its tributaries have been established by the Ohio Environmental Protection Agency and the U.S. Environmental Protection Agency in accordance with the Clean Water Act. The State has established the following use designations that apply to the water resources within the Park: state resource water, warm water habitat, cold water habitat and primary contact recreation (Ohio EPA, 2007). The Park annually monitors nineteen streams and several sites along the Cuyahoga River, for physical and chemical water quality characteristics. Seven streams within the Park have been designated by Ohio EPA as cold water habitat. The majority of the tributaries within the Park meet the water quality standards set forth by the state for either warm water or cold water habitat designation.

Almost all of the river segments that travel through the Park are in full attainment of the state of Ohio's water quality aquatic life use designation (Ohio EPA, 2003). Fish communities continue to recover and have shown significant improvements in the past four decades. Most of the fish habitat is located in the mainstem of the Cuyahoga River. Several of its tributaries meet or exceed the delisting targets set forth by the Great Lakes Water Quality Agreement (International Joint Commission, 2011). The Brecksville Dam and upstream pool at river mile 20, south of Station Road is one of the areas in non-attainment within the Park boundary for fish communities (Ohio EPA, 2009).

Functional riparian. Riparian areas (land adjacent to rivers and streams) help maintain stream water quality and biological health. In 2008, a Park study characterized the conditions of the Park's riparian areas and their quality indicating that approximately 53% of the total land area of the Park was within a functional riparian area (Holmes and Goebel 2008).

3.1.2 Wetlands

Approximately 1,500 individual emergent, shrub/scrub, and forested wetlands (Cowardin et al. 1979) have been surveyed in the Park, covering an estimated 1900 acres. Most of these wetlands exist on hill slopes (slope wetlands, 692(number of type in Park)) and within the floodplains of the Cuyahoga River and its tributaries (riverine wetlands, 369). Small depressional wetlands are also common (368). Many of the largest wetlands are located in the headwaters of small streams and at the base of the valley slopes, where high groundwater tables and seeps keep the ground saturated year-round. Nearly 40 wetlands are estimated to be greater than 10 acres in size, and 220 wetlands are greater than 1 acre. However, the majority of wetlands are estimated to be very small and typically less than one acre (Davey Resource Group, 2001).

The quality of the wetlands vary from very high (Category III) to low (Category I) (Ohio Administrative Code Rule, 3745-1-54(C)(1). However, most wetlands are moderate quality, Category II wetlands. Currently, the Towpath Trail crosses the Ira Road Beaver Marsh, and Stumpy Basin, which are two of the highest quality and most diverse wetlands in the park. Many other important wetlands can be experienced along various other trails throughout the Park, such as the Buckeye Trail and the Lake Trail around Virginia Kendall Lake. Some other large wetlands, such as Fawn Pond and Pleasant Valley, exist in the floodplain of the Cuyahoga River where maintained park trails are absent, but restricted access roads are present. There are only a handful of high quality wetlands that are not experienced by visitors.

3.1.3 Floodplains

Approximately 3,754 acres (11%) of the land within the Park is within the 100-year floodplain of the Cuyahoga River.

The Cuyahoga River has frequently accessed its floodplain during large rain events. River gauges managed by the U.S. Geological Survey (USGS) are located immediately north of Rockside Road (Independence gauge) outside of the Park boundary and approximately 2.5 miles south of the Park at Old Portage Path (Portage gauge). In the past ten years, the Independence gauge has reached Major Flood Stage (18.5 feet) seven times with the most recent occurring in February, 2011. The river has also

reached Moderate Flood Stage (17.0 feet) twice at Independence since 2000 (National Weather Service, 2012).
The Old Portage gauge has not reached Major Flood stage during the collection of data for the past one hundred years. Since 2000, the river has reached Moderate Flood stage five times and Flood stage three times at this location (National Weather Service, 2012).

The Towpath Trail is the single park trail that is predominantly located within the 100-yr floodplain of the Cuyahoga River. Because of its proximity to the floodplain, the Towpath Trail has experienced damage during the seven major flood stage events (National Weather Service, 2012), in the past decade, particularly in 2004 and 2011 which have resulted in trail closures, rehabilitation and repair of the trail.

3.1.4 Ohio & Erie Canal

Historically, the Ohio & Erie Canal linked Lake Erie with the Ohio River and played a major role in Ohio's economic growth. The canal parallels the Towpath Trail bisecting the Park and is partially watered by the Cuyahoga River. A watered section (8 miles) flows north from Station Road Trailhead to Rockside Road, and continues north beyond the Park boundary. The canal is a cultural resource and provides natural habitat for fish, turtles, mussels, beaver, otter, and birds.

3.2 Vegetation and Invasive Plants

3.2.1 General Vegetation Characteristics

The Cuyahoga Valley serves as a natural dividing line between two physiographic regions, the Central Lowlands to the west and Appalachian Plateau to the east, sometimes referred as a "botanical crossroads" (NPS, 2008). More than 1,300 species of plants have been documented at the Park, forming a variety of habitats. This includes mixed deciduous forest, mixed-evergreen forest, wet meadows, emergent marsh, and early successional grassland and shrubland (NPS, 2010d). Mixed-mesophytic forests cover approximately 23,000 acres (70 percent) of the Park with the oak-hickory association being the most common. Other forest associations at the Park include maple-oak, oak-beech-maple, maple-sycamore, pine-spruce and hemlock-beech. A long history of intensive land use has created forest at CVNP with vastly different ages and community structures.

The forests of CVNP can be broadly categorized as upland or bottomland forests, based upon landscape position relative to the floodplain of the Cuyahoga River. In upland forests, the dominant vegetation is a mix of hardwood trees, mainly oaks (*Quercus* spp.), hickories (*Carya* spp.), maples (*Acer* spp.) and beech (*Fagus grandifolia*). The groundcover in upland forests tends to be sparse, consisting of mayapple (*Podophyllum peltatum*), trout-lily (*Erythronium americanum*), spring-beauty (*Claytonia virginica*), toothworts (*Cardamine* spp.), violets (*Viola* spp.), Jack-in-the-pulpit (*Arisaema triphyllum*), and other herbaceous species. Shrub cover in upland forests at the Park is frequently sparse, but, when present, is often dominated by maple-leaved viburnum (*Viburnum acerfolium*), spicebush (*Lindera benzoin*), and witchhazel (*Hamamelis virginiana*) (NPS, 2004a).

Bottomland forests are located in the floodplains of the Cuyahoga River and its tributaries and predominantly support an overstory of ash (*Fraxinus* spp.), cottonwood *(Populus deltoide*s), sycamore *(Platanus occidentali*s), box elder (*Acer negundo*), Ohio buckeye (*Aesculus glabra*), silver maple (*Acer saccharinum*) and red maple (*Acer rubrum*), with some areas dominated by or absent of particular

species. The herbaceous groundcover in these forests tends to be more frequent than in the upland forests. Typical herbaceous species in bottomland forests at the Park include enchanter's nightshade (*Circaea lutetiana*), grasses (*Poa* spp.), sedges (*Carex* spp.), violets (*Viola* spp.), moneywort (*Lysimachia nummelaria*), wingstem (*Verbesina alternifolia*), smartweed (*Polygonum* spp.), jewelweed (*Impatiens capensis and Impatiens pallida*), wild onions, garlic and leeks (*allium* spp.), and garlic mustard (*Alliaria petiolata*). Shrub cover is sparse or more frequently absent in these areas. When present, bottomland shrubs consist mainly of viburnums (*Viburnum* spp.), non-native honeysuckles (*Lonicera* spp.), non-native privet (*Ligustrum*vulgare), and non-native multiflora rose (*Rosa multiflora*). Bottomland forests are more likely to support exotic plants than upland forest areas.

Interspersed among forests are other natural habitats, including shrub and grassland (approximately 1,100 acres or 3.4 percent of CVNP) and wetlands (approximately 1,800 acres or 5 percent), Agricultural fields cover approximately 1,950 acres or 6 percent of CVNP (NPS, 2002c). Table 11 provides acres of primary land cover types within the Park boundary.

Table 11: Primary Land Cover Types in CVNP, 2002.

Land Cover Type	Acres (percentage of total land cover in CVNP)
Developed Land	4.464 (13%)
Cropland/Agricultural Land	1,947 (5.9%)
Wetlands (forested and non-forested)	1,060 (3.2%)
Bottomland Forests (within floodplain)	1,634 (4.9%)
Upland Forests	21,821 (66.5%)
Shrub/Grassland	1,123 (3.4%)
Lakes/Ponds/Streams	729 (2.2%)
Total Land Cover	32,778

Open fields within the park vary from grassy areas that are frequently mowed to older successional areas with substantial shrub and tree growth. Grasslands are dominated by grasses (e.g., *Poa trivialis, Poa sylvestris, Panicum virgatum* and *Danthonia spicata*) with many forbs present as well (e.g., *Solidago canadensis, Solidago graminifolia, Aster nova-borensis* and *Apocynum cannibinum*). In old fields, the ground is covered mostly by grasses and forbs, but also includes brambles *(Rubus* spp.) and some shrubs (e.g., gray dogwood *(Cornus racemosa),* smooth arrow-wood *(Viburnum recognitu*m*),* common privet multiflora rose*,* and autumn olive *(Elaeagnus umbellat*a). Shrubs do not dominate large areas within these fields, though early successional trees, such as cottonwood and ash, may be present (NPS 2004a).

Shrubland habitats possess significant shrub/sapling growth. These are areas in which the majority of the ground is covered with woody growth greater than six feet in height, with a few emergent trees of six to twenty feet in height developing above the shrub layer. These habitats are typically vegetated with shrubs and young trees of up to six inches in diameter at breast height (e.g., hawthorn gray dogwood, smooth arrow-wood, common privet , *multiflora rose,* autumn olive*,*red maple*,* wild cherry *(Prunus serotina),* oaks, bigtooth aspen *(Populus grandidentata)* and white ash *(Fraxinus americana*) (NPS, 2004a).

Wetland habitats are located within the Cuyahoga River floodplain and included emergent, shrub, and forested areas. Emergent wetlands are characterized by erect, rooted, herbaceous plants, excluding mosses and lichens (Cowardin, et al. 1979). This would include marshes, wet meadows and fens. Emergent wetlands have many different types of communities including, fern species such as sensitive

fern (*Onoclea sensibilis),* cattails (*Typha spp*.), skunk cabbage (*Symplocarpus foetidus*), many different sedge (*Carex spp.)* and grass species such as rice cutgrass (*Leersia oryzoides*). Shrub wetlands include areas dominated by woody vegetation that is less than 20 feet tall (Cowardin, et al, 1979) Common wetland shrubs in the Park include buttonbush, spicebush, elderberry, many species of dogwood, viburnum, willows and alder. Forest wetlands are characterized by woody vegetation that is 20 feet tall or taller (Cowardin, et al. 1979). Bottom land floodplain forests common species include cottonwood, maples, black willow, sycamore, buckeyes, ash, and elms. Oak swamps (pink oak, swamp white oak, burr oak) are found occasionally.

3.2.2 Federal and State Endangered and Rare Plant Species

No federally listed species of plants have been documented at the Park. The Park is within the range of the northern monkshood (*Aconitum noveboracense*), a federally listed threatened plant species, which typically is found near the bottom of shaded cliffs adjacent to cool streams at sites in northeastern Ohio. However, the species has not been documented within the park and no appropriate habitats for the species have been found. A number of plant species in the Park are listed as endangered, threatened or potentially threatened by the State of Ohio (Table 12).

Table 12. State Listed Endangered, Threatened and Potentially Threatened Species known to occur within CVNP.

Common Name	Standard Scientific Name	Status
Bristly sarsaparilla	*Aralia hispida*	State Endangered
Drooping wood sedge	*Carex arctata*	State Endangered
Hairy tick-trefoil	*Desmodium glabellum*	State Endangered
Variegated souring-rush	*Equisetum variegatum*	State Endangered
Ground juniper	*Juniperus communis*	State Endangered
Large-leaved Mountain-rice	*Oryzopsis asperifolia*	State Endangered
Philadelphia panic grass	*Panicum philadelphium*	State Endangered
Pasture blue grass	*Poa saltuensis*	State Endangered
Compass-plant (historic reference)	*Silphium laciniatum*	State Endangered
Spotted coral root	*Corallorhiza maculate*	State Endangered
Ovate spikerush	*Eleocharis ovate*	State Endangered
Silvery sedge	*Carex argyrantha*	State Threatened
Pipsissewa	*Chimaphila umbellate*	State Threatened
Golden-knees	*Chyrosogonum virginiaum*	State Threatened
Bearded wheat grass	*Elymus trachycaulus*	State Threatened
Greene's rush	*Juncus greenei*	State Threatened
Gray beard tongue	*Penstemon canescens*	State Threatened
Great Rhododendron	*Rhododendron maximum*	State Threatened
Leafy goldenrod	*Solidago squarrosa*	State Threatened
Seaside arrow-grass	*Triglochin maritimum*	State Threatened

Common Name	Standard Scientific Name	Status
Bug on a Stick (moss)	*Buxbaumia aphylla*	State Threatened
American sweet flag	*Acorus americanus*	Potentially Threatened
Broad-winged sedge	*Carex alata*	Potentially Threatened
Golden-fruited sedge	*Carex aurea*	Potentially Threatened
Bebb's sedge	*Carex bebbii*	Potentially Threatened
American chestnut (fruiting)	*Castanea dentate*	Potentially Threatened
Rock harlequin	*Corydalis sempervirens*	Potentially Threatened
Round leaved dogwood	*Cornus rugosa*	Potentially Threatened
Thin-leaved sedge	*Carex cephaloidea*	Potentially Threatened
Fringed gentian	*Gentianopsis crinite*	Potentially Threatened
Weak spear grass	*Poa languid*	Potentially Threatened
Floating pondweed	*Potamogeton natans*	Potentially Threatened
Deer's tongue arrowhead	*Sagittaria rigida*	Potentially Threatened
Canada buffalo-berry	*Sheperdia Canadensis*	Potentially Threatened
Swamp oats	*Sphenopholis pennsylvanica*	Potentially Threatened
Shining Ladies-tresses	*Spiranthes lucida*	Potentially Threatened
Great Plain's Ladies' tresses	*Spiranthes magnicamporum*	Potentially Threatened
Rough fruited-pinweed	*Lechea intermedia*	Potentially Threatened
Arbor vitae	*Thuja occidentalis*	Potentially Threatened
Flattened sedge	*Carex complanata*	State listed- no status yet
Brittle bladder fern	*Cystopteris fragilis*	Presumed extirpated

The location of rare plant species within the park is widely distributed among all of the primary vegetation types of the park and in both highly visitor use and low visitor use areas of the Park, including their proximity to trails.

3.2.3 Invasive Plants

Nearly 20 percent of plant species in the park are non-native to the area. Approximately 50 of those non-native species are considered to be locally invasive and are able to over-run native habitats, displace native species, and form large monocultures that provide limited habitat value to native wildlife (Djuren and Young 2007).

The eleven most common exotic, invasive plants in the Park (in descending order) are multiflora rose, garlic mustard, reed canarygrass (*Phalaris arundinacea*), black locust (*Robinia pseudoacacia*), Japanese knotweed (*Polygonum cuspidatum*), privet, Japanese barberry (*Berberis thunbergii*), common reed (*Phragmites australis*), glossy buckthorn (*Frangula alnus*), Kentucky bluegrass (*Poa proatensis*) and autumn olive (Djuren and Young 2007). All of these species are distributed throughout the Park with some having broad environmental tolerances that enable them to inhabit upland and bottomland forests, as well as old fields and shrublands (e.g., multiflora rose, garlic mustard, privet and glossy

buckthorn). Other common exotic plants dominate wetlands and riparian areas (e.g., reed canarygrass, Japanese knotweed and common reed), while others dominate drier uplands at the Park (e.g., black locust and autumn olive).

3.3 Wildlife

3.3.1 General Populations

Faunal species that have been detected in CVNP include approximately 247 species of birds, 64 fish species, 36 mammals, 20 reptiles, and 18 species of amphibians. Wildlife species are distributed throughout the Park and are associated with the three primary habitats the Park provides; mature deciduous forests, early successional fields and meadows, and wetland habitats. Because the Park landscape predominantly consists of forest (approximately 70 percent), this represents the primary wildlife habitat in the Park. Within the Park boundary, forests are substantially fragmented by roads, trails, residential development and other non-forest habitats. Eighty-nine forest blocks greater than 50 acres exist including 17 forest blocks greater than 500 acres. There are four forest blocks within the Park that consist of 900 to 1800 acres and include the areas surrounding the Oak Hill Day Use area, Blossom Music Center, Furnace Run Metro Park, and the Brecksville Reservation from Valley Parkway to Snowville Road.

3.3.2 Mammals

Populations of several mammal species have increased substantially in the last decade both locally and regionally, and these species generate frequent interactions with trail users and other park visitors.

White-tailed deer (*Odocoileus virginianus*) are an abundant species in the Park. Overall density estimates between 1998 and 2010 varied from 44 (2005) to 87 (1999) deer per square mile with an estimated 41 deer per square mile in 2010 (NPS, 2011b). Deer population numbers have not increased from the levels recorded in the late 1990s, but remain at a level that continues to limit forest regeneration. The adjacent lands owned by both regional Metroparks have instituted deer management plans the past few years to manage deer populations on those properties (NPS, 2011b). Alternatives for managing impacts of overabundant deer on other park resources are being addressed in a White-tailed Deer Management Plan and Environmental Impact Statement. Deer are a consistently popular species for viewing by visitors.

Coyote (*Canis latrans*) populations also have increased substantially within the Park over the decades since they were first detected in the Park in the 1980s. Population estimates from 1993-2006 ranged from 22 (1993) to 54 (2006), with an estimate of 134 coyotes for 2009 (NPS, 2011h). Although public sightings of coyotes are relatively common, direct interactions between coyotes and humans are rare. Each year, the Park may receive 1-2 reports of coyotes demonstrating defensive or aggressive behavior toward dogs being walked by visitors on trails (e.g. approaching, following, sometimes growling). However, there has never been aggressive behavior of coyotes specifically toward humans (visitors or residents) within the Park. Coyotes are known to use trails, habitat edges, rights-of-way, and abandoned roads as travel corridors. Studies of distribution of coyote scat also indicate that coyotes regularly use park trails for movement through the landscape (Cepek, 2000, Bollin-Booth, 2007).

Beaver (*Castor canadensis*) have been active in the Park since the 1980's. Past (2006) inventories indicate that there are at least 23 active beaver lodges located throughout the park, in a variety of habitats including floodplain wetlands, ponds, tributary streams, the Cuyahoga River and the Ohio & Erie Canal (NPS, 2006b). Beaver are another popular species for visitor viewing, particularly along the Cuyahoga River and at Ira Trailhead and Beaver Marsh. Conflicts between beaver and humans occur occasionally when beaver activity creates flooding along trails, roads or private lands, or through impacts to trees. These are usually mitigated through tree protection and water level control devices rather than removing beaver themselves.

Additional nuisance wildlife species include raccoons, skunks, groundhogs, and Virginia opossum. These species have also increased in abundance over the past 20-30 years and are common throughout the park. Raccoons in particular are overabundant and can generate conflicts with humans around picnic areas, and other areas where food waste is located.

A bat inventory was conducted in the park during 2002 and 2003 and documented seven species of bat (NPS 2005). Four of these species, including the federally-endangered Indiana bat (*Myotis sodalis*), rely on forest vegetation for breeding and roosting. As of October, 2010 the Ohio Department of Natural Resources, Division of Wildlife, listed the following bats as species of concern: Little brown (*Myotis lucifugus*), big brown (*Eptesicus fuscus*), tri-colored (*Perimyotis subflavus*) and Northern long-eared (*Myotis septentrionalis*). All of these species are present in CVNP (Krynak, et. al. 2005).

3.3.3 Birds

Cuyahoga Valley National Park provides habitat for approximately 247 species of birds, including raptors (birds of prey) song birds, waterfowl, and migrants (NPS, 2011i, 2011j). At least 38 bird species observed in the Park are of conservation concern in Ohio (ODNR, 2009) or at regional and national levels as determined by the international conservation consortium, Partners in Flight (Hunter et al. 1993; Partners in Flight 2002). Table 13 provides information of terrestrial bird species that are of conservation concern and identified in the Park. Most of these species of concern have exhibited steep population declines throughout their range or regionally due to habitat loss and degradation (NPS, 2010d). Most are associated with forest and early successional habitats, and many are sensitive to habitat block size. Table 14 identifies habitat block area sensitive species that were documented within the recent Blossom land property acquisition area.

Table 13. Terrestrial Bird Species Known to Breed in CVNP and of Conservation Concern in Ohio

Species	Status	Habitat
Acadian flycatcher *(Empidonax virescens)*	Partners in Flight	Forest
American woodcock *(Scolopax minor)*	Partners in Flight	Early succession
Canada warbler *(Wilsonia Canadensis)*	Special interest in Ohio, Partners in Flight	Forest
Cerulean warbler (*Dendroica cerula)*	Species of Concern in Ohio, Partners in Flight	Forest
Dark-eyed junco (*Junco hyemalis)*	State threatened	Forest
Field sparrow (*Spizella pussila)*	Partners in Flight	Early succession
Henslow's sparrow (*Ammodramus henslowii)*	Species of Concern in Ohio, Partners in Flight	Grassland
Hermit thrush (*Catharus guttatus)*	State threatened	Forest
Kentucky warbler (*Oporornis formosus)*	Partners in Flight	Forest
Louisiana waterthrush (*Seiurus motacilla)*	Partners in Flight	Forest
Winter wren (*Troglodytes troglodytes)*	Special Interest in Ohio	Forest
Wood thrush (*Hylocichla mustelina)*	Partners in Flight	Forest

(ODNR, 2009, Hunter et al. 1993 – current Ohio Hills and Allegheny Plateau lists.)

Table 14. Area-Sensitive Forest Bird Species Documented within the Blossom Acquisition Property, 2001-2002.

Species	Scientific Name	Area-Sensitivity
Red-shouldered Hawk	*Buteo lineatus*	High
Broad-winged Hawk	*Buteo platypterus*	High
Yellow-billed Cuckoo	*Coccyzus americanus*	Moderate
Black-billed Cuckoo*	*Coccyzus erythropthalmus*	Moderate
Pileated Woodpecker	*Dryocopus pileatus*	High
Hairy Woodpecker	*Picoides villosus*	Moderate
Acadian Flycatcher*	*Empidonax virescens*	Moderate
Tufted Titmouse	*Baeolophus bicolor*	Moderate
White-breasted Nuthatch	*Sitta carolinensis*	Moderate
Blue-gray Gnatcatcher	*Polioptila caerulea*	Moderate
Yellow-throated Vireo	*Vireo flavifrons*	Moderate
Red-eyed Vireo	*Vireo olivaceous*	Moderate
Veery	*Catharus fuscescens*	High
Wood Thrush*	*Hylocichla mustelina*	Moderate
Cerulean Warbler*	*Dendroica cerulean*	High
Black-and-white Warbler	*Mniotilta varia*	High
American Redstart	*Setophaga ruticilla*	High
Kentucky Warbler*	*Oporornis formosus*	Moderate
Louisiana Waterthrush*	*Seiurus motacilla*	Moderate
Ovenbird	*Seiurus aurocapillus*	High
Hooded Warbler	*Wilsonia citrine*	Moderate
Scarlet Tanager*	*Piranga rubra*	Moderate
Rose-breasted Grosbeak*	*Pheucticus ludovicianus*	Moderate

(NPS, 2010c)
* Indicates species of conservation priority in the Allegheny Plateau and/or Ohio Hills physiographic areas of Partners in Flight.

The combination of upland forest, ravine, slope, succession, edge and wetland habitat provides for a diversity of breeding bird species and an important spring and fall migratory stopover region for landbirds (Audubon, 2010). There are 116 species identified as breeders and 111 as migratory (Chasar, 2010). Of the birds that reside in the Park, 45 species are affiliated with rivers and wetland habitats, 62 are in the forest habitats and 57 are in the open field habitats (Chasar, 2010).

Ten raptors are either summer or year-round residents of the Cuyahoga Valley (NPS, 2011j). Common raptors in the Park include the turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus*) (NPS, 2010i).

Many of the bird species in the Park nest on or near the ground, using grasses and other low-growing vegetation for building nests. These include killdeer (*Charadrius vociferous*), wild turkey (*Meleagris gallopavo*), field sparrow (*Spizella pusilla*), ovenbird (*Seiurus aurocapilla*), eastern meadowlark (*Sturnella*

magna), spotted sandpiper (*Actitis macularius*), white-crowned sparrow (*Zonotrichia leuscophrys*), ruffed grouse (*Bonasa umbellus*), veery (*Catharus fuscescens*), and turkey vulture (NatureServe, 2009; NPS, 2010i).

Birds that nest in the upper parts of the understory or canopy of woodlands include the greater horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), cedar waxwing (*Bombycilla cedrorum*), blue jay (*Cyanocitta cristata*), wood thrush (*Hylochichla mustelina*), Baltimore oriole (*Icterus galbula*), common grackle (*Quiscalus quiscula*), and eastern kingbird (*Tyrannus tyrannus*).

Blue Herons have established heronries south of Bath Road, along the southern Park boundary, along the Cuyahoga River near the intersections of Wetmore and Akron-Peninsula Roads and in the upper reaches of the "Mudcatcher" region northeast of Route 82.

In 2004, the National Audubon Society designated Cuyahoga Valley National Park an Important Bird Area (IBA) in Ohio. IBAs are sites that provide habitat for one or more bird species of conservation concern, restricted range species, or vulnerable species due to resource conditions (Audubon, 2010).

3.3.4 Amphibians

Amphibians and reptiles spend much of their time in and around the ponds, wetlands and the riparian zones within CVNP. Reptiles (snakes and turtles) are frequently found along the Towpath Trail and in watered portions of the canal.

3.3.5 Federally or State Endangered Species

There are no federally designated critical habitats or wilderness areas within the vicinity of the Park. However, the park is within the summer breeding range of the federally-endangered Indiana bat (*Myotis sodalis*), and the species was detected during a parkwide inventory of bat species in 2002 and 2003 (Krynak, et al. 2005). No hibernacula or maternity roosts of Indiana bat have been detected in the Park. Factors contributing to the species' decline include loss or degradation of suitable hibernacula, human disturbance during hibernation, white nose syndrome, and loss, degradation, and fragmentation of forest habitat, particularly large mature trees with exfoliating bark in floodplain and riparian areas.

Though delisted in 2007, bald eagles remain a federal species of concern and are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles have nested in the Pinery Narrows area of the Park since 2007. Additionally, a pair of state-threatened peregrine falcons has successfully nested beneath the Interstate 80 turnpike bridge south of the Boston Store Visitor Center since 2008. The Park currently closes portions of the Towpath Trail within the Bald Eagle nesting zone from February to July.

The Park is within the range of the piping plover (*Charadrius melodus*), a federally listed endangered bird species. However, the species has not been detected in the Park and no suitable breeding habitat for piping plovers exists within Park boundaries. The Park is also within the range of the eastern massasauga (*Sistrurus catenatus catenatus*) rattlesnake, a candidate species for listing under the Endangered Species Act (ESA) and listed as endangered by the State of Ohio. The species has not been detected within the Park. An assessment of potential habitat within the Park for this snake was conducted in 2003 and

concluded that much of the area had little potential for supporting viable populations of *S. c. catenatus* (Lockhart, 2003).

Table 15. State of Ohio Listed Animal Species, Threatened or Endangered, 2009

Mammals	**Scientific Name**	**Status**
Indiana bat	*Myotis sodalis*	Federally and state endangered.
Bobcat	*Lynx rufus*	State endangered
Star-nosed mole	*Condylura cristata*	State Species of concern
Birds		
Bald Eagle	*Haliaeetus leucocephalus*	Federal Species of concern
American bittern	*Botaurus lentiginosus*	State Endangered
Northern harrier	*Circus cyaneus*	State Endangered
King Rail	*Rallus elegans*	State Endangered
Black tern	*Chlidonias niger*	State Endangered
Yellow-bellied sapsucker	*Sphyrapicus varius*	State Endangered
Golden winged warbler	*Vermivora chrysoptera*	State Endangered
Peregrine falcon	*Falco peregrinus*	State Threatened
Osprey	*Pandion haliaetus*	State Threatened
Upland sandpiper	*Bartramia longicauda*	State Threatened
Black-crowned night heron	*Nycticorax nycticorax*	State Threatened
Dark-eyed junco	*Junco hyemalis*	State Threatened
Hermit thrush	*Catharus guttatus*	State Threatened
Least bittern	*Ixobrychus exilis*	State Threatened
Least flycatcher	*Empidonax minimus*	State Threatened
Sharp-shinned hawk	*Accipiter striatus*	Species of concern
Sedge wren	*Cistothorus platensis*	Species of concern
Marsh wren	*Cistothorus palustris*	Species of concern
Henslow's sparrow	*Ammodramus henslowii*	Species of concern
Cerulean warbler	*Dendroica cerulea*	Species of concern
Prothonotary warbler	*Protonotaria citrea*	Species of concern
Bobolink	*Dolichonyx oryzivorus*	Species of concern
Northern Bobwhite	*Colinus virginianus*	Species of concern
Common moorhen	*Gallinula chloropus*	Species of concern
Great egret	*Casmerodius albus*	Species of concern
Sora rail	*Porzana carolina*	Species of concern
Virginia rail	*Ralllus limicola*	Species of concern
Black vulture	*Coragyps atratus*	Species of concern
Canada warbler	*Wilsonia canadensis*	Special interest
Magnolia warbler	*Dendorica magnolia*	Special interest
Northern waterthrush	*Seiurus noveboracensis*	Special interest

Mammals	**Scientific Name**	**Status**
Winter wren	*Troglodytes troglodytes*	Special interest
Black-throated blue warbler	*Dendroica caerulescens*	Special interest
Northern saw whet owl	*Aegolius acadicus*	Special interest
Pine siskin	*Carduelis pinus*	Special interest
Purple finch	*Carpodacus purpureus*	Special interest
Red-breasted nuthatch	*Sitta canadensis*	Special interest
Blackburnian warbler	*Dendroica fusca*	Special interest
Common snipe	*Gallinago gallinago*	Special interest
Northern pintail	*Anas acuta*	Special interest
Redhead duck	*Aythya americana*	Special interest
Brown Creeper	*Certhia americana*	Special interest
Long eared owl	*Asio otus*	Special interest
Mourning warbler	*Oporonis philadelphia*	Special interest
Short eared owl	*Asio flammeus*	Special interest
Golden crowned kinglet	*Regulus satrapa*	Special interest
American wigeon	*Anas americana*	Special interest
Gadwall	*Anas strepera*	Special interest
Green winged teal	*Anas crecca*	Special interest
Northern shoveler	*Anas clypeata*	Special interest
Ruddy duck	*Oxyura jamaicensis*	Special interest
Yellow headed blackbird	*Xanthocephalus xanthocephalus*	Special interest
Reptiles		
Spotted Turtle	*Clemmys guttata*	State threatened
Eastern box turtle	*Terrapene Carolina*	Species of concern
Blanding's turtle	*Emydoidea blandingii*	Species of concern

3.4 Soils

3.4.1 General Soil Characteristics

The Park harbors 65 soil types as defined by the Natural Resource Conservation Service (NRCS). Seven of these soil types cover approximately 45% percent of the Park (Thornberry-Ehrlich, 2009). Generally, most of the Cuyahoga River Valley and its larger tributaries contain soils that are a mixture of sands, gravels, clays, and silts. Occasional floodplain terraces along the Cuyahoga represent narrow zones of deep, well-drained, sandy silt loams (Brose, 1998). Soils are mainly derived from glacial till and lacustrine deposits and tend to be light colored, acidic and moderately to highly erodible. Table 16 describes soil types that are predominantly present in the Park, acres or greater within the Park, their surface erosion potential, and suitability for recreational trails.

Table 16. Soil Series Characteristics found in CVNP (NRCS 2009)

Soil Series	General Characteristics	Erosion Potential (K-factor)	Recreational Trail Suitability
Rough broken land, clay and silt	Theses soils are made up of broken land of clay and silt material in wooded areas along valley walls along the Cuyahoga River and its tributaries. Slope, erosion and hazards of slippage are limitation to this soil type.	No k values	Not rated
Ellsworth silt loam, 2-6 percent slopes	This is a deep soil that is gently sloping and moderately well drained. This soil is suited to such recreational uses as picnic areas and hiking trails.	High – k factor	Not limited Recreational Trails
Ellsworth silt loam, 25-50 percent slopes	This deep soil is steep and very steep and moderately well drained. Most areas are woodland. Trails in recreation areas should be protected against erosion.	High –k factor	Very limited recreational trails.
Geesburg-Mentor silt loams, 25-70 percent slopes	This soil consists of a moderately well drained soil located on terraces and steep areas. Trails in recreational areas should be protected against erosion.	High – k factor	Very Limited recreational Trails
Ellsworth silt loam, 6-12 percent slopes	This is a deep soil and moderately well drained. This soil is on ridgetops, on uneven shoulder slopes, along well defined waterways.	High – k factor	Very limited for recreational trails.
Mahoning silt-loam, 2-6 percent slope	This is a deep soil that is gently sloping and somewhat poorly drained. This soil is in broad areas on till plains. Erosion is a	High – k factor	Somewhat limited for recreational trails.

	hazard where the soil is disturbed and left bare of vegetation.		
Chagrin silt loam, occasionally flooded	This is a deep soil is nearly level, well drained, and typically located in the highest position on flood plains. This soil is suited to recreational uses, such as hiking trails.	Medium – k factor	Not limited for recreational trails.

3.4.2 Soil Erosion on Trails

Trails in the Park experience varying degrees of erosion severity and muddiness, caused by compaction, level of use, type of use, location in the landscape, slope, design of the trail and other localized trail conditions. Erosion and wetness is most prevalent in areas of the trail located within the floodplain, on fall line trails that follow direct drainage paths, and where heavier load trail users, such as horses occur. These include the Towpath Trail, Wetmore Trail, Perkins Trail and the Buckeye Trail. The Old Carriage Trail Connector has historically had soil slumping occur along its route causing damage to the trail and displacement of the soil.

The NRCS maintains the soil survey that documents, soil types by county and its characteristics and limitations. Two factors that the NRCS evaluates is the k-factor of a soil type and its suitability for recreational trails and recreational uses. As defined by NRCS, the "k" factor is an erosion factor that indicates the susceptibility of a soil to sheet and rill erosion by water (NRCS, 2010). Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water. Table 17 provides information on the K factor as it relates to soil conditions for the entire Park. Almost half of all of the land within the Park boundary is identified with a high K-factor primarily located in the plateau and steep slopes of the valley. Medium k-factor areas consist of approximately 1/3 of the parkland, which primarily consists of the floodplain and valley floor. The areas identified with k-factors as low accounts for 5.6% of the total park land. These occur in isolated areas throughout the Park.

Table 17. K-Factor Value of CVNP Lands

K Factor Value (Soil Erosion)	Percent of Total Park Land
High (0.43-0.49)	46.6%
Medium (0.32-0.37)	29.1%
Low (0.17-0.28)	5.6%
Null (No information available)	18.5%

Note. K-factor soil quantities are compiled from NRCS Soil Survey. K-Factor Values are compiled from Institute of Water Research, 2002

3.4.3 Soil Suitability for Trails

Suitability for trails that involve hiking and horseback riding is prescribed by the "paths and trails" rating of NRCS. Ratings are based on soil properties that affect trafficability and erodibility (NRCS, 2010). Table 16 outlines recreational trail suitability for the entire Park.

Table 18. Recreation Suitability for Paths and Trails (NRCS 2010)

Recreation Suitability Paths and Trails	Percent of Total Park Land
Null (no information available)	0.52%
Not rated	18.5%
Not limited	30.3%
Somewhat limited	13.4%
Very limited	37.1%

3.5 Cultural Resources

As stated in the NPS Cultural Resource Management Guideline (NPS 28), cultural resources are "the material evidence of past human activities, finite and nonrenewable, these tangible resources begin to deteriorate almost from the moment of their creation. Once gone, they cannot be recovered. If these resources are degraded or lost so is the parks' reason for being." The main cultural resources of the Park can be categorized as archeological resources, historic structures, and cultural landscapes.

3.5.1 National Register of Historic Places

The Park has 116 properties included on the List of Classified Structures (LCS). The LCS identifies structures that are either currently listed or eligible for listing in the National Register of Historic Places. There are 34 National Register of Historic Places listings located within the Park, many of which include multiple properties.

There is one designated National Historic Landmark section of the Ohio & Erie Canal in the Park which encompasses a four mile section along the canal and State Route 631 in Valley View. Many of the historic structures and places associated with trails include trail facilities, such as trailheads and visitor centers, and the canal locks along the Towpath Trail including Boston Store and Canal Visitor Center.

3.5.2 Cultural Landscapes

According to NPS Management Policies (2006) and Cultural Resource Management Guidelines (NPS, 1997), all cultural landscapes are to be managed as cultural resources, regardless of the type or level of significance. Management actions are to focus on preserving the physical attributes, biotic systems, and uses of a landscape as they contribute to historic significance. "Because landscapes can change, due to natural processes and human activities, protecting and preserving the historic character of a landscape can occur over time through the continuity of distinctive characteristics. Thus the emphasis is on maintaining the character and feeling rather than on preserving a specific appearance or time period" (NPS, 2006a). In the Park, six cultural landscape themes were identified in the 1994 Cultural Landscape Inventory and the 2000 Thematic Overview and Methodology Guide. The themes include: prehistoric and indigenous cultures, settlement, transportation, agriculture, industry, and recreation. Many of the agricultural landscapes are evaluated in the Park's Rural Landscape Management Plan /EIS (NPS, 2003b) and managed under the Park's Countryside Initiative. There are currently eleven farms operating in the Park under this program with one additional farm planned for operation in 2012.

3.5.3 Archeological Resources

Archeological resources are distributed throughout the Park. To date, more than half (51%) of the Park has been archeologically surveyed and 200 archeological sites have been documented, representing human episodes dating as far back as 10,000 years ago and as recent as the historic era of the 20th century. Different environmental settings were favored by groups who have utilized the valley over many millennia, thus predictive modeling, based upon landform types and the distribution of documented archeological sites, can be applied to suggest where additional cultural manifestations attributed to certain time periods might occur. Likewise, there are settings within the Park that would not have been favorable, or in some cases even accessible, for human utilization and thus are not expected to contain evidence of past use. Additionally, due to more recent undertakings within the Park, areas have been identified where there is no potential for archeological resources to exist (e.g., reclamation of degraded areas). Five archeological sites are listed on the National Register of Historic Places.

3.5.4 Visual Resources (Scenic Values)

The Park is comprised of a largely forested landscape bisected by the Cuyahoga River, interspersed with old fields, agriculture, and historic buildings. Visitors perceive the Park to be more remote than it is; probably due to the strong contrast with adjacent developed areas (Schleicher et al, 1994). Evidence of the long history of use by humans is contrasted by the large swaths of what appear to be more natural areas. Scenic views and vistas from either side of the valley reveal patterns of natural and of humans. Visitors also enjoy parts of the Park because of what they do not see there – industry, signs, light pollution (NPS, 2010d).

Four primary scenic values of the Park can be recognized for preservation as part of the purpose of the Park; the Cuyahoga River Valley, both short distance and long distance scenic views, Cultural Resources and their character, and the level of minimal development of park facilities and its properties.

3.6 Visitor Use and Experience

Visitor use and experience on Park trails can have a profound effect on their conditions, management and design. Providing trails in the Park to a wide variety of user groups and visitors is a critical goal for any unit of the NPS. The NPS seeks to provide quality outdoor recreation, interpretation, and education while protecting the resources that visitors seek as part of their trail experience. This section outlines the user patterns and trends related to the trails in the Park that will be affected by the proposed alternatives.

3.6.1 User Capacity

3.6.1.1 General Park Visitation

Park visitation has increased over the years from 1 million visitors in 1985, when the first Trail Plan was completed, to 2.4 million visits in 2010. Between 2006 and 2010, the yearly attendance has ranged similarly between 2.4 and 2.8 million visitors. Visitation generally peaks in the summer months with July

being the highest average month for 2008, 2009 and 2010 averaging 348,000 recreation visits. Park visitation is projected to increase slightly over the next two years with a projected visitation forecast for 2012 of 2.6 million (NPS, 2010-2011a).

Table 19. Park Visitation History

Year	1978	1985	1995	2005	2010
Visitation	496,400	1,018,828	3,195,207	2,533,827	2,492,670

Note: Data collection methods were changed in 2005 by removing visitation at Boston Mills Ski Area from overall CVNP visitor counts and visitor count methodology changes by NPS in 2009.
(NPS Stats, 2010)

The Park, like many National Parks, experiences higher visitation during the summer months. However, its spring and fall visitation is relatively similar to summer visitation. In 2010, summer visitation accounted for 34% of the total annual visitation. The other three seasons in 2010 of annual visitation included spring season with 28%, fall with 25%, and winter with 12% of total annual visitation.

Table 20. Proportion of Seasonal Visitation, 2010

Season	Visitation Proportion of Total Annual Visitation
Winter	12%
Spring	28%
Summer	34%
Fall	25%

(NPS Stats, 2010)

Table 21. Park Monthly Visitation, 2010

Month	Visitation
January	108,972
February	80,931
March	155,486
April	238,394
May	309,477
June	273,111
July	271,603
August	304,191
September	254,221
October	258,050
November	117,910
December	120,324

Partner Park Units Visitation. In addition to NPS visitation, the park units owned and managed by the Park Partners draw 2.6 million visitors annually within the National Park boundary. Combined, visitation within the Park boundary of the various park units exceeded 5 million visitors in 2010.

Table 22. Park Partner Facilities Visitation, 2010

Park	2010 Visitation (recreation visits)
Bedford	776,332
Brecksville	1,485,935
Deep Lock	112,209
Furnace Run	113,144
Hampton Hills	71,225
O'Neil Woods	37,724
Bike & Hike (from Barlow Road to Route 82)	66, 372
Total within CVNP:	2,662,941
Towpath Akron (MPSSC	177,103
Towpath (CMP) (between Rockside and Harvard)	79,240 (2009)

2010 Park District Visitation, Cleveland Metroparks
2010 MPSSC Visitation, MPSSC

3.6.1.2 Trail Use

The trails in the Park are used regularly throughout the year. Summer brings the most trail users to the Park, but winter months will also attract trail users for cross-country skiing and snowshoeing. The trails are used by visitors coming to the Park for daily exercise from nearby neighborhoods, out-of-town recreation enthusiasts and participants of events and programs in the Park. Table 23 outlines primary events held in 2010 on the Park's trails and their level of participation.

Table 23. Trail Special Use Permits, 2010

Event	Number of Participants	Park Location
CVNPA Runs (7 events)	1000	Varies
Buckeye Trail 50k	250	Howe Meadow/Buckeye Trail
Revere H.S. XC	700	Howe Meadow
Cady 50k	225	Buckeye Trail
Burning River 100 mile	200	Buckeye/Wetmore/Towpath
Towpath Marathon Trail	250	Howe Meadow
Towpath Marathon	3000	Towpath
Woodbridge XC	1500	VK Trails
Double Scissors 60 mile	300	VK/Buckeye
Chaney Run	650	Howe Meadow
Pine Hollow Run	200	Pine Hollow
Jim Klett Run	500	Howe Meadow
Humane Society	300	Pine Hollow

Because of the variety of trail services, distances and level of difficulty, trail use differs by location and by use. In summer, 2010 and 2011, the Park conducted Trail Counts, consisting of counting trail users at 17 locations in the Park. The trail count assisted in identifying the level of use during the peak summer use season and the user type; bike, hike, or horse. Due to the summer season of counting, cross-country ski use and snowshoeing was not counted and will require a winter trail count to gauge its use activity. Findings of the initial counting conducted in 2010 and 2011 are summarized below.

- Bicycle use is the predominant use type on the Towpath Trail with an average bike to foot ratio of 3 bikes to every one walker or runner.
- The proportion of each trail use to the total overall use during 2010 and 2011 was 61% bicycles, 37% hike/walk/run and 1% equestrian.
- Saturday mornings and afternoons were the time periods counted with the highest use reported throughout the Park.
- Of all the trail segments counted, four locations exceeded trail use of over 300 users within a two hour period in both 2010 and 2011. These include the Towpath at Hunt Farm, Lock 29, Boston Store and Station Road Bridge. In addition, Boston Store and Lock 29 exceeded 500 users within two hour counting periods in 2011.
- In 2010 and 2011, there were 14 trail counting periods where trail use exceeded 200 bike users within a two hour period and four trail counting periods where trail use exceeded 200 walk/run/hike users within a two hour period.
- The three highest overall trail areas for an average week during the summer season in the Park include the Towpath at Hunt Farm, Towpath at Boston Store and Towpath at Lock 29. The three average lowest recorded during counting in 2010 and 2011 included Wetmore, Valley and Buckeye Trails at Pine Lane and Tree Farm. See Table 20 for average overall total users for all trail locations included in the Trail Count.
- A total of 63 equestrian riders in 2010 and 93 equestrian riders in 2011 with the additional month of August being included in the 2011 counting period. In 2011, equestrian activity was observed 13 of the 103 counting periods conducted on designated horse trails.
- Additional 24-hour counting was conducted in the summer of 2011 on sections of the Valley Bridle Trail. Results of the counting activity are provided in Table 24.

Table 24. Overall Average Total Trail Use During Trail Counting Periods, 2010-2011

Trail Segment	Average Total Users 2010-2011
Towpath at Hunt Farm	253
Towpath at Boston Store	237
Towpath at Lock 29	174
Towpath at Station Road Bridge	158
Brandywine (2010 only)	154
Towpath at Ira	153
Towpath at Stone Road/Rockside	97
Towpath at Frazee (2010 only)	81
Towpath at Botzum (2010 only)	54
Indigo Lake	43.5
Blue Hen (2011 only)	35
Everett-Covered Bridge	30.5
Oak Hill	13
Old Carriage Connector (2010 only)	12.5
Tree Farm	12.5
Pine Lane (Buckeye & Valley)	11
Wetmore	9

Table 25. Number of Trail Counting Periods Exceeding 200 Trail Users by Individual Use Type

	Number of Counting Periods 2010-2011
Greater than 200 bike users during 2-hour counting period.	15
Greater than 200 trail users during 2-hour counting period.	4

Table 26. Equestrian Trail Activity During Trail Count 2010-2011

Trail	2010	2011 (additional month of August)
Wetmore	9	37
Boston Store	0	11
Everett	29	27
Valley Bridle at Hunt Farm	25	24

Table 27. 24-hour Counting on Valley Bridle Trail, 2011

Location	June	July	August
Valley Bridle between Pine Lane(303 South) and Everett	73	64	72
Valley Bridle between Pine Lane (303 North) and Highland Road	34	38	19

3.6.2 Use of Trail Facilities

Visitors to the Park's trails have access to facilities for interpretation, service, and accommodations. Park Facilities are defined for the purpose of this Plan as facilities that connect or provide support to the Park's trails. These include visitor centers, trailheads, parking, restrooms, signage, and other associated facilities.

Visitor Centers. The Park currently operates four visitor contact facilities along the Towpath Trail. The Park is currently in the process of transforming the utility and services of these facilities for Park visitors. Boston Store currently serves as the primary visitor contact facility with Canal Visitor Center, Peninsula Depot and Hunt Farm serving as "nodes of visitor activity". These are locations within the Park, "where visitors can center themselves physically in the park, as well as intellectually and emotionally, through a variety of means, whether indoors or out" (NPS, 2009a). Boston Store Visitor Center had the highest visitation in 2010 with 34,573 visitors. Table 24 outlines visitation at the primary visitor centers adjacent to the Towpath Trail.

Table 28. Towpath Trail Primary Visitor Contact Facilities

Visitor Center(adjacent to Towpath	FY2010 Total Visitation
Boston Store Visitor Center	34,573
Peninsula Depot Visitor Center	29,679
Canal Visitor Center	22,703
Hunt Farm Visitor Information Center	13,110

Parking. The Park currently contains 33 trailhead parking areas that service the Trails. Each of the parking areas and trailheads have various levels of facilities that include signage, bulletin board or kiosk, parking, restrooms, benches, picnic tables and trash receptacles. During the peak season weekends, many of these primary parking lots reach full capacity, including Hunt Farm, Indigo Lake, Tree Farm, Lock 29, Red Lock, Ira, and Boston Store. These areas serve as the primary entryways onto the Towpath Trail and where visitor services and programs are concentrated. Parking for horse trailers is currently available at Everett, Wetmore, Boston Store Overflow and Station Road. Horse trailer parking is also available at the Equestrian Stables in Brecksville Reservation and at Bedford Reservation at the Egbert Trailhead.

Table 29. Parking Lots with Highest Estimated Recreation Visits, 2010

Parking Lot	Visits, 2010
Lock 29- Peninsula (main and overflow)	307,837
Canal Visitor Center	226,275
Station Road Bridge Trailhead	209,994
Pine Hollow (west)	119,601
Brandywine (main and overflow)	117,012
Ira Trailhead	116,109
Lock 39-Rockside	101,953

Table 30. Parking Lots with Lowest Estimate Recreation Visits, 2010

Parking Lot	Visits, 2010
Wetmore	7,625
Little Meadow	9,591
Pine Lane	20,994
Oak Hill	24,459

(NPS Statistics, 2010)

In summer of 2011, the Park conducted a random parking lot count to identify parking areas that may be reaching capacity during the peak use period for the Park. Of the 18 trailhead parking lots counted during this period, eleven of the parking lots had at least one day where the parking lot was 50% full. Table 31 lists parking areas and the number of days where 50% fullness was observed. Six parking areas exceeded 90% fullness at least once during observation periods, with Lock 29 and Boston Store having the highest frequency of maximum or near maximum fullness. Additionally, observation of vehicles with equestrian trailers during the observed time periods found the primary parking area for these vehicle types is Wetmore with a total of 26 vehicles observed overall. Three equestrian trailers were observed at Covered Bridge-Everett trailhead and one at Station Road. It should be noted that for a large part of the 2011 counting period, the Boston Store overflow lot was closed due to a Park improvement project.

Table 31. Parking Lot Capacity,50% and 90% Fullness Frequency 2011

Trailhead Parking Area	Number of times during observation days where parking lot fullness exceeded 50%	Number of times during observation days where parking lot fullness exceeded 90%
Canal Visitor Center	3	0
Station Road Bridge	6	0
Red Lock	12	2
Boston Store	13	3
Lock 29	14	4
Lock 29 Overflow	3	1
Blue Hen	3	0
Hunt Farm	9	1
Everett- Covered Bridge	1	0
Indigo Lake	2	1
Ira	6	0

Environmental Education Center. The Environmental Education Center, located in the southern portion of the Park, contains 2.8 miles of trails that annually serve 3,500 youth attending the Center for residential programs. These trails are restricted to the general public and serve the programs offered at the Center. The trails are in close proximity to the Furnace Run trails and the Oak Hill and Plateau Trail systems that are open for public use. Because of the Midwest weather conditions, extensive outdoor learning activities of the center, and the focus on youth, primary issues of the center involve ensuring the safety of the youth attending the center and providing facilities along the trails to support the outdoor learning experiences.

Howe Meadow, Happy Days Lodge and Hines Hill Center Programs. Three primary gathering places for events and facility use in the Park are Howe Meadow, Happy Days Lodge and the Hines Hill Center. In 2010, Happy Days Lodge had 23,632 visits, Hines Hill hosted 241 events and Howe Meadow was host to 24 events. None of these facilities currently provide trail connections to the Towpath and provide limited connections the Park's trail system. Happy Days Lodge provides trail connections to Boston Run and Haskell Run that can lead visitors to the Ledges and Virginia Kendall units. Increase in use of the Hines Hill Center by visitors of the Stanford House poses current challenges in the absence of a formalized walking path between the two facilities.

Visitation of Other Facilities for Trail Users. There are other facilities with direct connections to existing trails that provide expanded options for the visitor experience. These are currently maintained by the Park.

Kendall Lake Shelter. This shelter includes use as the Winter Sports Center for cross-country ski and snow-shoe rental. 3,918 contacts in FY10 (visitation varies greatly with weather conditions).

Octagon and Ledges Shelters. This shelter has reservable picnic shelters that include access to the Virginia Kendall trail systems.

Horseshoe Pond Shelter. This shelter has a non-reservable ADA accessible picnic shelter that is accessible to the Tree Farm Trail.

3.6.3 Visitor Use Experience

A wide variety of visitors come to the Park to utilize its trails for their use. This section describes this variety of trail uses and current outdoor recreation trends notable to CVNP trails.

3.6.3.1 General Park Visitor Types

General visitor use patterns in the Park were studied as part of a Visitor Study in 2005, through the NPS Social Science Program. In the summer of 2005, demographics of the park visitors reported that age groups between 31-55 (49%) visited the Park most frequently. Age groups older than 55 years had 22% of visitors and age groups younger than 30 years of age were 29% of total visitation.

Because of its proximity to a large metropolitan area and adjacent neighborhoods, visitors tend to visit the Park multiple times during the course of a year. In 2005, 49% of the visitors surveyed visited the Park 12 times or more per year and 30% visited the park at least 1 to 11 times per year.

This is further demonstrated by where visitors reside. In 2005, 90% of the visitors surveyed were from the State pf Ohio and 1% was from outside the United States. 50% of visitor groups were residents of the Park area, which for the 2005 Visitor Study was defined as the Cleveland-Akron metropolitan area.

The 2005 Visitor Use Study also surveyed how often visitors had visited the Park. Of the visitors surveyed, 15% were visiting the Park for the first time, 6% visit the Park once a year and 50% of the visitors surveyed had visited the Park more than 10 visits in a year.

Observations from the Interpretive and Education Division identify patterns between local and out-of-town visitors. Local visitors seem to be more interested in recreational amenities like the Towpath. Out-of-town visitors seem to be more interested in attractions like Brandywine Falls. This demonstrates a distinction of outdoor recreation visits and destination visits in the Park. Visitor Center staff has also observed out-of-state visitation continuing to increase as awareness of the Park beyond the region increases.

Other findings in the 2005 Visitor Use Study include:

- Families were the predominant visitor group that visitors were with on their park visit (49%) with 25% of visitor visiting alone.
- Park visitors tended to spend two hours (34%) or three to four hours (33%) when visiting the Park. (4.4 hours, average length of stay). Only 2% of visitor groups visited the Park greater than one day.
- In the 2005 Visitor Study, use of the trails was the predominant activity for visiting the Park. The most common activities Park visitors participated in on their visit were hiking/walking (55%) and bicycling (47%). Trail related activities were the top three primary reasons among 14 park activities for visiting the Park. These included bicycling (35%), hiking/walking (26%) and jogging/running (12%) accounting for 73% of all visits to the Park.

3.6.3.2 Trail Types

There are 175 miles of trail within the Park (Table 32). Of those miles, 97 miles are managed by the NPS. Trails range in distance from less than ¼ mile to over 20 miles providing a full range of trail types from a fully developed boardwalk system near facilities to singletrack earth trails in the primitive areas of the Park.

Table 32. Proportion of CVNP Trails by Designated Use Type (NPS and Park Partner Trails within CVNP)

Trail Type Within CVNP	Percentage of Total Trail Miles within CVNP
Multi-purpose Bike	42 miles/ 24%
Hike only	64.2 miles/37%
Equestrian	52.0 miles/30%
Cross-Country Ski	16.7 miles /9%
Total	174.9 miles/100%

Hiking/Running. All of the trails within the Park permit hiking/walking/running activities (Table 33). Hiking experiences in the Park range from highly developed short destination routes such as Brandywine Falls to long-distance primitive routes such as the Buckeye Trail. The Buckeye Trail is a statewide trail system of nearly 1,444 miles that today consists of a large loop in the State of Ohio. The trail branches north and east from Cincinnati and is rejoined in the Park before heading north to Lake Erie. The Buckeye Trail Association manages and maintains the trail that is designated as the Buckeye trail within the Park. A distinctive element of the hiking trails within the Park is the presence of primitive trails and the Towpath Trail located and accessible to a metropolitan area, particularly, trails at longer distances greater than five miles.

Table 33. Existing Hiking Only Trails in CVNP on NPS Lands

Current Hiking Only Trails on NPS- CVNP lands	Trail Miles
Buckeye Trail	10.1
Stanford Trail	1.5
Brandywine Falls	0.95
Blue Hen Falls	0.2
Ledges- Haskell Run +Connectors to Pine Grove	4.7
Pine Grove + connector to Lake Trail	1.9
Forest Point	0.5
Lake	1.1
Virginia Kendall Hills	2.0
Furnace Run	1.6
Oak Hill	1.4
CVEEC (not for public use)	4.1
Salt Run	3.5
Hemlock	0.2
Howe-Hale Connector	0.3
Total	**33.8**

Bridle Trails. Primary equestrian trails include Riding Run, Perkins, Wetmore and the long-distance Valley Trail (Table 34). Valley Bridle travels the length of the Park and connects into western and northern bridle trails outside Park boundaries. In addition, a camping facility, Robinson Field located near the Wetmore Trails provides an area for the equestrian community events. The equestrian user groups hold group riding events within the Park seven times a year. Regionally, twenty-eight Ohio State Parks provide over 450 miles of equestrian trails (ODNR, 2011). Cleveland Metroparks provides 82 miles of trails for equestrian use in five of its reservations, outside of the Brecksville and Bedford units (Cleveland Metroparks, 2011).

Table 34. Bridle Trails on NPS Lands

Current Bridle CVNP Trails on NPS Lands	**Trail Miles**
Valley Trail	14.5
Pinery Narrows	3.1
Riding Run	4.0
Perkins	2.8
Wetmore	4.4
Langes Run	3.5
Dickerson (Closed)	1.2
Tabletop (Closed)	0.7
Butlers	0.6
Total	**34.8**

Bike/Multi-Purpose. The Towpath Trail provides 20 miles within the Park boundary for off-road bicycle use. The Towpath Trail consists of an eight foot wide limestone material surface that follows the historic Ohio & Erie Canal. This is the primary bicycle route within the Park with the Old Carriage Connector and the Hale Farm Connector providing connections between neighborhoods or facilities to the Towpath Trail. In addition the parallel Bike & Hike trail provides an additional 10.4 miles for bicycle use along the eastern edge of the Park boundary. The Old Carriage Connector is the only trail that provides some connection to the Bike and Hike trail currently utilizing public roads for the linkage. Designated bike lanes currently exist on portions of Riverview and Akron-Peninsula Roads but are limited in width and are not continuous along the roadways. All current multipurpose trails and their mileage are summarized in Table 35.

Table 35. Current Multipurpose Trails

Current Bike/Multipurpose CVNP Trails on NPS Lands	**Trail Miles**
Towpath Trail	20.1
Towpath-Hale Connector	1.1
Old Carriage Connector	0.8
Stanford House Connector	0.1
Total	**22.1**

Cross-Country Skiing. Primary cross-country skiing trails are located at Boston Run, Old Carriage, Tree Farm, Plateau and the Virginia Kendall trail system (Table 36). The Towpath Trail also allows cross-country skiing. Cross-country skiing and snowshoeing continues to increase its interest and activity in the Park despite its dependence on weather conditions from year to year. In 2009-2010 winter, 3,931 visitors utilized the Winter Sports Center at Virginia Kendall for cross-country ski rentals, snowshoe rentals and winter hike programs. Boston Store provided 225 snow shoe rentals for visitors during the 2008-2010 Winter. Park staff has observed the most used trails for winter trail skiing or snowshoeing are Tree Farm, Cross-country trails, Plateau, Ledges and Boston Run ranking from most used to less used. The past two seasons, 2009-2010 and 2010-2011, visitors and Park staff have observed Tree Farm trailhead parking to be completely full during winter weekends.

Table 36. Current Cross-Country Ski Trails

Current Cross-Country Ski CVNP Trails on NPS Lands	**Trail Miles**
Old Carriage Trail (bridges closed)	2.7
Boston Run	3.2
Plateau	4.8
Tree Farm	2.9
Cross-Country	3.1
Total	**16.7**

3.6.3.3 Visitor Access (Including access for visitors with disabilities)

Trails in the Park offer a wide range of accessibility due to terrain, site conditions and desired visitor experience. Visitor access, including for visitors with disabilities will be defined in the Sustainable Trail Guidelines in the Park, through three activities, 1) defining and identifying levels of accessibility by Trail Class and site conditions to inform the desired design outcomes, 2) establishing a trail signage system to provide accessibility information for each trail within the Park and 3) defining the mobility equipment use and accessibility options that meet the conditions of the trails, protect the Park resources, sustain the desired visitor experience and maintain safe trails for all Park visitors.

3.6.3.4 Soundscapes/Noise

Due to the proximity of the Park adjacent to developed areas, trails are located near roadways and cross road intersections. This is most prevalent for the long-distance trails. The Towpath Trail has four road intersections, Buckeye Trail has nine road crossings and Valley Bridle has approximately eleven road crossings. Additionally, a section of the Valley Bridle trail is adjacent to the Ohio Turnpike interstate, causing less than optimal trail experiences for equestrian riding.

3.6.4 Opportunities for Outdoor Recreation

3.6.4.1 Outdoor Recreational Trail Trends – State and Regional

As part of its 2005 State of Ohio Trail Plan, a survey was conducted of Ohio households and their use of trails in the State of Ohio. Table 37 lists the results of the statewide survey of activities that occur in the Park or are being considered as part of the Trail Management Plan. The 2005 State Trail Plan identified walking, hard-surface bicycling and day hiking as the highest trail activities and horseback riding, backpacking overnight and cross-country skiing as the lowest trail activities.

Table 37. State of Ohio Trail Activities by Participation, 2005

Trail Activity	Percentage of Ohio Households Participating in Trail Activity
Walking	73.4%
Bicycling (hard surface)	44.1 %
Day Hiking	42.9%
Running	24.8%
Biking (natural surface)	18.9%
Canoe/Kayaking	18.4%
Horseback riding	8.9%
Backpacking overnight	7.0%
Cross-country skiing	5.0%

Source: State of Ohio Trail Plan, 2005

Outdoor recreation trends nationally reflect similar patterns for participation in outdoor recreation activities. The Outdoor Industry Foundation cited continued increase of the number of Americans hiking, trail running and camping. Table 38 show the activities available or being considered in the Park that nationally in 2009 were surveyed to be one of the top five most popular outdoor activities of all Americans, ages 6 and older. Additionally, cross-country skiing and snowshoeing continue to rise in popularity with both increasing nationally, with the Outdoor Foundation annual report citing a 9% increase for cross-country skiing and 11.4% increase for snowshoeing in 2011 from 2010 (Outdoor Foundation, 2011).

Table 38. National, Most Popular Outdoor Activities, 2009

Outdoor Activity	Percentage of Americans 6 and older Participating and ranking in Top 5
Running, Jogging, and Trail Running	16% Rank #2
Car, Backyard and RV camping	16% Rank #3
Road Biking, Mountain Biking and BMX	15%. Rank #4
Hiking	12% Rank #5

Source: Outdoor Recreation Participation Report, 2010, Outdoor Industry Foundation

3.6.4.2 Trail Uses

The uses of trails can serve a variety of visitors in the Park. Uses include the primary activities the trails are designed for; biking, hiking, running, cross-country skiing, and horseback riding. Other primary outdoor recreation uses of or a feature of the trails being considered in this Plan are provided in this section.

Mountain Biking Trails. The sport of mountain biking was not a mainstream outdoor recreation activity when the 1985 Trail Plan was completed. Today, mountain biking is part of the various outdoor recreation activities that utilizes trails. An overview of mountain biking in National Parks, statewide and the local region is provided.

Mountain Biking in National Park Service Federal Lands. Big Bend National Park recently conducted an Environmental Assessment for a Multi-Use Trail system including bicycle use off public roads outside developed zones. As part of its Plan, the Park reported on the status of this activity in NPS units and specifically National Parks (NPS, 2010b). Additional research and correspondence with NPS units was conducted by CUVA Trail Planning staff.

Main findings include:

- Approximately 23 National Parks provide bicycle trails on old or existing park roads.
- Approximately 8 National Recreation Areas allow or are in planning or rulemaking stages for single-track off-road bicycle trails.
- No National Park currently has established "single-track" bicycle trails that are not on administrative roads or utility corridors. Two National Parks, Big Bend and Mammoth Cave, are currently in planning or rulemaking stages to implement "single-track" trails.
- Currently, the largest proposed mountain bike "single-track" trail system in a National Park is 10 miles at Big Bend National Park.

Wayne National Forest sits in the southern region of the State of Ohio, approximately a 2-1/2-hour drive from the Park. Wayne National Forest permits mountain biking on its 300 miles of natural surfaced trails.

Ohio State Parks. The State of Ohio contains 22 of its State Parks with designated mountain bike trails with approximately 200 miles available for natural mountain bike trails. The nearest state parks to CVNP include West Branch (12 miles of mountain bike trails), Mohican (24.5 miles) and Quail Hollow (5 miles), all within an hour driving distance from the Park. No use statistics were available for the use of these trails (ODNR, 2011a).

Regional and Local Mountain Biking. Regional and county park districts continue to designate and create mountain bike trails as part of their outdoor recreation trail activities. Mountain bike trails near metropolitan areas have a generally high level of use. Table 39 provides a small sample of mountain bike trail use in three metropolitan regions in the State of Ohio. A mountain bike access survey was also conducted in Hamilton County near Cincinnati, Hamilton County Park District, regarding its mountain bike trails. One finding of the survey highlighted the distance of driving and the distance of the trail. 62% of survey respondents indicated that a mountain bike trail system of 8 miles or greater would be needed for the user to drive one hour or more to use. The only mountain bike trail currently available in Cuyahoga and Summit County is a 2-mile loop at the Ohio & Erie Canal Metroparks Reservation in

Cleveland. Reagan Park, a municipal park located in adjacent Medina County provides nine miles of mountain bike trails.

Table 39. Ohio Mountain Bike Trails within Urban Metropolitan Metroparks Systems

Regional Park	2010 Mountain Bike Trail Rider Use
Five Rivers (Dayton)	2,000 per month during peak riding months
Mitchell Memorial Forest, Hamilton County, Cincinnati	2,591 (full year)
Ohio & Erie Canal (Cleveland Metroparks)	14,932 (full year)

*Birdwatching***.** Birdwatching and wildlife viewing are other popular activities people utilize the Park trails. Due to the migratory patterns for the region and its designation as an Important Bird Area (IBA), the Park serves as a destination of this outdoor activity. Locations such as the Coliseum site, Beaver Marsh, Ledges, Tree Farm, Pinnery narrows area along the Towpath, and areas along the River. In the 2005 Visitor Use Study, 18% of the visitors surveyed were participating in birdwatching activities, the sixth most popular activity. Of the groups participating in the birdwatching on trails, 45% participated in the activity several times during the year.

*Camping***.** The Park currently provides campsites at one location, on the Stanford Trail. This campsite offers a hike or bike-in facility with five campsites, near the Stanford House, along Stanford Trail. The campsite is open from the end of May through October each year. Since opening in 2009 camping permits have increased 10% annually. In 2010, 94 of the 158 days permitted for camping, the campsites were occupied, which is approximately 60% full capacity of the campsites. On average in 2010, 85% of the overnight stays consisted of one night with the remaining 15% of the total stays consisted of two day stays, and one three day overnight stay. The month of July had the highest number of stays with 211 in 2010. The number of campers in 2010 consisted of 260 groups with a total of 757 campers with the average group size ranging between 2-4 persons per camp group. There were six days in which the campsites were nearing the 30 camper capacity, occupying 25 campers or more.

Howe Meadow also provides limited camping, under a special use permit and limited programming as part of the Environmental Education Center programming and specific park programming. This camping is not open to general use.

Robinson Field is utilized through a limited permit for equestrian trail users for camping during stewardship work days. No other camping occurs here during the year.

*River Use***.** Outdoor recreation on the Cuyahoga River include fishing and paddling with a canoe or kayak. The River is a popular destination for these activities, as the quality of the water continues to improve. Currently river use does occur, but is not managed or regulated by the Park. Fishing occurs along the Cuyahoga River with popular spots being Station Road, Canal Visitor Center, and the confluence at Tinker's Creek. There are currently no river use facilities within the Park for paddling or canoe use, by way of launch sites or support facilities. There are currently two canoe liveries on the Cuyahoga River outside of the Park. These include the Camp Hi-Canoe Livery located in the Upper Cuyahoga River in Hiram, and the Crooked River Adventure in Kent, located approximately twenty-five river miles south of the Park. Camp Hi canoe livery estimates, on average, 15,000 to 20,000 users annually with an average of 150-200 users per day during its season of April through October. 2010 was the first year of operation at Crooked River Adventures. The Kent Facility had 2,144 users for canoeing and kayaking

during its 2010 season of May through October (Crooked River Adventures and Camp Hi Livery, 2011).In addition, in 2010, the Cleveland Rowing Foundation and public partners established Rivergate Park, ten river miles north of the Park in the City of Cleveland, providing public access for river-based recreation activities including rowing, canoeing and kayaking and the rowing club's headquarters (Cleveland Rowing Foundation, 2011). In 2010, the State of Ohio, Division of Watercraft, reported there were 93,853 registered canoe or kayaks registered in the State with 15,317 of those registered by owners within the five county region nearest the Park (Cuyahoga, Geauga, Medina, Portage, Summit).

3.6.5 Opportunities for Information and Education

3.6.5.1 Education and Interpretation

The Park's interpretation division coordinates with volunteers and Park partners to provide education and interpretation about the Park's resources. In 2010, the Park provided 114 trail related programs with 2,860 visitors attending these (Table 40)**.** The trail programming focuses on three activities; 1) history based learning of the Park's cultural significance and associated features, primarily along the Towpath Trail, 2) nature-based learning of the Park's unique natural resources including Brandywine Falls, Ledges and Blue Hen Falls, and 3) outdoor recreation based activities that utilizes the less developed areas of the Park to engage visitors in physical activity with history and nature-based content, including trails such as the Buckeye Trail, Virginia Kendall trails and Oak Hill. One program currently offered is taking visitors off trail for hikes to explore Park resources.

Table 40. CUVA Trail Related Programs, 2010

Trail Related Programs	# of Programs	Total Attendance
Birdwatching	24	740
Full moon hikes	12	505
Lantern hikes and campfire programs	6	166
Music in meadow hikes	5	138
Off the Beaten Path	12	217
Snowshoe Hikes	6	93
Other recreation-focused hikes	49	1,001
Total Trail Program 2010	114	2,860

Other programs offered associated with the Park trails include the UGRR program with 225 attendees in 2010, the Hang Out at Hunt with 2,145 attendees, trail roving (36,283 hours), Wildlife Watchers (10,216 hours) and Tunes along the Trail (2,000 hours).

Additionally, the Park and its Partners provide children programs on trails. In 2010, 4,482 children participated in these programs within the Park.

3.6.5.2 Orientation to Park Trails

In order to direct visitors in the Park to one of its primary features, trails, the Park established an objective to "plan and implement a comprehensive and distinctive park-wide sign system to welcome, identify and guide park visitors to the various features within the park" (NPS,1998). The Park established its first Sign Plan in 1983 and completed an updated Sign Plan and Sign Inventory in 1998. In 2008, Director's Orders 52 established the UniGuide sign system for NPS. The Park's signage system consists of levels of orientation for the visitor and trail userthat include: traffic signs to direct visitors to park entrances and exits, facility signs, trail signs, bulletin boards at trailheads, regulatory signs, boundary signs and interpretive waysides. All of the Trail Management Plan alternatives may affect the signage due to additional or closed trails, new uses, new parking areas and new facilities. The alternatives however, will not affect the Sign Plan and Program significantly different. Trail signage will continue to be updated utilizing the NPS Uniguide sign system including updated accessibility information, and the use of alternative technology options for information on Park trails. The implementation strategy for the trail elements identified in the selected alternative of the Trail Management Plan will include the development of trail signage and trail information for park visitors.

The Park also publishes trail maps for free distribution that provide orientation to the trails. These are available online, and at visitor centers. To further enhance environmental stewardship, the Park continues to establish electronic and mobile trail maps for the trail user.

3.6.6 Visitor Facilities and Amenities

The trail user has access to a variety of facilities and amenities to assist with their visitor experience while in the Park.

Restrooms. There are restrooms at 25 trailheads within the Park. The restrooms range from fully developed to fairly primitive facilities. Current trails with temporary or no facilities include Boston Run and Blue Hen Falls.

Bicycle Racks. Bicycle racks are located along the Towpath at each visitor contact center, at Station Road, and Brandywine Falls.

Picnic Areas. Most existing picnic areas are located at park areas with limited or no trail access, such as Shady Grove, Maplewood and Columbia. Valley Picnic area does have trail access to the Plateau trail. Other areas that provide picnic areas include Horseshoe Pond, Brandywine Falls, Ledges, Octagon, Lake, Virginia Kendall, Boston Run, Oak Hill and Covered Bridge.

Benches and Seating. The trails provide benches along the trails at various intervals.

Horse hitching posts. Hitching posts for equestrian users are currently available at Wetmore, Hunt Farm, Boston Store, and Everett/Covered Bridge.

Overnight Accommodations. Overnight lodging for park visitors and programs are currently offered in the Park at the Environmental Education Center and Stanford House. Under the historic leasing program, Brandywine Inn, adjacent to Brandywine Falls, also provides lodging. Many of the visitors to these overnight facilities utilize the trails adjacent to the facilities. Additional lodging facilities within the Park have not been identified to date, but the desire to examine current park facilities for this use would

potentially be considered in the future. In addition, the Stanford Campsite discussed in section 3.6.4.2 provides overnight accommodations for trail users.

Parking. Parking areas are located near trail entrances throughout the Park. These are described in Section 3.6.2 of this Chapter.

Food/Retail. The Park partner, Conservancy for CVNP, provides food and beverage services at Trail Mix in Boston Store. Additionally, private food and beverage services are available in Peninsula, and Independence at Thornburg Station.

Equipment Rental. The Park provides outdoor recreation rentals for cross-country skis and snowshoes at the Winter Sports Center at Virginia Kendall and at Boston Store during the winter season. The Park also provides camping equipment for their youth camping programs.

3.6.7 Public Health and Safety

3.6.7.1 Trail Safety

During peak visitation months, there are areas of the trail that experience visitor conflicts that result in less than optimal visitor experiences. This is most notable on the Towpath Trail where bike riders and walkers/runners utilize the same trail. In 2009 the Park reported 28 incidents involving bike accidents or trail use conflicts (Table 41, 42 and 43). Because of the high visitation accessibility, relatively easy terrain and connections outside of the Park, the Towpath Trail attracts a wide variety of users, and typically has had the highest occurrence of incidents. Additionally, some of the trails pose safety hazards due to their proximity to water features, rock outcroppings, and steep terrain. The Park has injury incidents on the less developed trails due to traction and or falls on the trails due to the terrain and conditions at the time.

Table 41. FY 2009 Trail Injuries

Location	Number of Visitor Injuries
South of CVC to Station Road	4
South of Station Road to Red Lock	2
South of Red Lock to Boston Store	1
South of Boston Store to Lock 29	7
South of Lock 29 to Hunt Farm	1
South of Hunt Farm to Ira	2
South of Ira to Botzum	1
Buckeye Trail	4
Other Trails (Oak Hill, Furnace Run, Pine Grove, Ledges)	4

Table 42. FY 2009 Trail Visitor Injuries by Cause

Bikes	17
Hiking/Walking	6
Running	3
Stairs/Steps	2

Table 43. Towpath Visitor Accident Occurrences by Activity 2004-2008

Activity	Accidents
Hiking	9
Biking	49
Running	5
Miscellaneous/Unknown	3

An evaluation of the visitor accidents on the Towpath Trail was conducted in 2009. The report found that due to high visitation on the weekends, the weekends experienced the highest number of accidents between 2004 and 2008 with 41 accidents during the weekend and 25 for Monday through Friday during this five year period. During the same five year period, the Towpath between Boston Store and Lock 29 had the highest number of accidents with 25 occurring. There were 11 accidents or less on the other Towpath segments during the same five year period. Accidents involving bikes occurred 49 times, hiking 9 times and running 5 times over the five year period (NPS, 2009/2010a).

The Park initiated a Trail Safety awareness program, Safe is Sound, in partnership with the Ohio & Erie Canalway program to promote trail safety and good trail use practices. 2011 is the second year for the program.

3.6.7.2 Water for Public Use

Potable water is provided at various locations to trail users. Current locations along the Towpath Trail include Canal Visitor Center, Station Road, Boston Store, Lock 29, and Hunt Farm.

3.6.7.3 Human Contact with Cuyahoga River

In accordance with the applicable water quality standards for primary contact recreation established by Ohio EPA, the river water quality is often unacceptable for recreational use due to high concentrations of *Escherichia coli*, a fecal indicator bacterium. Issues associated with meeting primary contact recreation standards include the conditions after rainfall events, where the river rises and flow increases, resulting in increased fecal coliform and *E.coli* concentrations. The Cuyahoga River receives discharges of storm water, combined-sewer overflows, and incompletely disinfected wastewater from urban areas upstream of the Park. These discharges result in a threat to the health of visitors who come into contact with river water during recreational use (e.g., wading or canoeing). Because Park managers are concerned about the threat posed to human health by sewage and pathogen contamination, the Park currently discourages any canoeing, swimming, or wading in the river and does not currently manage river recreational use or provide visitor protection on the river. The Primary Contact Recreation standard as defined by Ohio EPA is as follows;

"At least one of the two following bacteriological standards must be met outside of the mixing zone.

Mixing zone for the Akron Wastewater Treatment Plant is from the point of effluent discharge directly south of Bath Road to Ira Road.

1. Fecal coliform - geometric mean fecal coliform content based on not less than five samples within a thirty day period shall not exceed 1,000 per 100ml and shall not exceed 2,000 per 100 ml in more than ten percent of the samples taken during any thirty day period.

2. *Escherichia coli*, geometric mean *E.coli* content, based on not less than five samples within a thirty day period shall not exceed 126 per 100 ml in more than ten percent of the samples taken during any thirty day period." The Park follows and uses this standard."

The U.S. Geological Survey (USGS) and the NPS continue to develop and refine models that predict *E. coli* concentrations based on turbidity and rainfall measurements. Near "real-time" water quality conditions for the Cuyahoga River are posted on the Ohio Nowcast program website (Nowcast, 2011). The Nowcast program issues advisories and predicts the concentrations of *E. coli* once a day at the posted time only. The predicted concentrations are for a specific site along the river and are for information only. The primary sampling location during the summer is located at Highland Road in Brecksville. In 2009 and 2010, samples were taken from May 26 through August 20 and 25th each year. Of the 48 samples taken in 2009, 38 of the 48, or 79% of the days sampled, had a predicted water quality of "Poor" which identifies that a primary contact advisory is in effect at the time. In 2010, 27 of the 45 days or 60% of the days posted a primary contact advisory.

3.6.7.4 Cuyahoga River Obstacles

The river contains a variety of natural and man-made obstacles to consider for its use and access for canoeing. In 1981, a Cuyahoga River Hazard Survey was conducted to identify natural and man-made obstacles in the river. The survey included natural obstacles such as strainers, rating risk of injury potential, rating for water conditions, and risks of man-made obstacles. Strainers listed as an obstacle are defined for the purpose of river use is any object that filters water but does not allow people, boats to pass through. An updated Hazard Survey would need to be conducted prior to determination of river access portage sites and operation.

3.7 Socioeconomic

The Park is part of a metropolitan region that consist of multiple jurisdictions, various cultural, performing arts and recreation institutions, and a large network of corridors for vehicular and bicycle travel.

3.7.1 Population

The Park is within the center of the 15th largest metropolitan area in the United States, with a population of 2,881,937 in 2010. (U.S. Census Bureau, Cleveland-Akron-Elyria Combined Statistical Area). There are approximately 13,000 residents living within the Park boundary, including the population residing in Peninsula. Within a ½ mile to the Park boundary, a population of 112,350 reside. Within 2 miles, the population is 340,980 and 3.3 million within 25 miles of the Park. Within 100 miles of the Park, which is a typical two-hour car drive for day trip destinations, a population of 10.3 million reside. (U.S.Census, 2010). Population in the central cities have declined the past ten years, however, the suburban outlying communities continue to grow but at a lower rate over the past ten years.

3.7.2 Local Communities

The Park boundary contains portions of 15 local municipalities and two counties. It is sandwiched between the two major metropolitan areas of Cleveland and Akron. The local communities comprise of small villages and smaller suburban cities and towns, including the Village of Peninsula which is surrounded by the park boundary. Many large neighborhoods sit along the edge of the Park boundary including Greenwood Village in Sagamore Hills, Echo Hills in Brecksville, and neighborhoods in Cuyahoga Falls on both sides of the southern part of the Park.

The local communities contain commercial areas in close proximity to the Park and its trails. Directly adjacent to the Towpath Trail, commercial areas include downtown Peninsula in the central part of the Park and Thornburg Station along the northern boundary of the Park in Independence. Other extended commercial areas, not directly accessible from the trails, but near the park entrance points, include Sagamore Hills, near Holzhauer Road, downtown Brecksville on Route 82, northern Akron area Merriman Valley District along Riverview Road, Richfield commercial area on Route 303, and downtown Hudson and Valley View commercial areas. The commercial areas contain restaurants and shops that Park visitors may utilize when travelling into and out of the Park entrance points.

Specific commercial sites that provide trail related services within or close proximity to the park include the Trail Mix store across from Boston Store in Boston Township, Szalay's Market, near Hunt Farm, and Appalachian Outfitters retail store on Truxell Road near Ledges and Virginia Kendall Units. Local Bike shops, including Century Cycle adjacent to the Towpath Trail in Peninsula provide bike rentals for trail users. Nearby running and bicycle stores in Northfield, Hudson, Brecksville and Akron also provide retail service to trail users of the Park.

3.7.3 Municipal Services

The local municipalities in cooperation with the Park provide emergency services to Park visitors as needed.

3.7.4 Visitor Spending Characteristics

In 2009, the NPS reported 2,293 overnight stays and $54 million in visitor spending (Stynes, 2011). The 2005 Visitor Study for Cuyahoga Valley National Park indicated economic activities conducted within a 15 minute drive by park visitors surveyed included, dining in a restaurant (57%), shopping (30%) and buying takeout food (27%) (NPS, 2005c).

3.7.5 Land Ownership

National Park Ownership. The Park is similar to other urban National Parks, by its mosaic of land ownership within its boundaries. Of the 33,000 acres within the Park boundary, the NPS owns approximately 19,000 acres. NPS lands include lands under short-term and long–term retention agreements. Some lands are utilized for utility right-of ways throughout the Park, but particularly through the central portion of the Park.

Other Public Lands. The second largest land owners in the Park are the regional park districts. Cleveland Metroparks own 5,700 acres in Bedford and Brecksville Reservations and additional tract land from the Highland Road area north to Sagamore Road, including lands that include the Buckeye Trail. Metroparks, Serving Summit County owns 3,203 acres including Deep Lock Quarry, O'Neill Woods, Hampton Hills and Furnace Run Metropark units, and lands that contain the trail systems of Wetmore and Riding Run and Perkins and conservation areas near Columbia Run, and Stanford Run. Metro Parks, Serving Summit County also owns and manages the Bike and Hike trail along the eastern edge of the Park.

Other public lands include lands owned by local municipalities including Hudson's Wildlife Woods Park located on Boston Mills Road that contains a small hiking trail connecting to the Buckeye and Valley Trails. The City of Independence and Independence Board of Education owns land along Stone Road in the northern portion of the Park. The Northeast Ohio Regional Sewer District has a service road near and through the Fawn Pond area.

Private Lands. The Park boundary contains 3,430 acres of privately owned land. These lands consist of approximately 3,200 acres of residential parcels and 200 acres of commercial lands, including some lands owned by utility companies. Some of the private lands contain conservation or scenic easements.

Compatible Institutional Lands. Compatible institutional land are tracts of land in private ownership by institutions, and are currently held and operated in a manner compatible with, or supportive of the NPS mission. Compatibles institutional land is the 4th largest land owner in CVNP. These include the Boy Scouts, Girl Scouts, Hale Farm, Old Trail School and the Blossom Music Center. Majority of these lands are located in the southern portion of the Park totaling 1,793 acres of land. Brandywine and Boston Mills Ski Resorts in the central region of the Park comprise of 138 acres at Brandywine and 58 acres at Boston Mills. These ski facilities, with no overnight accommodations attached to them, attracted approximately 270,000 visitors annually during the 2010-2011 winter season (Boston Mills/Brandywine Ski Resort, 2011). The Park does not operate or utilize these lands for programs or other activities, however coordination with events and operations between the Park and these institutions occurs.

Table 44. Land Ownership in CVNP

Land Ownership Type	Acres
National Park Service	19,082
Other Public Land	8,581
Compatible Institutional Ownership	1,793
Private (some with easements)	3,430
Total	**32,886**

3.7.6 Transportation network

The Park contains all levels of a transportation system; roadways, highways, local roads, train and bicycle transportation options. The primary mode of travel that visitors enter the Park is through its roadways either by car or bicycle. In the 2005 Visitor Study, 1% of visitors surveyed arrived in the Park by bike or foot. The Scenic Railroad provides primarily intra-park transportation with service south of the Park boundary for visitors. There are approximately 96 miles of road within the boundaries of the Park. The Cleveland Metroparks and Metro Parks, Serving Summit County own and operate 12 miles of these

roads. The NPS owns and operates one mile of road within the Park boundary. The road system in the Park is under the jurisdiction of local municipalities, counties or the State.

The road network within the Park serve as primary corridors for east to west and north to south vehicular travel particularly for commuting and connection to the major interstates adjacent to or bisect the Park, that include interstates 77, 271, the Ohio Turnpike and Route 8. Route 303, Route 82, Pleasant Valley Road, Wheatley Road to Steel Corners Road to Bath Road, and Rockside Road are the primary east-west roadways crossing through the park. Akron-Peninsula, Riverview and Canal Road are the primary north-south roadways in the Park. Many other roads within the Park are less travelled including Major Road, Sagamore Road, Everett Road, and Wetmore Road. Regional Transportation agencies have collected average daily traffic counts for motor vehicles, on roads within Park boundaries.

Table 45. Vehicle Traffic on Roads in CVNP 2006-2009

Location	ADT (Average Daily Traffic)
Cuyahoga – Alexander Road between Canal and Dunham Roads	9,799
Summit – Route 82 near Chaffee Road	11,770
Summit – Route 303 at Riverview Road	2,730
Summit – Route 303 between Riverview and Route 8	9,400
Summit – Wheatley between I-77 and Oak Hill Road	2,770
Summit - Riverview at Everett Road	5,680
Summit- Akron Peninsula Road between Route 303 and Quick Road	2,850
Summit – Route 303 between I-271 and Riverview Road	8,170

Source: NOACA, Cuyahoga County Highway Traffic Counts, 2006-2009
AMATS, 2010

Current bike use on roads within the Park occurs during spring, summer and fall months annually. Use has not been documented in formal counts, but is observed most frequently on the roads extending through the Park, including Route 303, Riverview and Akron Peninsula.

Road improvements for bicycle use have been made over the years by local, county and state agencies including improved shoulder conditions on portions of Riverview Road, Boston Mills Road, Truxell Road, Everett Road, and Akron-Peninsula Roads.

3.7.7 Soundscapes/Noise

The Park boundary abuts in many locations to medium-density residential areas and small village city centers. The high use trails, such as the Towpath travel through Boston Township and portions of Peninsula. Old Carriage Trail and the Old Carriage Connector trail abut the Greenwood Village neighborhood in Sagamore Hills. The remaining trails are not in close proximity to the neighborhoods surrounding CVNP.

Highway noise from I-271 and I-480 occur on the Valley Bridle Trail and Buckeye Trail that are located in close proximity to these roadways. Area roads throughout the park where high traffic volume occurs, contributes to the noise within the Park.

3.8 Park Operations

Operations of the trails and associated trail facilities in the Park include the use of Park staff, Park partner organizations including volunteers, and other jurisdictional operations within the CVNP boundary.

3.8.1 Operations

The Park is operated and managed by the NPS in collaboration with a variety of Park Partners. The Park employs 100 staff in five management divisions: administration, interpretation, maintenance, visitor protection and resource management, in addition to the Superintendent's office.

3.8.1.1 Staffing for Trails

All divisions of the Park play a role in the management and enjoyment of the trails within the Park. The primary staffing for the trails include professionals in design, construction, maintenance, interpretation, and visitor protection of the trails. The Park trails field staff are the key stewardship manager of the trail system. The current trails field staff include a part-time landscape architect, four full-time permanent trails maintenance staff, and six fulltime seasonal trails staff persons working up to five months annually. Currently, there are three trail maintenance positions vacant due to limited budgets. In addition to this trails field staff, many NPS staff assists and manage various aspects of the trails, whether it is safety of trail users, programming on Park trails or monitoring of Park resources along the trails.

3.8.1.2 Budget for Trails

In 2011, the trails operating and maintenance budget was $279,360. The 2008 Park Asset Management Plan reported only 18% of the total projected maintenance needs for trails were currently being funded with the existing budgets (NPS, 2008a).

Current staff levels are challenged to meet current demands of trail management most notably for trail maintenance, specifically for deferred maintenance and capital maintenance, site planning, design and project management. Tasks needed to implement a comprehensive Trails program do not have current staff assigned for them. These tasks include compliance, project and park-wide planning for trail management, funding, monitoring of visitor use patterns and trail conditions, and volunteer management and training.

3.8.2 Operation & Maintenance of Trail Facilities

Park facilities are defined for the purpose of this Plan as facilities that connect or provide support to the Park's trails. These include visitor centers, trailheads, parking, restrooms, signage and other associated facilities. Park staff, Park partners and volunteers manage, maintain, operate, and program these facilities throughout the year.

Trails. The Park and its Park Partners maintain and manage its trails. The Park conducts annual general maintenance of all of the trails in the Park. Annual maintenance includes mowing and trimming during growing season, bridge cleaning, hazardous tree removal and limb inspection, fall leaf removal and inspection of signs, bollards, and gates. The Park conducts assessments and trail improvements related

to drainage and erosion on particular trail units every two to five years or more frequently where recurring issues occur. Some trails have recurring maintenance issues due to their resource conditions and require maintenance staff to refocus on these trails when weather conditions occur. This primarily occurs on the Towpath Trail, with some conditions occurring at Valley Bridle trail, Perkins trail and Wetmore trail.

*Visitor Centers***.** The Park provides staffing and management at the four visitor contact centers as described in the Visitor Use Experience section 3.8. These centers also provide park and trail maps and typically the first stop for trail visitors for information and orientation. Canal Visitor Center and Boston Store Center operates daily during the summer and limited hours during the winter season. Hunt Farm and Peninsula also operate during the summer but has limited hours with staff and programming.

In addition to the NPS facilities, Brecksville Nature Center within Cleveland Metroparks, provides programming and trailhead facilities to the Park visitors.

Other Park Visitor Facilities. The Park and Park partners operate and maintain other visitor facilities that are utilized by trail users. These include the Winter Sports Center at Virginia Kendall, Environmental Education Center, Stanford House, Happy Days Lodge, Howe Meadow and Hines Hill Center. Frazee House, which is currently closed for rehabilitation, is also operated by park staff and accessible to the Towpath Trail.

Parking. The Park maintains the parking facilities within the Park. This includes snow clearing during the winter use months of 21 of the 34 trailhead parking areas.

Trail Rental and Equipment Storage. The Interpretive Division supplies trail equipment for their trail-related programming activities. These include bicycles, cross-country skis and snowshoes. Additionally, the Interpretation Division provides tents for its Kids in Tents on Trails program. The Winter Sports Center and Boston Store provides cross-country ski rentals during the winter season to trail users.

Permits. The Park and its partners manage permits and agreements for some of the activities and facilities associated with trails, including the Stanford campsite, and events held on trails coordinated by groups outside of the Park.

3.8.3 Partner Operations

Cuyahoga Valley National Park has been a leader in the NPS to establish partnerships and volunteer groups that contribute to the success of the Park's trail system.

3.8.3.1 Park Partners and Programs

The Park has three primary non-profit partners; the Conservancy for Cuyahoga Valley National Park, Cuyahoga Countryside Conservancy, and the Cuyahoga Valley Scenic Railroad. These organizations provide support to the operation and programming of the Park's facilities that are associated or affected by the Park's trail system. In addition, Cleveland Metroparks and Metroparks Serving Summit County maintain and operate the facilities in their respective reservations within the Park boundary.

Conservancy for Cuyahoga Valley National Park. The Conservancy, established in 2002, serves as the primary park-wide partner for the Park. The Conservancy focuses on four primary programs in partnership with the Park: 1) environmental education to youth, 2) adult programming and facility events at Howe Meadow, Happy Days Lodge and other venues throughout the Park focusing on arts, cultural and natural resources, and health and wellness, 3) coordinating volunteer activities among the various needs in the Park, and 4) the Trails Forever Program providing support to the Parks trails in a variety of ways. All of these programs within the Conservancy utilize the Park's trails and trail facilities. Additionally, the Conservancy operates and manages the Happy Days Lodge facility, Stanford House, and Hines Hill Conference Center, and the permit system for the Stanford campsite.

In addition to its programming, its current headquarters on Hines Hill Road provides meeting space in conjunction with the Hines Hill Conference Center. Current facilities are limited for pedestrian circulation and bicycle use that would connect the facility to other nearby park facilities including Stanford House and Brandywine Falls.

Trails Forever Program. In 2009, CVNP and the Conservancy kicked off its Trails Forever Program to provide added support and focus on the needs of the trails in the Park. The program is focused on five primary activities; providing trail experiences, volunteer stewardship, planning, trail system enhancement and establishing an endowment as part of the TRAILS FOREVER Legacy Fund. Two of the significant endeavors that the Trails Forever program will support include fund development for one-time capital projects and endowment growth for ongoing trail stewardship and maintenance. In 2012, Trails Forever will provide its first installment of support towards ongoing trail stewardship.

*Cuyahoga Countryside Conservancy***.** The Cuyahoga Countryside Conservancy was established in 1999 in association with the Park's Rural Landscape Program. The Countryside Conservancy coordinates the re-establishment of farms within the Park by providing technical training, coordination of eleven working farms, and operation of farmers markets in the Park. Since 2004, Farmers Markets have been occurring at Howe Meadow during the summer months and at nearby Old Trail School during the fall. During the summer of 2010, the Farmer's Markets at Howe Meadow averaged 45 vendors per week with customer attendance of 27,982 (Countryside Conservancy, 2011). In 2012, the Countryside Conservancy will be relocating its primary headquarters near the Black Acres Farm on Quick Road for expanded facilities and operations of the programs the Conservancy provides.

*Cuyahoga Valley Scenic Railroad***.** Cuyahoga Valley Scenic Railroad (CVSR) is dedicated to the preservation of passenger rail transportation in Cuyahoga Valley and the historic Ohio & Erie Canalway. CVSR operates and manages all rail programs and events, with 2010 program attendance reaching 180,000 (CVSR, 2011). The railroad provides eight stops within the Park. One of the newest offerings on the Scenic Railroad is the Bike Aboard program, launched in 2007. The program offers visitors to board their bikes on the train to travel to other parts of the Park's Towpath Trail or to provide an alternative mode of transportation to a destination after biking on the Towpath Trail. The Bike Aboard program has significant use since its inception in 2010 with use of 20,505. The Railroad's direct connections are limited to pedestrian walkways at Boston Store and Lock 29. Direct links to the trails are available at Canal Visitor Station, Indigo Lake, Station Road and Botzum. There currently is no direct trail connection to the Towpath or other Park trails at Rockside Station.

3.8.3.2 Trail Volunteers

The Park's trail system has one of the most extensive trail volunteer programs in the NPS. The Park's volunteer trail program involves groups that provide assistance to the Park in the following areas; visitor protection and orientation, trail stewardship and visitor education. Five primary volunteer trail groups include, Trailblazers, Cuyahoga Valley Trails Council (CVTC), Adopt-A-Trail, Ohio Horseman's Council (OHC) and the Buckeye Trail Association (BTA). Table 44 shows the hours contributed from each group in 2011. In addition other volunteer groups contribute to trail orientation and programs: Wildlife Watchers (1,484 hours), Paw Patrol (611 hours), Program Assistant hikes (744 hours), and Cycling School volunteers (553 hours).

Table 46. Trail Volunteer Hours

Trailblazers	Cuyahoga Valley Trails Council	Adopt-A-Trail	Medina Ohio Horseman's Council	Buckeye Trail Association
7,920	1,152	6,038	934	190

(Conservancy for CVNP, 2011)

Challenges facing volunteer programs include matching projects with skills, retaining volunteers over the years, and having Park and partnership staff available to coordinate volunteer activities. In 2011, the park initiated a trail volunteer program focused on trail condition assessments.

*Buckeye Trail Association***.** The Buckeye Trail Association is the state-wide non-profit organization that provides stewardship to the Buckeye Trail throughout the state of Ohio. The Association maintains the 35-mile portion of the Buckeye Trail that travels through the Park boundary.

3.8.4 Local Communities and Other Jurisdictions

Operations by local communities and other park jurisdictions are part of the activities associated with the Park's trail system. Local communities and regional and State governments maintain the roadways within the Park. The Park also coordinates with local communities and the other Metropark entities on trail events and programs.

Cleveland Metroparks. The Cleveland Metroparks maintains the facilities and trails within Bedford and Brecksville Reservations. These include the Brecksville Nature Center, the associated golf courses and the trails and their amenities. Coordination for visitor protection, programming and stewardship is an ongoing partnership between the Cleveland Metroparks and CVNP.

Metro Parks, Serving Summit County (MPSSC). The MPSSC maintains the facilities and trails within most of the parks in their jurisdiction within the Park boundary With the exception of maintenance on Perkins Trail, Riding Run Trail, and the Wetmore Trail. CVNP maintains these facilities. Coordination for visitor protection, programming and stewardship is an ongoing partnership between the MPSSC and CVNP.