

# GIRTY'S WOODS MANAGEMENT CONCEPTS

PENN STATE PITTSBURGH STUDIO

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## PROJECT STATEMENT

Girty's Woods is a 155-acre urban woodland in Reserve Township, PA. The site has survived a long history of natural resource extraction and general abuse, but with the recent acquisition by Allegheny Land Trust come opportunities for ecological restoration and community connectivity. Girty's Woods Management Concepts is a conceptual design and action plan that can serve as a strategic tool for future efforts towards providing recreational opportunities for surrounding communities, as well as bolstering ecological vitality for future generations.





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## Context, Issues, and Opportunities

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### Regional Context



Girty's Woods rests on a hillside overlooking Millvale, a river town on the northern banks of the Allegheny. As a former industrial hotspot, Millvale has retained its cultural and economic ties to the city of Pittsburgh, while retaining its endearing rugged character.

### Trail Conditions and Accessibility

#### Trails At Risk

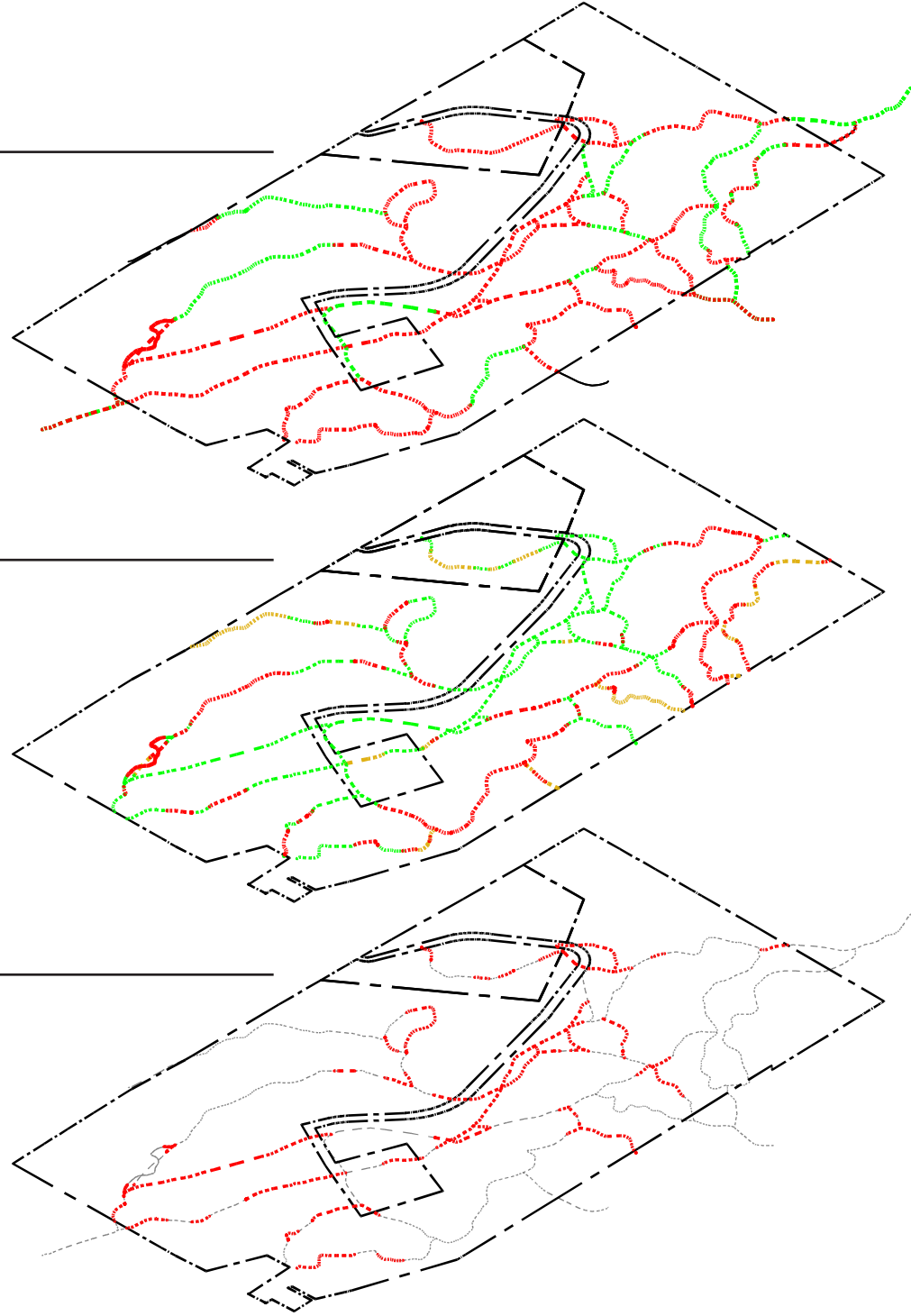
70% of all trails on site are at high risk of future degradation because they run at angles 45° or greater to existing slopes.

#### High Accessibility

50% of all trails are 5% or less in slope. Accessible trails are most highly concentrated in the areas close to the Irwin Lane entrance to the site.

#### Erosion and Access

80% of existing accessible trails are at high risk of degradation. This limits casual access from Millvale, where accessible slopes are scarce.



The citizens of Millvale Borough have played a significant role in the acquisition of Girty's Woods, but they are adversely affected by the poor conditions of on-site trails. Inaccessible slopes exclude aging populations in the surrounding communities and they are most prevalent of the hillside overlooking Millvale. Rerouting of trails and trail surfacing will be required to amend these disparities.

### Symptoms of Neglect and Abuse



Minimal Vegetative Cover



Widespread Erosion



Pervasive Soil Degradation



Habitat Fragmentation

The Woods have long been subject to degradation by loggers, miners, and, most recently, a multi-generational community of ATV and off-road bike users. Their activities have eroded site soil conditions and, along with clearing for utilities, have disrupted contiguous woodland habitat that could otherwise become a sanctuary for wildlife in the region.

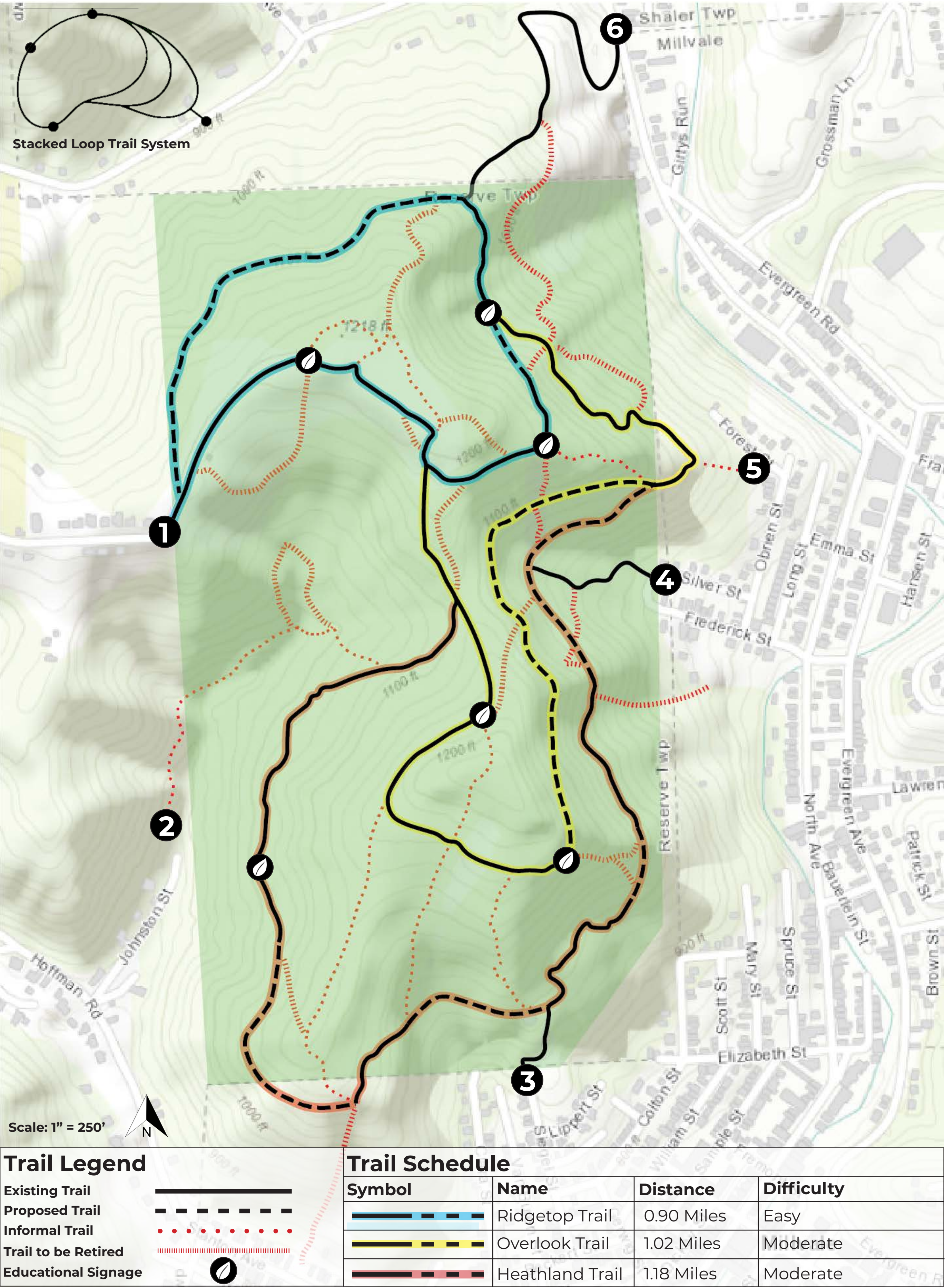


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## Trail Management, Adjustments, and Restoration

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### Suggested Trail System Adjustments


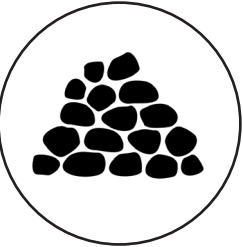



In order to provide a variety of recreational opportunities to individuals of varying ability and preserve as many existing trails as possible, a stacked loop trail system is proposed. New trails provide sustainable alternatives to existing trails that will be retired through selective planting strategies or remain informal. The retirement or abandonment of trails is a result of adverse slopes, significant soil degradation, or habitat fragmentation.

### Trailhead Information

No.	Access Point	Location	Access Type	Signage
1	Irwin Lane	Reserve Township	Vehicular	Multi-Panel Kiosk
2	Johnson Street	Millvale Borough	Pedestrian	None
3	Siegel Street	Millvale Borough	Pedestrian - Mountain Bike	Single Panel Kiosk - Trailblaze
4	Frederick Street	Millvale Borough	Pedestrian - Mountain Bike	Trailblaze
5	Forest Street	Millvale Borough	Pedestrian	None
6	Evergreen Avenue	Shaler Township	Pedestrian	None

### Surfacing and Accessibility

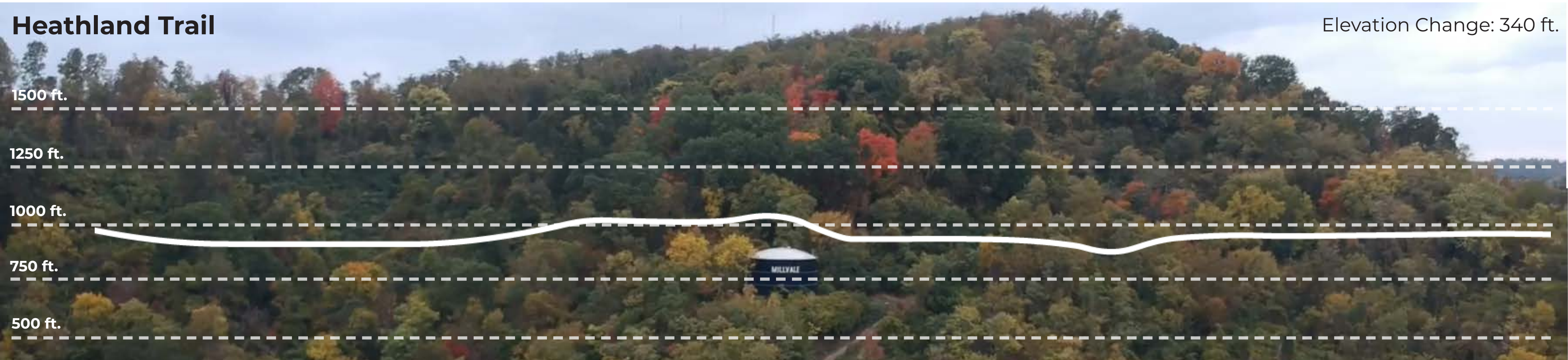
-  85% of formal trail lengths are 5% or less. The entirety of the Overlook Trail and its point of access from Irwin Lane are ADA accessible after surfacing.
-  ADA accessible trails shall be paved with crushed stone specified at 3/8", with added fines, laid down in 2-3" lifts. This is a higher-maintenance option, but is permeable.
-  All formal trails must maintain a vertical clearance of 8 -10'. Horizontal clearance varies across loops, with wider clearance closer to the Irwin Lane Trailhead.



Ridgetop Trail brings hikers through a high diversity of plant communities and the site's primary vistas.



Overlook Trail is ADA accessible and encircles both summits in the Woods.



Heathland Trail traverses pedestrians through heathland habitats and connects Millvale to the greater Woods trail system.

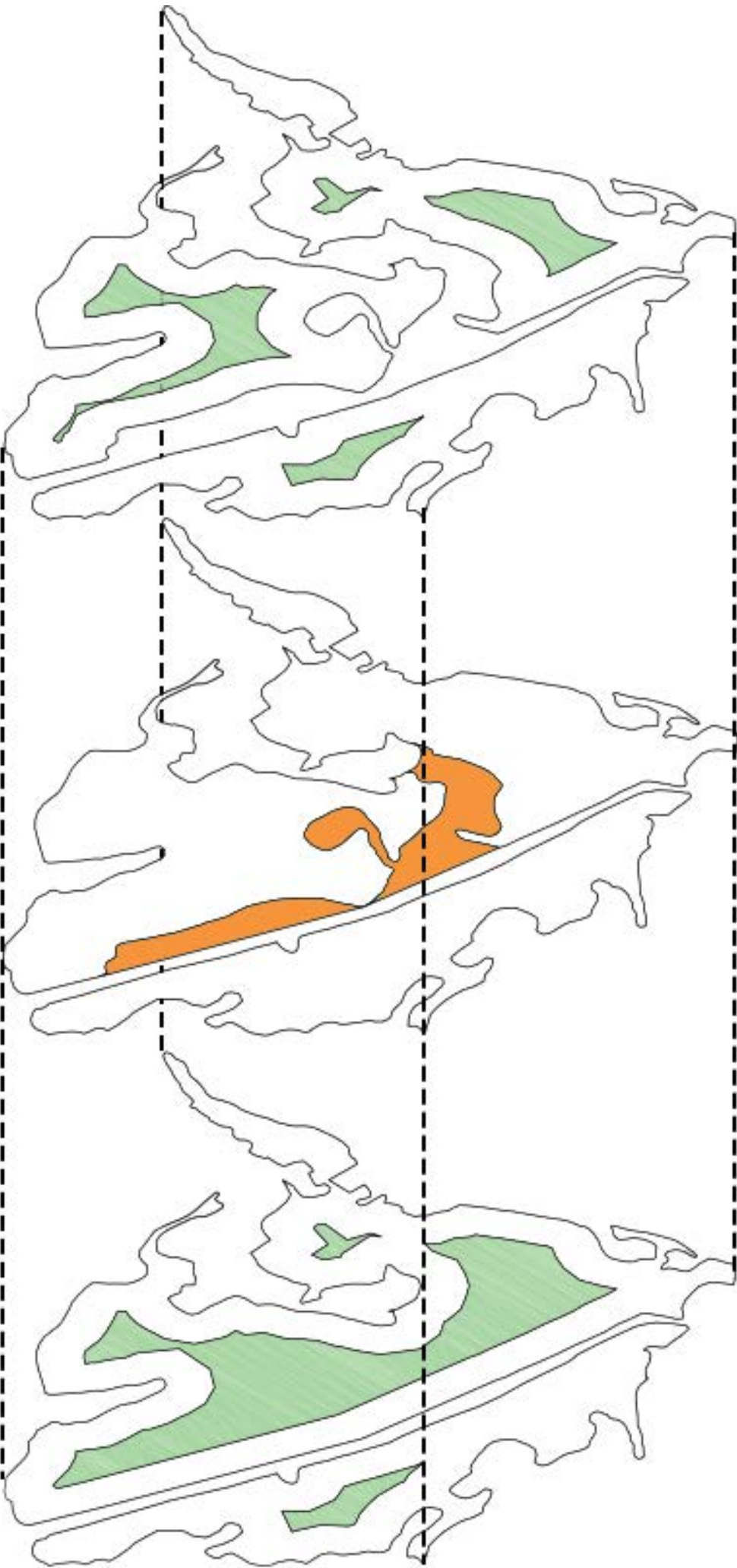


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## Ecological Restoration and Planting Strategies

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### On-Site Woodland Habitat



#### Existing Woodlands

Utilites and other disturbances fragment woodlands. Existing interior woodland habitat amounts to 29.28 acres.



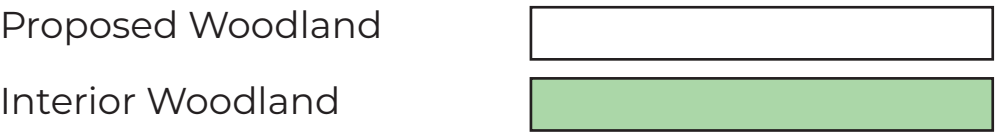
#### Planting Intervention

Area prioritized for intensive Dry Oak and Birch Rock Slope woodland planting amounts to 25.64 sq. acres.



#### Proposed Woodlands

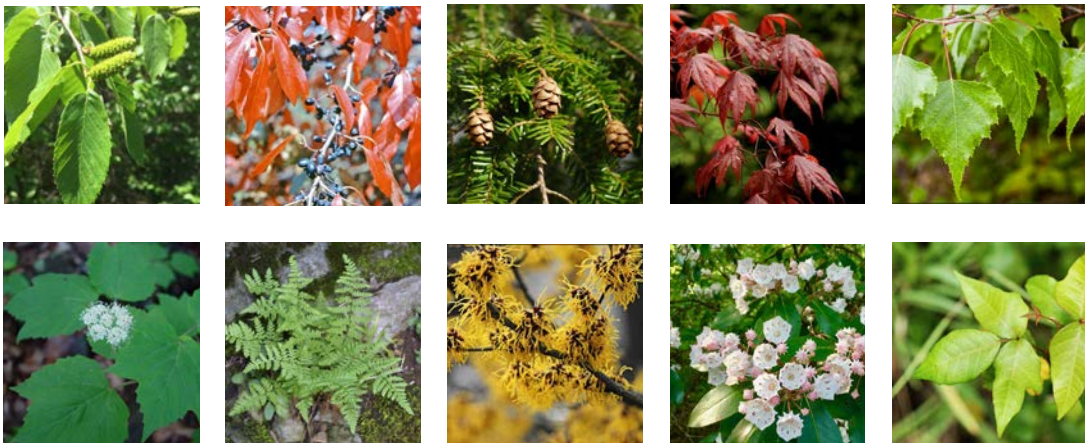
This intensive planting intervention will increase interior woodland habitat by **250%** to a total of 73.2 sq. acres.



### Birch (Black Gum) Rocky Slope Woodland



**Birch Rocky Slope Woodlands** are most common on Pittsburgh's rocky slopes, although it also occurs on benches, ridgetops, and boulderfields in other regions of the State. *Betula lenta* (sweet birch) and *Nyssa Sylvatica* (Black-gum) are the dominant tree species, accompanied by a sparse herbaceous understory. Lichens, mosses, and bryophytes exist in abundance on rocky soils.

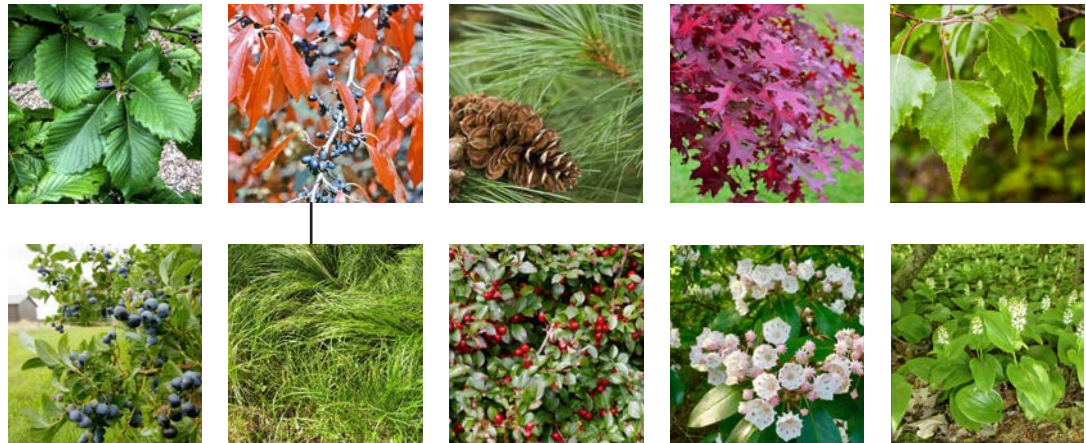


*Betula lenta* - Sweet Birch  
*Tsuga canadensis* - Eastern Hemlock  
*Nyssa sylvatica* - Black tupelo  
*Acer rubrum* - Red maple  
*Betula populifolia* - Grey birch  
*Viburnum acerifolium* - Maple-leaved viburnum  
*Woodsia obtusa* - Blunt-lobed woodfern  
*Hamamelis virginiana* - Witch hazel  
*Kalmia latifolia* - Mountain laurel  
*Toxicodendron radicans* - Poison ivy

### Dry Oak - Heath Woodland

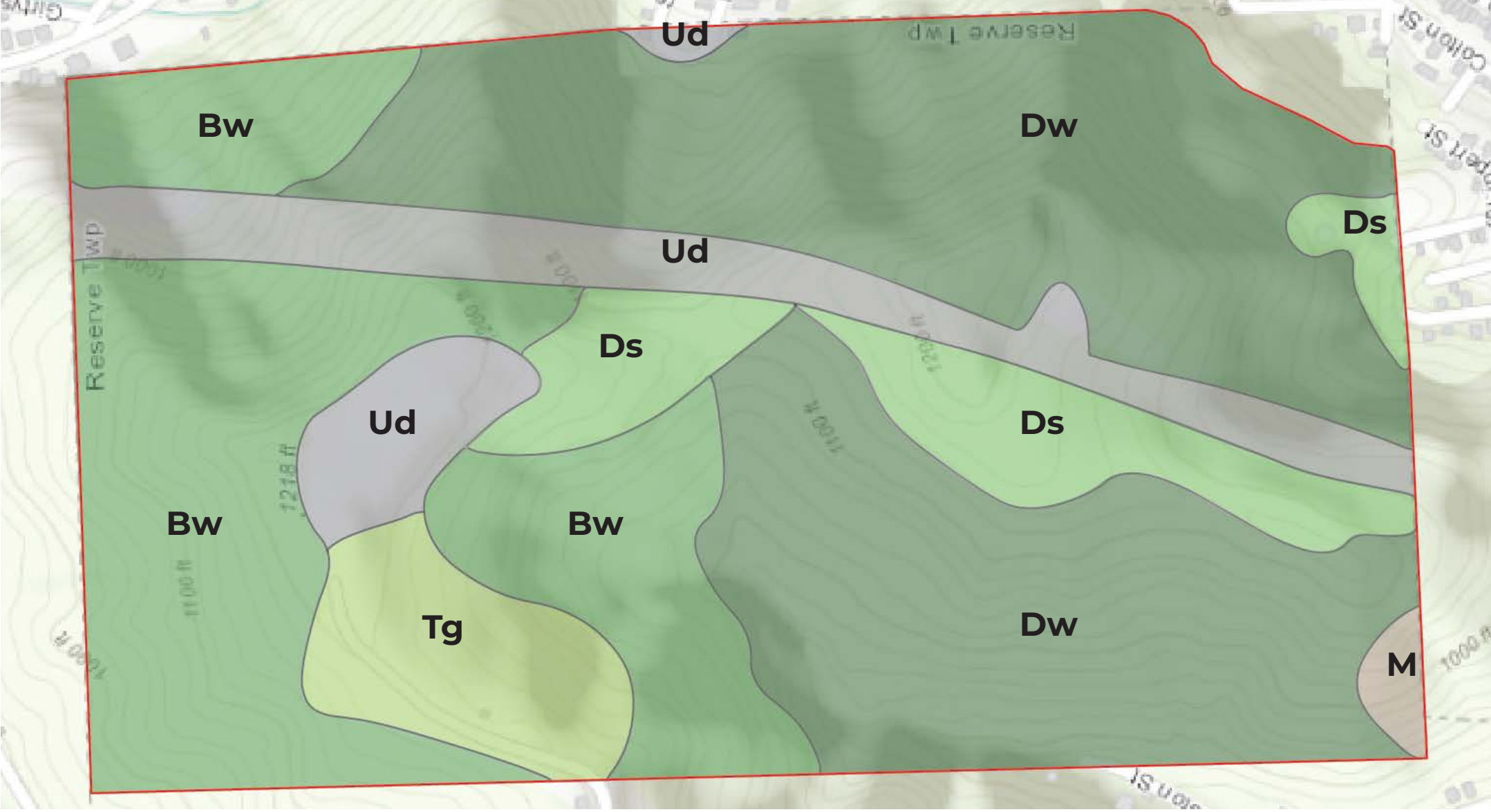


**Dry Oak - Heath Woodlands** thrive on the Woods' dry, acidic soils. Oaks, particularly *Quercus montana* (chestnut oak), are the most prevalent species in the canopy layer, along with maples, birches, and occasionally pines. The understory is dominated by acid-loving shrubs like blueberries and ferns. This is the most abundant plant community in Girty's Woods.



*Quercus montana* - chestnut oak  
*Nysaa sylvatica* - Black tupelo  
*Pinus strobus* - Eastern white pine  
*Quercus coccinea* - Scarlet oak  
*Betula populifolia* - Grey birch  
*Vaccinium corymbosum* - highbush blueberry  
*Carex pensylvanica* - Pennsylvania sedge  
*Kalmia latifolia* - Mountain laurel  
*Gaultheria procumbens* - Teaberry  
*Maianthemum canadense* - Canadian mayflower

### Existing Plant Communities



Code	Community Name	Area	Composition
BW	Birch (Black Gum) Rocky Slope Woodland	353.43 sq. miles (1,866,110.40 sq. ft.)	28.8%
Ds	Low Heath Shrubland	115.28 sq. miles (608,678.40 sq. ft.)	9.4%
DW	Dry Oak - Heath Woodland	560.66 sq. miles (2,960,284.80 sq. ft.)	45.7%
M	Monoculture	6.31 sq. miles (33,316.80 sq. ft.)	0.5%
Tg	Turfgrass / Weedy	60.86 sq. miles (321,340.80 sq. ft.)	5.0%
Ud	Urban / Disturbed	129.48 sq. miles (683,654.40 sq. ft.)	10.6%

### Low Heath Shrubland



**Low Heath Shrubland** occurs in areas where harsh microclimate conditions, like frost hollows or inadequate soil moisture, prevent the establishment of a dominant Dry oak - Heath canopy layer. These shrublands are periodically subject to fires as a result of the dry conditions upon which they thrive. Grasses, forbs, and berry bushes comprise most of the biomass in this community.



*Aronia melanocarpa* - Black chokeberry  
*Kalmia angustifolia* - Sheep laurel  
*Pinus strobus* - White pine  
*Vaccinium angustifolium* - Low bush blueberry  
*Betula populifolia* - Grey birch  
*Lysimachia quadrifolia* - Whorled loosestrife  
*Chasmanthium latifolium* - Northern oatgrass  
*Pteridium aquilinum* - Bracken fern  
*Deschampsia cespitosa* - Hairgrass  
*Rubus hispidus* - Swamp dewberry

### Urban / Disturbed

[Invasive Species and Conditions to Avoid]



Frequent strip mining, logging, and motor vehicle traffic have damaged soils on the summit of the Woods. This has increased soil erosion and depleted nutrients required by other existing plant communities on site. In their stead, invasives like *Arctium minus* (common burdocks), *Cirsium vulgare* (bull thistle), and *Lonicera maackii* (bush honeysuckle) domiante the landscape.



*Aesculus hippocastanum* - Common burdock  
*Cirsium vulgare* - Bull thistle  
*Lonicera maackii* - bush honeysuckle  
*Typha latifolia* -  
*Solanum dulcamara* - Bittersweet nightshade  
*Fallopia japonica* - Japanese knotwood  
*Euphorbia lathyris* - Capers spurge  
*Alliaria petiolata* - Garlic spurge  
*Artemisia vulgaris* - Common mugwort  
*Aesculus hippocastanum* - Horse chestnut

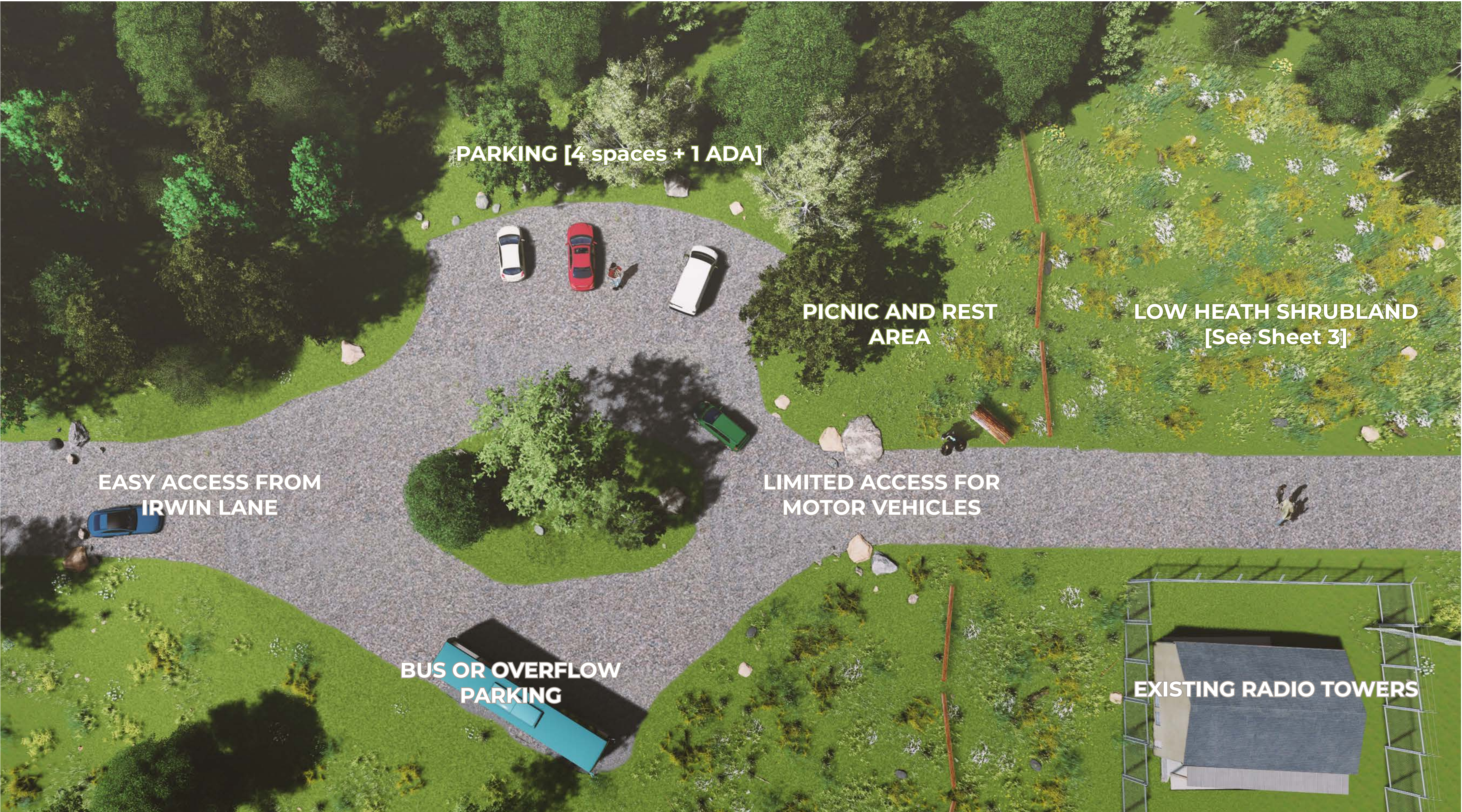


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## Phase 1: Irwin Lane Trailhead Design Concept

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Irwin Lane Trailhead Plan



### Trail Kiosk



Site entrances maintain high visibility of all trailhead elements and vistas.



Trail portals signal formal entry and exit into the Woods.

Birch Wood Picnic Tables



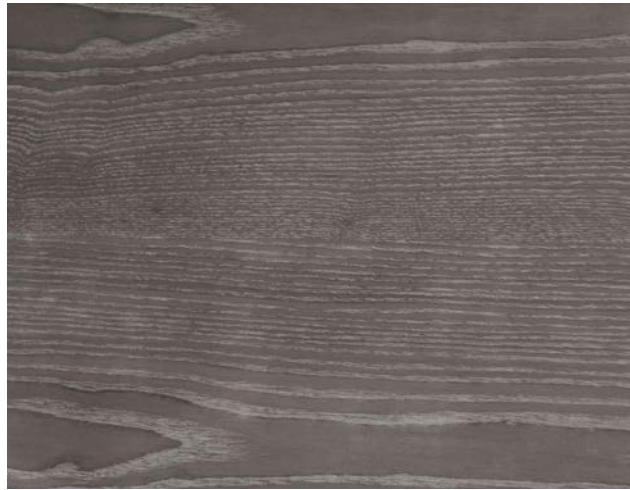
Stone Vehicle Barriers



Oak Wood Fence



Treated Wood



3/8" Crushed Stone



Stone Boulder



Locally-sourced materials are used as site furnishings and barriers to undesired access.



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Gathering Space



This action plan proposes that active recreation trails in Girty's Woods be coupled with staging or gathering areas at trailheads that will inform and orient the public. As Millvale and the Triboro Ecodistrict undergo a sustainability renaissance, universally accessible greenspaces that facilitate community and family-oriented activities will be instrumental in building a large, local constituency for sustainability practices.