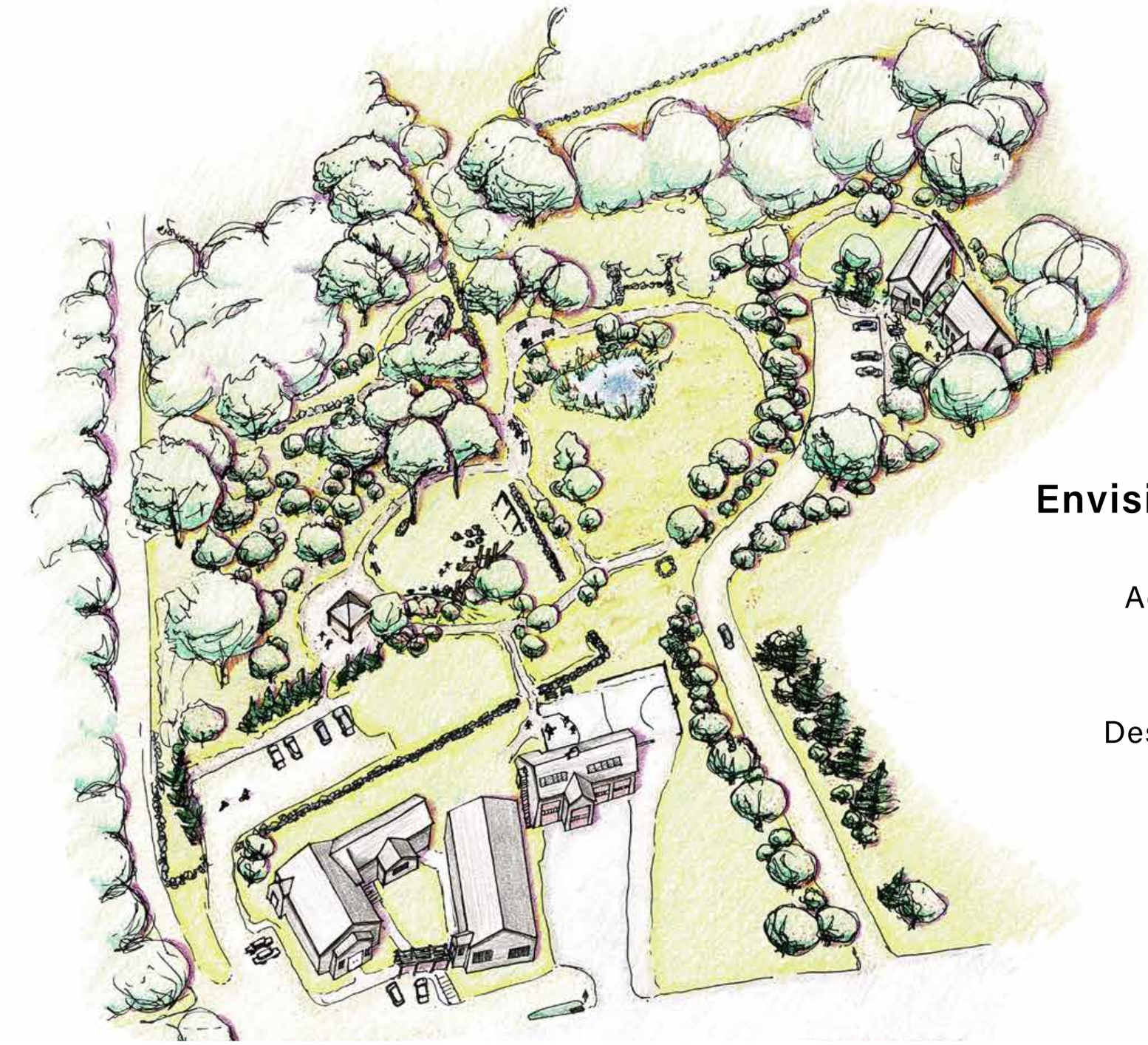

Envisioning Community in Aquinnah

Aquinnah Village Center Master Plan
Phase I

Designed for the Town of Aquinnah, MA

by Rowan Cignoni & Marianna Zak Hill
The Conway School
Spring 2020

Acknowledgements

Thank you to the residents of Aquinnah who generously shared with us their time and insights during two virtual community meetings, a public survey, and many phone calls and emails.

We are grateful to the Project Committee, whose input and dedication to the betterment of their town was essential to the development of this master plan: Derrill Bazzy, Mike Hebert, Jeffery Madison, Noli Taylor, and Juli Vanderhoop.

And thank you to the kind experts who contributed their time to sorting through nitty gritty details with us: Dan Doyle, Bill Lake, Peter Temple, Jamie Vanderhoop, and Faren Worthington.

Special thanks to the faculty, staff, and students of the Conway School. This report would not have been possible without their stalwart support of and committment to our learning, and their visions of a more hopeful tomorrow.

Land & Territory Acknowledgment

As I sit here and write this Land Acknowledgement, I cannot help but think of the current times and they interrupt my thoughts as I try to think of words to bring forth recognizing the past.

For ten years or longer I have dreamed of planting a forest to harvest from—a food forest or regenerative forest. Finally we have gathered a few who have listened and watched, and now begun to create what will become. This land—walking, working, listening, and enjoying this land that surrounds us—is something that fills our bodies with amazing energies (if we listen), and often we are overcome with emotions.

On this land we should recognize the people who have walked and worked this land to help us protect our spaces, my Wampanoag ancestors who knew what provisions this land held for the people who called this home. I hope we will gather together one day around this place and recognize the gift that we have of being able to call this our home, and once again think of and give thanks to the thousands of ancestors who are listening to our thoughts, and watching our work upon the People's sacred land. Now we need to hone our work toward less impact on nature and further our harmony with it. Honoring our ancestors always with our actions should be our everyday work moving forward.

- Julianne Vanderhoop

Project Overview & Goals

Setting the Scene

The island of Martha's Vineyard, or Noepe in Wampanoag, is located three miles off the coast of Cape Cod. The Vineyard is home to roughly 17,000 year-round residents and is known for its scenic beaches, picturesque towns, and booming seasonal tourism industry.

Martha's Vineyard and the neighboring island of Nantucket mark the southernmost extent of the Laurentide ice sheet, and are formed of sandy glacial outwash and stony, mixed moraine deposits.

The town of Aquinnah sits at the southwestern corner of the Vineyard. The town is accessible only by State Road, which runs between two bodies of water–Menemsha and Squibnocket Ponds–separating Aquinnah from the rest of the island. As the most geographically isolated town on the island and with the smallest population, Aquinnah is akin to an "island within an island" (MVC, 2018). The town is famous for its colorful clay cliffs and lighthouse at Aquinnah Circle on the western end and characterized by gently rolling hills, stone walls, scenic vistas, and a rich cultural history.

Aquinnah, until recently known by its colonial name, Gay Head, has been the home to the Wampanoag people for over 10,000 years. The Wampanoag Tribe has a rich history of whaling, fishing, and traditional agriculture, lifeways that were appropriated by Europeans in the late 1600s as the Wampanoag's ancestral lands were colonized.

The giant Moshup catches a whale at the Aquinnah Cliffs, mural by Stanley Clark.

Two sovereign governments make up the town's government, the Wampanoag Tribe and the Town of Aquinnah. These groups make joint land use planning decisions. As of 2016, Aquinnah was home to roughly 600 year-round residents, roughly a quarter of whom are tribal members. Aquinnah's population expands to over 2,100 residents each summer, and the livelihoods of the town's year-round residents rely heavily on this influx of summer workers, residents, and visitors. Aquinnah's year-round retired population is growing most quickly, and the town is also home to over 90 children under the age of thirteen.

Community & Client Team

Municipal authorities have identified an important community need for more affordable rental housing, and the project site was identified as a suitable location for affordable housing in Aquinnah's "Community Development Plan" (2004) and again in the "Housing Production Plan" (2018). Efforts to expand public facilities and site affordable rental housing have been ongoing on the site for fifteen years.

Though famous for its scenic cliffs and beaches, Aquinnah lacks active recreational spaces for children and families. The nearest playgrounds and athletic fields are part of the public schools in the neighboring town of Chilmark. In the first community meeting (May 7, 2020) and public survey (May 6 - 25, 2020) conducted as part of this project, respondents expressed an interest in an updated, nature-based play area with gathering spaces, walking paths, and comfortable resting places for adults.

The discussion of affordable housing and improved play and gathering spaces has recently been reinvigorated by a newly formed project committee, whose interests now include the design of a new playground and the planting of a community forest garden to grow perennial foods to supplement the town's emergency food supply.

Many residents travel out of town to buy groceries, and as more of the island has been developed for seasonal housing and fewer families garden, some residents feel that the connection to the land and food has been lost.

Aquinnah's Community Preservation Act tax allowance with state-matched funding fueled the formation of the project committee to lead the master planning process.

The project committee includes the following community members:

- Derrill Bazzy, Community Preservation Committee
- Mike Hebert, Housing Committee
- Jeffery Madison, Town Administrator
- Noli Taylor, Food Forest Working Group
- Juli Vanderhoop, Selectboard and Parks & Recreation

Aquinnah lacks active recreational spaces for children and families. Many of Aquinnah's residents seek a pleasant place to spend time year-round with friends, family, and visiting grandchildren.

Most of the residents who responded to the public survey reported driving 24 to 36 miles, round-trip, to purchase groceries, and most families do not keep food gardens at home.

Project Goals

Site up to four new affordable rental units on the site, to provide year-round rental housing for local residents.

Site up to two duplexes, each with one single-bedroom and one two-bedroom unit, with vehicle access from State Road, parking for seven cars, and a septic system sized for these buildings and possible future housing and town office expansion.

Create a clear division of public and private spaces both around the homes and within the site as a whole.

Provide accessible walkways from parking spaces to building entrances.

Design a nature-based play area with accompanying multi-generational gathering spaces and paths.

Design a new play and gathering space removed from State Road with shaded gathering space, accessible paths, and parking for ten vehicles nearby.

Ensure safe, clear, and accessible pedestrian linkages from new play spaces to existing restrooms and public amenities.

Design a community food forest (or a "forest garden"), which functions as an educational space for sharing traditional ecological knowledge and supplements the town's emergency food supply.

Integrate a perennial food forest into the public open space.

Designate locations for informational, educational, and wayfinding signs for visitors.

Include short- and long-term installation and maintenance plans to be implemented by volunteer groups and individuals.

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Rowan Cignoni & Marianna Zak Hill
Spring 2020

Project Overview & Goals
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Existing Conditions

The six-acre Town-owned site on the north side of State Road comprises three parcels. The southernmost parcel currently functions as the center of municipal functions, housing the Town Hall, town offices, police station, fire department, and public amenities such as a restroom, basketball court, and playground; 90 percent of residents surveyed consider this the "center of town," despite the property's relative lack of functional public use.

Some 100,000 annual visitors will drive by the site twice when visiting the popular beaches, clay cliffs, lighthouse, and shops at the Aquinnah Circle. Visitors park in front of Town Hall, and VTA bus passengers await buses in front of the fire station. The public restroom is currently only accessible during business hours.

Aquinnah's only formal playground sits east of the fire station and is underequipped, is exposed to traffic on State Road and the Fire Department's loud sirens, and lacks shade and comfortable seating.

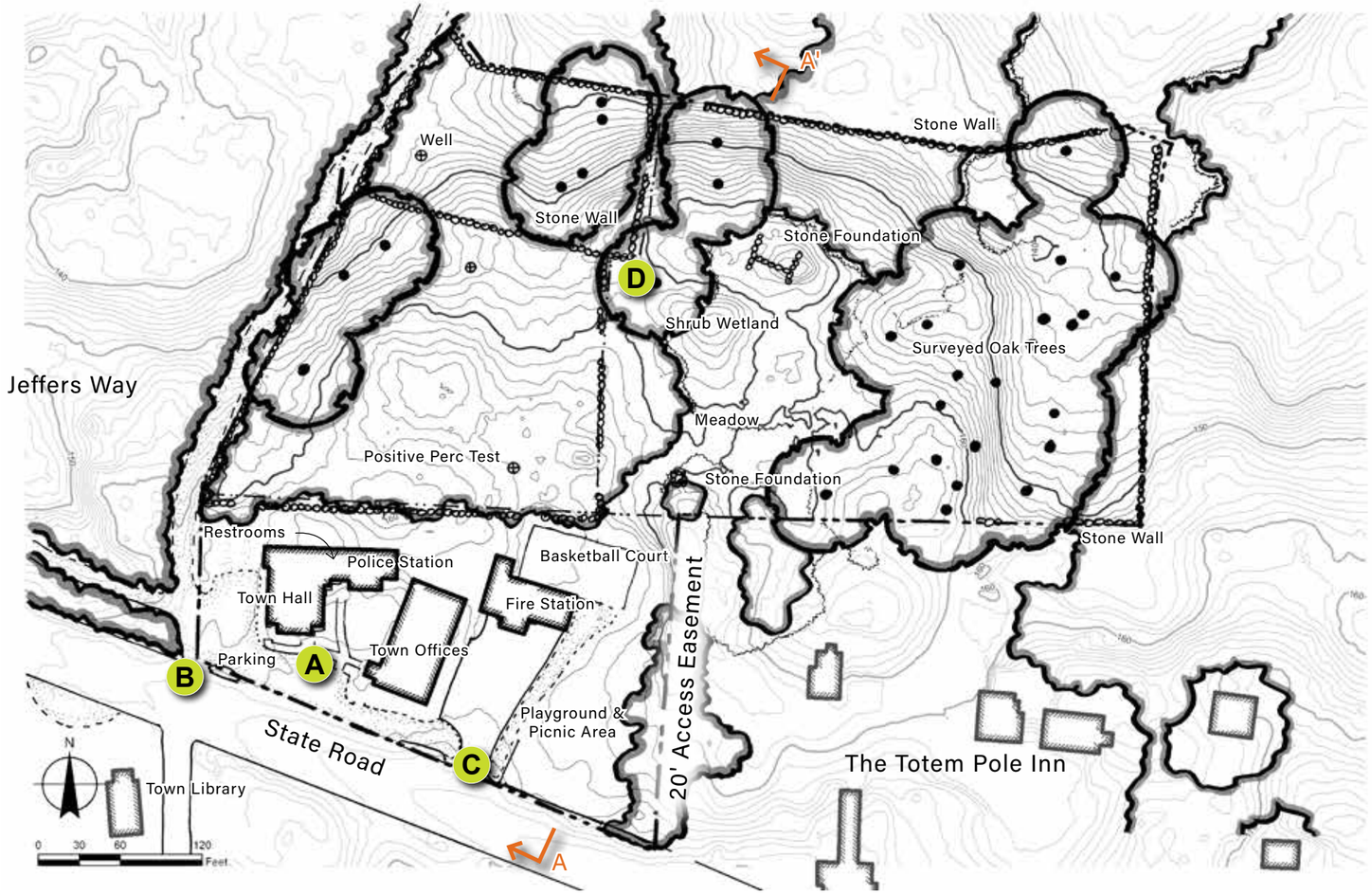
The two parcels to the north, totaling roughly 4.5 acres, are mostly wooded with a shrub wetland near the center. Informal paths formed by resident deer and human use cut through the woods, winding through a mix of deciduous trees, shrubs, and meadows, and along the steep slopes which bound the property on the north, east, and west sides.

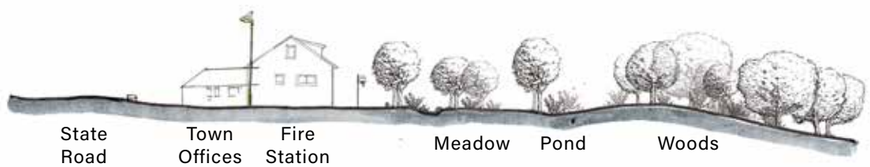
Clues to the site's history as a farmstead are evident in the presence of bordering and bisecting stone walls and the stone foundations of a home and cow pound; mature open-canopy oaks, likely hundreds of years of old, hint at the forest's succession from eighteenth-century cow pasture, through farm abandonment in the mid-1850s, to coastal forest today.

The Town Hall (left) and Town Offices (right) sit along 360 feet of frontage on State Road.

Aquinnah's playground, directly adjacent to the fire station (left); stone walls run through the woods (right).

Henry Laurens Whiting's "1850 Map" depicts the property at the zenith of agrarian activity. Dark brown shades indicate tilled agricultural lands, and tan shades indicate pasture lands.





Section A-A'

Project Site

This master plan examines the feasibility of developing affordable housing and a public open space within the two northern parcels, with access through the southern parcel. This is considered the first of two phases of development; Phase II will include improvements and expansion to the town office complex, which will integrate with the connections proposed in Phase I. Phase II may include improvements to the police station, a new library, and a satellite post office, among other possibilities.

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Existing Conditions
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Analysis: Soils & Setbacks

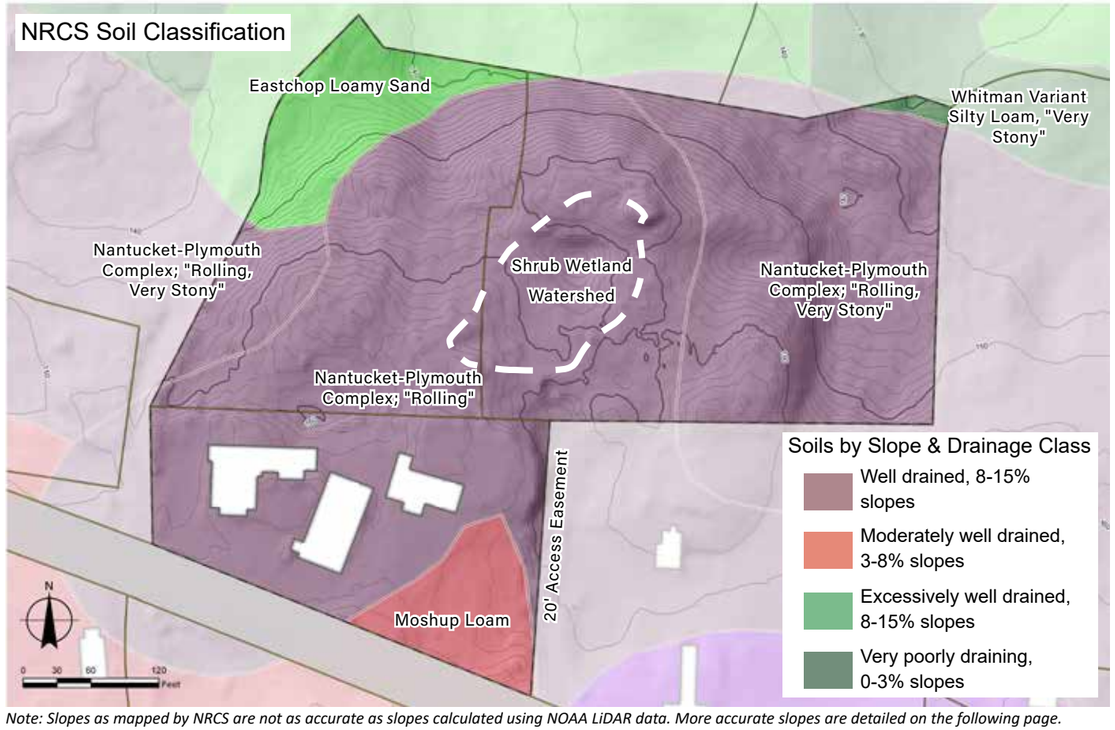
Soils

Aquinnah's soils consist of deep glacial moraine deposits of predominantly sandy, fast-draining soils often punctuated by clay lenses and perched wetlands, which makes siting septic systems difficult. In many areas, nutrients may leach too quickly out of soils and into nearby water bodies, and in other places the soils may not percolate at all. The placement of utilities is further complicated by water tables in close proximity to the ocean in many places, resulting in sea water intrusion into wells.

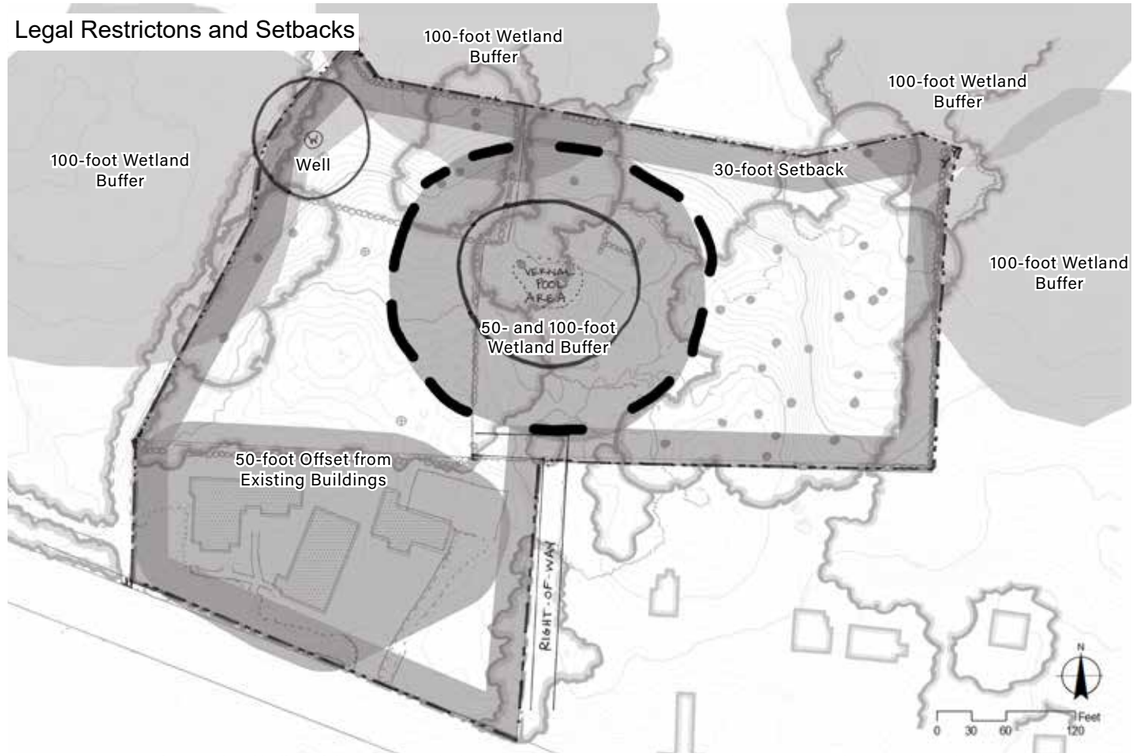
Almost the entire site, as mapped by the USDA Natural Resource Conservation Service (NRCS), is composed of moderately to excessively well-draining sandy loams, with 300 feet to bedrock or restrictive soil features.

Well-draining soils are suitable for growing perennials because they can be amended to retain moisture and they allow for unrestricted root growth. Deep, sandy soils are also easier to grade but may require subsequent erosion-control measures.

The end moraines of Martha's Vineyard and Nantucket mark the maximum southern extent of the Laurentide ice sheet, roughly 21,000 years ago. End moraines, comprising mixed debris accumulated during the glacier's advance, are pushed in front of the glacier and deposited in heaps at the maximum extent. South of the end moraines, sandy outwash plains formed as meltwater streams spread and deposited sediments suspended in the glacier (USGS, 2008).



Note: Slopes as mapped by NRCS are not as accurate as slopes calculated using NOAA LiDAR data. More accurate slopes are detailed on the following page.



The approximate 100-foot regulated buffers of three unmapped adjacent wetlands appear to extend into the project site. These nearby wetlands were observed by the design team in the spring as hosting a dominant ground cover of obligate wetland species. A professional wetland delineation may be required to establish an exact 100-foot buffer.

Zoning & Regulations

Aquinnah does not have municipal water or sewer services, so new homes must adhere to the State's Title 5 regulations. Septic tanks and leach fields must be set back fifty feet from any wetlands and wellheads, and ten feet from property boundaries. While the project site has not been designated a nitrogen-sensitive area, the proximity to wetlands may require advanced de-nitrification systems, which could be a financial constraint to the development of affordable housing (*Community Development Plan*, 2004). Successful percolation testing has been conducted onsite, see Existing Conditions, page 2.

The entire Town of Aquinnah is considered a “District of Critical Planning Concern” (DCPC), so any site development will require special permitting and review by the Planning Board. Fortunately, the Town of Aquinnah DCPC was structured as such to “encourage the development of critically needed affordable housing” (Zoning By-Law, 6.9-1).

Other regulatory constraints include the central delineated wetland and nearby, unmapped wetlands. Any new buildings, excavation, or filling of soils within 100 feet of the delineated wetland requires special permitting; unmapped wetlands may require delineation by a wetland scientist (see Wetlands on the following page for more details).

Because the three connected parcels share Town ownership, they are considered as one parcel, so only the perimeter property boundaries require a thirty-foot setback for new buildings.

Finally, the project committee requested that the design team apply a fifty-foot buffer to the municipal buildings to accommodate incomplete plans for expanded town offices and public parking north of the existing facilities.

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Soils & Setbacks
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Analysis: Slopes, Drainage & Wetlands

Slopes

The site sits atop a small plateau, and steep north-, northeast-, and northwest-facing slopes of greater than 25% grade bound the property on three sides. Small pits and mounds dot the landscape as well.

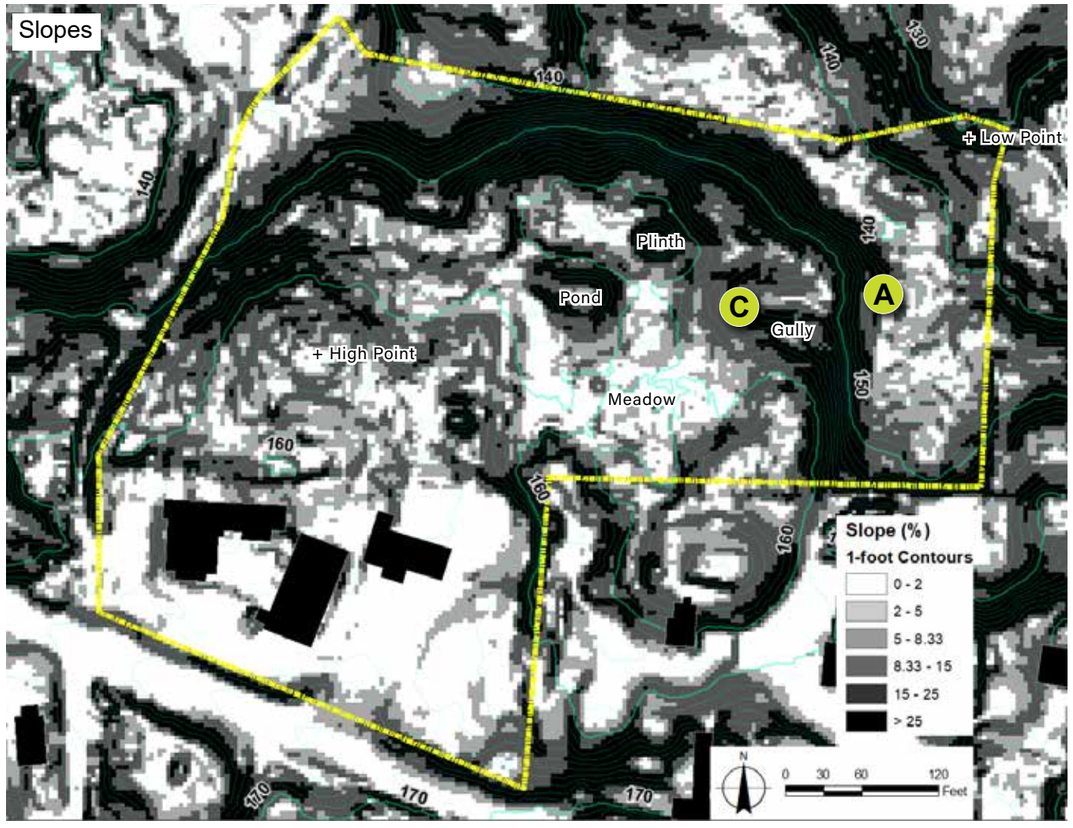
Looking west, up steep slopes over 25% grade shaded by large oak trees (left); a positive perc test pit from the mid-2000s, approximately fifty feet north of the town offices (right).

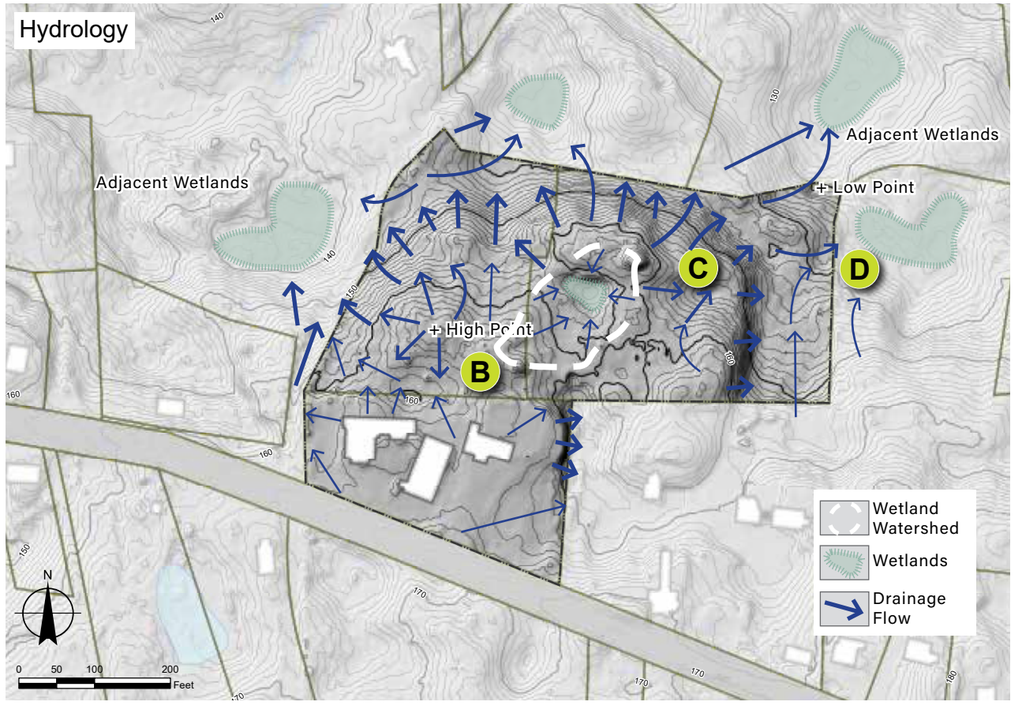
Drainage and Wetlands

The water body at the center of the site has been delineated as a wetland, and does not appear to be hydrologically connected to nearby wetlands or surface water bodies. The wetland may be perched on a clay lens, which is typical on the island, and as a result it retains the surface water draining from the surrounding 0.4-acre microwatershed.

Drainage issues on site appear to be minimal; the site's position at a local high point, the presence of moderately to excessively well-draining soils, and soil test pits conducted for this master plan confirmed that the soils on site are sandy and well draining. Most rainfall on the site likely infiltrates quickly, while some collects in the central wetland and the remaining surface flow is directed downslope into larger nearby wetlands to the west and northeast.

Successful percolation tests for septic were conducted in the mid-2000s just north of the municipal buildings.





Twenty inches of sand in the middle of the gully.

Skunk cabbage (Symplocarpus foetidus) is an obligate wetland species (OBL) and grows more than 99-percent of the time in saturated or inundated soil conditions, characteristic of wetland environments

Implications

Focusing the development of housing, driveways, parking, public gathering spaces, and accessible trails on the flat or gently sloping areas of the site (below 10% grade) would help minimize construction and maintenance costs. Focusing clearing and construction on the gentle slopes also makes erosion control easier and reduces construction disturbance.

The wetland is a valuable resource, both ecologically and culturally, and development on this site should preclude any degradation; alternatively, if the public spaces and food forest are designed to include viewing areas and educational signs, people can come to understand and appreciate the wetland. The 100-foot regulated area around the wetland may constrain siting structures or soil disturbances, but this area is also a niche for more diverse edible forest garden plants; if carefully designed so as not to compromise the wetland's functioning, edible plants grown around the wetland could support more human and wildlife forage.

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Slopes, Drainage & Wetlands
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

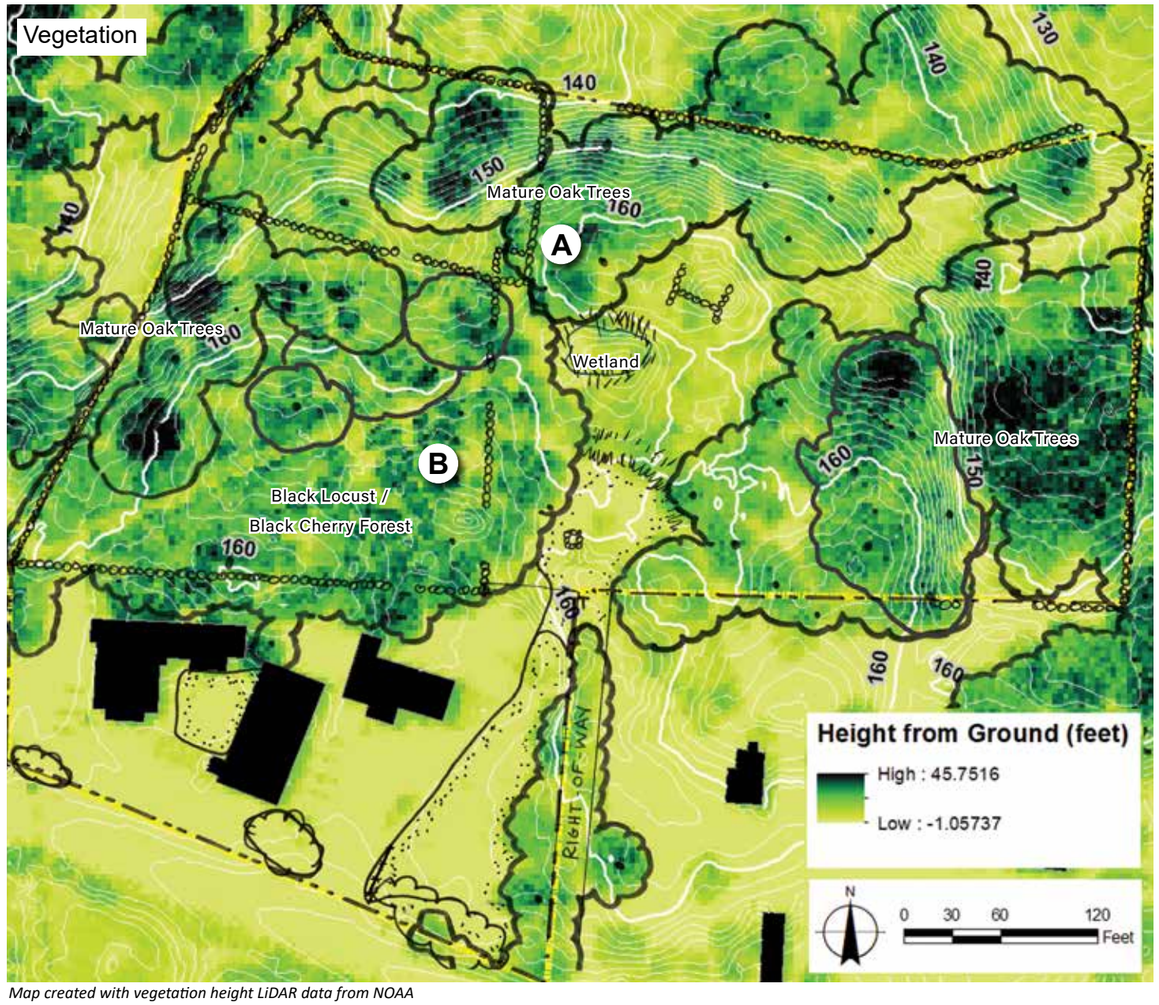
Analysis: Vegetation & Habitat

Vegetation

Vegetation patterns are consistent with the soil data; the dominant Coastal Oak/Heath forest here is indicative of dry, sandy, nutrient-poor soils. However, black cherry and black locust constitute almost all of the canopy vegetation in southern half of the northwest parcel, which also marks the extent of historically tilled farmland; because black locust is a nitrogen fixer–meaning its roots convert atmospheric nitrogen into mineral nitrogen in the soil–its presence could be indicative of enriched soils. Black locust is also naturally rot-resistant, making it a resource for fence posts, decking, or outdoor furniture. Black cherry is a valuable native forage species for many animals, from migratory birds to pollinating insects, and is shade-intolerant.

Mature, open-canopy oak trees dominate the tallest tree layer, functioning as the overstory roughly around the north, west, and east boundaries of the site, and have likely survived since the 1800s when the north and eastern parts of the site were open pasture; younger, successional oaks fill the understory on the top of the north, east, and west slopes, and ericaceous shrubs (such as blueberries and huckleberries) and dogwoods constitute the shrub layer throughout the site. Native grape and greenbrier vines climb into much of the canopy vegetation, and have colonized much of the shrub layer surrounding the wetland.

Opportunistic exotic species such as multiflora rose, honeysuckles, and Asiatic bittersweet were documented primarily along the forest edges, in the canopy openings around the stone foundations, and in the black locust woods along the stone walls.



Map created with vegetation height LiDAR data from NOAA

Habitat

The site's canopy of hard mast-yielding oaks; bountiful berry- and nectar-producing trees, shrubs, and vines; abundance of thicket-forming ground covers (both native and exotic); transitional edges between forest, meadow, and shrub wetland; and connection to larger tracts of undeveloped forest all contribute to the site's value as habitat for migratory and predatory birds, pollinating insects, small and large mammals, and amphibians.

Wildlife observations conducted for this master plan in June of 2020 included an abundance of native pollinating insects; migratory birds such as Baltimore orioles, red-winged blackbirds, and wood thrushes; red-tailed hawks; squirrels and chipmunks; white-tail deer does, and evidence of doe and fawn bedding; and deer ticks, wood ticks, and lone star ticks.

Stately, open-canopy oak trees contribute to a sense of place on the site.

Lone star ticks (Amblyomma americanum) are vectors for STARI (southern tick-associated rash illness) and the alpha-gal meat allergy.

The open and irregular crown pattern of the mid-succession black locust canopy (left) casts light shade on the understory, allowing both native and introduced opportunistic shrub, vine, and ground cover species to thrive, such as the Oriental bittersweet parasitizing the black locust (right).

Implications

This landscape has a long history of disturbance and succession, as evidenced by the presence of stone walls and foundations and the opportunistic introduced plant species, which thrive in early-successional environments following disturbance. Construction and development to meet the project's goals would unavoidably disturb large areas of the site.

The presence of introduced opportunistic species complicates site development; excavation and filling increases the risk of spreading these species to new areas of the site, and poses long-term management challenges. Protecting the predominant native plant species with beneficial habitat value, and replacing them with the same species or species providing similar ecosystem functions when removal is unavoidable, could help preserve the site's existing natural communities. Many common edible forest garden species serve similar ecosystem functions, and occupy similar plant communities, as the native (and exotic) species present on the site.

The presence of mature, native trees and shrubs adds character to the landscape which people can also enjoy; spring flowers and fall foliage offer seasonal interest, and mature trees with open canopies create shady outdoor "rooms," and striking architectural form. Preserving these charismatic trees and shrubs would maintain the sense of place in the landscape.

While beautiful to observe, white-tailed deer in large numbers are often responsible for over-browsing shrub and groundcover vegetation, making new plant establishment more challenging without fencing. Deer are also essential to the life cycle of ticks, which spread several tick-borne diseases. At densities of greater than 20 deer per square mile, deer begin to have serious negative impacts on forest vegetation (USDA, 2014); deer densities on the Vineyard are estimated at over 50 deer per square mile of wooded habitat (MassWildlife, 2019).

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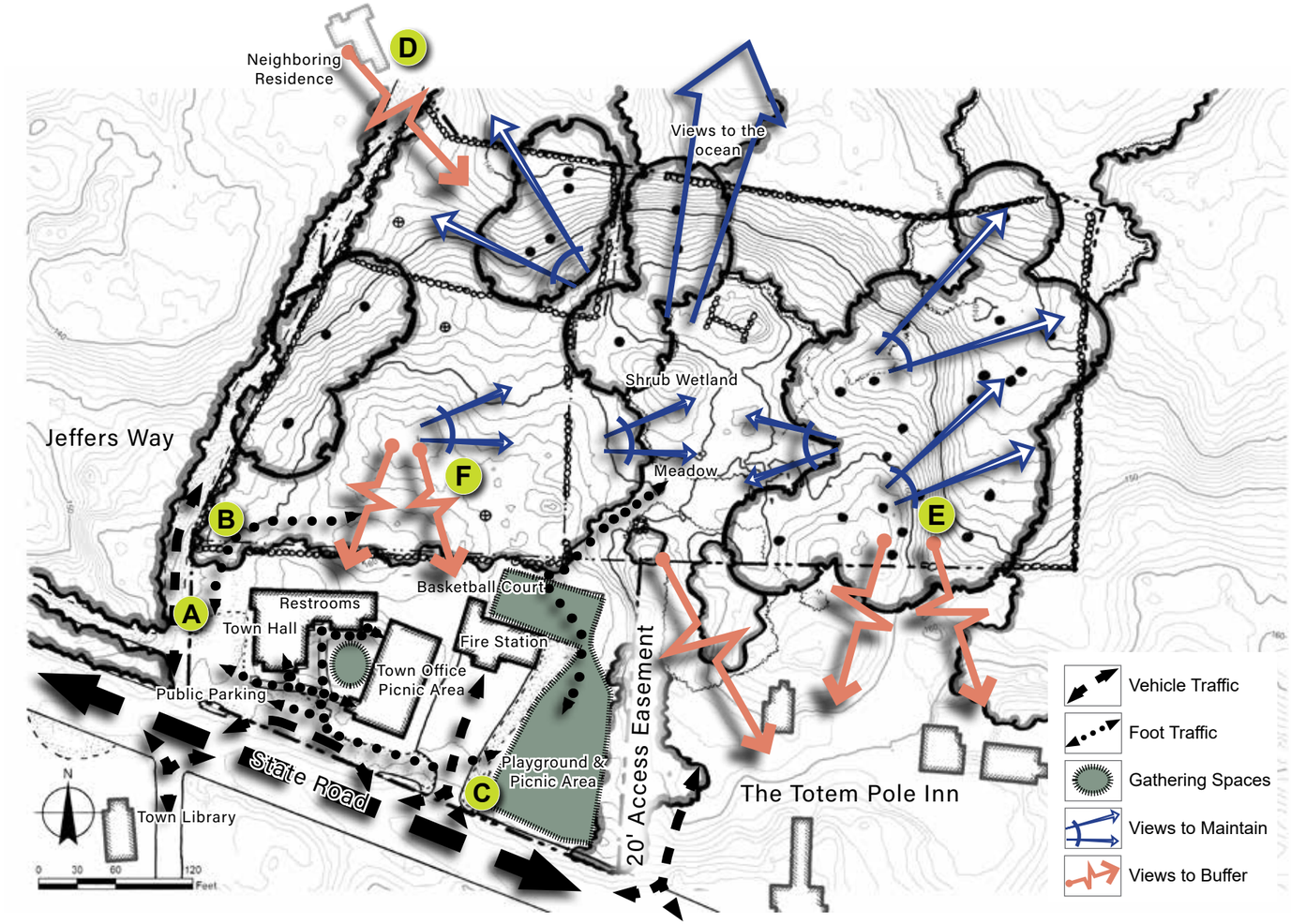
Vegetation & Habitat
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Analysis: Access, Circulation & Views



The public parking area west of town hall (A) terminates on the northern end at a gap in the stone walls, leading to the locust knoll.

There is no defined walking path between public parking existing play and picnic spaces. This area lacks shade, and visitors must traverse multiple vehicle access routes, including the Fire Department driveway, to reach the playground.

Views looking north into the properties north-facing slopes from the neighbor on Jeffers Way (left) and across east-facing slopes looking south toward the Totem Pole Inn (left) could be screened to improve privacy.

Views looking south through thin, successional black locust trees to the back of town buildings in early spring (May, 2020) and summer (June, 2020).

Access

The site's two northern parcels can be accessed from three points: the west and east sides of the town offices, or from private road Jeffers Way along the west side of the site. Access from Jeffers Way would require permission from the neighbor to the northwest.

State Road, like much of the Vineyard, lacks pedestrian infrastructure and bicycle lanes, leaving many people to rely more on cars to get around. When surveyed, most residents reported that when they visit the town center they come by car. The only public parking on site is in front of and west of town hall and accommodates roughly fifteen vehicles; overflow parking for larger town events, such as the annual holiday party held at Town Hall, is available across the street at the library and along State Road.

Visitors wishing to use the playground traverse an unshaded parking lot, an informal vehicle pull-through, and the entry to the fire station and police department parking lot.

Views

Deciduous forest allows open views into and out of the property in winter, which is an asset as well as a constraint. Long range views looking north from the stone foundation offer ocean vistas in the winter, or possibly year-round from an elevated structure or if trees were removed; from the east-facing slope, pleasant views unfold downhill into the surrounding forest.

The north-facing slopes in the northwest corner of the site are visible from the front porch of the neighboring seasonal home to the northwest, across Jeffers Way. The viewshed looking south from the locust knoll includes the back of the town buildings, propane tanks, HVAC systems, and storage crates, which lack visual interest and indicate only municipal uses. The backyard of the Totem Pole Inn is exposed through gaps in the forest along the southern edge of the northeast parcel, diminishing the privacy of the Inn's guests and tenants, and blurring the boundary between the properties.

Implications

Multiple access points to the northern parcels create opportunity for separating the public and private driveways and parking areas.

Parking spaces that face toward public amenities like playscapes and paths offer a more comfortable transition between vehicles and pedestrian activities, and improve safety by reducing the need for pedestrians to cross or traverse parking lots.

From the southern half of the northwest parcel, screening the views south to the back of town offices and west to cars on Jeffers Way could create visual interest for visitors enjoying public play spaces or improve privacy for new homes. Screening views into the Totem Pole Inn property would enhance privacy on both properties and create a distinct boundary between the two parcels.

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Access, Circulation & Views

Aquinnah Village Center

State Road, Aquinnah, Massachusetts

Summary Analysis: Assets, Constraints, and Site Character

The combinations of site conditions explored in the analyses contribute to different areas of the site having a unique character. This combination of conditions also presents assets and constraints when considering developing the site for housing and public open spaces. Some features of the site, like mature trees, simultaneously act as both assets and constraints.

A mature oak's value as a shade-casting, nut-producing, soil-stabilizing, air-filtering, and carbon-sequestering tree must be weighed against the additional costs incurred to save it during construction, or remove it in order to build houses, driveways, or a park.

Decisions such as these are difficult to make and ultimately based in human values and ethics.

Assets

Mature trees, gentle slopes with well-draining soils, scenic viewsheds, positive percolation tests, and multiple options for separating public and private access are all assets to the site to be preserved and enhanced in design proposals.

Preserving healthy, mature oak trees would reduce disturbance to sandy, nutrient-poor soils, offer valuable hard mast (acorns) for wildlife forage, and preserve the shady, glade-like character of the eastern and western portions of the site; where removal of mature oaks is unavoidable, the felled trees could be used on-site as rot-resistant building materials for play elements, which is a long-term way of storing the tree's captured atmospheric carbon.

Gently sloping areas of the site are the most cost-effective for constructing access roads and parking areas, and are also suitable for building play and gathering spaces and housing; however, housing can also be integrated into slopes to take advantage of passive geothermal warming and cooling.

Multiple access points to the northern parcels create opportunity for separating the public and private driveways and parking areas.

Constraints

The site's steep slopes, legal restrictions, views into and out of the property, microclimates, seemingly over-abundant white-tailed deer, and limited access down Jeffers Way all influence the siting of public and private elements like houses, playgrounds, and edible landscaping.

Accessing the site from the private road, Jeffers Way, was denied in past attempts to develop housing on the northwest-facing slopes in the northwest corner of the site; without access from Jeffers Way, constructing a driveway to the northwest corner of the site would create massive disturbances to intact vegetation and soils, and would require prohibitively expensive grading and erosion control measures. Houses built into the northwest-facing slope would also be exposed to cold winter winds, and views between proposed houses and the abutting property could threaten the neighbor's sense of privacy.

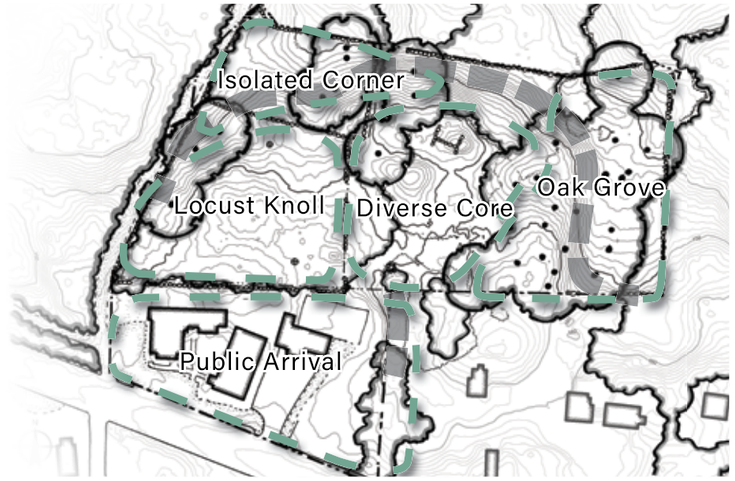
Any development requiring excavation or filling–which includes the construction of housing, driveways, parking lots, and gathering structures–within one hundred feet of the wetland will require extra sensitivity to potential impacts on the wetland, and special permitting. The wetland's ecological and cultural value cannot be understated; habitat value, biodiversity, and opportunity for childhood exploration are some of the many functions this shrub wetland has served. Therefore, development on this site should preclude any degradation to the wetland and minimize impacts within its buffer zone. If people visit the site's public spaces in the future, informative signs and low-impact viewing areas would help educate the public about the wetland.

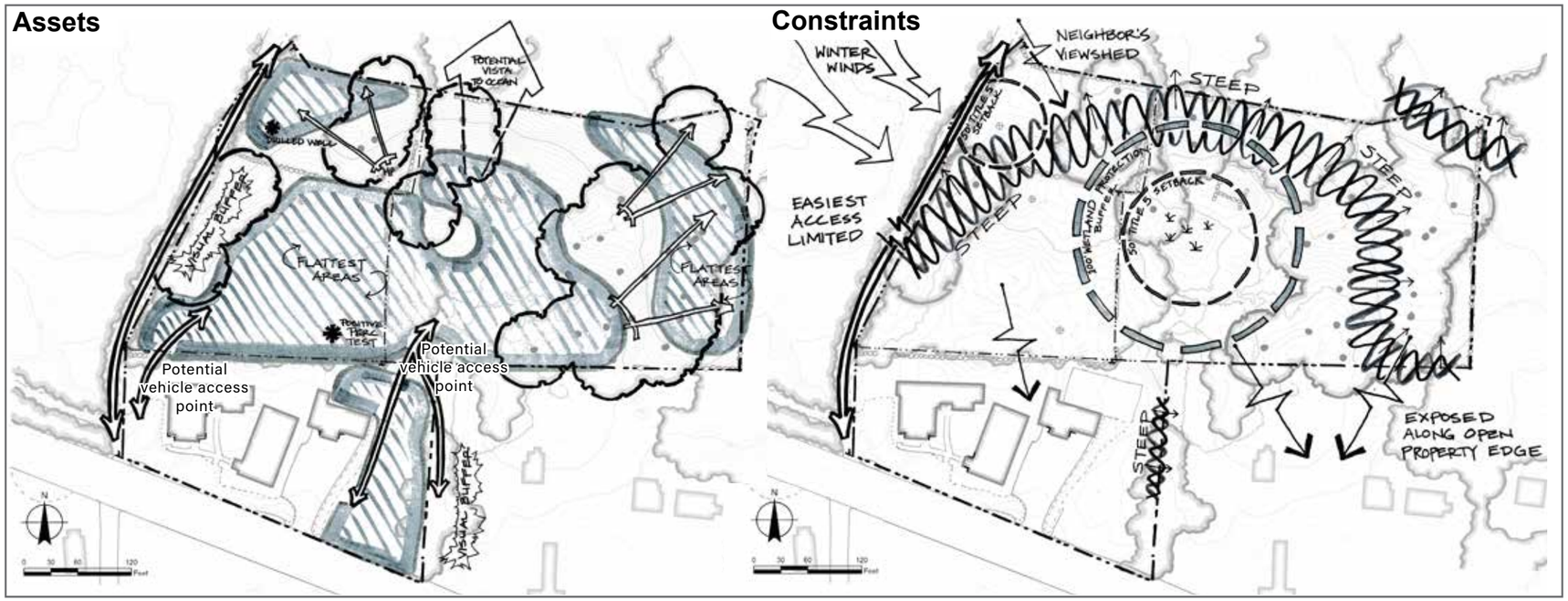
The wetland itself also creates a niche for more diverse edible forest garden plants, which could be designed to increase habitat value and biodiversity without degrading the wetland's ecosystem function. Edible and medicinal native plants like elderberries (*Sambucus* species), blueberries and cranberries (*Vaccinium* species), black chokecherry (*Prunus virginiana*), hazelnuts and filberts (*Corylus* species), raspberries and blackberries (*Rubus* species), wild raisin (*Viburnum nudum*), angelica (*Angelica atropurpurea*), and many more thrive in wetland environments. Each of those species is either present on the site or similar in ecosystem value and function to species which are, and native to the Vineyard.

Character

The site comprises five distinct zones, each with its own particular combination of dominant vegetation patterns, relationships to topography, ease of access, and historical stone walls.

- **The Public Arrival** zone is where municipal buildings and public parking are currently located. This zone serves as the primary entry point to the rest of the site.
- **The Locust Knoll** is an transitional zone between the deeper woods and the developed southern parcel. The boundary between the two spaces is clear and abrupt, made obvious by the bisecting stone wall.
- **The Diverse Core** in the center of the site is surrounded by forest edge and comprises the greatest biodiversity; a shrub wetland, a grassy meadow, and scrub heath are all found within this central zone.
- **The Oak Grove** on the eastern edge is characterized by groves of stately mature oaks and bisected by steep, east-facing slopes.
- **The Isolated Corner** to the northwest is at the same elevation as Jeffers Way, but isolated from the rest of the site by steep, wooded slopes.





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Rowan Cignoni & Marianna Zak Hill
Spring 2020

Summary Analysis
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Preliminary Design Alternatives

Discovering the Form

Each of the conceptual design alternatives was informed by site analysis, research, communication with the project committee, and public engagement.

Each design alternative responds differently to key analyses. Some concepts suggest building housing on slopes for passive heating and cooling and others site housing on the flatter areas to minimize costs and disturbance to the site; some take advantage of pleasant views while others may compromise privacy to preserve vegetation. Each alternative seeks to meet all project goals and adhere to all of the project committee's criteria.

Alternatives were presented to the project committee and the community during the second public meeting, which provided direction for the final design.

Concept One: Northern Vista

Northern Vista creates three distinct zones, with the housing situated at the top of the slope between the locust knoll and the northwest corner of the site.

Homes perched on the north-facing slope have second-floor views clear to the ocean in the winter. The residential space feels private and secluded, with both shared and private outdoor spaces for each home.

A loop driveway provides access and parking on the west side for residents and in the center for park users. Vegetation screens unwanted views from the homes of parked cars in the shared public and private throughway.

Public open space makes use of the existing meadow and natural site features, while preserving stately oaks to the east. Park visitors cross an open, sunny area to access the shade of mature trees and a pavilion sited outside of the wetland buffer.

A network of accessible trails guides visitors north to the secluded food forest, where both species tolerant of partial shade grow along the woodland edge.

Pros: Homeowner privacy; clear and easy public and private access; clear, distinct use zones; little wetland disturbance; little impact on stone walls; pleasant views from houses into northern woods.

Cons: Placing the food forest farther away and down steep slopes may inhibit public use, making maintenance more challenging; more costly to grade and retain soils for homes and trails on steeper slopes; no designated pedestrian connection from the playscape to restrooms and municipal buildings.

Concept Two: Clustered Community

Clustered Community attempts to blend the public elements while creating clear linkages to the private zone and clustering the homes and parking on the gentler slopes in the center of the site.

Vehicular access to the site is split for public and private uses, but could connect in a loop if needed. Residents enter the site west of Town Hall, where vegetation screens parking from both the homes and the town offices. Homes built close to existing buildings minimize the materials needed for driveways and utilities while taking advantage of a flat, slightly elevated knoll from which a septic system gravity-feeds down to a lower elevation in the northwest corner, where percolation tests had positive results. The placement of the homes creates private and shared spaces for residents. Footpaths connect the residences to the public space.

Park visitors enter the site from the access easement, with more visible parking closer to the road and accessible spaces close to the gathering area. A pavilion nearby allows visitors to sit and relax, and a playscape turns into an open field to the east.

The food forest weaves between the public and private spaces to create a physical buffer as well as a bridge between uses. Special permitting would be needed to build the pavilion in the wetland buffer, and some mature trees would be lost to build the homes and driveways.

Pros: Public and private zones are separated but clearly linked; less costly to construct houses, driveways, and paths due to their location on flatter land; easy access between parking and gathering space; lowest impact on mature trees.

Cons: Greater risk to wetland disturbance by building gathering space in the protection zone; arrangement of houses does not take advantage of scenic views; greater impact to stone walls; less privacy for residents with housing clustered closer to the town offices; limited potential to expand housing in the future due to stone walls and slopes.

Concept Three: Eastern Overlook

Eastern Overlook integrates the food forest and public open space, and consolidates public uses on the western side of the site.

With buildings situated on the east-facing slopes of the oak grove, construction of more units becomes possible along the slope to the north, with plenty of space outside the wetland buffer and a lack of stone walls in this area. The homes perched on the top of the east-facing slope offer views over the eastern woods, and are oriented to provide both shared and private outdoor spaces. Accessible walking paths among mature trees lead residents to the public zone.

The playscape and forest gardens are sited west of the residential turnoff, clustered near the existing public use zone, creating a more coherent division of public and private uses.

The food forest wraps around the northwest of the gathering and play areas, forming an edible edge to the existing forest, and invites adults and children to engage with an edible perennial landscape.

Pros: Forest gardens are more easily fenced for deer protection, easier to water during plant establishment, and easier to access from the gathering areas; edible plants grow in potentially richer soils; clearer pedestrian access to the town buildings from the playscape and pavilion; increased privacy for and scenic views from homes; greatest potential for housing expansion along east-facing slopes.

Cons: More expensive to grade driveway and build into the slopes; greatest potential impact to the oak grove.

Discoveries and Design Decisions

The project committee and community members provided feedback on each design and explored key questions posed by the design team.

Ultimately, the project committee and the community members present for the second public meeting unanimously agreed that the design team should move forward with the third concept, Eastern Overlook, as the final design.

Eastern Overlook stood apart because it integrates proposed public spaces with the current public amenities, while clustering housing to the east to provide distinct zones of use. Stakeholders also appreciated the potential for future housing growth in this design.

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Spring 2020

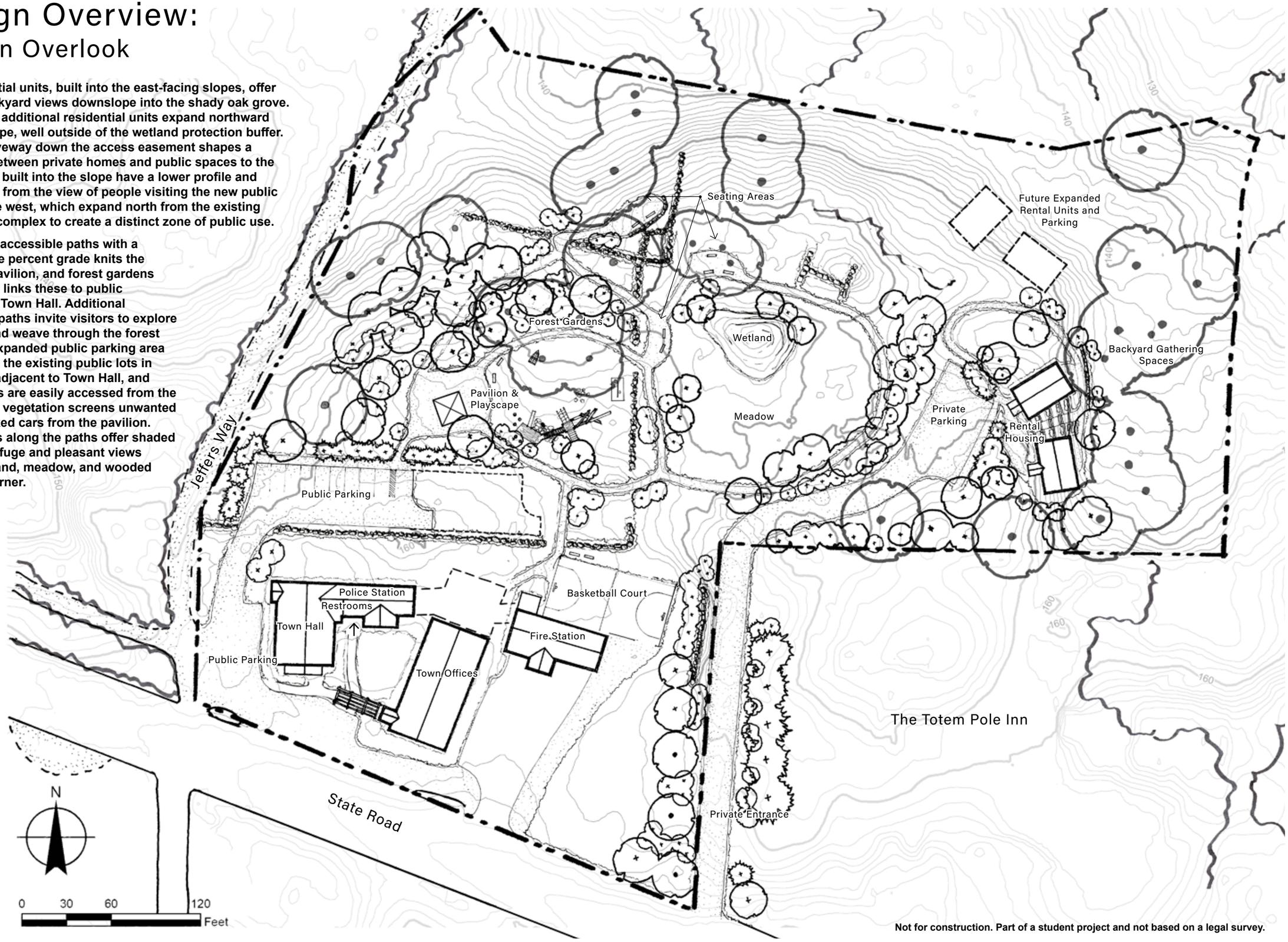
Preliminary Design Alternatives

Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Design Overview:
Eastern Overlook

Four residential units, built into the east-facing slopes, offer pleasant backyard views downslope into the shady oak grove. In the future, additional residential units expand northward along the slope, well outside of the wetland protection buffer. A private driveway down the access easement shapes a separation between private homes and public spaces to the west. Homes built into the slope have a lower profile and are screened from the view of people visiting the new public spaces to the west, which expand north from the existing town center complex to create a distinct zone of public use.

A network of accessible paths with a maximum five percent grade knits the playscape, pavilion, and forest gardens together, and links these to public restrooms at Town Hall. Additional informal footpaths invite visitors to explore the woods and weave through the forest garden. An expanded public parking area extends from the existing public lots in front of and adjacent to Town Hall, and public spaces are easily accessed from the new lot while vegetation screens unwanted views of parked cars from the pavilion. Seating areas along the paths offer shaded spaces for refuge and pleasant views into the wetland, meadow, and wooded northwest corner.



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Design Overview
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Zone I - Entry & Access

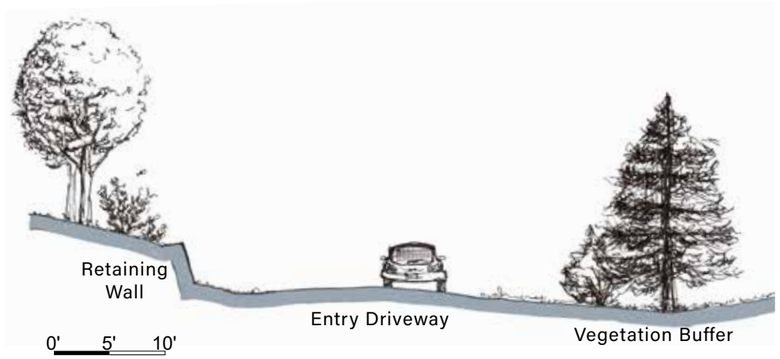
The twenty-foot-wide driveway down the access easement provides residents of the new housing with a private entrance and parking in front of their homes. Separating the private driveway from the access points for public use creates a more distinct boundary between the public and private realms.

A The existing grade is cut back and reinforced by a retaining wall before the driveway turns to the east.

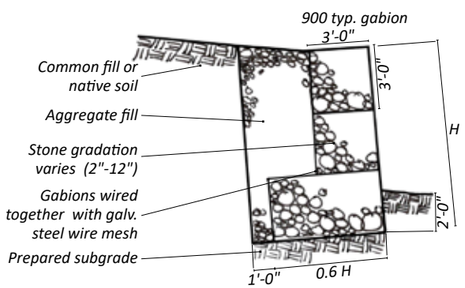
B Approximately 1,000 square feet of the driveway crosses into the 100-foot wetland protection zone and the cutting and filling for driveway grading in this area requires special permitting and review by the Planning Board and Conservation Commission.

C Flowering ornamental vegetation planted between the driveway and public paths screens views from public spaces into private spaces, captures stormwater runoff from the driveway before it enters the wetland, and provides a pleasant arrival sequence to both residents returning or leaving home and visitors strolling along the trail network.

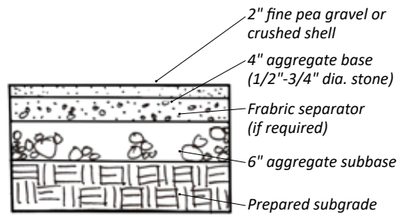
D Just beyond the 100-foot wetland protection zone, parking spaces for seven vehicles are within a short walk of the homes.



Section A-A'



Stone Gabion Retaining Wall
Not to Scale



Gravel Paving on Aggregate Base
Not to Scale

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Zone I - Entry & Access
Aquinnah Village Center
State Road, Aquinnah, Massachusetts
Spring 2020

10/20

Zone II - Homes

Residents enjoy a private living space with public amenities just a short walk away, and pleasant views into a shared backyard shaded by mature, stately oak trees. Durable, energy-efficient homes are built into the east-facing slopes to take advantage of passive geothermal warming and cooling, making utilities more affordable for residents.

Homes are oriented to make grading as cost-effective and low-disturbance as possible, instead of maximizing rooftop solar potential.

Excess snow is plowed off the west side of the driveway–clear of the solar canopy and accessible paths–and an overflow parking space doubles as a plow turnaround.

A After parking beneath the solar canopy, residents approach their homes from the west along accessible crushed shell or stone paths lined with fragrant ornamental plants.

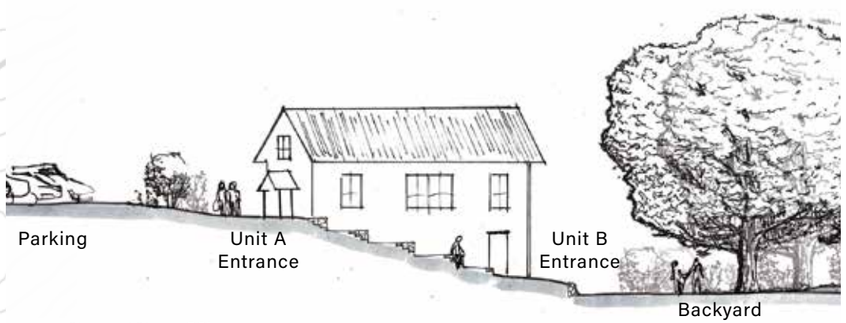
B Both duplexes have single-bedroom upper-level units, accessible at-grade on the west-facing side of the house.

Residents of the two-bedroom, lower-level units may choose to enter on the west entrance and take the interior stairs down, head directly into the backyard down an exterior staircase, or meander down an accessible walkway to the ground floor entrance porch.

C An accessible path, 250-foot-long and five-foot-wide at five-percent grade, winds around the buildings and links with backyard trails to a shared fire pit and shaded picnic area.

D The eastern overlook provides plenty of space along the slope for expanding building envelopes and parking spaces, creating a visually coherent and seamless extension from the Phase I housing and parking plan.

E A small bridge, crossing over a drainage channel, accommodates the parking expansion without interrupting the hydrologic function of the existing topography.



Section A-A'

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Zone II - Homes

Aquinnah Village Center

State Road, Aquinnah, Massachusetts

11/20

Zone III - Public Use

Entering the site from the west, visitors pass by historic stone walls that shape the boundary between the built environment and a more natural landscape.

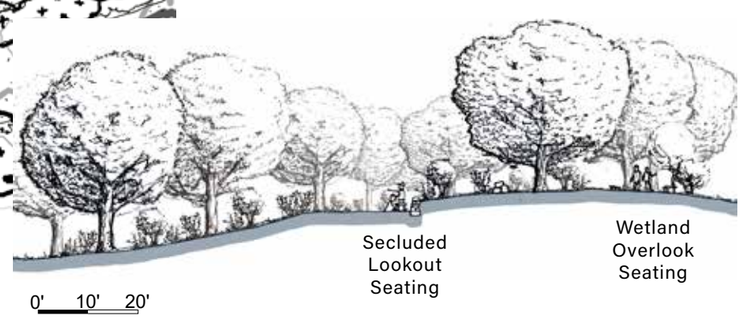
A From the 10-vehicle parking lot shaded by a solar energy-producing canopy structure, visitors are greeted by the open-air, post and beam pavilion–the focal point of a multigenerational play and gathering space, surrounded by a polyculture of edible landscaping.

B Radiating north-northwest from the cleared opening in the forest canopy created by the pavilion and playscape, forest gardens form a broad transitional edge between the grassy playscape and mature coastal oak and heath forest, offering more diverse habitat and taking full advantage of the various microclimates present in woodland edge environments. Deer fencing protects vegetation from resident browsers.

C Accessible paths, five feet wide and no greater than five percent grade, lead from the pavilion and playscape to the meadow and create opportunity for the public to engage with the site's diverse ecological systems. Steeper, informal paths invite visitors to wander through the forest garden and undisturbed woods.

D Benches placed in shaded nooks along the path allow for reading, birdwatching, or listening to amphibians sing after spring showers.

- A seating area on the north end of the wetland loop offers views south into the wetland and views north across the slope and toward the ocean
- More secluded overlook seating, away from the bustle of the playscape, creates a more secluded picnic space with views northwest into the woods.
- A bench between the wetland and the playscape provide resting space for grandparents to enjoy while children explore the playscape or run about the meadow.



Section A-A'

0' 15' 30'

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Zone III - Public Use
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Grading Plan

Grading of the site is necessary to construct driveways, parking, buildings, and accessible pedestrian paths. Where needed, retaining walls are constructed of rocks and boulders, gabions, or salvaged timber.

Any cut or fill within the 100-foot wetland buffer will require special permitting. To avoid disturbance to the wetland, grading and proposed structures within the buffer are minimized.

To best protect existing mature trees and specimen vegetation, grading is limited to outside the vegetation's drip line. Removal of trees should be kept to a minimum, and removed trees will be repurposed onsite.

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Grading Plan

Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Edible Forest Gardens: A Primer

Guiding Succession

Food forests are gardens designed to grow the way wild plants do in a forest, particularly by growing at different levels from groundcover to overstory trees. Once established, a forest garden is intended sustain itself with less human intervention over time.

Successful edible forest gardens start simple, building in complexity over time, and are assembled with succession in mind.

"A FOOD FOREST IS FOOD GROWING *LIKE* A FOREST, NOT NECESSARILY *IN* A FOREST."

- DAVE JACKE, 2005

Because the existing site is forested, clearing and grading for the playscape and paths will result in disturbance and will begin the process of forest succession.

The edible forest garden aims to mimic succession by guiding disturbance and assembling a mid-successional "edge" habitat between the playscape clearing and intact forest. The most productive, highest-yielding systems occurring naturally are mid-succession environments dominated by sun-loving pioneer species (Jacke, 2005), so the installed forest garden is assembled to mimic and maintain a mid-succession phase.

The forest garden is also assembled to support the five fundamental elements of forest physical architecture: **diversity, vegetation layers, soil layers or "horizons," vegetation density, vegetation patterns. This primer focuses on the first three.**

Diversity

Plant species are recommended in order to maximize diversity in:

- the growing season, harvest timing, and maintenance required
- the space or "niche" they occupy
- their character (taste, fragrance, etc.)

Biologically diverse systems tend to be more resilient to diseases, pests, flooding or drought, and other disturbances (Jacke, 2005).

Vegetation Layers

By some definitions, a forest isn't a forest unless it has three vertical layers. Recognized vegetation layers include tall trees, low trees, shrubs, herbs, ground covers, vines, and roots (see **Soil Horizons)**; many suburban landscapes have only two: a tree layer and ground layer.

This forest garden design incorporates a low tree layer, shrub layer, herbaceous layer, ground layer, and root layer; the tall tree layer comprises mature trees already present on the site, and the vining layer is excluded from this design to reduce maintenance, since vines may become parasitic to a host tree or shrub.

VERTICAL LAYERS PROVIDE MORE OPPORTUNITIES FOR YIELDS, MORE HABITAT FOR BIRDS AND INSECTS, AND SUPPORT MORE DIVERSITY; LAYERS ARE ALSO AN ASPECT OF A PLANT'S NICHE, OR "THE SUM OF ALL OF A PLANT'S OR ANIMAL'S UNIQUE CHARACTERISTICS, TOLERANCES, FORMS, FUNCTIONS, AND BEHAVIORS"

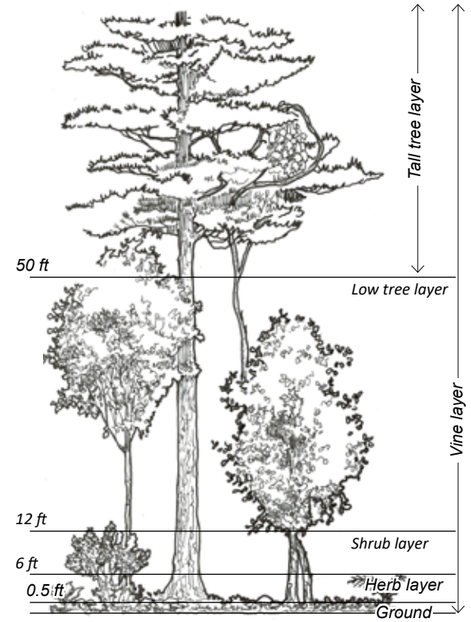
-DAVE JACKE, 2005.

Soil Horizons

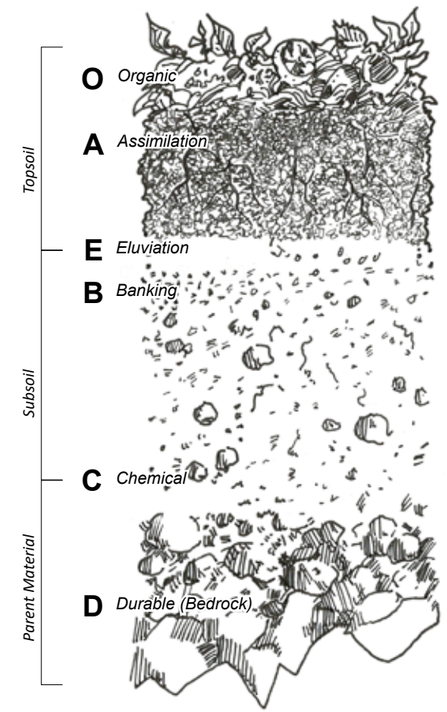
Healthy soils are essential to the growth of healthy plants; conversely, plants and their fungal allies are also essential to the development of healthy soils.

The topmost O-Horizon is the entry point for all organic nutrients, which are broken down and assimilated with minerals, water, air, and plant roots in the A-Horizon. The E-Horizon is a "no man's land" (Jacke, 2005) where biotic processes cease and minerals are eluviated downward and stored in the bank of the B-Horizon, which is the last chance for nutrients leached out of the topsoil to be captured by plant roots and recycled back to the surface, before sinking into the parent material.

Historical maps indicate that soils underlying the proposed forest gardens were disturbed by tilling. Minimizing repeated disturbance to these soils during construction will help retain the living O-A-Horizon which has since accumulated, and deep-rooted perennials may help recycle banked nutrients in the site's deep sand deposits.



The six above-ground layers of forest vegetation.



A typical temperate-forest soil profile comprises six layers. Biotic and climatic influences dominate at the top, and geo-chemical processes dominate at the bottom.

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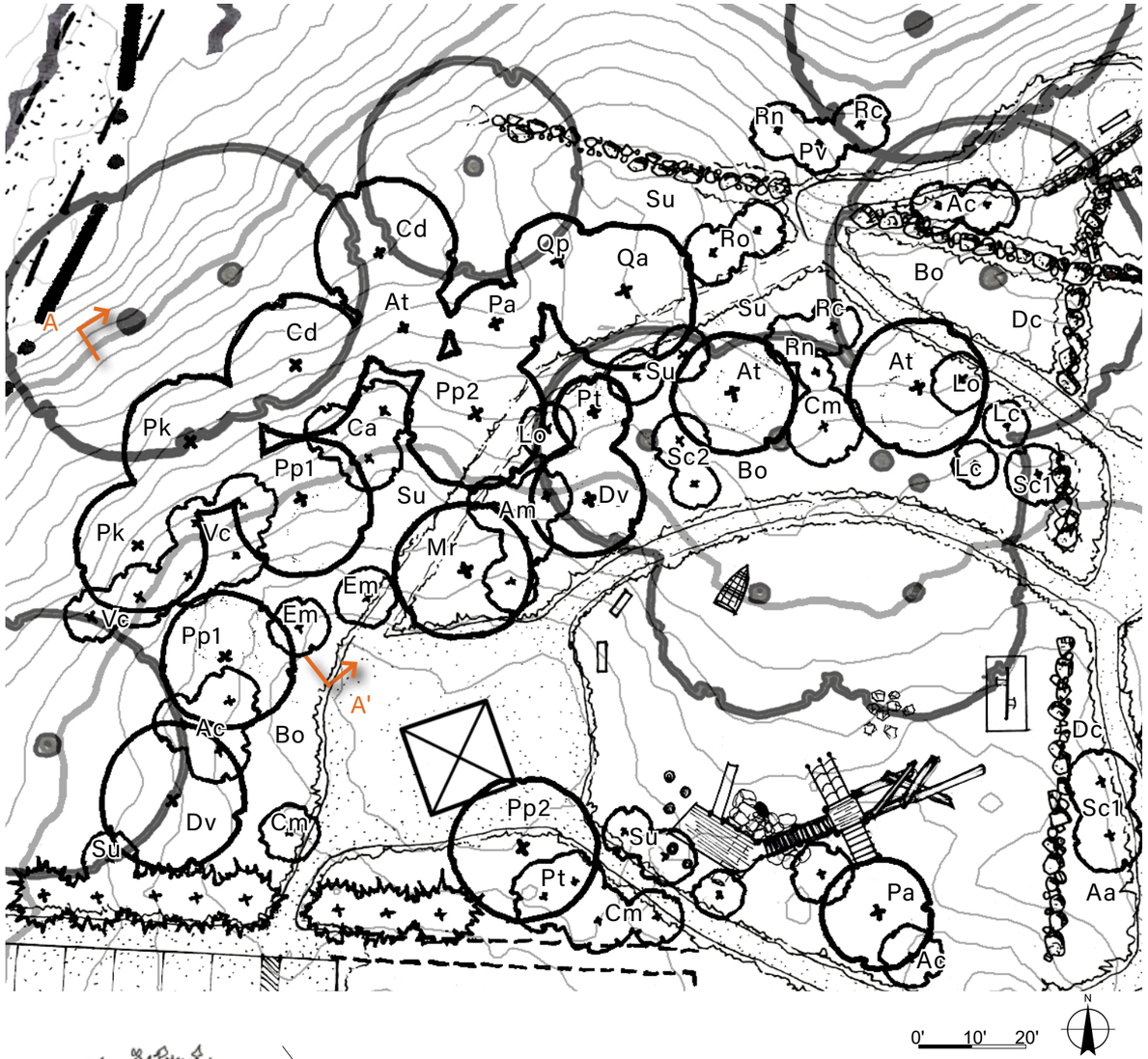
Edible Forest Gardens
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Spring 2020

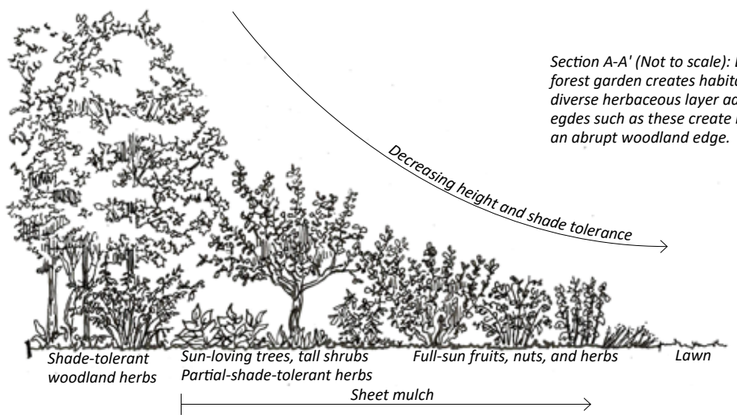
Planting Plan & List



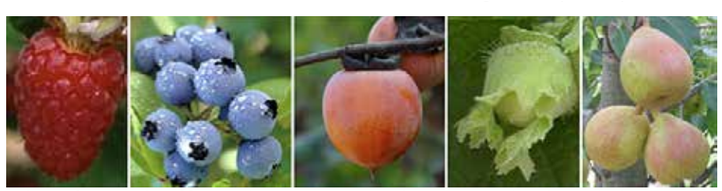
Cornelian cherry is a heavily fruiting dogwood with beautiful early spring blossoms.

Honeyberry, or Haskap, is an unusual spring-bearing fruit in the Honeysuckle family.

Hardwood logs inoculated with shiitake mushrooms grow readily in shady woodlands.



Section A-A' (Not to scale): Blending and diversifying the wood's edge with a forest garden creates habitat for small trees, shrubs of varying sizes, and a diverse herbaceous layer adapted to gradients of shade to full sun. Blended egdes such as these create more visual interest, productivity, and beauty than an abrupt woodland edge.



A diverse forest garden of fruits and nuts means more resilience to pests, droughts, and other disturbances. Left to right: Raspberries, Highbush Blueberries, Persimmons, Hazelnuts, and Asian Pears.

	Map ID	Botanical name	Common name
Trees (largest to smallest)	Cd	*Castanea dentata x mollissima*	American Chestnut (Chinese cross)
	Qa	*Quercus alba*	White Oak
	Pk	*Pinus koraiensis*	Korean Nut Pine
	Qp	*Quercus prinoides*	Dwarf Chinkapin Oak
	Pp1	*Pyrus pyrifolia*	Asian Pear
	Pp2	*Prunus persica*	Peach
	Mr	*Morus rubra*	Red Mulberry
	At	*Asimina triloba*	Paw Paw
	Dv	*Diaspyros virginiana*	American Persimmon
	Pa	*Prunus armeniaca*	Siberian Apricot
	Cm	*Cornus mas*	Cornelian Cherry
	Pv	*Prunus virginiana*	Chokecherry
Shrubs (largest to smallest)	Ca	*Corylus americana x avellana*	Hazelnut x Filbert
	Ac	*Amelanchier canadensis*	Shadblow Serviceberry
	Pt	*Prunus tomentosa*	Nanking Bush Cherry
	Em	*Elaeagnus multiflora*	Goumi Berry
	Sc1	*Sambucus canadensis*	Black Elderberry
	Vc	*Vaccinium corymbosum*	Highbush Blueberry
	Rn	*Ribes nigrum*	Black Currant
	Rr	*Ribes rubrum*	Red Currant
	Rxn	*Ribes × nidigrolaria*	Jostaberry
	Lc	*Lonicera caerulea*	Honeyberry/Haskap
	Ro	*Rubus occidentalis*	Black Raspberry
	Rs	*Rubus strigosus*	Red Raspberry
	Sc2	*Shepherdia canadensis*	Canada Buffaloberry
	Am	*Aronia melanocarpa*	Aronia Berry
	Sm	*Senna marilandia*	Senna
Herbaceous	Lo	*Levisticum officinale*	Lovage
	Aa	*Angelica archangelica*	Angelica
	Bo	*Borago officinalis*	Borage
	Dc	*Daucus carota*	Queen Anne's lace
	Su	*Symphytum x uplandicum*	Russian Comfrey
Ground	-	*Fragaria x ananassa*	Spreading Strawberry
	-	*Fragaria vesca*	Wild Strawberry
	-	*Waldstenia fragarioides*	Barren Strawberry
	-	*Trifolium repens/pratense*	White/Red Clover

Refer to appendix for detailed plant lists, including plant size, soil and sun requirements, and notes.

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Spring 2020

Planting Plan & List
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State Road, Aquinnah, Massachusetts

Playscape Detail

The custom playscape is a focal point of the public use area. Featuring natural, repurposed site materials, it offers exciting challenge to a wide range of children, while blending in with the wooded character of the site. Existing maple, oak, and black cherry trees provide shade, and tall black locust trees provide sensory interest.

A The custom play structure incorporates a planted, earthen berm, accessible by tree stump stepping stones or a climb up the oak- and locust-post palisade. Angled tree trunks, rope ladder, and monkey bars lead to two levels of platform and a rope bridge connecting to the berm. A boulder wall makes up a steep side of the berm, where visitors can climb, scramble, and crawl through a culvert tunnel. Strawberries, nasturtium, clover, and vetch carpet the berm, hinting at the abundant forage throughout the space.

B Additional play features include swings, additional tree trunks and boulders, a repurposed rowboat, and other loose parts such as movable tree trunk sections cut into prismatic-shaped blocks. Soft groundcover carpets the area, inviting visitors to play or relax on the lawn.

Existing and new trees onsite provide shade and sense of place while inviting abundant light and views into the woods in winter. Sitting places in the shade and sun provide comfortable variety for caregivers and other park visitors, whether hosting a birthday picnic, meeting a friend, or observing the natural surroundings.

Beyond the formal play area, adventurous visitors will find plenty more to explore among the climbing trees, shady shrub nooks, boulders, fort-building materials, and stone relics of the site's past.

Cafe lighting inside the pavilion and path lighting along the parking and pedestrian connections ensure safe travel for visitors departing at dusk year round, and a water fountain with a hose bib keeps visitors and vegetation hydrated.

Section A-A'

Not to Scale

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Playscape Detail
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State Road, Aquinnah, Massachusetts

Playscape Precedents

Natural playscapes provide children with more opportunities to use their imaginations than conventional playgrounds, which may be criticized for telling children how they should play. Outside of the built play features, adventurous visitors will find fort-building materials in the woods, flowers and fruits in the food forest, rocks and trees to climb on, and wildlife to observe. "Loose parts" sprinkled around the site in addition to built features provide the materials and props needed to "liberate the imagination and creativity of the playing children and allow them to master the world around them in ever-changing ways and communicate more effectively through their playing" (Wilson, 17). In the built features of the playground, "graduated access" must be provided to encourage children to explore within and beyond their comfort zones. For example, small children may enjoy climbing on stepping stumps and rocks, while older children will find a challenge on the climbing structure. Additional features, such as a rowboat, door frame, and other repurposed objects, can be placed farther from the the central play area to facilitate the transition from organized play to woodland exploration.

Children build a fort using materials left for them to find at Parramatta Park in Cairns, Australia. Source: McGregor Coxall.

Living willow tunnel at Syracuse University Early Childcare Center. Source: Rusty Keeler / Earthplay.

Custom timber play structure with features to climb, slide, hang, and look out. Source: Ross.

Custom timber play structure made from salvaged black locust posts at Upper Canada College in Toronto. Source: EarthScape.

Exploring a culvert tunnel at Stockwell Urban Oasis, London. Source: Stanton Bonna.

Climbing over and through a culvert tunnel in Portland, Oregon. Source: redtricycle.

Prismatic blocks cut from sections of tree trunk and pieces of turf are some of the "loose parts" that children can move around at the Donald and Barbara Zucker Natural Exploration Area in Prospect Park, Brooklyn. Salvaged trees felled by superstorm Sandy in 2012 make exciting climbing features. Source: Playscapes.

Terraced strawberry beds integrate food forest themes into the playscape. Source: imgur

Planted berm slide at New Day Children's Center in Watertown, New York. Source: Rusty Keeler / Earthplay.

Sections of tree trunks make exciting stepping stones for all ages at the New Day Children's Center in Watertown, New York. Source: Rusty Keeler / Earthplay.

Repurposed tree trunks for climbing at Westmoreland Nature-Based Play Area in Portland, Oregon. Source: GreenWorks

Timber-constructed swing structure at the Edgestone at Legacy community in Frisco, Texas. Source: Earthscape.

Berm slide at Village of Batawa in Quinte West, Ontario. Source: Earthscape.

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Rowan Cignoni & Marianna Zak Hill
Spring 2020

Playscape Precedents
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Plant List: Forest Gardens

Edible Forest Gardens

Botanical name	Common name	Form	Size (WxH)	Soil Req.	Sun Req.	Functions	Notes
Castanea dentata x mollissima	American Chestnut (Chinese cross)	T tree	40'x40'	Well-draining	◔ ○	Edible, Wildlife	Blight-resistant B3F3 breed
Quercus alba	White Oak	T tree	40'x40'	Well-draining	◔ ○	Wildlife	Edible with processing
Pinus koraiensis	Korean Nut Pine	T tree	40'x40'	Well-draining	● ◔	Edible, Wildlife, Windbreak	Shaded for first two years
Quercus prinoides	Dwarf Chinkapin Oak	Sm tree	10'x15'	Well-draining	◔ ○	Wildlife	Edible with processing
Pyrus pyrifolia	Asian Pear	M tree	15'x20'	Well-draining	○	Edible, Showy, Nectary	
Prunus persica	Peach	M tree	10'x15'	Well-draining	○	Edible, Showy, Nectary	Toxic seeds
Morus rubra	Red Mulberry	M tree	20'x20'	Well-draining	● ◔ ○	Edible, Showy, Nectary, Wildlife	Toxic unripe fruit
Asimina triloba	Paw Paw	M tree	20'x20'	Well-draining, acid	● ◔ ○	Edible, Wildlife	Root suckers
Diaspyros virginiana	American Persimmon	M tree	15'x20'	Well-draining, acid	● ◔ ○	Edible	"Meader"
Prunus armeniaca	Siberian Apricot	Sm tree	10'x15'	Well-draining	○	Edible, Showy, Nectary	toxic seeds
Cornus mas	Cornelian Cherry	Sm tree	10'x15'	None	● ◔ ○	Edible, Showy, Nectary, Wildlife	early blooms
Prunus virginiana	Chokecherry	Sm tree	10'x15'	None	● ◔ ○	Edible, Insectary, Wildlife	
Corylus americana x avellana	Hazelnut x Filbert	L shrub	8'x12'	None	○	Edible, Insectary, Fall color	Plant at least two!
Amelanchier canadensis	Shadblow Serviceberry	L shrub	8'x12-15'	None	● ◔ ○	Edible, Showy, Fall color	Root suckers
Prunus tomentosa	Nanking Bush Cherry	L shrub	5'x10'	None	● ◔ ○	Edible, Showy, Nectary	Tart cherry
Elaeagnus multiflora	Goumi Berry	L shrub	5'x10'	None	◔ ○	Edible, Insectary, N-fixing	
Sambucus canadensis	Black Elderberry	L shrub	5'x10'	Moist	● ◔	Edible, Medicinal, Insectary	Toxic seeds
Vaccinium corymbosum	Highbush Blueberry	M shrub	3'x5'	Acidic	○	Edible	
Ribes nigrum	Black Currant	M shrub	3'x5'	None	● ◔ ○	Edible, Medicinal	* "Titania"
Ribes rubrum	Red Currant	M shrub	3'x5'	None	● ◔ ○	Edible	*
Ribes × nidigrolaria	Jostaberry	M shrub	3'x5'	None	● ◔ ○	Edible	*
Lonicera caerulea	Honeyberry/Haskap	M shrub	3'x5'	None	○	Edible	Requires two varieties
Rubus occidentalis	Black Raspberry	M shrub	3'x6'	Well-draining	● ◔ ○	Edible, Insectary	Root suckers; Thorny
Rubus strigosus	Red Raspberry	M shrub	3'x6'	Well-draining	● ◔ ○	Edible, Insectary	Root suckers; Thorny
Shepherdia canadensis	Canada Buffaloberry	M shrub	3'x5'	None	● ◔ ○	Edible, Salt-tolerant	Tart berry
Aronia melanocarpa	Aronia Berry	M shrub	3'x6'	None	● ◔ ○	Edible	Tart berry; Suckers
Senna marilandia	Senna	Sm shrub	3'x4'	None	● ◔ ○	N-fixing	Self-seeding
Levisticum officinale	Lovage	L herb	2'x6'	Moist	● ◔ ○	Edible, Showy, Fragrant	
Angelica archangelica	Angelica	L herb	2'x6'	None	● ◔ ○	Edible, Insectary, Medicinal	Dynamic accumulator
Borago officinalis	Borage	M herb	2'x2'	None	● ◔ ○	Showy, Insectary, Cut flower	Rowan's favorite!
Daucus carota	Queen Anne's lace	M herb	2'x3'	None	● ◔ ○	Showy, Insectary	Dynamic accumulator
Symphytum x uplandicum	Russian Comfrey	M herb	2'x3'	None	● ◔ ○	Insectary, Medicinal	"Bocking 14" non-spreading
Fragaria x ananassa	Spreading Strawberry	Ground	3"-6" tall	Well-draining	○	Edible, Showy, Wildlife	Deer-tolerant
Fragaria vesca	Wild Strawberry	Ground	3"-6" tall	None	● ◔ ○	Edible, Showy, Wildlife	Deer-tolerant
Waldstenia fragarioides	Barren Strawberry	Ground	3"-6" tall	None	● ◔ ○	Edible, Showy, Wildlife	Deer-tolerant
Trifolium repens/pratense	White/Red Clover	Ground	3"-10" tall	None	● ◔ ○	Medicinal, Insectary, N-fixing	No-mow groundcover

● *Full shade*
◔ *Part shade/sun*
○ *Full sun*

** At this time, Ribes nigrum (Black Currant) and similar species are quarantined in Massachusetts under act 330 CMR 9.00 to prevent the spread of white pine blister rust (WPB). The "Titania" variety is selected for WPBR resistance, but sale or purchase is still prohibited. Red Currants and Jostaberry are allowed, by permit, in some towns.*

Mulberry trees produce heavy yields of delicious fruit, in shade-tolerant conditions.

Branches of the Goumi Berry shrub heavily laden with ripe summer fruits.

Both Elderflowers and berries are edible and medicinal, popular in syrups, jams and wines. Elder grows readily in moist, wetland conditions.

Early spring Cornelian Cherry blossoms provide seasonal interest (left); The Korean Nut Pine (right) produces edible nuts, popular in dishes like basil pesto.

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Plant List: Forest Gardens

Aquinnah Village Center
State Road, Aquinnah, Massachusetts

Spring 2020

Plant List: Wet and Dry Meadows, and Ornamentals

Meadows

Botanical name	Common name	Form	Size (WxH)	Soil Req.	Sun Req.	Functions	Notes
Symphyotrichum novae-angliae	New England Aster	L herb	2'x5'	Moist	○	Showy, Insectary	
Eutrochium purpureum	Joe-Pye Weed	L herb	2'x5'	Moist	● ◔ ○	Showy, Insectary, Fragrant	
Verbena hastata	Blue Vervain	L herb	2'x4'	Moist	○	Showy, Insectary, Medicinal	Self-seeding
Liatris spicata	Blazing Star	M herb	1'x3'	Moist	● ◔ ○	Showy, Cut flower	Dry winter soils
Rudbeckia spp.	Black-eyed Susan	M herb	3'x4'	None	◔ ○	Showy, Insectary	
Asclepias syriaca	Common Milkweed	M herb	3'x4'	None	◔ ○	Edible, Inectary	
Agastache foeniculum	Anise Hyssop	M herb	3'x4'	None	◔ ○	Showy, Fragrant, Insectary	Self-seeding
Monarda spp.	Beebalm	M herb	3'x4'	None	◔ ○	Showy, Insectary	
Schizachyrium scoparium	Little Bluestem	M grass	3'x4'	None	○	Wildlife, Showy	Very low maint.
Eragrostis spectabilis	Purple Lovegrass	M grass	2'x2'	None	○	Wildlife, Showy	
Festuca rubra	Red Fescue	M grass	24"x16"	None	○	Mowable	
Carex comosa	Bottlebrush Sedge	T grass	24"x36"	Moist	○	Showy	Foliage all season
Carex scoparia	Broom Sedge	T grass	24"x36"	Moist	○	Showy	
Symphyotrichum puniceum	Swamp Aster	L herb	2'x5'	Moist	◔ ○	Showy, Insectary	
Asclepia incarnata	Swamp Milkweed	M herb	1'x3'	Moist	◔ ○	Showy, Insectary	

Blazing Star adds beautiful color to a meadow, and thrives in drier, well-draining soils

Broom Sedge adds a splash of color and interesting texture to a meadow.

Little Bluestem provides low-maintenance texture and color to the edges of perennial plantings and meadows, especially when planted in masses.

Pollinators love Joe-Pye Weed blooms.

A meadow of mixed-height grasses and sedges, interplanted with masses of native wildflowers, creates a beautiful edge to a crushed stone path

The iconic Saucer Magnolia provides gorgeous spring color, and its irregular branching pattern creates year-round visual interest.

Polly Hill's "Chalif" Azaleas (left) in bloom; Winterberry (right) fruits provide winter forage for non-migratory birds and winter color for people to enjoy.

Ornamentals/Screening

Botanical name	Common name	Form	Size (WxH)	Soil Req.	Sun Req.	Functions	Notes
Magnolia macrophylla	Big-Leaf Magnolia	M Tree	15'x15'	Acidic, Well-drained	◔ ○	Showy, Fragrant	"Julian Hill"
Magnolia x soulangeana	Saucer Magnolia	M Tree	15'x15'	Acidic, Well-drained	◔ ○	Showy, Fragrant	
Cornus alba "Sibirica"	Tartarian Dogwood	L shrub	8'x8'	Rich	● ◔ ○	Showy, Fragrant, Winter color	Root suckers
Salix alba "Vitellina"	Golden Willow	L shrub	8'x8'	Moist	● ◔ ○	Showy, Winter color	Yearly coppicing
Rhododendron cumberlandense	Cumberland Azalea	L Shrub	10'x10'	Acidic	● ◔	Showy, Winter interest	"Chalif," Sizzler," "Sunlight"
Rhododendron viscosun	Swamp Azalea	M shrub	4'x4'	Acidic, Moist	◔	Showy, Insectary, Fragrant	Deciduous, Deer-tolerant
Ilex verticillata	Winterberry	M shrub	6'x8'	None	● ◔ ○	Showy, Winter interest, Wildlife	
Ilex glabra	Inkberry	M shrub	6'x8'	None	● ◔ ○	Showy, Winter interest, Wildlife	
Ilex opaca	American Holly	M shrub	6'x8'	None	● ◔ ○	Showy, Winter interest, Wildlife	

● *Full shade*
◔ *Part shade/sun*
○ *Full sun*

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Plant List: Meadows, Ornamentals
Aquinnah Village Center
State Road, Aquinnah, Massachusetts

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Land and Territory Acknowledgment

As an active form of gratitude and relationship building with the Indigenous nations of Turtle Island, organizations and institutions have begun developing Land and Territory Acknowledgment policies to formally offer gratitude and recognition for the Indigenous lands that they occupy, as well as to recognize treaties and, sometimes, lack of such treaties on unceded territory.

Acknowledgment can be a simple, powerful way of showing respect and a step toward correcting the stories and practices that erase the dispossession of Indigenous homelands and Indigenous people’s history and culture, moving toward inviting and honoring historical truth.

The authors of this master plan ask you to join us in acknowledging the Wampanoag community, their elders both past and present, and their future generations, upon whose ancestral lands at the southwestern end of Noepe (Martha’s Vineyard) this plan takes place.

“*As I sit here writing this Land acknowledgement, I cannot help but think of the current times and they interrupt my thoughts as I try to think of words to bring forth recognizing the past.*

For ten years or longer I have dreamed of planting a forest to harvest from—a food forest or regenerative forest. Finally we have gathered a few who have listened and watched, and now begun to create what will become. This land—walking, working, listening, and enjoying this land that surrounds us—is something that fills our bodies with amazing energies (if we listen), and often we are overcome with emotions.

On this land we should recognize the people who have walked and worked and helped us protect our spaces; my Wampanoag ancestors who knew what provisions this land held for the people, who called this place home. I hope we will gather together one day around this place and recognize the gift that we have of calling this land our home, and once again think of and give thanks to the thousands of ancestors who are listening to our thoughts, and watching our work upon the people's sacred land. Now we need to hone our work toward less impact on nature and further our harmony with it. Honoring our ancestors always with our actions should be our everyday work moving forward.”

This language was graciously written and provided by Julianne Vanderhoop, Wampanoag Tribe member, Town of Aquinnah Selectboard, and Community Preservation Committee.

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