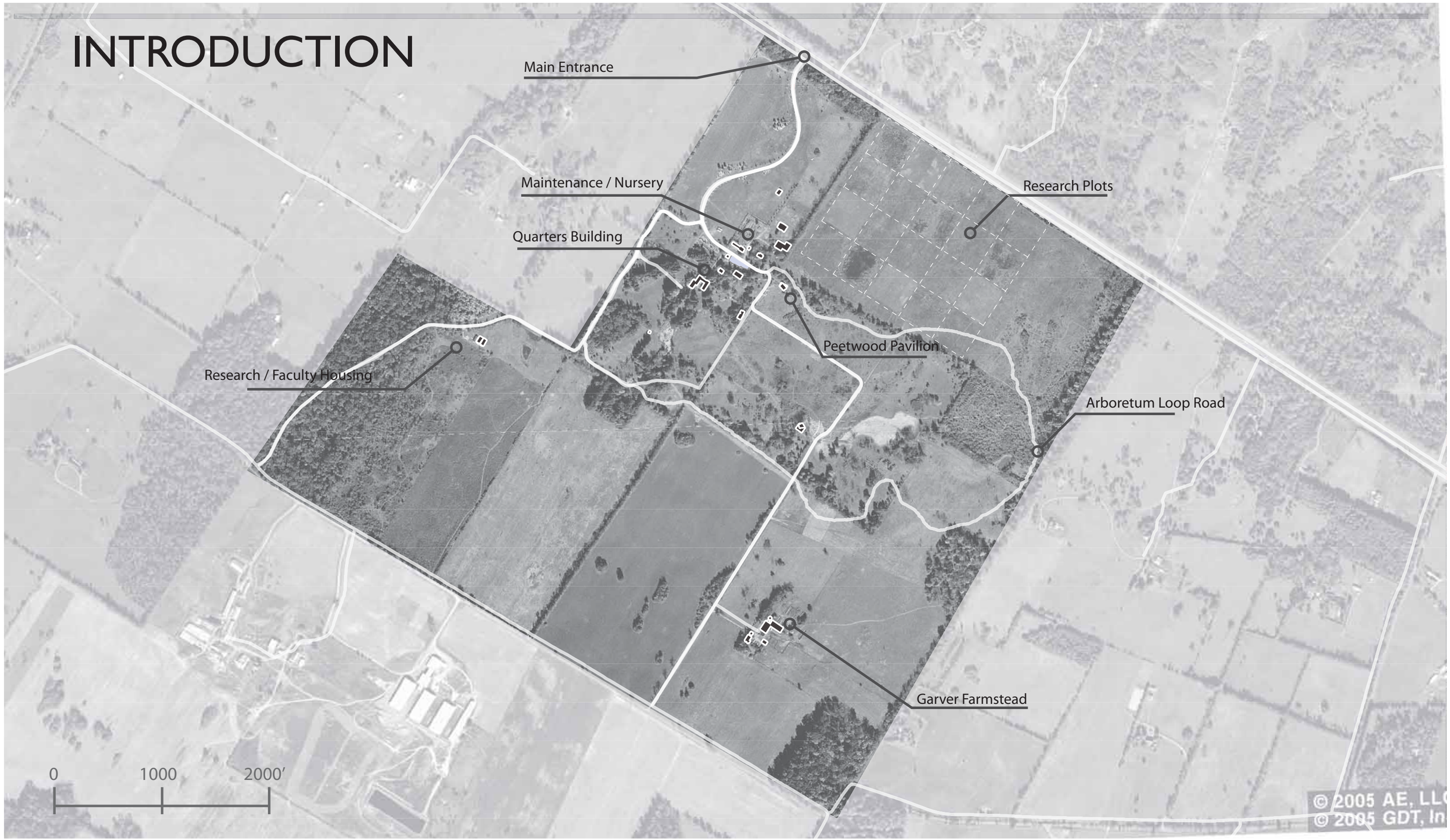
LANDSCAPE MASTER PLAN FOR BLANDY EXPERIMENTAL FARM

# 2011 ADDENDUM

**Office of the Architect, University of Virginia**

# INTRODUCTION




*Existing Conditions of Blandy Experimental Research Farm and Arboretum*

INTRODUCTION

The Landscape Master Plan prepared by Nelson Byrd Wolz Landscape Architects (NBWLA)has guided growth and development of new facilities at Blandy Experimental Farm and Arboretum through the first decade of the 21st century. In particular, the plan addressed improving visitor access to the arboretum collections and expanding educational/interpretive opportunities for visitors.

Over the past decade several of the key recommendations, such as construction of the loop road, have been implemented. However, recent leadership changes on the Blandy staff have resulted in new priorities for physical facilities. Both Manuel Lerdau, director from 2006 to 2008, and the current director, David Carr, have emphasized the need to build modern research laboratory facilities as a top priority. In response to these priorities, the Office of the Architect has prepared an addendum to the original landscape master plan that responds to the current management goals within the constraints of the current economic climate. The addendum provides recommendations in support of Blandy's triparte mission:

- University Research and Education
- Outreach and Environmental Education
- The Orland E. White State Arboretum

The addendum also builds on the foundation laid by previous studies such as:

- 1989- Master Plan by Nancy Takahashi which resulted in the new entrance drive from the north, expansion of the boxwood society garden, rehabilitation of the historic apple packing shed into the Parkfield Learning Center for K-12 educational outreach, construction of the Amphitheater, and beginning of the Native Plant Trail

- 1998- Research village master plan and construction of two residential cottages designed by Bushman Dreyfus Architects

- 2006- Blandy Experimental Farm Phase I Archaeological Investigations by Rivanna Archaeological Services provided greater depth of insight into the cultural history and resources of the Blandy landscape

- 2007- Master plan for expansion of the research village to include student dormitories and laboratory/greenhouse complex by Office of the Architect intern Chihiro Shinohara.

Brief History of Blandy Experimental Farm and Statewide Arboretum

The core of Blandy Farm was part of the landholdings acquired by Joseph Tuley in 1806. His son developed the property into an extensive estate called the Tuleyries with a fine federal style mansion (1820) on the hill overlooking the farmland and dependencies. The Quarters building (c. 1825-30), which serves as the administrative center of Blandy, contains a wing thought to be the former slave quarters of the Tuleyries and is located 1,500 feet away along the old road, now walkway, known as Dogwood Lane. In 1903, Graham Blandy, a wealthy stockbroker from New York, purchased the Tuleyries along with two adjacent properties, the Crigler and Garver farmsteads. By this time the primary crop on the Blandy's landholdings was fruit production as was typical of the northern Shenandoah Valley. In 1926, Graham Blandy bequeathed 712 acres of his property, including the Crigler and Garver farms, to The University of Virginia to create Blandy Experimental Farm, for the purpose of educating "boys farming in the various branches." The Tuleyries mansion and associated acreage was retained by Mrs. Blandy.

Under the 27- year tenure of UVA's first director of Blandy Experimental Farm, Orland E. White, an educational program on scientific farming was developed. White was also interested in plant genetics and established the arboretum that now bears his name on 135 acres at the center of the property . He also added onto the Quarters Building in 1941 and established the strong axis that runs through the center of the enlarged building south to the Terraces.

The next director was Dr. W. Ralph Singleton, a research scientist who spent his ten-year tenure at Blandy conducting research on the use of ionizing radiation to induce beneficial mutations in plants. He was dubbed the "Father of Hybrid Sweet Corn breeding." The subsequent director was Thomas Ewert. With a background in botanical garden management rather than research, his focus was developing the Blandy arboretum into a public garden.

In 1982, Ed Connor was appointed the next director who renewed the research agenda at Blandy and established its connection to the Department of Environmental Sciences as a field location for instruction and research. He promoted the official designation of Blandy as the State Arboretum of Virginia, which was adopted by the legislature in 1986. The organization now known as the Foundation of the State Arboretum of Virginia (FOSA) was established in 1984. Nancy Takahashi, a lecturer in the Department of Landscape Architecture, worked closely with Blandy on a number of projects during this period, including the first master plan. Blandy expanded its role in environmental education to include K-12 outreach in 1987 with the appointment of Christine Flanagan as Assistant Curator for Education.

In 1997, Michael Bowers became Director of Blandy. He developed a comprehensive strategic plan for all three program areas of Blandy's mission. The Landscape Master Plan developed by NBWLA in 2000 gave a physical framework for the accomplishment of the goals outlined in the strategic plan. Among other items, it included the expansion of the arboretum to include more native species, which were not well represented in the original collection planted by Orland White.


*The Tuleyries and the Quarters: Historically Linked*

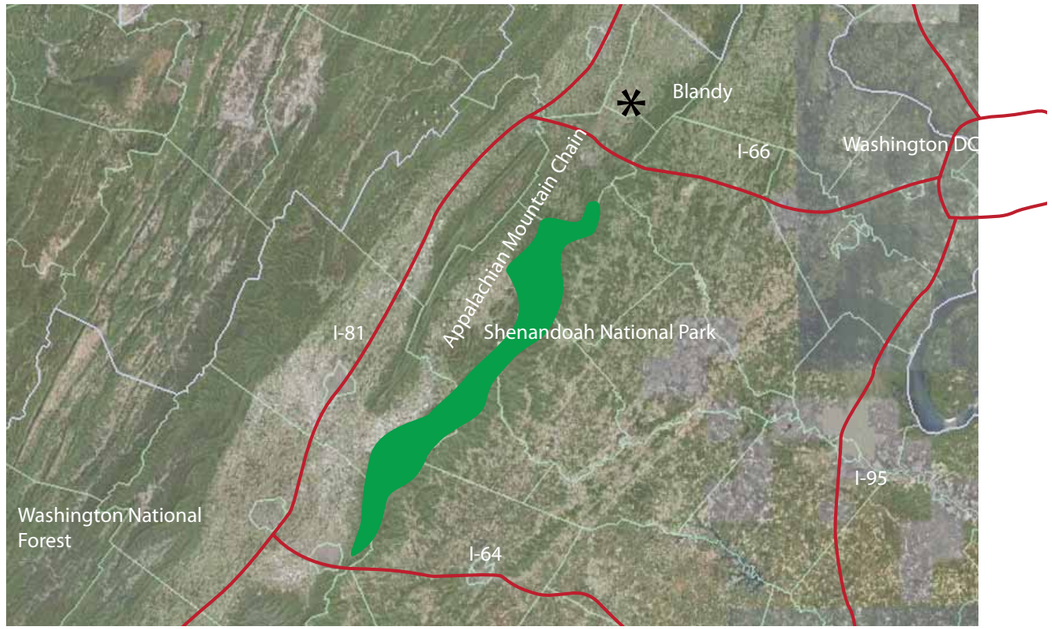
## EXISTING CONDITIONS / REGIONAL CONTEXT

Blandy Experimental Farm includes about 712 acres of land in the Shenandoah Valley. Although Blandy's immediate context consists mostly of large agricultural tracts, small clusters of towns and wooded areas, it is actually in close proximity to major centers of population. Located within 60 miles of downtown Washington DC and within 150 miles of 20 major universities, Blandy can draw from a wide area to expand its outreach in all program areas.

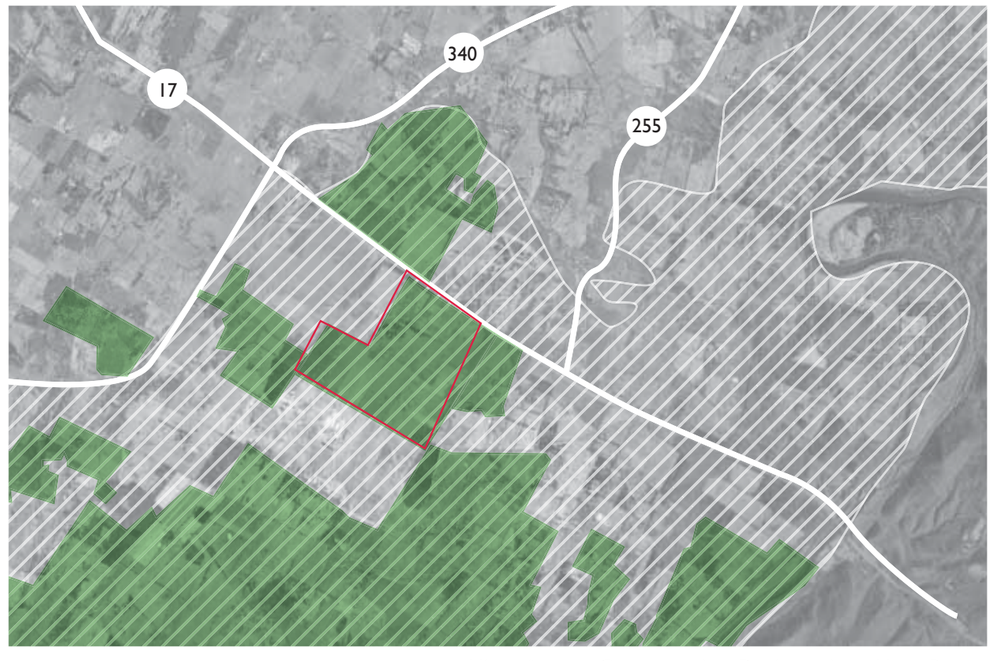
Much of the land around Blandy, however, is protected by conservation and historic districts, giving some protection to the rural character and cultural resources in the surrounding area. Blandy farm is part of the Greenway National Register District of Clarke County, a preserve of undeveloped Virginia rural land. Moreover, the 712 acres of the Blandy Experimental Farm are listed on the National Register of Historic Places as a historic district. Contributing resources in the district include not only a number of historic structures but also the original plantings of the Orland White arboretum and their evolutionary arrangement according to the classification system developed by Engler and Prantl as well as other landscape features such as old roads, walls and gateposts.

Blandy is situated in one of the most diverse mid-Atlantic ecotones where both northern and southern species of plants and animals can be found. There are several significant ecological habitats surrounding the farm including the Blue Ridge and Appalachian Mountains, Shenandoah River, Shenandoah National Park, George Washington National Forest, and Sky Meadows state park. The winding Shenandoah River can be found just beyond the eastern edge of the property. Blandy itself is a mix of open farmed fields, research plots, developed areas, and woodland.

Blandy's unique combination of rural environment and urban proximity make it a prime candidate to attract visitors and researchers alike. The expansion of facilities to meet this growth potential must be planned with sensitivity to the regional environmental, historical and agricultural context.




*Regional Context*




Legend

- Historic Districts
- Conservation Easements
- Blandy Experimental Farm

*Historic and Conservation Designations Near Blandy*

## CURRENT LAND USE AND FACILITIES

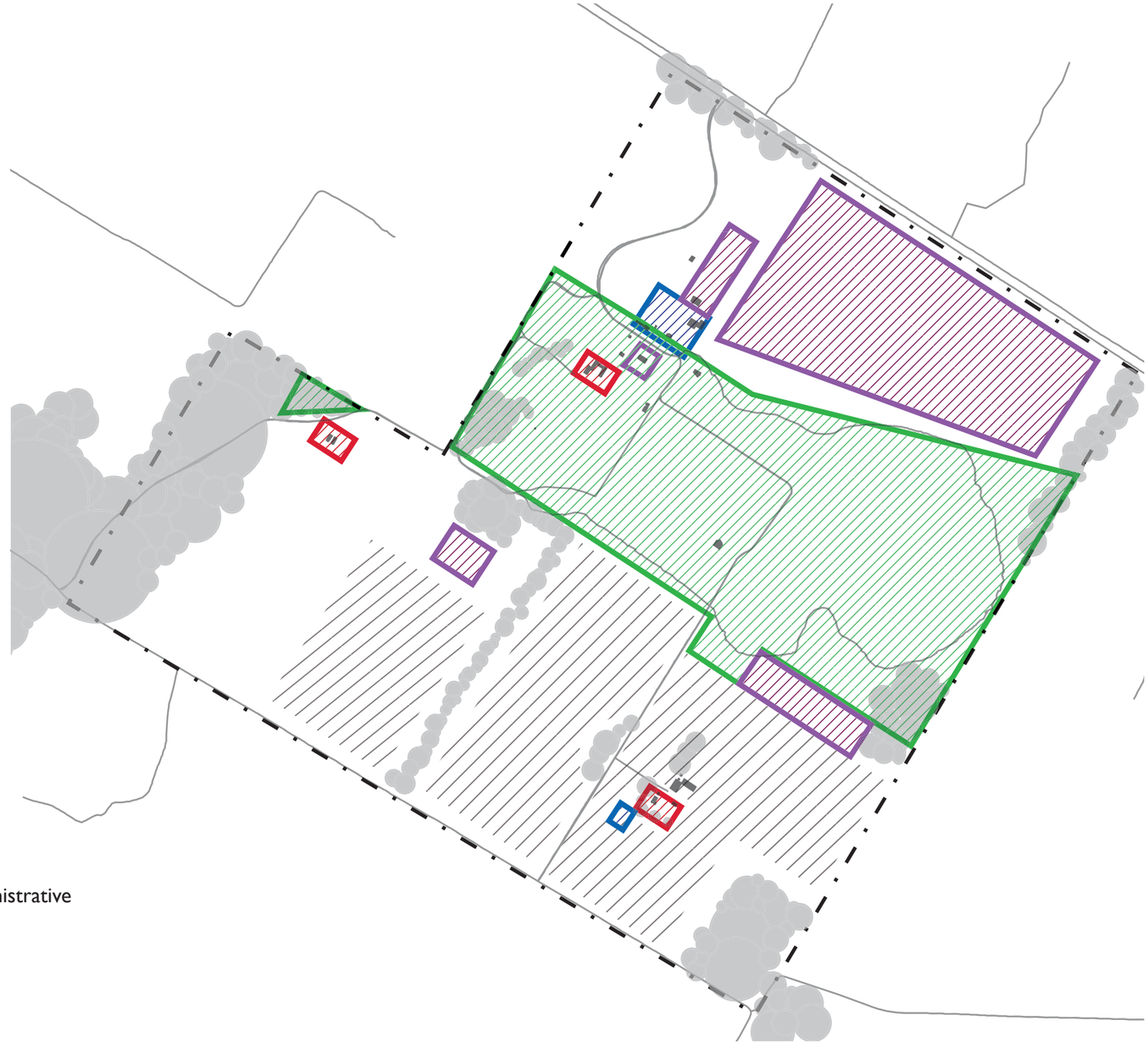
The Blandy Experimental Farm property is host to a variety of uses, including research, visitor outreach, education, arboretum, researcher housing, leased areas for farm functions and, of course, maintenance operations. These uses range from very public, to semi-private, to non-public, all housed on a property with significant historical and cultural resources. Currently, these functions overlap and are intertwined. While some overlap is desirable, at other times it is incongruous and disruptive. Furthermore, many of Blandy's functions are poorly served in their current locations, such as the laboratories and research housing in the historic Quarters building.

Previous planning efforts have recognized the conflict of the maintenance operations location across from the Quarters building and the property's entry sequence for the public. While the location of maintenance operations is critical for efficiency and effectiveness, the current location is very visible from the entry road and visitor arrival and parking.

The arboretum collections have been made more accessible by the recent loop road and visitor pull-offs, as well as walking trails. Interpretation of the collections and managed natural areas furthers this effort to good effect. However, the recent entry road passes through a sizable area that does not feel that it belongs to a public arboretum. School buses and vehicles are often parked in the field adjacent to the maintenance complex, which is a distracting and confusing view for the visitor.

When one arrives as a visitor to Blandy, it is not apparent where to proceed. The iconic Quarters building is the main visual attraction, yet the only public function within it is a very small gift shop with limited hours, and restrooms. A kiosk at the visitor parking lot is expected to serve for visitor orientation. The research greenhouse is immediately adjacent to the visitor parking lot and the education building, resulting in a confusing adjacency.

Residential accommodations for researchers have developed over time and therefore are not well organized or served. Housing is spread over three areas, the Quarters building, the Garver farmstead and the more recent cottages near the ginkgo grove.



Maintenance

Residential / Administrative

Research

Visitor / education / arboretum

Leased

# RESEARCH AND OUTREACH

QUARTERS AREA MODIFICATION

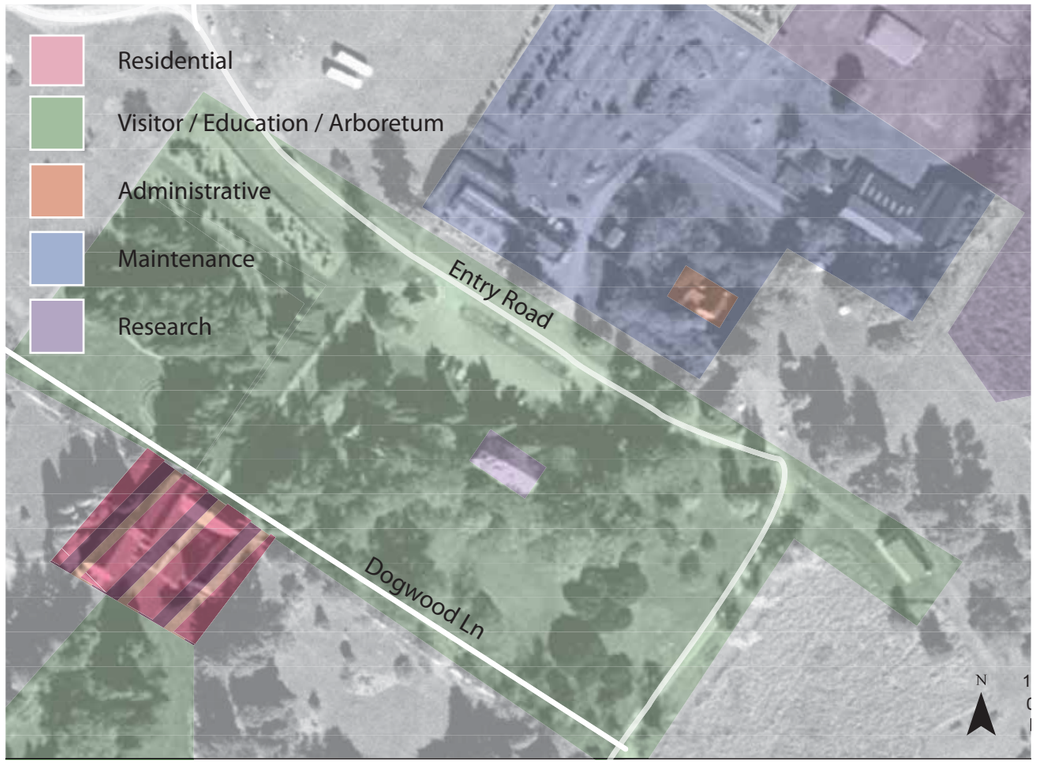
The area of Blandy surrounding the historic Quarters building is the central hub of the entire property. The entrance road winds its way here, offering visitors the iconic view of the Quarters building's central axis before terminating at the main public parking lot. Administrative offices, laboratories, researcher housing and a gift shop are housed within the Quarters building. Here one can begin to explore the arboretum's many collections via trails and paths that branch off from the Quarter's building interior courtyard or from the historic Dogwood Lane.

The main K-12 education building is housed in the "Apple Shed", located between the visitor parking lot and the Quarters building on a secondary path. A research greenhouse is tucked into mature plantings near the visitor parking lot and the busy maintenance complex is incongruously located immediately across the entrance road. The Peetwood Pavilion and public garden plots are a short walk away at the end of the entrance road and the beginning of the arboretum's loop roads.

The current conditions of Blandy's research laboratories and greenhouse are very poor and do not adequately serve its research mission. The visitor experience at Blandy is also poorly served in that there is little orientation or guidance on the public's use of the property. The opportunity to address these problems and re-imagine the Quarters area presented itself with the planning for a new laboratory building. In this effort, a long-term plan was developed that planned for the eventual build out of desired research and visitor services facilities, including additional research laboratories, research greenhouses and support structures, a visitor welcome center, lecture hall and expanded parking.

Rather than locate these additional facilities remotely from the Quarters building, it was desired to locate them nearby, but in a way that would not negatively impact the historic building's setting. In this way, the Quarters building remains a key central element visually and functionally. Its iconic central axis becomes a dominant organizational element that informs future development.

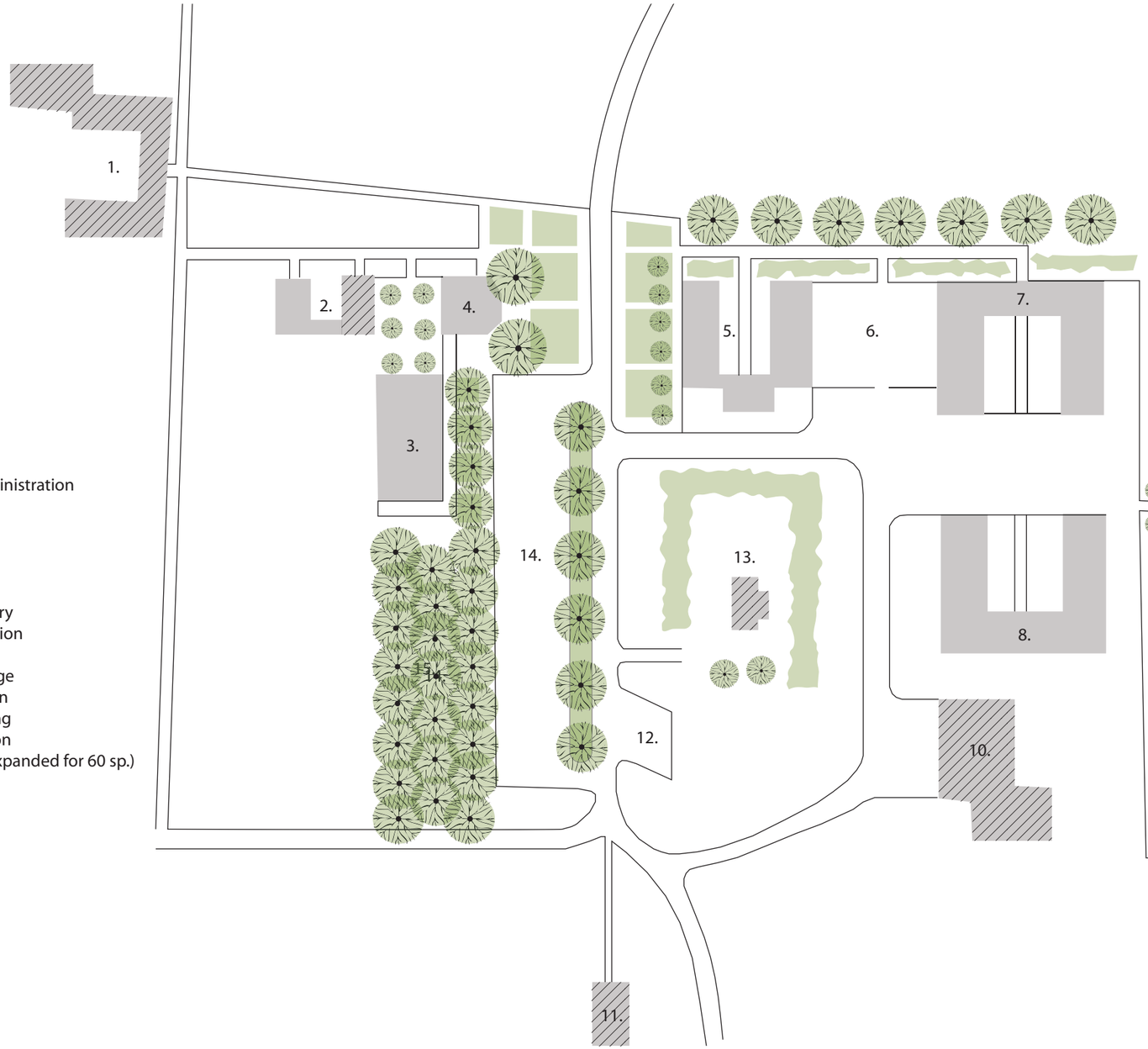
Building on previous planning efforts, this long-term plan recommends the relocation of the maintenance complex which allows for the development of a research "village" in close proximity to the Quarters area, but across the entrance road which separates semi-private functions from more public ones. Visitor orientation and services are improved with new facilities adjacent to the expanded parking area, reinforcing and organizing one's sense of arrival. A system of paths, gardens and plantings builds on those that exist and connect each facility. The Quarters building's central axis remains open; new buildings are set back along a secondary line established by the front façade of the existing Apple Shed and its access path. With poorly served functions such as laboratories and housing decanted from the Quarters building, it can be rehabilitated to serve as the central administrative building.



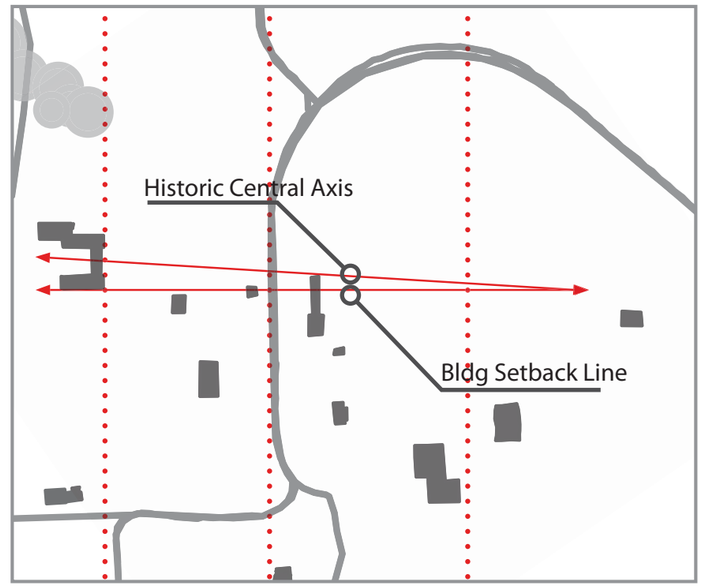

*Existing Land Use and Facilities in the Quarters Area*


*Proposed Land Use and Facilities near the Quarters*

## RECOMMENDED DEVELOPMENT SCHEME




Legend
1. The Quarters: Administration
2. Classrooms
3. Lecture Hall
4. Welcome Center
5. Greenhouses
6. Equipment Yard
7. Research Laboratory
8. Laboratory Expansion
9. Research Plots
10. Equipment Storage
11. Peetwood Pavilion
12. School Bus Parking
13. Possible Expansion
14. Visitor Parking (expanded for 60 sp.)
15. Picnic Bosque




*Organizing Lines for Site*

BLANDY EXPERIMENTAL FARM
EXPANSION CONCEPT PLAN
1"=100'
May, 2010

WATER FLOW AND MITIGATION

As part of the long-term planning and development of new research and visitor facilities, necessary infrastructure such as stormwater management and sanitary treatment need to be planned as well. Rather than hide these elements in pipes underground, managing them on site using innovative methods that are environmentally beneficial would be more compatible with Blandy's goals.

Blandy already has implemented a rain garden to treat stormwater run-off quality and quantity from its visitor parking area. Stormwater management for future development can and should be managed similarly, using bioretention and appropriate plantings. Furthermore, sewage treatment could be managed through use of constructed wetlands rather than in countless septic fields that take up considerable land and can be only planted in grass.

It is highly recommended that a stormwater and sanitary infrastructure study be conducted to identify suitable locations for these facilities to serve the long-term plan, and how these sustainable features can be integrated and interpreted as part of Blandy's landscape. It is assumed that these facilities would need to be located "downstream", or towards the successional research plots.

*Blandy Rain Garden After Storm*


*Stormwater Management Facility Concept*

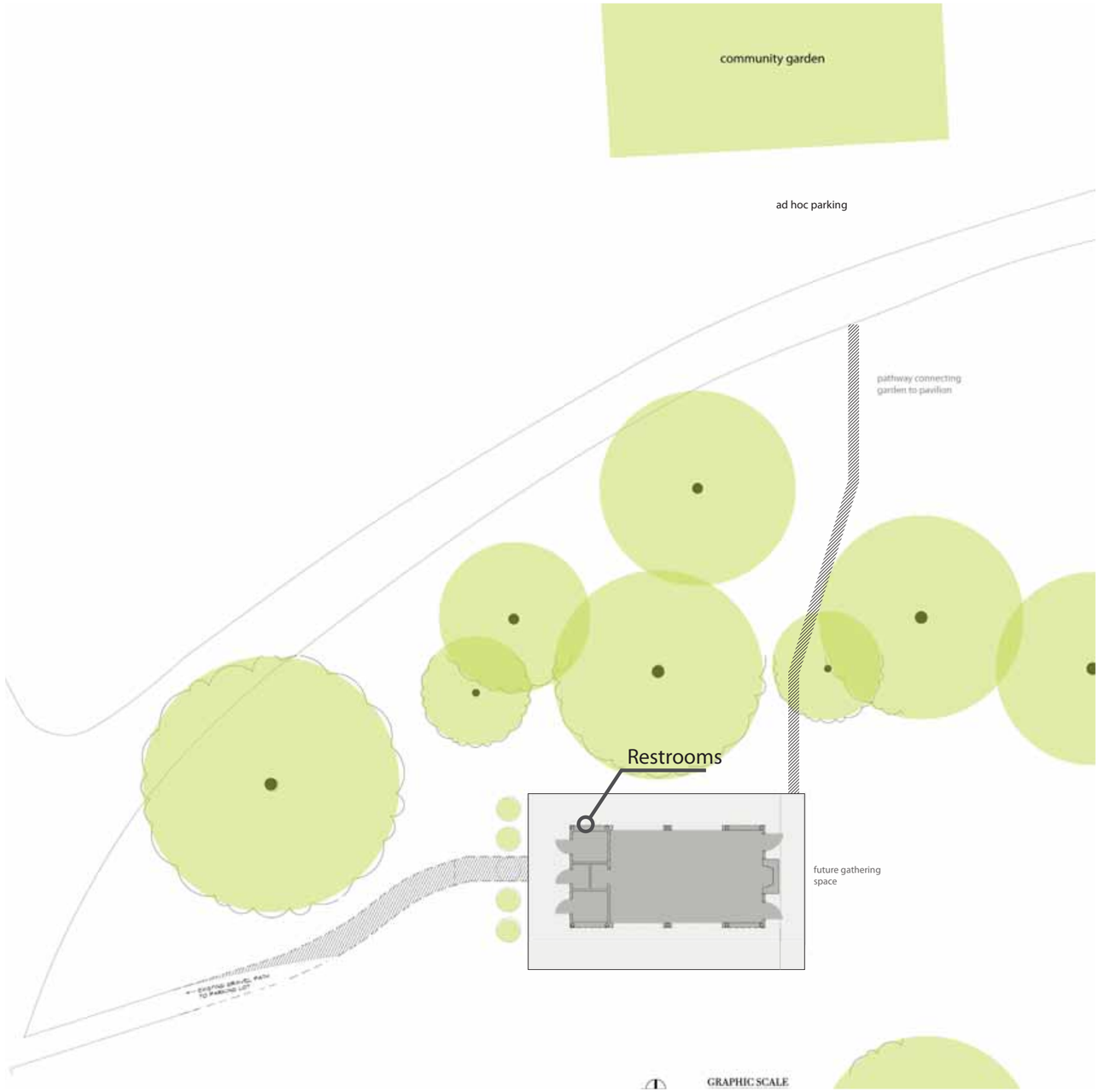
ADDITIONAL EXPANSION: PEETWOOD PAVILION AND COMMUNITY GARDEN

The Peetwood Pavilion currently houses K-12 outreach programs as well as public lectures. Although it is currently an open air shelter, Blandy plans to enclose the structure to make it usable over a longer period of the year. The new walls and resulting defined doorways will require modifications to the paving around the building to accommodate abrupt grade changes at the entrances.

The community garden lies just to the north of the pavilion. Demand has increased over the past year and the garden might be expanded in the years to come.

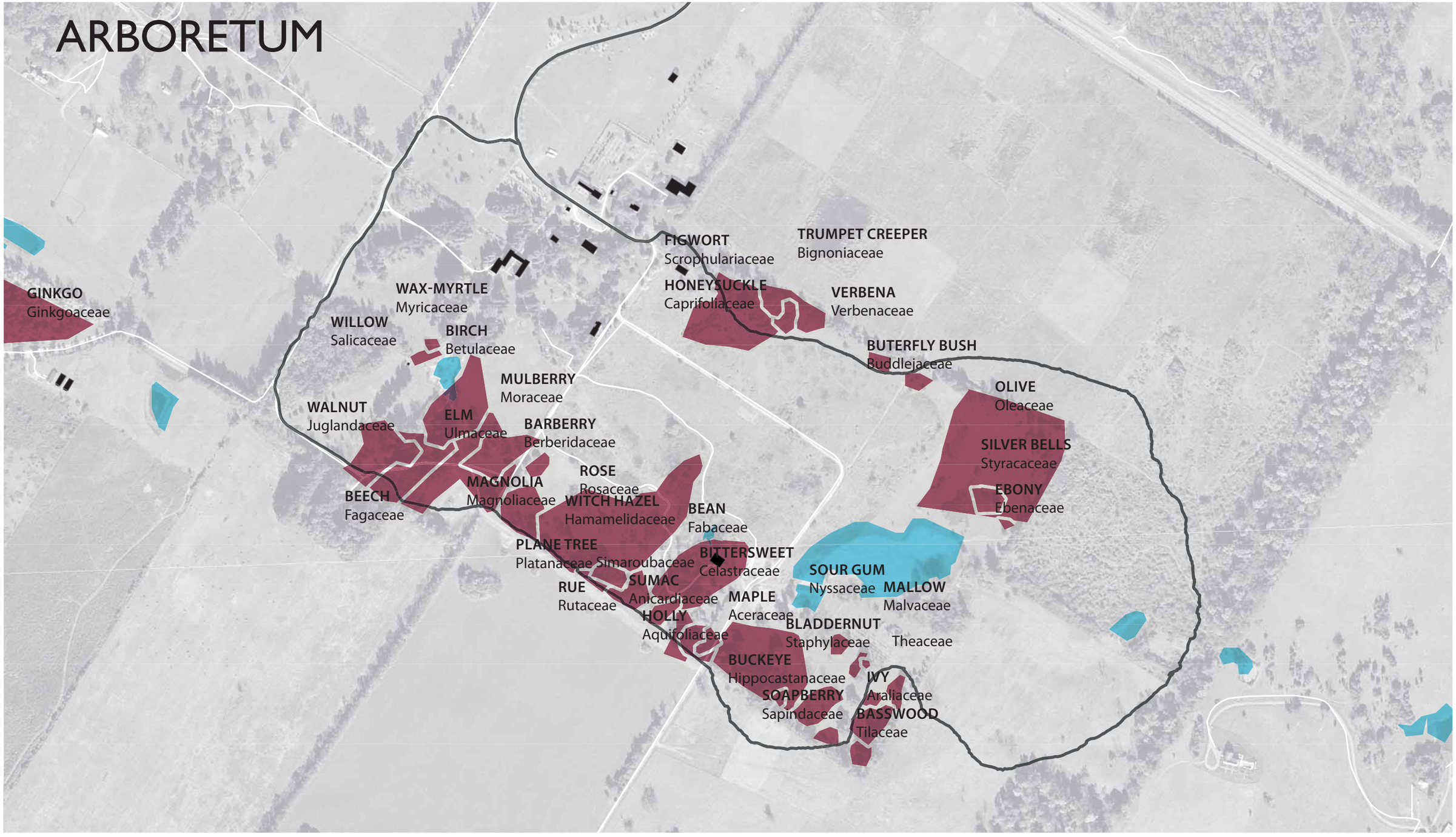
At the time of this addendum, there is no path connecting the pavilion to the gardens. In the future a path might provide a connection allowing access to the restrooms in the Pavilion for community gardeners.

*Community Garden Hanging Gourds*



*Peetwood Pavilion*

# ARBORETUM




*Arboretum Plantings as Identified by Staff, showing Prantl-Engler layout*

ORLAND E. WHITE ARBORETUM

The first director of Blandy Experimental Farm, Orland E. White, proposed the creation of an arboretum on the property in 1927. During his tenure as director (1929-55), he planted a wide range of trees from North America, Europe and Asia according to a taxonomic scheme that prevailed at the time. The practice of organizing gardens according to a taxonomic progression originated in the Renaissance era to help botany students understand, in accordance with contemporary science, the "logical" progression of plants. At the time of Blandy's initial arboretum layout, the Engler - Prantl system, the first taxonomic system based on Darwinian theories of evolution, was the accepted method of organizing and understanding botanical specimens. It sorted plants based on the physical characteristics of the flower and ranked them according to the evolutionary advancement of their reproductive systems.

Over time, the problems with this system became apparent. Every time new taxonomic systems were developed, the garden organization would become obsolete. Also, maintenance was difficult in this system because groupings often contained plants with drastically different habitat needs. Later arboretums such as Boston's acclaimed Arnold Arboretum use a system that was developed by Bentham and Hooker. After the 1930s, most arboretums abandoned taxonomic systems planting altogether and instead focused on clustering "plant communities" or groups of plants commonly found together in a particular habitat. Current technologies of DNA sequencing continue to challenge older taxonomic categorizations as the field of taxonomy changes.

The Blandy Experimental Farm was designated as the State Arboretum of Virginia in 1986. Since that time, the arboretum has functioned increasingly as a public garden, and new collections have been added with a goal of educating the general public rather than for study by scientists. The creation of the loop road and the Native Plant Trail has provided greater access to the 135-acre arboretum along with the opportunity to expand into new areas. However, budgetary and staffing constraints limit the opportunity for expansion as maintenance of existing collections takes precedence for use of scarce resources.

There is an opportunity to provide more access and use of the original Arboretum collections that are accessible via the loop road and interpreting the Engler-Prantl taxonomic classification system, integrating the old and new collections in a coordinated system of roads and pathways. Although the Arboretum is arranged in an outdated taxonomic format, it provides an opportunity to explain a moment in scientific history as well as encouraging visitor access to the Arboretum's diverse collection of mature trees. Development of a trail to interpret Blandy's cultural history, linking sites such as Rattlesnake Springs, cemeteries and the Quarters Building would further enrich the visitor experience and understanding of the Blandy landscape.


*Current Arboretum Offerings As Presented to Public*

RECOMMENDED ARBORETUM EXPANSION, ENTRY ROAD

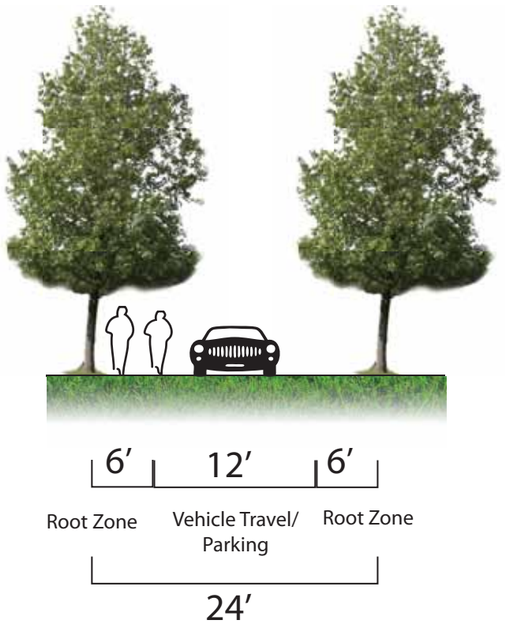
The entrance to Blandy Experimental  Farm and Arboretum is a critical part of the visitor experience. Visitors should immediately understand that they have entered a place that collects, curates, and celebrates plants. Currently, the visitor enters from the highway through the stone arrival gate, proceeds past a thin strip of forest and emerges into an open field. Although trees have been planted along the side of the road, the visitor's first impression is dominated by views of open fields rather than a collection of trees.

The 2000 Landscape Master Plan offered  an exciting vision for the entrance sequence. It suggested the creation of three zones, the initial forest strip, a large open rolling landscape of warm weather grasses, and a gridded field of orchard trees that would recall the region's agricultural context and Blandy's cultural landscape history as this area was an orchard in the early 20th C.

Although the orchard planting has not proved to be feasible to implement due to high maintenance costs, the concept of introducing a wooded threshold along the entry drive is an idea worth further consideration.  This plan suggests expanding the arboretum collection to this area that is so critical to the visitor experience and introduction to the Blandy landscape.

Curator T'ai Roulston has suggested, Sweetgum, or Liquidambar styraciflua, as a candidate for the gridded field. A native tree with beautiful fall foliage, it would also help fill a gap in the Liquadamber family in the current collection.  For reference, the Ginkgo biloba  (a similar sized tree) in the ginkgo grove are spaced about 20' on center.  However, in order to accomodate potential parking and drive aisles between trees, as represented in the diagram below, 24' might be a better spacing. In order to register as a threshold for visitors entering the Arboretum, the grove must flank both sides of the entrance drive and be at least as wide as the band of woods at the highway entrance. At the time of planting, the size and location of the trees will need to be balanced against the need for overflow parking.

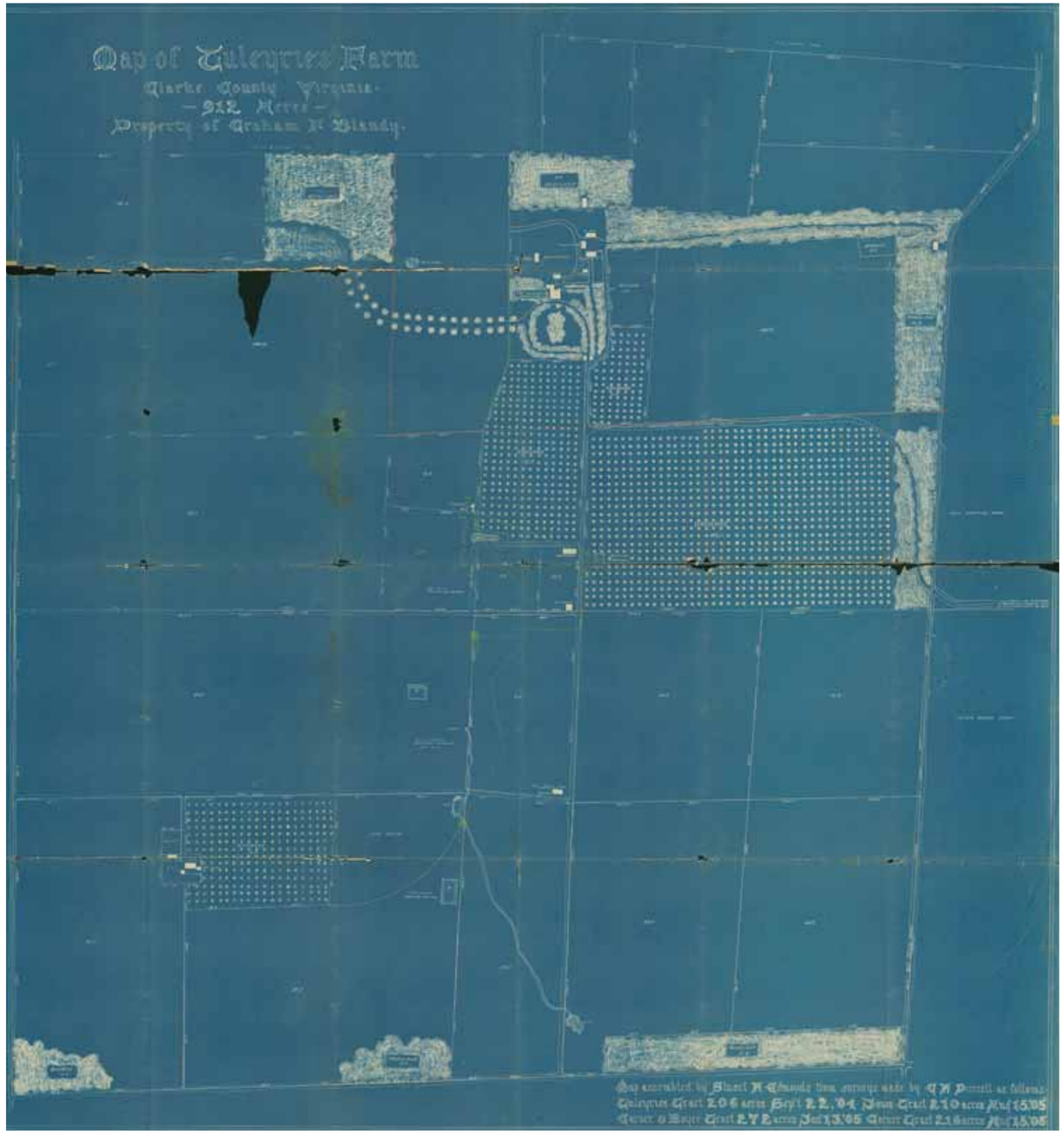

*Three Zones of Proposed Entrance Sequence: Woods, Grassland, and Sweetgum Grove*




*Typical Sweetgum Spacing Accommodates Occasional Parking*

*Sweetgum Leaf*

*Sweetgum Brilliant Fall Color*



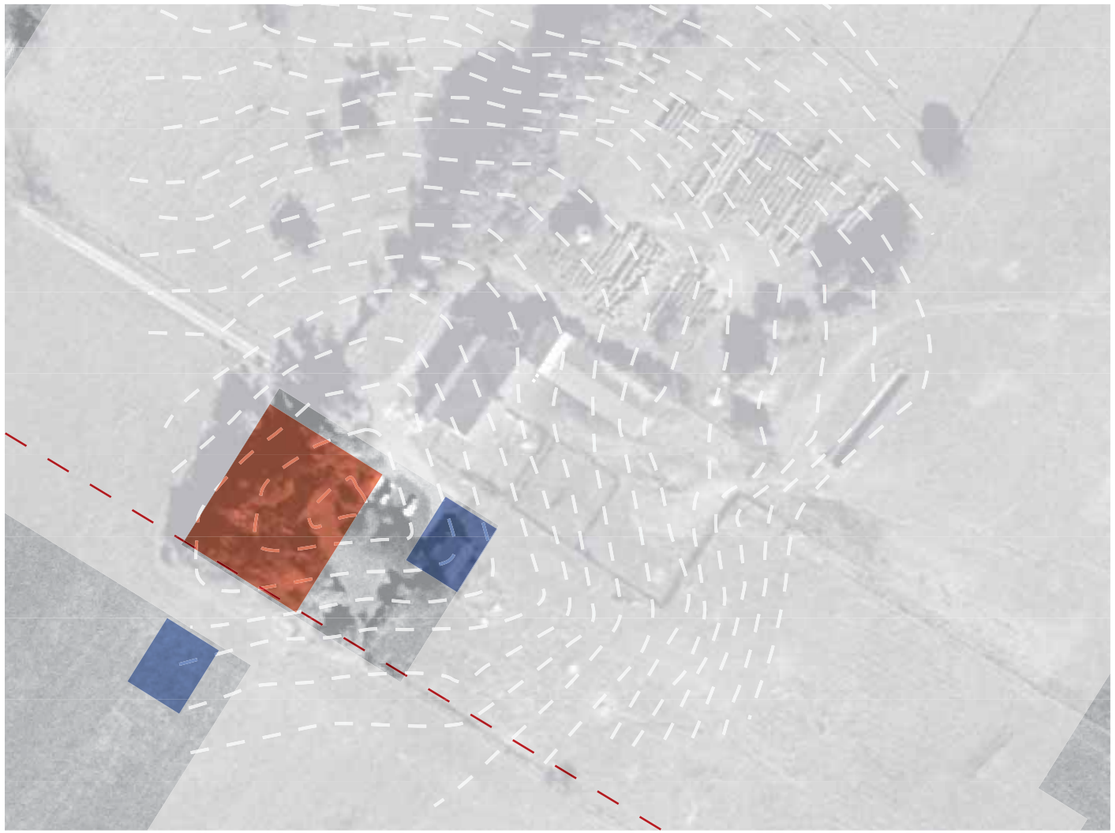

*1905 Blandy Farm Map Showing Locations of Orchards*

# SUPPORT FACILITIES

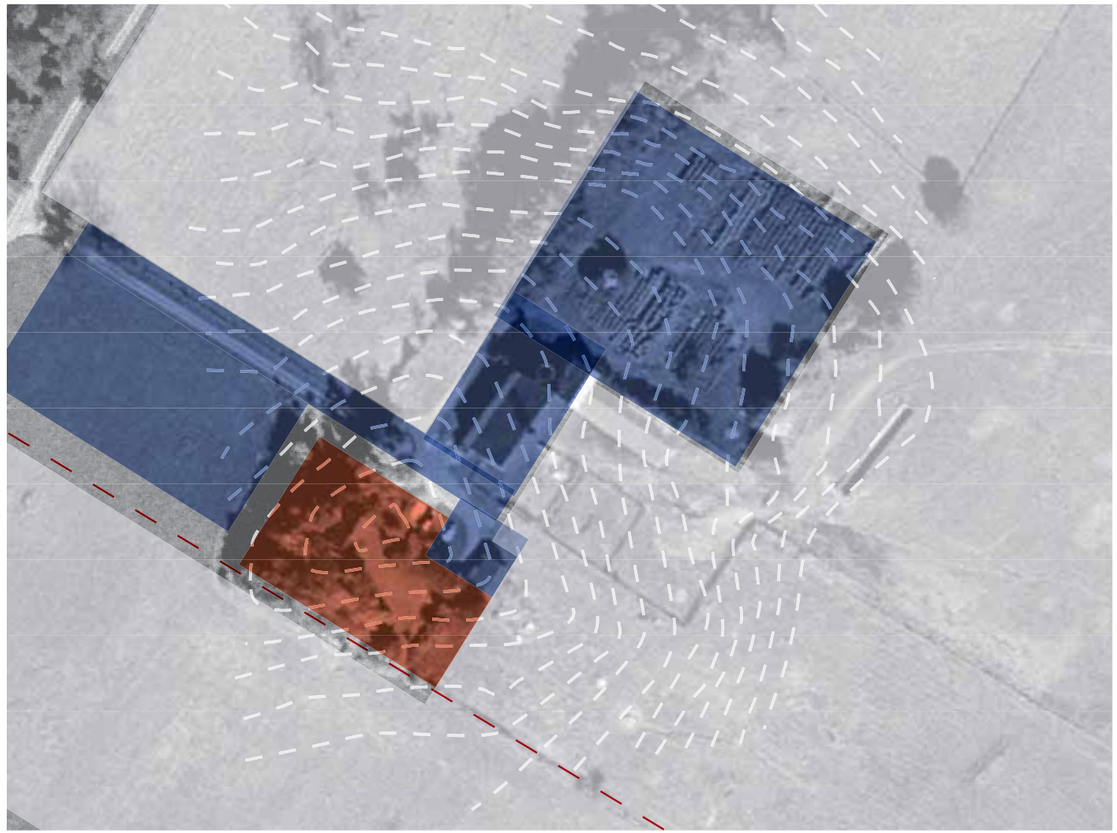
GARVER FARMSTED - EXISTING AND PROPOSED LAND USE

New construction for research facilities in the Quarters area will displace current maintenance operations, starting with the nursery and eventually the vehicle maintenance and storage building and lathe houses. The 2000 master plan recommended relocating maintenance operations to the Garver Farmsted site as a more appropriate location than the Quarters area. These facilities are best located to the north of the farmhouse, in association with the existing agricultural buildings, and away from the historic front of the farmhouse.

Currently at the Garver farm, the house is used as dormitories for research students. Behind the house is an "L" shaped complex of agricultural buildings, in varying degrees of deterioration. The iconic barn is used for storage of lightweight miscellaneous objects. Attached to it is the "corn crib", another significant historic structure. Adjacent to this is a more recent cattle shed. While the barn and corn crib should be preserved, the cattle shed is not significant and can be removed. Other structures include a block shed used as a shop and a propagation greenhouse.



*Existing Land Use at Garver Farmstead*



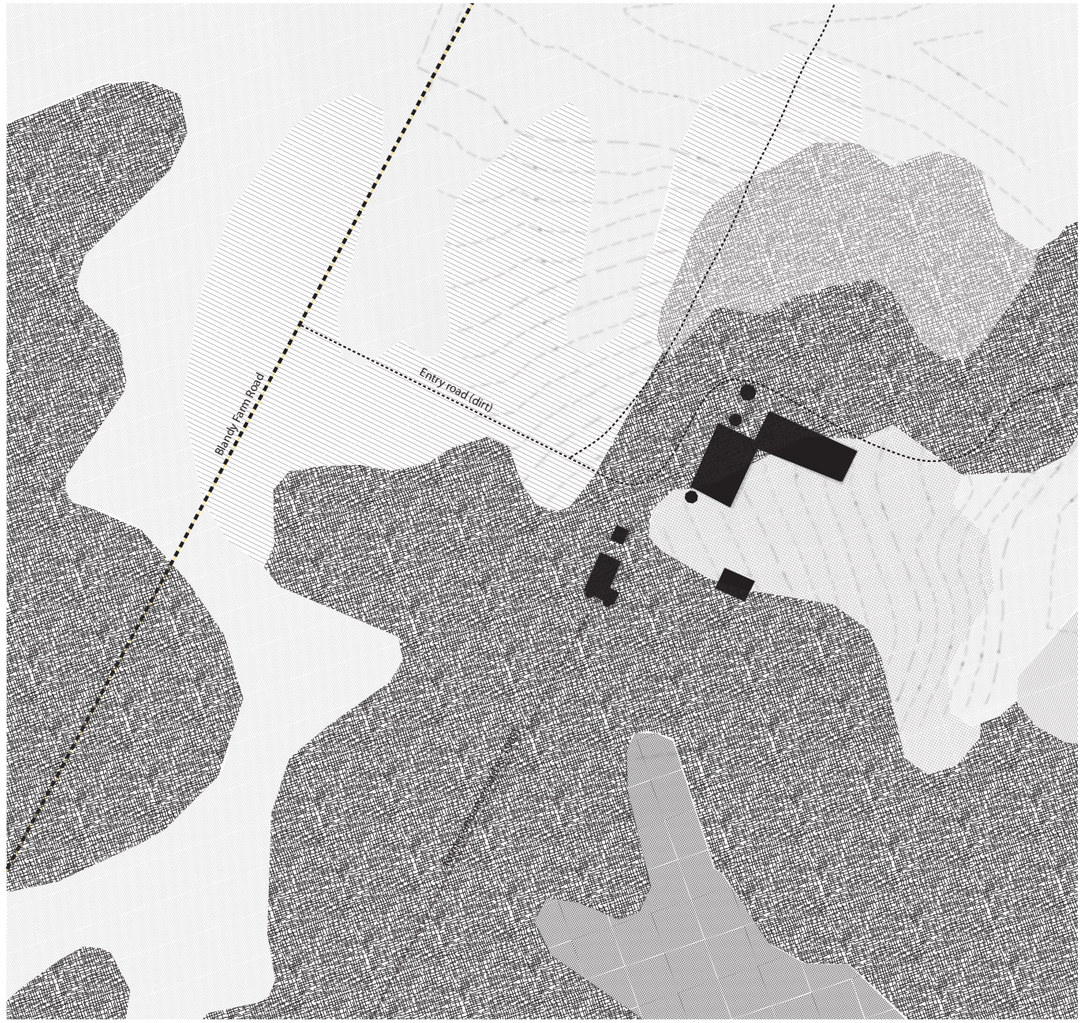

*Proposed Land Use at Garver Farmstead*

NURSERY RELOCATION

As of the writing of this document, the plant nursery is located in the current maintenance area across the entrance road from the Quarters building. Due to the planned research lab location, the nursery site will need to be relocated to the Garver Farmstead in the near future.

Historically, an orchard existed at the farm site, located to the north of the house and surrounding the barn. The front of the house faced south, towards the public road. While locating the nursery in a portion of the historic orchard zone conflicts with proposed future maintenance operations and facilities, a portion of it would be available for nursery plantings. In any event, the nursery location should be kept to the north of the house complex parcel, leaving its historic front open and free of maintenance functions. As the farmhouse currently operates as a residential facility, and will continue to do so in some form, keeping the nursery and maintenance operations separate from one another also lessens functional conflicts.

The Office of the Architect identified three potential sites for the nursery, based on historic land use and soil mapping. The benefits and drawbacks of each were discussed with the Blandy staff. After consideration, the staff selected option 1.




poplimento silt loam/ 8-15%

poplimento-webbtown complex/ rocky/ 3-8%

polimento silt loam/ rocky/ 8-15%

poplimento-rock outcrop complex/ 3-15%

timberville silt loam/ 0-7%

poplimento silt loam/ 3-8%

Site 1

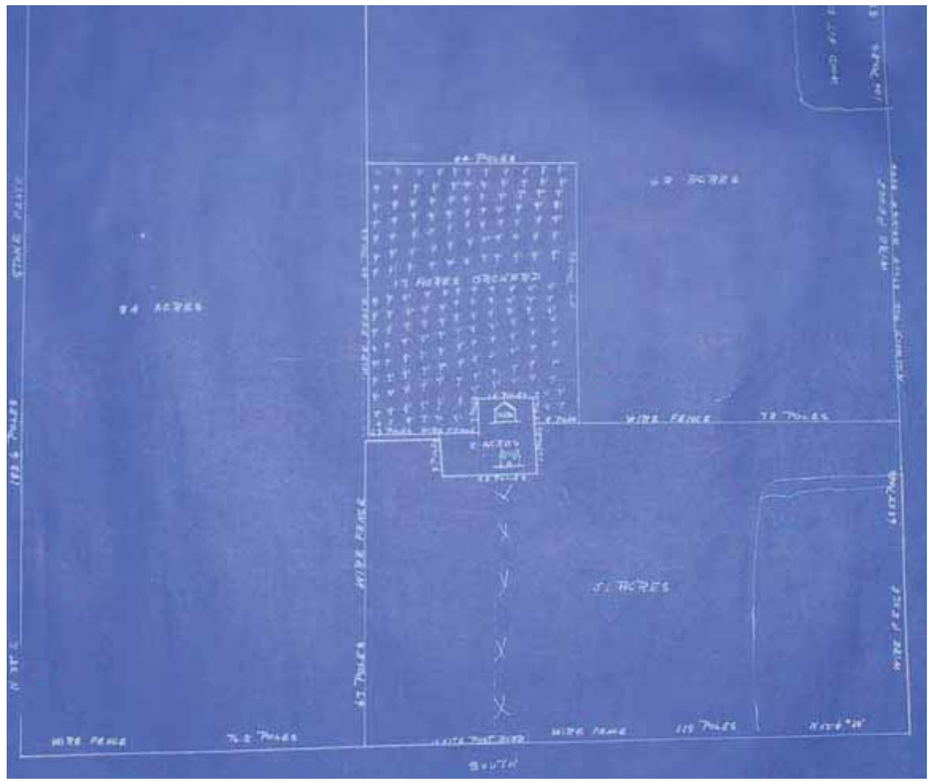
Pros: Convenient access. Fairly level. Better soil.
Cons: Farther from maintenance facilities. Closer to historic front of house.

Site 2:

Pros: Convenient access. Close water supply. North of farm house.
Cons: Rock outcrops result in narrow parcels; more fencing. In leased cattle field.

Site 3:

Pros: Close water supply. Within barn complex.
Cons: Eroded soils. Area important to lease tenant for cattle operations.




*1905 Map Showing Garver Farm's Historical Orientation to the South*


*Nursery Relocation Options at Garver Farmstead*

RELOCATION OF OTHER SUPPORT FACILITIES

Relocation of the maintenance complex to the Garver farmstead requires careful consideration. The home, barn and corn crib are historic structures; therefore, their re-use is sensitive. The placement of new facilities needs to be respectful of these historic structures but also be functional and efficient. Furthermore, preservation of these structures is important. At a minimum, stabilization should be performed where there are structural or roof problems, such as at the corn crib.

The largest new building to be located in this precinct is the vehicle maintenance and storage shed. Other structures include lathe houses and propagation greenhouse. The historic barn is not structurally suited to house anything other than storage of lightweight items, related to maintenance or research. However, there exists a relatively level area just north of the barn complex that would serve well as a location for new maintenance facilities; an old farmroad provides good access. Development in this location enables the historic barn and corn crib to be feasibly and appropriately utilized within the new maintenance complex.

A later structure, the "cattle shed", is attached to the corn crib. It is in poor condition. Its removal presents alternate options for the layout of the maintenance facilities. Should it be desirable to remain, perhaps to serve the tenant currently leasing land for cattle, the vehicle maintenance/storage shed can be located to the north, along with the lathe houses and propagation greenhouse. Should it be desirable to demolish it, the vehicle maintenance/storage shed could be built in its location, in which case this structure would take up some of the grade change. This latter option has the possibility of making the courtyard formed by the back of the historic barn part of the maintenance complex.

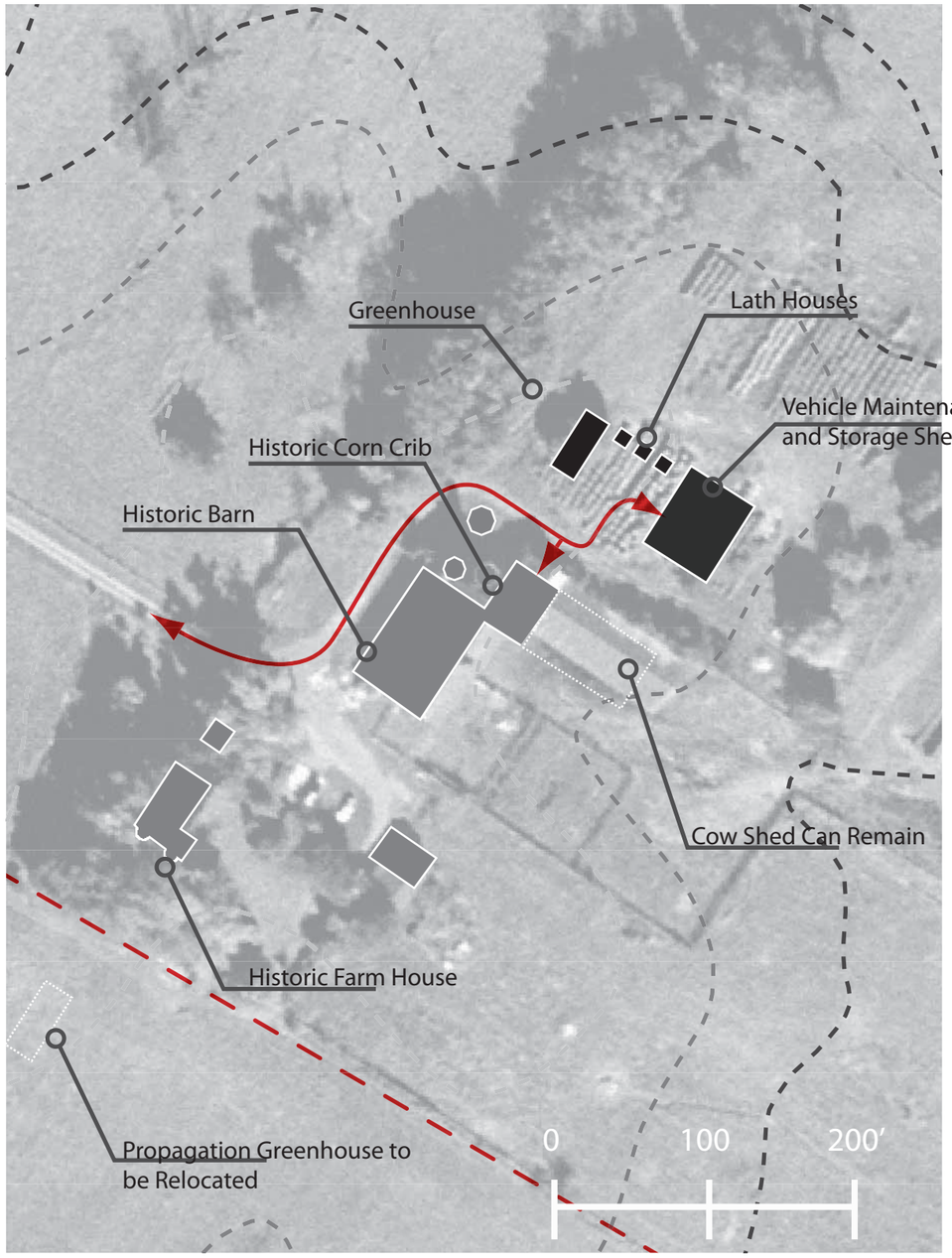
The historic front of the Garver home faced south, toward the public road. This frontage is currently difficult to perceive due to overgrown vegetation and the loss of its entry road. It is desirable to reclaim this historic view. It is also important to relocate the recent propagation greenhouse out of this viewshed and into the proposed maintenance complex adjacent to the historic barn and corn crib. The home itself could be more appropriately utilized, either as a home and office for the Blandy land manager, or as housing for visiting faculty researchers. Currently, the structure has been divided into multiple units for summertime student researchers.

*Vehicle Maintenance Building Exterior*

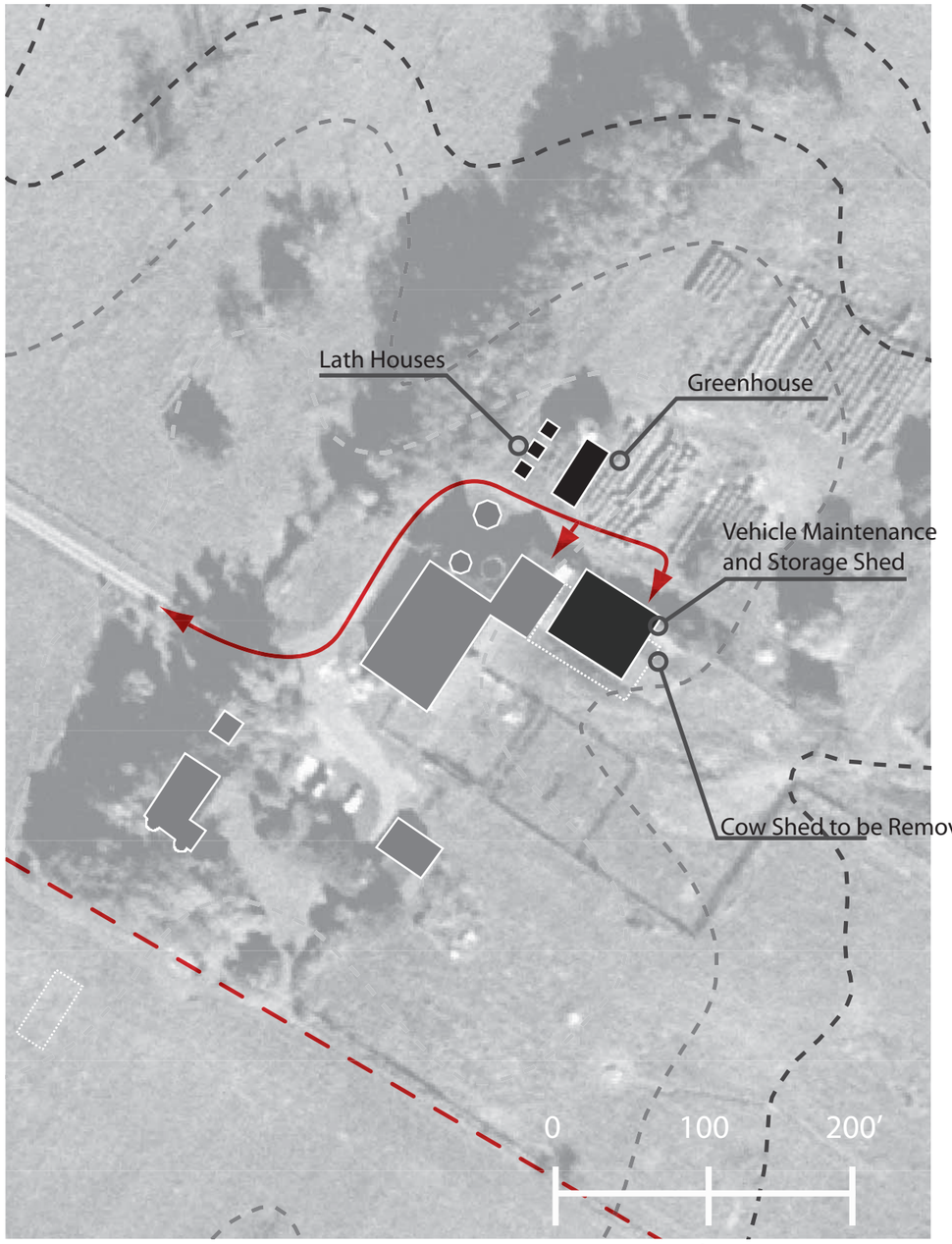
*Lathe Houses*

*Vehicle Maintenance Building Interior*

*Storage Shed*

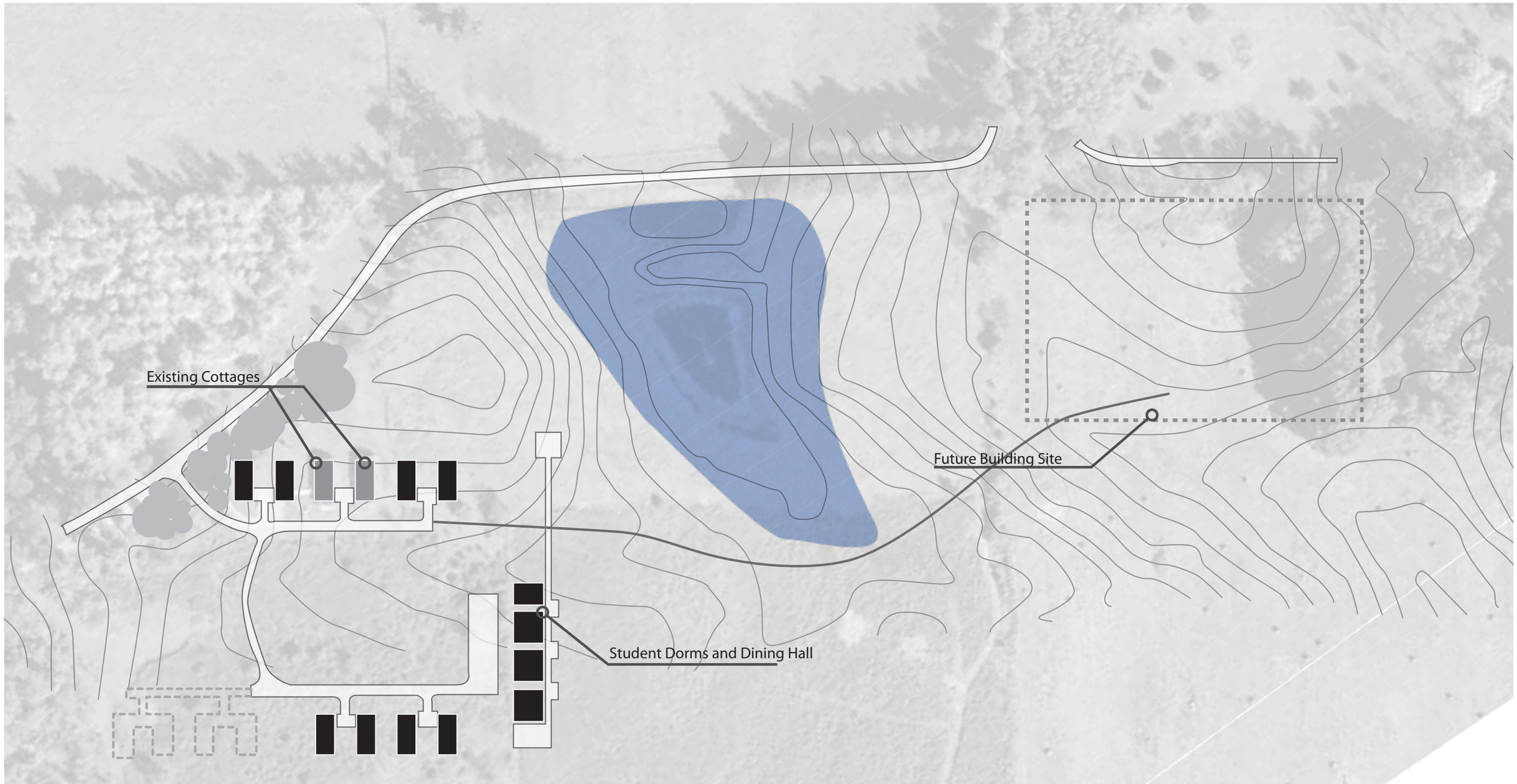



*Maintenance Compound Arrangement Option 1*




*Maintenance Compound Arrangement Option 2*

# HOUSING EXPANSION




*Conceptual Plan for Expansion of Residential Village*

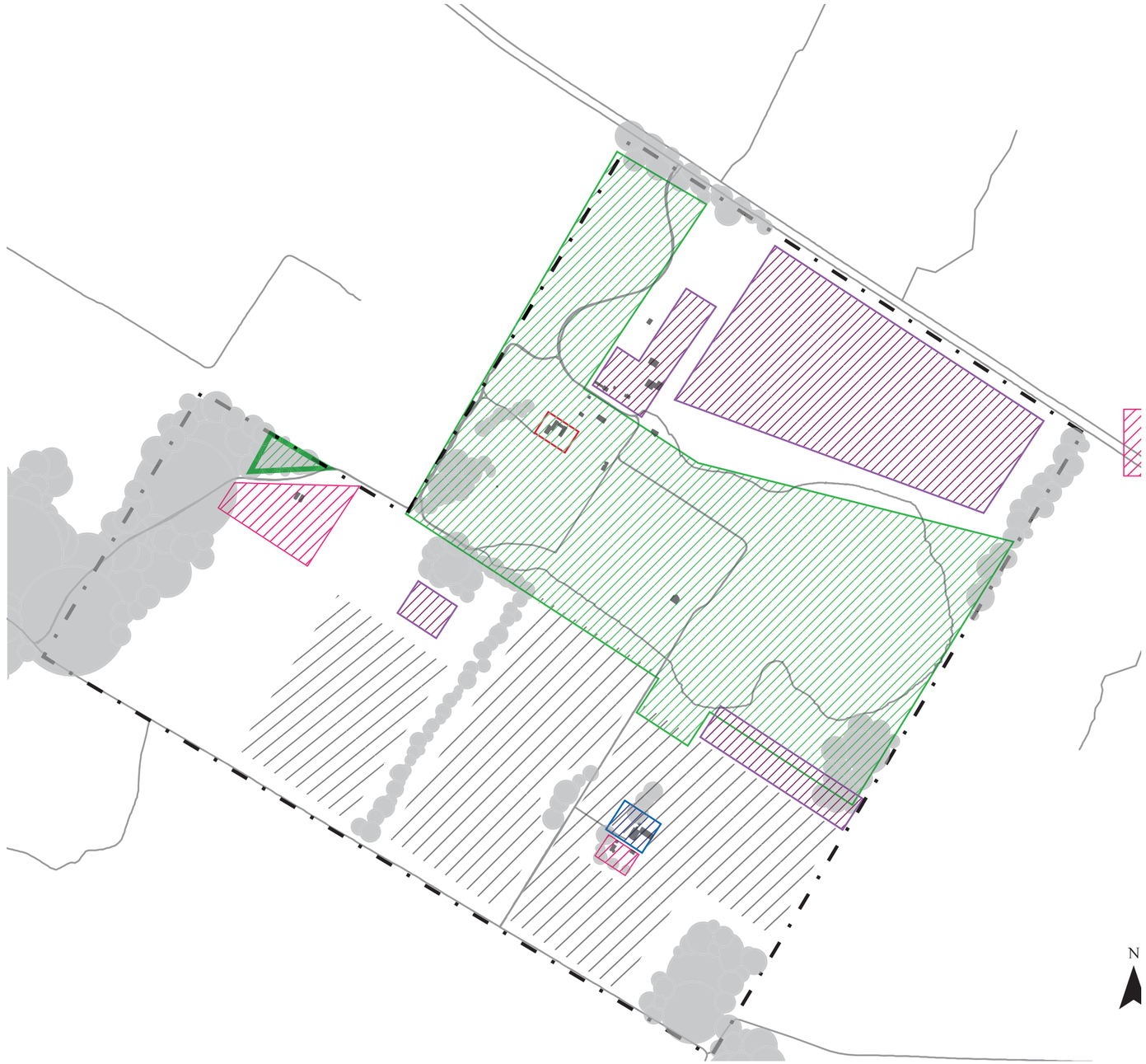
Blandy Experimental Farm is host to researchers that spend extended time on the property. During the summer months, numerous undergraduate and graduate student researchers spend the season conducting field research. Visiting faculty and researchers with families also spend days or weeks on site. Accommodation for researchers occurs at the Quarters building, at the Garver farmstead historic home and in two stand-alone cottages built in the 1990's in the southwestern area of the property, across from the ginkgo grove.

Student accommodation at the Quarters building is limited and not ideally served in the historic structure. The farmstead house was renovated to accommodate additional students when Blandy decided to take the house out of lease and utilize it in support of research activities.

In 2007, the Office of the Architect for the University studied development of the area surrounding the two cottages for research and residential expansion. The existing cottages serve families, multiple student researchers or visiting faculty well; therefore, this model can be repeated to create a complex of cottages. Higher density dormitory structures and a dining facility can eventually be included in this complex to give Blandy a variety of housing types to serve its various visiting researcher needs. In 2007, a potential building site for a new laboratory building was identified across an ephemeral pond from the residential complex. This plan addendum supercedes that concept, but the site remains a good building site to accommodate residential expansion.

*Existing Cottages*

# CONCLUSION




- Residential
- Leased
- Maintenance
- Administrative
- Research
- Visitor / education / arboretum

## Conclusion

The primary purpose of this 2011 addendum to the 2000 Landscape Master Plan was to supplement the recommendations of the original plan with site plans for new research facilities located in the vicinity of the Quarters building. The placement of these facilities, in turn, required a rethinking of the visitor center, parking and greenhouse locations if all these activities were to be accommodated within the viewshed of the entrance drive and the historic Quarters building as well as the relocation of existing maintenance functions to the Garver Farm. This most recent planning study has been undertaken with a fuller understanding of the scope of Blandy's historic resources as described in the 2006 Archaeological Report and the National Register Nomination (1992). It has also provided an opportunity to recommend improvements to the interpretation of the arboretum and the visitor entrance experience. Now that there is a physical plan for development of new facilities in several areas of the property, there is a need to undertake comprehensive planning for the necessary stormwater and sanitary infrastructure to take advantage of locations where larger capacity facilities can be accommodated without hindering future development and planting in prime locations needed for future growth. As this growth proceeds, the University must not lose sight of its stewardship role in caring for the rich legacy of Blandy's greatest assets: the Quarters building and mature plant collection of the Orland White Arboretum.

# APPENDIX


LEGEND
1. The Quarters: Administration
2. Classrooms
3. Lecture Hall
4. Welcome Center
5. Research Greenhouses
6. Research Laboratory
7. Laboratory Expansion
8. Research Plots
9. Equipment Storage
10. Peetwood Pavilion
11. School Bus Parking
12. Staff Residence
13. Visitor Parking
14. Picnic Bosque

BLANDY EXPERIMENTAL FARM
ALTERNATE EXPANSION CONCEPT PLAN
1"=100'
May, 2010

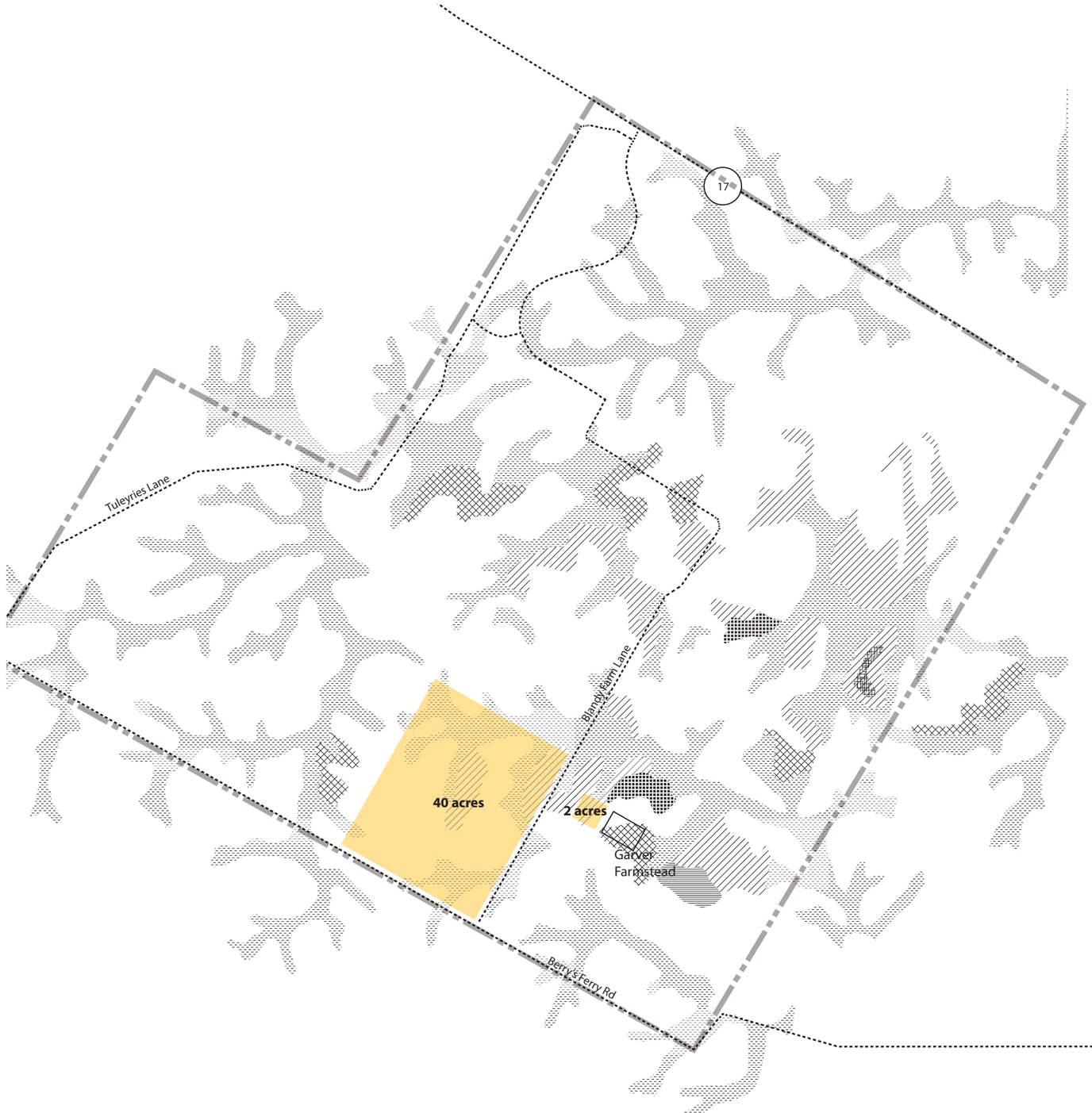
## SOIL CONSIDERATIONS

**Poplimento Soils**

Soils of the Poplimento series are very deep and well drained with moderately slow permeability. They formed in residuum from a mixture of shale, limestone, siltstone, and fine sandstone bedrock in the Ridge and Valley portion of the Shenandoah Valley. Mean annual temperature is about 53 degrees F and mean annual precipitation is about 35 inches near the type location. Slopes range from 2 to 60 percent.
USE AND VEGETATION: Most areas are in cropland or pasture. Major crops include apple and peach orchards, small grains, corn, and mixed hay. A few areas are in woodland mainly consisting of upland oaks, hickory, yellow-poplar, walnut, and ash.
DRAINAGE AND PERMEABILITY: Well drained; slow to very rapid runoff; moderately slow permeability.

**Timberville Silt Loam**

The Timberville series consists of very deep, well drained soils formed in alluvial/colluvial materials. Permeability is moderate. The soils are subject to frequent flooding of very short duration during the period April thru October. Mean annual temperature is about 53 degrees F and mean annual precipitation is about 35 inches. Slopes range from 0 to 15 percent.
DRAINAGE AND PERMEABILITY: Well drained; slow to moderate runoff; moderate permeability. Most areas are subject to brief periods of flooding during periods of intense rainfall.
USE AND VEGETATION: Most areas are cleared and are used for cultivated crops and pasture. The remainder is wooded. Native vegetation is mixed hardwood species.




poplimento silt loam/ 8-15%

poplimento-webbtown complex/ rocky/ 3-8%

polimento silt loam/ rocky/ 8-15%

poplimento-rock outcrop complex/ 3-15%

timberville silt loam/ 0-7%

poplimento silt loam/ 3-8%

* 40 acre plot for potential cottonwood research

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