2023

Landscape and Grounds Strategic Plan

The University of Alabama

Landscape and Grounds

Department

INTRODUCTION

ANNUAL LANDSCAPE AND GROUNDS MAINTENANCE

The University of Alabama, located in Tuscaloosa, Alabama, on the banks of the Black Warrior River, was founded in 1831 as the state's first public college. From a landscape and grounds viewpoint, it has become one of the most beautiful campuses in the nation. Assets, such as its diverse tree canopy, its beautiful ponds, green quadrangles, and manicured flower beds, give this campus plenty of charm and beauty. Add to that the strong central core of the antebellum President's Mansion, the landmark Denny Chimes and a multitude of character striking architectural structures throughout the campus, and you quickly see the rich heritage of Alabama's flagship University. This strategic plan will serve as the primary roadmap to ensure the campus landscape and grounds continue to be key pillars that contribute to the heritage of the University of Alabama.

A properly maintained campus landscape and grounds, not only adds to the beauty of the campus, but is critical to recruiting students. Dr. Phillip Waite, Associate Professor in landscape architecture at Washington State, in his research, which was directed at the effective power of place, and how the landscape of a campus affects student recruitment, retention and learning performance, found that 62% of high school seniors make their choice of institution based on the appearance of the campus buildings and grounds. The beauty of this campus translates into an incredible recruitment tool, to attract not only the best and brightest students, but quality faculty and staff. The University of Alabama grounds serves as a major environmental foundation to study, teach, research, work, entertain, recreate, and relax; a place we proudly call The Capstone.

With all this landscape beauty, comes the enormous challenges of maintaining the highest level of landscape excellence, installation, and integration of new special landscape projects, meticulous planning for future landscaping on capital construction, and most importantly, paying close attention to detail on daily grounds and landscape maintenance. The annual grounds maintenance requirements, from daily routines to annual cycles will be outlined in detail in Part I of this plan and provide descriptions of campus landscape and grounds projects in Part II. Ultimately, this Landscape and Grounds Strategic Plan will serve as a detailed reference guide/timeline to ensure the most critical campus landscape needs and requirements are addressed over both the short and long-term timeframes, while formulating a solid plan for campus special projects in the landscape arena.

CAMPUS LANDSCAPE AND GROUNDS AREAS

It is imperative that we treat all of campus as top priority areas. These areas, because of their location, importance, or historical significance, require greater attention to detail on a more consistent schedule. Although most of our campus is considered a high-profile area, it is paramount that we treat the entire campus as such, to ensure that the entire campus is beautiful and safe for faculty, staff, students, and visitors to enjoy.

PROJECT STANDARDS, FIGURES AND TIMETABLES

All landscape project plans will adhere to the stringent guidelines for Project Standards as outlined in the University of Alabama Campus Master Plan dated 2023. The appendix in this plan provides clear and concise descriptions of each foreseeable project and illustrations to give the university a better idea of the operational guidelines for Landscape and Grounds. It will also provide timetables for when the landscape critical needs should be accomplished during a yearly cycle.

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PART I:
ANNUAL LANDSCAPE AND GROUNDS MAINTENANCE

A. General Requirements and Information

Landscape maintenance cannot be performed correctly without proper functioning equipment or well-trained employees. All university, contractor leased landscape, and grounds equipment (the term equipment includes vehicles in this document) shall be maintained in an efficient and safe operating condition while performing work on the University of Alabama campus. All equipment, without exception, shall have proper safety devices always maintained while in use. If any equipment does not contain proper safety devices, that equipment shall be removed from service, without delay, until the deficiency is corrected. The same is true for the unsafe operation of any equipment by personnel employed or contracted by the University of Alabama when working on this campus.

B. Campus Irrigation Systems

The application of water to any landscape environment that incorporates grass, shrubs, flowers, and trees into its design is considered one of the key components. The most effective and efficient means to supply water, especially when it must be applied over an area encompassing approximately 1400 acres, is by using irrigation systems.

The University of Alabama currently has 163 separate irrigation systems on the main campus**. (See Figure 1.1 & Figure 1.2)** Establishing and maintaining beautiful, healthy, appealing, and inviting landscapes can only be accomplished if the irrigation system(s) remain(s) in a good operational condition, and effectively functions in the manner it was installed. We accomplish maintenance on these 163 systems with the aid of nine irrigation technicians. An irrigation system that does not operate correctly due to pressure or controller malfunctions, has breaks in the system that cannot be located, or in which sprinkler heads do not cover the entire required area (or worse, they spray into the street rather than the lawn) is not effective or resourceful. For this reason, a comprehensive, continuous, and dedicated maintenance repair schedule is extremely critical. The grounds department has advanced central operating controllers to help minimize water waste.

The goal of irrigation maintenance is to complete preventive maintenance "wet checks" monthly but make repairs immediately or when pertinent with operational constraints, temperatures, and demands on the department. A "wet check" consists of going through irrigation clock, zone by zone, flagging breaks or adjustments to heads, laterals, solenoids, mains, and valves. The campus Grounds Team (Director, Manager, Assistant Managers, and Irrigation Technician Team) accomplishes this task by evaluating the systems throughout campus on a monthly "wet check" process to proactively catch irrigation system issues. In addition, all Campus Grounds personnel are trained to note any questionable irrigation operations in their work areas. Malfunctions, leaks, and suspicious pooling of water from any system will be reported and a work order established for immediate action/repair. Next, all irrigation systems must be documented in terms of exact location on campus and marked on drawings, and with Global Positioning Satellite (GPS) technology. This documentation would include meters, controllers, clocks, and sprinkler heads.

Finally, the campus currently utilizes five different types of irrigation systems. Those irrigation systems are traditional electric, two wire, hydraulic, battery, and manual. Two wire systems provide operational effectiveness, compatibility, interoperability with the master controller systems and ease of maintenance/training.

C. Campus Sidewalks and Bollards: Repairs, Replacement and Additions

Due to the volume of foot, bicycle, maintenance vehicles, contractor trucks, and game day traffic/activities,

sidewalk maintenance and repair has become an increasing concern on campus. With approximately 1400 acres containing a multitude of sidewalks on every street, between facilities, around resident halls and throughout all quadrangle areas (Main Quad, Woods Quad, and Shelby Quad), it is paramount that the university maintain these pedestrian thoroughfares and handicap ramps in excellent working condition. This requires a continued inspection, evaluation and maintenance process that is vigilant in the areas of safety and usability, as well as functionality and aesthetics. Special attention should also be given to the different walkway surfaces. Different types and styles of concrete and pavers require a keen eye for their unique safety concerns, as well as their durability when placed under heavy weight.

The goal for this important area is to institute a plan that is both short and long term in execution. The campus sidewalks, plazas and quadrangle networks will be evaluated on a continual basis. Facilities and Grounds personnel review campus sidewalks on a continual basis, and needed repairs are documented by the Building Maintenance Department. Repairs are scheduled to be completed throughout the year with the University's internal concrete team; however, any documented trip hazards are addressed as quickly as possible. Concrete grinding is utilized to eliminate trip hazards in an expedient manner, until such time the sidewalk is replaced. Major repairs, replacement, and possible installation of additional sidewalks to augment the network where needed, will be completed during the summer months, as the campus is less populated. The Campus Master Plan Standard for width, depth, welded wire fabric, crushed stone base, and scoring pattern must be strictly adhered to. Standard drawings outlining these standards and details are located on the University Design Guidelines repository.

The university must ensure that all new sidewalk installation considers campus irrigation systems and their needs. Sleeves shall be installed at any location in which an irrigation line will cross a sidewalk. If irrigation parts need to be repaired/replaced due to damage caused by the installation, then the Facilities Maintenance Department or contractor needs to communicate those issues. Building Maintenance and the Grounds Department should ensure the correct course of action is scheduled.

The university strategically installs bollards to control vehicular and pedestrian travel on campus grounds. The campus standard bollard is constructed out of steel tubing with a newel post ball cap. They are installed at maximum spacing of 10' with hot dipped galvanized black coated chain between the bollards. Prior to installation, the bollards shall be painted black in color. At times, specialty bollards may be determined necessary by the University Planning Department, which deviate from the standard design. Specialty bollards must be reviewed by the University Planner and Architect prior to installation. If bollards are damaged, they can typically be straightened and repainted if struck, without need of replacement, but if the damage is great, replacement may be necessary.

D. Campus Seasonal Planting: Flowers and Shrubs

A comprehensive horticulture list along with a plan for seasonal planting is critical for a university campus the size of the University of Alabama. **(See Figure 2.1 – 2.3)** We have divided the campus into four different flower zones, **(See Figure 3)** allowing us to maintain each area with one of our four Horticulturist assistants. By dividing the campus into four zones, we ensure all the campus flowers (beds, planters, and pots) are maintained to the highest standard. This plan designates the appropriate flowers and shrubs to be incorporated into each bed, basket, and pot on campus. Flowers will be strictly coordinated with the season that gives a particular species the best opportunity to flourish with beauty and color in the central Alabama climates and still project the style the university strives to achieve. In addition, the color of blossoms desired in each location will be designated along with appropriate backup flowers/shrubs in the chance the primary choices are unavailable due to supplier shortages. Types of

planting, especially any new additions to the campus horticulture list, should be coordinated and decided upon by the Campus Landscape Architect and Landscape Advisory Group. Facilities and Grounds has renovated an existing Greenhouse on the Partlow Campus (University Services Campus). The renovation has enabled the Grounds Department to grow various plant species on site, while also keeping frequently used plant materials on hand, to augment our need for a quick turn-a-round.

E. Campus Tree Care

One of the University of Alabama's hallmark assets is the over ten thousand beautiful trees on campus. A magnificent canopy of both young and old trees casts an inviting picture-perfect backdrop for anyone who studies, works, plays, or visits the Capstone. In addition, the beauty of these trees represents numerous species such as Dogwood, Oaks, Pistache, Ginkgo, Crape Myrtles, Hollies, Magnolia, and Pine. **(See Figure 4.1 & 4.2)**

With so many trees located on one campus, the need for constant care, grooming, planting, transplanting, and removal is essential to maintaining both the beauty and health of our tree canopy. Such things as storm damage, environmental stressors, fertilization, pruning, transplanting, and mulching must all be considered during each annual cycle. A good campus forestry management plan starts with culling dead trees, thinning canopies to provide sunlight and air, then ensuring proper clearance for pedestrian and vehicular traffic on the ground. One of the most important things for healthy forest stands is proper pruning practices that adhere to Ansi-A300 Pruning Standards. While monitoring for disease and insect is important these are usually secondary issues to environmental factors for the trees. For instance, root compaction or construction activities can severely impact the root zones for trees. This added stress will open the tree to secondary pests like disease and insect. This can then significantly impact the trees, so it is always important to check for environmental factors and stressors. The geographic location of the university dictates a need for continuous maintenance due to extreme weather like thunderstorms, tornados, and hurricane winds from the Gulf Coast.

The short-term goal for tree care includes a constant campus inspection and evaluation of each tree on campus. Currently, staffed with 2 certified arborists the Facilities and Grounds team is equipped to perform a tree risk assessment established by the guidelines from the International Society of Arboriculture. Currently, there is 1 certified arborist that is Tree Risk Assessment Qualified (TRAQ) through ISA. This allows the certified arborist to perform a thorough Tree Risk Assessment Form (TRAF) for any trees deemed hazardous on campus. This is a joint task performed by a dedicated team consisting of the Grounds Director, Managers, Horticulturist and Arborist. If a tree has concluded its life cycle, it is not cut down without thorough review through the Landscape Advisory Group. When appropriate, and depending on the location, fallen or dead trees will be replaced by new ones. If a tree is deemed to be growing in a bad location due to such things as a new construction site or under power lines, the first choice will be to transplant, if possible. If the existing trees are not able to be transplanted, existing trees are to be replaced in areas of new construction.

F. Campus Turf Care

The care of different grasses and turf on campus takes considerable time and constant monitoring, as well as research to achieve the beautiful green look that is signature to the University of Alabama landscape. Often, depending on the project and location, the turf is installed using sod; however, larger areas are often established by seed. There are four elements that are needed to ensure optimum turf survival: sunlight, water, air, and soil. If any one of these four elements is missing, growing healthy turf grass becomes a serious challenge.

Sunlight is one of the most crucial factors influencing the health of any turf grass species. While it is true that some turf performs better in shade than others, there is **NO** turf/grass that thrives in shade. Tall Fescue and Zoysia are two species that perform better in shade. These species should be used in low light areas or under tree canopies. Crown thinning and raising of trees will help introduce more light into these low light areas. In addition to species selection, our department will strategically prune trees to allow more sunlight to penetrate the canopy and supply the turf with as much sunlight as possible.

The ability to provide adequate water is vital to the health of turf. Plants are comprised of nearly 75-85% water and provide the internal conduit for nutrients moving through the xylem of plants. Water does several things in a plant, but most importantly, it is a key element of photosynthesis. Without water, photosynthesis will not take place and the plant would not be able to make sugars and starches for food. Secondly, water gives the plant turgor allowing it to remain upright after pressure has been applied to it. Lastly, syringing is the practice of using water to cool plants during hot cycles in the summer; however, the key is not to saturate the soil when syringing, just lightly spritzing the water will help slow the plants transpiration process.

Availability of oxygen to plant roots is another essential component of a healthy turf grass system. Soil composition consists of three primary soil types, which are sand, silt, and clay. Sand is comprised of nearly 30-40% porosity. Silt is nearly 40-50% porosity, while clay is 75%. Porosity in the soil consists of the solids that are present in the soil profile. In soil profiles you will have small pockets called micro-pores and macro-pores. Micro-pores in soil profiles are holding 25% water and macro-pores are holding 25% air, the remaining 50% consists of solid material. At the University of Alabama our soil is primarily clay based, which has the least number of micro/macro-pores, thus creating a situation where water saturation happens faster than sand/silt-based soil profiles. Core aeration and top-dressing with sand will start the slow process of changing the soil profile in the top 6-8 inches soil. These types of mechanical Integrated Pest Management strategies will aid in remedying turfgrass health and vitality, but do not drastically change drainage or percolation problems. The main reason for this is because soil profile problems can extend past the topsoil layer and well into substrate layers. **(See Figure 5)**

Proper fertility/healthy soil is also a vital aspect to healthy turf grass. Soil testing should be done every year but strategically based off the problem areas throughout campus. In most cases, soil analysis ratios will not change dramatically unless the soil profiles are disturbed or water quality changes. Soil sampling will help to determine macro or micro deficiencies in the soil. Any soil deficiencies will be corrected based off the recommendations from the results of the sampling. Performing regular soil and tissue testing will also give the Grounds Department a baseline to follow, ensuring turf is getting its required nutrients, but at the same time, avoiding unnecessary applications that could be detrimental to a plant, as well as costly. **(See Figure 6)** While there are many factors that influence the health of turf grass, aeration and top dressing can be performed to aid in a turf's overall health.

G. General Grounds Maintenance, Leaf Removal and Mulch Application/Cycles

The backbone behind sustaining a beautiful landscape appearance throughout the year is the ability to perform general grounds maintenance at an outstanding level. The key to accomplishing this begins with well trained personnel and a supportive leadership team that has clear goals and communication for the department. We have divided the campus into 13 maintenance zones **(See Figure 10)** and assigned each zone to a different groundskeeper team. The zones have a defined set of buildings and areas assigned to them, with each building within a zone being scheduled for service on a bi-weekly or monthly basis, dependent upon the maintenance requirements for that building. Each team is comprised of a Team Leader and three to five groundskeepers. The

Team Leader and his or her team are responsible for the ground's maintenance in their zone. This ownership/responsibility for the different zones has led to each zone/area on campus being maintained at a very high standard due to the pride and attention-to-detail the groundskeeper team has contributed into maintaining their zone. Furthermore, leadership and support at all management levels and excellent groundskeeper training will take care of the toughest jobs, but it also takes pride, loyalty to the university and a sense of ownership by everyone to achieve the highest levels of excellence. This section will concentrate on the groundskeepers' techniques from achieving results that encompass all landscape maintenance areas.

Mowing any area of turf on campus takes a great amount of attention to ensure it is cut correctly and leaves a well-groomed appearance when the task is complete. Several guidelines must be followed by the groundskeeper in accordance with the inspections task list completed by their managers for the day, to ensure success. First, the correct height of the cutting blade on the mower should be established by the Team Leader or Assistant Manager for every area cut. The type of turf being mowed, and the season are primary factors in determining the height of the grass to be cut. **(See Figure 7 & 8**) The lay of the landscape should be evaluated and preventatively scanned for hazards such as: rocks, debris, wet spots, or treacherous inclines. Hillsides have different requirements than level turf. Safety should always be first and foremost in everyone's mind before starting the job. If it is more advantageous to use a standard push mower or weed-eater, rather than a riding mower or bush-hog, then that should be evaluated and listed in the task list. In addition, the direction of the cut must be alternated each week, if possible. Rotating your pattern of cut will prevent unnecessary wear on the turf.

Most of the general Grounds Maintenance work on campus: mowing, edging, weed eating, blowing, etc., is normally accomplished between the hours of 6:00 a.m. and 2:30 p.m. Monday through Friday. However, during the summer months and special occasions, some overtime is required to complete our assignments. This work schedule timing is necessary for several reasons; one of which is related to the health/safety of the Grounds and campus personnel (cooler temperatures, less dust due to dampness, less people on campus at 6:00 a.m., etc.). It is also necessary to begin early in the morning so that hard to service areas like parking lots, streets, sidewalks, etc., can be serviced when empty or less occupied. However, the two exceptions to the 6:00 a.m. start policy are around all Residential Living Facilities on campus and Dead Week.

The first exception in these residential areas is that general Grounds Maintenance will begin no earlier than 7:30 a.m. during normal school hours throughout the year. This time was established as a courtesy to the resident students/campus community to keep equipment that produces loud noise away from these building during normal sleeping hours; and because most students, faculty and staff are up and either on their way to work or in the first-class period (usually scheduled for 8:00 a.m.) by that time. The second exception is during Dead Week each semester when the start time is no earlier than time is 9:00 a.m. for the benefit of students who are preparing for exams. As a note, when beginning work near residential facilities, Grounds crews will begin their tasks at the outer most perimeters of the facilities and work their way toward the building. Using this operational strategy, crews will be working at the closest point to the facilities at an even later time in the morning, thus providing less noise even after the normal start times.

Edging all sidewalks, curbs, patios, and shrub/beds is another important technique for leaving any area looking well-groomed and cared for. This highlights the landscape or building like a picture frame. For the University campus, edging should be between approximately 1 to 1 ½ inch deep and ¾ to 1-inch-wide from the sidewalk, curb, soft bed edges, or the edge of a hard-surface.

Each area also should be fine-tuned by string trimming any undesirable, unappealing leftover grass, groundcover,

and weeds that are in hard-to-get-to areas such as sidewalk/curb cracks, around poles/bollards, buildings, and signs. The entire area should then be blown clean of debris (sidewalks, streets, patio, steps, etc.). Extra care should be taken not to blow debris toward/around pedestrians and vehicles. Debris should be blown in one central location, then raked and/or vacuumed and removed from the area. This same blowing/removal process should be followed when removing leaves from the campus grounds. Debris should not be placed in campus trash dumpsters. It should be taken to either the city dump or the current compost site at the University Arboretum.

The proper technique and process of applying mulch on campus adds beauty to the landscape, extra moisture during heat stressed periods, and protection to the plants during inclement weather. This form of protective cover is one of the most beneficial processes that can be accomplished for the health of plants, trees, and shrubs. However, all plant material, including flowers, can benefit from this practice. The need for the correct amount of moisture is key to the success of producing any healthy plant. In fact, lack of water is the main cause of severe stress to most plants. Applied at the proper thickness, this extra layer of cover insulates soil, retains moisture, keeps out weeds, prevents soil compaction, reduces lawnmower damage to the plant and adds an aesthetic touch to the landscape. In addition, it improves soil structure, surface/ground temperature and moisture availability for the plants it surrounds.

The standard technique for preparing all beds (trees, shrubs, flowers, etc.) for mulch application on campus will be to install a trench cut border on the outer-side perimeter of the bed. This style deep trench cut/edge will be a depth of approximately3inches. It will provide a trough or barrier that will serve as a catch basin to keep debris (mulch, dirt, leaves, etc.) from spreading onto streets, drives, sidewalks and surrounding landscape after heavy winds or rain. It also makes it easier to place the material back into the beds after inclement weather. This outer edge around trees and shrub/flower beds should be a clean, straight cut that follows the outline of the bed.

The goal is to apply mulch to all necessary beds, shrubs, and trees on campus each year. **(See Figure 9)** The technique to accomplish this added plant protection is as follows: (1) Remove any grass or weeds within the mulch area. (2) Place the mulch material (bark, chip, leaves or pine needles) around the root zone of the shrub/tree. (3) If possible, ensure the mulch does not touch the shrub's trunk. (4) Layer the mulch material approximately 1-3 inches in depth and slope down towards the trench at the edge of the bed. (5) Water to maintain adequate moisture.

H. Campus Fertilizing Care/Cycles

Like the importance of the application of water to a landscape's environment, the correct and timely application of fertilizer is necessary to the health of turf, shrubs, flowers, and trees and ultimately their overall appearance. Regular feeding of fertilizer promotes both healthy root growth and healthier vibrant looking shoots (grass blades, flowers, and branches). All fertilization should be based off the soil analysis performed and the recommendations set forth in that analysis. In most situations, you will be fertilizing the plant for color, but in certain situations you may be trying to balance the PH or improve a micro deficiency such as manganese, iron, zinc, molybdenum, or boron. These types of deficiencies are often overlooked in our industry but are of great importance to the overall plant health.

When applying fertilizer to the University's landscape environment, the terms correct and timely are critical in this process. **(See Figure 9.1)** The correct amount of fertilizer and type is important and should be based off the recommendations from the soil analysis. There is nothing worse than giving the plant something it does not need and then exacerbate the issues for the plant. Our fertilization schedule is dictated by turf need and a conscientious effort to balance environmental factors and concerns. We are very mindful of the desired aesthetical impact vs. environmental impact and take all necessary precautions to not over-apply fertilizers to our green spaces.

I. Campus Pesticide Use

On occasion, plants can become stressed due to environmental factors such as insufficient light, nutrient deficiencies, compaction, standing water, pollution, lightening, or previous mechanical damage. These types of environmental factors are always the primary causal agent that opens the plant up to secondary pests. If this happens, the competitive edge that the plant once had is given away to weeds, disease, and insects. When any of these pests invade a plant, the application of the appropriate pesticide to combat the pest and restore the plant's ability to maintain its health is necessary. Safety is of the upmost importance and the first rule when working with these pesticides. Applying seed and granular fertilizers takes time and skill, but the process for applying pesticides is much more difficult and requires the closest attention to detail by the applicator. Pesticides have extremely strict guidelines on applications, timing, target pest, non-target pests, and PPE required for specific applications. There is no room for error, and the application must be done according to the manufacturers label. There are major innovations in the industry using Arbor Jetting, which allows UA Landscape and Grounds to inject pesticide directly into the tree. This does a couple of things; it eliminates the use of topical pesticides to the plant, and it minimizes the risk to affect non-target pests such as pollinator insects. In all situations where pesticides are required, Landscape and Grounds will look to use systemic pesticide as a first option. Everything we do is with the best interest of the environment and the safety of our campus community. **(See Figure 6)**

J. Landscape Maintenance Training

All new UA Grounds employees receive a series of training courses. These courses are designed to help them understand the work, safety, and campus standards. Some examples are, plant identification, soils classification, insects and diseases, turf management, chemicals, and herbicides, and most importantly – safety! Also, UA Grounds employees must receive a training session by one of the University Landscape Architects covering the standards of maintenance expected by the University. Some of these topics are mowing, edging, weeding, line trimming, pruning, evergreen and deciduous hedge trimming (large and small), blowing, specialty shrub care, and ground cover maintenance. Each topic of discussion has examples of "do's and don'ts" presented in a simple, straight forward approach to achieving a clean, green, well defined landscape across the entire campus. The overall objective of the training session is to bring all teams and team members together to arm them with the skills, standards and understanding of what it takes to make the University of Alabama one of the most beautiful campuses in the nation.

PART II:
CAMPUS LANDSCAPE AND GROUNDS PROJECT

A. Irrigation Master Control System

Healthy landscapes equate to beautiful landscapes. One of the elements needed to achieve this result is the application of water. The key to sustained health and beauty, throughout all seasons, is the right amount of water applied, no matter the season. To take the University of Alabama campus to the next level of excellence, it will be necessary to supply irrigation to all critical areas, and ultimately to all turf, shrubs, and flowers throughout the entire campus. Having complete control of over 163 individual irrigation systems on campus is imperative to maximize results and work efficiently, in addition to ensuring the University is doing its part to conserve and utilize only the minimum amount of water necessary for its grounds operations.

We have found that the best way to achieve this was to install an intelligent, automatic water management system (a

master controller) that communicates with many controllers. Currently, most of our systems are compatible with our Toro DXI master control. The master controller has helped manage scheduling conflicts between multiple controllers, manage the number of valves based upon flow capacities, provide water management capabilities with or without flow meters, alert systems when it is raining, manage the proper operations of valves so that system capacities are not exceeded, and will alert the user to the location of leaks in the systems.

The short-term goal of 2023 is a continued process of finding all campus irrigation meters and marking them using GPS technology. In addition, all systems (electric, hydraulic, battery and manual) have been evaluated for compatibility and the ability to successfully communicate/connect with the initial start-up of the Master Control System. The long-term goal is to ensure any new irrigation systems (major construction or special projects) are connected and integrated into the system and then incorporate the older systems into the master control computer.

B. Irrigation System Upgrades

The long-term goal to build our own Campus Irrigation Installation Team was realized in 2015. This team of nine irrigation technicians has been very effective providing cost savings, flexibility, and quick response to in-house service and landscape projects. We have also divided the campus into two large irrigation zones **(See Figure 1.3)** with each being maintained by one of the two irrigation teams. The campus is divided into two irrigation zones, it ensures that all irrigation systems are checked frequently during the growing season and all repairs are made in a timely manner.

C. Campus Landscape and Grounds In-House Projects

The Campus Landscape and Grounds In-House Projects consisted of over 30 smaller projects on the University campus. The objective of these projects was to upgrade the landscape and beauty of street corners and lawns in front of selected halls. In House Projects that were accomplished by University Grounds personnel between October 2016 and December 2022 in the following areas:

1. Woods Hall
2. Bryant Denny Stadium
3. Crimson Promenade
4. ROTC Building
5. USC Cottage #1 & #4
6. 1893 Park
7. President's Mansion
8. Denny Chimes
9. Manderson Landing
10. Residential Life five Robert Witt Signs
11. Robert Witt Monument and Statue
12. Moody Music
13. Rose Administration
14. Capstone Village
15. Child Development Playground
16. RISE Complex
17. Indoor and Outdoor Tennis Courts
18. Pinehurst #7, #9, and #11
21 Rowand Johnson Hall
22 Little Hall
23. Law School
24. University Club
25. Locke House
26. Financial Affairs Cottage #10
27. Honors Hall
28. Flagpole Bed Student Center
29. Campus Drive Parking Deck
30. Bevill Bike Pad
31. UAPD Facility
32. Garland, Clark, and Presidents Hall
33. Softball Complex
34. Mary Burke Dorm

PART III:
CAMPUS LANDSCAPE AND GROUNDS POLICY

PURPOSE STATEMENT

Trees provide numerous benefits to the campus of The University of Alabama. The University strives to maintain, preserve, and enhance the forest/tree population within the University of Alabama campus (core and external properties). This partnership ensures the longevity of our campus tree population, increases the overall health of our urban forest canopy, and ensures necessary removal of any tree is managed in a manner consistent with local, state, and national tree health criteria. The University of Alabama Facilities Grounds Department, and Landscape Architect will partner together to provide the proper care and management to the campus forest.

POLICY

Criteria for Tree and Vegetation Work: Specific criteria will be established and applied to the removal and/or pruning of trees, shrubs and/or vegetation located in or on UA property. The criteria will be used to evaluate the overall public benefit of the proposed work. In all cases, safety concerns will receive the highest priority. Priority will be given to limiting removal, increasing forest canopy, and preserving appropriate vegetation on university property. Misuse of all trees is prohibited (climbing, use of ropes, wire, hammocks, slacklining, etc.). For a tree to be removed, it must meet the following criteria:

1. Dead or have reached or exceeded their useful lifespan and may present danger to life and property.
2. Safety Hazard
3. Hazard to utility lines
4. Interferes with construction of facilities
5. Growing in an inappropriate place such as too close to structures, sidewalks, or parking lots.
6. Damaged trees from natural causes
7. Trees not consistent with the master plan
8. Approval by Landscape and Grounds Advisory Board

Hazardous Tree Management: Public health, safety and general welfare will be upheld by Tree Risk Assessment Qualification (T.R.A.Q.) and the Tree Risk Assessment Forms (T.R.A.F.) created by the International Society of Arboriculture. Attention to proper selection, planting and maintenance of new trees will also be pursued to achieve long-term risk reduction.

Pruning Standards: The university will adhere to guidance from ANSI-A300 pruning standards that serve as the guide for proper pruning techniques for tree care. Trees are evaluated by recommendations from one or both of our university Arborists on staff in conjunction with our Campus Landscape Architect to open and enhance vistas.

Topping Disallowed: Topping destroys the natural appearance of the tree and does not contribute to the campus aesthetics. Because "topping" of trees can cause permanent damage by promoting decay, as well as causing unnatural dense and weak branching structure, topping will not be practiced or permitted except under special circumstances.

Tree Retention and Protection (Daily / Construction Site): Having healthy trees is a top priority to keep our campus beautiful. Misuse of all trees is prohibited. Examples of misuse include, but are not limited to climbing, use of ropes, wire, hammocks, slacklines, zip-lines, nails, tape, and signage, etc. All these issues cause stress, scaring and often broken branches, which can lead to disease and/or death of an otherwise healthy tree and therefore is prohibited. In addition, it is strictly prohibited to intentionally climb in/on campus trees, break off limbs, and branches for personal convenience (i.e., tent and RV placement on campus). Trees on construction sites will be conserved wherever possible.

Trees designated for retention will be protected from construction impacts according to ANSI-A300 Construction Management Standards. No equipment or vehicle shall be parked, or construction materials stored, or substance poured or disposed within the tree protection area (known as their drip line). Trees should be barricaded/fenced to protect the drip line from heavy equipment or compaction. In addition, great care should be taken where excavation is happening near adjacent specimen trees. Effort shall be made to avoid heavily populated root zone to ensure trees do not sustain damage during excavation. Construction and grounds management practices (fencing, feeding, watering, limiting traffic over root, etc.) will be complied throughout the construction process. Once construction projects are complete, all trees designated for protection shall receive deep root fertilization treatments for two years after project completion (once during the Spring and again during the Fall for two years). Often damage to tree roots on a construction site does not show up until years later. This will help ensure the overall health of the tree following any construction activities.

Conservation of Rare Specimens: Individual trees that are considered rare because of size, species or historical significance will be given extra protection and consideration for retention.

Diseased or Infested Plants That Pose Risk to Trees: Whenever possible, action will be taken to effectively decrease risk to other trees from pests and diseases. This may include removal and destruction of infected materials, pesticide treatments and/or alternative cultural practices. Other knowledgeable agencies, such as Local and State Cooperative Extensions, may be consulted as needed. However, as a minimum, UA Arborists and the Grounds Director will make an assessment and report their recommendation to the Landscape Advisory Group.

Damage, Vandalism and Illegal Cutting: Whenever issues arise, action will be taken to investigate and prosecute vandalism, misuse (see paragraph titled: **Tree Retention and Protection**) and illegal cutting of UA trees. This policy makes it illegal for anyone to vandalize or remove trees or other vegetation from the University of Alabama. Compensation for damages will be sought based on the appraised value.

Tree Replacement: Our goal is to plant a tree for every tree that is removed from the University of Alabama core campus. However, the location of the replacement tree(s) may not always be the same as the location of the removed tree. These replacement tree locations are coordinated with Campus Landscape Architect. Trees that are to be removed in construction areas shall be replaced in the same year as the removal. Replacement tree(s)/species and locations will be selected so that overall mature canopy volume will be maintained, or the tree(s) coincide with the overall landscape and building/facility needs and finally, for overall aesthetics of the campus.

Tree Planting/Transplanting: Trees that are planted or transplanted should be done in a manner ensuring that the overall health of the tree is considered. The best time to plant or transplant trees is in November to the end of February. This gives the tree the best chance at survival. Not all instances occur where trees will be able to be planted or transplanted during this timeframe. In these instances, any tree planted or transplanted shall be monitored on a regular basis and watered as needed until tree has established its root system. Tree staking and guying is not typically recommended for all trees being installed. When it in necessary to stake and guy trees due to wind or unstable soil, stakes shall be checked in six months after installing to ensure cables are not cutting into tree bark. If cables are no longer needed for the tree they shall be removed. Should cables still be needed the cables will be loosened so that they are not cutting into tree bark and reevaluated in six months.

Campus Tree Inventory: The Campus tree inventory was completed during the Summer of 2013 and is to be updated in 2025 on the main Campus, Peter Bryce Campus, and Partlow Campus (University Services Campus) excluding current construction projects going on at the time. Once construction projects are complete, existing, and planted trees will be inventoried**.** Data was collected on each tree on campus, to include Bryce Property. This data includes location of tree, diameter of tree, height of tree, health of the tree, any claims or damage made to the tree, if tree is a special tree (memorial, heritage, or dedicated), age of tree if known, and any safety issues or disease information on the tree. This information allows for the Arborist to make recommendations to the Landscape Advisory Group concerning the overall health of the tree. Each tree will be considered on a case-by-case basis, considering criteria listed in the Criteria for Tree and Vegetation Work, before recommending removal of such tree.

DESIGNATED TREE CAMPUS USA

The University of Alabama is proud to be among the most beautiful campuses in the nation. As such, we have been fortunate to have been designated a Tree Campus USA by the Arbor Day Foundation for seven consecutive years (2015, 2016, 2017, 2018, 2019, 2020, and 2021). This national recognition for our urban forestry management speaks volumes about the leadership's vision and dedication to the campus sustainability, conservation, ecological soundness, and natural beauty. It is our ongoing mission to continue to make strides in protecting and nurturing our campus tree canopy, apply and receive the annual designation of Tree Campus USA, so that it will be a testament of our campus pride for future generations of students, faculty, staff, and the campus community.

The Tree Campus USA program recognizes college and university campuses that:

- Effectively manage their campus trees.
- Develop connectivity with the community beyond campus borders to foster healthy urban forests.
- Strive to engage their student population utilizing service-learning opportunities centered on campus, community, and forestry efforts.

Colleges and universities across the United States can be recognized as a Tree Campus USA college by meeting **five standards** developed to promote healthy trees and student involvement.

1. While responsibility of the campus trees often ultimately lies with the arborist, landscape architect, or designated facilities department, the **Campus Tree Advisory Group** can assist in providing guidance for future planning, approval of a comprehensive campus tree plan, education of the campus population as to the benefits of the campus trees and development of connectivity to the community.
2. **A Campus Tree Care Plan** should be flexible enough to fit the needs and circumstances of the campus. The Tree Care Plan should be goal oriented and provide the opportunity to set good policy and clear guidance for planting, maintaining, and removing trees. It also provides education to the campus community, citizens, contractors, and consultants about the importance of the campus forest and the protection and maintenance of trees as part of the growth and land development process.
3. To be designated a Tree Campus USA, a university **must allocate finances** for its annual campus tree program. Evidence should be shown that an annual work plan has been established and expenditures dedicated towards that work plan.
4. An **Arbor Day observance** provides a golden opportunity to educate the campus community on the benefits of the trees on their campus property and in the community. The Arbor Day observance can be on the campus or held in conjunction with the community where the campus is located. Your observance may be held at an appropriate time for your campus if it is related to trees in some way.
5. The **Service-Learning Project** should be an outreach of the spirit of the Tree Campus USA initiative. This project should provide an opportunity to engage the student population with projects related to trees and can be part of a campus or community initiative. The project must be done within the course of the year application is submitted.

The University of Alabama, Facilities and Grounds Department, and Landscape and Grounds Advisory Group are proud to have met all five of these Tree Campus USA standards since 2015 and will strive to meet them for years to come.

APPENDIX

PROJECT STANDARDS, FIGURES AND TIMETABLES

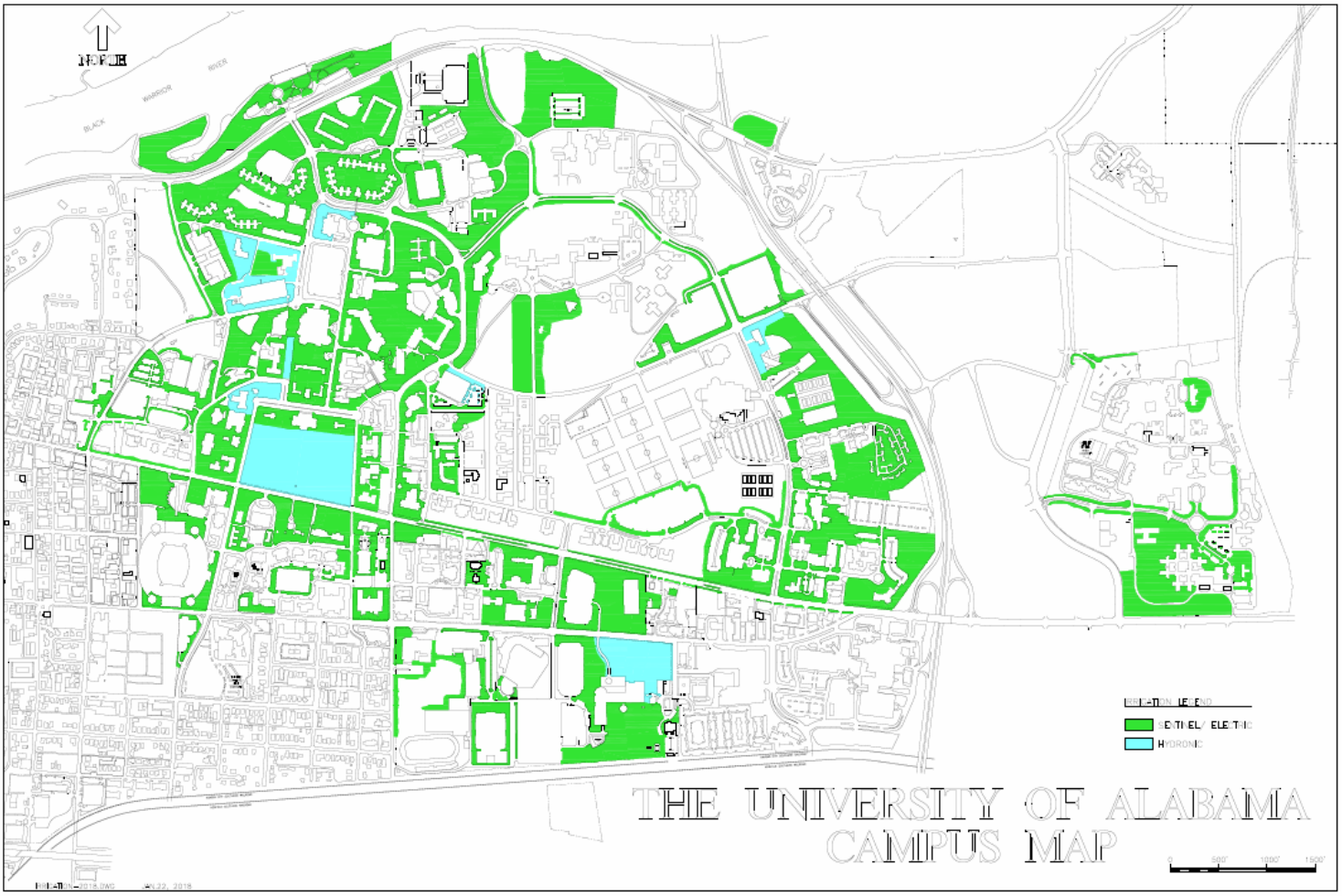
IRRIGATION SYSTEMS FIGURE 1.1

The University of Alabama Irrigation Systems				
Hydraulic Systems	**Electronic Systems Sentinel**			
Functional	**Functional**			
AIME Building	Adams Hall	Ferguson Parking Deck	North Lawn Hall	Rowand Johnson Hall
Alston Hall	Alston Hall	Football Coaches' Office	Northeast Parking Lot (East)	Rowing Facility/Manderson
Blount Building	Alumni Hall	Football Coaches' Parking Lot (2 Battery)	Northeast Parking Lot (West)	Russell Hall
Bridge to Riverside	Amie Building	Fosters	Nursing School	Sarah Patterson Plaza
Bruno Library	Barnwell (2 Battery OP.)	Gallalee Hall	Old Bryce Entrance	Shelby 1 (Box 1)
Campus Dr. Parking Deck	BB Comer	Gorgas Hall	Old Chancellor's Office	Shelby 1 (Box 2)
CBA Energy Plant	Bike Path	Graves & Carmichael Hall	Old Row	Shelby 3
Child Development	Blount Hall	Greenspace between Sorority and Osmand Hall	Outdoor Tennis	Shelby 4
Ferguson Parking Deck	Brewer Porch	Greenspace of Old Student Media (2 Battery OP.)	Palmer Lake	Sid McDonald
Ferguson Plaza	Bryant Athletic Dorm	Hackberry Lane North	Partlow Bryce Hospital	Sidewalk btw Kappa Phi/Kappa Alpha
Football Coaches Parking Lot	Bryant Athletics Hall	Hackberry Lane South	Partlow Bryce Hospital Road Entrance	Smith Wood - Kappa Alpha
Law School Entrance	Bryant Denny Stadium	Indoor Tennis	Paty Hall (North)	Softball Stadium
Martha Parham West	Bryant Denny Stadium (North)	Jessup Building (2 Battery OP.)	Paty Hall (South)	Sorority Next to Adams Hall
Mini Park	Bryant Denny Stadium (South)	Knott Hall Annex (2 Battery OP.)	Peter Bryce 1	Sorority Next to Paul Bear Bryant Dr
Promenade	Bryant Jordan Hall	Lakeside Dining	Peter Bryce 2	South Boulevard
Quad Box B & C	Bryant Jordan Hall	Lakeside East	Peter Bryce 3	Stalling Center
Reese Phifer Hall	Bryant Museum	Lakeside West	Pinehurst	Starbucks/Soup Store
Soccer Field (outside the fence)	Bus Entrance-Helen Keller Blvd (Battery)	Law School (Battery) Drip Line Planters	Pinehurst (2 Battery OP.)	Temple Emanuel/Hillel House
Softball Stadium	Business Admin Building	Law School (West)	Police Station	Ten Hoor Hall
UA Arboretum	Butler Field	Lloyd Hall	President's Mansion	Ten Hoor Parking Lot
Cottage #9	Campus Drive Parking Deck	Locke House	Presidential Village 1	Track Stadium Mechanical Room
Automotive Services Building	Capstone Village	Magnolia Parking Deck	Presidential Village 2	Triangle Parking Lot
Transit Maintenance Facility	Capstone Village Town Homes	Marr's Spring Pond	Presidential Village 2 Courtyard	University Boulevard
Ruby Tyler Services	Child Development	Mary Burke Hall	Print & Mail Shop	University Club
Environmental Health and Safety	Coleman Coliseum	Mary Harmon Bryant Hall	Quad Box A (3 Battery OP.)	University Medical Center
OIT Operations	Coleman Coliseum Parking Lot	McClure Library	Reese Phifer Hall	Veteran's Affair
Human Resources Admin	Cottonmouth Lake 3 Battery OP.	Moody Music Hall	Remote Parking Lot	Walk of Champions
Campus Support Services	Dr. Hillard's Office	Moody Music Parking Lot	Ridgecrest (South) 2 Battery OP.	Walter Bryant Jones Hall
Warehouse	East Annex	Moor & Little Hall	Ridgecrest North	West Entrance Sign/Green Space
Finance and Operations	East Commuter Lot	Morgan Hall	Ridgecrest South	West Nursing
Transportation Services	East Energy Plant/Gordon Palmer	NOAA Building	Riverside Dorms	West Substation/Nature Trail
Procurement Services	Farrah Hall	North Bluff Parking Lot	Riverside Parking Deck	Woods Hall
	Ferguson Center	North Entrance Sign	Rose & Doster Hall	

IRRIGATION SYSTEMS FIGURE 1.2

Athletic Facilities Irrigation Systems			
Hydraulic Systems		Electric Systems	Manual Systems
Functional	Non-Functional	Functional	Functional
Bryant Hall	Aquatic Center	Bryant Dorm	Football Greenspace
Coaches' Office	Baseball Stadium	Coliseum	
Soccer Stadium		Fosters Auditorium	
Softball Stadium		Indoor Tennis	
Tennis Stadium		Track Stadium	
		Sarah Patterson	
		Walk of Champions	

IRRIGATIONS SYSTEMS MAP FIGURE 1.3



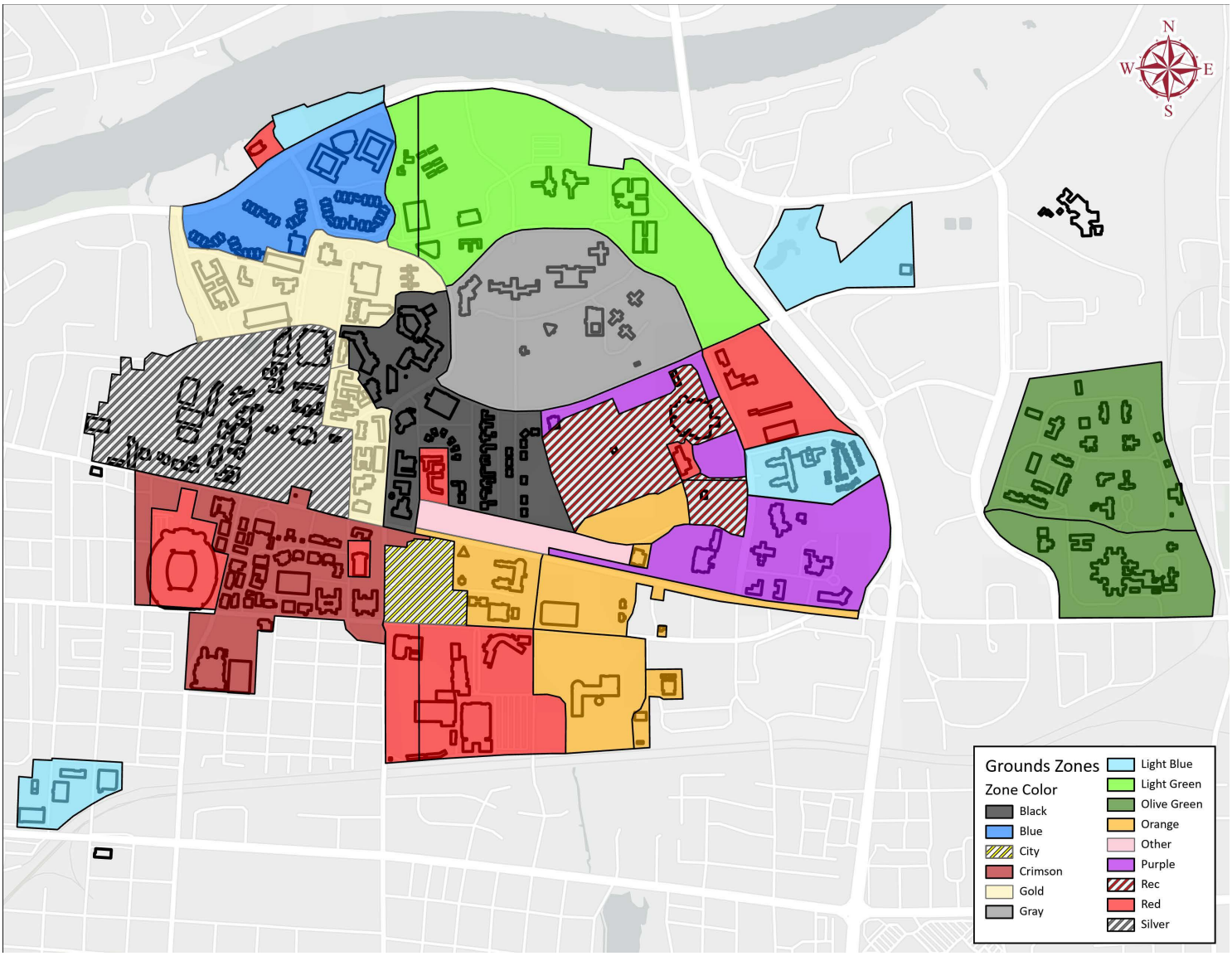
COLOR AREAS FIGURE 2.1

University of Alabama Annuals List			
Spring/Summer		**Fall/Winter**	
Alternanthera angustifolia	*Joseph's Coat*	*Antirrhinum majus*	*Snapdragon*
Angelonia angustifolia	*Angelonia*	*Brassica oleracea*	*Flowering Cabbage and Kale*
Asparagus densiflorus	*Asparagus Fern*	*Hedera helix*	*English Ivy*
Begonia semperflorens-cultorum	*Wax Begonia Hybrids*	*Petroselinum crispum*	*Parsley*
Begonia x hybrid 'Dragon Wing'	*Dragon Wing Begonia*	*Viola cornuta*	*Viola*
Caladium bicolor	*Caladiums*	*Viola x wittrockiana*	*Pansy*
Calibrachoa hybrids	*Million bells*		
Catharanthus roseus	*Periwinkle, Vinca*		
Colocasio esculenta	*Elephant Ear*		
Hedra helix	*English Ivy*		
Impatiens x hybrida 'sunpatien'	*Sunpatiens*		
Impatiens walleriana	*Impatiens*		
Ipomoea batatas	*Ornamental Sweet Potato Vine*		
Lantana camara	*Lantana*		
Lysimachia nummulariaL.	*Creeping Jenny*		
Nephrolepis obliterate	*Kimberly Queen Fern*		
Pelargonium x hortorum	*Geraniums*		
Pentas Lanceolata	*Penta*		
Petunia x hybrid	*Petunia*		
Portulaca grandiflora	*Purslane*		
Begonia x benariensis	*Whopper Begonias*		
Plectranthus scutellarioides	*Coleus*		
Salvia splendens	*Red Salvia*		
Salvia guarantica	*Black and Blue Salvia*		
Scaevola aemula	*Fanflower*		
Sutera cordata	*Bacopa*		
Torenia fournieri	*Torenia*		
Tradescantia pallida	*Purple Heart*		
Tulipa hybrids	*Tulips*		
Verbena hybrids	*Verbena*		

COLOR AREAS FIGURE 2.2

The University of Alabama Color Area		
Beds		**Hanging Baskets/Window Boxes**
Alston Front Bed	Mal Moore	Conference Center/Alumni Hall (19)
Aquatic Center	Manderson Landing Sign (2)	Carmichael (3)
Bidgood Sign Bed	Martha Parham West	Conf. Center/Alumni Hall (14)
Bidgood/Carmichael Step Bed	Mary Burke	Ferg./Promenade (26)
Bruno Library	Medical Center	Doster (1)
Bryant Drive Sign Beds (4)	Mini Park	Foster Auditorium (8)
Bryant Museum Side Bed	Moody Music	
Capstone Village	North Stadium Sign	
Carmichael Hall	Nursing School Circle Bed	**Permanent Planters/Pots**
Coliseum Beds	Old Systems Office	7th Ave (2)
Denny Chimes	Presidents Mansion	Alston (1)
Doster Hall	Ridgecrest Island Bed	Alston Food Service (2)
Dr. Whitt Memorial	RISE	Bryce Lawn Apt. (3)
East Entrance Sign	Riverside Walk	Capstone Village (10)
Farrah Hall	Rose Admin.-Front bed and Step Beds	Cottage 10 (2)
Foster's Auditorium	Sarah Patterson	Doster (2)
Gallalee Hall	Shelby Hall Circle	Gordon Palmer (2)
Garland Hall	Shelby Hall Courtyard	Gorgas House (12)
Gorgas House	Shelby Hall Entrance	Lloyd Hall (2)
Gorgas House Circle Bed	Smith Hall	Marr's Spring Pond Floaters (5)
Autherine Lucy Hall Side Bed	South Lawn	Martha Parham (3)
Autherine Lucy Hall Sign Bed	South Stadium Sign	Honor's Hall (2)
Homecoming Queen Bed	Speech and Hearing Courtyard	Nursing School (4)
Homecoming Walkthrough	Triangle Beds at Marr's Spring Rd and Stadium Drive (3)	Quad Maps (2)
Lakeside Dining	University Club	Riverside Walk (2)
Law School Entrance	West Entrance Sign	ROTC Planters (4)
Law School Steps	Woods Quad	

FLOWER MAP FIGURE 2.3



COLOR SCHEDULE FIGURE 3

The University of Alabama Color Schedule	
January	Routine maintenance of all Fall/Winter Color
February	
March	
April	Remove tulips and begin installation of Spring/Summer color. Begin routine maintenance.
May	
June	Routine maintenance of all Spring/Summer color.
July	
August	
September	
October	Remove summer color and begin installation of Fall/Winter color and tulips as weather permits. Begin routine maintenance.
November	
December	

CAMPUS TREE LIST FIGURE 4.1

The University of Alabama Large Tree List	
Acer saccharum	Red Maple
Carya illinoinensis	Pecan
Cedrus deodara	Deodar Cedar
Cryptomeria japonica	Japanese Cedar
Fagus grandifolia	American Beech
Fraxinus Pennsylvanica	Ash
Ginkgo biloba	Ginkgo
Liquidambar styraciflua 'Rotundaloba'	Fruitless Gum
Liriodendron tulipifera	Tulip Tree
Magnolia grandiflora	Southern Magnolia
Magnolia virginiana	Sweet Bay Magnolia
Metasequoia glyptostroboides	Dawn Redwood
Nyssa sylvatica	Black Gum
Pinus palustris	Longleaf Pine
Pinus taeda	Loblolly Pine
Pistacia Chinensis	Chinese Pistache
Quercus acutissima	Sawtooth Oak
Quercus alba	White Oak
Quercus bicolor	Swamp White Oak
Quercus coccinea	Scarlet Oak
Quercus falcata	Southern Red Oak
Quercus laurifolia	Laurel Oak
Quercus lyrata	Overcup Oak
Quercus macrocarpa	Burr Oak
Quercus nigra	Water Oak
Quercus nuttallii	Nuttall Oak
Quercus phellos	Willow Oak
Quercus prinus	Chestnut Oak
Quercus shumardii	Shumard Oak
Quercus virginiana	Live Oak
Sequoia sempervirens	Redwood
Taxodium distichum	Bald Cypress
Tilia americana	Littleleaf Linden
Ulmus amaricana	American elm
Zelkova serrata	Japanese Zelkova

SMALL TREE LIST FIGURE 4.2

The University of Alabama Small Tree List	
Acer palmatum	Japanese Maple
Amalanchier x 'Autumn Brilliance'	Autumn Brilliance Serviceberry
Cercis canadensis	Redbud
Chionanthus virginicus	Fringe Tree
Cornus florida	Flowering Dogwood
Cornus kousa	Kousa Dogwood
Ilex latifolia	Lusterleaf Holly
Ilex 'Mary Nell'	Mary Nell Holly
Ilex x attenuata 'Eagleston'	Eagleston Holly
Ilex x attenuata 'Fosteri'	Foster Holly
Ilex x attenuanta 'Savannah'	Savannah Holly
Ilex x 'Emily Bruner'	Emily Bruner Holly
Ilex x 'Nellie R. Stevens'	Nellie R. Stevens Holly
Juniperus virginiana 'Idyllwild'	Idyllwild Juniper
Lagerstroemia indica	Crape Myrtle
Magnolia stellata	Star Magnolia
Magnolia x soulangiana	Saucer Magnolia
Myrica cerifera	Southern Wax Myrtle
Osmanthus fortunei	Fortune's Osmanthus
Osmanthus fragrans	Fragrant Tea Olive
Prunus serrulata 'Kwanzan'	Japanese Flowering Cherry
Prunus subhirtella	Higan Cherry
Prunus x yedoensis	Yoshino Cherry
Thuja occidentalis	Arborvitae
Vitex agnus-castus	Lilac Chaste Tree

ANNUAL MAINTENANCE FOR THE PRESIDENT'S MANSION FIGURE 5

The University of Alabama Annual Maintenance for the President's Mansion	
January	Monitor landscape and perform maintenance as needed. Maintain Pansies, fertilize and replace plants as needed.
February	Maintain pansies and monitor tulip growth. Apply pre-emergent to turf by 20 February. Prune back Roses at mid-month. Cut back all Liriope. Fertilize over-seeding with 1 pound of N per 1000 square feet.
March	Maintain pansies and monitor Tulip growth. Maintain landscape and lawn.
April	Add amendments to color beds and re-plant with red Salvia. Re-mulch, fertilize and maintain all shrub beds.
May	Perform routine maintenance on color beds fertilizing and deadheading as needed. Monitor and maintain landscape and lawn. Fertilize turf 1-2 pounds of N and K per 1000 square feet. Prune Azaleas by end of May.
June	Perform routine maintenance on color beds, shrub beds and lawn. Prune shrubs and trees as needed.
July	Maintain color beds, landscape, and lawn.
August	Maintain color beds, landscape, and lawn. Fertilize turf with 2 pounds of N per 1000 square feet. Re-mulch all beds in preparation for football season.
September	Maintain color beds, landscape, and lawn. Monitor Salvia. Over seed lawn with Fescue at 10 pounds per 1000 square feet.
October	Maintain color beds, landscape, and lawn. Over seed lawn with Rye/Fescue at 10 pounds per 1000 square feet. Once a dense stand of Fescue is established, replace an over seed with a pre-emergent herbicide application.
November	Maintain color beds, landscape, and lawn. Plant dark pink tulips and mixed color pansies as weather permits. Fertilize over-seeding with 1 pound of N per 1000 square feet.
December	Maintain Pansies and fertilize as needed. Monitor lawn and landscape. Re-mulch all beds after football season has ended.

Pesticide and Fertility Timeline Figure 6

The University of Alabama Turf Pesticide Timeline		
	Cool Season Turf	**Warm Season Turf**
January		Application of a non-selective post-emergent weed control (Round-up), if needed.
February	Application of pre-emergent herbicide.	Application of pre-emergent herbicide.
March		
April		Application of a fungicide to protect zoysia grass from zoysia patch.
May	Application of selective post-emergent weed if needed.	Application of a selective post-emergent herbicide if needed.
June	Possibility of an application of a broad-spectrum fungicide, this will be dependent on disease pressure which is primarily dictated by weather patterns.	
July		
August		
September		Possibility of an application of an insecticide to combat grubs and/or fall army worms as well as application of fungicide to protect against Zoysia patch.
October	Application of a selective post-emergent. Weed control if needed. Application of a pre-emergent herbicide.	Application of a selective post-emergent. Application of a pre-emergent herbicide.
November	Application of a selective post-emergent	Application of a selective post-emergent
December	Application of a selective post-emergent	Application of a selective post-emergent

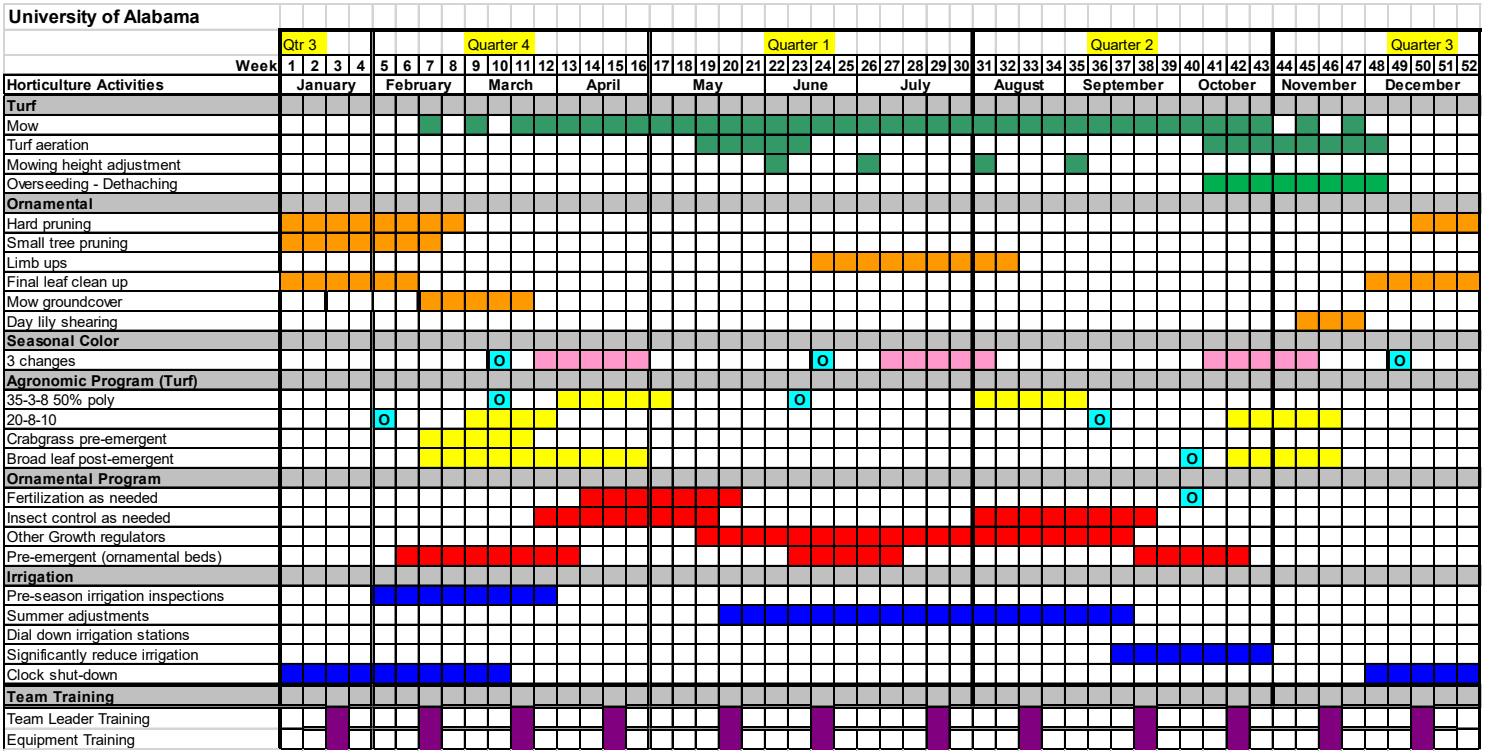
The University of Alabama Turf Fertility Timeline		
	Cool Season Turf	**Warm Season Turf**
January		
February		
March	Fertilize with high N with quick release at a maximum of 2 pounds nitrogen per 1000 square feet.	
April		Fertilize with a high N product that will slow release 2 pounds of Nitrogen over approximately 16 weeks.
May		
June		
July		Fertilize with a High N slow release at a max. of 1-2 lbs of Nitrogen and 1.5 pounds potassium per 1000 square ft.
August		
September		Fertilize with a High N slow release at a max. of 1-2 lbs of Nitrogen and 1.5 pounds potassium per 1000 square ft.
October	Fertilize with a 3-2-1 quick release at a maximum of 2 pounds nitrogen per 1000 square feet.	
November		
December	Fertilize with a high N quick release at a maximum of 2 pounds of nitrogen per 1000 square feet.	

Special Note: All applications of fertilizer will be based upon soil test results.

CUTTING HEIGHT FIGURE 7

The University of Alabama Turf Cutting Height		
Type	**Warm Season**	**Cool Season**
Bermuda	2.5"-3"	3"-3.5"
Rye	3"	3"
Centipede	3"	3"
Fescue	3.25"-3.5"	3.25"-3.5"
Zoysia	2.5"-3"	3"-3.5"

MOWING SCHEDULE FIGURE 8



MULCH SCHEDULE FIGURE 9

The University of Alabama Mulch Schedule		
Area A	**Area B**	**Area C**
Spring	Spring	Spring
Summer		
Fall	Fall	
Winter		

FERTILIZING SCHEDULE FIGURE 9.1

The University of Alabama Fertilizing Schedule		
Area A	**Area B**	**Area C**
Spring	Spring	Spring
Summer	Summer	Summer

THE GROUNDS TEAM ZONES MAP FIGURE 10