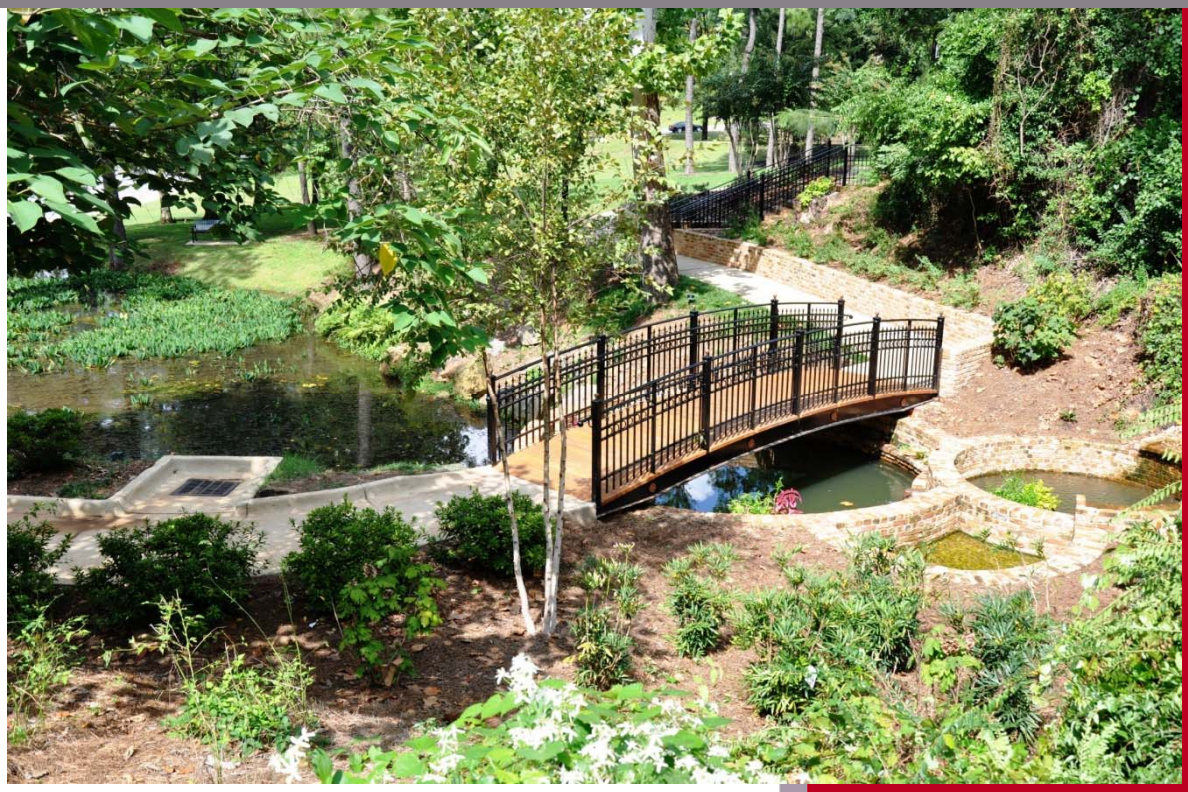
2018

Landscape and Grounds Strategic Plan



The University of Alabama

Duane A. Lamb

Associate Vice President

Facilities & Grounds

Tuscaloosa, Alabama

INTRODUCTION

ANNUAL LANDSCAPE AND GROUNDS MAINTENANCE

The University of Alabama, located in Tuscaloosa, Alabama, on the edge of the Black Warrior River, was founded in 1831 as the state's first public college. From a landscape and grounds viewpoint, it has quickly become one of the most beautiful campuses in the nation. Assets, such as its magnificent Live Oaks, Magnolias, and October Glory Maple Trees to its beautiful ponds, open, green quadrangles, and manicured flower beds, give this University campus the charm, beauty and feel of the old south. Add to that the strong central core of the antebellum President's Mansion, the landmark Denny Chimes obelisk tower, 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 well cared and 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 also translates into an incredible recruitment tool to attract, not only the best and the brightest students, but quality faculty and staff while serving as a major foundation for a conducive environment to study, teach, research, work, entertain, recreate and relax; a place we proudly call The University of Alabama.

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 the most critical locations on campus be identified as top priority areas. These areas, because of their location, importance, or historical significance, require greater attention to detail to landscape grooming on a more consistent schedule. Although the majority of our campus is considered a high-profile area, it is paramount that we treat the entire campus as such, in order 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 2018. 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 end product of each project. It will also provide timetables for when the landscape critical needs should be accomplished during a yearly cycle.

TABLE OF CONTENTS

PART I:
ANNUAL LANDSCAPE AND GROUNDS MAINTENANCE

A. General Requirements and Information

No landscape maintenance can be performed correctly without properly functioning equipment. 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 maintained at all times 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 to the satisfaction of the Associate Vice President for Facilities and Grounds. 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.

Contractor personnel performing landscape and grounds maintenance on campus will be in compliance at all times with all contractual requirements. In addition, contractor personnel will be properly identified and present themselves in a neat and professional manner at all times. All vehicles should also be properly identified and have a clean appearance while operated on campus. The contractor shall be responsible for storing its grounds equipment and supplies at an off-campus location; their equipment will not be stored on University property.

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, if not the primary component, if success is to be achieved in regard to the look you are trying to portray. The most effective and efficient means to supply water, especially when it must be applied over an area encompassing 1374 acres, is by using irrigation systems.

The University of Alabama currently has 151 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 151 systems with the aid of nine irrigation technicians. An irrigation system that does not operate correctly due to pressure malfunctions or controller lockups (will not turn itself off automatically), 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.

Irrigation maintenance must be accomplished daily. The short-term goals will be to inspect each system at least once a week. The campus Grounds Team (Director, Manager, Assistant Managers, and Irrigation Technician Team) accomplishes this task every Monday by evaluating the systems in their areas of responsibility. 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 in the future with Global Positioning Satellite (GPS) technology. This documentation would include meters, controllers, clocks, and sprinkler heads. The cost savings, in the ability to quickly locate malfunctioning components alone, would be in the thousands each year.

Finally, the campus currently utilizes four different types of irrigation systems. Those irrigation systems are electric, hydraulic, battery, and manual. For operational effectiveness, compatibility, interoperability with the master controller systems, parts exchangeability, and ease of maintenance/training all future campus installation should be comprised of electric systems. Finally, we must ensure that all new sidewalk installation considers irrigation systems and needs. If conduit sleeves need to be added for irrigation or system parts need to be repaired or replaced due to damage caused by the installation, they should be added to the sidewalk installation project.

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

Due to the volume of foot, bicycle, golf cart, maintenance vehicles, contractor trucks, and game day traffic/activities, sidewalk maintenance and repair has become an increasing concern on campus. With 1374 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 3"x3"x3/16" steel tubing with a newel post ball cap and are installed at maximum spacing of 10'. The bollards are installed in an 18" by 8" diameter concrete foundation, and the standard projection above grade is 30". 7/0 hot dipped galvanized black coated chain is to be hung between the bollards from 5/16 stainless steel quick links. Prior to installation, the bollards shall be painted with PPG Amercoat One primer and two coats of PPG PSX One in black color. Standard drawings of the bollard installation can be found on the University's Design Guidelines repository. 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, every effort is made

to repair the bollards on the day damage is reported. Bollards 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 & 2.2)**. Also, 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, in particular, 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 southern landscape 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 and Grounds Board. 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, in order to augment our need for a quick turn-a-round. Of special note is the capability to grow creeping fig for the UA Elephant topiary (Tromp).

The specific goal for planting is to adhere to a well-orchestrated horticulture schedule that follows the quarterly seasonal cycles for most areas on campus each year. Other areas may require planting only twice a year, but all areas will be specifically designed on the planting timetable.

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 Red Maple, Dogwood, Live Oak, Willow Oak, Crape Myrtle, Foster Holly, Magnolia and Pine **(See Figure 4.1).**

With so many trees located on one campus, the need for constant care, grooming, planting, transplanting and removal when necessary is essential to maintaining both the beauty and health of each tree. Such things as storm damage, stressors to trees, feeding, pruning, transplanting and mulching must all be considered during each annual cycle. The geographic location of the Deep South also dictates a need for continuous maintenance due to droughts, as well as a need for a work force that can react at a moment's notice due to the threat of extreme inclement weather like thunderstorms, tornados and hurricane winds from the Gulf Coast.

The short-term goal for tree care includes a monthly campus inspection and evaluation of each tree on campus. This is a joint task performed by a dedicated team consisting of the Grounds Director, Managers, Horticulture Manager, Grounds Forester and the campus Landscape and Grounds Advisory Board. If a tree has concluded its life cycle, it is not cut down without the entire team's concurrence with the Associate Vice President for Facilities and Grounds making the final decision, after briefing the Vice President for Financial Affairs on any special

circumstances. 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 new construction site or under power lines, the first choice will be to transplant if it is at all possible. If the existing trees are not able to be transplanted, existing trees are to be replaced in areas of new construction **(See Figure 4.3).**

F. CAMPUS TURF CARE

The care of different grasses and turf on campus takes considerable time, patience, dedication, 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, this turf is installed using sod; however, larger areas are often established by seed. When possible, old turf is recycled from athletic fields/stadiums (when they are being re-sodded), and it is transplanted to other locations on campus that are in need of grass. Provided the selected turf grass is being used in the climate to which it is adapted, there are only four major ingredients that are needed to insure optimum turf density and color: sunlight, water, oxygen, and fertility/healthy soil. If any one of the four of these factors is missing, growing healthy turf grass becomes a more serious challenge.

Sunlight is arguably one of the most crucial factors influencing the health of a turf grass in a given site. While it is true that some turf performs better in shade than others, there is **NO** turf/grass that thrives in shade. Fescue and Zoysia are two species that perform better in shade and when possible, these species should be used. In addition to species selection, our department will strategically prune trees in an effort 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 also vital to the health of a turf grass. Water does several things in a plant, but most importantly, it is a key element in photosynthesis. Without water, photosynthesis will not take place, and this will result in plant death. Secondly, water gives the plant turgor allowing it to remain upright after pressure has been applied to it. Lastly, water is the resource a plant uses to cool itself off. As one can tell, without water the plant will suffer in several different ways. Just as important as water quantity is water quality. A water supply should be tested a minimum of one time per year to insure it is balanced, has a proper pH, and that there is not an accumulation of salts or other impurities that are detrimental to the health of a plant.

Availability of oxygen to plant roots is another essential component of a healthy turf grass system. In healthy soil, there are solids and pore spaces. In an ideal situation, 50% of the pore space is occupied by oxygen and the other 50% is occupied by water. There are two ways in which we can help insure that this occurs. One is by core aeration. This creates a hole in the soil surface and allows pore space to be created. Core aeration also creates channels by which water and nutrients can more easily reach a root zone. The second is to help maintain proper soil oxygen by having proper soil drainage. If soil is water logged, there is little or no oxygen in the root zone. This in effect, suffocates the root system and will lead to eventual plant death. The President's Mansion lawn is the micro-cauisum of all the turf areas on campus and a good example of where all these techniques should be carefully followed to insure good plant health **(See Figure 5).**

Proper fertility/healthy soil is also a vital aspect to healthy turf grass. Soil testing should be done a minimum of one time per year. This will provide a snapshot of the soil condition and soil structure now, as well as serve as an indicator of where the soil's condition and structure will be in the future. Performing regular soil and tissue testing will also give the Grounds Department a baseline to follow to insure turf is getting its required nutrients in a given situation, while at the same time avoiding unnecessary applications that could be detrimental to a plant, as well as

costly **(See Figure 6.1).** While these four factors influence the health of a turf grass, there are several cultural practices that can be performed to aid in a turf's color and beauty. The first is over seeding. Over seeding is done to dormant or semi-dormant turf in the fall and winter months. A successful over seed is determined by site preparation, seed selection and seeding rates. Regular mowing must also be done to ensure a turf grass has a consistent green color. Mowing should be done a minimum of one time per week. The pattern in which a turf is mowed should be alternated weekly; this will help keep the grass growing upright as opposed to laying in one direction. Once established, mowing heights should remain the same throughout a growing season.

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 mission begins with top-notch leadership and personnel. We have divided the campus into 15 zones, **(See Figure 11),** and assigned each zone to a different groundskeeper team. 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 grounds 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, top-notch 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 final results standpoint that encompasses all landscape maintenance areas.

Mowing any area of turf on campus takes a great amount of attention to detail to insure 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 work order of 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 turf being mowed, and the season are primary factors in determining the height of the grass to be cut **(See Figure 7**). The lay of the landscape should also be evaluated. 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 job instructions. In addition, the direction of the cut must be alternated each week, if possible. This style of cutting, called crisscrossing pattern, helps stimulate healthy, straight up standing, growth and gives a clean-cut look to the grass.

Mowing cycles for each area on campus, if possible, should be followed as outlined in the weekly schedule, but due to work orders or special events this cannot always be followed **(See Figure 8)**. The majority of 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 Residential Living category includes 70 plus facilities, such as halls, apartments, dorms, fraternities and sororities, to include Capstone Village **(See Figure 9)**.

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 in an effort 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 the single most 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 or edge of hard-surface.

After mowing and edging an area, it should be fine-tuned by weed-eating any undesirable, unappealing leftover grass, ground-cover 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 than be blown clean of debris (sidewalks, streets, patio, steps, etc.). Extra care should be taken not to blow this 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 to trees, shrubs and beds 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; especially 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, the lack of water is the main cause of severe stress to most plants; and certainly, young ones. Mulch materials can assist when a Groundskeeper is not available to help keep plants healthy. 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, oxygen levels, 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 approximately 4 inches. It will provide a trough or moat that will serve as a catch basin to keep debris (mulch, dirt, leaves, etc.) from spreading sporadically on 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-side 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 twice each year **(See Figure 10.1).** 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 2-4 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). This in turn generates a species that is better equipped to fight off weeds and resist pest, thus producing a longer lasting and beautiful turf, shrubs, flowers or trees. Healthier, thicker roots and cover also provides an additional layer of erosion control in some areas and promotes less maintenance overall.

When applying fertilizer to the University's landscape environment, the terms correct and timely are critical in this process **(See Figure 10.2).** The correct amount/volume of fertilizer and type is important (slow or quick release, all-in-one particle, crystal/granular or jell, organic or chemical, etc.). The short-term goal is to ensure the lay down schedule is strictly followed; the appropriate fertilizer and volume is used at the right time of in the agricultural schedule and followed up with irrigation as specified. (Most horticulture experts recommend fertilizing once or twice a year; however, feeding some turfs and plants more can be appropriate (depending on location dictated by the amount of shade and sunlight in the area).

I. Campus Pesticide Use

On occasion, plants can become stressed due to natural or unnatural events. If this happens, the competitive edge that the plant once had is given away to such pests as weeds, fungi, and insects. When any of these pests invade a plant, the application of the appropriate chemical to combat the pest and restore the plant's ability to maintain its health is necessary. Safety is the upmost importance and the first rule when working with these chemicals. 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. There is no room for error, and the application must be done correctly the first time; failure to do so can be disastrous, as well as costly. Along with safety, the timing of pesticide applications is also extremely important. A poorly timed application will, more times than not, fail **(See Figure 6.1).**

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 attend a bi-yearly 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 is divided into its own section and presented in small groups of two to three teams consisting of four or five members each, where questions, discussions and feedback are encouraged in a more intimate setting. 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 campus beautiful.

PART II:
CAMPUS LANDSCAPE AND GROUNDS PROJECT

A. Irrigation Master Control System

Healthy landscapes equate to beautiful landscapes. The primary element 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 151 individual irrigation systems on campus is imperative to maximize results and work efficiently, in addition to insuring 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. To date, we have 98 systems that are compatible with our Sentinel Toro 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 2018 was to evaluate our current 151 irrigation systems with a professional irrigation consultant. That process resulted in 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. The goal is to have all systems electric on campus and connected to the master control system by 2025. There are an additional 21 hydraulic systems that will need to be converted to the Sentinel master control.

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 3.18)** with each being maintained by one of the two irrigation teams. By dividing the campus into two irrigation zones, confusion has been eliminated, and we have ensured that all irrigation systems are checked at least once a month, in

the summer, and all repairs are made in a timely manner.

The short-term goal is to have the Campus Irrigation Installation Team evaluate all current irrigation systems on campus for operational and upgrade needs. If an old system is to the point where it is no longer functional and is past the point where it can be repaired cost effectively then a plan to replace it will be evaluated. In addition, the Grounds Department will evaluate all areas that currently do not have irrigation on campus and determine the need in those areas as well as the cost to install a system. All new sidewalk installation must take into account irrigation systems and needs. If conduit sleeves need to be added for irrigation or system parts need to be repaired/replaced due to damage caused by the installation, it should be scheduled. Each new Capital Project will have an irrigation plan (drawing) completed by the University's Campus Landscape Architects. Each plan will be installed by our irrigation team, if possible.

C. Campus Landscape and Grounds In-House Projects

The Campus Landscape and Grounds In-House Projects consisted of over 40 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 2013 and March 2018 in the following areas:

1. Woods Quad
2. Reese Phifer
3. Shelby Quad
4. Bryant-Jordan Performing Arts Studio
5. East Annex
6. Gordon Palmer
7. Hackberry Park
8. Campus Nature Trail
9. President's Mansion
10. Denny Chimes
11. Manderson Landing
12. Residential Life five Robert Witt Signs
13. Robert Witt Monument and Statue
14. Moody Music
15. Mal Moore
16. Rose Administration
17. Capstone Village
18. Child Development Playground
19. RISE Complex
20. Indoor and Outdoor Tennis Courts
21. Pinehurst #7, #9, and #11
22. Alumni Hall
23. Rowand Johnson
24. Mary Harmon Bryant
25. Little Hall
26. Law School
27. Osband Hall
28. Brewer Porch
29. University Club
30. Locke House
31. Financial Affairs Cottage
32. Nott Hall
33. Flag Pole Circle Bed Ferguson Center
34. Campus Drive Parking Deck
35. Bevill Bike Pad
36. UAPD Facility
37. Garland, Clark, and Manly
38. Jerry Pate Golf Complex
39. Softball Complex
40. Mary Burke Dorm

With the completion of these projects, all 40 plus areas have been folded into a weekly grounds maintenance plan. Due to their importance to the campus, it is imperative that each area be given the highest standard of care to maintain their beauty.

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 Associate Vice President for Facilities and Grounds, 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 any and all trees is prohibited (climbing, use of ropes, wire, hammocks, slack-lining, etc.). In order 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. Trees growing in inappropriate places 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/Board President; Associate Vice President for Facilities and Grounds

Hazardous Tree Management: Public health, safety and general welfare will be maintained through the use of generally accepted professional practices of evaluation and treatment to reduce risks to people and property from hazardous trees. Attention to proper selection, planting and maintenance of new trees will also be pursued to achieve long-term risk reduction.

Pruning Standards: The latest pruning standards established by the International Society of Arboriculture will be used in the maintenance of vegetation. Maintenance is conducted on an as needed basis. Trees are evaluated and based on pruning needs are scheduled for pruning.

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 any and all trees is prohibited. Examples of misuse include, but are not limited to climbing, use of ropes, wire, hammocks, slack-lines, 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

standard plans and specifications. 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). Construction and grounds management practices (fencing, feeding, watering, limiting traffic over root, etc.) will be complied with throughout the construction process. Once construction projects are complete, any and 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 Forester and Grounds Director will make an assessment and report their recommendation to the Associate Vice President of Facilities and Grounds.

Damage, Vandalism and Illegal Cutting: Whenever possible, 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 ensure up to five trees will be planted 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. Trees that are to be removed in construction areas shall be replaced, so that the tree volume is equal to the existing **(See Figure 4.3),** 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 taken into account. The best time to plant or transplant trees is September 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 daily until tree has established its root system. Trees that are staked when planted shall have stakes 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 2018 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 **(See Figure 12).** 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. Every five years, the Campus Forester will re-inventory all trees on campus to ensure accurate data is kept on each tree. This information allows for the Campus Forester to make recommendations to the Campus Landscape and Grounds Advisory Board concerning the overall health of the tree or removal of the tree. Each tree will be considered on a case by case basis, taking into account 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 three consecutive years (2015, 2016, and 2017). 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, and community, 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 campus forester, arborist, landscape architect, or designated facilities department, the **Campus Tree Advisory Committee** 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 particular 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. A college campus, to be designated a Tree Campus USA, **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 as long as 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 Board are proud to have met all five of these Tree Campus USA standards since 2015 and with strive to meet them for years to come.

APPENDIX
PROJECT STANDARDS, FIGURES AND TIMETABLES

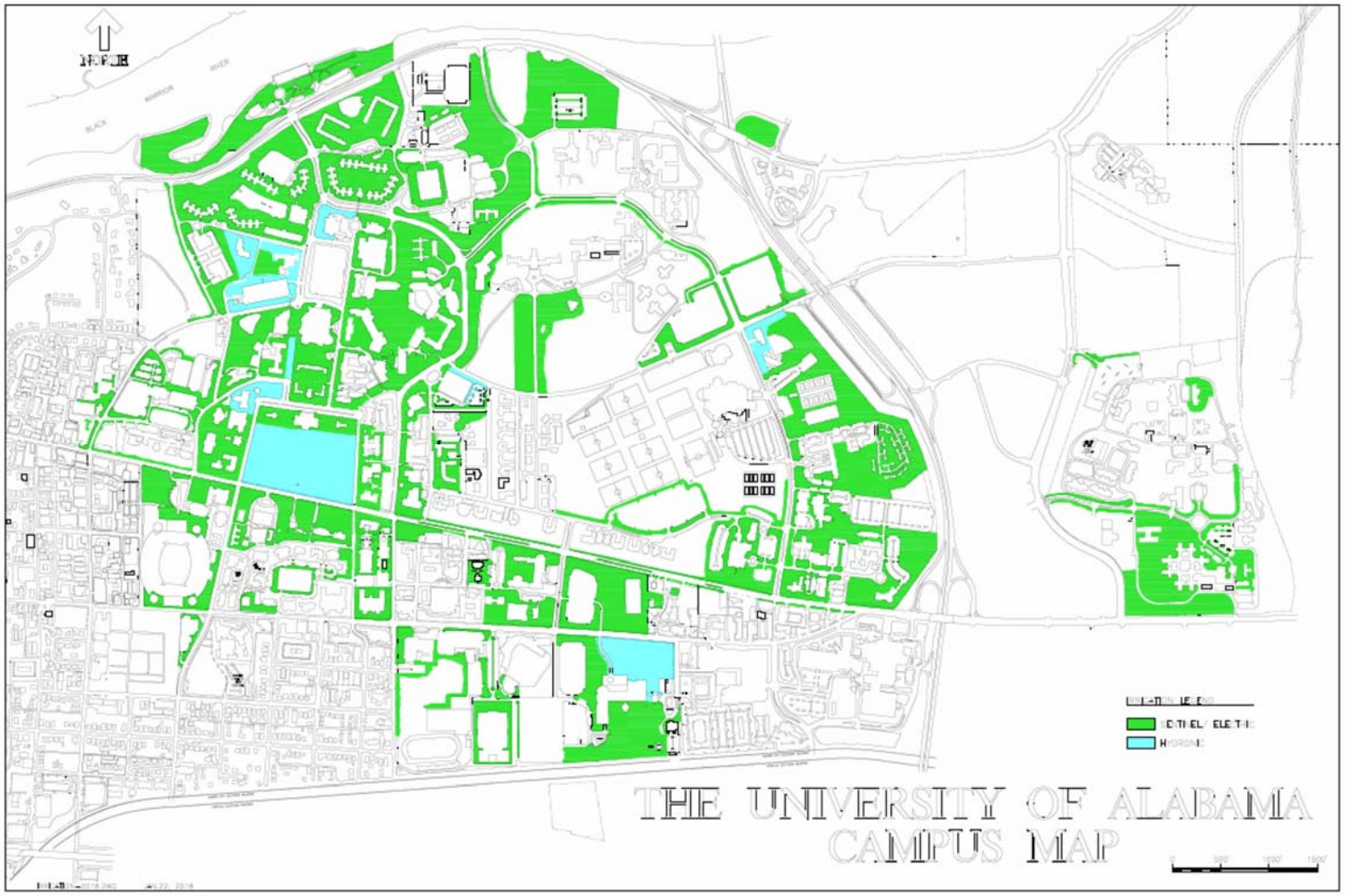
IRRIGATION SYSTEMS FIGURE 1.1

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
Woods Hall	Campus Drive Parking Deck	Locke House	Presidential Village 1	Track Stadium Mechanical Room
	Capstone Village	Magnolia Parking Deck	Presidential Village 2	Triangle Parking Lot
	Capstone Village Town Homes	Marr's Spring Pond	Presidential Village 2 Courtyard	University Boulevard
	Child Development	Mary Burke Hall	Print & Mail Shop	University Club
	Coleman Coliseum	Mary Harmon Bryant Hall	Quad Box A (3 Battery OP.)	University Medical Center
	Coleman Coliseum Parking Lot	McClure Library	Reese Phifer Hall	Veteran's Affair
	Cottonmouth Lake 3 Battery OP.	Moody Music Hall	Remote Parking Lot	Walk of Champions
	Dr. Hillard's Office	Moody Music Parking Lot	Ridgecrest (South) 2 Battery OP.	Walter Bryant Jones Hall
	East Annex	Moor & Little Hall	Ridgecrest North	West Entrance Sign/Green Space
	East Commuter Lot	Morgan Hall	Ridgecrest South	West Nursing
	East Energy Plant/Gordon Palmer	NOAA Building	Riverside Dorms	West Substation/Nature Trail
	Farrahh Hall	North Bluff Parking Lot	Riverside Parking Deck	
	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



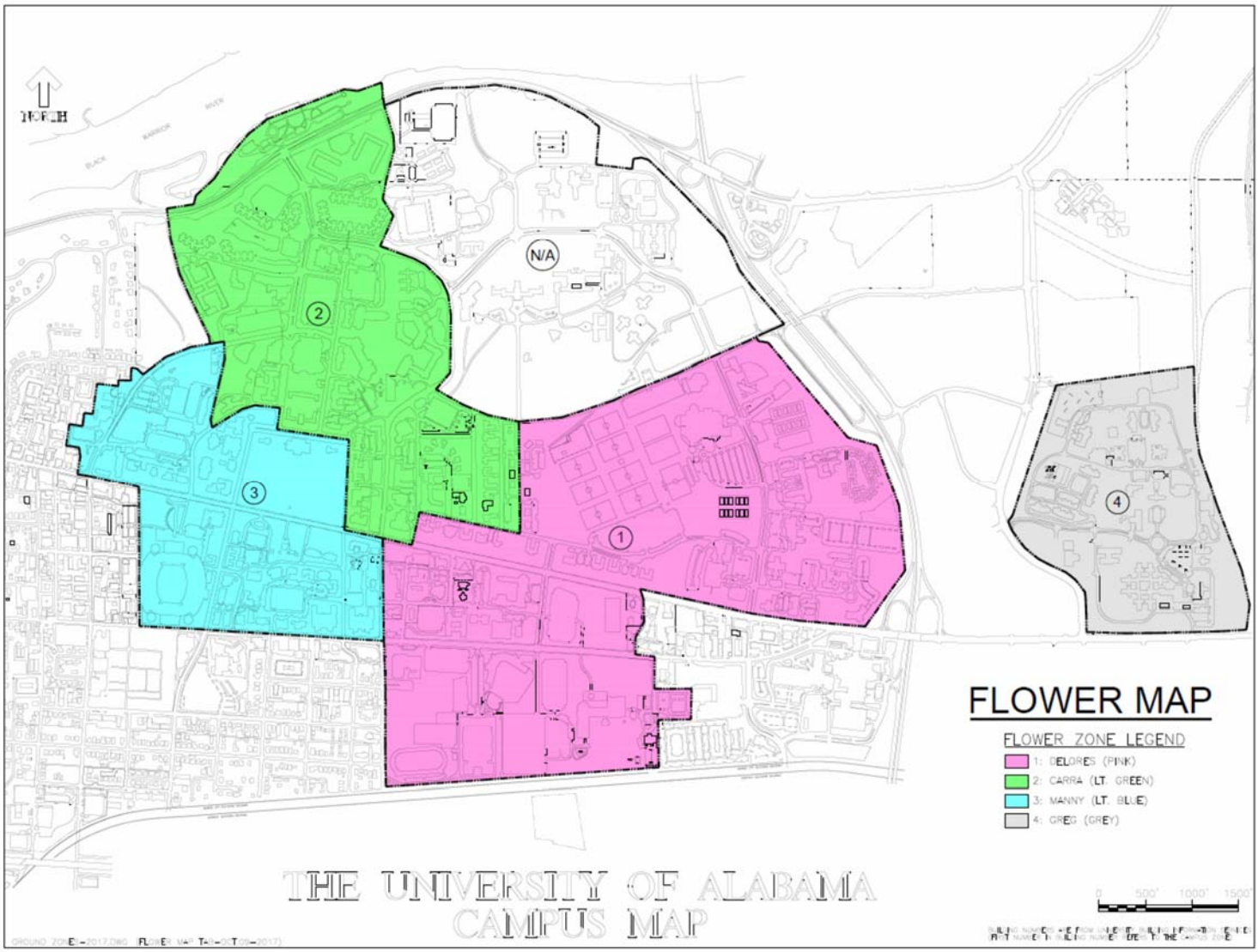
ANNUALS LIST FIGURE 2.1

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*		
Rudbeckia hirta	*Black Eyed Susan*		
Salvia gregii	*Autumn Sage*		
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	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)
Graves Hall Side Bed	South Lawn	Martha Parham (3)
Graves Hall Sign Bed	South Stadium Sign	Nott 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 rubrum	Red Maple
Carya illinoinensis	Pecan
Cedrus deodara	Deodar Cedar
Cornus x 'Rutcan'	Constellation Dogwood
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 glabra	Spruce Pine
Pinus palustris	Longleaf Pine
Pinus taeda	Loblolly Pine
Pinus virginiana	Virginia Pine
Pistacia Chinese	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	Overcup 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
Cornus x 'Rutcan'	Constellation Dogwood
Crataegus phaenopyrum	Washington Hawthorn
Ilex latifolia	Lusterleaf Holly
Ilex 'Mary Nell'	Mary Nell Holly
Ilex vomitoria	Yaupon Holly
Ilex x attenuata 'Fosteri'	Foster Holly
Ilex x attenuate '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
Thugia occidentalis	Arborvitae
Vitex agnus-castus	Lilac Chaste Tree

Tree Replacement Policy Figure 4.3

The University Of Alabama Tree Replacement Policy												
Removed Tree Diameter (inches)	Diameter of Replacement Tree (inches)											
	1"	2	3	4	5	6	7	8	9	10	11	12
1"	1 Tree	1	1	1	1	1	1	1	1	1	1	1
2	5	1	1	1	1	1	1	1	1	1	1	1
3	10	3	1	1	1	1	1	1	1	1	1	1
4	17	5	2	1	1	1	1	1	1	1	1	1
5	26	7	3	2	1	1	1	1	1	1	1	1
6	37	10	5	3	2	1	1	1	1	1	1	1
7	50	13	6	4	2	2	1	1	1	1	1	1
8	65	17	8	5	3	2	2	1	1	1	1	1
9	82	21	10	6	4	3	2	2	1	1	1	1
10	101	26	12	7	5	3	3	2	2	1	1	1
11	122	31	14	8	5	4	3	2	2	2	1	1
12	145	37	17	10	6	5	3	3	2	2	2	1
13	170	43	19	11	7	5	4	3	3	2	2	1
14	197	50	22	13	8	6	5	4	3	2	2	2
15	226	57	26	15	10	7	5	4	3	23	2	2
16	257	65	29	17	11	8	6	5	4	3	3	2
17	290	73	33	19	12	9	6	5	4	3	3	2
18	325	82	37	21	13	10	7	6	5	4	3	3
19	362	91	41	23	15	11	8	6	5	4	3	3
20	401	101	45	26	17	12	9	7	5	5	4	3
21	442	111	50	28	18	13	10	7	6	5	4	4
22	485	122	54	31	20	14	10	8	6	5	5	4
23	530	133	59	34	22	15	11	9	7	6	5	4
24	577	145	65	37	24	17	12	10	8	6	5	5
25	626	157	70	40	26	18	13	10	8	7	6	5

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.

Turf Pesticide and Fertility Timeline Figure 6.1

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.

TURF 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

University of Alabama Mowing Schedule				
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
Ferguson Student Center South Crimson Promenade	AIME Bevill H.M. Comer Houser Quad	Woods Quad	Little Moore Farrah Hayden Harris	Reese Phifer Temple Tutwiler Harris Eleventh
Ferguson Parking Deck	President's Mansion Rose Admin Doster Hall Presidential 1	Gorgas House Morgan Bidgood	Foster Burke Parham Barnwell New	Ten Hoor Campus Drive West Fraternities
B.U.I.P. Paty Hall	Hardaway Annex A.F. Studies	Carmichael Graves McClure	Byrd Parker Adams Wilson Osband	Marr's Spring Pond Chi Omega Alpha Chi Omega Delta Chi
Somerville Palmer	Engineering Boiler Shop Bureau of Mines	Gallalee	Tutwiler and Parking Anthropology Moody Bryant Conference	Maxwell Freidman Powers
Lakeside Lakeside Dining	W.B. Jones Science College	Nott Lloyd Smith	Museum Alumni Hall Band Parking Lot	Campus Drive West
Riverside Parking Lot	Annex. Greenhouse	Aquatic Center Area *	Soccer Stadium * Hillel House	Outside Rec. Fields
Highland Apartments Health Services	Russell Gordon Palmer Biology	Coliseum *	Tennis Stadium * Temple Emanu-EL	The Park at Manderson Landing
McMillian Shelby Hackberry Lane	Campus Drive Parking Bryant Hall	Mal Moore Bld. *	Patton House	Pinehurst #7, #9, #11
Rogers Library Hackberry Park	Bryce Lawn Apts. Fraternities	Baseball Stadium *	Softball Stadium *	Rowing Complex when needed *
Hillard Property	New Parking Lot University Blvd.	Track Stadium *	Rec. Center Area	Kidd Bldgs
Brewer Porch Building	Student Medical Center 600-700/Capstone	Law School	Locke House	Boone Cabin as needed
Parking lot next to Chevron Station	Stallings Ctr. Child Dev. Center	Retention Pond	System's Office	
Holding area by Publix	Retention Pond	Ridgecrest South Ridgecrest North	University Club	
East Side of Mini Park	AKA House		Office of Counsel	
Around Band Practice Field	Maintenance Property every 1st and 3rd Tues.		WUAL Radio Tower when needed	
Cross Country Track Course when needed *	Garage Area every 1st and 3rd Tues.			
South University Mall Lot	Strode Property every 1st and 3rd Tues.			
	Storeroom Area every 1st and 3rd Tues.			
	Wittichen Bld. every 1st and 3rd. Tues.			
	Brewer Porch Center every 2nd and 4th Tues.			

Note: * denotes outside Athletic Properties

Special Note: All mowing schedules may vary due to weather and/or events.

RESIDENTIAL FACILITIES ON CAMPUS FIGURE 9

The University of Alabama Residential Halls, Fraternities, and Sororities		
Halls	**Fraternities**	**Sororities**
Tutwiler	Alpha Kappa Lambda	Alpha Chi Omega
Burke East	Alpha Phi Alpha	Alpha Delta Pi
Burke West	Alpha Tau Omega	Alpha Delta Sigma
Parham	Beta Theta Pi	Alpha Gamma Delta
Byrd	Chi Phi	Alpha Kappa Alpha
Parker Adams	Delta Chi	Alpha Omicron Pi
Harris	Delta Kappa Epsilon	Chi Omega
Bryant	Delta Tau Delta	Delta Delta Delta
Small Group Houses	Kappa Alpha	Delta Sigma Theta
Bryce Lawn	Kappa Alpha Psi	Delta Xi Phi
Ridgecrest South	Kappa Sigma	Delta Zeta
The Highlands	Lambda Chi Alpha	Gamma Phi Beta
Riverside-East, West, North	Lambda Sigma Phi	Kappa Alpha Theta
Lakeside-East and West	Omega Psi Phi	Kappa Delta
Ridgecrest East and West	Phi Beta Sigma	Kappa Kappa Gamma
Blount	Phi Delta Theta	Phi Mu
Friedman	Phi Gamma Delta	Pi Beta Phi
Paty	Phi Iota Alpha	Sigma Delta Tau
Sommerville	Phi Kappa Psi	Sigma Gamma Rho
Palmer	Pi Kappa Alpha	Zeta Phi Beta
Presidential I	Pi Kappa Phi	Zeta Tau Alpha
Presidential II	Sigma Alpha Epsilon	Delta Gamma
	Sigma Chi	
	Sigma Lambda Beta	
	Sigma Nu	
	Sigma Pi	
	Theta Chi	
	Zeta Beta Tau	

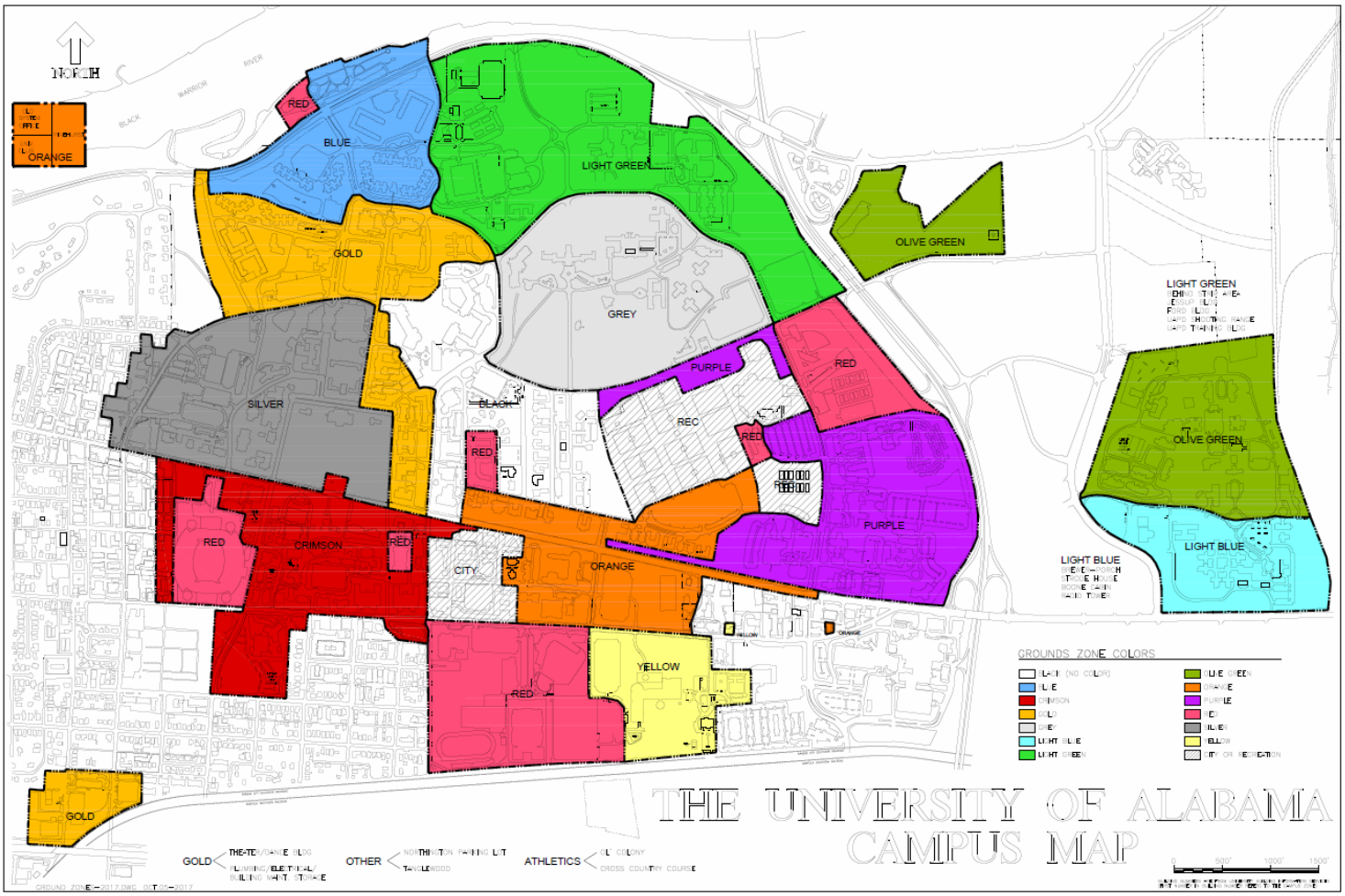
MULCH SCHEDULE FIGURE 10.1

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

FERTILIZING SCHEDULE FIGURE 10.2

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

THE GROUNDS TEAM ZONES MAP FIGURE 11



CAMPUS TREE INVENTORY FIGURE 12