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INTRODUCTION

The Landscape Services Department is the division of Campus Facilities responsible for the maintenance, design, and construction of the landscape contained within the 735 acres of Educational and General campus.

The mission of Campus Facilities-Landscape Services is ‘to provide a safe, attractive, educational landscape for students, faculty, staff, and visitors through a continuous commitment to excellence and a dedication to support the academic mission of the university.’

It is understood that the appearance of the campus landscape is an important element in marketing the institution, helping to attract and retain the best students, faculty, and staff by promoting an image of excellence.

The primary purposes of this plan are to: (1) Ensure the most effective use of available resources; (2) establish standards of appearance for each area of campus; (3) establish horticultural maintenance specifications to support this plan; (4) serve as a guide in landscape design; and (5) develop and promote sustainable horticultural practices.

This is intended as the operational and maintenance plan for the university landscape. Therefore, it is intended to be revised as circumstance may dictate in order to be responsive to the needs of the university.
LANDSCAPE MANAGEMENT CLASS AREAS

In order to deliver efficient and effective services, it is necessary to prioritize the allocation of landscape maintenance resources. In doing so, it is necessary to recognize and define the separate types, purposes, and areas of landscape on the MU Campus.

Information gathered from the Campus master plan, Mizzou Botanic Garden Development Plan, Campus Facilities, visitor and guest relations and others was analyzed for the following factors: type of use, visual impact, existing landscape quality and potential for improvement, pedestrian and vehicular corridors, tour routes, historical significance, educational opportunities, photo opportunities, type of funding source, and manageability.

The four landscape management class areas are defined as:

Class A: intensive use-high visibility
   A-1 Mall areas and irrigated turf areas
   A-2 non-irrigated turf areas

Class B: high use-medium visibility
   B-1 developed areas near building entrances
   B-2 less developed areas not in the public view

Class C: low use-low visibility
   C-1 Open space areas with reduced maintenance
   C-2 Open space being mowed once/twice each year

Class D: areas designated as specific gardens/collections of the Mizzou Botanic Garden.

Class E: storm water management sites

The attached maps indicate the boundaries/locations of each class as well as the level of care currently applied to those areas.
LANDSCAPE MANAGEMENT CLASS STANDARDS

Establishment of maintenance standards for each Class Area must consider the definition of each class, current standards, departmental goals and objectives and what is achievable with current resources. These standards articulate the level of care to be given to the campus landscape and are intended to maintain the attractiveness of the MU landscape and create a more enjoyable environment for the campus community.

The following is a summary of the standards to which these areas should be maintained.

Class A-1: Overall landscape shall appear very attractive and well-kept at all times. Turf shall be maintained in very good condition with few or no weeds. Green healthy color shall be maintained throughout the growing season by irrigation with automatic systems. Turf renovation shall be performed in all areas as needed. Shrubs and ornamental trees shall receive pruning, shaping or training as needed. Mature trees in this area will receive attention as a high priority in accordance with the Tree Management program. Plant pests will be managed as outlined in the Integrated Pest Management program. Annual and perennial flowers may be planted in this area. There should be areas of color, year round interest and gardens in this area. Trees and shrubs will be replaced as appropriate for the landscape design. Landscape renovation in this area will be a high priority as funding permits.

Class A-2: Overall landscape shall appear very attractive and well-kept at all times. Turf shall be maintained in very good condition with few or no weeds. Turf renovation shall be performed in all areas as needed. Shrubs and ornamental trees shall receive pruning, shaping or training as needed. Mature trees in this area will receive attention as a high priority in accordance with the Tree Management program. Plant pests will be managed as outlined in the Integrated Pest Management program. Annual and perennial flowers may be planted in this area. There should be areas of color, year round interest and gardens in this area. Trees and shrubs will be replaced as appropriate for the landscape design. Landscape renovation in this area will be a priority as funding permits.

Class B-1: Overall landscape will appear attractive and well cared for. Turf shall be maintained in good condition with a majority of acceptable grasses and few weeds. Grass will be allowed to become dormant during drought and not be irrigated. Turf renovation shall be performed in all areas as needed. Shrubs and ornamental trees shall receive pruning as needed. Mature trees will receive attention based upon the priorities in the Tree Management program. Plant pests will be managed as outlined in the Integrated Pest Management program. Only low maintenance perennials will be planted in this area. The landscape should provide interest in all seasons. Trees and shrubs may be replaced as appropriate for the landscape design and as resources are available.

Class B-2: Overall landscape will appear well cared for. Turf shall be maintained in fair condition with less regard for lawn weeds but placing emphasis on protecting the
area from soil erosion. Grass will be allowed to become dormant during drought and not be irrigated. Turf renovation shall be performed in areas with insufficient cover to stop soil erosion. Shrubs and ornamental trees shall receive pruning as needed. Mature trees will receive attention based upon the priorities in the Tree Management program. Plant pests will be managed as outlined in the Integrated Pest Management program. Only low maintenance landscapes with trees and low maintenance shrubs will be encouraged in this area. Trees and shrubs will be replaced as appropriate for the landscape design and as resources are available. The landscape should provide utility and transition that is acceptable to the part of the campus it is in.

Class C-1: Grass shall be mowed every ten days. There shall be no weed or pest control, irrigation or renovations in this area. Mature trees will receive attention based upon the Tree Management program. Plant pests will be managed as outlined in the Integrated Pest Management program. Shrub plantings will be minimal and not encouraged. Trees will be replaced as appropriate for the area and usage and if resources are available.

Class C-2: Grass will not be mowed except to control the invasion of woody species into the area. This will consist of mowing once/twice each year. Landscape trees will not be introduced or cared for in this area.

Class D: Mizzou Botanic Garden. These areas are maintained at the level commensurate with the overall area of the campus that they are located within and considering the interpretive intent of the garden/collection.

Class E: Storm water management sites. Maintained commensurate with the intent associated with the designed purpose, adjacent site area class designation, and the intended efficacy of the of the storm water management site.
**LANDSCAPE MANAGEMENT SPECIFICATIONS**

The detailed maintenance specifications below itemize the specific tasks and actions necessary in order to meet the standards established for each class.

Sections I and II are divided into separate sections for each class since there are major differences in maintenance for each class area in sections III thru VIII, differences in maintenance practices are noted where they occur. Where not noted, Class A shall receive first priority, Class B second, and Class C third. Contracts areas are maintained as specified in individual agreements, but in general meet or exceed Class B standards.

I. **LITTER CONTROL**

   A. Class A-1 and A-2

      1. Litter shall be picked up a minimum of once per day and twice per day on the heavily used mall areas as needed.

      2. Paved mall areas shall be thoroughly cleaned twice per month throughout the use season.

      3. Dumpster enclosure areas shall be cleaned thoroughly twice per year.

      4. Sidewalk trash receptacles/recycling containers shall be moved, cleaned, and both the container and the pavement power washed thoroughly once per year. Lids on aggregate containers will be cleaned and painted once each year.

      5. All sidewalks shall be entirely cleaned/swept twice per year. Attention should be paid to steps and other areas which require hand cleaning.

      6. Window wells, catch basins and drains shall be completely cleaned a minimum of once per month, and increased to once per week during the fall and early winter as leaves drop.

      7. Storm debris cleanup shall begin immediately following the storm and completed by the day following the occurrence.

   B. Class B-1 and B-2

      1. Litter shall be picked up a minimum of once per week and more frequently where and when needed.

      2. Dumpster enclosure areas shall be cleaned thoroughly twice per year.

      3. Sidewalk trash receptacles/recycling containers shall be moved, cleaned, and both the container and the pavement power washed thoroughly once per year. Lids on aggregate containers will be cleaned and painted once each year.
4. All sidewalks shall be entirely cleaned/swept once per year. Attention should be paid to steps and other areas which require hand cleaning.

5. Window wells, catch basins and drains shall be completely cleaned a minimum of once per month, and increased to once per week during the fall and early winter as leaves drop.

6. Storm debris cleanup shall begin immediately following the storm and completed by the day following the occurrence.

C. Class C-1 and C-2

1. Litter shall be picked up a minimum of once per week and more frequently where and when needed.

2. Dumpster enclosure areas should be cleaned thoroughly once per year.

3. Sidewalk trash receptacles/recycling containers shall be moved, cleaned and both the container and the pavement power washed thoroughly once per year. Lids on aggregate containers will be cleaned and painted once each year.

4. Window wells, catch basins, and drains should be completely cleaned a minimum of once per month, and increased to once per week during the fall and early winter as leaves drop.

5. Storm debris shall be cleaned up as soon as possible.
II. TURF MAINTENANCE

A. General Requirements

1. Trash shall be removed prior to mowing.

2. Mower height, as specified below, shall be made and measured on a flat, paved surface.

3. Trimming around trees, shrubs, buildings, retaining walls, sign post, light standards, fences, etc. shall be executed after each mowing. Herbicide may be used to maintain a narrow (3-inch maximum) trimming strip along buildings and fences only.

B. Class A-1 and A-2

1. Mowing shall be scheduled so that no more than one third (1/3) of the grass plant is removed with a cutting height of three and one-half (3 ½ ) inches. Lawn mowing will typically be performed weekly during the active growing season. Grass clippings will be mulched in place unless the amount of clippings is detrimental to the health of the lawn.

2. Irrigation (if in-ground system is in place) shall be utilized only as required to maintain a weekly application rate of approximately one (1) inch from a combination of natural rainfall and irrigation during the growing season. This rate is based on maintaining the proper moisture level for the first four to six (4-6) inches of topsoil.

3. Edging of lawns shall be performed along all sidewalks, drives patios, etc… weekly during the active growing season. Trimmings will be blown back onto the adjacent lawn to decompose in place.

4. Weed control shall be performed to maintain the turf with few or no weeds. Weeds will be controlled chemically only when significant infestations occur. All control methods and practices shall be in accordance with the Integrated Pest Management Program (Section VI). Herbicides shall only be used when necessary to achieve desired control with consideration for minimal environmental impact and in accordance with federal and state laws. Spot applications will be used whenever possible. Employees must wear all safety equipment required by the herbicide label, or exceed requirements as directed. Treated areas will be posted in accordance with the Integrated Pest Management program.

5. Insect and disease control shall be handled on an “as needed” basis and in accordance with the Integrated Pest Management program (Section VI).

6. Fertilizer application shall be made once in fall (Sept) at a rate of 1 ½ pounds nitrogen (60% SCU minimum) per 1000 square feet with an appropriate ratio analysis, including micro-nutrients (29 - 11-9, 5S, 2Fe typical). An additional application of 1 ½ pounds of nitrogen per 1000 square feet with polymer coated, sulfur coated urea (39-0-0) shall occur in the late winter (Feb).
7. Leaf litter shall be mulched in place with mowers throughout fall and winter as necessary. Leaves will only be removed when their volume or depth will kill grass or trigger other problems.

8. Aeration shall be accomplished each fall utilizing a coring type aerator with 3/8 - 5/8 inch diameter tines and a penetration depth of 1 - 1 ½ inch (minimum). Areas receiving intense use also shall be aerated in the spring.

9. Renovation shall be accomplished on an “as needed” basis. Over seeding shall be accomplished by slit seeding at the rate of 2-4 lbs per 1000 square feet, based upon current grass density. Highly visible areas may be planted with sod in the spring at the discretion of CF-LS.

10. Clippings and other mowing debris shall be blown back onto the adjacent lawn to decompose in place from paved surfaces such as sidewalks, plazas, courtyards, etc. a minimum of every two weeks, preferably after each mowing.

C. Class B-1 and B-2

1. Mowing shall be scheduled so that no more than one-third of the grass plant is removed, with a cutting height of three and one half (3 ½ ) inches. Lawn mowing will typically be performed weekly during the active growing season. Grass clippings will be mulched in place unless the amount of clippings is detrimental to the health of the lawn.

2. Edging of lawns shall be performed at least once per month along all walks during the active growing season. Trimmings will be blown back onto the adjacent lawn to decompose in place.

3. Weed control shall be performed to control the majority of dandelions and plantains only. Other weeds will be controlled chemically only when significant infestations occur. (Crabgrass may be controlled where and as necessary.) All control methods and practices shall be in accordance with the Integrated Pest Management Program (see Section VI). Herbicides shall only be used when necessary to achieve desired control with consideration for minimal environmental impact and personal exposure and in accordance with federal and state law. Spot applications will be used whenever possible. Employees must wear full safety equipment required for herbicide, or exceed requirements as directed. Treated areas will be posted in accordance with the Integrated Pest Management program.

4. Insect and disease control shall be handled on an “as needed” basis in accordance with the Integrated Pest Management program (see Section VII).

5. Soil tests will be performed annually to confirm fertility requirements. Should this testing indicate fertilization is necessary a fertilizer application shall be made once in fall (Sept) at a rate of 1 ½ pounds nitrogen (60% SCU minimum) per 1000 square feet with an appropriate ratio analysis, including micro-nutrients (29 - 11-9, 5S, 2Fe typical). An additional application of 1 ½ pounds of nitrogen per 1000 square feet with polymer
coated, sulfur coated urea (39-0-0) shall occur in the late winter (Feb).

6. Leaf litter shall be mulched in place with mowers throughout fall and winter as necessary. Leaves will only be removed when their volume or depth will kill grass or trigger other problems.

7. Aeration shall be accomplished each fall utilizing a coring type aerator with 3/8 - 5/8 inch diameter tines with a minimum penetration depth of 1 ½ inch.

8. Renovation shall be accomplished on an “as needed” basis. Over seeding shall be accomplished by slit seeding at the rate of 2-4 lbs per 1000 ft. square, based upon current grass density.

D. Class C-1 and C-2

1. Mowing shall be executed a minimum of every ten (10) days during the entire growing season at a cutting height of three (3 ½) inches.
III. TREE MANAGEMENT PROGRAM

A. General

1. The purpose of the tree management program is to protect and preserve trees as our primary landscape resource, while ensuring a safe environment by minimizing potential tree hazards.

B. Records

1. All campus trees shall be inventoried as part of the plant accession records of the Mizzou Botanic Garden. Additions and deletions to these records shall be kept on a continuous basis and the designated Archivist of the MUBG will be the responsible party for these records.

2. Data on the trees’ location, condition, species and size will be part of these records. Each tree is assigned an inventory number and mapped, and the data collected used to calculate an appraised value. The appraisal system follows the guidelines set forth by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture. The inventory system also will be used to record major maintenance and other history of individual trees.

C. Maintenance Schedules and Priorities

1. The following schedule of maintenance activities are listed in order of importance. Although all activities should be performed, this priority should serve as a management guide.

2. Tree limbs shall annually be lifted to a height of 7 ft. over walks and 12 ft. over roads, drives, parking areas, and any other vehicle access route. This typically should be done in June after full leaf out and the majority of branch elongation.

3. Young trees shall receive training annually for 5 years after planting, as necessary. Training shall direct the tree growth toward the habit, shape or form desired of the mature plant.

4. Ornamental trees (trees with mature height of less than 20-25 ft) will be maintained by the groundskeepers responsible for that area. Trees which have been planted longer than 5 years but are still less than 20 ft. in height, and are not classified as ornamental may also need maintenance. These trees should also be maintained by area groundskeepers.

5. Maintenance Class A trees shall receive annual maintenance, Class B trees every two years, Class C every 2 years as possible. Class A shall be first priority, Class B second and Class C third.

6. Mature trees (defined as greater than 25 ft in height) shall receive maintenance, as
required, once every four years. These trees will be maintained by a professional arborist. The priority of this work shall be: first, hazard trees, second trees near buildings and high use areas and lastly all other trees within each category, trees in Class A will be first, Class B second, and Class C third.

7. Maintenance Class A trees should have mulch tree rings refreshed annually with Class B and C area tree rings refreshed a minimum of every 2 years, in order to maintain weed suppression and target depth.

8. Typically trees which die or are otherwise removed shall be replaced. However, replacements shall be planted as resources are available, and in accordance with the landscape priorities and design goals as defined by Campus Facilities-Landscape Services. Hardiness, disease, and other horticultural factors will be considerations in replacement decisions with an emphasis on planting native or well adapted non-native species.

D. Tree Maintenance Standards

1. Corrective pruning shall be performed to maintain the natural shape and characteristics of the variety and maintain the tree’s health. Central leaders shall be maintained in those species normally having them. Interfering or crossed limbs shall be removed, along with any suckers and/or waterspouts.

2. All limb removals shall be made at the outside end of the branch collar at the trunk or limb from which they originate.

3. Aesthetic pruning shall be performed in such a manner that the trees will complement the landscape design and adjacent architecture. All dead or broken branches shall be removed.

4. Pest control shall be performed in accordance with the Integrated Pest Management program (see Section VI).

5. Tree wrapping shall be installed in the fall and removed in the spring on linden, maple, honey locust and other thin barked trees for 3-5 years after installation. Trees in protected locations may be exempted. Paper wrap shall be used and secured at the top with black electrical tape.

6. Tree guying cables or stakes shall be removed after one year.

7. Irrigation of newly planted trees shall consist of deep soaking at least twice monthly during the first three irrigation seasons, unless soil and moisture conditions dictate otherwise for good growth. Earthen water basins shall be maintained around trees during these initial years of establishment. Summers with excessive drought will require irrigation of trees based on the need of the species and the cultural experience of the particular area.

8. Mulch shall be composed of shredded hardwood. Mulch should be maintained at a
two inch depth in tree rings, and should not exceed four inches in depth. Mulch should be placed in a radius of 18-20 inches from the outside of the tree trunk. Attention should be paid to keep mulch from building up against the tree trunk. When mulch exceeds 4 inches the old mulch shall be removed and replaced.

9. All trimmings including limbs up to 8 inches in diameter shall be deposited at the city mulch site for shredding and composting.

E. Tree Removals

1. A ‘Campus Tree Condition Assessment’ report (attached) with supporting pictures and any necessary documentation will be completed and submitted to the Director of CF-LS for approval prior to scheduling any tree removal.

2. In the event that it is determined that a tree is to be removed, it shall be removed in the safest manner possible while observing all applicable safety practices and standards.

3. Tree stumps shall be ground (removed) to a point twelve (12) inches below grade. Upon removal of all debris from the site, damaged turf areas shall be repaired by filling holes with topsoil, compacting and seeding with the approved seed mix.

4. All tree removals will be annotated in the accession records within 72 hours of the removal.
IV. SHRUB AND GROUND COVER MAINTENANCE

A. General

1. Pruning of shrubs shall be executed in such a manner as to retain their natural form and proportionate size to each other. Shrubs should be pruned to: (1) maintain size and shape; (2) control traffic or allow pedestrian clearance; or (3) thinned in order to promote plant health and longevity, encourage flowering and improve shape and structure.

B. Standards

1. Renovation shall be performed as an exception. Pruning shall be performed as often as necessary to have the shrubs appear neat and orderly at all times.

2. Pruning of hedges shall occur as regularly as demanded by the growth rate of the plant. Typically, juniper, yew, arborvitae and boxwood hedges should be sheared once per year in late winter. Privet hedges shall be sheared 3 times per year. Formal yew hedges, especially lineal form hedges, should also be sheared in July to remove new elongated growth only. Hedges shall always be sheared such that the base of the hedge is proportionately wider than the top. Height and form shall be predetermined by CF-LS management.

3. Pruning of ground covers shall be done to encourage complete coverage of the bed. Creeping euonymus shall be mowed to a height of six (6) inches once each spring prior to bud break. Liriope shall be mowed to a height of three (3) inches once each spring prior to growth initiation. English ivy, hypericum, vinca minor, creeping mahonia and honeysuckle shall be mowed or pruned about every 2-3 years to a height of four (4) inches in the spring prior to bud break. Creeping ground covers shall be trimmed along the bed edges throughout the growing season to achieve an overall neat appearance.

4. Ornamental grasses shall be cut off just above the crown early in the spring prior to new growth.

5. Pest control shall be performed in accordance with the Integrated Pest Management Program (Section VI).

6. Weeding of shrub and ground cover beds shall be done as required to provide adequate control. All control methods and practices shall be in accordance with the Integrated Pest Management Program. A pre-emergence herbicide if necessary should be applied to all beds twice annually. Post-emergent herbicides if necessary will be used to spot spray weeds in beds once per month on Class A areas and a minimum of every 2 months on Class B and C areas. Hand weeding will be used as necessary. Primary attention shall be paid to field bindweed, bermuda grass, garlic mustard and nutsedge.

7. Shredded mulch shall be used to control weeds in open beds. Class A and B1 areas should be top dressed annually; Class B2 and C areas should be top-dressed a minimum
of every 2 years in order to maintain weed suppression and a target depth of 4 inches.

8. Fertilizing of ground cover plantings shall be implemented with a balanced fertilizer once a year or as necessary for the site conditions and species. Shrubs shall be fertilized as necessary based upon soil, site conditions and species.

9. Watering of shrub and ground cover beds shall occur for 1-3 years during the establishment period, as indicated by species. Some plants will require supplemental watering during drought periods and shall be watered as needed.
V. ANNUAL AND HERBACEOUS PERENNIAL PLANTINGS

A. General

1. Annual flowers if utilized shall be planted only in select Class A areas. Emphasis will be placed on using herbaceous perennials in most seasonal plantings. Only low maintenance perennials may be planted in Class B areas.

B. Standards

1. The annual flower program will be planned to provide color interest with emphasis for spring commencement, the start of the fall semester, and Homecoming.

2. Planting beds/containers shall be thoroughly prepared to a depth of eight (8) inches prior to planting. Incorporation of amendments and compost will be based on soil test results.

3. Pre-emergent herbicides and slow release fertilizer if utilized shall be applied to plantings. Hand weeding of flower beds shall be done a minimum of every two (2) weeks or as appropriate thereafter.

4. Watering of plantings shall be done regularly and adequately to fit the nature of the plants, the type of soil and the location and exposure of the bed/planter.

5. Removal of spent blooms shall be performed on varieties which require it to provide maximum bloom.

6. Insect and disease control shall occur in accordance with the Integrated Pest Management program (Section VI).

7. Pruning of herbaceous perennials shall consist of removing previous year’s top growth in spring prior to new growth. Beds shall then be cleaned and mulched with 2 inches of compost or 1 inch of bark mulch if compost is not available.

8. If necessary, perennial beds shall receive a first application of pre-emergence herbicide and slow release fertilizer in early spring (March). A second application of pre-emergence herbicide will be applied if necessary according to product labeling.
VI. INTEGRATED PEST MANAGEMENT

A. General definition

1. “Integrated Pest Management (IPM) is both a concept and a philosophy. It is a broad, multidisciplinary, systematic approach to controlling all pests. All types of control methods (biological, cultural, regulatory, physical, and chemical) are utilized. Use of IPM strategies should result in effective and economical suppression of pests with a minimum effect on non-target organisms and the environment. IPM is based on understanding the plants to be protected and the pests to be controlled.”

B. Goals and objectives

1. The goal of the Integrated Pest Management program is to preserve and protect the landscape while minimizing personal and environmental impacts, and establish sustainable landscape management practices.

2. The Integrated Pest Management Program shall follow six basic principles:
   a. Identify the pest to be managed; not all pests need control.
   b. Define the management area; pest management will vary with campus area and pests.
   c. Establish monitoring techniques; a variety of methods from trapping to degree days, may be employed.
   d. Establish thresholds of tolerance; typically damage thresholds will predominate, however, economic and aesthetic thresholds may be considered.
   e. Develop a predictive model for each target pest.
   f. Develop a pest management plan and schedule for each target pest.

C. Priorities and options

1. Although specific practices will vary widely (pest management plans are included below) there are several guidelines.

2. Maintenance Class A areas will receive top priority in order to meet established standards of landscape management and appearance. Typically the thresholds of tolerance for this area will be damage and/or diminished appearance.

3. Class B areas should not be ignored, however, the typical tolerance threshold for this area will be sustainable plant damage and usually not aesthetic.

4. Class C area will typically not receive pest management.

5. The order of control options should be: plant species options; cultural; physical or mechanical; bio-rational; biological; and lastly synthetic chemical control.

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1Controlling Turfgrass Pests: Shurtleff, Fermanian, Randall.
6. New options (especially pertaining to weed control) will be investigated and research trials will be conducted when feasible. Every effort will be made to continuously integrate into this program the newest IPM information and seek to maintain institutional leadership in this field.

D. IPM Specifications

1. Each host/pest system shall be monitored regularly for pest population occurrence and size, natural enemy populations, and practices that could affect both.

2. A threshold of tolerance for the pest population shall be determined based on how much aesthetic, physiological, or economic damage is acceptable for each host plant, considering the applicable Landscape Management Class Standard.

3. Pest management measures shall be undertaken for pest populations which reach or exceed the determined tolerance level.

4. Pest management measures shall be based on pest biology, weather, host phenology, and other factors that might affect pest population dynamics, and shall be designed to have the least adverse impact on the environment.
   a. Non-chemical management tactics shall be considered first.
   b. Site-suitable, resistant or tolerant plants
   c. Modification of cultural management practices
   d. Modification of host/pest systems to reduce the pest's food and living space
   e. Physical controls such as traps, barriers, and hand picking
   f. Bio-rational pesticides, horticultural oils, soaps, botanical and mineral compounds
   g. Biological controls - conserving, enhancing or introducing pest natural enemies
   h. Synthetic chemical control shall be used minimally when other measures are ineffective or prohibitively costly.

5. Pesticides, when used, shall be evaluated under the following criteria in order to select the least hazardous pesticide possible.
   a. LD₅₀ (the highest mg/kg should be the first choice)
   b. Acute and chronic human health effects
   c. Persistence in the environment
   d. Re-entry interval
   e. Effectiveness
   f. Host specificity/selectivity
   g. Application techniques
   h. Cost
   i. Impact on non-target organisms
   j. Pest resistance, resurgence and secondary pest outbreaks
   k. Potential for drift and leaching: air and water pollution, property damage, health hazard

6. Pesticides, when used, shall be applied in strict accordance with manufacturer labels, regulations and good safety practices.
7. All management practices shall be monitored to evaluate effectiveness.

8. Records shall be kept of monitoring and treatment.

9. Pest management guidelines shall be established for each host/pest system encountered, and predictive models developed where possible.

10. Public awareness of the benefits of the IPM policy shall be communicated to the university community on a regular basis.

11. IPM strategies shall be regularly reviewed to include new and better methods as experience and new information warrant change.
VIII. ADDITIONAL LANDSCAPE SERVICES RESPONSIBILITIES

Landscape Services is responsible for a variety of additional responsibilities not directly related to horticulture. These responsibilities include:

1. Organizing and coordinating the Campus Facilities winter weather management plans.
2. Outdoor pest control.
3. Recreation trail maintenance.
4. Site amenities including benches, tables, etc...
5. Storm water catch basin clearing.
6. Turf irrigation systems.
7. Site equipment: bike racks, map stands, and outdoor bulletin boards.
8. Fence maintenance including bollards and post and chains.
10. Maintain exterior trash/recycling containers to support the Sustainability Office.
11. Supporting the Mizzou Botanic Garden efforts not funded by private giving.
Common name:

Genus and species:

Location:

Size:

Prepared by:

Date:

Condition

Potential Hazards

Recommendation