The University of Kansas
Landscape Master Plan

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# TABLE OF CONTENTS

A CAMPUS WIDE REVIEW OF CULTURAL MAINTENANCE PROGRAMS AT THE UNIVERSITY OF KANSAS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>5</td>
</tr>
<tr>
<td>Recommendations for Improving Department Organization</td>
<td>5</td>
</tr>
<tr>
<td>Recommendations for Improving Department Communication and Training</td>
<td>5</td>
</tr>
<tr>
<td>Recommendations for Improving Efficiency and Quality</td>
<td>6</td>
</tr>
</tbody>
</table>

A CAMPUS WIDE REVIEW OF CULTURAL MAINTENANCE PROGRAMS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>8</td>
</tr>
<tr>
<td>Facilities Operations: Landscape Maintenance Resources</td>
<td>8</td>
</tr>
<tr>
<td>Agronomic Perspectives: Landscape Acreage (FO)</td>
<td>8</td>
</tr>
<tr>
<td>Agronomic Perspectives: Turfgrass Maintenance Programs (FO)</td>
<td>9</td>
</tr>
<tr>
<td>Agronomic Perspectives: Tree/Shrub Maintenance Programs (FO)</td>
<td>9</td>
</tr>
<tr>
<td>Operational Perspectives: Employee Survey (FO)</td>
<td>9</td>
</tr>
<tr>
<td>Facilities Operations Employee Survey</td>
<td>9</td>
</tr>
<tr>
<td>Survey Findings</td>
<td>12</td>
</tr>
<tr>
<td>Historical Manpower Levels</td>
<td>13</td>
</tr>
<tr>
<td>Historical Labor and Materials Costs</td>
<td>13</td>
</tr>
<tr>
<td>Facilities Operations: Agronomic Programs and Operations Practical Perspectives and Recommendations</td>
<td>14</td>
</tr>
<tr>
<td>Turfgrass Maintenance Program</td>
<td>14</td>
</tr>
<tr>
<td>Tree and Shrub Maintenance Program</td>
<td>15</td>
</tr>
<tr>
<td>Grassing Palette</td>
<td>16</td>
</tr>
<tr>
<td>Equipment Inventory</td>
<td>17</td>
</tr>
<tr>
<td>Equipment Storage</td>
<td>17</td>
</tr>
<tr>
<td>Fertilizer, Pesticide and Landscape Products Inventory</td>
<td>18</td>
</tr>
<tr>
<td>Fertilizer, Pesticide and Landscape Products Storage</td>
<td>18</td>
</tr>
<tr>
<td>Pesticide Rinse Facilities</td>
<td>18</td>
</tr>
<tr>
<td>Contract Services</td>
<td>18</td>
</tr>
<tr>
<td>Turfgrass Irrigation</td>
<td>18</td>
</tr>
<tr>
<td>Greenwaste Program</td>
<td>19</td>
</tr>
<tr>
<td>The Chancellor's Beautification Program</td>
<td>19</td>
</tr>
<tr>
<td>Peer Comparisons: Grounds Maintenance Costs/Acre</td>
<td>20</td>
</tr>
<tr>
<td>Staffing, Manpower Levels, Estimated Payroll</td>
<td>21</td>
</tr>
<tr>
<td>Staffing Action Plan</td>
<td>22</td>
</tr>
<tr>
<td>Management and Employee Training</td>
<td>23</td>
</tr>
<tr>
<td>Communication</td>
<td>23</td>
</tr>
<tr>
<td>Facilities Operations: Agronomic Programs and Operations Final Thoughts and Summary</td>
<td>24</td>
</tr>
</tbody>
</table>

DEPARTMENT OF STUDENT HOUSING: LANDSCAPE MAINTENANCE RESOURCES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomic Perspectives: Landscape Acreage (DSH)</td>
<td>25</td>
</tr>
<tr>
<td>Agronomic Perspectives: DSH Turfgrass Maintenance Programs</td>
<td>25</td>
</tr>
<tr>
<td>Agronomic Perspectives: Tree/Shrub Maintenance Programs (DSH)</td>
<td>26</td>
</tr>
<tr>
<td>Agronomic Perspectives: Chemical Inventory (DSH)</td>
<td>26</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>26</td>
</tr>
<tr>
<td>Pesticides</td>
<td>27</td>
</tr>
<tr>
<td>Operational Perspectives: Employee Survey (DSH)</td>
<td>28</td>
</tr>
<tr>
<td>DSH Employee Survey</td>
<td>28</td>
</tr>
<tr>
<td>Survey Findings</td>
<td>28</td>
</tr>
<tr>
<td>Department of Student Housing Agronomic Programs and Operations</td>
<td>28</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>CONCLUSIONS: AGRONOMIC &amp; OPERATIONAL PERSPECTIVES - THE UNIVERSITY OF KANSAS MASTER PLAN</td>
<td>50</td>
</tr>
<tr>
<td>Transition to the Future</td>
<td>51</td>
</tr>
<tr>
<td>Maintenance Standards</td>
<td>51</td>
</tr>
<tr>
<td>Proposed Maintenance Standards</td>
<td>51</td>
</tr>
<tr>
<td>Department Organization</td>
<td>57</td>
</tr>
<tr>
<td>Department Communication and Training</td>
<td>57</td>
</tr>
<tr>
<td>Efficiency and Quality</td>
<td>58</td>
</tr>
</tbody>
</table>
A Campus Wide Review of Cultural Maintenance Programs at the University of Kansas

Executive Summary

Properly conceived landscape maintenance programs are an essential component of successful landscape architecture. The greatest limiting factor associated with the long-term success of any landscape design is the maintenance program that carries the design concept successfully into the future.

The landscape environment at the University of Kansas combines maturity, beauty, function and topographical diversity. Over 1140 acres of landscape acreage is presently maintained for the enjoyment of students, faculty and staff at the University of Kansas. The Department of Facilities Operations maintains 960 acres and the Department of Student Housing maintains the remaining 180 acres.

Responding to the need to review campus-wide cultural maintenance programs at the University of Kansas, Mark M. Mahady & Associates, Carmel Valley, California, and Turf Diagnostics & Design, Olathe, Kansas, were selected to evaluate turfgrass and ornamental maintenance programs, equipment inventories, staffing relative to performance expectations and employee satisfaction perspectives within the Department of Facilities Operations, Department of Student Housing, Recreation Services and Department of Athletics.

This process revealed many common issues among the Department of Facilities Operations, Student Housing and Athletics. From the information gathered during employee meetings and generated from employee surveys it would appear that, overall, the employees in these maintenance departments are dedicated, experienced workers that enjoy what they do on a daily basis. Staff morale is minimally acceptable to good and the work environment is rated good in two of three departments. Those areas where improvements can be made would be associated with department organization, department communication and training, staffing and wage levels, and the mind set that the performance standard determines staffing levels.

Recommendations for Improving Department Organization

• Transfer the maintenance responsibility for all intramural fields to the Athletic Department.

• Enhance the support for the Department of Student Housing by placing their material/product needs and equipment needs under a shared umbrella with Facilities Operations.

Recommendations for Improving Department Communication and Training

• Regularly scheduled meetings, perhaps during the summer and mid-winter, among the Athletic Department, Facilities Operations, and Department of Student Housing would create a forum to share ideas and address common problems.

• The development of a Plant Design, Selection and Maintenance Advisory Committee to meet on a quarterly basis in order to discuss new construction, existing landscapes and the planting of the Chancellor’s Beautification Program would spearhead a common sense understanding of the interrelationship of plant design, adaptation and maintenance, and prevent the design and establishment of plant materials that are either not well adapted or impossible to maintain.

• The development of an Athletic Department Advisory Board consisting of a field design team, coaches, stadium operations, Athletic Department Management and sports field maintenance staff to review all new design, all new construction and to evaluate the issues and problems associated with present fields.
• The development of a twelve-month field use calendar for Athletics and Recreation Services. Record all activities including practices, games, entertainment and all maintenance activities. Maintain calendars for all fields. Use this information to monitor field use and over-use. Present this information as an educational session to staff members from all coaching staffs, stadium operations, the Athletic Department and the sports field maintenance staff. Improve the general understanding of seasonal use and resulting turfgrass wear.

• The development of a department wide maintenance training program to enhance technical understanding, employee satisfaction and employee turnover at the utility worker level. Regularly scheduled sessions for both in-house training by qualified supervisors and outside educational seminars covering subject areas such as plant identification, general soils, plant nutrition, weed control and pesticide use is also recommended.

Recommendations for Improving Efficiency and Quality

The tasks associated with grounds and sports field maintenance can be completed in a very rapid and task oriented fashion when little or no consideration is given to the aesthetic value of that task. When the resulting aesthetic quality of the completed task is as important as completing the task itself, more time, effort and money must be invested in order to achieve that qualitative goal. In the case of grounds and sports field maintenance this translates into an adequate number of dedicated, well trained people, financially rewarded within realistic industry standards, and supported with the proper equipment and materials to complete both the quantitative and the aesthetic goals at hand.

Staffing figures will vary from campus to campus based on the complexity and acreage of the plant material to be maintained in the landscape, the level of performance expectation, the level of knowledge, experience and training of the maintenance staff, suitable equipment to perform maintenance tasks, and the number and types of duties assigned to the maintenance staff that are not related to landscape care. However, the level of staffing and financial resources that the university decides to direct toward grounds and sports field maintenance will ultimately be driven by a cost benefit analysis of perceived need and the following considerations:

• the manner in which people perceive KU,

• the learning environment,

• the ability to acquire new students, student athletes, faculty, staff and administrators,

• the ability to retain new students, student athletes, faculty, staff and administrators,

• the stability of student enrollment and its impact on the long-term future of KU.

• The information generated by the California State University survey shows an average of 13.9 acres per FTE with a generated maintenance cost per acre of $4,175. Within the same study a national representation of universities shows an average of 13.5 acres per FTE and a generated maintenance cost of $4,428 per acre. Information generated by Western Michigan University shows 16.0 acres per FTE. Data generated by Facilities Operations at KU shows estimates of 36.9 acres per FTE at a cost of $687 per acre.

While it may be easy to say that the National Universities study or the California State University study represent acreage per FTE and grounds cost per acre that are unrealistic for KU, these extreme discrepancies are an indication of the level at which KU is presently operating and point to a more positive direction in which KU needs to rapidly move. Regardless of what exact numbers are appropriate for the type of landscape and the performance expectations at KU, the real acid test is whether the university as a whole believes that the present level of maintenance of landscapes and sports fields across the campus is meeting the needs of the university. In many respects it has little to do with data or benchmarking numbers. It has everything to do with weighted values of perceived importance and customer satisfaction, and whether KU believes it is providing a pleasurable, attractive and functional green environment that will serve the needs of students, faculty and staff.
The low entry wage scale is preventing the grounds maintenance groups at KU from hiring and keeping more qualified candidates. While the experience levels in all department groups showed twelve to sixteen years plus in the supervisor and managerial level, the comparative years of experience in the utility level was often less than three years. There were very few employees with five to eight years of experience. The loss of this middle tier employee group would indicate that KU cannot retain quality employees. While in the short term this may not be a critical or limiting factor, it could influence the performance level of the remaining employee pool once the managers with twelve to sixteen years retire.

The University of Kansas is lucky enough to have dedicated, hard working and experienced people who love their work and enjoy the daily challenges of maintaining landscapes and sports fields. Unfortunately, based on national average, comments from employees in all departments and the current condition of the landscapes and sports fields, we believe that the staffing levels are inadequate for the present level of performance, as indicated by the present condition of the landscapes, much less a great leap forward in performance expectation. A recent walk across campus to review the condition of several high visibility turfgrass areas emphasized this perspective. The turf in many areas appeared to have not been mowed for more than one week, exhibited more broadleaf and grassy weeds than would be deemed acceptable and was not edged along sidewalks or steps. A simple and practical approach to solving these basic turfgrass problems would be (a) mow and edge more frequently, (b) establish proper seasonal fertilizer programs to improve turfgrass vigor and density, and, (c) establish weed control programs to limit weed invasion. The addition of more trained employees equipped with the proper equipment to mow and edge turfgrass areas more frequently would result in a significant improvement in the day to day condition of the landscapes at the University of Kansas. The addition of lower maintenance warm season grasses such as buffalograss and zoysiagrass, which require significantly less mowing and total maintenance inputs, would further enhance this perspective.

If KU believes that the aesthetic and functional value of its landscapes and sports fields do not meet its perceived standard of excellence, then it should proceed with the process of improving entry and existing wage scales and increasing the number of employees to build maintenance and sports field staffs that can realistically achieve established performance standards. All finely maintained facilities first decide on the level of performance expected and then, utilizing this information, proceed with developing the systems and hiring the people required to be successful.

***
A Campus Wide Review of Cultural Maintenance Programs

Facilities Operations, Student Housing, Recreation Services and Athletics at the University of Kansas

Introduction

Plant design philosophies must work in symphony with cultural maintenance concepts in order to create greenscape environments that promote use, function and lasting beauty. Well-conceived cultural maintenance programs implemented by knowledgeable, dedicated maintenance personnel will ensure the future success of plant systems within both landscape and sports field settings.

The essential resources that are required to achieve such goals include:

- Dedicated, open-minded people who have a passion for their work
- Sound technical information combined with years of practical field experience
- Proper tools, materials and equipment
- Managerial philosophies that reward quality employees and create an environment for all employees to maximize their productivity

On February 22 and 23, 1999 group meetings were held on the campus of the University of Kansas with the key maintenance and service staff members from Facilities Operations, Student Housing, Intramurals and Athletics. The objective of this process was to gather background information on the agronomic programs and operational philosophies presently utilized in each department and to make practical recommendations for improving the condition of landscapes and sports fields at the University of Kansas.

Facilities Operations: Landscape Maintenance Resources

The Department of Facilities Operations (FO) at the University of Kansas presently employs 26 full time staff members with the responsibility of maintaining over 960 acres of turfgrass, trees, shrubs and flowers. Additional responsibilities include snow removal and preparation for special campus events. Seasonal part-time employees are hired during the summer period.

Agronomic Perspectives: Landscape Acreage (FO)

Total landscape acreage designations with percentage breakdowns for landscape type and manpower requirement are presented in Table 1. Landscape designations are identified as tree/shrub, turf and flowers to D is presented in Table 2.

| Table 1. Facilities Operations Landscape Acreage and Manpower Requirements, University of Kansas, 1999. |
|-------------------------------------------------|---|---|---|---|
| **Acreage** | Tree/Shrub | Turf | Flowers | Total |
| 240 | 685 | 85 | 960 |
| **Percent of Total Acreage** | 25% | 71% | 4% | 100% |
| **Percent Manpower Required** | 25% | 70% | 5% | 100% |
Table 2. Facilities Operations percent of total and difficult maintenance acreage in each performance standard. University of Kansas, 1999.

<table>
<thead>
<tr>
<th></th>
<th>Performance A*</th>
<th>Performance B*</th>
<th>Performance C*</th>
<th>Performance D*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Total Acres</td>
<td>Difficult</td>
<td>% of Total Acres</td>
<td>Difficult</td>
</tr>
<tr>
<td>Tree/Shrub</td>
<td>12</td>
<td>30*</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>Turf</td>
<td>6</td>
<td>80</td>
<td>81</td>
<td>50</td>
</tr>
<tr>
<td>Flowers</td>
<td>71</td>
<td>80</td>
<td>27</td>
<td>0</td>
</tr>
</tbody>
</table>

*Represents the percentage of difficult to maintain area within a performance standard (e.g. 30% of the tree/shrub acreage in Performance A is difficult to maintain)*. Performance A: A minimum of two maintenance visits per week (e.g. The Chancellor’s Residence). Performance B: One maintenance visit per week. Performance C: One maintenance visit per month. Performance D: One maintenance visit per season or year.

**Agronomic Perspectives: Turfgrass Maintenance Programs (FO)**

Yearly turfgrass maintenance programs as designated by Facilities Operations for performance Standard A through D are presented in Table 3. All maintenance practices are presented including mowing, irrigation, fertilizing, weed control programs, insect control, disease control, micronutrients, plant growth regulators (PGR), aeration, dethatching, seeding, sodding, sweeping, soil tests and water tests.

As would be expected, Standard A and Standard B performance programs receive greatly enhanced attention as compared to Standard C and Standard D programs.

**Agronomic Perspectives: Tree/Shrub Maintenance Programs (FO)**

Yearly tree and shrub maintenance programs as designated by Facilities Operations for performance Standard A through D are presented in Table 4.

- The fertilizer and chemical section contains the following: information describing product type, manufacturer, current registration, quantity, age, use per year and product condition.

**Operational Perspectives: Employee Survey (FO)**

**Facilities Operations Employee Survey**

Facilities Operations staff members were asked to evaluate their work place based on various considerations and issues. Ratings were based on a one-to-five scale with one representing an unacceptable condition and five an excellent condition. Perspectives and key comments are presented.

<table>
<thead>
<tr>
<th></th>
<th>Performance A*</th>
<th>Performance B*</th>
<th>Performance C*</th>
<th>Performance D*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mow</strong></td>
<td>twice/week: 50% clipping removal</td>
<td>once/week</td>
<td>twice/month</td>
<td>once/season or year</td>
</tr>
<tr>
<td><strong>Irrigate</strong></td>
<td>100%</td>
<td>20%</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Fertilize</strong></td>
<td>4x/season</td>
<td>4x/season</td>
<td>1x/year in fall</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>0.68 LB AN/M</td>
<td>0.68 LB AN/M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weeds/Pre</strong></td>
<td>2x spring/summer</td>
<td>2x spring/summer</td>
<td>spot treatment</td>
<td>none</td>
</tr>
<tr>
<td><strong>Weeds/Post</strong></td>
<td>2x spring/summer</td>
<td>2x spring/summer</td>
<td>spot treatment</td>
<td>none</td>
</tr>
<tr>
<td><strong>Insects</strong></td>
<td>reactive</td>
<td>reactive</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Disease</strong></td>
<td>reactive</td>
<td>reactive</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Micronutrient</strong></td>
<td>special need</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>PGR</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Aerate</strong></td>
<td>2x/year</td>
<td>2x/year</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Dethatch</strong></td>
<td>special need</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Seed</strong></td>
<td>80-90% in fall</td>
<td>80-90% in fall</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Sweep</strong></td>
<td>special need/fall</td>
<td>special need/fall</td>
<td>none</td>
<td>none</td>
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<tr>
<td><strong>Turf Typs</strong></td>
<td>75% tall fescue</td>
<td>65% tall fescue</td>
<td>mixed cool season grasses</td>
<td>natives bluestem, ricegrass, buffalo, switchgrass</td>
</tr>
<tr>
<td></td>
<td>15% K. bluegrass</td>
<td>20% bermuda</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% bermuda</td>
<td>15% K. bluegrass</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Soil/Water Tests</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
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</tbody>
</table>

* Performance A: A minimum of two maintenance visits per week (e.g. the Chancellor's Residence)
* Performance B: One maintenance visit per week
* Performance C: One maintenance visitor per month
* Performance D: One maintenance visit per season or year

<table>
<thead>
<tr>
<th></th>
<th>Performance A*</th>
<th>Performance B*</th>
<th>Performance C*</th>
<th>Performance D*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fertilize</strong></td>
<td>new plantings special needs (foliar/injection)</td>
<td>new plantings special needs (foliar/injection)</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Micronutrient</strong></td>
<td>pin oaks only</td>
<td>pin oaks only</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Insects</strong></td>
<td>reactive application late April bagworms, aphids</td>
<td>reactive application late April bagworms, aphids</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Disease</strong></td>
<td>mid to late April anthracnose</td>
<td>mid to late April anthracnose</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Planting Program</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Replacement Program</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Pruning</strong></td>
<td>hedges PGR May-June</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Weed Control</strong></td>
<td>splits fall/spring Ronstar/Snapshot Pendulum</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Irrigation</strong></td>
<td>water truck to drip</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Tree Inventory Risk Assessment</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Tree Inventory Removal Pruning</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td><strong>Contract Services</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

* Performance A: A minimum of two maintenance visits per week (e.g. the Chancellor's Residence)
* Performance B: One maintenance visit per week
* Performance C: One maintenance visit per month
* Performance D: One maintenance visit per season or year
Survey Findings

- People are the most valuable and the most important resource at Facilities Operations.
- The staff at FO represents a dedicated group of self-starters and self-motivators who are reliable, conscientious and who know how to get the job done.
- The staff is well trained and versatile in their ability to operate many types of equipment and complete many different types of tasks.
- The staff pulls together as a team during crunch time to complete their tasks and achieve common goals. They have a passion for their work on a daily basis and take a great deal of pride in their accomplishments. Despite their efforts, the department as a whole receives few compliments from the KU administration.
- The present manpower staffing is highly unacceptable for the total number of acres maintained and the level of performance expected. At one time there were 75 employees with the responsibility of maintaining turfgrass, trees, shrubs and flowers on campus. Today there are 26 employees plus four to six seasonal part-time workers doing the same job.
- All new projects, no matter how big or small need to be evaluated in terms of total scope of required maintenance, monthly and yearly payroll hours, and equipment and product needs.
- It seems that while new buildings and projects come along all the time, little consideration is given to the significant increase in required maintenance and the actual manpower needed to maintain a quality standard.

“There are many areas we need to get to, but we don’t on a regular basis. We keep the fronts of the buildings looking good and get the backs once per month or so whenever we can. It seems every year we have to let more go than the year before - it just keeps snowballing and getting worse.”

- The employee staff at FO carries a great deal of experience with the upper management group (Tier 1) averaging eighteen years plus, the middle management group (Tier 2) averaging ten years plus, and the utility worker group (Tier 3) averaging two to three years plus.
- The package of salary, wages and benefits is slightly above minimally acceptable. Utility worker is the most difficult position in which to maintain employee stability. The starting wage of $6.90 per hour is not enough money to attract and keep good people. The benefits package is good, but no better than the city program. Although benefits are a good drawing card for employees with families, the key for young single employees is the hourly wage. The city pays starting workers $8.00 per hour and represents KU’s number one competitor for good employees.

“A utility worker had been employed at KU for a short time and accepted a position as an Operator I on the city maintenance staff. Three years later he is making $4.00 more per hour than KU maintenance staff members who have been on the job for 18 years.”

- Staff morale is generally quite good. The staff is very dedicated and gets along well as a group. The only factor that has a defined negative influence on morale is the wage level. One of the key benefits that is very much appreciated is the flexible work hours. If someone gets in a bind and really needs the time off, most of the time it is granted.
Historical Manpower Levels

Historical manpower levels for Facilities Operations personnel with the responsibility of maintaining turfgrass, trees, shrubs and flowers are presented in Table 5. Manpower levels for the staff have dropped to 26 full time positions in recent years. At one time, the Facilities Operations staff responsible for these tasks consisted of 75 positions.

Historical Labor and Materials Costs

Historical labor and material costs for Facilities Operations turfgrass maintenance, tree/shrub and flower programs are presented in Tables 6-8. The driving force behind program cost is labor. Material costs represent only 5.5% of the total cost of turfgrass maintenance, 15.3% of the total cost of tree/shrub maintenance and 12.8% of the total cost of flower maintenance.

A comparison of the total cost per year and the cost per acre for the Facilities Operations turfgrass maintenance program are presented in Table 9.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Full-time Positions</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Hours: Turf Maintenance</td>
<td>23,198</td>
<td>23,905</td>
</tr>
<tr>
<td>Hours: Tree/Shrub</td>
<td>7,226</td>
<td>7,446</td>
</tr>
<tr>
<td>Temporary Positions</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Temporary Hours: Trees &amp; Shrubs</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Temporary Hours: Turf Maintenance</td>
<td>6,793</td>
<td>6,793</td>
</tr>
<tr>
<td>Total Hours: flowers, Trash, Event Set-up</td>
<td>8,304</td>
<td>9,339</td>
</tr>
</tbody>
</table>

Once again the greatest limiting factor associated with achieving a standard of performance is labor support. The total cost per acre of Performance Standard A is roughly 1.94 times the cost of Performance Standard B. While the material cost of A and B are equivalent ($41.78), the labor cost of A is roughly twice that of B. This difference is due to the fact that Standard A is mowed twice as frequently as Standard B, and differences in labor cost represent the primary difference between the total cost per acre of the two programs.

People drive quality maintenance. To increase the number of acres within Performance Standard A and upgrade the overall performance expectation of the campus, one does not need to purchase more fertilizer – one needs to hire more people and purchase additional efficient, high quality mowing equipment.
Facilities Operations: Agronomic Programs and Operations Practical Perspectives and Recommendations

Turfgrass Maintenance Program

According to the Facilities Operations maintenance staff, this is the first year that a defined turfgrass maintenance program was implemented. Program development was established based on high and low priority areas that fit the concept of Performance Standard A, B, C and D.

The turfgrass maintenance program presented in Table 3 is agronomically sound. Program enhancements would include the following:

- Use of turfgrass plant growth regulators such as Primo (Novartis Crop Protection, Inc.) on slopes to reduce total clipping production and the frequency of mowing.
- Use of two applications of preemergent herbicides on all Standard A and Standard B acreage to reduce the need for reactive postemergent applications.
The tree and shrub maintenance program presented in Table 4 is agronomically adequate. Program enhancements would include:

- Fall applications of horticultural oil to reduce populations of mites and scale.
- Spring soil injections of chelated iron for chlorotic pin oaks, such as Sprint 330.
- Spring soil injections of nitrogen, phosphorus and potassium for general plant nutrition. The program would be plant and plant age specific (e.g. new planting program versus mature landscape plantings).
- Spring applications of plant growth regulators such as Atrimec, Embark or NAA to hedge areas following the first late spring, early summer pruning. These materials will significantly slow growth and reduce the number of payroll hours required for hand pruning. Many plants are product specific so one season of small scale, plant-specific testing is required.

**Table 9.** 199 Facilities Operations material and labor cost per acre for the yearly turfgrass maintenance program as designated by Performance Standard A, B, C and D. The University of Kansas, 1999.

<table>
<thead>
<tr>
<th></th>
<th>Performance A*</th>
<th>Performance B*</th>
<th>Performance C*</th>
<th>Performance D*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Turf Acreage</td>
<td>41</td>
<td>555</td>
<td>21</td>
<td>68</td>
</tr>
<tr>
<td>Total Material Cost/Year</td>
<td>$1,713</td>
<td>$23,189</td>
<td>$98</td>
<td>$0</td>
</tr>
<tr>
<td>Total Labor Cost/Year</td>
<td>$53,726</td>
<td>$363,634</td>
<td>$6,855</td>
<td>$1,385</td>
</tr>
<tr>
<td>Material Cost/Acre/Year</td>
<td>$41.78</td>
<td>$41.78</td>
<td>$4.66</td>
<td>$0.00</td>
</tr>
<tr>
<td>Labor Cost/Acre/Year</td>
<td>$1,310.39</td>
<td>$655.20</td>
<td>$326.42</td>
<td>$20.36</td>
</tr>
<tr>
<td>Total Cost/Acre/Year</td>
<td>$1,352.17</td>
<td>$696.98</td>
<td>$331.08</td>
<td>$20.36</td>
</tr>
<tr>
<td>Total Cost/Year</td>
<td>$55,438.97</td>
<td>$386,823.90</td>
<td>$6,952.68</td>
<td>$1384.48</td>
</tr>
</tbody>
</table>

* Performance A: A minimum of two maintenance visits per week (e.g. the Chancellor's Residence)
* Performance B: One maintenance visit per week
* Performance C: One maintenance visit per month
* Performance D: One maintenance visit per season or year

- Collection of soil samples from four to six distinct landscape regions across the KU campus. Request a general nutritional analysis and physical analysis. Coordinate testing through a turf diagnostics firm. Request consulting comments. Maintain this information in historical files.
- Collection of an irrigation water sample. Coordinate testing through a turf diagnostics firm. Request an irrigation suitability analysis and consulting comments.
- Develop a cost/benefit comparison reviewing the potential for utilizing contract services to complete fertilizer and weed control services campus wide. Compare in-house material, labor and equipment costs to the cost/benefit of contracted services. Consider service, safety and liability issues and the potential to free-up manpower hours for other essential tasks. If contracted, instill service companies with specific objectives and expectations, written specifications, contractual agreements and regularly scheduled field performance evaluations.

**Tree and Shrub Maintenance Program**

The tree and shrub maintenance program presented in Table 4 is agronomically adequate. Program enhancements would include:

- Fall applications of horticultural oil to reduce populations of mites and scale.
- Spring soil injections of chelated iron for chlorotic pin oaks, such as Sprint 330.
- Spring soil injections of nitrogen, phosphorus and potassium for general plant nutrition. The program would be plant and plant age specific (e.g. new planting program versus mature landscape plantings).
- Spring applications of plant growth regulators such as Atrimec, Embark or NAA to hedge areas following the first late spring, early summer pruning. These materials will significantly slow growth and reduce the number of payroll hours required for hand pruning. Many plants are product specific so one season of small scale, plant-specific testing is required.
• Ornamental bed weed control: develop a campus wide weed map identifying specific weed types in specific ornamental beds. Select and use preemergent herbicides such as Gallery, Snapshot, Surflan, Ronstar and Pendulum based on the specific weeds present. Use of preemergent herbicides in ornamental beds will significantly enhance landscape aesthetics by reducing weed populations, requirements for hand weeding and requirements for postemergent herbicide applications.

• Establish a tree inventory as part of the KU Master Plan. Complement this program with a tree replacement and/or new tree-planting program. Tree species recommendations to be based on adaptation, ecological design significance, disease and pest susceptibility and maintenance requirements. An advisory board consisting of a horticulturalist knowledgeable in species adaptation, the landscape design team and the maintenance staff should establish a palette of tree species options.

• During the tree inventory process identify trees that require pruning and establish a species-specific pruning program that identifies season and frequency of pruning.

**Grassing Palette**

There must be a protocol or methodology for turfgrass improvement that follows the plant palette within the Master Plan.

Utilize improved varieties of turf type tall fescue for irrigated, high visibility areas where Standard A performance or extended fall color and early spring green-up are required (e.g. Jayhawk Boulevard). Review regional NTEP (National Turfgrass Evaluation Program) information for selection of varieties best suited for Kansas.

Utilize buffalograss or solid stands of native grasses for low maintenance areas or severely sloped areas where turfgrass maintenance is difficult. Reduce maintenance requirements while enhancing aesthetic appeal. Select buffalograss varieties that have performed well in local commercial landscapes and review the NTEP programs at the University of Nebraska and the University of Missouri.

Utilize zoysiagrass around student housing facilities where traffic use is low to moderate and need for maintenance inputs is reduced. The slow growth and reduced vertical extension of zoysiagrass reduces the need for frequent mowing.

Select the landscape areas from three building sites on campus. Establish the total turf area of each location as a turf performance evaluation site. Select bermudagrass, zoysiagrass or buffalograss as the designated turf type based on the level of required aesthetics, maintenance inputs such as irrigation and mowing, and traffic activity at each site. Compare establishment procedures, relative cost per acre, speed to cover and practical perspectives of seeding, sprigging or sodding. Evaluate performance over a two-year period. Document seasonal performance relative to aesthetics, function, use and cost per acre.

The selection of low maintenance warm season grasses such as zoysiagrass and buffalograss for use on sloped and low traffic turf areas will reduce the need for maintenance inputs. Less irrigation, less fertilizer and less mowing would be required. The existing turf composition which consists primarily of tall fescue requires greater labor and maintenance inputs. As performance standards for tall fescue increase, the labor, material and maintenance costs required to achieve these standards will also increase.

Utilize Quickstand bermuda grass for intramural fields. This turf type will improve surface quality, enhance wear tolerance and reduce maintenance inputs.

Utilize the intramural fields as a test site for future grass recommendations. Establish large demonstration plots of improved grasses under actual field use conditions. Evaluate performance and generate information that will serve future campus grassing needs.
Equipment Inventory

John Deere provides the best service of any major turfgrass equipment supplier in the area. In the past John Deere has approached KU departments with potential lease options for campus wide equipment use.

Once again evaluate turfgrass equipment suppliers in the area. Request bids for lease options based on exclusive use of the selected manufacturer’s equipment on campus landscapes and potentially on the new natural grass football stadium. Evaluate the cost/benefit of a lease option program versus a purchase program.

Increase communication among maintenance departments at KU, specifically, Facilities Operations, Department of Student Housing and Athletics. Discuss options for sharing existing equipment and sharing new equipment purchases.

The overall equipment inventory supports the general needs of Facilities Operations, but is lacking in specific areas:

Service vehicles: determine employee transport versus carrying capacity or both. Consider Toro Workman, Cushman Truckster or White Truck, Gator. Request on-site manufacturer demonstrations.

- Designed service trailers: special trailers may be an option for transporting equipment and increasing the transport and on-site efficiency of hand mowing and weeding crews.

- Spray system: utilized for weed control, plant growth regulator, micronutrient or foliar feeding programs. A dedicated, mobile spray system with 125 to 150 gallon capacity. Consider John Deere Accumaster, Cushman Turf Master, Smithco. Request on-site manufacturer demonstrations.

- Sweeper/vacuum: determine need and flexibility required for a pull behind unit that provides sweeping, vacuuming and blowing capacity. Consider Goossen Versa-Vac and Toro Vac. Request on-site manufacturer demonstrations.

- Thatching/slit seeder: thatches and slit-seeds for fall overseeding. For small or sloped areas consider a Ryan Mataway Overseeder/Dethatcher and for larger acreage a Landpride Solid Stand Seeder/Dethatcher. Request on-site manufacturer demonstrations.

- Four-wheel drive mowing unit for sloped turf areas: consider a unit such as the 4-wheel drive Ransomes AR-250 with floating rotary heads. Complement this unit with the Steiner 520 Pebble Beach Edition for stability on extremely steep slopes. The Steiner can also be used to mow native grasses at cutting heights of four to five inches. Request on-site manufacturer demonstrations.

- Piston driven aerifier: a small self-propelled unit such as the Ryan GA-30 or LA-28 for small lawn and compacted areas. For larger acreage areas consider the Toro Fairway Aerifier, John Deere 1500, Ryan GA-60 or Soil Reliever with deep tine and hollow tine attachment. Request on-site manufacturer demonstrations.

Equipment Storage

Current equipment storage facilities are unacceptable. Only one-third of maintenance equipment is placed in protective storage. The remaining equipment is exposed to extreme summer and winter conditions throughout the year.

Exposure of equipment to weather extremes reduces the equipment life and significantly increases repair and maintenance costs.
Fertilizer, Pesticide and Landscape Products Inventory

The fertilizer, pesticide and landscape product inventory serves the immediate needs of the Facilities Operations maintenance staff.

Properly dispose of all fertilizers and pesticides that are more than five years old and have not been used in the last two years. Be proactive in the organization and maintenance of the fertilizer, pesticide and landscape products inventory. Order the proper amount of product when needed. Avoid purchasing excessive product quantities that require significant storage space for extended periods.

Conduct a cost/benefit analysis for bulk purchasing of fertilizers to be shared with the Department of Student Housing and Athletics. Purchasing fertilizers in bulk reduces the cost per pound of actual nitrogen, warehouse storage, product loss as a result of stolen and broken bags, and the employee liability associated with lifting and transporting bags.

Fertilizer, Pesticide and Landscape Products Storage

The storage facilities for pesticides inventories at Facilities Operations are highly unacceptable and represent both a health risk to FO employees and a potential liability to the University of Kansas.

The pesticide storage room is not an approved system, has poor ventilation and is located in the general employees’ maintenance quarters.

These products need to be removed immediately from their existing location in the maintenance facility and stored in a vented, federally approved locker or storage facility. Pesticides should be stored separately from fertilizers and landscape products.

Store fertilizers and landscape products in a centrally located facility that is easily accessible, clean, and dry. Stack bagged materials on pallets and always use broken bags first.

Pesticide Rinse Facilities

There are no pesticide rinse facilities at the University of Kansas. Plans for the development and construction of such a system need to begin as soon as possible.

Contract Services

Develop a cost/benefit comparison reviewing the potential for utilizing contract services to complete all or a portion of the following applications campus wide including: turfgrass fertilizer, turfgrass preemergent and postemergent weed control, turfgrass plant growth regulator, ornamental bed weed control, tree and shrub macronutrients and micronutrients, tree and shrub insect and disease control, and tree pruning. Compare in-house material, labor and equipment costs to the cost/benefit of contracted services. Consider service, safety, liability and the potential to free-up manpower hours for other essential tasks. Contact respected lawn care and/or tree and shrub companies. If contracted, indoctrinate service companies with specific objectives and expectations, written specifications, contractual agreements and regularly scheduled field performance evaluations.

Turfgrass Irrigation

Presently there is no central irrigation control system. Each turf location has its own separate controller. All existing and future sites must be linked to a central control.

Turfgrass irrigation at KU was not used to designate a performance standard, but was simply the result of monies being available during the time of construction.
Irrigated acreage includes the following performance areas: all of Standard A and twenty percent of Standard B.

If Standard B properties are strategically located and turf quality is severely compromised due to summer drought, consideration should be given to upgrading all Standard B acreage with irrigation.

**Greenwaste Program**

In order to develop on-campus green waste recycling, purchase a tub grinder. Grind all wood, branches and green waste, windrow and turn the organic matter, and develop high quality mulch that can be used as mulch and an organic soil amendment for all KU campus needs.

**The Chancellor’s Beautification Program**

Based on the issues surrounding minimum staffing, there are many times during the year that it is a challenge for FO just to complete the basic maintenance requirements, much less deal with trash pickup and the requested annual color planting and maintenance programs. It is often difficult to designate maintenance time and trash pick-up time. It would be better if a different crew supported trash pickup.

At times when FO would attempt small landscape projects, ultimately someone would not approve of the design or planting scheme, and all plant material would have to be removed.

Flowerbeds and annual color programs are often planted without consideration for their high maintenance requirement. Some departments and building groups are enthusiastic about planting flowers, but have no intention of assisting with their maintenance.

Properly staffing trash collection, including the simple collection of cigarette butts outside of campus buildings and general servicing of trash bins across the campus will require the time of two full time employees.

The Chancellor’s Beautification Program is proposed in order to enhance the neat, clean appearance and beauty of the campus. The primary goals of the program would be to plant and maintain annual color while proactively pursuing unsightly debris. Specifically the program would include the following:

- trash pick-up in and around high visibility landscape locations and throughout campus landscapes,
- servicing of outdoor trash bins, and
- planting, maintenance and removal of annual color flower beds.

A palette of annual flowers approved for planting should be established by the campus horticulturist, landscape design teams and maintenance staff. Departments or building groups requesting annual color would choose flower types from these approved palettes and submit proposals for areas to be planted and dates of establishment.

Staffing would consist of two full time employees for trash removal, one supervisor, and four seasonal part-time employees. The number of seasonal employees may vary from year to year based on annual color requests and the general success of the program.

Staffing of seasonal part-time employees has been a challenge for FO and other maintenance departments at KU. Unfortunately, few KU students participate or are even interested in pursuing these positions. Additional manpower could come from high school students, departmental work-study programs for KU students, the establishment of a landscape internship program, contributions from KU Alumni and outside volunteer community or gardening programs.
• Responsible high school students who are well supervised could be a very viable man-
power source for such a program. This concept also lends itself to community involvement,
the opportunity to educate potential future KU students about the value of the student
environment, and may even provide a source for future long-term employees.

• Students participating in department work-study programs could also participate in flower
planting and maintenance programs based on the availability of funding. Well-maintained
flower programs could instill a new level of departmental pride and instill a level of friendly
competition.

• KU does not have a horticulture program, but it could initiate an intern program through
Kansas State as a work program location for KSU horticulture students. Students could be
housed in the dormitories during the summer session. The program could advertise for
students at KSU and emphasize intern positions providing wages, housing and practical
field experience in the area of landscape maintenance and facilities management.

The Chancellor’s Beautification Program should be housed in FO. The supervisor position and
two full time positions for trash would be new positions supported by FO. The seasonal part-
time or intern positions would be supported through the Chancellor’s funding or other KU
sources.

There are also other pathways to consider in supporting FO in their attempts to maintain quality
and yet generate a balance in revenue to support employee positions. FO is classified as
general use contractors. FO could bid the work and bill the requesting department or building
group for special projects and annual color other than general maintenance.

**Peer Comparisons: Grounds Maintenance Costs/Acre**

In a 1998 review of ten California State University campuses, the average cost of grounds
operations and the average number of acres maintained per grounds maintenance full time
employee (FTE) was determined. This information compared to a national average of other
public institutions and the University of Kansas is presented in Table 10.

<table>
<thead>
<tr>
<th>Table 10: A Comparison of the 1997 average cost (dollars) of grounds operations and the average number of acres maintained per grounds maintenance full-time employee (FTE) for ten California State University Campuses, a national average of public institutions and the University of Kansas, MMM &amp; Associates, 1999.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs Per Acre Maintained</td>
</tr>
<tr>
<td>University of Kansas</td>
</tr>
<tr>
<td>California State University</td>
</tr>
<tr>
<td>National Average of Public Institutions</td>
</tr>
</tbody>
</table>

• The Facilities Operations staff maintains 2.7 times more acreage per employee at 1/7th the
cost of grounds operations staffs at the California State University campuses.

• The Facilities Operations staff maintains 2.65 times more acreage per employee at close to
1/8th the cost of grounds operations staffs from a sampling of other public universities
across the nation.

• Facilities Operations is grossly understaffed compared to the California State University
system and a national average of public universities.
• Benchmark figures will vary from campus to campus based on the complexity and acreage of the plant material to be maintained in the landscape, the level of performance expectation, the level of knowledge, experience and training of the maintenance staff, suitable equipment to perform maintenance tasks and the number and types of duties assigned to the maintenance staff that are not related to landscape care.

• In addition to the California State University benchmark study and the national perspective, other peer comparisons show:
  1. Western Michigan University: 16 acres per FTE
  2. University of Idaho: two formulas for grounds maintenance staffing,
    Formula One
      • High Intensity/Quality Landscape: 4 acres/FTE
      • Medium Intensity/Quality Landscape: 8 acres/FTE
      • Low Intensity/Quality Landscape: 24 acres/FTE
    Formula Two
      • Very High Intensity/Quality Landscape: 4 acres/FTE
      • High Intensity/Quality Landscape: 8 acres/FTE
      • Medium Intensity/Quality Landscape: 16 acres/FTE
      • Low Intensity/Quality Landscape: 32 acres/FTE

The cost of a specific performance standard A, B or C is not significantly influenced by the difference in the product and material cost among programs, but is primarily driven by the labor cost associated with the number of visits to a site and the amount of time to complete a task.

**Staffing, Manpower Levels, Estimated Payroll**

The cost of a specific performance standard A, B or C is not significantly influenced by the difference in the product and material cost among programs, but is primarily driven by the labor cost associated with the number of visits to a site and the amount of time to complete a task.

For the fiscal year 1995-96 the total number of employee hours for maintaining turf was 23,198. The total number of hours for maintenance of trees and shrubs was 7,226. The total combined hours for turf and trees/shrubs was 30,424. With 27 full time employees, each full time position worked an average of 1126.81 hours per year on turf, trees and shrubs. Based on the fact that 85% of all turf, tree and shrub maintenance work is completed during a seven month period from April to October, it means that each employee worked an average of 34.20 hours per week on turf, trees and shrubs.

For the fiscal year 1997-98, the total number of employee hours for maintaining turf was 24,551. The total number of hours for maintenance of trees and shrubs was 7,647. The total combined hours for turf and trees/shrubs was 32,198. With 27 full time employees, each full time position worked an average of 1238.38 hours per year on turf, trees and shrubs. Based on the fact that 85% of all turf, tree and shrub maintenance work is completed during a seven month period from April to October, it means that each employee worked an average of 37.59 hours per week on turf, trees and shrubs.

Maintenance managers account for over 50% of total overtime hours.

The duties assigned to the maintenance staff that are not directly related to the landscape area are often the straw that breaks the camel’s back (e.g. event setup, event removal, cleanup following events, trash pickup, reseeding or resodding due to damage following events, etc.).

Dynamic population density per zone greatly influences the time and effort required to maintain a performance standard. The Chancellor’s Residence, an A Performance Standard, requires little clean-up prior to mowing. Ideal times for mowing the Chancellor’s Residence
range from 8:00 a.m. to 5:00 p.m., Monday through Friday. In contrast, the lawn in front of Strong Hall, also an A Performance Standard, will have significantly more trash, compaction, traffic, turf damage, reseeding and resodding, in addition to mowing. Due to the amount of students using the lawn, 8:00 a.m. to 5:00 p.m. is exactly when mowing should not take place.

**Staffing Action Plan**

Review completely the staffing philosophy for Facilities Operations grounds maintenance at KU.

Base the number of required full time employees on a mixture of methodologies:

- Utilize the knowledge and experience of Bence Williams, Wayne Reusch, T. J. Reyes, Clarence Rayton and Randy Russell and their management staff – trust their judgement.

- Understand that staffing figures will vary from campus to campus based on the complexity and acreage of the plant material to be maintained in the landscape, the level of performance expectation, the level of knowledge, experience and training of the maintenance staff, suitable equipment to perform maintenance tasks and the number and types of duties assigned to the maintenance staff that are not related to landscape care.


- Review the 1993 NACUBO benchmarking report.

- Gather additional regional and national data from colleges and universities with similar continental climates to assist in the development of a model template. Inputs would include plant material, acreage, climate, topography, annual plantings, agronomic programs and performance expectations. Utilize this data to build a maintenance staff model that fulfills expectations.

- Use the following references produced by the Professional Grounds Management Society (PGMS) and distributed by the Association of Physical Plant Administrators (APPA). Information on ordering any of these titles is online at: [http://www.appa.org/publish/order.htm](http://www.appa.org/publish/order.htm)
  2. Grounds Maintenance Management Guidelines
  3. Grounds Management Forms & Job Descriptions Guide

- Hire and promote from within the existing KU work force.

- Create more supervisor positions to train staff member.

- Develop a crew foreman position to reduce management’s overtime concern.

- Increase the utility worker force.

- Hire more seasonal part-time people at the right time of year prior to graduation when the need exists. Offer good workers opportunities the following year within the utility worker force.

- Increase the starting hourly wage for utility worker to $8.00 per hour so KU can begin to compete with other local industries.

- Increase the support staff or reduce the number of total maintained acres when performance level increases.

- Change sloped and low traffic turf areas to buffalograss and zoysiagrass in order to reduce labor and maintenance inputs.

- Review the scope of Facilities Operations relative to the landscape.

- Key in on quality mowing practices, irrigation, fertilizing, weed control and tree pruning.
• Delegate special projects to other groups or plan to fund special projects with manpower and payroll support. Investigate the cost/benefit of contract services for fertilizer and weed control programs.

• Transfer the maintenance responsibility for all intramural fields to the Athletic Department. The Athletic Department maintains both game fields and practice fields at KU and has things necessary to maintain and prepare fields for sporting events. It is anticipated that in order to provide the Athletic Department’s maintenance staff with the opportunity to significantly improve the surface quality of the intramural fields, greater inputs within the framework of labor, materials and equipment will be required.

• Fund a plant horticulturalist position. The requirements of the position would include (a) horticulture or related science degree, (b) strong practical experience with knowledge of plant adaptation specific to Kansas and (c) some degree of experience with landscape design and maintenance considerations. This position would provide cooperative leadership in a campus wide advisory panel consisting of design and maintenance personnel. A primary function would be to spearhead a common sense understanding of the interrelationship of plant design, adaptation and maintenance.

• Support Wayne Reusch, Facilities Operations Assistant Director of Landscape, with an additional subordinate position, such as Senior Landscape Supervisor. This position would be responsible for directing all Landscape Supervisors and overseeing day-to-day landscape crew maintenance operations. The addition of this position would allow Wayne Reusch, as the Assistant Director, to continue to be in touch with day to day operations while supporting Facilities Operations through enhanced participation in administrative decisions at the Associate and Director level.

**Management and Employee Training**

More training is required, particularly with the turnover at the utility worker level. Regularly scheduled sessions for both in-house training by qualified supervisors and outside educational seminars covering subject areas such as plant identification, general soils, plant nutrition, weed control and pesticide use is also required.

**Communication**

Facilities Operations requests an improved level of communication with the KU administrative group for the purpose of receiving constructive feedback on their performance in landscape maintenance. Examples of the types of questions that FO would like answered included: “What would they like to see? What would they like the landscapes to look like? Are we doing a good job? How can we improve?”

In recent years communication among KU’s campus wide maintenance groups has declined. Regularly scheduled seasonal meetings among the key staff members of FO, the Department of Student Housing and Athletics would create a forum to share ideas and address common problems. Improved communication leads to a platform of trust and understanding that could in turn lead to cooperative programs involving equipment and products.

Development of a Plant Design, Selection and Maintenance Advisory Committee to meet on a quarterly basis in order to discuss new construction, existing landscapes and the planting of the Chancellor’s Beautification Program. Such a committee would reduce the reoccurrence of the problem described below. “Hedge trimming becomes an A priority during the spring. Hedge locations relative to parking lots and the proximity to parked vehicles creates many problems. About 33% of hedges are planted right up against vehicle parking areas. Workers cannot get to the hedges because cars are parked during the day and night (labs, study hours, etc).
Facilities Operations: Agronomic Programs and Operations Final Thoughts and Summary

Facilities Operations is a dedicated group of hard working individuals whose responsibilities have continued to increase as staffing and payroll resources have decreased over the years. If the University of Kansas hopes to maintain the traditional heritage of the green space on campus while improving aesthetic value it must look hard and long at increasing the staffing levels within Facilities Operations. In addition to staffing issues FO needs to (a) focus on core responsibilities of landscape maintenance, (b) begin to increase the percentage of lower maintenance warm season grasses such as buffalograss and zoysiagrass to reduce labor and maintenance inputs, (c) delegate special projects to other departments, (d) create and fund full time positions such as campus horticulturalist, senior landscape supervisor and crew foreman to support the efficiency of the management infrastructure, (e) hire more seasonal part-time people prior to the periods of critical need, (f) establish training programs for new hires and new managers, (g) transfer responsibility of intramural fields to the Athletic Department, and (h) pursue contracted services when cumbersome tasks exceed a scope of cost/benefit and time/value. The Facilities Operations management group needs to continue to enhance its level of communication with the landscape design department and other maintenance groups at KU in order to share ideas, learn more about how to do things well, and educate others concerning the way that plant selection and design influence maintenance practices.
Department of Student Housing: Landscape Maintenance Resources

The Department of Student Housing (DSH) at The University of Kansas is staffed with eleven full time employees, seven with landscape responsibilities and four in special services. Seasonal part-time employees are hired during the summer period. The primary function of the DSH is to serve the needs of students.

Agronomic Perspectives: Landscape Acreage (DSH)

Total landscape acreage designations with percentage breakdowns for landscape type and manpower requirement are presented in Table 11. Landscape designations are identified as tree/shrub, turf and flowers.

The percentage of acreage within each performance standard from A to D is presented in Table 12.

Agronomic Perspectives: DSH Turfgrass Maintenance Programs

<table>
<thead>
<tr>
<th>Table 11. Department of Student Housing (DSH) landscape acreage and manpower requirement. University of Kansas, 1999.</th>
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<tr>
<td>Acreage</td>
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<td>Percent of Total Acreage</td>
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<td>Percent Manpower Required</td>
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Yearly turfgrass maintenance programs as designated by DSH for performance Standard A through D are presented in Table 13. All maintenance practices are presented including mowing, irrigation, fertility, weed control programs, insect control, disease control, micronutrients, plant growth regulators (PGR), aeration, dethatching, seeding, sodding, sweeping, soil tests and water tests.

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<tr>
<td>Tree/Shrub</td>
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<td>Turf</td>
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<td>Flowers</td>
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* Performance A: A minimum of two maintenance visits per week (e.g. The Chancellor’s Residence)
* Performance B: One maintenance visit per week
* Performance C: One maintenance visit per month
* Performance D: One maintenance visit per season or year
None of the turfgrass acreage maintained by DSH falls within an A Performance Standard. The vast majority of DSH turfgrass acreage (80%) falls within a B Performance Standard.

**Agronomic Perspectives: Tree/Shrub Maintenance Programs (DSH)**

Yearly tree and shrub maintenance programs as designated by DSH for performance Standard A through D are presented in Table 14.

The DSH tree/shrub maintenance program presents a good effort by a small staff. However, the program does not address a tree inventory, risk assessment and/or a removal or planting program which is essential for the future of the landscape.

**Agronomic Perspectives: Chemical Inventory (DSH)**

Most of the fertilizers, herbicides and pesticides used by the DSH are purchased in late February and used in March and April. Short-term product use may be weather dependent. With the exception of some herbicides, most products are not stored for more than a two to three week period.

**Fertilizer**

The DSH Landscape Section primarily purchases and uses two types of fertilizer. One (13-13-
13) contains 13% nitrate. The other contains 34% ammonium nitrate. The ammonium nitrate fertilizer shows a tendency to collect moisture and harden in storage, and, for that reason, when purchased is used immediately.

The DSH does not store large quantities of fertilizer. Fertilizer is purchased in amounts that can be distributed in a two-week time frame. For example, during March of 1999 DSH purchased thirty (30) ten-pound bags of fertilizer. All fertilizer was applied to landscape areas by April 30, 1999. Wet weather caused the slight delay in the application of this product.

**Pesticides**

Round-up type herbicides are purchased in small quantities and primarily used for vegetation control in the cracks of sidewalks, fence lines and around trees and flowerbeds before mulching. These products are used as needed. The oldest container of pesticide in storage is approximately ten months old.

Pesticides are handled much the same way as fertilizer. They are purchased in relatively small quantities and are used as needed. The oldest container of pesticide in storage is approximately ten months old.
quantities, designated for a specific purpose, and will be used shortly after purchase. For example, the greatest amount of pesticide purchased during the spring of 1999 was twenty (20) gallons of bagworm spray. The bagworm spray was used within two weeks of purchase. The pesticides that are used in the residence halls consist of bait traps (primarily for rodents), aerosol cans (primarily for flying insects and spiders) and limited quantities of pesticides that must be mixed (primarily for roaches, etc.). Most of these products are packaged in a similar fashion to those found in retail stores. Many of those chemicals that must be tank mixed are prepackaged in the correct quantities to ensure proper dilution.

**Operational Perspectives: Employee Survey**

**DSH Employee Survey**

DSH staff members were asked to evaluate their work place based on various considerations and issues. Ratings were based on a one-to-five scale with one representing an unacceptable condition and five an excellent condition. Perspectives and key comments are presented below.

**Survey Findings**

People are the most valuable and the most important resource at the DSH.

The staff at the DSH represents an experienced, conscientious group of self-starters who are dedicated to upholding student needs as their highest professional priority. The DSH understands the needs of students better than other departments and takes pride in their ability to meet student needs. If the DSH was thrown into a larger department, student priorities would be shifted to a different level and their best interests would not be served as well.

"University campuses nationwide are in competition for students. One of the most important and critical factors in evaluating any facility is the first time visual experience. When you take your son or daughter to visit a campus for the first time, no one knows who takes care of what – responsibilities are transparent. If the dorms do not come across too well, but I like what I see on the academic side, I’m going to go downtown and check on the cost of an apartment. I will shop around until I find that apartment complex that gives me that initial impression – that place I know I want my son or daughter to live."

The staff is well trained and versatile in their ability to operate many types of equipment and complete many different types of tasks. The landscape staff and special services staff cross train their employees as much as possible in order to assist each other during very busy periods of the year.

The staff is very team oriented and works together to complete their tasks and achieve common goals.

The present manpower staffing is minimally acceptable for the total number of acres maintained and the level of performance expected. At one time there were 13 employees working for the landscape staff at DSH, today there are seven. With 180 acres of turf, trees, shrubs and flowers to maintain and only seven employees on the landscape staff, one FTE is responsible for maintaining 25.71 acres. Staffing figures from The California State University system average 13.9 acres per FTE. A national study from 150 participating universities show an average of 13.5 acres per FTE.

The package of salary and benefits is unacceptable. Many people are working more than one job to make ends meet. The hourly wage is what is most important, particularly to young single people. Benefits are not as lucrative a selling point as it would be for older employees with families.
DSH has a number of people who work outside their classification, but who do not receive any recognition or financial benefits.

The starting wage of $6.90 per hour is not enough money to attract and keep good people. They can run cable for Sprint or AT & T and make $10.00/hour. It is difficult to find good people. During a recent hiring effort only three people were qualified out of a hiring roster of 35. The DSH and KU Human Resources are presently reviewing the full time employee (FTE) grade structure.

With very marginal staffing, it is difficult to juggle vacation time and complete required maintenance. Graduation is a very busy time and unfortunately DSH does not receive seasonal part-time assistance until the summer. DSH does not have manpower when they actually need it.

About eight to ten part-time seasonal workers are hired every summer.

Except for international students, U.S. university students, by and large, do not want to work for DSH.

“If I had the authority to hire high school students, I could probably fill all the needs I ever had. Maybe this is just an internal thing with Student Housing, I don’t know, but we have high school students that come here looking for summer work and I am not allowed to hire them.” (Personal communication DSH: as of summer 1999 the DSH received authorization to hire high school students).

The work environment is good. The morale is good. The people work well together. DSH has people who like their jobs and are extremely proud of the work they do. Wages influence morale and are the biggest concern.

The employee staff at DSH carries a great deal of experience with the upper management group averaging twelve to fourteen years. The utility worker group has the least amount of experience averaging less than two years.

**Department of Student Housing Agronomic Programs and Operations**

**Practical Perspectives and Recommendations**

**Turfgrass Maintenance Program**

The turfgrass maintenance program was established based on high and low priority areas that fit the concept of Performance Standard A, B, C and D.

The turfgrass maintenance program presented in Table 13 is agronomically acceptable based on the level of aesthetic quality expected. Program enhancements would include the following:

- The use of turfgrass plant growth regulators such as Primo (Novartis) on slopes to reduce total clipping production and the frequency of mowing.
- Using two applications of preemergent herbicides on all Standard B acreage to reduce the need for reactive postemergent applications.
- Increasing the frequency of fertilizer applications from twice per year to three times per year during early spring, early summer and fall. Use a soluble nitrogen source that includes phosphorous and potassium during spring and fall (e.g. 15-15-15). Use a slow release sulfur coated urea nitrogen source for early summer fertilization.
- Adding a single fall hollow tine aeration with a piston driven unit and coordinating the aeration with the fall overseeding.
- Identifying potentially high visibility areas for designation into Standard A Performance classifications.
• Collecting soil samples from four to six distinct landscape regions across DSH properties. Requesting a general nutritional analysis and physical analysis. Coordinating testing through a firm such as Turf Diagnostics and Design, Olathe, Kansas. Requesting consulting comments. Maintaining this information in historical files.

• Collecting an irrigation water sample and coordinating testing. Requesting an irrigation suitability analysis and consulting comments.

• Developing a cost/benefit comparison reviewing the potential for utilizing contract services to complete fertilizer and weed control services campus wide. Comparing in-house material, labor and equipment costs to the cost/benefit of contracted services. Considering service, safety and liability issues and the potential to free-up manpower hours for other essential tasks. Contacting respected lawn care companies. If contracted, indoctrinate service companies with specific objectives and expectations, written specifications, contractual agreements and regularly scheduled field performance evaluations.

Tree and Shrub Maintenance Program

The tree and shrub maintenance program presented in Table 14 is minimally acceptable. Program enhancements would include:

• Fall applications of horticultural oil to reduce populations of mites and scale.

• Spring soil injections of chelated iron (such as sprint 330) for chlorotic pin oaks.

• Spring soil injections of nitrogen, phosphorus and potassium for general plant nutrition. The program would be plant and plant age specific (e.g. new planting program versus mature landscape plantings).

• Spring applications of plant growth regulators such as Atrimec, Embark or NAA to hedge areas following the first late spring, early summer pruning. These materials will significantly slow growth and reduce the number of payroll hours required for hand pruning. Many plants are product specific so one season of small scale, plant-specific testing is required.

• Ornamental bed weed control: develop a weed map specific to DSH properties identifying specific weed types in specific ornamental beds. Select and use preemergent herbicides such as Gallery, Snapshot, Surflan, Ronstar and Pendulum based on the specific weeds present. Use of preemergent herbicides in ornamental beds will significantly enhance landscape aesthetics by reducing weed populations, requirements for hand weeding and requirements for postemergent herbicide applications.

• Establish a tree inventory as part of the KU Master Plan. Compliment this program with a tree replacement and/or new tree-planting program. Tree species recommendations to be based on adaptation, ecological design significance, disease and pest susceptibility and maintenance requirements. An advisory board consisting of a horticulturalist knowledgeable in species adaptation, the landscape design team and the maintenance staff should establish a palette of tree species options.

• During the tree inventory process identify trees that require pruning or removal due to over growth or hazardous conditions. Establish a species-specific pruning program that identifies season and frequency of pruning.

Grassing Palette

There must be a protocol or methodology for turfgrass improvement that follows the plant palette within the Master Plan.

Utilize zoysiagrass around student housing facilities where traffic use is low to moderate and need for maintenance inputs is reduced. The slow growth and reduced vertical extension of zoysia grass reduces the need for frequent mowing. Utilize improved varieties of turf type tall
fescue for high visibility areas where Standard A performance or extended fall color and early spring green-up are required. Review regional NTEP (National Turfgrass Evaluation Program) information for selection of varieties best suited for Kansas.

Utilize buffalograss or solid stands of native grasses for low maintenance areas or severely sloped areas where turfgrass maintenance is difficult. Reduce maintenance requirements while enhancing aesthetic appeal. Select buffalograss varieties that have performed well in the NTEP programs at the University of Nebraska and the University of Missouri. If there are DSH locations that are utilized by students as sports fields for daily pickup games, but are truly part of the landscape, use Quickstand bermudagrass as the turf of choice. This turf type will improve surface quality, enhance wear tolerance and reduce maintenance inputs.

**Equipment Inventory**

John Deere provides the best service of any major turfgrass equipment supplier in the area. In the past John Deere has approached KU departments with potential lease options for campus wide equipment use. Unfortunately, to date, there is not one piece of John Deere mowing equipment under a statewide contract.

Once again evaluate turfgrass equipment suppliers in the area. Request bids for lease options based on exclusive use of the selected manufacturer’s equipment on campus landscapes and potentially on the new natural grass football stadium. Evaluate the cost/benefit of a lease option program versus a purchase program.

Increase communication among maintenance departments at KU, specifically, Facilities Operations, Department of Student Housing and Athletics. Discuss options for sharing existing equipment and sharing new equipment purchases.

The overall equipment inventory supports the general needs of DSH, but is lacking in specific areas:

- Four-wheel drive mowing unit for sloped turf areas: consider the 4-wheel drive Ransomes AR-250 with floating rotary heads. Complement this unit with the Steiner 520 Pebble Beach Edition for stability on extremely steep slopes. The Steiner can also be used to mow native grasses at cutting heights of four to five inches. Request on-site manufacturer demonstrations.
- Service truck with dumping capacity.
- Sweeper/vacuum: determine need and flexibility required for a pull behind unit that provides sweeping, vacuuming and blowing capacity. Consider Goossen Versa-Vac and Toro Vac. Request on-site manufacturer demonstrations.
- A small tiller with tractor attachment.
- A small hollow tine piston driven aerator for large lawn sites. Consider a Ryan GA-30. Request on-site manufacturer demonstrations.
- A walk behind snow blower.
- Two chain saws.

**Equipment Storage**

Current equipment storage facilities are unacceptable. Equipment is exposed to extreme summer and winter conditions throughout the year. Exposure of equipment to weather extremes reduces the life of equipment and significantly increases repair and maintenance
Fertilizer, Pesticide and Landscape Products Inventory

Continue to be proactive in the organization and maintenance of the fertilizer, pesticide and landscape products inventory. Order the proper amount of product when needed. Avoid purchasing excessive product quantities that require significant storage space for extended periods. Conduct a cost/benefit analysis for bulk purchasing of fertilizers to be shared with Facilities Operations and Athletics. Purchasing fertilizers in bulk reduces the cost per pound of actual nitrogen, warehouse storage, product loss as a result of stolen and broken bags, and the employee liability associated with lifting and transporting bags.

Fertilizer, Pesticide and Landscape Products Storage

The storage facilities for fertilizers were deemed acceptable. Purchase a vented, federally approved locker or storage facility for pesticides. Pesticides should be stored separately from fertilizers and landscape products. Store fertilizers and landscape products in a centrally located facility that is easily accessible, clean, and dry. Stack bagged materials on pallets and always use broken bags first.

Pesticide Rinse Facilities

There are no pesticide rinse facilities at the University of Kansas. Plans for the development and construction of such a system need to begin as soon as possible. Coordinate shared use with Facilities Operations.

Contract Services

Develop a cost/benefit comparison reviewing the potential for utilizing contract services to complete all or a portion of the following applications campus wide including: turfgrass fertilizer, turfgrass preemergent and postemergent weed control, turfgrass plant growth regulator, ornamental bed weed control, tree and shrub macronutrients and micronutrients, tree and shrub insect and disease control, and tree pruning. Compare in-house material, labor and equipment costs to the cost/benefit of contracted services. Consider service, safety, liability and the potential to free-up manpower hours for other essential tasks. Contact respected lawn care and/or tree and shrub companies. If contracted, indoctrinate service companies with specific objectives and expectations, written specifications, contractual agreements and regularly scheduled field performance evaluations.

Turfgrass Irrigation

Presently none of the turfgrass acreage maintained by the DSH is irrigated. If Standard B properties are strategically located and turf quality is severely compromised due to summer drought, consideration should be given to upgrading high visibility Standard B acreage with irrigation.

Greenwaste Program

Coordinate this program with Facilities Operations and Athletics. In order to develop on-campus green waste recycling, purchase a tub grinder. Grind all wood, branches and green waste, wind row and turn the organic matter, and develop high quality mulch that can be used as mulch and an organic soil amendment for all KU campus needs.

The DSH Beautification Program

Based on the issues surrounding minimum staffing, there are many times during the year that it
is a challenge for DSH just to complete the basic maintenance requirements, much less deal with trash pickup and the requested annual color planting and maintenance programs. It is often difficult to designate maintenance time and trash pick-up time. It would be better if a different crew supported trash pickup.

At times when DSH would attempt small landscape projects, ultimately someone would not approve of the design or planting scheme, and all plant material would have to be removed.

Flowerbeds and annual color programs are often planted without consideration for their high maintenance requirement. Some individuals and departments are enthusiastic about planting flowers, but have no intention of assisting with their maintenance.

To properly staff trash collection including the simple collection of cigarette butts outside of buildings and general servicing of trash bins requires the time of one full time employee.

The DSH Beautification Program is proposed in order to enhance the neat, clean appearance and beauty of DSH properties. The primary goals of the program would be to plant and maintain annual color while proactively pursuing unsightly debris. Specifically the program would include the following:

- trash pickup in and around high visibility landscape locations,
- servicing of outdoor trash bins, and
- planting, maintenance and removal of annual color flower beds.

A palette of annual flowers approved for planting would be established by the campus horticulturalist, landscape design teams and maintenance staff. Building groups requesting annual color would choose flower types from these approved palettes and submit proposals for areas to be planted and dates of establishment.

Staffing would consist of one full time employee responsible for trash removal and supervising part-time workers. Part-time workers could be university or local high school students. Staffing of seasonal part-time employees has been a challenge for DSH and other maintenance departments at KU. Unfortunately, few KU students participate or are even interested in pursuing these positions. Additional manpower could come from high school students, departmental work study programs for KU students, the establishment of a landscape internship program, contributions from KU Alumni and outside volunteer community or gardening groups such as the Heritage Club. The number of seasonal employees may vary from year to year based on annual color requests and the general success of the program.

Responsible high school students who are well supervised could be a very viable manpower source for such a program. This concept also lends itself to community involvement, the opportunity to educate potential future KU students about the value of the student environment, and may even provide a source for future long-term employees.

Students participating in department work-study programs could also participate in flower planting and maintenance programs based on the availability of funding. Well-maintained flower programs could instill a new level of departmental pride and instill a level of friendly competition.

KU does not have a horticulture program, but it could initiate an intern program through Kansas State as a work program location for KSU horticulture students. Students could be housed in the dormitories during the summer session. The program could advertise for students at KSU and emphasize intern positions providing wages, housing and practical field experience in the area
Peer Comparisons:Staffing and Manpower Levels

At one time there were 13 employees working for the landscape staff at DSH, today there are seven. With 180 acres of turf, trees, shrubs and flowers to maintain and only seven employees on the landscape staff, one FTE is responsible for maintaining 25.71 acres. Based on the 1998 report from the California State University system entitled ‘Benchmarking for Process Improvement in Higher Education’, the benchmark average across its sixteen-campus system was 13.9 acres per full time employee (FTE) at a cost of $4,175 per maintained acre. Figures for a national perspective of 150 universities showed 13.5 acres per FTE at a cost of $4,428 per maintained acre.

Benchmark figures will vary from campus to campus based on the complexity and acreage of the plant material to be maintained in the landscape, the level of performance expectation, the level of knowledge, experience and training of the maintenance staff, suitable equipment to perform maintenance tasks and the number and types of duties assigned to the maintenance staff that are not related to landscape care.

In addition to the California State University benchmark study and the national perspective, other peer comparisons show:

1. Western Michigan University: 16 acres per FTE
2. University of Idaho: two formulas for grounds maintenance staffing

Formula One

- High Intensity/Quality Landscape: 4 acres/FTE
- Medium Intensity/Quality Landscape: 8 acres/FTE
- Low Intensity/Quality Landscape: 24 acres/FTE

Formula Two

- Very High Intensity/Quality Landscape: 4 acres/FTE
- High Intensity/Quality Landscape: 8 acres/FTE
- Medium Intensity/Quality Landscape: 16 acres/FTE
- Low Intensity/Quality Landscape: 32 acres/FTE

The cost of a specific Performance Standard A, B or C is not significantly influenced by the difference in the product and material cost among programs, but is primarily driven by the labor cost associated with the number of visits to a site and the amount of time to complete a task.

Staffing Action Plan

Review completely the staffing philosophy for DSH grounds maintenance at KU. Base the number of required full time employees on a mixture of methodologies:

- Utilize the knowledge and experience of Philip Garito, Carol von Tersch, Stanley Brown and Chris Romero and their management staff – trust their judgement.
- Understand that staffing figures will vary from campus to campus based on the complexity and acreage of the plant material to be maintained in the landscape, the level of performance expectation, the level of knowledge, experience and training of the maintenance staff, suitable equipment to perform maintenance tasks and the number and types of duties assigned to the maintenance staff that are not related to landscape care.
• Review the 1993 NACUBO benchmarking report.

• Gather additional regional and national data from colleges and universities with similar continental climates to assist in the development of a model template. Inputs would include plant material, acreage, climate, topography, annual plantings, agronomic programs and performance expectations. Utilize this data to build a maintenance staff model that fulfills expectations.

• Use the following references produced by the Professional Grounds Management Society (PGMS) and distributed by the Association of Physical Plant Administrators (APPA). Information on ordering any of these titles is online at: http://www.appa.org/publish/order.htm
  • Grounds Maintenance Estimating Guidelines
  • Grounds Maintenance Management Guidelines
  • Grounds Management Forms & Job Descriptions Guide

• Establish expectations in the landscape and then build a maintenance staff to achieve your goals of performance. Do not select the total number of FTE’s and then backfill responsibilities.
  • Hire and promote from within the existing DSH work force.
  • Create more supervisor positions to train staff members.
  • Hire or support employee training for a qualified applicator position. A qualified applicator will be responsible for all aspects of pesticide storage, handling, use and application.
  • Increase the utility worker force.
  • Hire more seasonal part-time people at the right time of year prior to graduation when the need exists. Offer good workers opportunities the following year within the utility worker force.
  • Increase the starting hourly wage for utility worker to $8.00 per hour so KU can begin to compete with other local industries.
  • If the level of expectation changes increase the support staff or reduce the number of total maintained acres while increasing training for specialty projects.
  • Review the scope of DSH relative to the landscape.
  • Key in on quality mowing practices, irrigation, fertility, weed control and tree pruning.
  • Delegate special projects to other groups or plan to fund special projects with additional manpower and payroll support. Investigate the cost/benefit of contract services for fertilizer and weed control programs.
  • Maintain the integrity of the Department of Student Housing, their staff and their dedication to student needs. Enhance the support for DSH by placing their material/product needs and equipment needs under a shared umbrella with FO. Share technical expertise, new ideas, training, products and equipment.
  • Support the funding of a plant horticulturalist position. The requirements of the position would include (a) horticulture or related science degree, (b) strong practical experience with plant adaptation specific to Kansas and (c) some degree of experience with landscape design and maintenance considerations. This position would provide cooperative leadership in a campus wide advisory panel consisting of design and maintenance personnel. A primary function would be to spearhead a common sense understanding of the interrelationship of plant design, adaptation and maintenance.
  • Establish a design review team consisting of:
Management and Employee Training

- More training is required, particularly with the turnover at the utility worker level. Regularly scheduled sessions for both in-house training by qualified supervisors and outside educational seminars covering subject areas such as plant identification, general soils, plant nutrition, weed control and pesticide use is also required. Red Cross, CPR, EMT and first aid training is also very valuable. Document training for all employees to protect the university against liability issues.

Communication

- Provide all managers and crew foreman with hand-held radios. Presently only pagers are utilized.
- DSH requests an improved level of communication with the KU Landscape Architect for the purpose of sharing new ideas to improve their landscapes.
- In recent years communication among KU’s campus wide maintenance groups has declined. Regularly scheduled seasonal meetings among the key staff members of DSH, FO and Athletics would create a forum to share ideas and address common problems. Improved communication leads to a platform of trust and understanding that could in turn lead to cooperative programs involving equipment and products.

Department of Student Housing Agronomic Programs and Operations Final Thoughts and Summary

The Department of Student Housing, like their counterparts at Facilities Operations, is a dedicated group of hard working individuals whose responsibilities have continued to increase as staffing and payroll resources have been reduced over the years. The staff at the DSH feels that they are unique in identifying and understanding student needs. They portray a very personal dedication in their attempt to always serve the best interests of the students at the University of Kansas.

The DSH has the potential to greatly influence the manner in which student candidates and their parents first perceive the University of Kansas. This first time visual experience is perhaps the most critical and important factor in the evaluation of any new environment. Improving staffing levels, technical assistance and the level of communication with other campus departments will greatly assist the DSH in their attempt to create a welcoming and memorable campus experience. Providing an umbrella of assistance from Facilities Operations in the form of equipment and materials, and complimenting this support with enhanced communication among Gregory Wade, KU Landscape Architect, and a Landscape Advisory Panel will create a more defined pathway of understanding that will be reflected in the aesthetics of the landscape.

* * *

KU Landscape Master Plan  Volume 2  36
Recreation Services: A Student Life Division of Student Affairs

Recreation Services (RS) at the University of Kansas serves a wide range of sport and recreational activities including flag football, rugby, ultimate frisbee, intramural soccer, sport club soccer, women’s soccer, lacrosse, softball and running. Unscheduled use includes the normal wide variety of university and community activities such as pickup football games, kite flying, rocket launching and dog walking.

Recreation Services operates an active program with more than 17,000 students participating in field events between August and October. It is estimated that over fifty percent of the 25,000 students at KU are regular participants.

The most intense use of the intramural fields is during the periods from March to May and then again from September to October. In order to attempt to monitor participation and field use, the total number of participants are counted from 3:00 pm until dark Monday through Friday, and from noon to 8:00 pm on Saturday and Sunday. In most cases activities outside this time frame would not be monitored nor the participants counted.

Some degree of community outreach has been attempted through the opportunity for field use, the availability of open restrooms, and the installation of vending machines and a public telephone.

This viable program combined with the wide open intramural field space would appear to be a potential drawing card for acquiring new undergraduate students who are not only looking for a balance of quality academics and the Big 12 KU experience, but also a solid, well organized intramural program with a wide range of recreation and fitness activities. The manner in which this program is funded and operated presents unique challenges for those recreation services staff members who are dedicated to the continuation of a quality program.

- Recreation Services does not have any land of their own. The primary sports fields that support the KU intramural program are owned and ultimately controlled by the Endowment Association. Recreations Services does not have clear rights to any of these fields and has very limited equipment of their own, with the exception of one line painting unit and a trencher.

- All funding for RS comes from student fees. Within a $214 fee, $13.00 goes to a Restricted Student Fee, which in turn is divided among three groups, $3.50 for Robinson Facilities, $7.25 for Recreation Services and $2.25 for Sport Clubs (which reports to Recreation Services). The RS program does not have any base funding. No general funding or matching funding is provided by the state or the university.

- Recreation Services is required to pay for capital improvement items such as paving parking lots, building restrooms and installing irrigation systems. Intramurals even has to pay to light the campus, irrigate the playing fields and put up signage.

- Recreation Services does not have a staff of employees to maintain their fields. They must rely on Facilities Operations (FO) to mow and maintain their fields.

- Recreation Services is disappointed with the quality of field maintenance provided by FO.

Field Use, Field Maintenance and Funding Issues: Intramurals

Employee Discussion

Recreation Services staff members were asked to provide candid thoughts concerning the operational systems that influence the intramural program, including field use, field maintenance and funding issues. Perspectives and key comments are presented.
Comments: Field Use

Due to the high visibility and accessibility of the intramural fields, unscheduled field use is a significant problem. There is no monitoring, no enforcement and no control of unscheduled community use such as kite flying, rocket launching and dog walking.

Unscheduled use often occurs when university programs have been canceled due to rainfall and excessively wet field conditions. Under wet conditions turf injury potential increases significantly, and, as a result, significant damage to the fields occurs. University clubs have damaged public playgrounds and, in turn, been forced to pay for damages.

Unscheduled use of intramural fields is a significant liability for the university based on the combination of unacceptable maintenance and the absence of disclaimer signs (play at your own risk). There are no emergency telephones available.

Liability issues associated with unscheduled field use are even greater than for regular university sponsored events. No one walks fields or evaluates field safety before unscheduled use because unscheduled use is not controlled.

Safety problems on and around intramural fields are a constant issue. Baseballs and softballs are hit out onto Clinton Parkway. Safety issues for intramural participants chasing balls from the soccer fields out into the street at 23rd and Iowa are a big concern.

Comments: Field Maintenance

Having FO maintain intramural fields is not congruent with their maintenance equipment, staffing and technical understanding of sports field maintenance and field preparation. Even the staff at FO does not believe that they have the manpower to adequately staff the needs of intramurals.

FO realizes what needs to be done, but it is just the simple fact that they do not have the knowledge or the people to complete the tasks. FO knows how to mow grass, but does not know how to prepare a field for an event. Recreation Services does not want to speak badly about FO; they understand the limitations that FO faces.

Presently the intramural fields are rated below fair or unacceptable. Mowing, field safety from divots and holes, even trash pickup in the parking lot are issues from the perspective of intramurals.

Unfortunately, FO’s perspective on intramural fields is ‘we will get to it when we get to it.’ The intramural fields represent a low priority within the realm of responsibility for FO. FO’s first mission is to take care of the campus. It seems from the perspective of intramurals that they are peripheral to that mission.

Intramural staff members walk fields prior to events to evaluate the field for safety. They have actually filled up holes around sprinkler heads with dirt to even the surface and reduce potential liability, while in turn increasing maintenance problems. IM fields were not even properly prepared or evaluated for safety for the Sunflower Games.

Comments: The Perception of Intramurals at KU

Intramurals is a big part of the perceived benefit and value of a college campus. K-State and Iowa State use their recreation centers as key recruiting tools.

Is the intramural program an essential part of the University atmosphere and central to the mission of KU? Some may believe that students, staff and faculty do not need to recreate in order to go to a University.
Why does Recreational Services have to support paving of parking lots and building of restrooms? That should be funded as capital improvement items within the University support services structure.

A portion of student fees go to intramurals and Athletics, but there is no university support provided to intramurals while significant monies are directed toward athletics. Fund raising is a thought, but the money channel is too inconsistent.

KU is committed to academics first, athletics second and intramurals somewhere after that.

‘It is an embarrassment to bring people to KU when the conditions of our fields are so poor. No one wants to host anything - it is terrible. You should want to show off your university in order to continue to improve student recruitment and retention.’

Practical Perceptions, Recommendations and Action Plans

- The purpose of the master plan is to create a more attractive facility and to make the university environment a more pleasurable experience. Do intramurals contribute to this vision and is the intramural program an essential part of the university atmosphere and central to the mission of KU?

- The administration needs to address the long-term perspectives on the viability and need of the intramural program at KU based on student interest, need and available facilities.

- Remove the responsibility of intramural field maintenance from FO.

- Transfer the responsibility of field maintenance and field preparation for sporting events to the Athletic Department. The Athletic Department staff has an intimate knowledge of the manner in which sport fields are to be maintained and prepared for events. Support this transfer with capital budget enhancements for the Athletic Department to purchase new turf equipment for maintenance of the intramural fields. Continue to improve communication and team orientation among Facilities Operations, Athletic Department and Department of Student Housing in order to share ideas, equipment, products and ideas.

- Control access to all intramural fields. Secure the fields with fences and eliminate unscheduled use. As unscheduled field use is eliminated, turf quality will improve drastically. Fences will also eliminate ball chase into adjacent street areas and improve player safety.

- Improve maintenance, improve surface quality and reduce liability. Improving surface quality will not only enhance aesthetics and surface performance, but will also reduce liability from injuries resulting from poor surface quality.

- Use one field as a demonstration plot to test new grass types under playing conditions. After two years of evaluation, consider converting the remainder of the fields to the most wear tolerant and best performing grass type.

- Correct the drainage problem on the intramural fields.

- Generate revenue by charging fees for field use. Rent the fields to youth football, soccer, camps, and clubs. Charge for non-university sponsored events. Use these funds to support intramurals and field maintenance.

- Consider additional ways to enhance intramural funding, e.g. receiving matching funds from the Athletic Department or the university general fund. Increase student fees.

- Consider local high schools fields as an option for softball use.

- Consider lighting at least one or two fields to enhance the time frame of use.

- Consider installing artificial turf on one field to reduce the traffic pressure and turf damage on adjacent natural turf fields.

* * *
Athletic Department

The Athletic Department (AD) at the University of Kansas presently employs four full time staff members with the responsibility of maintaining all game and practice fields. The total acreage for all maintained fields is approximately seven acres.

Agronomic Perspectives: Turfgrass Maintenance Programs (AD)

Yearly turfgrass maintenance programs as designated by the Athletic Department for performance Standard A through D are presented in Table 15. All of the sports fields maintained by the Athletic Department are maintained as an A performance standard.

Turfgrass Fertilizer and Pest Control Programs

Presently, all fertilizer and pesticide applications for KU sports fields are contracted out to Dick Stuntz. A history of applications from 12/97 to 11/98 is presented in Table 16.

Immediate concerns: 1) no soil testing to establish soil fertility baselines, 2) use of soluble nitrogen sources with a poor ratio of N to P, a 3:1:3 ratio of N, P, and K is recommended for sports fields, 3) applications of grub control should be no later than June 20. The fertility

<table>
<thead>
<tr>
<th>Performance</th>
<th>Performance</th>
<th>Performance</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A*</td>
<td>B*</td>
<td>C*</td>
<td>D*</td>
</tr>
<tr>
<td>Mow</td>
<td>3-4 times/wk at 5/8&quot; to 7/8&quot;</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Irrigate</td>
<td>100%</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Fertilize</td>
<td>contract services</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Weed/Pre</td>
<td>Ronstar 5#/2x</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Weed/Post</td>
<td>Trimec/ Manage</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Insects</td>
<td>white grubs/Mach II insecticide</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Disease</td>
<td>summer patch &amp; grey snowmold</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Micronutrient</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>PGR</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Aerate</td>
<td>deep tine twice every 5 years</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Dethatch</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Seed</td>
<td>perennial ryegrass overseed 10#/M</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Sweep</td>
<td>as required</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Turf Types</td>
<td>Midiron, U-3, 419 + perennial ryegrass</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Soil/Water Tests</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

* Performance A: A minimum of two maintenance visits per week (e.g. The Chancellor's Residence)
* Performance B: One maintenance visit per week
* Performance C: One maintenance visit per month
* Performance D: One maintenance visit per season or year
program presented is more suited to a golf course, than the very specific needs of a high traffic sports field.

**Agronomic Perspectives: Equipment and Chemical Inventory (FO)**

The Athletic Department’s equipment inventory is presented in Table 17.

The Athletic Department does not have a fertilizer or pesticide inventory because the fertility and pesticide program is a contracted service.

**The Athletic Department: Field Use Scheduling**

Field use scheduling for the four primary sports is presented below. With the exception of football, all sports practice and play on the same field.
Baseball:  
Home games: 30-35 home games  
Practice: 30 people daily March through May  
Tournament: Summer  
Camps: Six weeks in summer  

Softball:  
Home games: 5 home double-headers  
Practice: 20 people daily 3/1 to 5/15 and 9/15 to 10/15  
Camps: Six to seven weeks in summer  

Soccer:  
Home games: 10 home games  
Practice: 40 people daily 8/15 to 11/15  
Camps: Three weeks in summer  

Football:  
Home games: No events  
Practice: 120 people daily 8/1 to 11/15; 3 weeks 2 times/day. Three weeks in spring.  
Camps: Two weeks in summer  

<table>
<thead>
<tr>
<th>Number</th>
<th>Equipment Type</th>
<th>Year of Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2300 D Mowers</td>
<td>1996 &amp; 1998</td>
</tr>
<tr>
<td>1</td>
<td>216 G Mower</td>
<td>1989</td>
</tr>
<tr>
<td>1</td>
<td>J. D. 755 Bucket, box, blade, mower</td>
<td>1989</td>
</tr>
<tr>
<td>1</td>
<td>J. D. 955 Mower deck, vacuum, brush</td>
<td>1996</td>
</tr>
<tr>
<td>1</td>
<td>J. D. 935 Front mower</td>
<td>1996</td>
</tr>
<tr>
<td>1</td>
<td>Vicon spreader</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Scott's broadcast spreader</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Turf II utility cart</td>
<td>1998</td>
</tr>
<tr>
<td>2</td>
<td>Golf cart Club Car - utility</td>
<td>1994</td>
</tr>
<tr>
<td>1</td>
<td>EZ GO</td>
<td>1983</td>
</tr>
<tr>
<td>1</td>
<td>AMT</td>
<td>1990</td>
</tr>
<tr>
<td>2</td>
<td>Push mower</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>Weed Eater</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Sod cutter</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Topdresser</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Field sweeper</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Olathe seeder</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>J. D. 420 1985</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>J. D. 1200A</td>
<td>NA</td>
</tr>
</tbody>
</table>
Operational Perspectives: Employee Survey (AD)

Athletic Department Employee Survey

The Athletic Department maintenance staff members were asked to evaluate their work place based on consideration of several issues. Ratings were based on a one to five scale with one representing an unacceptable condition and five an excellent condition. Perspectives and key comments are presented.

Survey Findings

- The Athletic Department maintenance staff is a dedicated, experienced group with high standards.
- The staff is well trained and versatile in their ability to operate many types of equipment and complete many different types of tasks.
- The present manpower staffing is minimally acceptable for the total number of acres maintained and the level of performance expected. Part-time seasonal employees are hired during the summer. There are no summer intern programs.
- There is no mechanic. All equipment is serviced by dealerships.
- Staff experience is good with upwards of 16 years experience.
- Staff morale is minimally acceptable. The morale among the field employees is good. However, at times they feel that the upper administrative group makes unreasonable requests associated with field use and condition. This in turn influences the way they feel about their positions.
- Another issue that influences staff morale is the lack of opportunity for training. Requests to attend turfgrass educational seminars have been denied. Requests to visit other sports facilities to learn about methods and other programs have also been denied.
- The package of salary, wages and benefits is minimally acceptable. Staff members enjoy what they are doing, but the wages are not that great.

The Athletic Department: Agronomic Programs and Operations Practical Perspectives and Recommendations

Turfgrass Maintenance Program

The maintenance program presented for the sports fields at KU is no longer adequate. Based on the challenges presented within the Master Plan to enhance both aesthetic and surface performance quality of the sports fields at KU, the following perspectives are recommended:

- As the new natural turf stadiums are constructed and come into play, the level of turf quality expectations for game and practice fields at KU will continue to increase. As these expectations increase, the level of responsibility and accountability by the Athletic Department Maintenance Staff will also increase.
- If the Athletic Department Maintenance Staff is to be accountable, they must be in control of their own destiny. They must be allowed to develop and conduct cultural management programs that are specific to their sports fields.
- They must have a) their own equipment, b) immediate access to all required products and materials, and c) adequate staffing to complete the necessary maintenance practices on
schedule, at any time, whenever they need to be done. These three factors create a level of quality flexibility that will allow them to develop maintenance programs that maximize aesthetic and surface quality performance at all times.

- The NCAA Division I, Big 12 has expectations. It is time that KU supports the people they have in place, to provide them with the equipment, products and environment to be successful.

Bring all of the responsibilities of maintenance including applications of fertilizers, pesticides, plant growth regulators, mowing practices, aeration, vertical mowing, etc. back in-house under the direction of George Barnes and his staff. The staff now has a licensed, certified applicator (Phil) who can legally and properly apply all pesticide products as required.

The need for required contract services such as deep tine aeration or other specialty maintenance practices will be reviewed and approved by George Barnes.

Initiate a soil-testing program on all sports fields. Evaluate both soil physical parameters and soil nutritional perspectives. Coordinate testing through a firm such as Turf Diagnostics and Design, Olathe, Kansas. Request consulting comments. Maintain this information in historical files.

Establish a yearly water-testing program. Coordinate testing through a firm such as Turf Diagnostics and Design, Olathe, Kansas. Request an irrigation suitability analysis and consulting comments.

Develop a 12-month agronomic calendar, revise yearly based on previous years experience. Review once or twice per year with a certified agronomist.

Utilize Primo on bermudagrass fields to increase density, reduce biomass production, reduce mowing frequency, improve wear tolerance and enhance surface quality.

Use pre-emergent herbicides such as Barricade 65 WG (prodiamine) to enhance annual bluegrass control and reduce both summer annual and winter annual weed problems.

Utilize granular fertilizer products with a 3-1-3 nitrogen (N), phosphorus (P) and potassium (K) ratio to produce balanced growth and wear tolerance. Use soluble nitrogen products such as ammonium, urea or nitrate on all warm season grasses.

Utilize complete fertilizers (e.g. 15-15-15) following overseeding and drill seeding.

Base fertilizer needs on soil testing results.

Investigate the drainage problems on the soccer field. Conduct a complete soil physical parameter test series including water release curves. Reevaluate the surface. Replace if required.

Remove all the Toro 690 sprinkler heads from practice and game fields. These sprinkler heads are a safety liability issue for all players and KU. Redesign the irrigation systems and replace with either Hunter or Toro low profile sprinkler heads designed specifically for sports field use.

Review the turf type selected for each sport use. Select one intramural field and use it as a demonstration trial site for review of grass types that are best suited for sports field use. Evaluate the site for two years under actual field use. Select the best performing grass for use in specific game and practice fields.

**Grassing Palette**

The grassing palette concept for the Master Plan can be utilized within grass types used for sport fields.
Utilize improved varieties of turf type tall fescue for high visibility areas surrounding sports fields where Standard A performance or extended fall color and early spring green-up are required. Do not use tall fescue as a sports field turf. Review regional NTEP (National Turfgrass Evaluation Program) information for the selection of varieties best suited for Kansas.

Utilize buffalograss or solid stands of native grasses for low maintenance areas or severely sloped areas where turfgrass maintenance is difficult. Reduce maintenance requirements while enhancing aesthetic appeal. Select buffalograss varieties that have performed well in the NTEP programs at the University of Nebraska and the University of Missouri.

Utilize zoysiagrass where traffic use is low to moderate and need for maintenance input is reduced. The slow growth and reduced vertical extension of zoysia grass reduces the need for frequent mowing. Zoysiagrass is also more drought-tolerant than tall fescue.

Utilize Quickstand bermuda grass for intramural fields and consider a change over to bermudagrass selections for other Athletic Department practice and game fields. Bermudagrass exhibits improved surface quality, better wear tolerance, fewer fungicide and weed control inputs, lower water use, fewer maintenance costs and better survivability in August, September and October.

Utilize the intramural fields as a test site for future grassing recommendations. Establish large demonstration plots of improved grass under actual field use conditions. Evaluate performance and generate information that will serve future campus grassing needs.

**Equipment Inventory**

John Deere provides the best service of any major turfgrass equipment supplier in the area. In the past John Deere has approached KU departments with potential lease options for campus wide equipment use.

Once again, evaluate turfgrass equipment suppliers in the area. Request bids for lease options based on exclusive use of the selected manufacturer’s equipment on campus landscapes and potentially on the new natural grass football stadium. Evaluate the cost/benefit of a lease option program versus a purchase program.

Increase communication among maintenance departments at KU, specifically, Facilities Operations, Department of Student Housing and the Athletics Department. Discuss options for sharing existing equipment and sharing new equipment purchases.

The overall equipment inventory supports the existing needs of the Athletic Department, but is lacking in specific areas:

- Spray system: utilized for weed control, plant growth regulator, micronutrient or foliar feeding programs. A dedicated, mobile spray system with 125 to 150 gallon capacity. Consider John Deere Accumaster, Cushman Turf Master, Smithco. Request on-site manufacturer demonstrations.

- Piston driven aerifier: consider the Ryan GA-60 aerifier with four wheel turf truckster for the high quality show case fields and/or the Toro Fairway Aerifier for larger acreage to include the intramural fields. Request on-site manufacturer demonstrations.

- A six-ton roller with water-fill option.

- A Tycrop MH-400 topdresser. Request an on-site manufacturer demonstration.

The existing equipment inventory will need to be completely upgraded once the new natural turf stadiums are constructed.
Equipment Storage

As the new natural turf stadiums come on board, more new turf equipment will be required for maintenance. The location of storage space relative to the area of turf to be maintained is going to become a critical issue. Plan on equipment storage for new equipment in the stadiums or in roofed, contained areas as close to the facilities as possible. Exposure of equipment to weather extremes reduces the equipment life and significantly increases repair and maintenance costs. Storage is already inadequate. Equipment sits outside exposed to the elements.

Fertilizer, Pesticide and Landscape Products Inventory

Presently there are no fertilizer, pesticide or landscape product inventories because the maintenance practices that utilize these materials are contracted services. However, for future reference, consider the following perspectives:

Properly dispose of all fertilizers and pesticides that are more than five years old and have not been used in the last two years. Be proactive in the organization and maintenance of the fertilizer, pesticide and landscape products inventory. Order the proper amount of product when needed. Avoid purchasing excessive product quantities that require significant storage space for extended periods.

Conduct a cost/benefit analysis for bulk purchasing of fertilizers to be shared with FO and DSH. Purchasing fertilizers in bulk reduces the cost per pound of actual nitrogen, warehouse storage, product loss as a result of stolen and broken bags, and the employee liability associated with lifting and transporting bags.

Fertilizer, Pesticide and Landscape Products Storage

As in-house agronomic programs are developed, fertilizer products and pesticides will need to be properly stored in approved locker or storage facilities. Pesticides should be stored separately from fertilizers and landscape products.

Store fertilizers and landscape products in a centrally located facility that is easily accessible, clean, and dry. Stack bagged materials on pallets and always use broken bags first.

Pesticide Rinse Facilities

There are no pesticide rinse facilities at the University of Kansas. Plans for the development and construction of such a system need to begin as soon as possible. Discussions among the Athletics Department, Facilities Operations and the Department of Student Housing should begin prior to the design and the location of the system so that each group will have their future needs considered.

Contract Services

The need for specialized contract services such as deep tine aeration may be required from year to year.

Develop a cost/benefit comparison reviewing the potential for utilizing contract services. Compare in-house material, labor and equipment costs to the cost/benefit of contracted services. Consider service, safety, liability and the potential to free-up manpower hours for other essential tasks. Indoctrinate service companies with specific objectives and expectations, written specifications, contractual agreements and regularly scheduled field performance evaluations.
Turfgrass Irrigation

Review all irrigation systems. Evaluate each for quality, function and use. Replace inappropriate heads such as Toro 690’s with sports field sprinklers designed for enhanced safety.

Greenwaste Program

Participate in the proposed greenwaste program with Facilities Operations and the Department of Student Housing. Recycle grass clippings in the tub grinder. Use the high quality mulch in landscape areas surrounding the sports fields.

Transfer of Intramural Fields Maintenance Responsibilities

Transfer the maintenance responsibility for all intramural fields to the Athletic Department. FO is a dedicated and hardworking group, but their expertise is in landscape maintenance not sports field maintenance and event preparation.

The Athletic Department maintains both game fields and practice fields at KU and has the understanding necessary to maintain and prepare fields for sporting events.

When purchasing the equipment required to improve the performance of the existing fields and also to serve the needs of the new natural grass programs, purchase equipment that has large acreage capacity so that the intramural fields can be mowed, fertilized and maintained as high quality practice fields. Always contact suppliers and request on-site demonstrations prior to purchase.

Sports Field Landscape Program

Utilize the plant palettes selected from the Master Plan and carry these planting and design concepts into the landscaped areas surrounding KU sports fields. This will provide balanced continuity throughout the campus and provide for an aesthetic and welcoming atmosphere in and around sports fields.

Staffing Action Plan

The recommended in-house maintenance program will enhance both aesthetic and surface quality performance. This consideration combined with the planned natural turf stadium expansion program points toward the need for a complete review of existing and future staffing levels in order to achieve realistic maintenance performance goals.

Review the staffing philosophy for the Athletic Department sports fields grounds maintenance at KU.

Utilize the knowledge and experience of George Barnes and his management staff – trust their judgement.

Hire and promote from within the existing KU work force.

Create more supervisor/crew foreman positions to train staff members.

Increase the utility worker force.

Increase the starting hourly wage for utility worker to at least $8.00 per hour so KU can begin to compete with other local industries.

Increase the support staff when acreage and/or performance level expectations increase.
KU does not have a horticulture program, but it could initiate an intern program through Kansas State as a work program location for KSU horticulture students. Students could be housed in the dormitories during the summer session. The program could advertise for students at KSU and emphasize intern positions providing wages, housing and practical field experience in the area of sports field maintenance.

Support the funding of a plant horticulturalist position. The requirements of the position would include (a) a horticulture or related science degree, (b) strong practical experience with knowledge of plant adaptation specific to Kansas and (c) some degree of experience with landscape design and maintenance considerations. This position would provide cooperative leadership in a campus wide advisory panel consisting of design and maintenance personnel. A primary function would be to spearhead a common sense understanding of the interrelationship of plant design, adaptation and maintenance.

**Management and Employee Training**

More training is required, particularly with the turnover at the utility worker level. Regularly scheduled sessions for both in-house training by qualified supervisors and outside educational seminars covering subject areas such as plant identification, general soils, plant nutrition, weed control and pesticide use is also required.

Allow sports field maintenance employees to attend local and regional turfgrass maintenance seminars. Request that participants prepare a review and present new findings to the remainder of the staff upon their return.

Allow sports field maintenance employees to visit other Big 12 sports complexes to share ideas, discuss problems and learn new techniques for improving the field maintenance programs at KU.

**Communication**

In recent years, communication among KU’s campus wide maintenance groups has declined. Informal, but regularly scheduled meetings, perhaps during early summer and mid-winter, among the Athletic Department, FO and DSH would create a forum to share ideas and address common problems. Improved communication leads to a platform of trust and understanding that could in turn lead to cooperative programs involving equipment and products.

Develop an Athletic Department Advisory Board consisting of a field design team, coaches, stadium operations, Athletic Department Management and Sports Field Maintenance Staff to review all new design and construction, and to evaluate the issues and problems associated with present fields. After design and construction, field maintenance is the yardstick by which all fields are evaluated. For this reason there must be an open channel of communication among stadium operations who schedule events, the coaches and athletes who use the fields, and the maintenance staff who maintain the fields so that an opportunity exists to discuss needs and concerns on a regular basis. These meetings should be held on a quarterly basis. They should include comments from all participants relative to what is good about field performance and what needs to be improved.

The sports turf maintenance staff should be involved in all design reviews for new construction, should be responsible for all maintenance, and should be accountable for surface quality performance.

The philosophy on free field use for summer camps needs to change. Local use and summer camps have destroyed sports fields. It is recommended that all local use and summer camp use be reviewed in order to determine the level of wear caused by each event. Final decisions on
field use should be determined by the joint input of stadium operations, the Athletic Department and the Sports Field Maintenance Staff. Develop realistic fees for field use. Reinvest those monies into the Sports Field Maintenance Program.

Develop a twelve-month field use calendar. Record all activities including practices, games and all maintenance activities. Maintain calendars for all fields. Use this information to monitor field use and over-use. Present this information as an educational session to staff members from all coaching staffs, stadium operations, the Athletic Department and Sports Field Maintenance. Improve the general understanding of seasonal use and resulting turfgrass wear.

It is critical that the new sand profile design be reviewed prior to construction by an independent group or consultant that can contribute unbiased laboratory information to support soil profile design and the performance of field profiles under specific weather conditions and periods of seasonal use. This group or individual should be hired by the university to oversee the design and construction phase and would work with the construction team in order to continually maintain the best interests of the university. The group or consultant would also work directly with the Athletic Department Advisory Board to ensure that all perspectives associated with design, field use and field maintenance were considered. If such a group had been in place prior to the construction of the existing soccer field at KU, the present drainage and field performance problems could have been avoided.

“It’s a little embarrassing and I don’t know how the chancellor would feel about this, but last year when we were having conference soccer games we were not able to play on our fields because the conditions were not acceptable. To me that was embarrassing. What are other peoples’ perceptions of KU? KU is a prestigious institution and we don’t have a decent field to play soccer. I mean, is that part of his concern?”

The Athletic Department Agronomic Programs and Operations Final Thoughts and Summary

This is an exciting time period for the sports maintenance staff at KU. There are great opportunities to improve the existing sports fields while planning for the development and maintenance of fine turf surfaces in the new natural turf stadiums.

The existing staffing philosophy for sports field maintenance and the level of responsibility and accountability designated needs to be addressed immediately with the existing field acreage before the new natural turf field stadiums are constructed.

The maintenance staff is a dedicated, experienced group and they must be given the freedom and the responsibility to maintain all sports fields and the intramural fields at the highest level of quality possible. It will be understood that their system of maintenance will be reviewed and that ultimately they will be responsible for surface quality performance.

The sports field maintenance staff should be encouraged and supported in their efforts to pursue additional agronomic training. Attending local and regional turfgrass educational seminars and visiting other Big 12 sports facilities to enhance their learning curve should be a part of their job responsibility.

The University of Kansas and the Athletic Department as a whole should do a better job of listening to their own people and including experienced staff members in the decision making process. Look within and listen before making decisions.
Conclusions: Agronomic & Operational Perspectives & The University of Kansas Master Plan

As we presented in the introduction to this document,

“Plant design philosophies must work in symphony with cultural maintenance concepts in order to create greenscape environments that promote use, function and lasting beauty. Well conceived cultural maintenance programs implemented by knowledgeable, dedicated maintenance personnel will ensure the future success of plant systems within both landscape and sports field settings.”

The essential resources that are required to achieve such goals include the following:

- **Dedicated, open-minded people who have a passion for their work,**
- **Sound technical information combined with years of practical field experience,**
- **Proper tools, materials and equipment,**
- **Managerial philosophies that reward quality employees and create an environment for all employees to maximize their productivity.**

There are many common threads that weave their way through Facilities Operations, Department of Student Housing and the Department of Athletics. From the information generated in these surveys it would appear that, overall, the employees in these maintenance departments are dedicated, experienced workers that enjoy what they do on a daily basis. Staff morale is minimally acceptable to good and the work environment is rated good in two of three departments. Those areas where improvements can be made would be associated with department organization, department communication and training, staffing and wage levels, and the mindset that the performance standard determines staffing levels.

**Transition to the Future**

As the Landscape Master Plan takes shape through implementation of the recommendations and by instituting various guidelines and procedures, a heightened degree of maintenance standards and practices will come into being. The transition from the current conditions to the standards and expectations of tomorrow will not come easy.

Overcoming the hurdles of the “status quo” will require a philosophical transformation as well as a shift in operational structure. Many of the recommendations contained in the Landscape Master Plan are theoretical regarding the true application parameters for the Kansas University Campus. Subsequently, experimentation and testing of certain areas of landscape types, maintenance procedures, and operational changes should occur during a transitional period.

It would be our recommendation that a transitional process be identified. This process would define how policy, operations, and standards would evolve from the current state to the reality of tomorrow. Testing and experimentation, operational optimization, and thoughtful documentation will focus these efforts of change and will ensure that the steps taken will be beneficial and efficient.

Additional funds will need to be set aside for this transition. This funding should be separate from the additional funding required for the anticipated expansion of operational staff and equipment. The funding stream should correspond to the schedule for implementation and should embrace the aspects of testing and experimentation, operational validation and procedural documentation and training.
**Maintenance Standards**

An important premise of this study is a new mapping of maintenance standards that are closely aligned with the landscape master plan objectives. Campus spaces of high use and visual importance should receive the highest levels of maintenance. Service and utility areas should require less maintenance while continuing to provide a neatly kept appearance.

Performance Standards A and B present over 95% of the maintenance expenditures and cover 80% of the campus acreage. This applies a fairly uniform maintenance standard for most areas of campus. It also spreads limited maintenance resources thinly across the campus resulting in a maintenance program that is primarily focused on mowing turf. Current maintenance zones show little correlation to the existing topography and the importance of outdoor spaces other than in certain key campus locations.

There is a strong perception that the campus is composed of cool season grass types such as Kentucky bluegrass and turf-type fescues. However, in reality, warm season grasses such as buffalograss and bermudagrass are colonizing the campus and now represent approximately 40% of the existing turfgrass. The primary reason for this transition is that warm season grasses are better adapted to the local climate and thrive on low maintenance conditions. Changing from cool season grasses to warm season grasses on campus will require a shift in expectations and attitudes. Warm season grasses are actively growing and green between May and September when the campus is least populated. During the remainder of the year, warm season grasses are dormant and a golden bronze color. On the other hand cool season grasses are actively growing and green during the majority of the school year. Unfortunately, cool season grasses require significantly more maintenance to remain attractive. It is unlikely the University can devote (or should devote) sufficient resources to maintain a cool season grass palette on the entire campus.

The common expectation that turfgrass on portions of the campus should be green during the spring and fall, will not change quickly. A gradual change to the methodology for maintenance and grass selection on campus is needed. The campus should adopt a grassing palette that incorporates many turfgrass varieties including both warm and cool season cultivars. Cool season grasses should be used in highly visual pedestrian spaces where the increased maintenance cost is justified in providing a quality stand of green grass throughout the year. Warm season grasses can be introduced over time in areas of lesser visual importance. The two grass types will enhance the campus appearance, plant bio-diversity and stability.

Maintenance of the areas will be simplified and more cost-effective in that those areas with the highest levels of visibility will receive the appropriate levels of maintenance. The mapping of maintenance zones in alignment with landscape objectives will also provide a legibility and strength to the open space design of campus. Grassing palette changes are an important tool in reallocating limited maintenance resources.

**Proposed Maintenance Standards**

The remapping of maintenance zones for the campus required a wide range of assumptions that are critical to understanding and applying the proposed maintenance principals. The proposed maintenance zones are shown on Figure 3.

Discussions concerning maintenance focused on achievable expectations with limited resources. Maintenance expectations must be balanced with maintenance resources. If an expectation for a particular maintenance standard is increased, a change is required in order to achieve that expectation. Either the maintenance resources need to be increased or new techniques or materials introduced that require less maintenance. This basic principle is critical to making expectations achievable.
## Maintenance Comparison Chart

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (Acreage)</td>
<td>31.85</td>
<td>284.55</td>
<td>83.05</td>
<td>57.07</td>
<td>148.33</td>
<td>100.35</td>
<td>0.00</td>
<td>685.00</td>
</tr>
<tr>
<td>(% of Total)</td>
<td>4.66%</td>
<td>41.51%</td>
<td>12.12%</td>
<td>5.41%</td>
<td>21.65%</td>
<td>14.65%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td><strong>Total (Cost/Acre/Year)</strong></td>
<td>$1,552</td>
<td>$697</td>
<td>$483</td>
<td>$526</td>
<td>$20</td>
<td>$290</td>
<td>$52</td>
<td></td>
</tr>
<tr>
<td><strong>Existing Maintenance</strong></td>
<td>$53,803</td>
<td>$250,259</td>
<td>$50,592</td>
<td>$61,527</td>
<td>$3,813</td>
<td>$31,681</td>
<td>$0</td>
<td>$405,422</td>
</tr>
<tr>
<td>(Total Cost/Year)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed Maintenance (Total</td>
<td>51.84</td>
<td>79.93</td>
<td>221.35</td>
<td>113.66</td>
<td>170.84</td>
<td>193.07</td>
<td>31.23</td>
<td>864.92</td>
</tr>
<tr>
<td>Acreage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% of Total)</td>
<td>6.39%</td>
<td>9.24%</td>
<td>25.59%</td>
<td>13.14%</td>
<td>19.75%</td>
<td>22.32%</td>
<td>3.61%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Proposed Maintenance (Total</td>
<td>$74,151</td>
<td>$55,707</td>
<td>$106,819</td>
<td>$97,101</td>
<td>$3,478</td>
<td>$48,267</td>
<td>$101,193</td>
<td>$357,193</td>
</tr>
<tr>
<td>Cost/Year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Change in Total Acreage from</td>
<td>15.05</td>
<td>(-279.14)</td>
<td>116.52</td>
<td>66.86</td>
<td>(-16.44)</td>
<td>66.55</td>
<td>51.25</td>
<td></td>
</tr>
<tr>
<td>Existing to Proposed</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Based on existing cost per acre. Figures do not include efficiencies gained from implementation of recommendations contained in this report.*

**Estimated Annual Costs**

<table>
<thead>
<tr>
<th>Maintenance Standards</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Service Zone</th>
<th>Forested Slopes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Turf</strong></td>
<td>Cool Season Blue Grass / Turf-Type Rescue Blends</td>
<td>Cool Season Turf-Type Bermuda Grass</td>
<td>Warm Season Bermuda Grass</td>
<td>Warm Season Native: Bermuda Grass, Buffalo Grass, Grass</td>
<td>Eliminate or greatly reduce turf</td>
<td>Eliminate turf</td>
</tr>
<tr>
<td><strong>Seasonal Color</strong></td>
<td>Limited use of annual in areas of high importance, expand use of perennials</td>
<td>No annuals. Low maintenance perennials in defined beds</td>
<td>Seasonal color achieved by tree and shrub palette</td>
<td>Seasonal color achieved by prairie forbs.</td>
<td>Eliminate seasonal color.</td>
<td>Seasonal Color achieved by native plants and forbs.</td>
</tr>
<tr>
<td><strong>Irrigation</strong></td>
<td>Overhead irrigation of turf and large groundcover areas. Drip irrigation of seasonal color and planters</td>
<td>Overhead irrigation of turf. Temporary irrigation of shrubs and groundcovers until established.</td>
<td>Temporary irrigation of turf until established.</td>
<td>No irrigation required.</td>
<td>No irrigation required.</td>
<td>No irrigation required.</td>
</tr>
</tbody>
</table>
The proposed maintenance zones have been created based upon the landscape master plan objectives. The most important spaces are afforded the highest level of maintenance. A basic assumption of this approach is that maintenance resources would remain relatively constant. Therefore, in order to maintain new areas of increased landscape expectation other areas are adjusted to a lower maintenance standard. Lowering the maintenance standard for a particular area does not necessarily mean lowering the visual expectation. It means reducing the required maintenance input while keeping an acceptable appearance. This can be accomplished in a number of ways. For example, changing to a grass type that requires less mowing. It could mean organizing plantings so that the area can be mowed with larger equipment and less trimming. The challenge then is finding ways of reducing maintenance inputs without negatively impacting the appearance.

Perceptions and attitudes about the landscape vary considerably from person to person. What makes an overgrown lawn an eyesore or a prairie beautiful? The distinction between the two may be very subtle, as simple as the context of the planting in its surroundings. Implementation of new maintenance standards will require experimentation and research. A research program of test plots of new approaches, whether it is grass type, mowing frequency or chemical programs, should be implemented. This experimentation will result in an understanding of expectations and perceptions. It will also establish plant material palettes and maintenance protocols that meet public expectations.

In order to balance resources and expectations, it was assumed that those areas viewed primarily by pedestrians required a higher maintenance standard than those viewed from vehicles. The world is experienced much differently while traveling on foot than at 30 miles per hour in a car when an individual can be much more aware.

Two new maintenance zones were included on the exhibit. They were service zones and forested slopes.

**Service Zones:** Service zones are the support areas of campus that are required to keep the campus operating. Service zones include access roads, loading docks, service corridors or utility compounds. Pedestrian access to these areas should be discouraged due to safety concerns. Landscape and maintenance treatments should be minimal and clean. Most of the areas are small isolated islands. Turf should be eliminated in favor of low maintenance groundcovers. Shrubs should be minimized or eliminated other than to screen the service zones from public spaces. The use of an occasional tree or ornamental shrub to soften the architecture and groundcover would eliminate the majority of maintenance in these areas.

**Forested Slopes:** Many areas of open or green space on the campus are defined by steep slopes such as those along Memorial Drive. A great majority of these slopes are covered with turfgrass, which requires considerable maintenance resources. Turf-covered slopes in excess of 20% require specialized mowing equipment. Because of their steepness, they also can be a safety problem to maintenance personnel. The specialized mowing equipment is smaller and requires greater manpower investment. The University should make a concerted effort to transition many of these grassed slopes into areas with native woodland species that will not require maintenance.

However, this transition from turf to native woodland associations will require time. The ideal native association, especially for south facing slopes, would consist of an oak-hickory overstory structure, scattered understory plantings, flowering ornamentals; and low native shrubs such as coralberry and currant. Leaf litter would be allowed to accumulate encouraging the introduction of local woodland wildflowers. This type of woodland association provides a significant amount of visual access and is therefore a minimal security concern. Once established, the association would become self-sustaining and would require very little maintenance. The difficulty of its implementation is creating a native matrix that allows a naturalization process to occur. Very little practical information is currently available concerning urban ecological restoration. Implementation of this planting strategy will require small scale experimentation in order to develop
effective planting protocols and methods. The sensitive nature of steep slopes requires a careful and calculated planting approach. Restoration of large expanses should not be attempted until a proven approach is developed.

Public perception and expectation will define acceptable planting approaches and the rate of change allowable for forested slopes. A public education campaign may be effective in communicating the intent of the planting strategy and the public benefit. The restoration program needs to be long term. Restored areas of mature growth will have the greatest impact in reducing maintenance resources and defining the open and green spaces on campus. It is important that woodland restoration is not abandoned due to the length of time required to mature.

Department Organization

Facilities Operations, Department of Student Housing, Recreation Services and Athletics have a myriad of common goals. However, they also present specific objectives and missions that are unique to each department. To improve the efficiency of each department while maintaining the integrity of each, the following perspectives are recommended:

- Transfer the maintenance responsibility for all intramural fields to the Athletic Department. Facilities Operations is a dedicated and hardworking group, but their expertise is in landscape maintenance, not sports field maintenance and event preparation. The Athletic Department maintains both game fields and practice fields at KU and has the understanding necessary to maintain and prepare fields for sporting events.

- Enhance the support for the Department of Student Housing by placing their material/product needs and equipment needs under a shared umbrella with Facilities Operations. Share technical expertise, new ideas, training, products and equipment.

Department Communication and Training

In recent years communication among KU's campus wide maintenance groups has declined. Informal, but regularly scheduled meetings, perhaps during early summer and mid-winter, among the Athletic Department, Facilities Operations, and Department of Student Housing would create a forum to share ideas and address common problems. Improved communication leads to a platform of trust and understanding that could, in turn, lead to cooperative programs involving equipment and products.

The development of a Plant Design, Selection and Maintenance Advisory Committee to meet on a quarterly basis in order to discuss new construction, existing landscapes and the planting of the Chancellor’s Beautification Program is recommended. Such a committee would spearhead a common sense understanding of the interrelationship of plant design, adaptation and maintenance, and prevent the design and establishment of plant of materials that are either not well adapted or impossible to maintain.

Also recommended is the development of an Athletic Department Advisory Board consisting of a field design team, coaches, stadium operations, Athletic Department Management and Sports Field Maintenance Staff to review all new design and construction and to evaluate the issues and problems associated with present fields. After design and construction, field maintenance is the yardstick by which all fields are evaluated. For this reason there must be an open channel of communication among stadium operations who schedule events, the coaches and athletes who use the fields, and the maintenance staff who maintain the fields so that an opportunity exists to discuss needs and concerns on a regular basis. These meetings should be held on a quarterly basis. They should include comments from all participants relative to what is good about field performance and what needs to be improved.
members from all coaching staffs, stadium operations, the Athletic Department and the Sports Field Maintenance staff. Improve the general understanding of seasonal use and resulting turfgrass wear.

More training is required, particularly with the turnover at the utility worker level. Regularly scheduled sessions for both in-house training by qualified supervisors and outside educational seminars covering subject areas such as plant identification, general soils, plant nutrition, weed control and pesticide use is also required. Red Cross, CPR, EMT and first aid training is also very valuable. Document training for all employees to protect the university against liability issues. Landscape and sports field maintenance employees should be encourage to attend local and regional turfgrass maintenance seminars. At least one employee per year should visit other Big 12 schools to share ideas, discuss problems and learn new techniques for improving the maintenance programs at KU.

**Efficiency and Quality**

Efficiency within departments is often viewed as the number of tasks completed by a specific number of individuals at a specific cost. Within the vast confines of plant management systems, and grounds and sports field maintenance, there is a critical aesthetic qualitative factor that is more important and ultimately more limiting than any efficiency or productivity rating. As an example, if a grounds maintenance worker is assigned to mow a one-acre, high visibility area on campus, the worker could drive the mowing equipment as fast as the machinery could possibly go. If the worker drove the mowing equipment at nine miles per hour instead of the recommended six miles per hour, the task would be completed thirty-three percent faster. However, as a result, the quality of cut would be poor, the ends of the leaf blades would be torn and shredded, and the turf would take on an unacceptable whitish cast. This would influence the visual quality of the task immediately after mowing and for weeks following because torn and shredded turf does not recuperate as rapidly as properly mowed turf. Although the mowing task would have been completed in a very efficient manner, the quality standard associated with completing the task would have been deemed unacceptable.

The tasks associated with grounds and sports field maintenance can be completed in a very rapid and task-oriented fashion when little or no consideration is given to the aesthetic value of that task. When the resulting aesthetic quality of the completed task is as important as completing the task itself, more time, effort and money must be invested in order to achieve that qualitative goal. In the case of grounds and sports field maintenance, this translates into an adequate number of dedicated, well trained people, financially rewarded within realistic industry standards, and supported with the proper equipment and materials to complete both the quantitative and the aesthetic goals at hand.

Staffing figures will vary from campus to campus based on the complexity and acreage of the plant material to be maintained in the landscape, the level of performance expectation, the level of knowledge, experience and training of the maintenance staff, suitable equipment to perform maintenance tasks, and the number and types of duties assigned to the maintenance staff that are not related to landscape care. However, the level of staffing and financial resources that the university decides to direct toward grounds and sports field maintenance will ultimately be driven by a cost benefit analysis of perceived need and the following considerations:

- How important is the high quality maintenance of the green environment (landscapes and sport fields) relative to other essential services (e.g. accounts payable, admissions, human resources, parking, registration, etc.)?
- To what degree are student candidates, existing students, student athletes, staff, faculty and the administration satisfied or pleased with the present condition of the landscape, intramural fields and sports fields?
- To what extent does the level of importance and the level of satisfaction associated with grounds and sports field maintenance influence the following:
• the manner in which people perceive KU,
• the learning environment,
• the ability to acquire new students, student athletes, faculty, staff and administra-
tors,
• the ability to retain new students, student athletes, faculty, staff and administra-
tors,
• the stability of student enrollment and its impact on the long-term future of KU.

If a survey was conducted asking graduating high school seniors interested in attending KU and second year sophomores who had spent one complete year on campus to evaluate how important specific campus services were in their decision to select KU as their four year undergraduate university of choice, would landscape and sports field quality be an important consideration? Would the following questions be limiting factors and potentially influence their decision to attend KU?

• Was your first visual experience at KU pleasurable and memorable?
• Are the landscapes and housing units maintained in a neat and clean manner?
• Are the intramural fields safe and in good condition?
• Are the sports fields at KU of NCAA caliber?
• Does the total green environment provide an attractive, pleasurable, relaxing and functional environment in which to study, work and play?

If landscape and sports fields maintenance is deemed to be a very important consideration in the total environment at KU, how is it to be funded and staffed?

The information generated by the California State University survey shows an average of 13.9 acres per FTE with a generated maintenance cost per acre of $4,175. Within the same study a national representation of universities shows an average of 13.5 acres per FTE and a generated maintenance cost of $4,428 per acre. Information generated by Western Michigan University shows 16.0 acres per FTE. Data generated by Facilities Operations at KU shows estimates of 36.9 acres per FTE at a cost of $687 per acre.

The low entry wage scale is preventing the grounds maintenance groups at KU from hiring and keeping more qualified candidates. While the experience levels in all department groups showed twelve to sixteen years plus in the supervisor and managerial level, the comparative years of experience in the utility level was often less than three years. There were very few employees with five to eight years of experience. The loss of this middle tier employee group would indicate that KU cannot retain quality employees. While in the short term this may not be a critical or limiting factor, it could influence the performance level of the remaining employee pool once the managers with twelve to sixteen years retire.

It would appear that across the board the present employee base enjoys their work and the working atmosphere at the University of Kansas. Unfortunately the lack of adequate staffing and the marginal wage scale has a negative impact on the morale of the existing staff. These factors detrimentally affect the ability of KU to continue to retain new employees and build the qualified ranks of future supervisors and managers.

While it may be easy to say that the California State University study represents acreage per FTE and grounds cost per acre that are unrealistic or 'pie in the sky numbers' for KU, these extreme
discrepancies are a indication of the level at which KU is presently operating and point to a more positive direction in which KU needs to rapidly move. Regardless of what exact numbers are appropriate for the type of landscape and the performance expectations at KU, the real acid test is whether the university as a whole believes that the present level of maintenance of landscapes and sports fields across the campus is meeting the needs of the University. In many respects it has little to due with data or benchmarking numbers, it has everything to do with weighted values of perceived importance and customer satisfaction, and whether KU believes it is providing a pleasurable, attractive and functional green environment that will serve the needs of students, faculty and staff.

The University of Kansas is lucky enough to have dedicated, hard working and experienced people who love their work and enjoy the daily challenges of maintaining landscapes and sports fields. Unfortunately, based on national average, comments from employees in all departments and the current condition of the landscapes and sports fields, we believe that the staffing levels are inadequate for the performance standard, much less support a great leap forward in performance expectation. A recent walk across campus to review the condition of several high visibility turfgrass areas emphasized this perspective. The turf in many areas appeared to have not been mowed for more than one week, exhibited more broadleaf and grassy weeds than would be deemed acceptable and was not edged along sidewalks or steps. A simple and practical approach to solving these basic turfgrass problems would be (a) mow and edge more frequently, (b) establish proper seasonal fertilizer programs to improve turfgrass vigor and density, and, (c) establish weed control programs to limit weed invasion. As we continued our walk a single thought came to mind: ‘If the maintenance staff at KU had more employees equipped with the proper equipment to mow and edge turfgrass areas more frequently, it would be amazing to see the level of improvement in the day to day condition of the landscapes at the University of Kansas.’ The addition of lower maintenance, warm season grasses such as buffalograss and zoysiagrass, which require significantly less mowing and total maintenance inputs, would further enhance this perspective.

If KU believes that the aesthetic and functional value of their landscapes and sports fields do not meet their perceived standard of excellence, then they should proceed with the process of improving entry and existing wage scales and increasing the number of employees to build maintenance and sports field staffs that can realistically achieve established performance standards. All finely maintained facilities first decide on the level of performance expected and then, utilizing this information, proceed with developing the systems and hiring the people required to be successful.

KU’s people are its most valuable resource. Support them in their efforts to help achieve KU’s goals.

* * * * *

KU Landscape Master Plan  Volume 2  57