

**SAINT PAUL GOLF COURSES**

**MAINTENANCE  
STANDARDS  
MANUAL**

**Saint Paul, Minnesota  
Department of Parks and Recreation  
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## CHAPTER 1 INTRODUCTION

The *Maintenance Standards Manual* is created to make the important connection between golf course operating budgets and actual field operations. The specific outcome in the operating budget that these maintenance standards address is “customers find golf course facilities accessible, well maintained and enjoyable places to recreate.”

The maintenance standards contained in this manual define the desired conditions of the golf course features that are a natural extension of the budgetary outcome measures. Broad division goals and objectives are translated into specific maintenance standards.

Clear expectations relative to the maintenance of the physical features for which they are held responsible provide golf course staff with basic information and direction relative to the provision of service levels expected by Parks and Recreation management.

For the purpose of this document, the term City shall mean the Director of Parks and Recreation or designee.

## CHAPTER 2 GOLF COURSE TURF

There is a variety of turf grasses found on golf courses. Each turf type is maintained to serve a specific purpose in a particular area of the golf course such as a green, tee, fairway or rough. It is important that each turf area is evaluated relative to the purpose for which it is intended. There are much higher quality standards for putting greens, which are the most critical playing surfaces. The other areas such as tees, fairways, roughs and course amenities also have significant impact on golfers' perceptions and the actual playing of the game of golf. The standards relative to turf care are minimum standards. They may vary depending upon time of year, weather and other unforeseen factors.

### **1. Greens, Practice Putting Green and Nursery**

From a player's perspective, putting greens are the most important area of turf on the golf course. Putting green conditions are the determining factor when players make choices about where they like to play. For this reason, putting greens need to receive the major focus of attention when maintaining the golf courses.

The objective of the maintenance standards is to develop on all putting greens, a fine bent grass and/or Poa Annuua turf of like texture and density with a minimum of thatch and grain; to maintain a true surface with a moderate speed of 8.5 to 10.5 to satisfy the majority of golfers; to develop a basic agronomic soundness for all greens and to present greens to the golfing public that are of a comparative quality to the better public golf courses in the Twin Cities Metropolitan Area.

- A. Mowing - At a height of 1/8" – 3/16", daily during the months of May through September and as needed during other months of operation.
- B. Daily change cup locations on all greens and practice putting green, as needed, during the months of May through September and as needed during other months of operation. Cup location will be moved a sufficient distance from the previous placement as deemed by existing turf conditions.
- C. Daily repair of ball marks, divots, or any other damaged turf on all greens and practice green.
- D. Core aerify or solid tine or linear aeration all greens, practice putting green and nursery at least once per year during the growing season or more if necessary.
- E. Top dress all greens, practice putting green and nursery, after aerification and additionally, as needed (at least monthly during the growing season) to maintain a smooth putting surface. Topdressing shall be sand as approved by the City.
- F. Light vertical mowing of all greens, practice putting green and nursery shall be performed as necessary to produce smooth and true putting surfaces. Dethatch as needed.
- G. Fertilization - All greens, practice green, and nursery shall receive fertilization applications to promote growth and recovery.
- H. Pest Management - All greens, practice green and nursery shall receive pesticide applications as needed on a preventative or curative basis to control pests.
- I. Sodding – Areas where seeding/growing is untimely shall be resodded with a sod consistent with the type and quality of grass in the immediate surrounding area.
- J. The soil shall be analyzed periodically by an accredited soils testing laboratory. Fertilization

shall be based on the soil analysis and the recommendations provided in the analysis.

## **2. Tees - All Areas used for Tee Surface**

The objective in tee management is to quickly regenerate turf grass in areas where turf is damaged from player activity and to provide a level and firm playing surface.

- A. Mowing - All tees shall be mowed at a height of 3/8" – 5/8" a minimum of three times per week.
- B. Aerification - All tees shall be cored, deep tined, linear or quad tined aerified at least once per season or more if necessary.
- C. Topdressing - All worn areas on tees shall be top dressed at least weekly to fill divots and to level the tee surface. Topdressing material shall contain seed of bent grass, perennial ryegrasses, Kentucky bluegrass or other types as approved by the County.
- D. Vertical Mowing - All tees shall be vertically mowed as necessary to control mat, thatch build-up or uneven growth.
- E. Fertilization - All tees shall be fertilized as needed to maintain color, growth and health of the turf.
- F. Pest Management - Tees shall be kept pest free to an extent of at least 90% of the area by the proper and timely application of pre-emergent and post-emergent herbicides and insecticides.
- G. Set Up – Tee markers and all tee equipment shall be moved daily for proper spacing and control of turf wear.

## **3. Fairways - All Areas of Play except Greens, Tees, Roughs and Natural Growth Areas, including Driving Range**

Fairways are large turf areas that are subjected to more cart and vehicle traffic than greens and tees. The objective is to produce a fine fairway turf that will withstand moderately close mowing and will be tolerant to summer heat and humidity with a minimum of damage, and to produce an agronomically sound and healthy fairway turf.

- A. Mowing - All fairways shall be mowed three times per week at a height of 7/16" – 3/4" from May through September and as needed during other months of operation.
- B. Aerification - All fairways shall be aerified a minimum of once per year.
- C. Vertical Mowing - All fairways will be vertically mowed as necessary to control mat or thatch build-up.
- D. Fertilization - All fairways shall be fertilized as needed to maintain color, growth, and health of the turf.
- E. Pest Management - Fairways shall be kept pest free to an extent of at least 90% of the area by the proper and timely application of pre-emergent and post-emergent pesticides.

## **4. Roughs - All Areas of Play except Greens, Tees, Fairways and Natural Growth Areas**

- A. Mowing - All roughs shall be mowed weekly from May through September and as necessary during the other months of operation, at heights of 1.5" – 2.5".

- B. Aerification - as necessary to establish and/or maintain quality turf.
- C. Fertilization - Roughs shall be fertilized as necessary to maintain quality turf.
- D. Pest Management – Pesticides shall be applied as necessary to control pests to maintain a healthy turf.
- E. Worn Areas - Shall be sodded or overseeded and top-dressed as necessary to maintain a healthy turf.

**5. Natural Growth Areas**

All areas in which native or introduced vegetation is allowed to survive without routine mowing, cultivating, irrigation, or other routine turf maintenance procedures. They may be out of play areas, steep slopes, barriers, windbreaks or nature trails. Such areas are to be maintained free of excessive trash and noxious weeds in such manner as to comply with laws as may apply. Such natural growth areas may be improved and may occasionally be subjected to irrigation, cultivation, pruning, controlled burns or other such practices as may be necessary or desirable to establish or maintain them. They may not be either established or converted to more or less intensively managed landscape types without the approval of the City.

**6. Wildlife Management**

Wildlife are encouraged to exist on the golf course property except in cases where the wildlife is causing damage to turf or interfering with playing conditions.

### CHAPTER 3 GOLF COURSE TREES AND ORNAMENTALS

Trees are an important component to the overall quality of golf courses. The significant number of trees on the golf courses and limited available funding makes it difficult to perform a detailed appraisal of each tree on an annual basis. Evaluations should be performed from the ground level and further, more detailed inspections are to be carried out if there are any concerns. Each golf course should have a written plan that identifies the location and species of each tree, sets a plan of action for timely pruning and addresses major concerns such as disease control, removal and replacement.

1. Trees - All Trees within the Property Lines of the Golf Course
  - A. A tree management plan should be developed and implemented to assure long-term health, safety and proper location of trees.
  - B. Hazardous trees shall be removed in a timely manner.
  - C. Pruning - All trees shall be properly pruned by removing dead wood, crossing branches and hazards to maximize the health of the tree, appearance and safety.
  - D. Any tree removal and significant tree pruning shall be undertaken only with the approval of the City.
  - E. Stakes - Trees shall be staked as necessary until they are of sufficient size to stand unassisted, up to one year maximum.
  - F. Irrigation – Newly planted trees shall be irrigated to provide adequate moisture for proper establishment.
  - G. Mowing - Large area mowers shall not be used within two feet of the trunk of any tree. Proper precautions shall be taken to protect bases of trees.
  - H. Plant native species when possible. Plant the right plant in the right place.
2. Ornamentals - All Areas Planted with Ornamental Plants, not intended for Golf Play and having a Definable Border
  - A. Pest Management - All ornamental areas shall be maintained free of weeds and undesirable grass by using mechanical removal methods or applying pesticides.
  - B. Trimming - The ornamentals shall be trimmed for proper growth and appearance.
  - C. Clean-up – Ornamental areas shall be maintained free of trash and debris such as paper, drinking cans, bottles, fallen limbs and leaves.

## CHAPTER 4 IRRIGATION

### 1. Irrigation - All Equipment Required to Irrigate all Areas of the Property

- A. At all times, maintain entire irrigation system, including mainlines, valves, lateral lines, and sprinkler heads and controllers in good repair, functioning properly and conforming to all related codes and regulations. Irrigate as required to maintain adequate moisture for plant health. Adequate soil moisture shall be determined by visual observation, plant resiliency, turgidity, examining cores removed by soil probe, and moisture sensor devices. The City shall be responsible for all major repairs of well, pumping station and electrical service.
- B. While irrigating, consideration must be given to soil texture, structure, porosity, water holding capacity, drainage, compaction, precipitation rate, runoff, infiltration rate, percolation rate, evapotranspiration, seasonal temperatures, prevailing wind condition, time of day or night, type of grass plant and root structure. Proper irrigation may include syringing and hand watering to prevent wilt and desiccation.
- C. In areas where wind creates problems of spraying onto private property or road rights of way, the controllers shall be set to operate during the period of lowest wind velocity, which would normally occur at night.
- D. Monitor all systems within the golf course premises and correct for: coverage, adjustment, clogging of lines, and removal of obstacles, including plant materials, which obstruct the spray.
- E. Check system daily and adjust and/or repair any sprinkler heads causing excessive runoff, including sloped areas or which throw water directly onto roadway paving or walks within rights of way.
- F. All controllers shall be kept in proper working order, repaired as necessary, and run times adjusted as necessary to maintain proper moisture levels.
- G. A soil probe, weather station or tensiometer shall be used to determine the soil moisture content in various areas for the purpose of determining irrigation needs.
- H. All leaking or defective valves, heads, lines and controllers shall be repaired as soon as possible.
- I. All reporting requirements of the Minnesota Department of Natural Resources shall be met and copies shall be provided to the City.
- J. In the event of a reduction of the volume of water supplied to the golf course during peak demand period, the priority of water distribution shall be as follows:
  - Greens
  - Tees
  - Fairways
  - Other turf, landscape and ornamental areas



## CHAPTER 5 FEATURES AND ACCESSORIES

### FEATURES

1. **Sand Bunkers**

All sand bunkers shall be raked four times per week and edged as necessary to maintain a proper lip as designed. Replacement sand shall produce acceptable playing conditions. The sand shall meet USGA specifications for sand bunker use.

2. **Aquatic**

All lakes, ponds and streams shall be properly sealed and maintained in an environmentally sound manner.

3. **Color Areas**

The various plantings areas throughout the course shall be cultivated, weeded, and pruned on a regular basis with annual flowers replanted each year.

### ACCESSORIES

1. **Playing Equipment**

Golf course playing equipment includes the various items that are part of the course set-up or features that add to the player's comfort. This includes such things as flags, flagsticks, bunker rakes, benches, ball washers, towels, tee markers, signage, yardage markers, trash receptacles, traffic control measures and hazard stakes. These detail items are important to players who judge the overall course presentation and shall be properly utilized and maintained.

2. **Set-up**

Tee markers and all tee equipment shall be moved daily for proper teeing and control of turf wear. Change the towels as required to maintain a full supply of clean towels on each tee. Keep ball washers filled to the proper level with water and proper cleaning agent. Flush ball washers periodically to minimize odor.

3. **Construction and Remodeling**

Any change in the physical characteristics of any area of the golf course, such as addition or removal of sand bunkers, addition or removal of any hazards (water, trees, or native vegetation), movement of soil exceeding 20 cubic yards in any single area, or the modification of any portion of the golf course or the buildings, shall be undertaken only with the approval of the City.

4. **Litter Control and Recycling**

Remove all litter daily from golf course grounds including the golf course proper, clubhouse, maintenance yard, landscaped areas and driving range. Remove all trash and debris resulting from golf course maintenance as it occurs. Trash and refuse shall be collected daily and removed from the property as necessary to ensure minimal problems from refuse odors, pests and poor appearance. Approved trash receptacles shall be conveniently stationed on tees, in and nearby buildings, and emptied daily. Recyclable materials shall be collected and deposited in the proper refuse containers.

## CHAPTER 6 SUPPORT FACILITIES

### 1. Buildings and Structures

All maintenance buildings and structures shall be maintained in good repair at all times. Surrounding areas shall be maintained free of weeds, brush, disorganized junk or broken-down equipment, trash piles and unsightly areas. Interior areas shall be clean and neatly organized, safe and sanitary, for customers and employees. Painting, rodent and insect control, and landscaping shall be performed as necessary. Housekeeping duties shall be performed as needed.

### 2. Cart Paths

Golf course cart paths assure the efficient movement of players throughout the golf course and are important for controlling wear patterns around greens, tees and fairways. Well-maintained paths also add to the overall positive experience for the customers. All cart paths shall be maintained in a smooth and clean condition, and repaired promptly as needed.

### 3. Parking Lots

Parking lots contribute to the first impression players have when they visit the course. Golf course staff is responsible for assuring that the parking lots are cleaned and maintained in the proper manner for safe use by customers. Golf course staff is responsible for maintaining planting areas in the parking lot islands and areas adjacent to the lots and assuring that the lots are attractive for the customers.

### 4. Edging

All sidewalks, patios and cart paths shall be kept edged and free of vegetation. Edging around valve boxes, meter boxes, backflow preventers, etc. shall be maintained as needed to ensure that there is no obstruction during play.

### 5. Fences - All Fences and Walls

Repair or replace as necessary all broken or damaged fences, gates, and locking devices needed for the protection of the golf course, equipment or buildings.

### 6. Storage

All legal requirements and safety regulations in the use and storage of chemicals, hazardous materials, supplies and equipment shall be followed at all times in accordance with federal, state and local laws regulations and ordinances.

## CHAPTER 7 CONCLUSION

These maintenance standards indicate minimum practices necessary for the proper maintenance of the Saint Paul golf courses. They do not limit the responsibility of the golf course staff to provide the proper care and maintenance of the property. This document will be reviewed and revised every two years.