ORDINANCE No. 121351

COUNCIL BILL No. 114756

AN ORDINANCE relating to the City's municipal golf courses; authorizing the Superintendent of Parks and Recreation to extend and to enter into one or more management contracts for the operation of the City's municipal golf courses; increasing the 2003 Adopted Budget of the Department of Parks and Recreation to reflect a new management structure for the City's three eighteen hole golf courses; transferring money; and ratifying the assumption of unpaid financial obligations and lease arrangements from the former golf operator; all by a three-fourths vote of the City Council

COMPTROLLER FILE No. _____

Introduced: NOV 10 2003	By: DRAGO
Referred: NOV 10 2003	To: BUDGET
Referred:	To:
Referred:	To:
Reported: 11-24-03	Second Reading:
Third Reading: 11-24-03	Signed: 11-24-03
Presented to Mayor:	Approved: 12/05/03
Returned to City Clerk: 12/05/03	Published: TTH 5pp.
Vetoed by Mayor:	Veto Published:
Passed over Veto:	Veto Sustained:

US5017

The City of Seattle--Legislative

REPORT OF COMMITTEE

Honorable President:

Your Committee on _____

to which was referred the within Council Bill No. _____
report that we have considered the same and respectfully recommend that the same

Pass JC, RC, JD, RM, MP,
11-24-03 Passed 9-0

Committee Chair

SMEAD 48 YSP

The City of Seattle--Legislative Department

REPORT OF COMMITTEE

Date Reported and Adopted

Honorable President:

Your Committee on

to which was referred the within Council Bill No.
report that we have considered the same and respectfully recommed that the same:

Pazo JC, RC, JD, RM, MP, PS, HW

11-24-03 Passed 9-0

Committee Chair

SMEAD 45 YSP 17793

NOTICE: IF THE DOCUMENT IN THIS FRAME IS LESS CLEAR THAN THIS NOTICE
IT IS DUE TO THE QUALITY OF THE DOCUMENT.

Sarah Welch
MGSord
10/31/03
Version #9

ORDINANCE 121351

AN ORDINANCE relating to the City's municipal golf courses; authorizing the Superintendent of Parks and Recreation to extend and to enter into one or more management contracts for the operation of the City's municipal golf courses; increasing the 2003 Adopted Budget of the Department of Parks and Recreation to reflect a new management structure for the City's three eighteen hole golf courses; transferring money; and ratifying the assumption of unpaid financial obligations and lease arrangements from the former golf operator; all by a three-fourths vote of the City Council.

WHEREAS, the Seattle City Council authorized an agreement for the operation of its three municipal golf courses by Municipal Golf of Seattle (MGS), a not-for-profit corporation, through Ordinance 117663 in 1995; and

WHEREAS, as authorized by Ordinance 120028, the City entered into an Agreement regarding Assignment of Golf Course Operation between Frontier Bank ("Bank"), MGS and the City to allow MGS to borrow funds to make capital improvements to the golf courses; and

WHEREAS, by late 2002, MGS' deteriorating financial condition led both MGS and the City to conclude that MGS was unable to continue to operate the courses; and

WHEREAS, between 2002 and July 2003, MGS failed to pay the Department of Parks and Recreation for approximately $2.1 million in maintenance services that were provided on the golf courses by the Department's staff; and

WHEREAS, on May 9, 2003, the City notified the Bank that MGS was in default of the Golf Course Operation Agreement; and

WHEREAS, on July 3, 2003, the Bank held MGS' bank loan in default, accelerated the entire indebtedness of the loan, and exercised its right of setoff against MGS' bank accounts; and

WHEREAS, the Department explored options to provide for the orderly transition of golf management to a responsible entity and concluded that the Interbay Golf Center's then-current operator, Premier Golf Centers, LLC (Premier), was uniquely suited to manage the three municipal courses until the Department could conduct a search for a permanent operator; and,

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WHEREAS, in order to prevent closure of the facilities, the Superintendent of Parks and Recreation entered into an emergency agreement with Premier to operate the three municipal golf courses; and

WHEREAS, the Superintendent of Parks and Recreation entered into a mutually agreeable termination agreement with MGS and a Settlement and Mutual Release with the Bank on July 11, 2003; and

WHEREAS, Premier has been satisfactorily managing the City's Interbay Golf Center since March 1, 2001, under a similar management agreement to what the Executive has proposed as an interim operating arrangement for the City's three municipal golf courses; and the City wishes to extend that agreement through December 31, 2004 and enter into an agreement with Premier for the City's three municipal golf courses, NOW, THEREFORE,

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. The Superintendent of Parks and Recreation is authorized to extend the Interim Management Contract for Interbay Golf Center with Premier Golf Centers, LLC substantially in the form of Attachment '1' to this ordinance, until December 31, 2004.

Section 2. The Superintendent of Parks and Recreation is authorized to enter into an Interim Management Contract with Premier Golf Centers, LLC, until December 31, 2004, substantially in the form of Attachment '2' to this ordinance to manage the three eighteen hole golf courses, Jackson Park, Jefferson Park and West Seattle Golf Course, (the "Three Municipal Golf Facilities").

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Section 3. In order to pay for necessary costs and expenses incurred or to be incurred in 2003, but for which insufficient appropriations were made, the appropriation for the following in the 2003 Budget is increased from the fund shown, as follows:

Department	Fund	Budget Control Level	Amount
Parks and Recreation	Park and Recreation Fund (10200)	Park Cleaning, Landscaping, and Restoration (K3220)	$2,300,000

The above appropriation shall provide for expenditures made by the Department of Parks and Recreation for the operation of the Three Municipal Golf Facilities, including management fees, and other direct and indirect expenses of the Department of Parks and Recreation that are related to the Three Municipal Golf Facilities.

Section 4. Revenues from the operation of the Three Municipal Golf Facilities shall be deposited into the Park and Recreation Fund.

Section 5. The assumption by the Department of Parks and Recreation, pursuant to the termination agreement with MGS, of certain MGS debts and obligations, as well as the equipment leases which had been previously authorized by MGS, is hereby ratified.

Section 6. To support the appropriation made in Section 7 below, cash is hereby transferred as shown in the following table:

Fund	Amount Transferred
Cumulative Reserve Subfund Unrestricted (00164)	$125,000 transferred in
Park and Recreation Fund (10200)	$125,000 transferred out

Section 7. In order to pay for necessary costs and expenses incurred or to be incurred in 2003, but for which insufficient appropriations were made, the appropriation for the following in the 2003 Budget is increased from the fund shown, as follows, contingent upon and only to the extent of the execution of the transfer authorized in Section 6 above:

Fund	Department	Budget Control Level/CIP Program	Amount
Cumulative Reserve Subfund – Unrestricted (00164)	Parks and Recreation	K72553: Jefferson Golf Crew Headquarters	$125,000

Section 8. In accordance with RCW 35.32A.060, by reason of the facts above stated, the foregoing appropriations are made to meet actual necessary expenditures of the City for which insufficient or no appropriation has been made due to causes which could not reasonably have been foreseen at the time of the making of the 2003 Budget.

Section 9. Any act consistent with the authority and prior to the effective date of this ordinance is hereby ratified and confirmed. In particular, the decision of the Superintendent of Parks and Recreation to enter into an emergency contract with Premier Golf Centers, LLC for the operation of the Three Municipal Golf Facilities is hereby ratified and confirmed. Golf fees that have been charged to the playing public since the termination of the MGS Agreement are hereby ratified and confirmed.

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10/31/03
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Section 10. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by a three-fourths (3/4) vote of all the members of the City Council the 24th day of November, 2003, and signed by me in open session in authentication of its passage this 24th day of November, 2003.

Peter Steinbrueck
President _____ of the City Council

Approved by me this 2 day of December, 2003.

Gregory J. Nickels, Mayor

Filed by me this 3 day of Dec, 2003.

Judith E. Pippin
City Clerk

(Seal)

Attachment 1: Interim Management Contract for Interbay Golf Center with Premier Golf Centers, LLC

Attachment 2: Interim Management Contract with Premier Golf Centers, LLC

ACTING CITY CLERK

Attachment 1: Interim Management Contract for Interbay Golf Center with Premier Golf Centers, LLC

FIRST AMENDMENT TO
THE CITY OF SEATTLE
INTERIM MANAGEMENT AGREEMENT FOR THE
OPERATION AND MAINTENANCE OF THE
INTERBAY GOLF COURSE AND RELATED FACILITIES

THIS FIRST AMENDMENT (the "Amendment") is entered into by and among THE CITY OF SEATTLE ("City"), a municipal corporation of the State of Washington, acting by and through its Department of Parks and Recreation (the "Department") and the Superintendent thereof, and Premier Golf Centers, LLC, a California Limited Liability Company, (referred to herein as "OPERATOR").

WHEREAS, the City and the OPERATOR (the "Parties") have entered into an Interim Management Agreement for the Operation and Maintenance of the Interbay Golf Course and Related Facilities (the "Agreement") the term of which ends on December 31, 2003; and

WHEREAS, the Parties desire to extend the termination date of the Agreement until December 31, 2004; and

WHEREAS, the Parties mutually desire to execute certain other amendments to the Agreement;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows:

1. Section 4.1 of the Agreement is amended to extend the Term of the Agreement until December 31, 2004.

2. Section 6.1 is amended as follows:

Annual Budget. OPERATOR shall submit to the City, for its review and approval, an annual budget ("Annual Budget") for each Operating Year. The Annual Budget for the first Operating Year shall be submitted by OPERATOR to the City within 30 days of the Effective Date. The City shall approve, disapprove or conditionally

approve the Annual Budget within thirty days of its receipt thereof, and the City's approval shall not be unreasonably withheld. For all subsequent Operating Years, OPERATOR shall submit to the City an Annual Budget on or before November 1 of the Operating Year immediately preceding the Operating Year at issue in the Annual Budget. The City shall approve, disapprove or conditionally approve these Annual Budgets on or before January 1 of the Operating Year at issue in the Annual Budget, and the City's approval shall not be unreasonably withheld. Each Annual Budget shall be in a format acceptable to City and shall include: (1) an optimistic budget which sets forth a budget assuming the most favorable business conditions and results; and (2) a realistic budget which sets forth a budget assuming the most likely, reasonable conditions and results. Each Annual Budget also shall include, but not be limited to, the prices as set forth in Section 6.12, the projected number of employees, a detailed description of all employee incentive compensation and employee benefits, the projected number of employees, the projected number of rounds of golf played and Driving Range buckets of golf balls purchased, and the Projected Gross Revenue, Projected Gross Course Revenue, Projected Gross Range Revenue, Projected Gross Pro Shop Revenue, Projected Gross Lesson Revenue and Projected Gross Restaurant Revenue, Projected Gross 18 Hole Putting Course Revenue, Projected Other Revenue and the projected amount of Direct Costs, Capital Expenditures, and major maintenance expenditures, a marketing plan, and any proposed plans for any improvements, upgrading or changes to the Interbay Golf Center. After written notice to and consultation with OPERATOR, the Superintendent shall have the authority to make reasonable changes to the Annual Budget including, but not limited to, the method of allocation for costs, expenditures and revenues.

3. Subsections 7.1B. and C. are amended as follows:

B. Incentive compensation programs for the Class "A" PGA Golf Professional and qualified golf instructors. Only costs of incentives for the Class "A" PGA Golf Professional and qualified golf instructors paid in accordance with incentive compensation programs approved by the Superintendent in the Annual Budget as set forth in Section 6.1 or other benefits given to the Class "A" PGA Golf Professional and qualified golf instructors as set forth in the Golf Course Manual (Exhibit B) shall be Direct Costs.

C. Employee benefits including vacation, sick leave, health insurance, disability insurance, worker's compensation insurance and incentive payments. Only costs of incentive payments paid in accordance with the Annual Budget approved by the Superintendent as set forth in Section 6.1 or other benefits given to employees as set forth in the Golf Course Manual (Exhibit B) shall be Direct Costs.

4. Except as specifically amended by this Amendment, all other terms and conditions of the Agreement shall remain unchanged and in full force and effect. Capitalized terms used herein shall have the same meaning as defined in the Agreement.

DATED this _____ day of _____, 200__.

PREMIER GOLF CENTERS, LLC

By: _____
Its: _____

THE CITY OF SEATTLE

By: _____
SUPERINTENDENT OF THE
DEPARTMENT OF PARKS
AND RECREATION

Attachment 2: Interim Management Contract with Premier Golf Centers, LLC

THE CITY OF SEATTLE
MANAGEMENT AGREEMENT FOR THE OPERATION AND MAINTENANCE OF THE CITY GOLF COURSES AND RELATED FACILITIES

THIS GOLF COURSE MANAGEMENT AGREEMENT (the "Agreement") is entered into by and among **THE CITY OF SEATTLE** ("City"), a municipal corporation of the State of Washington, acting by and through its Department of Parks and Recreation (the "Department") and the Superintendent thereof, and **PREMIER GOLF CENTERS, LLC**, a California Limited Liability Company, ("OPERATOR"), and is effective as of _____, 2003 (the "Effective Date").

RECITALS:

Pursuant to Article XI of the Seattle Charter, the Superintendent has the responsibility for the operation and control of the Parks and Recreation system of the City.

The City owns the Jackson, Jefferson and West Seattle Golf Courses and related facilities ("Golf Courses") more particularly described in Exhibit A attached hereto and incorporated herein by this reference.

The City desires to provide for the interim overall management and operation of the Golf Courses and the collection of fees therefrom to insure the highest quality of golf programs and related benefits for the public.

OPERATOR is well-qualified through its experience to manage and operate the Golf Courses facilities on an interim basis.

The City and OPERATOR agree that the primary objectives for OPERATOR'S performance under this Agreement are as follows:

a. Seamless transition from the previous operator, Municipal Golf of Seattle, to OPERATOR;

b. Continuation and, where possible, improvement of existing operations, maintenance, and customer service;

c. Continuation of affordable golf and related services; and

d. Increases in public use and associated revenues.

e. Due to the unexpected cessation of the management and operation of the Golf Courses by the prior operator, it was necessary for the City to enter into an agreement with OPERATOR to manage and operate the courses on an emergency basis. The parties now desire to replace that emergency agreement with this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows:

1. DEFINITIONS

The following terms shall be defined as follows for the purposes of this Agreement:

1.1 Actual Gross Course Revenue. "Actual Gross Course Revenue" shall mean any and all revenues earned during an Operating Year attributable to operations directly relating to the Golf Courses.

1.2 Actual Gross Lesson Revenue. "Actual Gross Lesson Revenue" shall mean any and all revenues earned during an Operating Year attributable to operations directly relating to Golf Lessons.

1.3 Actual Gross Range Revenue. "Actual Gross Range Revenue" shall mean any and all revenues earned during an Operating Year attributable to operations directly relating to the Driving Range.

1.4 Actual Gross Restaurant Revenue. "Actual Gross Restaurant Revenue" shall mean any and all revenues earned during an Operating Year attributable to operations directly relating to the Restaurants.

1.5 Actual Gross Shop Revenue. "Actual Gross Shop Revenue" shall mean any and all revenues earned during an Operating Year attributable to operations directly relating to the Pro Shops.

1.6 Actual Gross Golf Car Rentals. "Actual Gross Golf Car Rental" shall mean all revenues earned during an Operating Year attributable to operations directly related to the rental of golf cars.

1.7 Actual Other Revenue. "Actual Other Revenue" shall mean any and all revenues derived from sources other than those in sections 1.1 through 1.6.

1.8 Actual Gross Revenue. "Actual Gross Revenue" shall mean any and all revenues earned attributable to operations directly relating to the Golf Courses including, but not limited to, green fees, merchandise sales, Driving Range fees, Golf Lesson fees, Golf Car Rentals and food and beverage sales. The sum of the Actual Gross Course Revenue, Actual Gross Lesson Revenue, Actual Gross Range Revenue, Actual Gross Restaurant Revenue, Actual Other Revenue and Actual Gross Shop Revenue shall equal the Actual Gross Revenue.

1.9 Annual Budget. "Annual Budget" shall have the meaning set forth in Section 6.1 of the Agreement.

1.10 Annual Gross Revenue. "Annual Gross Revenue" shall mean any and all revenues earned during an Operating Year attributable to operations directly relating to the Golf Courses including, but not limited to, green fees, merchandise sales, Driving Range fees, Golf Lesson fees, Golf Car Rentals and

food and beverage sales. The sum of the Actual Gross Course Revenue, Actual Gross Lesson Revenue, Actual Gross Range Revenue, Actual Gross Restaurant Revenue, Actual Other Revenue and Actual Gross Shop Revenue for an Operating Year shall equal the Annual Gross Revenue for that Operating Year.

1.11 Capital Expenditure. "Capital Expenditure" shall have the meaning set forth in Section 7.4 of the Agreement.

1.12 Direct Cost. "Direct Cost" shall have the meaning set forth in Section 7.1 of the Agreement.

1.13 Superintendent. "Superintendent" shall mean the Superintendent of the Department of Parks and Recreation or his or her authorized and appointed designee.

1.14 Driving Range. "Driving Range" shall mean the golf ball driving practice facility located at the Jefferson Golf Course and shown on the diagram attached hereto in Exhibit A.

1.15 Golf Courses. "Golf Courses" shall mean all of the buildings, grounds, fixtures, structures, restrooms, equipment, computers, irrigation and controls, tools, vehicles, fencing and all appurtenances thereto involving the Jefferson, Jackson and West Seattle Golf Courses as shown in Exhibit A.

1.16 Golf Course Manual. "Golf Course Manual" shall mean the manual for the operation of the Golf Courses attached hereto as Exhibit B [illegible] all reasonable revisions thereto promulgated by the Superintendent from time to time made after written notice to and consultation with OPERATOR.

1.17 Golf Lessons. "Golf Lessons" shall mean the professional golf instruction given at the Golf Courses by either the Class "A" PGA Golf Professional or qualified golf instructors employed or subcontracted there by OPERATOR.

1.18 Operating Year.

A. The first Operating Year shall commence on the Effective Date and end on December 31, 2003.

B. Each Operating Year thereafter shall comprise the period of twelve (12) full calendar months, commencing on January 1 and ending on December 31.

1.19 Projected Gross Course Revenue. "Projected Gross Course Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to operations directly relating to the Golf Courses.

1.20 Projected Gross Revenue. "Projected Gross Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to operations related to the Golf Courses including, but not limited to, green fees, merchandise sales, Driving Range fees, Golf Lesson fees, food and beverage sales, and other revenue. The sum of the Projected Gross Course Revenue, Projected Gross Lesson Revenue, Projected Golf Car Revenue, Projected Gross

Range Revenue, Projected Gross Restaurant Revenue, Projected Other Revenues and Projected Gross Pro Shop Revenue for an Operating Year shall equal the Projected Gross Revenue for that Operating Year.

1.21 Projected Gross Lesson Revenue. "Projected Gross Lesson Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to operations directly relating to the Golf Lessons.

1.22 Projected Gross Range Revenue. "Projected Gross Range Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to operations directly relating to the Driving Range.

1.23 Projected Gross Restaurant Revenue. "Projected Gross Restaurant Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to operations directly relating to the Restaurants.

1.24 Projected Gross Pro Shop Revenue. "Projected Gross Pro Shop Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to operations directly relating to the Pro Shops.

1.25 Projected Gross Golf Car Revenue. "Projected Gross Golf Car Revenue" shall mean the projected amount of revenues to be earned during an Operating Year attributable to the operations directly relating to Golf Car Rentals.

1.26 Projected Other Revenue. "Projected Other Revenue" shall mean the projected amount of any and all revenues derived from sources other than those in sections 1.19 and 1.21 through 1.26.

1.27 Pro Shops. "Pro Shops" shall mean the golf professional and merchandise facilities located at the Golf Courses and shown on the diagram attached hereto in Exhibit A.

1.28 Restaurants. "Restaurants" shall mean the food and beverage dining facilities located at the Golf Courses and shown on the diagram attached hereto in Exhibit A.

1.29 Starting Balance. "Starting Balance" shall have the meaning set forth in Section 9.3 of the Agreement.

1.30 "City" means The City of Seattle.

1.31 "Department" means the Department of Parks and Recreation of the City.

1.32 "Effective Date" shall mean July 14, 2003.

1.33 "OPERATOR" means Premier Golf Centers, LLC, and its subsidiary, PGC Interbay, LLC.

1.34 "Maintenance Agreement" shall mean that certain Maintenance Agreement set forth in Exhibit C.

1.35 "First Tee Agreement" shall mean the USE AGREEMENT between the City and SEATTLE JUNIOR GOLF FOUNDATION, dba FIRST TEE OF SEATTLE, a Washington non-profit corporation, attached hereto as Exhibit F.

1.36 "Property" means the real property upon which the Golf Courses are located. The Property is described in Exhibit A.

1.37 "Term" shall have the meaning set forth in Article 4.

1.38 Interpretation of Terms. In the event of any conflict in the definition or interpretation of any word, responsibility, service or schedule between this Agreement and the exhibits attached hereto, such conflict or inconsistency shall be resolved by giving precedence in the following priority order: first to the Agreement; then to the Maintenance Agreement attached hereto in Exhibit C; and then to the Golf Course Manual attached hereto in Exhibit B.

2. RETENTION OF OPERATOR

2.1 Golf Courses. The City hereby retains OPERATOR for the interim management and operation of the Golf Courses, including, but not limited to, the Golf Courses, Pro Shops, Storage Spaces, Restaurants, Driving Range, Golf Car Rental, restrooms and all other buildings located at the Golf Courses.

3. ACCEPTANCE

3.1 Inspection. Prior to the effective date of this Agreement, OPERATOR has made an inspection of the Golf Courses and hereby accepts the condition of it for purposes of this Agreement on an "as is" basis.

4. TERM

4.1 Term of Agreement. The initial term of this Agreement shall begin on the Effective Date and terminate (unless extended by mutual agreement) on December 31, 2004.

4.2 Effect of Termination. Upon termination of the Agreement, all employees and agents of OPERATOR shall vacate the premises of the Golf Courses and shall have no further rights or duties thereon, except to ensure and organize a proper transfer of the premises, property and records of the Golf Courses.

5. OPERATOR'S BASIC SERVICE OBLIGATIONS

5.1 Golf Professional Services. OPERATOR shall sell, rent, store and repair golf equipment, sell golf related clothing and supplies, provide instructional services in the playing of golf, and operate the Golf Courses, Pro Shops, Golf Car Rentals and Driving Range as set forth in this Agreement. OPERATOR shall employ Class "A" PGA Golf Professionals at the Golf Courses, subject to the approval of the Superintendent, which approval shall not be unreasonably withheld.

A. Merchandise. OPERATOR shall provide and maintain in the Pro Shops such inventory of golf merchandise as is deemed necessary by the Superintendent to adequately

meet the demand of the public. After written notice to and consultation with OPERATOR, the Superintendent shall have the right to prohibit the sale and rental of any item of merchandise on finding(s) that the item(s) is of such inferior quality as to not be in the public interest to be offered for sale or that such item(s) is not necessary or desirable for proper service to the public.

B. Golf Instruction. OPERATOR shall provide for golf instruction by employing qualified instructors accredited by the PGA and the PGA apprentice program. OPERATOR shall cause all golf instructors including the Class "A" PGA Golf Professional to comply with the rules and regulations of the Golf Course Manual.

C. Junior Golf Program. OPERATOR shall implement and promote a junior golf program as provided in the Golf Course Manual by providing group lessons, range balls and general golf instructions, and by conducting junior tournaments. OPERATOR shall comply with the terms of the FIRST TEE AGREEMENT.

D. Minimum Hours of Operation. At a minimum, the facilities shall be open and available to the public in accordance with the following daily hours of operation:

Facility	Hours of Operations
Driving Range	6:00 a.m. to 10:00 p.m. during Peak Season
	8:00 a.m. to 10:00 p.m. during Off Season
	(10:00 a.m. on Mondays)
Golf Courses	Dawn to dusk
Pro Shops	Dawn to dusk
Restaurants	7:00 a.m. to dusk during Peak Season
	8:00 a.m. to dusk during Off Season

For purposes of this Agreement, Peak Season shall mean the months of April through October and Off Season shall mean the months of November through March. The above minimum daily hours of operation may be reasonably changed or revised by the Superintendent from time to time made after written notice to and consultation with OPERATOR.

5.3 Building and Equipment Maintenance Services. OPERATOR shall keep and maintain the premises of the Golf Courses, excluding grounds maintenance which shall be provided by the City in accordance with the Maintenance Agreement, including but not limited to, the Pro Shops, restrooms, storage spaces, the Driving Range, Golf Car Rentals and Restaurants, and all buildings, structures, improvements, fixtures, equipment and utility systems which may now or hereafter exist on or in the premises, in good, operable, usable and sanitary order and repair and in a good condition throughout the term of this Agreement, providing for such repairs, replacements, rebuilding and restoration as may be required in compliance with this Agreement. All such replacements, rebuilding and restoration, but not repair, shall be approved

by the Superintendent prior to implementation, which approval shall not be unreasonably withheld.

5.4 Improvements. Any improvements, additions, alterations or changes (collectively, "improvements") to the Golf Courses made by OPERATOR shall be subject to, prior to the commencement of the improvements work, written approval by the Superintendent and the securing of applicable permits, and compliance with such terms and conditions as may be imposed by the Superintendent and shall be reimbursable under 7.4 of this contract.

5.5 City Ownership. Ownership of all Golf Courses structures, buildings or improvements thereto or thereon, merchandise, hand cars and Golf Course maintenance equipment constructed or acquired by the City, or OPERATOR on behalf of the City, and all alterations, additions or betterments thereto, shall remain with and owned by the City.

5.6 Failure to Perform. Should OPERATOR fail, after thirty (30) days notice from the City of the need therefor, to perform its obligations under this Article 5, the City may enter upon the premises of the Golf Courses and perform OPERATOR's obligations. Notwithstanding the preceding sentence, in the event of an emergency, the City may immediately enter upon these premises without notice to OPERATOR to perform emergency repairs and restoration. The cost of such repairs and restoration that are incurred by OPERATOR will be considered a Direct Cost unless they constitute a Capital Expenditure.

6. OPERATING RESPONSIBILITIES

6.1 Annual Budget. OPERATOR shall submit to the City, for its review and approval, an annual budget ("Annual Budget") for each Operating Year. The Annual Budget for the first Operating Year shall be submitted by OPERATOR to the City within 30 days of the Effective Date. The City shall approve, disapprove or conditionally approve the Annual Budget within thirty days of its receipt thereof, and the City's approval shall not be unreasonably withheld. For all subsequent Operating Years, OPERATOR shall submit to the City an Annual Budget on or before November 1 of the Operating Year immediately preceding the Operating Year at issue in the Annual Budget. The City shall approve, disapprove or conditionally approve these Annual Budgets before January 1 of the Operating Year at issue in the Annual Budget, and the City's approval shall not be unreasonably withheld. Each Annual Budget shall be in a format acceptable to City and shall include, but not be limited to, the p[illegible]es as set forth in Section 6.12, the projected number of employees, a detailed description of all employee incentive compensation and employee benefits, the projected number of rounds of golf played and Driving Range buckets of golf balls purchased, and the Projected Gross Revenue, Projected Gross Course Revenue, Projected Gross Range Revenue, Projected Gross Pro Shop Revenue, Projected Gross Lesson Revenue, Projected Gross Golf Car Revenue and Projected Gross Restaurant Revenue, Projected Other Revenue and the projected amount of Direct Costs, Capital Expenditures, and major maintenance expenditures, a marketing plan, and any proposed plans for any improvements, upgrading or changes to the Golf Courses. After written notice to and consultation with OPERATOR, the Superintendent shall have the authority to make reasonable changes to the Annual Budget including, but not limited to, the method of allocation for costs, expenditures and revenues.

6.2 Annual Reports. OPERATOR shall submit to the City, for its review and approval, on or before February 15 of each Operating Year, not including the first Operating Year, an annual report ("Annual Report"). Each Annual Report shall include a summary regarding the physical condition of the Golf Courses and any repairs or improvements made during the most recently concluded Operating Year. Each Annual Report also shall include a summary of the financial condition of the Golf Courses including the Annual Gross Revenue, Actual Gross Course Revenue, Actual Gross Range Revenue, Actual Gross Shop Revenue, Actual Gross Lesson Revenue, Actual Gross Restaurant Revenue, Actual Gross Golf Car Revenue, Actual Other Revenues, the total amount of Direct Costs, the total amount of Capital Expenditures, and the total amount of major maintenance expenditures for the Operating Year described in the Annual Report.

6.3 Compliance with Laws. The parties shall comply with all municipal ordinances and all state and federal laws and regulations applicable to the terms and conditions of this Agreement. The parties shall not knowingly permit any illegal activities to be conducted on or at the premises of the Golf Courses. If any permits or licenses are required, OPERATOR shall obtain all such required permits or licenses from the appropriate regulatory agency before undertaking the regulated activity.

6.4 Compliance with Rules and Regulations. OPERATOR shall comply with all rules and regulations set forth in the Golf Course Manual and will enforce all such rules at the Golf Courses.

6.5 OPERATOR's Obligations to Refrain From Discrimination. OPERATOR agrees to comply with all state and local laws prohibiting discrimination with regard to creed, religion, race, age, color, sex, marital status, sexual orientation, gender identity, political ideology, ancestry, national origin, or the presence of any sensory, mental or physical handicap.

During the performance of this Agreement, OPERATOR agrees as follows:

OPERATOR will not discriminate against any employee or applicant for employment because of creed, religion, race, age, color, sex, marital status, sexual orientation, gender identity, political ideology, ancestry, national origin, or the presence of any sensory, mental or physical handicap, unless based upon a bona fide occupational qualification. OPERATOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their creed, religion, race, age, color, sex, national origin, marital status, political ideology, ancestry, sexual orientation, gender identity or the presence of any sensory, mental or physical handicap. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. OPERATOR agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause. OPERATOR will take affirmative action to ensure that all of its employees, agents and subcontractors adhere to these provisions; provided, nothing herein shall prevent an employer from giving preference in employment to members of his/her immediate family.

OPERATOR will, upon the request of the Director (as used herein Director means the Director of Executive Administration, or his/her designee) furnish to the Director on such form as may be provided therefor, a report of the affirmative action taken by OPERATOR in implementing the terms of this provision, and will permit access to his records of employment, employment advertisements, application forms, other pertinent data and records requested by the Director for the purpose of investigation to determine compliance with these provisions.

If, upon investigation, the Director determines that there is probable cause to believe that OPERATOR has failed to comply with any of the terms of these provisions, OPERATOR shall be so notified in writing. The contracting authority shall give OPERATOR an opportunity to be heard, after ten (10) days' notice. If the contracting authority concurs in the findings of the Director, it may suspend or terminate this Agreement in accordance with law.

Failure to comply with any of the terms of these provisions shall constitute a breach of this Agreement.

The foregoing provisions will be inserted in all subcontracts entered into under this Agreement.

6.6 Signs. OPERATOR shall not post any signs, other than normal day-to-day operating prices and activity signs, at the Golf Courses without the prior approval of the Superintendent.

6.7 Public Use: Marketing. OPERATOR shall use its best efforts to maximize the public use of the Golf Courses. OPERATOR shall use its best efforts to effectively market and promote the Golf Courses to insure its financial and operating success. For each Operating Year, OPERATOR shall submit to the City a report along with the Annual Report concerning all activities undertaken by OPERATOR with respect to the approved marketing and promotion plan for the applicable Operating Year.

6.8 Utilities. Upon commencement of the term of this Agreement, OPERATOR shall be responsible for arranging for the utility services required by the Golf Courses, including, but not limited to, water, gas, electricity, sewer service and trash removal. OPERATOR acknowledges that during the term of this Agreement there may be a defect, deficiency or impairment of any utility system, water system, water supply system, drainage system, waste system, heating or gas system, or electrical apparatus or wires serving the Golf Courses. Any expenses incurred by OPERATOR to correct any such defect, deficiency or impairment shall be a Direct Cost.

6.9 Safety. OPERATOR shall immediately correct any unsafe conditions to the premises of the Golf Courses, or notify the City of any potentially unsafe conditions, as well as any potentially unsafe practices occurring thereon, that are known by OPERATOR or should have been known by OPERATOR. OPERATOR shall obtain emergency medical care as soon as reasonably possible for any member of the public on or at these premises who is in need thereof because of illness or injury. OPERATOR shall cooperate fully with the City in the investigation of any accidental injury or death occurring at the Golf Courses and shall submit to the Superintendent promptly an accident report describing any injuries or deaths at the Golf Courses. An incident log will be maintained at the Golf Courses.

6.10 Use of Facilities Restrictions. OPERATOR shall obtain from the Superintendent prior written approval of (1) any events or activities not otherwise specifically provided for or authorized under the Agreement, or (2) any extraordinary events or activities requiring the exclusive use of the Golf Courses or any portion thereof.

6.11 Meetings. Representatives of OPERATOR and the Superintendent shall meet on a quarterly schedule and at such other times as may be required by the City to review OPERATOR's performance under this Agreement, review the monthly financial reports submitted by OPERATOR, and discuss any problems or matters as determined by the City.

6.12 Fee Structure. With the prior approval in writing of the Superintendent, the OPERATOR shall set in-season fees for rounds of golf, cart fees, driving range fees and fees for all other golf services at the Golf Courses. The OPERATOR, in the exercise of its professional judgment, shall set such fees at such rates that will best meet the goals of maximizing Golf Courses net revenue and the positive golfing experience of golfers of all ages and skills. The OPERATOR will set and implement seasonal fees at or below the established maximum fees stated in this Agreement. The maximum fees (tax included) for the following services shall be as follows:

a. Greens Fees
   - (18 holes) $35.00
   - (9 holes) $19.00

b. Cart Rentals
   - Golf Cars $27.00
   - Pull Carts $5.00

c. Driving Range Balls (Bucket Size)
   - Small (30 balls) $4.00
   - Medium (60 balls) $7.00
   - Large (90 balls) $10.00

d. Club Rentals
   - 9-holes $7.50
   - 18 holes $15.00

e. Restaurants/Pro Shops/Lessons
   - The OPERATOR shall set prices in the restaurants at such levels as to meet or exceed the Projected Gross Restaurant Revenues in the Annual Budget.
   - The OPERATOR shall set prices in the Pro Shops at such levels as to meet or exceed the Projected Gross Pro Shop Revenues in the Annual Budget.
   - The OPERATOR shall set prices for Lesson at such levels as to meet or exceed the Projected Gross Lessons Revenues in the Annual Budget.

The OPERATOR, in the exercise of its professional judgment and to meet its goals of maximizing Golf Courses net revenue and the positive golfing experience of golfers of all ages and skills, also may establish: 1) off-season fees for rounds of golf, cart fees, driving range fees and fees for all other golf services at the Golf Courses and provide written notice to the Department within seven (7) days of the implementation of such off-season fees; and/or 2) temporarily lower fees, provide discounts, or conduct promotional programs.

In the event that the OPERATOR desires an increase in the maximum fees authorized under this Agreement, the OPERATOR shall submit such proposed changes to the Department for approval at least 90 days prior to the proposed implementation date. The parties recognize that any increase in the maximum fees authorized under this Agreement can be approved only by ordinance, and that, in the event that the Superintendent is in agreement with the proposed increases, the 90 day period is intended to give the Department time to seek ordinance approval for the proposed increases.

A. Goods and Services. OPERATOR shall at all times maintain a complete list or schedule of the prices charged for all goods and services supplied to the public by or at the Golf Courses. Such list or schedule of prices shall be included in each Annual Budget and provided to the Superintendent upon his request. Such prices shall be fair and reasonable based on the following considerations: that the Golf Courses are intended to serve the needs of the public with the goods and services supplied at a fair and reasonable cost; that the prices charged should be comparable to prices charged for similar goods and services in the general area; and that the profit margin should be reasonable considering the cost of providing the goods or services in compliance with the obligations of this Agreement. If the Superintendent notifies OPERATOR that fee or a price being charged is not fair and reasonable, OPERATOR shall have the right to confer with the Superintendent and justify such fee. Following reasonable conference and consultation thereon, OPERATOR shall make such fee/price adjustments as may be ordered by the Superintendent and provided that the City shall not price any item below its wholesale cost.

B. Green and Driving Range Fees. OPERATOR shall set forth in each Annual Budget the green fees, driving range fees, hand car rental fees and other equipment rental fees for the Operating Year at issue; provided, however, during the term of the Agreement, after written notice to and consultation with OPERATOR, the City may change the green fees, Driving Range fees hand cart rental fees and other equipment rental fees to be charged by OPERATOR. Changes in green fees and Driving Range fees may be made by OPERATOR in accordance with Section 6.12.

6.13 Business License and Permits. OPERATOR shall obtain the state and local licenses and permits necessary to conduct business at the Golf Courses. The costs, fees and charges incurred in obtaining and maintaining these licenses and permits shall constitute Direct Costs.

7. COSTS AND EXPENDITURES

7.1 Direct Cost. The normal and ordinary costs of operating and maintaining the Golf Courses ("Direct Costs") shall be paid by OPERATOR from OPERATOR'S bank account in accordance with Section 9.3. A Direct Cost shall be any cost which is directly related to the normal and ordinary staffing, operations or maintenance of the Golf Courses, including, but not limited to, the following:

A. Employee salaries.

B. Incentive compensation programs for the Class "A" PGA Golf Professional and qualified golf instructors. Only costs of incentives for the Class "A" PGA Golf Professional and qualified golf instructors paid in accordance with incentive compensation programs approved by the Superintendent in the Annual Budget as set forth in Section 6.1 or other benefits given to the Class "A" PGA Golf Professional and qualified golf instructors as set forth in the Golf Course Manual (Exhibit B) shall be Direct Costs.

C. Employee benefits including vacation, sick leave, health insurance, disability insurance, worker's compensation insurance and incentive payments. Only costs of incentive payments paid in accordance with the Annual Budget approved by the Superintendent as set forth in Section 6.1 or other benefits given to employees as set forth in the Golf Course Manual (Exhibit B) shall be Direct Costs.

D. Lease and/or rental of equipment.

E. Repair and maintenance of golf and hand carts, irrigation systems and capital equipment.

F. Uniforms, laundry and linens.

G. Operating supplies, office supplies, cleaning supplies and other miscellaneous supplies.

H. Audit.

I. Advertising and marketing expenses.

J. Travel.

K. Telephone, postage and freight.

L. Fees, Permits and Licenses

M. Utilities, including natural gas, water, electric power, telephones, garbage and trash collection.

N. Parking lot maintenance.

O. Necessary start-up materials referenced in Section 9.3.

P. Insurance Premiums, and, in the event of a claim on the liability insurance required by Section 11.1.B, the amount paid up to the deductible.

Q. Inventory, merchandise, food and beverage.

R. Business and Occupation taxes on the Direct Costs or reimbursement of same.

7.2 Direct Cost Budget. The Direct Cost Budget is the annual budget setting forth all projected Direct Costs and shall be part of the Annual Budget. The Direct Cost Budget may be amended or modified from time to time, in accordance with the City policies and procedures, to reflect actual operating circumstances, after written notice to and consultation with OPERATOR.

7.3 Excluded Operating Costs. Those operating costs that are paid by the City and not included in the Direct Cost Budget include and are limited to the following:

A. Leasehold Excise Taxes, if any.

B. Those maintenance and/or operating costs that are due to any reason beyond OPERATOR'S reasonable control (an "occurrence of force majeure") including, without limitation, acts of God, riots, strikes, fires, provided, however, that such expense shall continue only during the pendency of the particular occurrence of force majeure. Such excluded costs must exceed $5,000.00 per incident, and are subject to the prior approval of the Superintendent which approval will not be unreasonably withheld. If such costs do not exceed $5,000.00 per incident, they shall be treated as Direct Costs.

C. Base Management Fees and Incentive Bonuses.

D. Golf Course Maintenance Expenses including the golf course maintenance equipment leases and the golf car leases.

7.4 Capital Expenditures. A Capital Expenditure is any expenditure for new or replacement capital equipment or improvements to the Golf Courses that have a life expectancy greater than or equal to one year and a cost of no less than $5,000.00. A Capital Expenditure is not a Direct Cost and must be approved by the Superintendent before it may be undertaken. The cost of a Capital Expenditure shall be borne by the City. A list of capital equipment owned or possessed by the City relating to this Agreement as of the Effective Date is attached hereto in Exhibit D. The City may have the OPERATOR contract for and make capital improvements and reimburse the OPERATOR for these improvements.

8. OPERATOR COMPENSATION

8.1 Monthly Fee to OPERATOR. During the term of the agreement, City shall pay OPERATOR, on a monthly basis, a fixed amount of $20,200 per month; provided, however, that the monthly payment for the month of the Effective Date shall be made pro rata based upon the number of days remaining in the month including and after the effective date; and, provided further, that once the City funded working capital account specified in Section 9.3.B is established, the monthly management fee shall revert to $18,000. The City will pay the Monthly Fee upon receipt of an invoice from the Operator. The Monthly Fee is to be paid monthly on the first business day of the following month.

Bonus to Operator. At the end of each calendar month, a bonus shall be paid as follows: Operator to be paid a bonus equal to 12% of the amount that the Actual Gross Revenues

of the just completed calendar month is in excess of Actual Gross Revenues for the same month of the preceding year. The City will pay the monthly bonus upon receipt of an invoice from the Operator.

8.2 Payment Procedures. After receipt from OPERATOR of applicable invoices, the City shall pay OPERATOR the monthly fee of Section 8.1 within five business days after receipt of an invoice following the end of the month, and City shall pay OPERATOR the Monthly Bonus, if any, no more than 30 days after the end of the applicable month and receipt of an invoice from the Operator.

9. FINANCIAL AND ACCOUNTING PROCEDURES

9.1 Bank Account. The City has established a bank account ("City's Bank Account") for the purposes of accepting deposits of revenues under this Agreement. The funds in this account are the property of the City. Payments by OPERATOR from this account are prohibited.

A. Revenues. All revenues from green fees, cart rentals, the Golf Course, Driving Range, Golf Car Rentals, Pro Shop, Restaurant, merchandise sales, Golf Lessons, equipment rentals, interest income and any other revenues from the Golf Courses are the property of the City and not part of the fees or consideration paid to OPERATOR and shall be deposited into the City's Bank Account daily. No deposits of Golf Courses' revenues may be made into any other bank account for any purpose or under any circumstances.

9.2 Monthly Reports and Transactions. OPERATOR shall provide to the City monthly reports of the previous month's transactions and financial status of the Golf Courses.

A. Within twenty (20) days of the end of each month, OPERATOR shall provide the City with a monthly and year-to-date balance sheet, cash flow report and income statement.

B Within three (3) days of the end of each month, OPERATOR shall provide the City with a monthly revenue report that separates the revenue by type of revenue.

C. The OPERATOR will provide to the City on a weekly basis a copy of every bank deposit slip and a copy of every credit card batch settlement.

D. After review of the above items, the City may request additional reports that detail previous transactions.

9.3 Beginning Working Capital. Within one (1) day of the Effective Date, OPERATOR shall deposit in its bank account sufficient funds based upon the projected calendar of needs ("Starting Balance") so as to provide sufficient working capital to commence operations at The Courses. On or before the Effective Date, OPERATOR shall provide the City with a list of the necessary start-up materials, attached hereto as Exhibit E. to be purchased with this working capital. The cost of these necessary start-up materials shall be Direct Costs. OPERATOR may invoice the City for expenditures it has incurred in the operation of the Golf Courses. Such expenditures must be supported by receipts, checks or other documentation and have been contemplated in the Annual Budget for the then current Operating Year. Upon approval of such expenditures, which approval shall not be unreasonably withheld, the City shall reimburse the OPERATOR for such approved expenditures.

A. Reimbursement for Expenses. OPERATOR may submit invoices on a twice-a-week basis, on Monday and Thursday, and the Department agrees to reimburse OPERATOR by inter-account transfer or wire transfer to OPERATOR'S account within four business days from receipt of an invoice and supporting documentation from the Operator. City will return the backup documents included with the twice weekly billings to OPERATOR for filing. OPERATOR will deliver all backup documents to City at the termination of the agreement. In addition, OPERATOR shall provide the City with the total amount of the bimonthly payroll with documentation reasonably satisfactory to the City at least two business days prior to each bimonthly payroll disbursement date. Provided that OPERATOR has met the requirements of the foregoing sentence, the City shall inter-account transfer or wire transfer to OPERATOR'S payroll account an amount equal to the total amount of the payroll on or before the payroll disbursement date.

B. The City without delay will pursue the establishment of a City funded working capital account. Until such time as a City funded working capital account is established, the monthly management fee shall be increased to $20,200 per month. Once the City funded working capital account is established, the monthly management fee shall revert to $18,000.

10. BUSINESS RECORDS

10.1 Types of Records. OPERATOR shall maintain a method of accounting for all the revenues and expenses in connection with the operation of the Golf Courses which shall in accordance with generally accepted accounting principles correctly and accurately reflect the gross receipts and disbursements received or made by OPERATOR from the operation of the Golf Courses. OPERATOR shall establish and implement adequate internal controls for this operation. The method of accounting, including bank accounts, established for the operation shall be separate from the accounting system used for any other business operated by OPERATOR. Such method shall include the keeping of the following records and documents:

A. Regular books of account such as general ledgers;

B. Journals including any supporting and underlying documents such as vouchers, checks, tickets, bank statements, etc.

C. Sales tax returns and checks and other documents proving payment of sums shown;

D. Cash register tapes or computerized records for the identification of day-to-day sales;

E. Logs showing the dates and times of Driving Range and greens usage and Golf Lessons at the Golf Courses; and

F. Any other accounting records that the City, in its sole discretion, deems necessary for proper reporting of receipts.

10.2 Audit of Records. All documents, books and accounting records kept by

OPERATOR pursuant to this Article shall be open for inspection by the City at any reasonable time during the term of this Agreement and for at least three (3) years thereafter. All books and records will be turned over to the City after three (3) years for retention in City archives. In addition, the City or its authorized representative may, from time to time, conduct an audit of the books of the operation of the Golf Courses and observe the operation of the business. The City will use its best efforts to minimize the interruption with the normal operation of the Golf Courses during any inspection or audit performed pursuant to the provisions of this Section. The City and OPERATOR will independently conduct and jointly conduct "surprise" cash and inventory audits as each deems appropriate. The results of the audits will be documented in a written report, a copy of which will be given to both parties.

10.3 Annual Financial Statements. OPERATOR shall submit audited financial statements for the operation of the Golf Courses including a copy of the applicable audited statement of gross receipts and the audit management letter to the City within one hundred twenty (120) days of the close of each Operating Year during the term of this Agreement. The audit shall be performed by an independent certified public accountant designated by the City, and the cost of the audit shall be included as a Direct Cost of operation.

10.4 Public Records. All information obtained in connection with the City's inspections of the records or audits may be or become subject to public inspection and/or reproduction as public records.

11. INSURANCE AND INDEMNITY

11.1 Insurance.

A. Worker's Compensation Insurance. OPERATOR shall obtain and keep in full force and effect during the term of this Agreement worker's compensation insurance for all workers employed pursuant to this Agreement and, in case any work is sublet, OPERATOR shall require its suboperator(s) similarly to provide worker's compensation insurance for all of the latter's employees unless all the employees are covered by such protection afforded by OPERATOR.

B. Liability Insurance. OPERATOR shall obtain and keep in full force and effect, during the term of this Agreement commercial general liability insurance (including Premises/Operations, Products/Completed Operations. Personal Injury/Advertising Injury, Contractual Liability, Independent Contractors, Stop Gap/Employers Contingent and Commercial Liquor Liability), business auto liability and umbrella liability insurance with total limits of liability of not less than $6,000,000 per occurrence Combined Single Limit Bodily Injury and Property Damage. OPERATOR shall also obtain and keep in full force and effect during the course of this agreement aircraft liability insurance with limits of liability of liability of not less than $1,000,000 per occurrence Combined Single Limit Bodily Injury and Property Damage, including Passenger Legal Liability with no sublimit. The City and its respective officers, agents and employees shall be named as additional insureds under each policy whether liability is attributable to OPERATOR or the City and the policies shall stipulate that the insurance will be primary and non-contributory with any insurance or self-insurance maintained by the City.

C. Property Insurance. The City shall insure all real property and personal property, including new buildings and additions under construction on City premises (but excluding land such as greens, fairways, trees and landscaping), inventory and mobile equipment (including leased mobile equipment) subject to various deductibles and shall insure said property for the benefit of both the City and Operator. The City shall obtain from its property insurer a waiver of subrogation in favor of Operator to the extent that property insurance applies to any loss. In addition, the City agrees to waive subrogation for claims involving damage to City property in excess of $1,000 for any loss within the applicable deductible amount up to the attachment point of property insurance coverage. Operator shall be liable for claims less than $1,000 involving damage to City property only to the extent to which it is responsible for the damage.

D. Commercial Crime Insurance. OPERATOR shall obtain and keep in full force and effect, during the term of this Agreement, a commercial crime insurance policy in the amount of $250,000 for employee dishonesty and coverage for theft, disappearance and destruction of or to monies or funds of, in or at the Golf Courses in an amount as dictated by the exposure at any given time, but in no event less than $50,000. All amounts set forth in this Section 11.1D shall be per occurrence and in the aggregate. OPERATOR also shall purchase a fidelity bond on behalf of the City whereby in the event any officer, employee, agent or subcontractor of OPERATOR embezzles, steals or otherwise fraudulently or improperly takes or obtains City funds, money or property, the City shall be reimbursed for the total amount of funds taken up to $250,000 per occurren

E. Certificates of Insurance and Endorsements. OPERATOR shall timely complete and file with the City certificates of insurance, copies of declarations pages and schedules of endorsements for all insurance required pursuant to this Agreement. Each policy of insurance required hereunder shall be endorsed to provide that no cancellation, non-renewal or reduction in coverages or limits to less than those required in this Section 11.1 shall be made during the term of this Agreement without thirty (30) days' prior written notice by certified mail to:

The City of Seattle
Risk Management Division
700 5th Avenue, Suite 1715
Seattle, WA 98104-5042

F. Cost of Insurance. The cost of the insurance required by this Section 11.1 and any deductible that the Operator pays for claims on the liability insurance required by Section 11.1.B shall be Direct Costs and shall be borne by the City.

11.2 Indemnity.

A. OPERATOR undertakes and agrees to defend, protect, indemnify and hold harmless the City and all of its elective and appointive boards, commissions, officers, officials, volunteers, agents and employees from and against all suits, judgments, causes of action, claims, losses, demands and expenses, including, but not limited to, attorney's fees and costs of litigation, damage and liability of any kind or nature whatsoever, for death or injury to any person or damage or destruction of any property of the City, OPERATOR or third party, arising in any

manner from, by reason of, or incident to the negligent performance of or failure to perform under this Agreement by or on the part of OPERATOR or ITS officers, agents, subcontractors or employees.

B. OPERATOR shall defend, indemnify and hold harmless the City for any fines imposed by administrative regulatory bodies, except for fines resulting from and directly related to action for which the City is solely and completely responsible. In the event the City is only partially responsible for said action or inaction, OPERATOR shall defend, indemnify and hold harmless the City for the full amount of such fines.

C. The City does not and shall not waive any rights against OPERATOR which it may have by reason of the indemnity clause of Section 11.2 because of the acceptance by the City of any of the insurance policies described in Section 11.1.

D. The indemnity clause of Section 11.2 shall apply to all damages and claims for damages of every kind suffered, or alleged to have been suffered, by reason of any of the operations of this Agreement, regardless of whether or not the insurance policies referred to herein shall have been determined to be applicable to any of such damages or claims for damages.

12. REPRESENTATIONS AND WARRANTIES

12.1 Organization and Authority. As of the date of this Agreement and thereafter, OPERATOR hereby represents and warrants that (a) it is a Limited Liability Company duly organized, validly existing and in good standing under the laws of the State of California and is qualified to do business in all other states where necessary in light of its business or properties and has all requisite power and authority to conduct its business and own its properties, (b) it has all necessary power and authority to execute, deliver and perform its obligations under this Agreement, (c) the execution, delivery and performance by OPERATOR under this Agreement has been duly authorized by all necessary action and this Agreement has been duly and validly executed and delivered by OPERATOR, and (d) this Agreement constitutes the legal, valid and binding obligation of OPERATOR and is enforceable against OPERATOR in accordance with its terms, except as the enforceability thereof may be limited by applicable bankruptcy, insolvency, reorganization or moratorium or other similar laws relating to the rights of creditors generally.

12.2 No Conflict. As of the Effective Date and thereafter for the term of this Agreement, OPERATOR hereby represents and warrants that the execution, delivery and performance by OPERATOR of this Agreement does not and will not (a) conflict with or violate any provision of its articles of incorporation or bylaws, (b) result in a material breach or violation of any term or provision of, or constitute a material default under, any material agreement or instrument to which OPERATOR is a party or by which OPERATOR or any of its assets are bound, or (c) contravene or constitute a material default under any provision of applicable law or regulation.

12.3 Accuracy of Representations and Warranties. The representations and warranties contained in this Agreement do not contain any untrue statement of a material fact or omit any material fact necessary in order to make the statements contained herein not misleading

or incomplete.

12.4 Survival of Representations and Warranties. The representations and warranties set forth by OPERATOR in this Article 12 shall survive the date of this Agreement and shall terminate only upon the fifth anniversary of the date of termination of this Agreement.

13. MISCELLANEOUS

13.1 Entire Agreement. This Agreement and the documents expressly referred to herein constitute the entire agreement among the parties with respect to the subject matter hereof and supersede any prior agreement or understanding among the parties with respect to such subject matter.

13.2 Severability. If any provision of this Agreement or the application of such provision to any party or circumstance shall be invalid, the remainder of this Agreement or the application of such provision to other parties or circumstances shall not be affected thereby.

13.3 Notices. All notices, requests, demands, consents and other communications required or permitted to be given by this Agreement shall be in writing and personally delivered or placed in the United States mail, properly addressed and with full postage prepaid, certified and return receipt requested. Such notices shall be deemed received at the earlier of (a) the date actually received, or (b) 5 business days after such mailing. Such notices shall be sent to the parties at the following addresses, unless other addresses are furnished by appropriate notice:

If to the City, to:

The City of Seattle
Department of Parks and Recreation
100 Dexter Avenue N.
Seattle, Washington 98109-5119

If to OPERATOR, to:

Premier Golf Centers, LLC
840 Apollo Street, Suite 213
El Segundo, CA 90245
Attention: William Schickler

13.4 Assignment; Subcontract. This Agreement shall be binding on, and shall inure to the benefit of, the parties to it and their respective heirs, legal representatives, successors and assigns. OPERATOR shall not assign any of its rights or delegate any of its duties under this Agreement to a third party unless (a) the City approves the third party contract prior to execution, and (b) the third party contract is consistent and complies with the terms and conditions of this Agreement.

13.5 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall constitute one in the same instrument.

13.6 Headings. The article and section headings in this Agreement are for convenience of reference only, and shall not be deemed to alter or affect the meaning or interpretation of any provisions hereof.

13.7 Construction. This Agreement shall be construed and enforced according to the laws of the State of Washington without regard to any otherwise governing principals of conflicts of laws. This Agreement shall be construed neutrally and not in favor of or against any party.

13.8 Amendment. This Agreement shall not be modified or amended except by a written agreement executed by both of the parties.

13.9 Further Actions. Each party shall execute and deliver such other certificates, agreements and documents, and take such other actions, as may reasonably be required to carry out the provisions or the intent of this Agreement.

13.10 Prior Agreement. This Agreement supercedes the previous agreement between the parties entitled "The City of Seattle Interim Management Agreement for the Operation and Maintenance of the City Golf Courses and Related Facilities" ("Prior Agreement") with an effective date of July 14, 2003. The intent of the parties is to not to extinguish any right or obligation of any party under the Prior Agreement for the period between July 14, 2003 and the effective date of this Agreement, but that the Prior Agreement shall have no force and effect after the effective date of this Agreement.

DATED this _____ day of _____, 2003.

PREMIER GOLF CENTERS, LLC

By: _____
Its: _____

THE CITY OF SEATTLE

By:_____
SUPERINTENDENT OF THE
DEPARTMENT OF PARKS AND
RECREATION

EXHIBITS

A. Golf Courses Real Property Descriptions

B. Golf Course Manual

C. Maintenance Agreement

- Jackson Park Golf Club – Best Management Practices
- Jackson Park Golf Club – Integrated Pest Management Plan Table of Contents
- Jackson Park Golf Club – Integrated Pest Management Plan
- Jackson Park Golf Club – Water Quality Monitoring Program
- Jefferson Park Golf Course – Best Management Practices
- Jefferson Park Golf Course – Integrated Pest Management Plan Table of Contents
- Jefferson Park Golf Course – Integrated Pest Management Plan
- West Seattle Golf Club – Best Management Practices
- West Seattle Golf Club – Integrated Pest Management Plan Table of Contents
- West Seattle Golf Club – Integrated Pest Management Plan
- West Seattle Golf Club – Water Quality Monitoring Program

D. Capital Equipment Owned or Possessed by the City Relating to this Agreement

E. List of Necessary Start-Up Materials

F. Use Agreement between the City of Seattle and Seattle Junior Golf Foundation, dba First Tee of Seattle

Exhibit A to Attachment 2 to MGSord: Golf Courses Real Property Descriptions

INTERBAY GOLF COURSE PROPERTY DESCRIPTION

That part of E1/2NE1/4 of Section 23, Township 25 North, Range 3 East W.M. described as follows:

The following blocks and portions of blocks of Gilman's Addition

Block 21 less that portion condemned for street purposes by condemnation Ordinance 86751;

Blocks 123,124,125;

Blocks 126,136, less the west 25 feet deeded to the Municipality of Metropolitan Seattle , Ordinance 94155;

Blocks 137,138,139;

Lots 1 through 6, inclusive and Lot 23, Block 140;

Block 147, less portion condemned for street purposes by Ordinance 86751 and less the south 15 feet condemned for street purposes by Ordinance 23041;

Block 148, less the south 15 feet condemned for street purposes by Ordinance 23041;

Block 149 less part of Lot 30 condemned for street purposes by Ordinance 23041;

Block 150, less the west 25 feet and south 13.7 feet of Lot 24 deeded by Ordinance 94155 and that portion condemned for street purposes by condemnation Ordinance 23041;

Together with those alleys and portions of 16th Avenue W, 17th Avenue W, 18th Avenue W, W. Armour Street, W. Raye Street, Gilman Avenue W.

vacated by Ordinances 18078 and 92373, excepting the west 25 feet of W. Armour Street and W. Raye Street and the north half of W. Wheeler Street.

Also excepting the Interbay P-Patch, located in part of Block 147 and vacated 16th Ave W adjoining.

JACKSON PARK GOLF

Part of the East Half of Section 20, Township 26 North, Range 4 East W.M. described as follows:

The W1/2 NE1/4 together with the W1/2 E1/2 NE1/4 and the N1/2NW1/4SE1/4;

All of Block 9 and Tracts 1,2 of Block 10, Paramount Park Addition, together with the vacated portions of 12th Ave. N.E. and vacated N.E. 137th, vacated by Ordinance 85539;

Excepting:

The West 30 feet of the W1/2NE1/4, being a part of of 5th Ave N.E.
The North 30 feet of the W1/2NE1/4 and the north 30 feet of the W1/2E1/2NE1/4, being a part of NE. 145th Street;

Also, excepting the North 110 feet of the West 90 feet of the W1/2NE1/4(less the west 30 feet and north 30 feet thereof) being the Seattle City Light Substation.

JEFFERSON GOLF PROPERTY DESCRIPTION

EIGHTEEN HOLE GOLF COURSE

S1/2NW1/4, E1/2SW1/4 of Section 16, Township 24 North, Range 4 East, W.M. lying south of South Spokane Street, east of Beacon Avenue South and north of South Alaska Street.

NINE HOLE GOLF COURSE AND CLUBHOUSE

Part of the N1/2SW1/4 of Section 16, Township 24 North, Range 4 East, W.M. lying south of the north line of South Dakota Street produced easterly, west of Beacon Avenue South, north of the northerly boundary of Government Lot 5 and east of Jefferson Park Playfield.

DRIVING RANGE

Part of the SW1/4NW1/4 andNW1/4SW1/4 of Section 16, Township 24 North, Range 4 East, W.M., lying north of the north line of South Dakota Street produced easterly, west of Beacon Avenue South, east of Jefferson Reservoir, and south of Jefferson Community Center.

WEST SEATTLE GOLF PROPERTY DESCRIPTION

That portion of the SW1/4 of Section 13, Township 24 North, Range 3 East, W.M. and That portion of the NW1/4 of Section 24, Township 24 North, Range 3 East. W.M. lying within the following described boundaries:

Southerly of the south margin of S.W. Genesee Street; westerly of the west margin of the alley adjoining blocks 1,3,4,5,9,10 of Cottage Grove Addition; northerly of the north margin of S.W. Brandon Street ; easterly of the east margin of 35th Avenue S.W.

Except that portion of said SW1/4 of Section 13 commonly known as the West Seattle Stadium;

And except that portion of said NW1/4 of Section 24 commonly known as Camp William G. Long.

Premier Golf Centers, LLC

Seattle Golf Courses

GOLF COURSE MANUAL

Premier Golf Centers, LLC

Seattle Golf Courses
Jackson Park Golf Course
Jefferson Park Golf Course
West Seattle Golf Course

GOLF COURSE MANUAL

Purpose

The purpose of the Golf Course Manual is to establish uniform rules, procedures and operating policies for the operations of Jackson Park Golf Course, Jefferson Park Golf Course, and West Seattle Golf Course (The Golf Courses).

The Golf Course Manual provides direction and valuable information for golf course operations. It is the City's desire that The Golf Courses be a major community service program which enhances the quality of life of participants of all ages.

All matters pertaining to the operation of The Golf Courses, fee and policy changes shall be directed to the Seattle Department of Parks and Recreation Manager of Golf.

Table of Contents

DEFINITIONS

In order to facilitate the use of the Golf Course Manual the following definitions will apply:

1. The City of Seattle will hereinafter be referred to as "City."

2. Premier Golf Centers, LLC. will hereinafter be referred to as "OPERATOR."

3. Jackson Park Golf Course, Jefferson Park Golf Course, and West Seattle Golf Course will hereinafter be referred to as the "Golf Courses".

4. The men's, women's and junior clubs at the Golf Courses will hereinafter be referred to as the "Recognized Clubs."

5. The daily diary of the golf course activity will hereinafter be referred to as "Log Books."

6. The following professional organizations will hereinafter be referred to by their abbreviated titles:

   - The Professional Golfers' Association of America as the "PGA."
   - The Ladies Professional Golfers' Association of America as the "LPGA."
   - The United States Golf Association as the "USGA."

7. The Course Manager will be an employee of, report directly to, and receive instructions and guidance from the OPERATOR.

8. The Class "A" Superintendent in charge of maintenance will hereinafter be referred to as "The Superintendent."

9. Golf Course maintenance staff will be referred to as "Crew" or "Crews."

10. Junior rates shall apply to youths 17 and under.

11. Senior rates shall apply to all adults 62 years of age and over.

12. Manager of Golf is the Manager of Golf, City of Seattle Department of Parks and Recreation.

I. GOLF SHOP OPERATIONS

A. Operating Philosophy

1. Operating Goal

   a. Provide quality service in all activities to insure the enjoyment of all patrons, and to generate revenue for the City.

2. Professional Staff Functions

   a. Maintain the functions in a manner consistent with the desires and the policies of the City and the OPERATOR to include:

      1) Pro shop sales
      2) Power and Hand cart rental and maintenance
      3) Golf Club Rentals
      4) Lesson promotion and programs
      5) Course marketing activities
      6) Driving range operations
      7) Starting, course Marshaling, tournament promotion and booking activities
      8) Cleanliness and maintenance of the facility
      9) Customer relations
      10) Revenue collection

3. Merchandising (Pro Shop)

   a. Maintain a well-stocked and attractive pro shop offering merchandise commensurate with wants and needs of the patrons.

4. Accountability

   a. Establish and maintain accurate records regarding the following:

      1) All revenue, as per management agreement
      2) Tournament bookings
      3) Lesson activity
      4) Rounds of golf
      5) Cart usage
      6) Daily weather
      7) Starting times
      8) Driving range revenue

5. Customer Relations

a. Professional image and courtesy

1) Maintain a well dressed and well groomed appearance at all times.
2) Maintain a standard of integrity and philosophy consistent with the policies and procedures outlined in this manual.
3) Address all customers in a friendly and courteous manner.
4) Make every attempt to greet customers by name.

B. City Responsibility

1. The City is responsible for establishing major operating policies, such as the rate schedule for green fees, range fees, and hours of operation.

The process for changing policies is to make a request to the Department of Parks and Recreation Manager of Golf.

C. Management Responsibilities

1. General Responsibilities of Course Manager

a. The direction and supervision of all golf course administrative, operational, and procedural activities, and the personnel assigned to those activities.

c. Perform other duties as assigned by the OPERATOR.

2. Specific Responsibilities of Course Manager

a. Conduct various golf tournaments and initiate and promote golf activities for the golfing public.

b. Cooperate with the Recognized Clubs and their various committees and render professional advice, opinions, assistance and services as required.

c. Administer and train a staff of employees, as necessary, to perform duties and meet requirements for sales, rentals and services which are, in the opinion of the City and the OPERATOR, necessary to carry out the provisions of the management agreement.

d. Operate and maintain a golf shop for repairs handling, storage, sales, leasing, and services relating to golf, equipment, golf cars and hand carts.

e. Be available, as necessary, to attend regular and special meetings of the Recognized Clubs and to discuss areas both within the realm of his/her duties and those for the benefit of the Course and the City.

f. Supervise the starting of play by golfers, and the proper charging of green fees and other fees, as necessary, and required.

g. Operate and supervise a Marshal Program.

h. Ensure that golf be taught only by qualified instructors.

i. Hire, discipline and discharge personnel.

j. Plan and schedule the assignment of personnel to cover a seven day per week operation.

k. Ensure that golf cars are maintained and in operable and safe condition.

l. Recommend public safety measures and maintain a continuous safety program in compliance with applicable laws.

m. Provide security for all maintenance buildings and equipment, service yards, materials, supplies, and, especially, toxic chemicals.

n. Report any emergency, unusual condition or incident to the CITY immediately.

o. Inspect the Course daily to ensure proper maintenance and operation, and, as required, make decisions concerning the closing of the Course.

p. Ensure that the Course Manager and/or a designated representative is on duty at the start and close of the scheduled work day.

q. Sell, rent, store and/or repair golf equipment, clothing and supplies, sell instructional services in golf play, rent golf cars, and operate a driving range.

r. Represent the OPERATOR/City before civic and private groups for discussion of Course operations.

s. Maintain the golf course Log Book in accordance with established rules and procedures.

II. FOOD & BEVERAGE OPERATIONS

A. Operating Philosophy

1. Operating Goal

a. Provide quality breakfast, lunch and (where applicable) dinner service to ensure the enjoyment of all patrons.

2. Professional Staff Functions

a. Maintain the functions in a manner consistent with the desires and the policies of the City and the OPERATOR to include:

1) Restaurant marketing activities
2) Cleanliness and maintenance of the facility
3) Customer relations
4) Revenue collection

3. Merchandising (Restaurant)

a. Maintain a well-planned menu designed to maximize sales volume as well as margins and offer dining commensurate with wants and needs of the patrons.

5. Accountability

a. Establish and maintain accurate records regarding restaurant revenue and expenses.

6. Customer Relations

a. Professional image and courtesy

1) Maintain a well dressed and well groomed appearance at all times.
2) Maintain a standard of integrity and philosophy consistent with the policies and procedures outlined in this manual.
3) Address all customers in a friendly and courteous manner.

4) Make every attempt to greet customers by name.

B. Management Responsibilities

1. General Responsibilities of Restaurant Manager

a. The direction and supervision of all food service personnel.

b. The appearance and cleanliness of the dining and kitchen area is of prime importance, and the Restaurant Manager is responsible for the general maintenance and decor of the restaurant as necessary to maintain the quality and appearance levels.

2. Specific Responsibilities of Restaurant Manager

a. Host various club and group functions and parties and initiate and promote dining opportunities to the general public as well as users of the golf facilities.

b. Administer and train a staff of employees, as necessary, to perform duties and meet standards for service which are, in the opinion of the City and the OPERATOR, necessary to carry out the provisions of the management agreement.

c. Ensure that alcoholic beverages be served by licensed food servers of legal age.

d. Hire, discipline and discharge personnel.

e. Plan and schedule the assignment of personnel to cover a seven day per week operation.

f. Ensure that kitchen equipment is maintained and in sanitary, operable, and safe condition.

g. Recommend public safety measures and maintain a continuous safety program in compliance with applicable laws.

h. Report any emergency, unusual condition or incident to the Course Manager immediately.

i. Inspect the Restaurant daily to ensure proper maintenance, cleanliness and operation.

j. Ensure that the Restaurant Manager and/or a designated representative is on duty at or before the start and at or after the close of the scheduled Restaurant hours.

k. In conjunction with the OPERATOR, maintain a continuous training program on restaurant maintenance and related subjects, and plan, schedule, and coordinate maintenance programs with personnel in other divisions and departments.

l. Sell food and beverage services.

III. GOLF CAR OPERATIONS

A. Vehicle Operation

1. No vehicle other than golf cars supplied by the OPERATOR, and private golf cars for which a trail fee has been paid shall be permitted (except as required for maintenance purposes).

2. Golf Cars and hand carts must not be taken over aprons, greens, tees, sand traps, or areas between the greens and traps surrounding the green.

3. When play has reached the green, golf cars and hand carts must be left on cart paths or at least 30 feet away from the side of the green.

4. Cars or carts of any kind should not be driven or pulled through wet or muddy areas or over sprinkler heads.

IV. STARTING AND MARSHALING

A. Starter Responsibilities

1. Get the golfing public on the Course for play by reservation, or off the waiting list, with the least delay and discomfort and in the best possible frame of mind.

2. Use every expediency at his/her command to keep the golf operations running efficiently and without undue delay or commotion.

3. Start golfers on time according to the reservations and in compliance with the waiting list. Fivesomes will be allowed at the discretion of the Starter.

4. Assign fivesomes or less for play, making certain there is a green fee and recorded name on the Starter Sheet for every tee time on the golf Course.

5. Inform each golfer to retain his/her cash register receipt throughout his/her round of golf play as he may be asked to show the receipt to authorized persons.

6. Keep score cards and pencils at the counter and give them to golfers who request them.

7. Be properly groomed and attired.

8. Know the types of grass in the tees, fairways and greens; be familiar with maintenance operations and requirements of the Course, be familiar with other public fee golf courses in the area and with all types of tournaments and prominent golf organizations, such as, USGA, PGA, LPGA, PUBLIC LINKS, etc.

9. Be fair and considerate of golf patrons at all times, treating everyone equally, and at all times being courteous, friendly, helpful, tactful, effective and impartial.

10. Patiently and courteously answer all questions of patrons and explain to them golf rules and policies and etiquette, in compliance with local rules and USGA rules.

11. Note in the Log Book all complaints and suggestions concerning the operation or maintenance of the Course, and inform the complainant that his/her complaint will be referred to the Course Manager.

12. Inform golfers called from the waiting list of the players with whom they will be playing.

13. Practice good housekeeping while on duty by keeping the Starter area clean.

B. Rules of Play

1. The speed of play can be increased by observing strictly the USGA and local rules of golf, the etiquette of golf and the traditions of the game. It is important to play as quickly as possible and avoid unnecessary delays. The golden rule is applicable to play on the Golf Course. **Practice ready golf.**

C. Marshaling Responsibilities

1. OPERATOR shall provide the services of a Marshal to be on duty at all appropriate times, with the exception of periods of inclement weather. The services of the Marshal may be provided by volunteers. The primary purpose of the Marshal's duties shall be to expedite play on the

Course at all times. A secondary duty will be to ensure compliance with all Golf Course Rules and Regulations.

2. Under no circumstances will playing golf be considered as course Marshaling during the scheduled work week.

3. The Marshals will require players to maintain their position on the Course to speed up play and verify that golfers have required equipment.

4. Players will be required to observe golf course etiquette, replace fairway divots, rake sand bunkers and repair ball marks on the greens. The Marshals will assure safe practices by all golfers.

5. The Marshals will enforce regulations concerning the use of golf cars and electric hand and pull carts.

6. Periodically during the day, inform golfers to please keep their positions on the Course, replace their divots on the fairways and repair their ball marks on the greens, as we are striving to maintain excellent playing conditions.

D. Non Reserved Players Policy

1. Golfers who do not have a reserved starting time must register with the Starter on the daily waiting list (Call Sheet) prior to play.

2. Golfers without reservations who are at the Course and ready to play may register on the Call Sheet as a single or in groups of two, three, four, or five (upon Starter's discretion).

3. Playing group vacancies, cancellations, and open or unreserved starting times will be filled only from the Call Sheet on a first-come, first-served basis with priority determined by the time of registration with the Starter. Those who have registered as a group will be called for play as openings become available for the number of players in the group.

4. When sufficient players are available from the Starter Sheet and/or the Call Sheet, the Starter will send groups of four to the starting tee. If fewer than four players are available, the Starter may send out groups of two or three. A single player may be sent out alone only if no other golfers are available and if it appears they will not be available within a reasonable time.

5. As players on the Call Sheet are sent to the first tee their names will be scratched from the sheet.

6. The golf course Starter on duty is responsible for assigning foursomes, and for scheduling and starting all players in accordance with Reservation/Call Sheet rules and regulations. Golfers are not permitted to buy, sell, or transfer starting times or Call Sheet positions. Only those golfers who are properly registered and who are called by the Starter will be allowed to start play.

7. The golf course Starter may switch or interchange starting times if in his/her judgment such change would prevent delays, eliminate confusion, correct a problem, or be of general benefit to the players involved and to those following.

8. The Starter will call players to the tee by the starting and/or by name. After calling the group due on the tee, the following group will be given an on deck warning call by tee time and/or name. The next group will then be given an in the hole warning call by tee time and/or name.

E. Reservation Policy

1. Starting time reservation requests for daily play will be accepted at the Course Starter's office, or on the internet tee time reservation system up to eight days in advance of playing date desired. Requests may be made, in person by automated reservation system or by phone.

2. Reservations will be made only for groups of two, three, four, or five players, and openings in a group will be filled from the Call Sheet on the day of play. Reservations will not be accepted for a single player, except as a fill in to another group of three or less.

3. Only two reserved times per person is allowed, and that person must be a member of the group for which the reservation is made (unless there are acceptable extenuating circumstances).

5. The name of the person making the reservation will be recorded on the Starter sheet, or electronic tee sheet, opposite the time assigned. On the day of play, players names will be marked to recognize their green fee has been collected.

6. A reservation may be forfeited if the golfer making same does not check in with the Starter at least ten minutes prior to the assigned starting time. A reservation may also be forfeited when only one of a group having a reserved time is present ten minutes prior to tee-off time. If a reservation is forfeited, the players involved may be registered on the Call Sheet in priority order if they so desire.

7. Reservations are not transferable to another player. If a reservation is canceled, the Starter will offer the time to the next applicant, or if the time is open on the day of play, it will be filled with names from the Call Sheet in the order listed.

8. Permanent starting times will not be assigned at any time, however, the OPERATOR may have one reserved time per hour on Saturday, Sunday and holidays to allow for possible human error during the reservation process.

9. If, for any reason, the Course is closed the entire day, all golf play reservations for that day will be canceled. If the Course is closed only temporarily, players whose reservations are the earliest starting time of the day will be the first group off the tee and all other times will follow in sequence. The Starter will make every effort to get all players on the golf course as soon as possible. Players unable to begin at their assigned starting times due to inclement weather will be reassigned starting times at the discretion of the Starter.

10. The City may schedule use of the golf course as a setting for official business. Appropriate activities include promotion of economic development or intergovernmental relations. Such use shall be directly related to City business and shall not include purely personal use of the golf course by City officials or their families. For official business, the City may reserve a tee time more than one week in advance. In such cases, the following procedure should be used:

    a. The Manager of Golf must approve the proposed use.

    b. The use will not pre-empt any previously scheduled tournament or event.

    c. All requests will be routed through Manager of Golf

The Superintendent of Parks and Recreation has the ability to schedule two (2) special golf outings per year (including one for City employees, if desired) without the minimum, number of player requirements for either weekend or weekdays,

F. Closing Course

1. OPERATOR is responsible for decisions concerning temporary or all day closing of the Course. In making such decisions, due consideration will be given to the welfare of the general public and golf course.

V. COURSE RULES, REGULATIONS AND ETIQUETTE

A. General

1. The following activities are prohibited on grounds or facilities except as authorized by OPERATOR or City.

   a. Storage of private or personal property.
   b. Solicitation of any kind.
   c. Circulation or posting of handbills, petitions, advertising matter, promotional material, and literature
   d. Selling of any goods, wares, or merchandise.
   e. Carrying or discharging any firearm, air gun, sling shot, or fireworks of any kind.
   f. Use of the Course for any purpose other than to play golf in the accepted manner.

2. All beverages taken on the Course must be purchased from the OPERATOR. No coolers can be brought on premises.

3. Throwing trash (paper cups, candy wrappers, etc.) anywhere on the Course is prohibited.

4. It shall be unlawful for any person to loiter on the premises, and unauthorized persons are not permitted.

5. Dogs, cats, or any other animals shall not be brought on the Course under any circumstances.

6. Picnicking or recreational play, other than golf, is prohibited.

7. Overnight or day camping is not allowed on any part of the Course.

8. Cars must be parked in designated parking areas only, and overnight parking in the parking lot is not allowed.

9. Reserved parking may be provided for the Starter, Golf Professionals and Course Manager within the clubhouse parking area.

10. If necessary, the Seattle Police Department may be called upon for assistance in enforcing these regulations.

11. Holes must be played in sequence, and a golfer in the wrong fairway must give way to players playing that hole.

12. No more than one golfer shall play out of one bag. Each player must have his/her own set of clubs.

13. It is the responsibility of each player to replace divots, rake and smooth traps, and repair ball marks or other damage on the greens.

14. Golfers are responsible for injuries or damages resulting from their golf shots.

15. Starter shall have the right to allow spectators only for special events with prior approval from the City and OPERATOR.

16. In the interest of all, players must play without delay, and all groups must keep their place on the Course or allow following players to play through.

17. OPERATOR reserves the right to cancel playing permits for individuals or organizations using Course facilities if at any time conditions justify such action.

18. Golfers may be refused playing privileges, or they may be removed from the Course for:

    a. Submitting false information for the purpose of securing golfing privileges.
    b. Playing golf without paying a green fee or registering with the Starter.
    c. Obvious inability to play golf and to maintain their position on the Course.
    d. Intoxication, disorderly conduct, use of abusive or profane language, inappropriate dress or other behavior detrimental to the normal and orderly operation of the Course.
    e. Failure to comply with the existing rules and regulations governing golf play, practice, operation of carts or pull carts, personal conduct, and appropriate dress.

B. Dress Code

1. Appropriate golf attire must be worn at all times.

    a. Swim trunks and bathing suits are not allowed in the clubhouse, or on the Course and Driving Range.
    b. Shirts must be worn on both the Course and Driving Range at all times.
    c. Shoes must be worn on the Course and must be appropriate for golf.
    d. In addition to these specific guidelines, it is up to the discretion of the Starter to determine appropriate golf attire.

e. Marshals will assure that these guidelines are adhered to on the golf Course and Driving Range.

C. Golf Play

1. USGA Rules of Golf and posted local rules will govern play at all times.

2. No play is allowed on the Course when it has been closed for any reason.

3. Golfers under the age of fourteen (14) years may play on the Course only when they have demonstrated appropriate knowledge of golf course etiquette and are accompanied by an adult responsible for child. At the discretion of the Starter, golfers under the age of fourteen may be able to play without being accompanied by an adult.

4. All players must be registered with the Starter before playing any part of the golf Course.

5. All players must have a current cash register receipt or a valid daily ticket in their possession during play.

6. Practicing anywhere on the Course at any time is prohibited. Players must use the driving range, putting green, and other designated practice facilities for practice.

7. The starter has the authority to pair multiple parties to fill the Tee-Time.

8. When sufficient players are registered, four persons will be scheduled in each playing group on tee #1.

9. Fivesomes are allowed at the discretion of the Starter.

10. Unless prior permission is given, golfers will tee off only between the appropriate tee markers.

VI. TOURNAMENTS

A. General Information

1. Any golf club, company, golf association, or other organization may request authorization to hold a golf tournament on a first come, first served, basis.

2. All tournaments must have a Tournament Agreement requiring multiple reserved starting times with a minimum of 16 players.

3. Tournament fees and charges will be set by the OPERATOR subject to the approval of the Superintendent of Parks and Recreation. Fees and charges will include at least $8.00 per player prize fund and $2.00 per player administration fee, and shall be subject to change without prior written notice. Tournament fees will be based on fees and charges in effect on the date of the tournament. All fees and charges in effect on date of tournament must be paid and received 30 days prior to day of tournament.

4. All pre-scheduled tournament events will be charged at the current daily fee per player.

5. Individual starting time reservation requests will not be accepted for starting times which fall within a scheduled tournament period, however, the Course may fill any unfilled or late starting time with players from the daily call sheet.

6. Unless otherwise authorized by the OPERATOR, tournament playoffs to settle a tie will not be permitted.

7. Refunds on tournament green fees will not be made except when the Course is officially closed due to inclement weather or other adverse conditions.

8. If the Course is closed prior to, or during a tournament and does not reopen in a reasonable amount of time, green fees for those participants who have not commenced play will be refunded in accordance with established procedures.

9. Tournament participants must observe all prevailing rules and regulations covering use of the Course, personal conduct, dress, and golf play as prescribed by the City and the OPERATOR.

10. Tournament sponsors are liable for any personal injury, property damages or repairs resulting from tournament play.

11. Tournament sponsoring organizations must agree that, during use of the Course facilities, no person will be excluded from participation, denied any benefit, or otherwise be subjected to discrimination because of his/her race, creed, color, or national origin.

12. All scheduled tournaments will be posted on the Course bulletin board for information to the general public at least two weeks in advance of the tournament dates.

13. The following information on each scheduled tournament will be entered in the Log Book by the OPERATOR or the designated representative.

    a. Name of the organization holding the tournament.
    b. Date and time of play.
    c. Number of players.
    d. Name, address, and phone number of the tournament chairperson.

B. Tournament Procedures

1. Tournament requests will be taken beginning in December of the prior year for the following year, (i.e. December 1, 2003 for January 1 through December 31, 2004).

2. No tournament will be confirmed until the following:
    a. A tournament contract, accompanied by a $250.00 non-refundable deposit, is signed by the organization representative booking the tournament and the OPERATOR.
    b. A check for 10% of the total charges for the tournament is received.
    c. The total remaining fees must be paid in full no later than 30 days prior to the scheduled tournament or the tournament will be canceled.

3. The 10% deposit may be waived at the discretion of the OPERATOR.

4. The Recognized Clubs may schedule a one day weekend tournament per month. The Recognized Club tournament event can start at 7:00 a.m.

5. The Recognized Clubs may have one (1) multiple-day event per year for their club championships.

6. In order to receive a refund of the 10% deposit, OPERATOR must receive written notification of cancellation at least 60 days prior to the date of the scheduled tournament

7. All tournament fees are calculated on the current fees charged on the day the tournament is held. These fees are subject to change requiring no notification to the organization or individual responsible for booking the tournaments.

8. On receipt of tournament fees within the time allocated, the OPERATOR will immediately fill out and sign the approved two-part receipt for the fees paid. The original copy will be sent to the applicant and one copy will be placed on file with the contract. Receipt of payment will be noted in the Log Book

9. Starting times for which advance payment has been made and for which a Tournament Contract has been executed will be blocked out on the Starter Sheet, or automated Tee Sheet for the day of the tournament.

C. Tournament Categories

1. Prepaid use

a. Permits use of golf course for those starting times reserved by the tournament sponsoring organization. A 10% deposit is required at the time the tournament contract is signed and the tournament is scheduled.

2. Shotgun Tournaments

a. Shotgun tournaments (tournaments where all golfers start at the same time on a different hole) may be permitted under certain conditions and restrictions and must be approved by the OPERATOR and are subject to the following requirements:

1) Generally must be held Monday through Thursday only.
2) Pay for a minimum of 144 players.
3) Shotgun tournaments are not generally exclusive-use tournaments and the playing privilege cannot be transferred to any other group. Starting times after the tournament will be made available to the general public, and the OPERATOR reserves the right to fill incomplete foursomes within the tournament group from the daily Call Sheet.

3. Group League Play

a. Group play must be approved by the OPERATOR and is subject to the following restrictions:

1) Permitted Monday through Friday only, exclusive of holidays.
2) Must pay prevailing green fees.

4. Junior Tournaments

a. The OPERATOR may schedule an annual City sponsored Junior Tournament for boys and girls who are not yet 18 years of age. Participating junior golfers will pay a special discounted tournament entry fee to the course.

b. Course Manager will coordinate appropriate varsity golf team practices and league matches during their golf season. (High School and College.)

D. Accounting

1. The Course Manager will receive payment for tournament fees by mail or in person at the Course. In the absence of the Course Manager, the Starter on duty may accept payment and issue appropriate receipts.

2. On the date of the tournament, play will be recorded on that day's Starter Sheet in the usual manner. A ticket will be rung for all paid players in the tournament and the tournament representative will be issued a cash register receipt.

VII. SCHOOL TEAM PLAY

A. Purpose

1. To provide young people the opportunity to participate in organized competition in a sport that is not always accessible to all social and economic levels of our society.

2. To provide young people with the opportunity to develop an interest in a lifetime sport through involvement with the schools.

B. Policy and Procedures

1. Letter applications for school team play, for the following year, must be submitted to the OPERATOR between September 15 and November 1. Applications will not be accepted prior to September 15, and those

applications received during the specified period for submission will be processed in the order received. Priority will be given to schools within the Seattle School District boundaries.

2. In processing an application for school team play, the OPERATOR will:

   a. Make every effort to comply with the school request.
   b. Designate and assign the days and times for school play.
   c. Issue a letter authorizing use of the Course, including dates and times.
   d. Prior to January 2 of each year, meet with the golf coach or other designated faculty representatives of the requesting schools to make necessary arrangements, discuss procedures, rules, and regulations, and to schedule the school team play.

3. Each school authorized for team play must submit a team roster and schedule for practice and league play to the OPERATOR at least two weeks prior to the opening of the season. Team members must meet standard eligibility requirements at the junior high, high school or college level.

4. School golf teams will not be allowed on the Course unless accompanied at all times by a golf coach or other designated faculty representative. Teams will be classified as a group, and the assigned coach or faculty member will represent them and be held responsible for their conduct.

5. Each school may be permitted to play at junior rates for a period of twenty weeks between September 1 and May 31 of each year.

6. Team members may play one 18-hole round on the assigned day or days.

7. Team practice and/or league play will be permitted only on those weekdays (excluding holidays) assigned by the OPERATOR. School golf teams shall report to the Course between the hours of 2:00 p.m. and 3:00 p.m. on the days scheduled for play. Any changes or exceptions must be approved by the OPERATOR.

8. Each participating school is allowed four foursomes and a coach or faculty member for practice matches and for scheduled league matches. Only one match may be scheduled on any one day.

9. For school team practice rounds and team league play, the golf coach or designated faculty representative will pay the prevailing junior fee for

each participating team member. Payment may be in cash or by first party check for the exact amount due.

10. The golf coach or designated faculty member will pay the prevailing junior green fee when playing golf while supervising the school team activity. Regular green fees will be paid for play at any other time.

11. School team players will be required to show their student identification cards.

12. School golf team members, golf coaches, and faculty representatives will be expected to observe and adhere to the rules of conduct, dress, and golf play prescribed by the City. The OPERATOR reserves the right at all times to cancel a playing permit if conditions justify such action.

VIII. JUNIOR GOLF PROGRAM

A. Purpose

1. Create a future interest in golf by providing opportunities for young people to learn the game of golf.

2. Establish guidelines that will enable young golfers to integrate comfortably with adult players on the Course.

3. Ensure an ongoing program of education for young people interested in sports (specifically golf) as a contribution to their own personal development.

B. Junior Certification Program

1. The Certification Program for junior golfers under 15 years of age is the responsibility of the OPERATOR.

2. The Certification Program is designed to improve the golfing skills of junior boys and girls, and to enhance their knowledge and awareness of the rules of golf, golf etiquette, and golf course care.

3. To complete the Certification Program, junior golfers must:

   a. Take and pass a written examination on USGA Rules of Golf, golf etiquette, and golf course care.
   b. Successfully demonstrate their golfing skill and ability on the driving range and the putting green.
   c. Become familiar with and understand the Course Rules and Regulations.
   d. Graduate from a junior golf camp.

4. Appropriate study material covering the subjects included in Certification Program written examinations will be made available to junior golfers through the OPERATOR. Certification applicants will be encouraged to read and study the material provided before taking the written examination, and study material will be returned to the OPERATOR for reissue to other applicants.

5. Each junior under 15 years of age will also be required to complete one semester of junior golf instruction and/or be able to pass a field playing proficiency test.

6. The OPERATOR will present a Junior Certification Card to each applicant who successfully completes the Certification Program.

7. Notification of the junior Certification Program will be posted on the bulletin board and in the Starter office, and all required information will be recorded on the approved index card by the OPERATOR.

C. General Policies

1. The OPERATOR is required to establish, promote, and maintain:

   a. A Junior Golf Club.
   b. Four Junior Golf Tournaments per year.

2. Juniors will be defined as children 17 years old and under.

3. Parental permission will be required for Junior Golf participation.

IX. RECOGNIZED CLUBS

A. Purpose

1. To offer a vehicle for organized competition, handicapping and fellowship for the Course patrons.

2. To establish a nucleus of patrons for the Course.

B. Policy

1. Recognized club status is granted at the sole discretion of the OPERATOR. The PNGA currently allows no more than four (4) clubs with 18 hole formats and two(2) clubs with 9 hole formats to be designated affiliated clubs.

2. The Recognized Clubs must be totally self supporting through their own dues structure. The Recognized Clubs must coordinate amongst

themselves the maintenance of the GHIN system at their host course. Maintenance includes the cost of telephone lines, computer equipment purchase and maintenance, and other items associated with maintaining the GHIN system.

3. Each Recognized Club must establish a Board of Directors. This Board must have at least four members as follows:

   a. President
   b. Treasurer
   c. Tournament Chairman
   d. OPERATOR representative

4. OPERATOR will aid in the establishment of the above clubs.

5. The Recognized Clubs' bylaws must be approved by the OPERATOR and the City.

6. The Recognized Clubs must belong to the appropriate amateur golf regulatory association, (i.e. Washington Golf Association, as applicable to the Course).

7. The Recognized Clubs use of the Course for organized playing activities will be subject to the policy established in this manual.

8. Each Recognized Club is encouraged to purchase their tournament prizes from the OPERATOR per the fee schedule.

9. No cash prizes for tournament winners will be permitted unless approved by the OPERATOR.

10. Reservation privileges for the Recognized Clubs' members will be limited to the reservation policy established in this manual.

11. Organized tournament privileges for Recognized Clubs will be limited to policies established in this manual.

X. League Play Policy

1. Purpose

   a. To offer a vehicle for organized league play for the Course patrons.

2. Policy

1. League events may be scheduled in accordance with the following policy

2. Leagues are required to schedule a minimum of 12 consecutive weeks on the same day of the schedule among the week; traveling leagues may schedule among the three courses (Jackson Park, Jefferson Park, or West Seattle) for a minimum of 12 weeks and must be played on the same day of the week.

3. An application fee of $250.00 payable to the respective course must accompany an application form. The Operator cannot schedule league use without a completed application and the application fee.

4. Leagues may be scheduled to tee off anytime on the weekdays; traveling leagues may tee off at 10:00 AM or later on weekdays. The City does not allow league play on holidays or weekends.

5. Each league must sign up for a minimum of 4 tee times (16 players) per play date.

6. Leagues are required to pay $40.00 per player per season, based on the peak number of players. $30.00 per player of will be distributed in the form of credit book accounts established at the league course for each person who earns prize money. The league coordinator will need to supply the operator with a list of league players who are to receive prize money so that the operator can set up accounts for them.

7. Upon approval of the play dates, a contract will be mailed to the league coordinator. The signed contract must be returned within 30 days of the mail date and must be accompanied by a non-refundable $250.00 deposit. The deposit will be credited toward fees due.

8. The balance of fees is due 30 days before the first league play date. At that time, a credit book account will be established in the league's name and the prize funds will be made available to the league coordinator for any advance purchases.

XI. DRIVING RANGE OPERATIONS

A. Hours of Operation

1. The driving range hours of operation will be as stated in the Management Agreement.

B. General Policies

1. The OPERATOR shall provide a quality of range ball that will meet the needs and desires of the golfers.

2. The OPERATOR will be required to maintain the following amenities for the patrons' enjoyment:

a. Properly maintained standing mats and brushes.
b. Accurate and aesthetically pleasing yardage indicators.
c. Signs indicating safety procedures for all patrons.
d. Adequate quantities of range balls to allow for peak usage periods.

3. The OPERATOR shall have clubs available for rental use on the driving range.

XII. LESSON PROGRAMS

A. Purpose

1. To provide a service to all levels of golfers so that they may enjoy golf by improving their individual skill levels.

2. To provide a means of introducing new golfers to the game of golf therefore improving revenue potential and Course usage.

3. To provide different types of instruction to fit the needs and incomes of all people desiring to play the game of golf.

B. Types of lessons available

1. The OPERATOR is required to provide the following types of professional instruction:

a. Private instruction available by the half hour, hour or in a series structure.
b. Junior golf "swing classes" for beginners at least once per week on a perpetual basis.
c. Adult group lessons for beginning, intermediate, and advanced players on a perpetual basis.
d. Periodic clinics for the Recognized Clubs demonstrating various aspects of the golf game.
e. Playing lessons.

November 2003

Monday	Tuesday	Wednesday	Thursday	Friday
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28

December 2003

Monday	Tuesday	Wednesday	Thursday	Friday
1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
29	30	31		

Jackson Park Golf Club

Best Management Practices

The Best Management Practices outlined below are general policies and procedures that direct routine golf course management operations at Jackson Park Golf Club. These policies and procedures are the result of combining standard golf course management practices common to Pacific Northwest and national golf courses, and those defined in the Seattle Parks and Recreation Best Management Practices that apply to Seattle municipal golf courses.

I. Turf Cultural Practice

A. Location

1. Develop location specific cultural practices (i.e., greens, tees, fairways and rough).

B. Hygiene

1. Remove clippings.
2. Optimize air circulation.
3. Minimize shade for turf areas. Whenever possible, retain shade over waterways to preserve habitat.
4. Remove leaves, fallen limbs, and other debris from turf areas. Whenever possible, do not disturb this material in waterways to preserve habitat.

C. Soil Moisture

1. Maintain proper soil moisture levels.
2. Avoid over-application of water to turf.

D. Mowing

1. Set mowing height appropriately for location.
2. Adjust mowing height to relieve turf stress when necessary.

E. Aeration

1. Adjust aeration frequency appropriate for turf location and conditions.

F. Topdressing

1. Use topdressing sand that meets USGA specifications for particle size distribution when available to maintain consistent rootzone content.
2. Apply topdressing following aerification when appropriate.
3. Apply "light" topdressing when appropriate.

G. Overseeding

1. Select seed type best suited for the growing environment.

2. When available, use disease resistance cultivars.

II. Turf Fertilization

A. Soil Nutrient Testing

1. Perform soil nutrient testing at regular intervals determined by the superintendent).
2. Maintain accurate records of soil sample locations, date of sampling, and soil conditions.

B. Nitrogen

1. Use slow release nitrogen when possible.
2. Regulate nitrogen application to optimize turf vigor and prevent disease development.

C. Phosphorus

1. Using soil test information, avoid over-application.

D. Potassium

1. Using soil test information to develop target levels, apply as required.

E. Micronutrients

1. Apply as required.

F. pH

1. Maintain soil pH appropriate for turfgrass type.
2. Adjust soil pH to optimize turf vigor.

G. Buffer Zones

1. Establish buffer zones near waterways where appropriate. Observe a minimum buffer zone width of 25 feet whenever possible, with buffer zones never being narrower than 10 feet.
2. Do not apply fertilizer to turf located in defined buffer zones.

H. Documentation

1. Record location, date, and type of fertilizer applied.
2. Record rate of application.
3. Record method of application.
4. Maintain current inventory of fertilizer on hand.

I. Storage

1. Maintain fertilizer inventory in a dedicated, enclosed area.
2. Keep fertilizer in a dry, well-ventilated environment.

III. Turf Irrigation

A. Water Quality

Determine that water quality of irrigation source is suitable for application to turf.

B. Conservation
Optimize irrigation program to conserve water.

C. Weather Data
When available, use weather station and evapotranspiration information to fine tune irrigation regimen.

IV. Tree Management

A. Tree Selection

1. Select trees with rate of growth appropriate for location.
2. Select trees with wood strength, rooting characteristics, and plant features (e.g., leaves, etc.) appropriate for location.
3. Select trees well suited for climate, soil conditions, and pest resistance.
4. Determine if native or non-native trees are appropriate and select quality planting stock.

B. Planting Locations

1. Consider characteristics of mature tree (height, light passage, etc.) when evaluating potential locations.
2. Choose locations that will not create problems with shading of turf or restriction of air movement.

C. Tree Planting

1. Create a planting hole with a minimum diameter of 12 inches wider than root spread or root ball, and no deeper than the root ball.
2. Place balled-and-burlapped trees in planting hole, plumb vertically, and remove all rope and 1/3 of burlap (or fold down).
3. Backfill soil in lifts of 4 to 6 inches, avoiding compaction with muddy backfill. Use native soil to backfill unless existing soil contains rubble or pure clay
4. Water thoroughly after backfilling to settle the soil, eliminate air pockets and re-wet the root system.
5. Do not wrap tree trunks, and do not fertilize tree(s) at time of planting
6. Create a berm 3 inches high to surround trees planted in sandy or loamy soils for the purpose of funneling water to the root ball.
7. Add 3 to 4 inches of shredded mulch or composted brush chips to surround planted trees immediately after backfilling, keeping mulch away from tree trunk.
8. Stake only in situations where normal planting procedures do not provide a stable plant. Remove stakes at the end of the first year.
9. Whenever possible, plant trees during the fall (October through December) or spring (March through May).

D. Cultural Care

1. Water newly planted trees weekly through the first three growing seasons. Trees should receive approximately 1 inch of water per week including rainfall.
2. Do not water established trees except during periods of extreme drought.
3. Maintain 3 to 4 inches of mulch annually in newly planted tree rings to suppress weeds and avoid damage from mowers and trimmers.
4. Monitor trees for insects and disease. If detected, use physical methods (e.g., pruning, nest removal, etc.,) to correct the problem. If pesticide treatment is required to control a pest(s), consult Seattle Parks and Recreation Best Management Practices for appropriate procedures

E. Tree Removal

1. Identify trees that are defective and/or represent a hazard. Examples include old age, storm damage, poor structure, disease state, or tree death. Such trees are candidates for removal.
2. Identify trees that require removal for new construction, access, or other issues not related to tree viability. Such trees are candidates for removal.
3. When practical and of value, transplant viable trees smaller than ten to twelve inches in diameter that require removal (e.g., new construction).
4. Consult Seattle Urban Forestry and Seattle Parks Department to engage appropriate procedures (e.g., public notification) and to obtain authorization for tree removal.

V. Pest Management

A. Integrated Pest Management

1. Develop an Integrated Pest Management document
2. Use the Integrated Pest Management document as an operational reference for all golf course operations.
3. Educate staff on the contents and utility of the Integrated Pest Management document.
4. Revise the Integrated Pest Management document over time so that it remains a contemporary document reflecting the state of the art of golf course management.

B. Weeds

1. Define threshold levels.
2. Monitor turf regularly for presence of weeds.
3. Optimize turf vigor by proper application of fertilizer to prevent weed colonization and establishment.
4. When possible, use mechanical means (i.e., hand pulling) to remove.

5. Use selective herbicides only when thresholds have been exceeded, and when possible, limit applications to spot treatments.

C. Fungal Disease

1. Define threshold tolerance levels.
2. Understand disease symptoms and disease life cycle.
3. Monitor turf regularly for disease symptoms.
4. Monitor conditions (temperature, humidity, moisture etc.) that favor disease development.
5. Use fungicides with optimal efficacy and specificity.
6. When possible, use targeted, spot applications of fungicides.
7. Rotate chemical family of fungicides applied to prevent the development of fungal resistance.
8. Document problem areas, disease identification, and disease treatment.

D. Insects

1. Define threshold tolerance levels.
2. Understand relevant insect life cycles and symptoms of infestation.
3. Monitor turf regularly for symptoms of infestation.
4. If infestation is detected, correctly identify the insect.
5. Use target specific insecticides.

E. Rodents

1. Define threshold tolerance levels.
2. Use mechanical traps when possible.
3. Study the habits of the target rodent to enhance trap efficiency.

F. Aquatic

1. Define threshold tolerance levels
2. Keep ponds/lakes as deep as practical to minimize aquatic plant growth.
3. Where possible, use mechanical means to remove undesirable aquatic plants.
4. Use beneficial aquatic plants to out-compete undesirable plants and/or to remove nitrate from the water.
5. Use aerators to agitate water; this practice reduces the growth of bacteria and algae.

VI. Environmental

A. Regulations

1. Become familiar with federal, state, and local regulations that apply to golf course operations including those related to habitat, surface water, groundwater, and storm water runoff.
2. Implement policies and procedures to achieve compliance with relevant regulations.

B. Habitat

1. Develop golf course operations to optimize preservation and enhancement of wildlife habitat.
2. Where available, obtain advice from organizations such as the Audubon Cooperative Sanctuary, Fish and Wildlife, etc. to assist in habitat enhancement.

C. Monitoring

1. Monitor and document habitat improvements and related wildlife response (e.g., installation of bird boxes leading to increased bird population).
2. Where appropriate, monitor and document water quality of relevant surface waters to assess impact of golf course management
3. If monitoring information reveals a potential problem, implement and document corrective action.

D. Corrective Action

1. In the event that monitoring information identifies a potential problem, design and implement action to correct the situation.
2. Document any corrective action taken.

E. Spill Response

1. Maintain appropriate spill response equipment.
2. Train staff on proper use of spill response equipment.

VII. Pesticides

A. Selection

1. Confirm identity of pest requiring pesticide treatment.
2. Select pesticide based on efficacy, target specificity, and environmental compatibility.
3. Rotate chemical family of pesticide used for a specific pest to prevent the development of pest resistance.

B. Application

1. Read and understand pesticide labeling before use.
2. Use pesticides for labeled use only.
3. Mix pesticides for target pests at rates recommended by the manufacturer.
4. Mix pesticides in a dedicated area.
5. Wear appropriate personal protective equipment during pesticide mixing and application.
6. Properly calibrate sprayer or spreader before use.
7. Apply pesticides to target areas only. Do not apply pesticides in buffer zones.
8. Minimize pesticide drift by applying when winds are 5 mph or less.
9. Use curative applications only when threshold levels have been reached.

10. Use preventative applications only when conditions favoring outbreaks occur (e.g., summer stress favoring anthracnose, winter conditions favoring fusarium).
11. Use check plots to determine pesticide effectiveness (i.e. 2 x 2 foot square of plywood laid on turf to block application and serve as an untreated control area.)

C. Storage

1. Store pesticides in a restricted access, dedicated room or cabinet.
2. Ensure that the pesticide storage area meets OSHA requirements (i.e., dry, ventilated, temperature control, etc.)

D. Disposal

1. Triple rinse containers prior to disposal. Apply rinsate to turf.
2. Inspect rinsed container to confirm that all visible residues have been removed prior to disposal.
3. Contact local pesticide distributor for container recycling instructions.

E. Documentation

1. Follow state regulations for proper documentation procedures
2. Record target of pesticide application.
3. Record location, date, and type of pesticide applied.
4. Record weather conditions.
5. Record rate of application.
6. Record method of application.
7. Maintain current inventory of pesticides on hand.

VIII. Petroleum Products

A. Fuel Storage

1. Store fuel in certified, double walled, self-contained concrete or steel tanks.
2. Keep gas cans in a separate, dedicated storage area.
3. Label fuel storage containers clearly and accurately.

B. Disposal

1. Store used fluids in separate containers appropriate for specific fluid type.
2. Maintain used fluid containers in an easy access, safe area that is out of the weather.
3. Label used fluid containers clearly with fluid contents.
4. Contact City of Seattle ESD to arrange pick up of containers for disposal.

IX. Waste Management

A. Compost

Compost as much biomass as possible and reuse on golf course.

B. Wash Water

Pre-wash all mowing equipment in a designated area in rough or use a leaf blower or pressurized air to dry to remove material prior to rinsing. Rotate this location daily or weekly. Perform final rinse at wash pad. When possible, recycle rinse water.

C. Recycling

Implement recycling program (cardboard, plastic, pop cans, etc.).

X. Safety Program

A. Safety Meetings

1. Establish a regular meeting time (i.e., first Monday of the month).
2. Keep accurate records of meeting discussions.
3. Create safety committee consisting of maintenance crew members.

B. Safety Training

1. CPR and first aid.
2. Eye protection.
3. Noise exposure and protection.
4. Hard hat use and head protection.
5. Personal protection equipment.
6. Respirators
7. Gloves
8. Rubber boots
9. Rain suit
10. Chemical suit
11. Safety glasses

C. Equipment training

1. Tool and accessory training.
2. Lightning safety and protection.
3. Emergency procedures.
4. Bomb threat.
5. Signage.
6. Highlight all fire extinguisher locations
7. Display signage appropriate for location or situation
8. Request free safety training videos from OSHA.
9. Understand how to interpret a Material Safety Data Sheet (MSDS). Place MSDS documents in a file and store in a location accessible to all staff.

D. Safety Audits

1. Have fire marshal perform an audit of fire safety.
2. Have OSHA perform a "consultative" general safety audit.
3. Contact insurance company to determine if they will perform a safety audit.

Jackson Park Golf Club

Integrated Pest Management Plan

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1. Growth Conditions and Symptoms
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Appendices

Jackson Park Golf Club

Integrated Pest Management Plan

I. Introduction

The Environmental Stewardship Guidelines direct the management practices of Jackson Park Golf Club focusing on environmental protection of the golf course and surrounding areas. The cornerstone of environmental stewardship at Jackson Park Golf Club is the philosophy of Integrated Pest Management (IPM). Simply stated, IPM is a management system that utilizes systematic, disciplined, and documented cultural practices as a first line of defense for pest control. Cultural practices such as irrigation, aerification and fertilization are utilized to optimize plant health enabling natural plant resistance to combat pest infestations. Mechanical strategies, such as proper mowing, also contribute to turf health and will be implemented. Biological control options will be considered and utilized whenever feasible. On occasion, when cultural practices are not fully effective at controlling pests, the use of pesticides to manage pest damage will be necessary. The Jackson Park Golf Club IPM Plan will provide a sound working framework for selection and implementation of the most environmentally sound solutions to golf course pest problems.

Jackson Park Golf Club will consider all IPM strategies that will reduce overall pesticide applications in an effort to meet and sustain the City of Seattle's pesticide reduction goals. Jackson Park Golf Club will continue to search for viable alternative products to replace the Tier I (highest level of concern) pesticide products currently in use as identified in the City of Seattle's Pesticide Tier Tables. This document is viewed to be a functional document that will evolve over time requiring periodic updating of information.

II. Integrated Pest Management Definition

Although there are numerous definitions of Integrated Pest Management, the Jackson Park Golf Club recognizes the following definition, which is stated in the City of Seattle, Department of Parks and Recreation *Best Management Practices*:

"A decision-making process to determine if, where, when and how pest problems will be managed. An IPM program includes all potential pest control strategies but focuses on non-chemical controls whenever possible. The following four pest control methods may be employed in an IPM program:

- Cultural control: The use of sound horticultural practices to optimize plant health and to suppress insects, disease, and weed growth. Other cultural controls include site-appropriate design and the use of disease or drought-resistant plants.
- Mechanical control: The use of a variety of tools and equipment for the purpose of eliminating pests.

- Biological control: The use of biological control agents that act as predators or parasites of pest species. The use of other beneficial organisms that improve plant health by enhancing soil quality.

- Chemical Control: The application of various agricultural products such as herbicides, insecticides or fungicides or other chemical compounds to a target pest as a means of control."

Simply stated, the broad objective of Jackson Park Golf Club Integrated Pest Management plan is to maximize the use of cultural methods to control pests through optimized, disciplined, and documented golf course management practice. To meet this objective, the Jackson Park Golf Club Integrated Pest Management plan defines turfgrass, non-turfgrass, and aquatic management areas; pests of concern within these areas; methods to monitor pest populations; damage threshold levels that when exceeded may require action; and the proper procedures to be followed if action is necessary.

Integrated pest management includes optimizing turf health through cultural practices to enhance natural plant resistance to pest infestation, optimizing habitats for beneficial species, and minimizing plant damage resulting from routine golf course operations. However, in spite of the use of these practices, in certain instances the use of pesticides to control some pests and diseases may be necessary. An essential component of the Integrated Pest Management plan is the coordination of the ongoing use of cultural methods with the selective use of pesticides as a means of minimizing pesticide application.

III. IPM Objectives

- Minimize potential hazards to human health and the environment
- Optimize playing conditions of the golf course
- Control operating costs
- Utilize effective monitoring to enable selective control of pest populations
- Minimize pesticide use through targeted application while optimizing pesticide efficacy
- Sustain high turf grass quality
- Maintain health of landscape elements such as trees, shrubs, flower beds and natural areas

IV. IPM Structure

The structure of the Integrated Pest Management plan is based on the selective targeting of plant pathogens, weeds, and insects that threaten the agronomic health of the golf course. In addition, the Integrated Pest Management plan includes provisions to preserve the quality of aquatic areas of the golf course. The strategy of the Integrate Pest Management plan is as follows:

- Define areas requiring management and the relative maintenance intensity associated with each area
- Maintain vigorous turf health through maintenance practices to optimize pest tolerance
- Identify pests likely to be encountered
- Establish damage threshold levels for each pest which when exceeded, may lead to corrective action

- Scout and monitor for the presence of pests

- Implement sequential corrective action when threshold levels have been exceeded
  - Adjust cultural practices
  - Utilize biological and mechanical controls when appropriate
  - Determine if pesticide intervention is necessary or appropriate
  - Apply appropriate amounts of pesticides selectively, if necessary. Pesticides will be selected based on minimal toxicity and optimal efficacy
- Document all scouting and monitoring observations, treatments, and treatment results

V. *Area Definition*

Jackson Park Golf Club is a City of Seattle municipal golf course that includes an 18 hole golf course and a 9 hole, par 3 golf course ("Short Nine"). Both golf courses are located on a total of 160 acres in Seattle, Washington. Property surrounding the golf course includes residential areas on its northern, eastern, and southern boundaries. An interstate freeway (I-5) is located upslope from the golf course on its western boundary. The first nine holes of the 18 hole golf course were golf course were built in 1920, and the second nine holes were completed in 1931. The "short nine" course was completed in 1954. Native materials were used for the construction of all aspects of the golf course, including greens. The original course design has remained effectively unchanged since its original development. Several grass tees have been installed, number 14 green has been rebuilt and is sand-based, and number twelve fairway was re-graded and sand-capped in 1994. The managed areas of the golf course include turfgrass areas and non-turfgrass areas, which are described below.

A. Turfgrass Areas

All grass types used for each location (tees, greens, etc.) are well suited and adapted for the climate of the area. The turfgrass of greens consists primarily of annual bluegrass (*poa annua*). The turfgrass of the tees, fairways, and rough consists of annual bluegrass and perennial ryegrass. The turfgrass and ornamental areas (shrubs and plants) and their respective management requirements are defined in Table 1.

Table 1. Jackson Park Golf Club Area Definition and Maintenance Requirements

Area	% Total Area[a]	Fertilizer Requirement	Irrigation Requirement	Mowing Frequency	Cultural Frequency
Greens	5.4	high	high	high	high
Green Surrounds	4.9	medium	high	medium	high
Tee Surface	3.9	high	high	medium	high
Tee Surrounds	3.0	medium	medium	low	low
Approaches	5.2	high	high	medium	medium
Fairway	31.3	medium	medium	medium	medium
Rough	38.7	low	low	low	low
Ornamentals[b]	7.5	low	low	N/A	medium

[a] golf course management area (turfgrass & ornamentals)
[b] for this table, ornamentals are defined as shrubs and plants

B. Non-Turfgrass Areas

Non-turfgrass areas consist of bunkers, ornamental plantings, trees, aquatic areas, natural areas, cart paths, service roads, walls, rockeries, and non-vegetated areas.

1. Bunkers

   Fairway and green-side bunkers are located throughout the golf course. Bunker management is confined to routine maintenance including raking and smoothing of sand contained within the bunkers.

2. Ornamental Plantings

   A number of ornamentals plants and shrubs are located surrounding the clubhouse and throughout the golf course.

3. Trees

   Numerous native and non-native/ornamental trees with a wide variety of ages are located throughout the golf course.

4. Aquatic areas

   a. Ponds

      A 1.5 acre storm water retention pond is located adjacent to the 14th hole. During large rain events, the retention pond receives high flows from the North Fork of Thorton Creek. The outflow of the retention pond discharges into Jones Creek The pond is buffered on its northern edge by 1.5 acres of riparian forest. The pond normally retains water during the entire year, but the water level fluctuates depending on precipitation.

   b. Creeks

      (1) Thorton Creek

      Thorton Creek enters the golf course at its northwestern boundary. The creek traverses the western side of the golf course for approximately 2,600 linear feet before exiting the golf course on its southern border near the 1st fairway. Currently, there is little if any natural growth buffer along most of this reach of the creek, with maintained turf and service roads within a few feet of the creek. A large retention pond and creek restoration project is scheduled to start construction in the summer of 2002, which will change large areas off the front nine holes of the golf course.

      (2) Jones Creek

      Jones Creek enters the golf course at its northern boundary and traverses a small portion of the northeastern section of the golf course before exiting the golf course at its eastern boundary. The creek then passes through adjacent residential property before re-entering the golf course at its eastern boundary. The creek then passes through a small portion of the "short nine" before exiting the golf course at its eastern boundary.

   c. Buffer Zones

      A buffer zone, as defined in the *Tri-County Integrated Pest and Vegetation Management Guidelines* (Appendix A) is "a corridor of land that is 25 feet in width

on the sides of a stream or other body of water. Measurement of this buffer zone begins at the top of the stream bank. Anticipated seasonal or weather related changes affecting water level will be included in the decision making process when dealing with buffer zones." Additional information regarding general and specific buffer zone guidelines can be found at **http://www.metrokc.gov/hazwaste/ipm/ipmguide.htm**.

5. Natural Areas
Jackson Park Golf Club contains a rich diversity of distinct and unusual habitat areas totaling approximately 30 acres. The Jackson Park natural areas are dominated by 15 acres of coniferous forests. Scrub-shrub and forested wetlands adjacent to Thorton Creek and Jones Creek total slightly over two acres. Shrublands account for approximately one acre, which consists primarily of blackberries. Five distinct forest types are present in the natural areas including: Landscaped (planted) forest (five acres), madrone forest (very rare in Seattle - two acres), mixed conifer/deciduous forest (two acres), deciduous forest (1.25 acres), and riparian forest (one acre). The age and size of the forested areas is impressive with most trees having diameters ranging from 15 to 30 inches. Invasive plants present in the natural areas include ivy, holly, blackberry, reed canary grass, and Scot's Broom, and typically are not widespread. A detailed description and a map of the Jackson Park Golf Club habitat areas and invasive weeds are located in Appendix B (from *Habitats on Seattle Public Lands* - provided by the Seattle Urban Nature Project).

6. Cart Paths, Service Roads, Walls, Rockeries, and Non-vegetated Areas
Gravel cart paths and service roads are located throughout the golf course. In addition, a variety of walls, rockeries, and non-vegetated areas are located on the golf course. Occasional weed control is necessary to maintain these assets.

VI. Turfgrass Management Practices

Turfgrass area management is the most labor intensive element of the Integrated Pest Management program, requiring greater than 95% of resource allocation. As stated repeatedly throughout this document, the primary intent of the Integrated Pest Management program is to optimize turfgrass vigor utilizing sound cultural practices as a means of preventing and/or minimizing pest infestation. The primary cultural practices of turfgrass management at Jackson Park Golf Club include mowing, fertilization/amendments, and irrigation. Secondary cultural practices include aeration, thatch management, topdressing, overseeding, and sod replacement.

A. Primary Cultural Practice

Primary cultural practice includes mowing, fertilization/amendments, and irrigation. The following describes routine primary cultural practice operational procedures. Additional detail that governs primary cultural practice is defined in the document entitled *Golf Course Maintenance Standards for Seattle Municipal Golf Courses* (Appendix C).

1. Mowing
Mowing will be performed on an as-needed basis and mowing frequency is area dependent. During the growing season, mowing of Greens occurs daily, mowing of tees and fairways occurs three times per week, and mowing of the rough occurs on an average of one to two times per week.

Lightweight mowing equipment is used as often as practical to minimize turf compaction and mowing heights are adjusted for individual areas. Mowing heights include 7/32 to 9/16 inches for greens, 9/16 of an inch for tees, 5/8 of an inch for fairways, and 1.5 inches for rough.

2. Fertilization/Amendments

Management of nutrients is essential for development of turf vigor. Management of turf fertility involves the understanding of soil composition, plant nutrient requirements, fertility management history, use of soil/tissue test information, and applications of the proper fertilizer formulations at the proper time. Additionally, the availability of beneficial soil [illegible] and biological amendments should be considered when managing soil/[illegible] programs. The objective of the fertilizer program is to provide optimal nutrient availability to turf while simultaneously avoiding the application of excess nutrients to avoid weed infestation, disease development, and nutrient runoff. Every effort will be made to prevent off-site nutrient leaching through careful fertility management practices.

a. Soil/Tissue Nutrient Testing

Testing for nutrient composition provides valuable information that allows for the development of strategic fertilizer plan development and also provides insight into the effect of preceding cultural practices. Tissue nutrient testing provides information relative to nutrient uptake and plan-available nutrients. Soil/tissue testing should be performed on areas of the golf course selected by the Superintendent to generate information that will provide technical support during the development and application of the fertilizer program.

b. Turfgrass Nutrient Requirements

The major nutrients required for turfgrass health are nitrogen, phosphorus, potassium (NPK). Secondary, or "minor" nutrients include calcium, sulfur, iron, boron, copper, manganese, magnesium, and zinc. The availability of nutrients to turfgrass is influenced markedly by the pH of the soil. Consequently, maintenance of the appropriate pH is an important component of the fertilization program. Slow release fertilizers should be used as the primary source of nutrients, with adjustments for special needs and conditions. Greens fertilization programs may include light applications of soluble foliar-adsorbed nutrients applied on a frequent basis (commonly referred to as "spoon feeding").

(1) Major Nutrients

(a) Nitrogen

The management of nitrogen levels is critical owing to the high turf demand for this nutrient and the potential for excess nitrogen to enter into surface water and groundwater. As a result, the amount of nitrogen delivered to turfgrass should be the minimum amount necessary to promote turf vigor. In general, nitrogen rates and formulations will be determined based on soil/tissue test results, season, site conditions, weather, and other information. In certain instances when turf and/or climate conditions

dictate, rates of application will be adjusted (either higher or lower) at the discretion of the Superintendent.

Nitrogen formulations consist of water insoluble (slow release) and water soluble (quick release) types. Slow release nitrogen sources include methylene urea, sulfur-coated urea, IBDU, polymer coated fertilizers, and organic fertilizers processed and formulated as slow release products. Examples of quick release nitrogen sources include ammonium sulfate, ammonium nitrate, potassium nitrate, and urea. "Bridge" fertilizers combine the best qualities of synthetic and organic fertilizers providing both quick and slow release of nutrients. Organic formulations should be considered for providing sustainable slow release nutrients, soil organic matter, and potentially higher soil biological activity. To maximize plant uptake and minimize nitrogen runoff (e.g., nitrate), slow release nitrogen sources and/or light applications of soluble nitrogen ("spoonfeeding") should be used whenever possible.

Determination of the appropriate nitrogen source will be at the discretion of the Superintendent and will be based on the season and relative growth rate of the turf at the time of application. Ammonium nitrate should be avoided as a source of nitrogen as it requires an Explosives Materials Permit from Seattle Fire Department for storage. Every effort will be made to eliminate potential off-site leach of nutrient through careful fertility management.

(b) Phosphorus
Turf requirements for phosphorus are relatively low and phosphorus does not leach from soil quickly. As a result, application rates tend to be corresponding low, which minimizes the possibility of storm water runoff carrying residual phosphorus off-site.

(c) Potassium
Turf requirements for potassium are intermediate to high in relation to nitrogen and phosphorus levels. Potassium content of fertilizer formulations should be based on results from the soil/tissue nutrient analysis. Although applied to maximize efficiency of uptake, potassium does not pose the extent of environmental risk that excess nitrogen and phosphorus levels represent. Proper levels of potassium are an important component of plant disease resistance and contribute to the ability of turf to withstand wear and traffic.

(2) Secondary (Minor) Nutrients
In general, turfgrass requirements for the secondary nutrients calcium, sulfur, iron, boron, copper, manganese, magnesium, and zinc are lower than for nitrogen, phosphorus and potassium. Secondary nutrients are essential for optimal turf performance and when possible, should be applied based on soil/tissue testing results and recommendations. These nutrients are available in a variety of formulations and application of these nutrients will be at the discretion of the Superintendent.

(3) Supplements and Amendments
A variety of turf supplements and biostimulants such as proteins, amino acids, plant hormones, carbohydrates, humic acids, and soil microorganisms have shown promise for the enhancement of turfgrass performance under high stress environments such as putting greens. As research and development of these products progresses, selected products may be used in fertility management at the discretion of the golf course Superintendent.

(4) pH
Maintenance of the proper soil pH is essential in optimizing the availability of nutrients, and also is important in minimizing overall turfgrass stress. When the soil pH requires adjustment to a more alkaline pH, lime will be added until the targeted pH is obtained. When soil requires adjustment to a more acidic pH, ammonium sulfate will be added until the targeted pH is obtained.

c. Fertilizer Treatment Areas
The rate and frequency of fertilizer application is area and situation dependent. A typical fertilizer application frequency is shown in Table 2. Fertilizer application is most frequent on the greens with less frequent applications being made to tees and fairways, and the least frequent application being made to the rough.

Table 2. Jackson Park Golf Club:
Fertilizer Application Areas and Typical Yearly Applications

Area	% Total Area[a]	Applications per Year	Total Nitrogen per Year
Greens	5.4	12 - 15[b]	6 - 8 lbs[c], (3 - 8 lbs)[d]
Green Surrounds	4.9	2 - 3	2 - 3 lbs
Tee Surface	3.9	6 - 8	4 - 6 lbs
Tee Surrounds	3.0	6 - 8	4 - 6 lbs
Approaches	5.2	6 - 8	4 - 6 lbs
Fairway	31.3	2 - 3	2 - 3 lbs
Rough	38.7	1 - 2	1 - 2 lbs
Ornamental	7.5	as required	< 1 lb

[a] golf course management area
[b] light rates applied incrementally to minimize growth and potential leaching
[c] expressed as lbs nitrogen per 1,000 ft^2
[d] rates vary depending on formulations, foliar vs. soil applications, frequency, etc.

d. Fertilizer Storage
All fertilizers will be maintained in a dedicated moisture free, well-ventilated, approved storage area.

e. Fertilizer Documentation
All fertilizer applications will be documented on a fertilizer application form. Information recorded will include date of application, location of application, total area

treated, formulation of fertilizer(s), rate of application expressed as Lbs. of N/1,000 ft^2, total quantity of product applied, and the of the applicator(s) name.

3. Irrigation

The distribution of adequate water onto turf via irrigation without over-watering is essential to turf health. In addition to providing optimal moisture levels for turf, irrigation practices are designed to conserve water whenever possible. During periods of hot weather, greens should be syringed (hand-watered) in mid-afternoon as required, and cycle and soak watering schedules should be utilized whenever possible. Finally, wetting agents should be used when necessary to improve water infiltration for localized dry spots and other hydrophobic areas of turf. Wetting agents will be applied in accordance with label rates and recommendations.

a. Water Source
Jackson Park Golf Club has water rights to Thorton Creek and uses water from the creek as its sole source of irrigation water.

b. Irrigation System
The irrigation system is a manual system that relies on quick couplers and the use of hoses. Areas of localized dryness are treated by hand watering.

c. Irrigation Water Quality
Historically, no turfgrass problems have been correlated with problems in irrigation water quality. Accordingly, testing of irrigation water quality is not performed. In the event that turfgrass symptoms indicate potential contaminants in irrigation water, water samples will be acquired from all irrigation water sources and submitted for irrigation suitability testing by a qualified analytical laboratory.

d. Water Conservation
Specified irrigation programs prevent over-application of water as a means of optimizing turf vigor and conserving water. The areas requiring the most frequent irrigation are tees, fairways, and greens. Because it represents a substantial percentage of the overall turfgrass area, the rough is irrigated as sparingly as possible to conserve water. "Out-of-play" areas typically receive little to no irrigation, except as needed for survival of landscape assets.

The primary means of determining turfgrass irrigation requirements is the daily observations and monitoring by the Superintendent and staff. This irrigation system is managed to replace water as needed for optimum growth of all landscape assets, based upon golf course-specific information and daily weather conditions.

Occasionally, a drought condition affecting the City of Seattle's water supply can prompt activation of the Department of Parks and Recreation's *Water Shortage Contingency Plan*.

B. Secondary Cultural Practice

Secondary cultural practice includes aeration, topdressing, thatch removal, overseeding, and sod replacement to promote a healthy turf environment. Similar to primary cultural practice, the following describes routine secondary cultural practice that is governed by the detail contained within *Golf Course Maintenance Standards for Seattle Municipal Golf Courses* (Appendix C).

1. Aeration
   Aeration is the practice of removing soil cores from turf and is performed to minimize turf compaction. This practice enhances the movement of air, water and nutrients in the soil and is a useful technique to manage thatch layers. Additionally, deep tine or verti-drain aerification can be performed one to two times per year and involves aerification at depths of up to 12 inches to improve drainage.

   Aeration frequency is greatest for greens and tees and to a lesser extent for fairways. Aeration is typically performed during periods of active turf growth in the early spring, early summer and fall. Additional aeration may occur at the discretion of the Superintendent. In the case of greens, topdressing sand is applied to fill the cores resulting from the aeration treatment.

2. Thatch Management
   Thatch is a layer of organic debris and the roots, crowns, and stems of grass that exists between the soil and the turf canopy. In the absence of cultural management, this layer becomes thicker over time, resulting in sub-optimal turf growth. Management of thatch is particularly important on greens and consists primarily of aeration and topdressing practices. The thatch layer on greens should be maintained at a depth of 0.5 inches or less. Thatch management practices include hollow core aerification, solid core aerification, vertical mowing, and verticutting. The proper balance of soil microbes is also important for decomposition of turf thatch.

3. Topdressing
   The practice of topdressing consists of the application of a layer of sand to greens and is used to assist in thatch layer management and to provide a smooth and firm playing surface. Topdressing applications follow the aeration or verticutting of greens, and are also made in the absence of aeration ("light" topdressing). Following the application of sand, the sand is lightly brushed into the turf surface. Sand used for topdressing and aeration should be washed, screened material that has a particle size distribution that is compatible with that of the sand located in the rootzone of greens.

4. Overseeding
   Overseeding is the selective application of turfgrass seed to improve areas of turf depletion and to bolster turf density. Overseeding is performed in the late fall, early spring, or early summer; or on an as-needed basis as determined by the Superintendent.

5. Sod Replacement
   Occasionally, problems with diseased, damaged, or weedy turf cannot be remedied by cultural practices. Under these circumstances, affected areas of turf are removed, and fresh turf obtained from an on-site nursery is used to replace the removed section.

VII. Tree Management

Numerous native and non-native trees of varying ages are located on Jackson Park Golf Club and require routine management. General tree planting, management, and removal practices at Jackson Park Golf Club are described below. Further detail regarding tree management practices is contained within support documents entitled City of Seattle Department of Parks and Recreation *Best Management Practices*, and City of Seattle's *Tree Management, Maintenance, Pruning and/or Removal Policy* (hereafter referred to as "*Tree Policy*").

A. Tree Selection

Trees considered for planting will be selected based on ultimate size and type of growth appropriate for the planting location, compatibility with soil conditions and climate, and pest resistance properties. Tree selection factors are specifically defined in the *Tree Policy*.

B. Planting Locations

Tree planting locations will be carefully evaluated prior to planting to anticipate the affect of mature trees on surrounding turf and ornamental areas. Architectural features, engineering, aesthetics, and influence on playing characteristics of the golf course are important landscape functional considerations. Water requirements, shading, and influence on air circulation will be the primary determinants of planting locations.

C. Tree Planting

Trees will be planted in planting holes appropriate for the root ball/root mass and planting holes will be backfilled with native material, except in certain situations where the existing soil is contaminated or filled with rubble. The planting area will be mulched and receive irrigation as required through the first three growing seasons. Whenever possible, planting will occur during the fall. More specific tree planting information is included in the *Tree Policy*.

D. Tree Maintenance

Trees will routinely be monitored for overall health, influence on playing characteristics, the presence of insects and diseases, influence on surrounding turf and ornamentals, and hazard potential. In general, insect and diseases pests are tolerated. High-value specimen trees may require more consideration for IPM strategies. Mulch will be maintained around trees to suppress weed growth and conserve water for newly planted trees. Established trees do not require supplemental watering except in situations of extreme drought. Trees will be pruned to optimize health, allow passage of light, minimize hazard, and manage pests. The Seattle Parks and Recreation Department Urban Forester and IPM Coordinator will be consulted regarding trees that have disease and/or pest problems beyond the normal scope of golf course management practices. The *Tree Policy* outlines specific tree arboreal care considerations and maintenance practices.

E. Tree Removal

The Senior Urban Forester will be consulted regarding trees that are considered candidates for removal (e.g., disease, age, hazard) by the Jackson Park Golf Club Superintendent. Upon confirmation that tree removal is necessary, the tree will be removed by Jackson Park Golf Club staff, or when necessary, by a commercial tree service.

VIII. Composting and Organic Materials Management

A. Grass Clippings and Aerification Cores

Where appropriate, grass clippings and/or aerification cores should be spread on site as mulch. These materials should not be applied within buffer zones of creeks or other water bodies. Materials should be spread out in a thin layer to prevent damage to underlying plants.

B. Leaves

Vac/shredders and leaf lowers should be used to generate a shredded leaf mulch for application to plant beds, rough, and natural areas whenever possible. Excess leaves should be donated to the City of Seattle P-Patches or other City of Seattle operations when possible.

C. Woody Brush

When practical, brush chippers should be used to process tree limbs and other woody material to generate mulch for application to ornamental plant beds, tree wells, steep slopes and natural areas.

D. Logs, Stumps, and Large Woody Debris

Logs, stumps, and woody debris should be stockpiled in suitable storage locations and periodically processed with a leased wood grinder to generate wood fiber landscape mulch. This material functions as excellent mulch for ornamental plant beds, tree wells, and natural areas.

IX. Pest Population Definition

A summary of the currently identified potential pests at Jackson Park Golf Club is shown in Table 3.

Table 3. Pest Definition and Distribution at Jackson Park Golf Club

Category	Pest	Turfgrass	Ornamentals	Natural Areas
Fungal Disease	Anthracnose	3		
	Brown Patch	3		
	Downy Mildew	3		
	Dutch Elm Disease		3 (trees)	3 (trees)
	Fairy Ring	3		
	Fusarium Patch	3		
	Pythium	3		
	Red Thread	3		
	Summer Patch	3		
	Take-All Patch	3		
	Yellow Patch	3		
Algae	Black Algae	3		
Moss	Silvery Thread Moss	3		
Broadleaf Weeds	Chickweed	3	3	
	Clovers	3	3	
	Creeping Buttercup	3	3	
	Dandelion	3	3	
	English Lawn Daisy	3	3	
	Field Bindweed		3	
	Horsetail	3	3	
	Plantain	3	3	
	Poison Hemlock	3	3	
	Speedwell/Veronica	3	3	
Noxious Weeds* (examples)	Garlic Mustard		3	3
	Giant Hogweed		3	3
Grassy Weeds	*Poa annua*		3	
	Quackgrass	3	3	
Woody Brush	Blackberry		3	3
	English Ivy		3	3
	Scotch Broom		3	3
Insects	Cutworms	3		
	European Crane fly	3		
	Spruce Aphids		3 (trees)	
	Western Tent Caterpillar		3 (trees)	

	Wasps & Yellow jackets	3	3	

[a] State of Washington listed noxious weeds (Classes A B, & C): mandated control

X. *Pest Threshold Levels*

The damage threshold levels for specific pest types are shown in Table 4. Damage threshold level is defined as the number of pests detected within a specified area that may lead to corrective action to reduce the density of the specific pest below the damage threshold level.

Table 4. Damage Threshold Limits for Specific Pest Categories

Pest	Tees	Fairways	Rough	Approaches[a]	Greens	Ornamentals	Natural Areas
Fungal Disease	10%[b,c,d]	N/A	N/A	10%[b,c,d]	0.2%[b,c,d]	Symptoms	N/A
Algae	0.2%[b]	N/A	N/A	N/A	0.2%	N/A	N/A
Moss	N/A	N/A	N/A	N/A	10%	N/A	N/A
Broadleaf Weeds	1-5/1000 ft^2	5-10/1000 ft^2	20/1000 ft^2	1-5/1000 ft^2	1/1000 ft^2	20/1000 ft^2	N/A
Noxious Weeds	N/A	N/A	N/A	N/A	N/A	1-5/1000 ft^2	1-5/1000 ft^2
Weedy Grasses	N/A	N/A	N/A	N/A	N/A	20/1000 ft^2	N/A
Woody Brush	N/A	N/A	N/A	N/A	N/A	1-5/1000 ft^2	1-5/1000 ft^2
Insects							
Cutworms	2/ft^2	N/A	N/A	2/ft^2	10/1000 ft^2	N/A	N/A
European Cranefly	25-40/ft^2	25-40/ft^2	N/A	25-40/ft^2	15-25/ft^2	N/A	N/A
Spruce Aphids	N/A	N/A	N/A	N/A	N/A	Detection	Detection
Tent Caterpillar	N/A	N/A	N/A	N/A	N/A	1 nest per tree	1 nest per tree
Wasps	Detection[e]	Detection[e]	Detection[e]	Detection[e]	Detection[e]	Detection[e]	Detection[e]

[a] approach areas are those located approximately 20 - 50 yards in front of greens
[b] % of area affected
[c] when conditions dictate, preventative measures will be considered
[d] spot treatments are considered when conditions dictate
[e] treatment based on detection in high traffic areas

XI. *Pest Monitoring and Pest Control*

All golf course maintenance staff will be trained in golf course IPM to monitor for evidence of pest infestation. The intensity and frequency of monitoring will be adjusted based on the likelihood or presence of pest infestation (i.e., seasonal) or in situational/site specific instances. All monitoring observations of potential pest infestation will be reported directly to the Superintendent on the same day of the observation. The IPM process and strategies will be implemented continuously and appropriate corrective action will be implemented as necessary.

The pest control strategy is sequential and consists of using cultural practices as the first line of defense. Pest control strategy will be developed on a case by case basis with all potential control options given consideration. The decision to implement chemical pest control measures beyond cultural, biological, or mechanical practices will be based on the review of relevant safety, scientific, economic, and environmental information. All products used for pest control must be those approved for use as defined in the City of Seattle *Pesticide Use Reduction Strategy*. See additional information in section ***XII. Pesticides***.

A. Fungal Disease

Within the overall spectrum of pest management, fungal disease represents the most serious and consistent threat to turfgrass health at Jackson Park Golf Club, and is of concern primarily on greens and tees. Greens and tees should be inspected regularly for symptoms of fungal disease. The primary means of identifying fungal disease will be diagnosis by the Superintendent. However, in some instances symptoms consistent with fungal disease may have alternative causes (nutrient deficiency, insects, etc.). When uncertainty regarding potential fungal disease is encountered, samples will be sent to a plant pathology lab for confirmation of the presence of fungal pathogens. More frequent monitoring of greens and tees will occur when conditions known to favor the development of these pathogens occur

An essential aspect of preventing the development fungal disease is the optimization of turf vigor through routine cultural practice. In addition, fungal disease control is dependent on the understanding the disease cycle and conditions that promote disease development, the correct recognition of disease symptoms, and the selective use of the appropriate fungicide agents when necessary. Specific cultural practices can be employed to minimize the potential for fungal disease, which are described below. In general, if these measures fail and symptoms of fungal infestation exceeds defined damage thresholds, fungicide applications may be necessary to control the disease. Numerous factors including season, weather, and turf health/vigor contribute to the determination whether fungicide treatment may or may not be necessary. Annual review of improved products and rotational application strategies should be implemented to reduce resistance of fungal pathogens to specific products. Fungicide products must be those approved for use as defined in the City of Seattle *Pesticide Use Reduction Strategy*.

A description of conditions favoring disease development, symptoms of disease, and specific control measures for each type of fungal disease that requires pest management follows:

1. Anthracnose (*Colletotrichum graminicola*)
   a. Disease Conditions and Symptoms
      Anthracnose appears in the summer when temperatures exceed >78°F and soil moisture conditions are high. Disease development is promoted by compaction, excess thatch, and low nitrogen fertility. Symptoms of Anthracnose include yellow to brown irregular shaped areas on turf with grass leaves having yellow lesions with black centers.

   b. Cultural Control
      Nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less. Light-weight mowing equipment will be used when practical to minimize compaction of turf and the thatch layer will be monitored and managed in an effort to restrict the thatch layer to 1/4 inch or less. Shade will be minimized to improve air circulation for enhanced drying of turf, and irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight.

   c. Fungicide Control
      In the event that conditions favoring Anthracnose growth develop, select turfgrass areas will be considered for preventative treatment with Daconil (Chlorothalonil) or

Heritage (Azoxystrobin). If actual Anthracnose infestation is diagnosed, affected areas will be treated with Banner (Propiconazole), Bayleton (Triadimefon), or Scotts FF (Thiophanate-Methyl).

2. Brown Patch (*Rhizoctonia solani*)
   a. Disease Conditions and Symptoms
      Brown Patch appears in the early summer through late summer under conditions of high temperature and humidity, especially when night temperatures exceed 60°F. The disease is particularly severe on turf with high nitrogen and low phosphorus conditions. Symptoms of Brown Patch include brown circular patches several inches to several feet in diameter, which sometimes are surrounded by a smokey-colored boundary.

   b. Cultural Control
      Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less. Moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to improve air circulation for enhanced drying of turf and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight, thatch will be maintained at 1/4 inch or less, and whenever possible, mowing heights will be raised.

   c. Fungicide Control
      In the event that Brown Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Chipco (Iprodione), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), Prostar (Flutolanil), Scotts FF (Thiophanate-Methyl), Scotts FFII (PCNB), Scotts Fungicide VIII (Thiophanate-Methyl + Iprodione), or Scotts IX (Thiophanate-Methyl + Chloroneb).

3. Downy Mildew (*Sclerophthora macrospora*)
   a. Disease Conditions and Symptoms
      Downy mildew is typically found in areas of poor drainage or that have been over-watered. Symptoms of Downy mildew include diffuse areas of yellow turf, and infected leaf blades may appear mottled before eventually becoming yellow.

   b. Cultural Control
      High nitrogen fertility will be avoided, and soil drainage will be optimized. Additionally, shade will be minimized allow for warmer temperatures and improve air circulation for enhanced drying of turf.

   c. Fungicide Control
      If Downy Mildew infestation is diagnosed, treatment options are Prostar (Flutolanil).

4. Dutch Elm Disease (*Ophiostoma ulmi*)
   a. Disease Conditions and Symptoms
      Dutch Elm disease is a fungal pathogen specific for elm trees, and is spread by several 2 species of bark beetles. Symptoms of Dutch Elm disease include wilting leaves and sparse foliage, followed by yellowing and premature defoliation, typically in mid to

late summer in the first year of infection. Second year infections may appear earlier during spring leaf-out. A diagnostic test is required to confirm presence of infection.

b. Cultural Control
The primary cultural control is to rapidly detect and remove diseased trees to prevent disease spread. All wood and bark will be burned immediately (i.e., not stored for firewood).

c. Fungicide Control
Chemical control of diseased trees is beyond the normal scope of golf course management capabilities. If chemical control is a consideration, the Seattle Department of Urban Forestry will be consulted to determine a course of action to treat diseased trees.

5. Fairy Ring
a. Disease Conditions and Symptoms
Fairy Ring is caused by a variety of fungal species, each having a characteristic presentation on turf. General symptoms of Fairy Ring include large circles or arches of dark green or brown, dead turf that often have small mushrooms present.

b. Cultural Control
The primary cultural method of preventing Fairy Ring development will be thatch removal, compaction relief via aeration, and proper irrigation. In addition, moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less, and moderate to high levels of potassium and phosphorus will be maintained. In addition, frequent aeration of ring areas followed by application of wetting agent to remedy hydrophobic patches may be used.

c. Fungicide Control
In the event that Fairy Ring infestation is diagnosed, the treatment option is Prostar (Flutolanil).

6. Fusarium Patch/Pink Snow Mold (*Microdochium nivale*)
a. Disease Conditions and Symptoms
Fusarium Patch appears in the autumn, winter, and spring and is very common in Western Washington during the winter. Conditions favoring disease development include cool temperatures (35° - 65°F) and lush turf growth in which turf contains high nitrogen and low potassium. Symptoms of Fusarium Patch include light reddish to brown patches ranging from one to eight inches in diameter.

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less during late summer and fall. Moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to improve air circulation to allow for warmer temperatures and enhanced drying of turf, and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight, and soil moisture will be monitored to avoid drought stress. Greens should be dragged in the early morning on days when mowing does not occur for the purpose of removing dew to promote faster turf drying.

c. Fungicide Control
In the event that Fusarium Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Chipco (Iprodione), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), Scotts FF (Thiophanate-Methyl), Scotts FFII (PCNB), Scotts Fungicide VIII (Thiophanate-Methyl + Iprodione), Scotts IX (Thiophanate-Methyl + Chloroneb), or Scotts X (Iprodione). Preventative treatments, particularly in the fall season on historically susceptible sites may be advantageous for maximum control with minimum product application.

7. Pythium (*Pythium* spp.)
   a. Disease Conditions and Symptoms
   Pythium infection of turf is caused by a variety of *Phythium* species and can occur in the form of Pythium blight and/or Pythium root rot. The onset of disease can be sudden and devastating to green surfaces. Conditions favoring Pythium development are high temperature and humidity when night-time temperatures exceed 65°F. Symptoms of Pythium infection include greasy brown patches of turf less than inch in diameter that increase to approximately two inches and turn straw-colored.

   b. Cultural Control
   Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less and optimum calcium levels will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and drainage will be optimized. Mowing of susceptible turf areas will be avoided when night temperatures are greater than 70°F.

   c. Fungicide Control
   In the event that Pythium infestation is diagnosed, treatment options are Fore (Mancozeb), Heritage (Azoxystrobin), Subdue (Metalaxyl), or Terraneb (Chloroneb).

8. Red Thread (*Laetisaria fuciformis*)
   a. Disease Conditions and Symptoms
   Red Thread usually occurs between late spring and early summer. Conditions favoring Red Thread development include cool temperatures (40 to 70°F), high humidity, and nitrogen deficiency. Typically, turf damage is not severe, as Red Thread does not infect plant roots. Symptoms of Red Thread include the appearance of reddish strands protruding above turf leaf blades.

   b. Cultural Control
   Timely and adequate nitrogen fertilization is the key to controlling this disease, particularly in vulnerable new turf areas. Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month and moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight. Because dry conditions favor the development of this disease, the use of wetting agents may be used to alleviate this condition.

c. Fungicide Control
In general, cultural practice is sufficient to control this disease. However, in the event that Red Thread infestation is diagnosed and is beyond control through cultural practice, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), or Prostar (Flutolanil).

9. Summer Patch (*Magnaparthe poae*)
a. Disease Conditions and Symptoms
As its name indicates, Summer Patch usually occurs during the summer, when daytime temperatures are greater than 85°F. Conditions favoring Summer Patch development include high soil moisture, poor drainage, and low mowing heights. Symptoms of Summer Patch include circular patches of wilted to straw-colored turf, usually less than 10 inches in diameter. Turf leaf blades turn yellow or brown starting at the tips, and roots are light to dark brown.

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month and "fast release" sources of nitrogen will be avoided. Soil drainage will be improved, soil compaction will be reduced, and turf surfaces will be syringed when temperatures exceed 85°F. Lightweight mowing equipment will be used and whenever possible, mowing heights will be raised.

c. Fungicide Control
In the event that Summer Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), or Heritage (Azoxystrobin).

10. Take-All Patch (*Gaeumannomyces graminis. Var. avenae*)
a. Disease Conditions and Symptoms
Take-All Patch occurs in the spring and early summer when temperatures are between 59 and 76°F. Conditions favoring Take-All Patch development include moist soil, a pH of greater than 5.5, low/unbalanced fertility, and greens with high sand content. Symptoms of Take-All Patch include wilted to bronze colored circular patches that can be as large as several feet in diameter. Turf leaf blades turn yellow, then bronze at the tip, progressing downward. Roots are brown and necrotic. Turf damage can be rapid and severe under warm, dry conditions.

b. Cultural Control
Fertilizer with acid-forming source of nitrogen such as ammonium sulfate is a fertilization strategy for disease control. Moderate levels of phosphorus and potassium will be maintained. Soil drainage will be improved, and heavy, frequent irrigation will be avoided.

c. Fungicide Control
If conditions dictate, susceptible areas will be considered for preventative treatment with Heritage (Azoxystrobin) at the discretion of the Superintendent. In the event that Take-All Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Heritage (Azoxystrobin), or Prostar (Fluotlanil).

11. Yellow Patch (*Rhizoctonia cerealis*)
    a. Disease Conditions and Symptoms
    Yellow Patch usually occurs during early to midwinter when temperatures are less than 60°F. Conditions favoring Yellow Patch development include high moisture, excessive thatch, and high nitrogen fertility. Symptoms of Yellow Patch include patches or rings of yellow to straw-colored turf between 8 and 20 inches in diameter. Turf damage is usually not severe, but the loss of turf quality can be significant. Young turf is particularly susceptible Yellow Patch.

    b. Cultural Control
    Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less and moderate to high levels of potassium will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and thatch will be maintained at 1/4 inch or less.

    c. Fungicide Control
    In the event that Yellow Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Heritage (Azoxystrobin), or Prostar (Flutolanil).

B. Algae

Algae growth ("black algae") is of concern primarily for turf located on greens and tees and is caused by *Symploca* spp. or *Oscillatoria* spp.. A description of conditions favoring algae growth, symptoms of the presence of algae, and specific control measures follows:

1. Growth Conditions and Symptoms
   Conditions favoring algae growth include shaded areas with poor drainage, reduced air movement, and compacted soil. Symptoms of "black algae" include the appearance of dark brown-black growth over the soil surface and plant crowns that may look like oil spots.

2. Cultural Control
   Preventative cultural and fertility practices are the primary means of controlling algae on turf. Techniques include improvement of soil drainage, maintenance of balanced turf fertility, the loosening of compacted soil, and providing more light to turf via pruning of trees and shrubs.

3. Chemical Control
   Temporary chemical control can be realized by the application of wettable sulfur or Fore (Mancozeb).

C. Moss

Current greens maintenance practices create an environment that can be favorable for the infestation of various moss species, including Silvery Thread moss (*Bryum argenteum*), which is the species most commonly detected. Moss species in greens may require different control methods than species commonly found in other turf areas.

1. Growth Conditions and Symptoms

Conditions favoring moss growth include low mowing heights, frequent irrigation, and low nitrogen fertility.

2. Cultural Control
The first control measure is to raise mowing heights when possible, and to improve turf fertility. The second approach is to adjust irrigation to optimize drainage and prevent over-watering. The third approach is to prune or remove trees creating excessive shade on greens surfaces. The fourth approach is to utilize turf management practices to minimize problems such as disease, wear, localized dry spots, etc., that cause turf thinning

3. Chemical Control
Products showing varying levels of moss control include ferrous sulfate, copper hydroxide (Junction, Kocide), and salts of fatty acids.

D. Weeds

The weeds that are potential pests and that require monitoring and control by golf course personnel are listed in table 2. The general categories include broadleaf weeds, grassy weeds, noxious weeds, and woody brush. In addition, a variety of landscapes require weed management including turfgrass, ornamental shrubs and plants, areas surrounding trees, natural areas; and cart paths, service roads, walls, rockeries, and non-vegetated areas. In certain instances, management areas may not be monitored for certain weed types (i.e., the grassy weed *poa annua* does not present a problem in turfgrass). All areas will be monitored weekly for the presence of weeds problematic for the respective areas.

A description of the individual areas and measures used to control weeds located in these areas follows:

1. Turfgrass
   a. Cultural Control
   Broadleaf weeds are the primary pest concern for turfgrass. The primary means of controlling broadleaf infestation will be to optimize turf health through standard cultural practices. Selection of well-adapted turfgrass cultivars in combination with proper cultural practice - fertilization, irrigation, insect and disease control produces a dense vigorous turf that optimizes resistance to colonization by broadleaf weeds. If maintenance practices are not completely effective, the first approach to broadleaf weed control at Jackson Park Golf Club will be mechanical removal (i.e., hand pulling).

   b. Chemical Control
   Occasionally, in spite of IPM and good cultural practices, one or more of the broadleaf weeds listed in Table 2 may exceed damage threshold levels. On these occasions, spot treatments with an herbicide(s) specifically labeled for the weed requiring control will be considered for use. The herbicides that have been approved for use are listed in Table 6. Applications are most effective during late summer or early fall.

2. Ornamentals
   a. Cultural Control

Broadleaf weeds, grassy weeds, noxious weeds, and woody brush in ornamental areas (shrubs and plants) will be controlled primarily by mechanical means (hand pulling), and whenever possible, weeds should be removed prior to seed production. In addition, mulches such as bark dust or wood chips will be used to control weed populations. Properly planted beds with high densities of desirable plants is a key cultural strategy to effectively crowd out many weed species. Creeping infestation of weeds will be prevented by the installation of hard borders and/or frequent edging.

b. Chemical Control
On occasion, herbicides will be used on a spot treatment basis to control weeds in ornamental shrub and plant areas. Treatment options include Roundup (glyphosate) for non-selective post-emergent control and Surflan (Oryzalin) for pre-emergent control. If significant amounts of weed seed are present, a combination of the two products may be applied to provide for more effective long-term weed control. Adequate moisture is necessary to activate Surflan, and as a result applications are preferentially made during the spring and fall seasons.

3. Trees
Weed and grass control around the trunks of trees in turf areas is essential to protect trees from damage resulting from mowing, trimming equipment, and rodents.

a. Cultural Control
Weeds around the bases of trees will be controlled primarily by a combination of by mechanical means (hand pulling and string trimmers). Extreme caution should be used when using string trimmers to prevent damage to the bark of trees. Mulch material is recommended for use around newly planted trees.

b. Chemical Control
Periodic treatments may be necessary to control growth of weeds around the bases of trees. Treatment options include Roundup (glyphosate) for non-selective post-emergent control and Surflan (Oryzalin) for pre-emergent control. A combination of the two products may be applied under certain situations for longer term weed control.

4. Natural Areas
Noxious weeds are the primary management concern in natural areas. Control and eventual eradication of King County Class A noxious weeds is required by law. Control of King County Class B and Class C noxious weeds, with containment as the primary goal, is also required by law. Additional information regarding King County Noxious Weed Control can be found on the King County website at **http://dnr.metrokc.gov/weeds**.

a. Cultural/Mechanical Control of King County Listed Noxious Weeds
Weeds and roots will be removed by hand pulling, plant material will be placed in bags, and bags will be placed in dumpsters. Removed plant material for Class A noxious weeds will not be composted or placed in clean/green bunkers. Frequent mowing prior to seed production may be an effective strategy for certain weed species.

b. Chemical Control

Chemical treatment may be required to eradicate Class A weeds. Treatment options include Garlon 4 (Triclpyr) as a selective broadleaf herbicide or Roundup (Glyphosate) as a non-selective herbicide. Selective herbicides such as Garlon 4 are recommended for broadleaf weed control to preserve existing grasses, which provide competition for broadleaf weed species.

5. Cart Paths, Service Roads, Walls, Rockeries, and Non-vegetated Areas
   a. Cultural Control
      Very fine 3/8 minus crushed rock is recommended for use to surface cart paths and service roads. The combination of tightly compacted crushed rock path surfaces and vehicle traffic will reduce weed growth. Paved cart paths/service roads provide a long term solution to path maintenance and pest management problems.

   b. Chemical Control
      If cultural practices prove ineffective, the herbicides Roundup (glyphosate) or the pre-emergent Surflan (Oryzalin) are approved for use for weed control in these areas.

E. Insects

Three management areas are potentially vulnerable to damage from insect infestation which include turfgrass areas (Cutworms, European Cranefly), trees (Spruce Aphids, Western Tent Caterpillar), and high traffic areas for golfers and/or maintenance staff (Wasps/Yellow jackets). Monitoring for insects will consist of routine visual inspection of susceptible areas and specific vegetation areas on a weekly basis. General turfgrass cultural practices leading to optimal turf vigor are the primary means of minimizing the potential for insect infestation. Similarly, cultural practices are the primary means of controlling insect infestation of trees. In general, cultural practices are ineffective at controlling Wasps and Yellow jackets. If cultural practices are ineffective at preventing damage thresholds for a specific pest from being exceeded, the selective use of biological agents and/or insecticides will be considered. Rotational strategies will be employed as necessary to reduce insect resistance to specific products.

A description of specific insect pests, symptoms of infestation, and corresponding control measures follows:

1. Cutworms (*Noctuidae* family)
   a. Insect Description and Infestation Symptoms
      The adult cutworm is a moth that lays eggs on grass leaves at night. The resultant larvae are thick-bodied caterpillars approximately 1.5 to 2 inches in length that may be greenish gray, brown, or black, and often have spots or stripes. The larvae reside in the thatch layer during the day and emerge to the surface to feed on the grass blades at night. Cutworm infestation results in small brown circular patches on the turf, and generally occurs during late summer and fall. Also, an indication of cutworm infestation is the presence of birds attempting to feed on cutworms by digging at the thatch layer during the day.

   b. Cultural Control
      Optimize turf vigor through standard cultural practices.

   c. Biological Control
      Several insect growth regulators and biological agents including azadirachtin (Turplex, Margosan-O) and *Bacillus thuringensis* (Bactimos, Dipel, M-One, M-Peril, MVP, Teknar, Thuricide, etc.) have been shown to be effective agents against cutworms. These agents will be considered for use following a cost/efficacy analysis.

d. Insecticide Control
If biological treatments are unsuccessful, the insecticide used to control cutworm infestations exceeding threshold levels will be Dursban (Chlorpyrifos). Dursban is currently not approved for general use by the City of Seattle, but will be considered for treatment of cutworms based on a one-time exception request.

2. European Cranefly (*Tipula paludosa*)
   a. Insect Description and Infestation Symptoms
   The European Cranefly is a flying insect that resembles a large mosquito. Adults lay eggs on the turf in late summer, which hatch in late fall. The resulting larvae are approximately one inch long and are brownish gray in appearance. The larvae feed on the turf during the fall, overwinter, and then become active in the early spring. The larvae reside under the surface of the turf and feed on the turf root system, becoming especially active after soil temperatures exceed 50°F in the early spring. Evidence of infestation is the presence of irregular brownish patches on the turf surface and general turf thinning.

   b. Cultural Control
   Optimize turf vigor through standard cultural practices.

   c. Biological Control
   Steinernema carpocapse (Turfco Vector) is a commercially available nematode shown to be effective at treating European Cranefly infestation. This agent will be considered for use following a cost/efficacy analysis.

   d. Insecticide Control
   If documented biological control strategies are unsuccessful, the insecticide currently used to control European Cranefly infestations that exceed threshold levels will be Dursban (Chlorpyrifos). Dursban is currently not approved for general use by the City of Seattle, but will be considered for treatment of European Cranefly based on a one-time exception request.

3. Spruce Aphid (*Elatobioum abietinum*)
   a. Insect Description and Infestation Symptoms
   The Spruce aphid is a small, dull green aphid that causes extreme needle drop from infested trees. The Spruce aphid typically appears in February and increases in number rapidly during March and April.

   b. Cultural Control
   Optimize tree health through standard cultural practices.

   c. Mechanical Control
   Remove affected tree(s) and replace with pest resistant species.

   d. Insecticide Control
   Generally, cultural methods provide satisfactory control of spruce aphids.

4. Wasps and Yellow jackets
   a. Insect Description and Infestation Symptoms
      Wasps and Yellow jackets are beelike insects with yellow and black or white and black bands on the abdomen of the insect. Nests can be located underground, or in shrubs and trees. These insects are most active during the day, and less active at night.

   b. Cultural Control
      Generally, no cultural methods provide satisfactory control of wasps and yellow jackets.

   c. Insecticide Control
      When detected in high traffic areas, nests that present a threat to golfers and/or maintenance staff will be treated with Zep Tox Wasp and Hornet (Tetramethrin + phenothrin) or mint oil products.

5. Western Tent Caterpillar (*Malacosoma* spp.)
   a. Insect Description and Infestation Symptoms
      Tent Caterpillars can infest and damage a variety of trees. Larvae are hairy, yellowish brown, with a row of blue and orange spots on their sides. Moths are light to dark brown in color. Nests are identifiable by the presence of large, silken structures (i.e., "tents") located in trees and shrubs. Caterpillars inhabit the nests during the night and go out during the day to feed. At pupation, caterpillars leave the nest to find appropriate places to form chyrsalises.

   b. Cultural Control
      Optimize tree health through standard maintenance practices. Generally, cultural methods provide satisfactory control of tent caterpillar.

   c. Mechanical Control
      Light infestations can be controlled by nest removal. Nests will be removed by pruning during early morning hours and destroyed.

   d. Biological Control
      The biological agent *Bacillus thuringensis* (Bactimos, Dipel, M-One, M-Trak, MVP, Teknar, Thuricide, etc.) has been shown to be effective against tent caterpillar when they are actively feeding.

XII. Pesticides

A. Pesticide Definition

A pesticide is any substance that is used to control pests including insects (insecticide), weeds (herbicide), fungi (fungicide), nematodes (nematicide), and algae (algicide). The mechanism of action of most pesticides is to eliminate the pest by suppressing, weakening or eradicating the target pest.

B. Pesticide Use Policy

NOTICE: IF THE DOCUMENT IN THIS FRAME IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

The City of Seattle implemented a *Pesticide Use Policy* in 1999 that regulates the use of specific pesticides and establishes guidelines for overall reduction of pesticide use. According to this policy, all pesticide products used on City of Seattle landscapes must first be screened for a number of health and environmental criteria, and based on these criteria, are assigned to pesticide product Tier Tables (Appendix D). The products are ranked as follows: Tier 1 (highest level of concern), Tier 2 (moderate concern), Tier 3 (lowest concern), and Tier 4 (insufficient information). Tier 1 pesticides have been identified as first priorities for phase-out when viable alternative products become available. Exceptions to use restrictions for Tier 1 products are considered on a one-time use only basis, or as a programmatic exception. Fungicide products are not currently subject to the exception process because viable (Tier 2 and Tier 3) alternatives do not currently exist. All pesticides must be screened and entered into the City of Seattle's Tier Tables prior to use. The City of Seattle *Pesticide Use Reduction Strategy* (Appendix E) establishes a goal of reducing overall pesticide use by 30% by the end of 2002. Additional information regarding the City of Seattle's *Pesticide Use Reduction Strategy* can be found on the City of Seattle's Office of Sustainability and Environment website, which is located at **www.cityofseattle.net/environment/pesticides.htm**. Guidance contained within the *Tri-County Integrated Pest and Vegetation Management Guidelines* (Appendix A) describing proper pesticide use should also be consulted and complied with. The *Tri-County Integrated Pest and Vegetation Management Guidelines* can be viewed on the Internet at **http://www.metrokc.gov/hazwaste/ipm/ipmpolicy.htm**.

C. Pesticide Use Determination

The primary strategy for pest management as defined in this Integrated Pest Management plan is to optimize turf vigor through maintenance practices to optimize turf resistance to, or tolerance of pests. In the event that maintenance practices do not maintain pest populations below damage thresholds, control strategies will be considered. Through the IPM process, pesticides will be selected by the Superintendent based on their indication for use, safety, efficacy, toxicological and environmental impacts. In addition, the Superintendent will monitor developments in pesticide research and development; and he/she will incorporate the use of newly developed, tested and improved pesticides approved by EPA and the City of Seattle where appropriate.

D. Current Practice

The locations of pesticide use and the typical frequencies of the application of these agents are shown in Table 5.

Table 5. Jackson Park Golf Club:
Pesticide Applications Areas and Typical Application Frequencies

Area	% Total Area[a]	Pesticide Applications per Year	Pesticide Category
Greens	5.4	6 - 9	Fungicide
Green Surrounds	4.9	spot treatment as needed	Herbicide
Tee Surface[b]	3.9	spot treatment as needed	Fungicide
Tee Surrounds	3.0	spot treatment as needed	Herbicide
Approaches	5.2	spot treatment as needed	Herbicide
Fairway	31.3	spot treatment as needed	Herbicide
Rough	38.7	spot treatment as needed	Herbicide

Ornamental	7.5	0	N/A

[a] golf course management area
[b] occasional treatment with fungicides when damage thresholds exceeded

The pesticides that have potential for use at Jackson Park Golf Club include 13 fungicides, six herbicides, and two insecticides (Table 6). To minimize the development of resistance, pesticides in different families with different mechanisms of action will be rotated as frequently as practical and necessary. In addition, if pest resistance to one or more of these pesticides does develop, or if unanticipated circumstances arise, the Superintendent may use alternative pesticides that are EPA approved and have received authorization for use by the City of Seattle.

Table 6. Pesticide Selection for Potential Application at Jackson Park Golf Club[a]

Pesticide Trade Name	Pesticide Chemical Name	Pesticide Category
Banner	Propiconazole	Fungicide
Bayleton	Triadimefon	Fungicide
Chipco 26019, Scotts Fungicide X	Iprodione	Fungicide
Daconil	Chlorothalonil	Fungicide
Dithane, Fore	Mancozeb	Fungicide
Heritage	Azoxystrobin	Fungicide
Prostar	Flutolanil	Fungicide
Scotts FF	Thiophanate-Methyl	Fungicide
Scotts FFII, Blocker	PCNB	Fungicide
Scotts Fungicide VIII	Thiophanate-Methyl/Iprodione	Fungicide
Scotts Fungicide IX	Thiophanate-Methyl/Chloroneb	Fungicide
Subdue	Metalaxyl	Fungicide
Terraneb	Chloroneb	Fungicide
Casoron[b]	Dichlobenil	Herbicide
Crossbow	2,4-D + Triclopyr	Herbicide
Drive	Quinclorac	Herbicide
Garlon 4	Triclopyr (ester formulation)	Herbicide
Roundup	Glyphosate	Herbicide
Surflan	Oryzalin	Herbicide
Trimec	2,4-D + Dicamba + Mecoprop	Herbicide
Dursban[c]	Chlorpyrifos	Insecticide
Zep Tox Wasp and Hornet	Tetramethrin + Phenothrin	Insecticide

[a] Additional pesticides not listed in this table have been approved for use by the City of Seattle, and when necessary, can be used at the discretion of the Superintendent.
[b] Tier 1 exception dictates that this product can only be used for horsetail rush control in ornamental plant beds. Product will be applied according to Best Management Practices described in the exception.
[c] Dursban is currently not approved for general use by the City of Seattle, but will be considered for use by exception request.

E. Pesticide Storage

All pesticides will be maintained in a dedicated, dry, well-ventilated, approved storage area that has restricted access and meets the requirements of the State of Washington and the City of Seattle Fire Department. Hazardous Materials Permits from the City of Seattle Fire Department are necessary for pesticide storage.

F. Pesticide Mixing
The entire pesticide product label will be read and understood prior to the use of any pesticide. Prior to pesticide mixing, the Superintendent will determine that local weather conditions are suitable for pesticide application. All pesticides will be mixed according to manufacturer's labeling instructions by a licensed pesticide applicator. Personnel will wear personal protective equipment during the entire mixing process, as recommended in the Material Safety Data Sheet appropriate for the pesticide being mixed. All pesticides will be prepared in an approved pesticide mixing area.

G. Signage
All pesticide applications will be identified by the posting of official City of Seattle Pesticide Application Signs. Posted signage will be in compliance with the City of Seattle's *Pesticide Use Policy* and will remaining posted for a minimum of 24 hours following pesticide application.

H. Application
Application of restricted use pesticides or any pesticides applied with a power spray apparatus will be done by licensed pesticide applicators properly trained in the safe application of these products. Application of non-restricted use pesticides applied with manually operated equipment may be assigned to full time employees who are under the supervision of licensed pesticide applicators. Applicators will wear appropriate personal protective equipment appropriate for the pesticide application. All pesticide application equipment will be properly calibrated prior to the addition of the pesticide formulation to the equipment and application to the golf course.

The areas of the golf course requiring pesticide application will be specifically defined by the Superintendent. Whenever, possible, applications will be selective and limited to localized, targeted areas to minimize the amount of pesticide being applied. No pesticide spray applications will occur if wind speed is above 5 miles per hour or if wind direction or activity will carry pesticides toward, or deposit them upon open water. Pesticides will not be applied if heavy rain is forecast following the potential application event.

I. Clean Up and Disposal
Pesticide containers, mixing tanks, and equipment will be rinsed in accordance with recommended procedures and rinse water will be disposed of in accordance with state and local ordinances.

J. Pesticide Use Documentation
The City of Seattle Office of Sustainability and Environment maintains a pesticide use database for tracking all pesticide applications on the City of Seattle lands. The database calculates pesticide use according to pounds of active ingredient used. Reports are generated annually to determine use reduction, specific product use, and site usage. All pesticide applications to City of Seattle public golf courses are required to be accurately entered into the database on a monthly basis. Pesticide application information recorded will include date of application, time of application, specific location of application, size of the area treated (typically by 1,000 ft^2), product name, product EPA registration number, rate of application (typically as rate per 1,000 ft^2 or acre), weather conditions (wind speed and direction, temperature, rainfall, weather comments), total amount of product applied and the applicators

name and pesticide license number. In addition, current pesticide labels and MSDS sheets will be compiled and maintained in a location accessible to all employees, and are required to be present at the time a pesticide application is made. All pesticide documentation will be in accordance with federal, state, and city regulations.

K. Pesticide Inventory/Purchasing

All pesticide purchases must comply with the City of Seattle's *Pesticide Use Policy* and current City regulations. Annual pesticide inventories are required by the City of Seattle to document the individual products and their respective quantities in storage.

XIII. Facilities Description

A. Maintenance Building

Maintenance functions are performed in maintenance building that has a total area of approximately 6,900 square feet. The building is physically segregated into two main areas The first area is dedicated to office space and crew quarters, which consists of the Superintendent's office, the staff lunchroom, staff locker room, and the staff restroom. The second, larger area is dedicated to equipment storage, equipment maintenance, fertilizer storage, and pesticide storage.

1. Mechanical Shop
   This area is where all equipment maintenance and repair work is performed. All fluids and solvents required for maintenance and repair are maintained within this area and used fluids and solvents are disposed of according to federal, state, and local guidelines.

2. Equipment Storage
   This area contains all equipment used in golf course maintenance operations including mowers, tractors, and fertilizer and pesticide application equipment.

3. Fertilizer Storage
   All fertilizer is stored in a dedicated and approved storage area. The storage area is isolated and allows for the maintenance of fertilizer in a dry, well-ventilated environment that has restricted access.

4. Pesticide Storage
   All pesticides are stored in a separate, dedicated area approved by the City of Seattle Fire Department. A hazardous materials storage permit from the City of Seattle is required for the storage of pesticides.

B. Petroleum Fluid Storage and Disposal

1. Flammable Materials
   All flammable materials are stored in an area approved by the City of Seattle Fire Department.

2. Used Fluids
   Used fluids are stored in separate containers appropriate for the fluid type.

3. Used Fluid Containers
   Used fluid containers are labeled with the identity of the used fluid.

4. Fluid Disposal

Used fluids are disposed of according to state and local regulations.

5. Permits
A flammable materials storage permit is required by the City of Seattle for the storage of flammable materials.

C. Fuel Depot
The fuel depot consists of gravity feed system that is housed over a concrete spill retention system.

D. Equipment Washing
All equipment should be washed with water only (i.e., no detergent) over an approved wash rack that contains an oil/chemical separator that exits into a sanitary sewer. In the event that this facility is not available, every precaution must be taken to prevent equipment rinse water from exiting down a storm drain or from surfaces draining off site in any manner.

E. Pesticide Mixing Area
All pesticide mixing occurs at a dedicated mixing area.

XIII. References

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Jackson Park Golf Club
Water Quality Monitoring Program

I. Introduction

The primary objective the Jackson Park Golf Club Water Quality Monitoring Program is to establish accountability for management practice as it pertains to water quality. The two basic issues of concern regarding the impact of golf course management practice on water quality include eutrophication (nutrient loading) and toxicity. The chemicals used in golf course management practice that have potential to cause eutrophication and/or toxicity are nitrogen, phosphorus, and pesticides.

Consistent with its *Integrated Pest Management Policy*, Jackson Park Golf Club recognizes the importance of sound environmental stewardship, and is committed to optimizing its golf course management practice to protect the environment within, and surrounding the golf course. The following document describes the Jackson Park Golf Club Water Quality Monitoring Program, which is designed to monitor the quality of water obtained from specific locations on a semi-annual basis. Using EPA methods, water samples will be tested for the presence of the nutrient indicators phosphorus and nitrate, and for all pesticides applied to the golf course during the six months preceding the sample collection event.

II. Structure

Historically, the development of a formal golf course specific water quality monitoring program has been hampered by the lack of a suitable monitoring model (i.e., testing frequency, etc.). However, recently the Oregon Golf Course Superintendents Association has developed a set of *Environmental Stewardship Guidelines*, which includes a model for water quality monitoring as a means of addressing this concern. The water quality monitoring model in the *Guidelines* is based on a document entitled *Endangered and Threatened Species: Proposed Rule Governing Take of Seven Threatened Evolutionarily Significant Units (ESUs)' Proposed Rule* [(4d) rule] published by the National Marine Fisheries Service (NMFS). This document "represents the regulations NMFS believes necessary and advisable to conserve the seven listed threatened salmonid ESUs and defines programs that NMFS concludes will lead to the conservation of the listed endangered species." One of these programs is the Portland Parks and Recreation (PPR) *Pest Management Policy*, which includes a description of municipal golf course management practice.

Comment on the PPR *Pest Management Policy* by NMFS represents an independent, thorough, and highly qualified scientific review of the policy as it pertains to sensitive environmental and water quality issues. The favorable comment on the PPR *Pest Management Policy* by NMFS provides meaningful guidance that can be used in the formulation of golf course specific water quality monitoring programs. Accordingly, the structure of the Jackson Park Golf Club Water Quality Monitoring Program is designed to be consistent with guidance for municipal golf courses

provided within the PPR *Pest Management Policy*, and is specific for the environment of Jackson Park Golf Club.

The Waterways Pest Management Policy of the PPR *Pest Management Policy* states that for golf course waterways testing "Waters adjacent to treated areas within the golf course shall be tested on a regular basis for fertilizer and pesticide levels. Frequency of the testing will depend upon the scheduling of applications, but shall occur no less than twice per year."

Consistent with this guidance, semi-annual testing of water samples for the presence of nitrate, phosphorus, and pesticides is a central feature of the Jackson Park Golf Club Water Quality Monitoring Program. In addition, the Water Quality Monitoring Program is configured to complement and support existing Jackson Park Golf Club Best Management and Integrated Pest Management practices.

III. Sample Locations and Sample Collection Methods

For nutrient and pesticide testing, water samples will be collected from two separate locations for each sampling time point. A sample will be collected from a location where surface water enters the golf course (Thorton Creek), and from a location where surface water exits golf course property (Thorton Creek). Each sample location will be assigned a unique sample identifier, and the same sample identifiers will be used to label respective samples throughout the course of the monitoring program. Samples with the same identifier but collected at different time points will be distinguished from one another by date of sample collection. Sample identifiers and the corresponding sample locations are as follows:

JPTCE (Jackson Park Thorton Creek Entry): This sample will be collected from the western border of the golf course where Thorton Creek enters golf course property. A sample will be collected for nitrate and phosphorus testing in a clean, plastic bottle and will be sealed with a clean plastic lid. A sample for pesticide testing will be collected in clean, amber, one liter-glass bottles that will be sealed with clean, teflon-lined lids.

JPTCX (Jackson Park Thorton Creek Exit): This sample will be collected from the southern border of the golf course where Thorton Creek exits golf course property. A sample will be collected for nitrate and phosphorus testing in a clean, plastic bottle and will be sealed with a clean plastic lid. A sample for pesticide testing will be collected in clean, amber, one liter-glass bottles that will be sealed with clean, teflon-lined lids.

IV. Sample Collection Frequency

Samples will be collected semi-annually from each sampling location during the weeks of April 8th - April 15th and October 8th - October 15th.

V. Sample Collection

Samples will be collected between the hours of 7:00 a.m. and 11:00 a.m. by the Jackson Park Golf Club Superintendent or by an individual designated by the Superintendent who has received proper training in sample collection. Water samples will be acquired for testing based on

methodology defined in *Volunteer Stream Monitoring; A Methods Manual* (EPA 841-B-97-003) and the *DEQ Laboratory Field Sampling Reference Guide, Revision 4.0.*

VI. Chain-of-Custody

Chain-of-custody will be documented for all samples from the point of sample collection to the point of sample receipt by the testing laboratory.

VII. Sample Maintenance and Transport

After collection, samples will be stored at 4°C (~39°F) in the dark. Samples will be maintained at 4°C during transport to the testing laboratory and will be delivered to the testing laboratory no later than twenty-four hours following sample collection.

VIII. Sample Testing

Water samples will be tested for the presence of nitrate and phosphorus using EPA methods.

Water samples will be tested for the presence of all pesticides applied to Jackson Park Golf Club during the six months preceding the sampling event. The sample will be tested for the presence of specific pesticides using appropriate EPA methods.

All laboratory test results will be linked by the laboratory sample identification number and the Jackson Park Golf Club sample identifier assigned at the time of sample collection.

IX. Interpretation of Results

All testing results will be reviewed and compared to relevant federal and state water quality standards.

X. Corrective Action

A. Nutrients

In the event that either nitrate levels or phosphorus levels in water samples are determined to exceed water quality standards, the following corrective action will be taken.

1. Records will be reviewed to determine if a direct cause and effect relationship between fertilizer application events and nutrient levels can be established. If such a relationship is identified, adjustments in fertilizer application rates and/or methods will be implemented to reduce the load of the compound(s) entering waterways.

2. The Integrated Pest Management plan will be reviewed to identify and implement alternative management practices that will mitigate the situation.

3. Following adjustments in practice, additional samples will be acquired for re-testing to assess the effectiveness of revised management practice.

B. Pesticides

The inherent assumption is that when applied properly and in accordance with the Jackson Park Golf Club Integrated Pest Management plan, pesticides applied to the golf course should not threaten water quality. However, in the event that a pesticide(s) applied to the golf course in the six months preceding the sampling event is detected in an exit point water sample (***JPTCX***) and not in the corresponding entry point sample (***JPTCE***), the following corrective action will be taken.

1. Based on the best information available, the level of the pesticide(s) detected will be compared to allowable levels to determine if there is an immediate hazardous threat. In the event that a hazardous situation is identified, the appropriate agencies will be contacted.

2. Records will be reviewed to determine if a direct cause and effect relationship between pesticide application events and pesticide(s) detected in water samples can be established. If such a relationship is identified, adjustments in pesticide application rates and/or methods will be implemented to reduce and ultimately eliminate the load of the compound(s) entering waterways.

3. The Integrated Pest Management plan will be reviewed to identify and implement alternative management practices that will mitigate the situation.

4. Following adjustments in practice, additional samples will be acquired for re-testing to assess the effectiveness of revised management practice.

XI. Documentation

All activities associated with the Jackson Park Golf Club Water Quality Monitoring Plan will be documented including sample collection, chain-of-custody, test results, interpretation of results, and summary reports. All original documents will be maintained on site at Jackson Park Golf Club.

XII. Reporting

Water quality monitoring results will be summarized and documented following each round of testing (i.e., twice per year) and a summary of the Water Quality Monitoring Plan will be prepared annually.

XIII. References

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Jefferson Park Golf Course

Best Management Practices

The Best Management Practices outlined below are general policies and procedures that direct routine golf course management operations at Jefferson Park Golf Course. These policies and procedures are the result of combining standard golf course management practices common to Pacific Northwest and national golf courses, and those defined in the Seattle Parks and Recreation Best Management Practices that apply to Seattle municipal golf courses.

I. Turf Cultural Practice

A. Location

1. Develop location specific cultural practices (i.e., greens, tees, fairways and rough).

B. Hygiene

1. Remove clippings.
2. Optimize air circulation.
3. Minimize shade for turf areas. Whenever possible, retain shade over waterways to preserve habitat.
4. Remove leaves, fallen limbs, and other debris from turf areas. Whenever possible, do not disturb this material in waterways to preserve habitat.

C. Soil Moisture

1. Maintain proper soil moisture levels.
2. Avoid over-application of water to turf.

D. Mowing

1. Set mowing height appropriately for location.
2. Adjust mowing height to relieve turf stress when necessary.

E. Aeration

1. Adjust aeration frequency appropriate for turf location and conditions.

F. Topdressing

1. Use topdressing sand that meets USGA specifications for particle size distribution when available to maintain consistent rootzone content.
2. Apply topdressing following aerification when appropriate.
3. Apply "light" topdressing when appropriate.

G. Overseeding

1. Select seed type best suited for the growing environment.

2. When available, use disease resistance cultivars.

II. Turf Fertilization

A. Soil Nutrient Testing

1. Perform soil nutrient testing at regular intervals determined by the superintendent).
2. Maintain accurate records of soil sample locations, date of sampling, and soil conditions.

B. Nitrogen

1. Use slow release nitrogen when possible.
2. Regulate nitrogen application to optimize turf vigor and prevent disease development.

C. Phosphorus

1. Using soil test information, avoid over-application.

D. Potassium

1. Using soil test information to develop target levels, apply as required.

E. Micronutrients

1. Apply as required.

F. pH

1. Maintain soil pH appropriate for turfgrass type.
2. Adjust soil pH to optimize turf vigor.

G. Buffer Zones

1. Establish buffer zones near waterways where appropriate. Observe a minimum buffer zone width of 25 feet whenever possible, with buffer zones never being narrower than 10 feet.
2. Do not apply fertilizer to turf located in defined buffer zones.

H. Documentation

1. Record location, date, and type of fertilizer applied.
2. Record rate of application.
3. Record method of application.
4. Maintain current inventory of fertilizer on hand.

I. Storage

1. Maintain fertilizer inventory in a dedicated, enclosed area.
2. Keep fertilizer in a dry, well-ventilated environment.

III. Turf Irrigation

A. Water Quality

Determine that water quality of irrigation source is suitable for application to turf.

B. Conservation
Optimize irrigation program to conserve water.

C. Weather Data
When available, use weather station and evapotranspiration information to fine tune irrigation regimen.

IV. Tree Management

A. Tree Selection

1. Select trees with rate of growth appropriate for location.
2. Select trees with wood strength, rooting characteristics, and plant features (e.g., leaves, etc.) appropriate for location.
3. Select trees well suited for climate, soil conditions, and pest resistance.
4. Determine if native or non-native trees are appropriate and select quality planting stock.

B. Planting Locations

1. Consider characteristics of mature tree (height, light passage, etc.) when evaluating potential locations.
2. Choose locations that will not create problems with shading of turf or restriction of air movement.

C. Tree Planting

1. Create a planting hole with a minimum diameter of 12 inches wider than root spread or root ball, and no deeper than the root ball.
2. Place balled-and-burlapped trees in planting hole, plumb vertically, and remove all rope and 1/3 of burlap (or fold down).
3. Backfill soil in lifts of 4 to 6 inches, avoiding compaction with muddy backfill. Use native soil to backfill unless existing soil contains rubble or pure clay
4. Water thoroughly after backfilling to settle the soil, eliminate air pockets and re-wet the root system.
5. Do not wrap tree trunks, and do not fertilize tree(s) at time of planting
6. Create a berm 3 inches high to surround trees planted in sandy or loamy soils for the purpose of funneling water to the root ball.
7. Add 3 to 4 inches of shredded mulch or composted brush chips to surround planted trees immediately after backfilling. keeping mulch away from tree trunk.
8. Stake only in situations where normal planting procedures do not provide a stable plant. Remove stakes at the end of the first year.
9. Whenever possible, plant trees during the fall (October through December) or spring (March through May).

D. Cultural Care

1. Water newly planted trees weekly through the first three growing seasons. Trees should receive approximately 1 inch of water per week including rainfall.
2. Do not water established trees except during periods of extreme drought.
3. Maintain 3 to 4 inches of mulch annually in newly planted tree rings to suppress weeds and avoid damage from mowers and trimmers.
4. Monitor trees for insects and disease. If detected, use physical methods (e.g., pruning, nest removal, etc.,) to correct the problem. If pesticide treatment is required to control a pest(s), consult Seattle Parks and Recreation Best Management Practices for appropriate procedures.

E. Tree Removal

1. Identify trees that are defective and/or represent a hazard. Examples include old age, storm damage, poor structure, disease state, or tree death. Such trees are candidates for removal.
2. Identify trees that require removal for new construction, access, or other issues not related to tree viability. Such trees are candidates for removal.
3. When practical and of value, transplant viable trees smaller than ten to twelve inches in diameter that require removal (e.g., new construction).
4. Consult Seattle Urban Forestry and Seattle Parks Department to engage appropriate procedures (e.g., public notification) and to obtain authorization for tree removal.

V. Pest Management

A. Integrated Pest Management

1. Develop an Integrated Pest Management document
2. Use the Integrated Pest Management document as an operational reference for all golf course operations.
3. Educate staff on the contents and utility of the Integrated Pest Management document.
4. Revise the Integrated Pest Management document over time so that it remains a contemporary document reflecting the state of the art of golf course management.

B. Weeds

1. Define threshold levels.
2. Monitor turf regularly for presence of weeds.
3. Optimize turf vigor by proper application of fertilizer to prevent weed colonization and establishment.
4. When possible, use mechanical means (i.e., hand pulling) to remove.

5. Use selective herbicides only when thresholds have been exceeded, and when possible, limit applications to spot treatments.

C. Fungal Disease

1. Define threshold tolerance levels.
2. Understand disease symptoms and disease life cycle.
3. Monitor turf regularly for disease symptoms.
4. Monitor conditions (temperature, humidity, moisture etc.) that favor disease development.
5. Use fungicides with optimal efficacy and specificity.
6. When possible, use targeted, spot applications of fungicides.
7. Rotate chemical family of fungicides applied to prevent the development of fungal resistance.
8. Document problem areas, disease identification, and disease treatment.

D. Insects

1. Define threshold tolerance levels.
2. Understand relevant insect life cycles and symptoms of infestation.
3. Monitor turf regularly for symptoms of infestation.
4. If infestation is detected, correctly identify the insect.
5. Use target specific insecticides.

E. Rodents

1. Define threshold tolerance levels.
2. Use mechanical traps when possible.
3. Study the habits of the target rodent to enhance trap efficiency.

F. Aquatic

1. Define threshold tolerance levels
2. Keep ponds/lakes as deep as practical to minimize aquatic plant growth.
3. Where possible, use mechanical means to remove undesirable aquatic plants.
4. Use beneficial aquatic plants to out-compete undesirable plants and/or to remove nitrate from the water.
5. Use aerators to agitate water; this practice reduces the growth of bacteria and algae.

VI. Environmental

A. Regulations

1. Become familiar with federal, state, and local regulations that apply to golf course operations including those related to habitat, surface water, groundwater, and storm water runoff.
2. Implement policies and procedures to achieve compliance with relevant regulations.

B. Habitat

1. Develop golf course operations to optimize preservation and enhancement of wildlife habitat.
2. Where available, obtain advice from organizations such as the Audubon Cooperative Sanctuary, Fish and Wildlife, etc. to assist in habitat enhancement.

C. Monitoring

1. Monitor and document habitat improvements and related wildlife response (e.g., installation of bird boxes leading to increased bird population).
2. Where appropriate, monitor and document water quality of relevant surface waters to assess impact of golf course management
3. If monitoring information reveals a potential problem, implement and document corrective action.

D. Corrective Action

1. In the event that monitoring information identifies a potential problem, design and implement action to correct the situation.
2. Document any corrective action taken.

E. Spill Response

1. Maintain appropriate spill response equipment.
2. Train staff on proper use of spill response equipment.

VII. Pesticides

A. Selection

1. Confirm identity of pest requiring pesticide treatment.
2. Select pesticide based on efficacy, target specificity, and environmental compatibility.
3. Rotate chemical family of pesticide used for a specific pest to prevent the development of pest resistance.

B. Application

1. Read and understand pesticide labeling before use.
2. Use pesticides for labeled use only.
3. Mix pesticides for target pests at rates recommended by the manufacturer.
4. Mix pesticides in a dedicated area.
5. Wear appropriate personal protective equipment during pesticide mixing and application.
6. Properly calibrate sprayer or spreader before use.
7. Apply pesticides to target areas only. Do not apply pesticides in buffer zones.
8. Minimize pesticide drift by applying when winds are 5 mph or less.
9. Use curative applications only when threshold levels have been reached.

10. Use preventative applications only when conditions favoring outbreaks occur (e.g., summer stress favoring anthracnose, winter conditions favoring fusarium).
11. Use check plots to determine pesticide effectiveness (i.e. 2 x 2 foot square of plywood laid on turf to block application and serve as an untreated control area.)

C. Storage

1. Store pesticides in a restricted access, dedicated room or cabinet.
2. Ensure that the pesticide storage area meets OSHA requirements (i.e., dry, ventilated, temperature control, etc.)

D. Disposal

1. Triple rinse containers prior to disposal. Apply rinsate to turf.
2. Inspect rinsed container to confirm that all visible residues have been removed prior to disposal.
3. Contact local pesticide distributor for container recycling instructions.

E. Documentation

1. Follow state regulations for proper documentation procedures
2. Record target of pesticide application.
3. Record location, date, and type of pesticide applied.
4. Record weather conditions.
5. Record rate of application.
6. Record method of application.
7. Maintain current inventory of pesticides on hand.

VIII. Petroleum Products

A. Fuel Storage

1. Store fuel in certified, double walled, self-contained concrete or steel tanks.
2. Keep gas cans in a separate, dedicated storage area.
3. Label fuel storage containers clearly and accurately.

B. Disposal

1. Store used fluids in separate containers appropriate for specific fluid type.
2. Maintain used fluid containers in an easy access, safe area that is out of the weather.
3. Label used fluid containers clearly with fluid contents.
4. Contact City of Seattle ESD to arrange pick up of containers for disposal.

IX. Waste Management

A. Compost

Compost as much biomass as possible and reuse on golf course.

B. Wash Water
Pre-wash all mowing equipment in a designated area in rough or use a leaf blower or pressurized air to dry to remove material prior to rinsing. Rotate this location daily or weekly. Perform final rinse at wash pad. When possible, recycle rinse water.

C. Recycling
Implement recycling program (cardboard, plastic, pop cans, etc.).

X. Safety Program

A. Safety Meetings
1. Establish a regular meeting time (i.e., first Monday of the month).
2. Keep accurate records of meeting discussions.
3. Create safety committee consisting of maintenance crew members.

B. Safety Training
1. CPR and first aid.
2. Eye protection.
3. Noise exposure and protection.
4. Hard hat use and head protection.
5. Personal protection equipment.
6. Respirators
7. Gloves
8. Rubber boots
9. Rain suit
10. Chemical suit
11. Safety glasses

C. Equipment training
1. Tool and accessory training.
2. Lightning safety and protection.
3. Emergency procedures.
4. Bomb threat.
5. Signage.
6. Highlight all fire extinguisher locations
7. Display signage appropriate for location or situation
8. Request free safety training videos from OSHA.
9. Understand how to interpret a Material Safety Data Sheet (MSDS). Place MSDS documents in a file and store in a location accessible to all staff.

D. Safety Audits

1. Have fire marshal perform an audit of fire safety.
2. Have OSHA perform a "consultative" general safety audit.
3. Contact insurance company to determine if they will perform a safety audit.

Jefferson Park Golf Course

Integrated Pest Management Plan

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Jefferson Park Golf Course

Integrated Pest Management Plan

I. Introduction

The Environmental Stewardship Guidelines direct the management practices of Jefferson Park Golf Course focusing on environmental protection of the golf course and surrounding areas. The cornerstone of environmental stewardship at Jefferson Park Golf Course is the philosophy of Integrated Pest Management (IPM). Simply stated, IPM is a management system that utilizes systematic, disciplined, and documented cultural practices as a first line of defense for pest control. Cultural practices such as irrigation, aerification and fertilization are utilized to optimize plant health enabling natural plant resistance to combat pest infestations. Mechanical strategies, such as proper mowing, also contribute to turf health and will be implemented. Biological control options will be considered and utilized whenever feasible. On occasion, when cultural practices are not fully effective at controlling pests, the use of pesticides to manage pest damage will be necessary. The Jefferson Park Golf Course IPM Plan will provide a sound working framework for selection and implementation of the most environmentally sound solutions to golf course pest problems.

Jefferson Park Golf Course will consider all IPM strategies that will reduce overall pesticide applications in an effort to meet and sustain the City of Seattle's pesticide reduction goals. Jefferson Park Golf Course will continue to search for viable alternative products to replace the Tier 1 (highest level of concern) pesticide products currently in use as identified in the City of Seattle's Pesticide Tier Tables. This document is viewed to be a functional document that will evolve over time requiring periodic updating of information.

II. Integrated Pest Management Definition

Although there are numerous definitions of Integrated Pest Management, the Jefferson Park Golf Course recognizes the following definition, which is stated in the City of Seattle, Department of Parks and Recreation *Best Management Practices*:

"A decision-making process to determine if, where, when and how pest problems will be managed. An IPM program includes all potential pest control strategies but focuses on non-chemical controls whenever possible. The following four pest control methods may be employed in an IPM program:

- Cultural control: The use of sound horticultural practices to optimize plant health and to suppress insects, disease, and weed growth. Other cultural controls include site-appropriate design and the use of disease or drought-resistant plants.

- Mechanical control: The use of a variety of tools and equipment for the purpose of eliminating pests.

- Biological control: The use of biological control agents that act as predators or parasites of pest species. The use of other beneficial organisms that improve plant health by enhancing soil quality.

- Chemical Control: The application of various agricultural products such as herbicides, insecticides or fungicides or other chemical compounds to a target pest as a means of control."

Simply stated, the broad objective of Jefferson Park Golf Course Integrated Pest Management plan is to maximize the use of cultural methods to control pests through optimized, disciplined, and documented golf course management practice. To meet this objective, the Jefferson Park Golf Course Integrated Pest Management plan defines turfgrass, non-turfgrass, and aquatic management areas; pests of concern within these areas; methods to monitor pest populations; damage threshold levels that when exceeded may require action; and the proper procedures to be followed if action is necessary.

Integrated pest management includes optimizing turf health through cultural practices to enhance natural plant resistance to pest infestation, optimizing habitats for beneficial species, and minimizing plant damage resulting from routine golf course operations. However, in spite of the use of these practices, in certain instances the use of pesticides to control some pests and diseases may be necessary. An essential component of the Integrated Pest Management plan is the coordination of the ongoing use of cultural methods with the selective use of pesticides as a means of minimizing pesticide application.

III. IPM Objectives

- Minimize potential hazards to human health and the environment
- Optimize playing conditions of the golf course
- Control operating costs
- Utilize effective monitoring to enable selective control of pest populations
- Minimize pesticide use through targeted application while optimizing pesticide efficacy
- Sustain high turf grass quality
- Maintain health of landscape elements such as trees, shrubs, flower beds and natural areas

IV. IPM Structure

The structure of the Integrated Pest Management plan is based on the selective targeting of plant pathogens, weeds, and insects that threaten the agronomic health of the golf course. In addition, the Integrated Pest Management plan includes provisions to preserve the quality of aquatic areas of the golf course. The strategy of the Integrate Pest Management plan is as follows:

- Define areas requiring management and the relative maintenance intensity associated with each area
- Maintain vigorous turf health through maintenance practices to optimize pest tolerance
- Identify pests likely to be encountered
- Establish damage threshold levels for each pest which when exceeded, may lead to corrective action

- Scout and monitor for the presence of pests

- Implement sequential corrective action when threshold levels have been exceeded
  - Adjust cultural practices
  - Utilize biological and mechanical controls when appropriate
  - Determine if pesticide intervention is necessary or appropriate
  - Apply appropriate amounts of pesticides selectively, if necessary. Pesticides will be selected based on minimal toxicity and optimal efficacy
- Document all scouting and monitoring observations, treatments, and treatment results

V. Area Definition

Jefferson Park Golf Course is a City of Seattle municipal golf course that includes an 18 hole golf course, a 9 hole par 3 golf course ("Short Nine"), and a driving range facility. Both golf courses are located on a total of 137.4 acres in Seattle, Washington. The area of turfgrass and ornamentals requiring golf course management proper is 125.6 acres, and the remaining 11.8 acres consists of maintenance buildings, etc. Property surrounding the golf course includes residential, commercial, and City of Seattle parks property. The golf course was built in 1915 using native materials, and currently, no areas of the golf course are designated as environmentally sensitive. The managed areas of the golf course include turfgrass areas and non-turfgrass areas, which are described below.

A. Turfgrass Areas

All grass types used for each location (tees, greens, etc.) are well suited and adapted for the climate of the area. The turfgrass of greens consists primarily of annual bluegrass (*poa annua*) and lesser amounts of native bentgrass. The turfgrass of the tees, fairways, and rough consists of annual bluegrass, perennial ryegrass, and some native bentgrass. The turfgrass and ornamental areas (shrubs and plants) and their respective management requirements are defined in Table 1.

Table 1. Jefferson Park Golf Course Area Definition and Maintenance Requirements

Area	% Total Area[a]	Fertilizer Requirement	Irrigation Requirement	Mowing Frequency	Cultural Frequency
Driving Range	5.5	low	low	low	low
Greens	3.8	high	high	high	high
Green Surrounds	3.3	medium	high	medium	medium
Tee Surface	2.2	medium to high	high	medium	high
Tee Surrounds	2.5	medium	high	medium	medium
Approaches	0.8	medium	high	medium	medium
Fairway	35.9	medium	high	medium	medium
Rough	45.4	low to medium	low to medium	medium	low to medium
Ornamental[b]	0.6	low	low to medium	N/A	low to medium

[a] golf course management area (125.6 acres)
[b] for this table, ornamentals are defined as shrubs and plants

B. Non-Turfgrass Areas

Non-turfgrass areas consist of bunkers, ornamental plantings, trees, aquatic areas, cart paths, service roads, walls, rockeries, and non-vegetated areas.

1. Bunkers
   Fairway and green-side bunkers are located throughout the golf course. Bunker management is confined to routine maintenance including raking and smoothing of sand contained within the bunkers.

2. Ornamental Plantings
   A number of ornamentals plants and shrubs are located throughout the golf course including those surrounding the clubhouse, and tee boxes located on holes number 3, 11, 15, and 16.

3. Trees
   Information obtained from *Habitats on Seattle Public Lands* indicates that approximately 33 acres of land within the golf course is classified as landscaped forest resulting in closed canopy urban forest over 26 percent of the managed landscape of Jefferson Park Golf Course. Landscape forest is described in the *Urban Wildlife and Habitat Management Plan* as closed tree canopy over maintained landscape such as lawns, trails or shrub beds. Many outstanding native and non-native tree specimens and groves are present on the course as a result of open growth conditions and an abundance of water and fertility. Please refer to Appendix A (*Habitats on Seattle Public Lands* - provided by the Seattle Urban Nature Project) for additional information.

4. Aquatic areas
   A small, constructed, asphalt-lined reflection pond is located on hole number 15. The pond is approximately 8 - 12 inches deep, and is replenished with City of Seattle water. As a matter of routine, the pond does not require routine management with the exception of occasional debris removal.

5. Natural Areas
   No natural areas are defined at Jefferson Park Golf Course at this time.

6. Cart Paths, Service Roads, Walls, Rockeries, and Non-vegetated Areas
   Gravel cart paths and service roads are located throughout the golf course. In addition, a variety of walls, rockeries, and non-vegetated areas are located on the golf course. Occasional weed control is necessary to maintain these assets.

VI. Turfgrass Management Practices

Turfgrass area management is the most labor intensive element of the Integrated Pest Management program, requiring greater than 95% of resource allocation. As stated repeatedly throughout this document, the primary intent of the Integrated Pest Management program is to optimize turfgrass vigor utilizing sound cultural practices as a means of preventing and/or minimizing pest infestation. The primary cultural practices of turfgrass management at Jefferson Park Golf Course

include mowing, fertilization/amendments, and irrigation. Secondary cultural practices include aeration, thatch management, topdressing, overseeding, and sod replacement.

A. Primary Cultural Practice

Primary cultural practice includes mowing, fertilization/amendments, and irrigation. The following describes routine primary cultural practice operational procedures. Additional detail that governs primary cultural practice is defined in the document entitled *Golf Course Maintenance Standards for Seattle Municipal Golf Courses* (Appendix B).

1. Mowing

Mowing will be performed on an as-needed basis and mowing frequency is area dependent. During the growing season, mowing of Greens occurs daily, mowing of tees and fairways occurs three times per week, and mowing of the rough occurs on an average of one to two times per week.

Lightweight mowing equipment is used as often as practical to minimize turf compaction and mowing heights are adjusted for individual areas. Mowing heights include 1/8 to 7/32 inches for greens, 9/16 inch for tees and fairways, and 1.5 to 2.0 inches for rough.

2. Fertilization/Amendments

Management of nutrients is essential for development of turf vigor. Management of turf fertility involves the understanding of soil composition, plant nutrient requirements, fertility management history, use of soil/tissue test information, and applications of the proper fertilizer formulations at the proper time. Additionally, the availability of beneficial soil microbes and biological amendments should be considered when managing soil/nutrient programs. The objective of the fertilizer program is to provide optimal nutrient availability to turf while simultaneously avoiding the application of excess nutrients to avoid weed infestation, disease development, and nutrient runoff. Every effort will be made to prevent off-site nutrient leaching through careful fertility management practices.

a. Soil/Tissue Nutrient Testing

Testing for nutrient composition provides valuable information that allows for the development of strategic fertilizer plan development and also provides insight into the effect of preceding cultural practices. Tissue nutrient testing provides information relative to nutrient uptake and plan-available nutrients. Soil/tissue testing should be performed on areas of the golf course selected by the Superintendent to generate information that will provide technical support during the development and application of the fertilizer program.

b. Turfgrass Nutrient Requirements

The major nutrients required for turfgrass health are nitrogen, phosphorus, potassium (NPK). Secondary, or "minor" nutrients include calcium, sulfur, iron, boron, copper, manganese, magnesium, and zinc. The availability of nutrients to turfgrass is influenced markedly by the pH of the soil. Consequently, maintenance of the appropriate pH is an important component of the fertilization program. Slow release fertilizers should be used as the primary source of nutrients, with adjustments for special needs and conditions. Greens fertilization programs may include light

applications of soluble foliar-adsorbed nutrients applied on a frequent basis (commonly referred to as "spoon feeding").

(1) Major Nutrients

(a) Nitrogen

The management of nitrogen levels is critical owing to the high turf demand for this nutrient and the potential for excess nitrogen to enter into surface water and groundwater. As a result, the amount of nitrogen delivered to turfgrass should be the minimum amount necessary to promote turf vigor. In general, nitrogen rates and formulations will be determined based on soil/tissue test results, season, site conditions, weather, and other information. In certain instances when turf and/or climate conditions dictate, rates of application will be adjusted (either higher or lower) at the discretion of the Superintendent.

Nitrogen formulations consist of water insoluble (slow release) and water soluble (quick release) types. Slow release nitrogen sources include methylene urea, sulfur-coated urea, IBDU, polymer coated fertilizers, and organic fertilizers processed and formulated as slow release products. Examples of quick release nitrogen sources include ammonium sulfate, ammonium nitrate, potassium nitrate, and urea. "Bridge" fertilizers combine the best qualities of synthetic and organic fertilizers providing both quick and slow release of nutrients. Organic formulations should be considered for providing sustainable slow release nutrients, soil organic matter, and potentially higher soil biological activity. To maximize plant uptake and minimize nitrogen runoff (e.g., nitrate), slow release nitrogen sources and/or light applications of soluble nitrogen ("spoonfeeding") should be used whenever possible.

Determination of the appropriate nitrogen source will be at the discretion of the Superintendent and will be based on the season and relative growth rate of the turf at the time of application. Ammonium nitrate should be avoided as a source of nitrogen as it requires an Explosives Materials Permit from Seattle Fire Department for storage. Every effort will be made to eliminate potential off-site leach of nutrient through careful fertility management.

(b) Phosphorus

Turf requirements for phosphorus are relatively low and phosphorus does not leach from soil quickly. As a result, application rates tend to be corresponding low, which minimizes the possibility of storm water runoff carrying residual phosphorus off-site.

(c) Potassium

Turf requirements for potassium are intermediate to high in relation to nitrogen and phosphorus levels. Potassium content of fertilizer formulations should be based on results from the soil/tissue nutrient analysis. Although applied to maximize efficiency of uptake, potassium does not pose the extent of environmental risk that excess nitrogen and phosphorus levels represent. Proper levels of potassium are an important component of plant

disease resistance and contribute to the ability of turf to withstand wear and traffic.

(2) Secondary (Minor) Nutrients
In general, turfgrass requirements for the secondary nutrients calcium, sulfur, iron, boron, copper, manganese, magnesium, and zinc are lower than for nitrogen, phosphorus and potassium. Secondary nutrients are essential for optimal turf performance and when possible, should be applied based on soil/tissue testing results and recommendations. These nutrients are available in a variety of formulations and application of these nutrients will be at the discretion of the Superintendent.

(3) Supplements and Amendments
A variety of turf supplements and biostimulants such as proteins, amino acids, plant hormones, carbohydrates, humic acids, and soil microorganisms have shown promise for the enhancement of turfgrass performance under high stress environments such as putting greens. As research and development of these products progresses, selected products may be used in fertility management at the discretion of the golf course Superintendent.

(4) pH
Maintenance of the proper soil pH is essential in optimizing the availability of nutrients, and also is important in minimizing overall turfgrass stress. When the soil pH requires adjustment to a more alkaline pH, lime will be added until the targeted pH is obtained. When soil requires adjustment to a more acidic pH, ammonium sulfate will be added until the targeted pH is obtained.

c. Fertilizer Treatment Areas
The rate and frequency of fertilizer application is area and situation dependent. A typical fertilizer application frequency is shown in Table 2. Fertilizer application is most frequent on the greens with less frequent applications being made to tees and fairways, and the least frequent application being made to the rough.

Table 2. Jefferson Park Golf Course:
Fertilizer Application Areas and Typical Yearly Applications

Area	% Total Area[a]	Applications per Year	Total Nitrogen per Year
Driving Range	5.5	1 - 2	1 - 2 lbs[c]
Greens	3.8	12 - 15[b]	6 - 8 lbs, (3 - 8 lbs)[d]
Green Surrounds	3.3	2 - 3	2 - 3 lbs
Tee Surface	2.2	6 - 8	4 - 6 lbs
Tee Surrounds	2.5	6 - 8	4 - 6 lbs
Approaches	0.8	6 - 8	4 - 6 lbs
Fairway	35.9	2 - 3	2 - 3 lbs
Rough	45.4	1 - 2	1 - 2 lbs
Ornamental	0.6	as required	< 1 lb

[a] golf course management area (125.6 acres)

[b] light rates applied incrementally to minimize growth and potential leaching
[c] expressed as lbs nitrogen per 1,000 ft^2
[d] rates vary depending on formulations, foliar vs. soil applications, frequency, etc.

d. Fertilizer Storage
All fertilizers will be maintainec in a dedicated moisture free, well-ventilated, approved storage area.

e. Fertilizer Documentation
All fertilizer applications will be documented on a fertilizer application form. Information recorded will include date of application, location of application, total area treated, formulation of fertilizer(s), rate of application expressed as Lbs. of N/1,000 ft^2, total quantity of product applied, and the of the applicator(s) name.

3. Irrigation

The distribution of adequate water onto turf via irrigation without over-watering is essential to turf health. In addition to providing optimal moisture levels for turf, irrigation practices are designed to conserve water whenever possible. Irrigation rates are determined based on data collected on a daily basis from weather stations. This practice is known as watering according to evapotranspiration rate. During periods of hot weather, greens should be syringed (hand-watered) in mid-afternoon as required, and cycle and soak watering schedules should be utilized whenever possible. Finally, wetting agents should be used when necessary to improve water infiltration for localized dry spots and other hydrophobic areas of turf. Wetting agents will be applied in accordance with label rates and recommendations.

a. Water Source
Jefferson Park Golf Course irrigates with water obtained from the City of Seattle.

b. Irrigation System
The irrigation system is an automated system that is computer controlled (Rain Bird Eagle 700/750 heads, Nimbus II central). Areas of localized dryness are treated by hand watering or the use of sprinklers.

c. Irrigation Water Quality
Historically, no turfgrass problems have been correlated with problems in irrigation water quality. Accordingly, testing of irrigation water quality is not performed. In the event that turfgrass symptoms indicate potential contaminants in irrigation water, water samples will be acquired from all irrigation water sources and submitted for irrigation suitability testing by a qualified analytical laboratory.

d. Water Conservation
Specified irrigation programs prevent over-application of water as a means of optimizing turf vigor and conserving water. The areas requiring the most frequent irrigation are tees, fairways, and greens. Because it represents a substantial percentage of the overall turfgrass area, the rough is irrigated as sparingly as possible to conserve

water. "Out-of-play" areas typically receive little to no irrigation, except as needed for survival of landscape assets.

The primary means of determining turfgrass irrigation requirements is the daily observations and monitoring by the Superintendent and staff. Data obtained from a weather station located on the golf course are evaluated to assist in this decision making process, and is a required component of the Nimbus II irrigation system. This computer controlled irrigation system replaces water as needed for optimum growth of all landscape assets, based upon golf course-specific information and daily weather conditions.

Occasionally, a drought condition affecting the City of Seattle's water supply can prompt activation of the Department of Parks and Recreation's *Water Shortage Contingency Plan.*

B. Secondary Cultural Practice

Secondary cultural practice includes aeration, topdressing, thatch removal, overseeding, and sod replacement to promote a healthy turf environment. Similar to primary cultural practice, the following describes routine secondary cultural practice that is governed by the detail contained within *Golf Course Maintenance Standards for Seattle Municipal Golf Courses* (Appendix B).

1. Aeration
   Aeration is the practice of removing soil cores from turf and is performed to minimize turf compaction. This practice enhances the movement of air, water and nutrients in the soil and is a useful technique to manage thatch layers. Additionally, deep tine or verti-drain aerification can be performed one to two times per year and involves aerification at depths of up to 12 inches to improve drainage.

   Aeration frequency is greatest for greens and tees and to a lesser extent for fairways. Aeration is typically performed during periods of active turf growth in the early spring, early summer and fall. Additional aeration may occur at the discretion of the Superintendent. In the case of greens, topdressing sand is applied to fill the cores resulting from the aeration treatment.

2. Thatch Management
   Thatch is a layer of organic debris and the roots, crowns, and stems of grass that exists between the soil and the turf canopy. In the absence of cultural management, this layer becomes thicker over time, resulting in sub-optimal turf growth. Management of thatch is particularly important on greens and consists primarily of aeration and topdressing practices. The thatch layer on greens should be maintained at a depth of 0.5 inches or less. Thatch management practices include hollow core aerification, solid core aerification, vertical mowing, and verticutting. The proper balance of soil microbes is also important for decomposition of turf thatch.

3. Topdressing

The practice of topdressing consists of the application of a layer of sand to greens and is used to assist in thatch layer management and to provide a smooth and firm playing surface. Topdressing applications follow the aeration or verticutting of greens, and are also made in the absence of aeration ("light" topdressing). Following the application of sand, the sand is lightly brushed into the turf surface. Sand used for topdressing and aeration should be washed, screened material that has a particle size distribution that is compatible with that of the sand located in the rootzone of greens.

4. Overseeding
   Overseeding is the selective application of turfgrass seed to improve areas of turf depletion and to bolster turf density. Overseeding is performed in the late fall, early spring, or early summer; or on an as-needed basis as determined by the Superintendent.

5. Sod Replacement
   Occasionally, problems with diseased, damaged, or weedy turf cannot be remedied by cultural practices. Under these circumstances, affected areas of turf are removed, and fresh turf obtained from an on-site nursery is used to replace the removed section.

VII. Tree Management

Numerous native and non-native trees of varying ages are located on Jefferson Park Golf Course and require routine management. General tree planting, management, and removal practices at Jefferson Park Golf Course are described below. Further detail regarding tree management practices is contained within support documents entitled City of Seattle Department of Parks and Recreation *Best Management Practices*, and City of Seattle's *Tree Management, Maintenance, Pruning and/or Removal Policy* (hereafter referred to as "*Tree Policy*").

A. Tree Selection

Trees considered for planting will be selected based on ultimate size and type of growth appropriate for the planting location, compatibility with soil conditions and climate, and pest resistance properties. Tree selection factors are specifically defined in the *Tree Policy*.

B. Planting Locations

Tree planting locations will be carefully evaluated prior to planting to anticipate the affect of mature trees on surrounding turf and ornamental areas. Architectural features, engineering, aesthetics, and influence on playing characteristics of the golf course are important landscape functional considerations. Water requirements, shading, and influence on air circulation will be the primary determinants of planting locations.

C. Tree Planting

Trees will be planted in planting holes appropriate for the root ball/root mass and planting holes will be backfilled with native material, except in certain situations where the existing soil is contaminated or filled with rubble. The planting area will be mulched and receive irrigation as required through the first three growing seasons. Whenever possible, planting will occur during the fall. More specific tree planting information is included in the *Tree Policy*.

D. Tree Maintenance

Trees will routinely be monitored for overall health, influence on playing characteristics, the presence of insects and diseases, influence on surrounding turf and ornamentals, and hazard potential. In general, insect and diseases pests are tolerated. High-value specimen trees may require more consideration for IPM strategies. Mulch will be maintained around trees to suppress weed growth and conserve water for newly planted trees. Established trees do not require supplemental watering except in situations of extreme drought. Trees will be pruned to optimize health, allow passage of light, minimize hazard, and manage pests. The Seattle Parks and Recreation Department Urban Forester and IPM Coordinator will be consulted regarding trees that have disease and/or pest problems beyond the normal scope of golf course management practices. The *Tree Policy* outlines specific tree cultural care considerations and maintenance practices.

E. Tree Removal
The Senior Urban Forester will be consulted regarding trees that are considered candidates for removal (e.g., disease, age, hazard) by the Jefferson Park Golf Course Superintendent. Upon confirmation that tree removal is necessary, the tree will be removed by Jefferson Park Golf Course staff, or when necessary, by a commercial tree service.

VIII. Composting and Organic Materials Management

A. Grass Clippings and Aerification Cores
Where appropriate, grass clippings and/or aerification cores should be spread on site as mulch. These materials should not be applied within buffer zones of creeks or other water bodies. Materials should be spread out in a thin layer to prevent damage to underlying plants.

B. Leaves
Vac/shredders and leaf lowers should be used to generate a shredded leaf mulch for application to plant beds, rough, and natural areas whenever possible. Excess leaves should be donated to the City of Seattle P-Patches or other City of Seattle operations when possible.

C. Woody Brush
When practical, brush chippers should be used to process tree limbs and other woody material to generate mulch for application to ornamental plant beds, tree wells, steep slopes and natural areas.

D. Logs, Stumps, and Large Woody Debris
Logs, stumps, and woody debris should be stockpiled in suitable storage locations and periodically processed with a leased wood grinder to generate wood fiber landscape mulch. This material functions as excellent mulch for ornamental plant beds, tree wells, and natural areas.

IX. Pest Population Definition

A summary of the currently identified potential pests at Jefferson Park Golf Course is shown in Table 3.

Table 3. Pest Definition and Distribution at Jefferson Park Golf Course

Category	Pest	Turfgrass	Ornamentals	Natural Areas
Fungal Disease	Anthracnose	3		
	Brown Patch	3		
	Downy Mildew	3		
	Dutch Elm Disease		3 (trees)	3 (trees)
	Fairy Ring	3		
	Fusarium Patch	3		
	Pythium	3		
	Red Thread	3		
	Summer Patch	3		
	Take-All Patch	3		
	Yellow Patch	3		
Algae	Black Algae	3		
Moss	Silvery Thread Moss	3		
Broadleaf Weeds	Chickweed	3	3	
	Clovers	3	3	
	Creeping Buttercup	3	3	
	Dandelion	3	3	
	English Lawn Daisy	3	3	
	Field Bindweed		3	
	Horsetail	3	3	
	Plantain	3	3	
	Poison Hemlock	3	3	
	Speedwell/Veronica	3	3	
Noxious Weeds[a] (examples,	Garlic Mustard		3	3
	Giant Hogweed		3	3
Grassy Weeds	*Poa annua*		3	
	Quackgrass	3	3	
Woody Brush	Blackberry		3	3
	English Ivy		3	3
	Scotch Broom		3	3
Insects	Cutworms	3		
	European Crane fly	3		
	Spruce Aphids		3 (trees)	
	Western Tent Caterpillar		3 (trees)	

	Wasps & Yellow jackets	3	3	

[a] State of Washington listed noxious weeds (Classes A, B, & C): mandated control

X. Pest Threshold Levels

The damage threshold levels for specific pest types are shown in Table 4. Damage threshold level is defined as the number of pests detected within a specified area that may lead to corrective action to reduce the density of the specific pest below the damage threshold level.

Table 4. Damage Threshold Limits for Specific Pest Categories

Pest	Tees	Fairways	Rough	Approaches[a]	Greens	Ornamentals	Natural Areas
Fungal Disease	10%[b,c,d]	N/A	N/A	10%[b,c,d]	0.2%[b,c,d]	Symptoms	N/A
Algae	0.2%[b]	N/A	N/A	N/A	0.2%	N/A	N/A
Moss	N/A	N/A	N/A	N/A	10%	N/A	N/A
Broadleaf Weeds	1-5/1000 ft^2	5-10/1000 ft^2	20/1000 ft^2	1-5/1000 ft^2	1/1000 ft^2	20/1000 ft^2	N/A
Noxious Weeds	N/A	N/A	N/A	N/A	N/A	1-5/1000 ft^2	1-5/1000 ft^2
Weedy Grasses	N/A	N/A	N/A	N/A	N/A	20/1000 ft^2	N/A
Woody Brush	N/A	N/A	N/A	N/A	N/A	1-5/1000 ft^2	1-5/1000 ft^2
Insects							
Cutworms	2/ft^2	N/A	N/A	2/ft^2	10/1000 ft^2	N/A	N/A
European Cranefly	25-40/ft^2	25-40/ft^2	N/A	25-40/ft^2	15-25/ft^2	N/A	N/A
Spruce Aphids	N/A	N/A	N/A	N/A	N/A	Detection	Detection
Tent Caterpillar	N/A	N/A	N/A	N/A	N/A	1 nest per tree	1 nest per tree
Wasps	Detection[e]	Detection[e]	Detection[e]	Detection[e]	Detection[e]	Detection[e]	Detection[e]

[a] approach areas are those located approximately 20 - 50 yards in front of greens
[b] % of area affected
[c] when conditions dictate, preventative measures will be considered
[d] spot treatments are considered when conditions dictate
[e] treatment based on detection in high traffic areas

XI. Pest Monitoring and Pest Control

All golf course maintenance staff will be trained in golf course IPM to monitor for evidence of pest infestation. The intensity and frequency of monitoring will be adjusted based on the likelihood or presence of pest infestation (i.e., seasonal) or in situational/site specific instances. All monitoring observations of potential pest infestation will be reported directly to the Superintendent on the same day of the observation. The IPM process and strategies will be implemented continuously and appropriate corrective action will be implemented as necessary.

The pest control strategy is sequential and consists of using cultural practices as the first line of defense. Pest control strategy will be developed on a case by case basis with all potential control options given consideration. The decision to implement chemical pest control measures beyond cultural, biological, or mechanical practices will be based on the review of relevant safety, scientific, economic, and environmental information. All products used for pest control must be those approved for use as defined in the City of Seattle *Pesticide Use Reduction Strategy*. See additional information in section *XII. Pesticides*.

A. Fungal Disease

Within the overall spectrum of pest management, fungal disease represents the most serious and consistent threat to turfgrass health at Jefferson Park Golf Course, and is of concern primarily on greens and tees. Greens and tees should be inspected regularly for symptoms of fungal disease. The primary means of identifying fungal disease will be diagnosis by the Superintendent. However, in some instances symptoms consistent with fungal disease may have alternative causes (nutrient deficiency, insects, etc.). When uncertainty regarding potential fungal disease is encountered, samples will be sent to a plant pathology lab for confirmation of the presence of fungal pathogens. More frequent monitoring of greens and tees will occur when conditions known to favor the development of these pathogens occur.

An essential aspect of preventing the development fungal disease is the optimization of turf vigor through routine cultural practice. In addition, fungal disease control is dependent on the understanding the disease cycle and conditions that promote disease development, the correct recognition of disease symptoms, and the selective use of the appropriate fungicide agents when necessary. Specific cultural practices can be employed to minimize the potential for fungal disease, which are described below. In general, if these measures fail and symptoms of fungal infestation exceeds defined damage thresholds, fungicide applications may be necessary to control the disease. Numerous factors including season, weather, and turf health/vigor contribute to the determination whether fungicide treatment may or may not be necessary. Annual review of improved products and rotational application strategies should be implemented to reduce resistance of fungal pathogens to specific products. Fungicide products must be those approved for use as defined in the City of Seattle *Pesticide Use Reduction Strategy*.

A description of conditions favoring disease development, symptoms of disease, and specific control measures for each type of fungal disease that requires pest management follows:

1. Anthracnose (*Colletotrichum graminicola*)
   a. Disease Conditions and Symptoms
      Anthracnose appears in the summer when temperatures exceed >78°F and soil moisture conditions are high. Disease development is promoted by compaction, excess thatch, and low nitrogen fertility. Symptoms of Anthracnose include yellow to brown irregular shaped areas on turf with grass leaves having yellow lesions with black centers.

   b. Cultural Control
      Nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less. Light-weight mowing equipment will be used when practical to minimize compaction of turf and the thatch layer will be monitored and managed in an effort to restrict the thatch layer to 1/4 inch or less. Shade will be minimized to improve air circulation for enhanced drying of turf, and irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight.

   c. Fungicide Control
      In the event that conditions favoring Anthracnose growth develop, select turfgrass areas will be considered for preventative treatment with Daconil (Chlorothalonil) or

Heritage (Azoxystrobin). If actual Anthracnose infestation is diagnosed, affected areas will be treated with Banner (Propiconazole), Bayleton (Triadimefon), or Scotts FF (Thiophanate-Methyl).

2. Brown Patch (*Rhizoctonia solani*)
   a. Disease Conditions and Symptoms
      Brown Patch appears in the early summer through late summer under conditions of high temperature and humidity, especially when night temperatures exceed 60°F. The disease is particularly severe on turf with high nitrogen and low phosphorus conditions. Symptoms of Brown Patch include brown circular patches several inches to several feet in diameter, which sometimes are surrounded by a smokey-colored boundary.

   b. Cultural Control
      Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less. Moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to improve air circulation for enhanced drying of turf and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight, thatch will be maintained at 1/4 inch or less, and whenever possible, mowing heights will be raised.

   c. Fungicide Control
      In the event that Brown Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Chipco (Iprodione), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), Prostar (Flutolanil), Scotts FF (Thiophanate-Methyl), Scotts FFII (PCNB), Scotts Fungicide VIII (Thiophanate-Methyl + Iprodione), or Scotts IX (Thiophanate-Methyl + Chloroneb).

3. Downy Mildew (*Sclerophthora macrospora*)
   a. Disease Conditions and Symptoms
      Downy mildew is typically found in areas of poor drainage or that have been over-watered. Symptoms of Downy mildew include diffuse areas of yellow turf, and infected leaf blades may appear mottled before eventually becoming yellow.

   b. Cultural Control
      High nitrogen fertility will be avoided, and soil drainage will be optimized. Additionally, shade will be minimized allow for warmer temperatures and improve air circulation for enhanced drying of turf.

   c. Fungicide Control
      If Downy Mildew infestation is diagnosed, treatment options are Prostar (Flutolanil).

4. Dutch Elm Disease (*Ophiostoma ulmi*)
   a. Disease Conditions and Symptoms
      Dutch Elm disease is a fungal pathogen specific for elm trees, and is spread by several 2 species of bark beetles. Symptoms of Dutch Elm disease include wilting leaves and sparse foliage, followed by yellowing and premature defoliation, typically in mid to

late summer in the first year of infection. Second year infections may appear earlier during spring leaf-out. A diagnostic test is required to confirm presence of infection.

b. Cultural Control
The primary cultural control is to rapidly detect and remove diseased trees to prevent disease spread. All wood and bark will be burned immediately (i.e., not stored for firewood).

c. Fungicide Control
Chemical control of diseased trees is beyond the normal scope of golf course management capabilities. If chemical control is a consideration, the Seattle Department of Urban Forestry will be consulted to determine a course of action to treat diseased trees.

5. Fairy Ring
   a. Disease Conditions and Symptoms
   Fairy Ring is caused by a variety of fungal species, each having a characteristic presentation on turf. General symptoms of Fairy Ring include large circles or arches of dark green or brown, dead turf that often have small mushrooms present.

   b. Cultural Control
   The primary cultural method of preventing Fairy Ring development will be thatch removal, compaction relief via aeration, and proper irrigation. In addition, moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less, and moderate to high levels of potassium and phosphorus will be maintained. In addition, frequent aeration of ring areas followed by application of wetting agent to remedy hydrophobic patches may be used.

   c. Fungicide Control
   In the event that Fairy Ring infestation is diagnosed, the treatment option is Prostar (Flutolanil).

6. Fusarium Patch/Pink Snow Mold (*Microdochium nivale*)
   a. Disease Conditions and Symptoms
   Fusarium Patch appears in the autumn, winter, and spring and is very common in Western Washington during the winter. Conditions favoring disease development include cool temperatures (35° - 65°F) and lush turf growth in which turf contains high nitrogen and low potassium. Symptoms of Fusarium Patch include light reddish to brown patches ranging from one to eight inches in diameter.

   b. Cultural Control
   Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less during late summer and fall. Moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to improve air circulation to allow for warmer temperatures and enhanced drying of turf, and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight, and soil moisture will be monitored to avoid drought stress. Greens should be dragged in the early morning on days when mowing does not occur for the purpose of removing dew to promote faster turf drying.

c. Fungicide Control
In the event that Fusarium Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Chipco (Iprodione), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), Scotts FF (Thiophanate-Methyl), Scotts FFII (PCNB), Scotts Fungicide VIII (Thiophanate-Methyi + Iprodione), Scotts IX (Thiophanate-Methyl + Chloroneb), or Scotts X (Iprodione). Preventative treatments, particularly in the fall season on historically susceptible sites may be advantageous for maximum control with minimum product application.

7. Pythium (*Pythium* spp.)
a. Disease Conditions and Symptoms
Pythium infection of turf is caused by a variety of *Phythium* species and can occur in the form of Pythium blight and/or Pythium root rot. The onset of disease can be sudden and devastating to green surfaces. Conditions favoring Pythium development are high temperature and humidity when night-time temperatures exceed 65°F. Symptoms of Pythium infection include greasy brown patches of turf less than inch in diameter that increase to approximately two inches and turn straw-colored.

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less and optimum calcium levels will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and drainage will be optimized. Mowing of susceptible turf areas will be avoided when night temperatures are greater than 70°F.

c. Fungicide Control
In the event that Pythium infestation is diagnosed, treatmennt options are Fore (Mancozeb), Heritage (Azoxystrobin), Subdue (Metalaxyl), or Terraneb (Chloroneb).

8. Red Thread (*Laetisaria fuciformis*)
a. Disease Conditions and Symptoms
Red Thread usually occurs between late spring and early summer. Conditions favoring Red Thread development include cool temperatures (40 to 70°F), high humidity, and nitrogen deficiency. Typically, turf damage is not severe, as Red Thread does not infect plant roots. Symptoms of Red Thread include the appearance of reddish strands protruding above turf leaf blades.

b. Cultural Control
Timely and adequate nitrogen fertilization is the key to controlling this disease, particularly in vulnerable new turf areas. Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2 month and moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight. Because dry conditions favor the development of this disease, the use of wetting agents may be used to alleviate this condition.

c. Fungicide Control
In general, cultural practice is sufficient to control this disease. However, in the event that Red Thread infestation is diagnosed and is beyond control through cultural practice, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), or Prostar (Flutolanil).

9. Summer Patch (*Magnaparthe poae*)
a. Disease Conditions and Symptoms
As its name indicates, Summer Patch usually occurs during the summer, when daytime temperatures are greater than 85°F. Conditions favoring Summer Patch development include high soil moisture, poor drainage, and low mowing heights. Symptoms of Summer Patch include circular patches of wilted to straw-colored turf, usually less than 10 inches in diameter. Turf leaf blades turn yellow or brown starting at the tips, and roots are light to dark brown.

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month and "fast release" sources of nitrogen will be avoided. Soil drainage will be improved, soil compaction will be reduced, and turf surfaces will be syringed when temperatures exceed 85°F. Lightweight mowing equipment will be used and whenever possible, mowing heights will be raised.

c. Fungicide Control
In the event that Summer Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), or Heritage (Azoxystrobin).

10. Take-All Patch (*Gaeumannomyces graminis. Var. avenae*)
a. Disease Conditions and Symptoms
Take-All Patch occurs in the spring and early summer when temperatures are between 59 and 76°F. Conditions favoring Take-All Patch development include moist soil, a pH of greater than 5.5, low/unbalanced fertility, and greens with high sand content. Symptoms of Take-All Patch include wilted to bronze colored circular patches that can be as large as several feet in diameter. Turf leaf blades turn yellow, then bronze at the tip, progressing downward. Roots are brown and necrotic. Turf damage can be rapid and severe under warm, dry conditions.

b. Cultural Control
Fertilizer with acid-forming source of nitrogen such as ammonium sulfate is a fertilization strategy for disease control. Moderate levels of phosphorus and potassium will be maintained. Soil drainage will be improved, and heavy, frequent irrigation will be avoided.

c. Fungicide Control
If conditions dictate, susceptible areas will be considered for preventative treatment with Heritage (Azoxystrobin) at the discretion of the Superintendent. In the event that Take-All Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Heritage (Azoxystrobin), or Prostar (Fluotlanil).

11. Yellow Patch (*Rhizoctonia cerealis*
    a. Disease Conditions and Symptom
    Yellow Patch usually occurs during early to midwinter when temperatures are less than 60°F. Conditions favoring Yellow Patch development include high moisture, excessive thatch, and high nitrogen fertility. Symptoms of Yellow Patch include patches or rings of yellow to straw-colored turf between 8 and 20 inches in diameter. Turf damage is usually not severe, but the loss of turf quality can be significant. Young turf is particularly susceptible Yellow Patch.

    b. Cultural Control
    Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less and moderate to high levels of potassium will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and thatch will be maintained at 1/4 inch or less.

    c. Fungicide Control
    In the event that Yellow Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Heritage (Azoxystrobin), or Prostar (Flutolanil).

B. Algae

Algae growth ("black algae") is of concern primarily for turf located on greens and tees and is caused by *Symploca* spp. or *Oscillatoria* spp.. A description of conditions favoring algae growth, symptoms of the presence of algae, and specific control measures follows.

1. Growth Conditions and Symptoms
   Conditions favoring algae growth include shaded areas with poor drainage, reduced air movement, and compacted soil. Symptoms of "black algae" include the appearance of dark brown-black growth over the soil surface and plant crowns that may look like oil spots.

2. Cultural Control
   Preventative cultural and fertility practices are the primary means of controlling algae on turf. Techniques include improvement of soil drainage, maintenance of balanced turf fertility, the loosening of compacted soil, and providing more light to turf via pruning of trees and shrubs.

3. Chemical Control
   Temporary chemical control can be realized by the application of wettable sulfur or Fore (Mancozeb).

C. Moss

Current greens maintenance practices create an environment than can be favorable for the infestation of various moss species, including Silvery Thread moss (*Bryum argenteum*), which is the species most commonly detected. Moss species in greens may require different control methods than species commonly found in other turf areas.

1. Growth Conditions and Symptoms

Conditions favoring moss growth include low mowing heights, frequent irrigation, and low nitrogen fertility.

2. Cultural Control
The first control measure is to raise mowing heights when possible, and to improve turf fertility. The second approach is to adjust irrigation to optimize drainage and prevent over-watering. The third approach is to prune or remove trees creating excessive shade on greens surfaces. The fourth approach is to utilize turf management practices to minimize problems such as disease, wear, localized dry spots, etc., that cause turf thinning

3. Chemical Control
Products showing varying levels of moss control include ferrous sulfate, copper hydroxide (Junction, Kocide), and salts of fatty acids.

D. Weeds

The weeds that are potential pests and that require monitoring and control by golf course personnel are listed in table 2. The general categories include broadleaf weeds, grassy weeds, noxious weeds, and woody brush. In addition, a variety of landscapes require weed management including turfgrass, ornamental shrubs and plants, areas surrounding trees, natural areas; and cart paths, service roads, walls, rockeries, and non-vegetated areas. In certain instances, management areas may not be monitored for certain weed types (i.e., the grassy weed *poa annua* does not present a problem in turfgrass). All areas will be monitored weekly for the presence of weeds problematic for the respective areas.

A description of the individual areas and measures used to control weeds located in these areas follows:

1. Turfgrass
   a. Cultural Control
   Broadleaf weeds are the primary pest concern for turfgrass. The primary means of controlling broadleaf infestation will be to optimize turf health through standard cultural practices. Selection of well-adapted turfgrass cultivars in combination with proper cultural practice, fertilization, irrigation, insect and disease control produces a dense vigorous turf that optimizes resistance to colonization by broadleaf weeds. If maintenance practices are not completely effective, the first approach to broadleaf weed control at Jefferson Park Golf Course will be mechanical removal (i.e., hand pulling).

   b. Chemical Control
   Occasionally, in spite of IPM and good cultural practices, one or more of the broadleaf weeds listed in Table 2 may exceed damage threshold levels. On these occasions, spot treatments with an herbicide(s) specifically labeled for the weed requiring control will be considered for use. The herbicides that have been approved for use are listed in Table 6. Applications are most effective during late summer or early fall.

2. Ornamentals
   a. Cultural Control

Broadleaf weeds, grassy weeds, noxious weeds, and woody brush in ornamental areas (shrubs and plants) will be controlled primarily by mechanical means (hand pulling), and whenever possible, weeds should be removed prior to seed production. In addition, mulches such as bark dust or wood chips will be used to control weed populations. Properly planted beds with high densities of desirable plants is a key cultural strategy to effectively crowd out many weed species. Creeping infestation of weeds will be prevented by the installation of hard borders and/or frequent edging.

b. Chemical Control
On occasion, herbicides will be used on a spot treatment basis to control weeds in ornamental shrub and plant areas. Treatment options include Roundup (glyphosate) for non-selective post-emergent control and Surflan (Oryzalin) for pre-emergent control. If significant amounts of weed seed are present, a combination of the two products may be applied to provide for more effective long-term weed control. Adequate moisture is necessary to activate Surflan, and as a result applications are preferentially made during the spring and fall seasons.

3. Trees
Weed and grass control around the trunks of trees in turf areas is essential to protect trees from damage resulting from mowing, trimming equipment, and rodents.

a. Cultural Control
Weeds around the bases of trees will be controlled primarily by a combination of by mechanical means (hand pulling and string trimmers). Extreme caution should be used when using string trimmers to prevent damage to the bark of trees. Mulch material is recommended for use around newly planted trees.

b. Chemical Control
Periodic treatments may be necessary to control growth of weeds around the bases of trees. Treatment options include Roundup (glyphosate) for non-selective post-emergent control and Surflan (Oryzalin) for pre-emergent control. A combination of the two products may be applied under certain situations for longer term weed control.

4. Natural Areas
Noxious weeds are the primary management concern in natural areas. Control and eventual eradication of King County Class A noxious weeds is required by law. Control of King County Class B and Class C noxious weeds, with containment as the primary goal, is also required by law. Additional information regarding King County Noxious Weed Control can be found on the King County website at **http://dnr.metrokc.gov/weeds**.

a. Cultural/Mechanical Control of King County Listed Noxious Weeds
Weeds and roots will be removed by hand pulling, plant material will be placed in bags, and bags will be placed in dumpsters. Removed plant material for Class A noxious weeds will not be composted or placed in clean/green bunkers. Frequent mowing prior to seed production may be an effective strategy for certain weed species.

b. Chemical Control

Chemical treatment may be required to eradicate Class A weeds. Treatment options include Garlon 4 (Triclpyr) as a selective broadleaf herbicide or Roundup (Glyphosate) as a non selective herbicide. Selective herbicides such as Garlon 4 are recommended for broadleaf weed control to preserve existing grasses, which provide competition for broadleaf weed species.

5. Cart Paths, Service Roads, Walls, Rockeries, and Non-vegetated Areas
   a. Cultural Control
      Very fine 3/8 minus crushed rock is recommended for use to surface cart paths and service roads. The combination of tightly compacted crushed rock path surfaces and vehicle traffic will reduce weed growth. Paved cart paths/service roads provide a long term solution to path maintenance and pest management problems.

   b. Chemical Control
      If cultural practices prove ineffective, the herbicides Roundup (glyphosate) or the pre-emergent Surflan (Oryzalin) are approved for use for weed control in these areas.

E. Insects

Three management areas are potentially vulnerable to damage from insect infestation which include turfgrass areas (Cutworms, European Cranefly), trees (Spruce Aphids, Western Tent Caterpillar), and high traffic areas for golfers and/or maintenance staff (Wasps/Yellow jackets). Monitoring for insects will consist of routine visual inspection of susceptible areas and specific vegetation areas on a weekly basis. General turfgrass cultural practices leading to optimal turf vigor are the primary means of minimizing the potential for insect infestation. Similarly, cultural practices are the primary means of controlling insect infestation of trees. In general, cultural practices are ineffective at controlling Wasps and Yellow jackets. If cultural practices are ineffective at preventing damage thresholds for a specific pest from being exceeded, the selective use of biological agents and/or insecticides will be considered. Rotational strategies will be employed as necessary to reduce insect resistance to specific products.

A description of specific insect pests, symptoms of infestation, and corresponding control measures follows:

1. Cutworms (*Noctuidae* family)
   a. Insect Description and Infestation Symptoms
      The adult cutworm is a moth that lays eggs on grass leaves at night. The resultant larvae are thick-bodied caterpillars approximately 1.5 to 2 inches in length that may be greenish gray, brown, or black, and often have spots or stripes. The larvae reside in the thatch layer during the day and emerge to the surface to feed on the grass blades at night. Cutworm infestation results in small brown circular patches on the turf, and generally occurs during late summer and fall. Also, an indication of cutworm infestation is the presence of birds attempting to feed on cutworms by digging at the thatch layer during the day.

   b. Cultural Control
      Optimize turf vigor through standard cultural practices.

   c. Biological Control
      Several insect growth regulators and biological agents including azadirachtin (Turplex, Margosan-O) and *Bacillus thuringensis* (Bactimos, Dipel, M-One, M-Peril, MVP, Teknar, Thuricide, etc.) have been shown to be effective agents against cutworms. These agents will be considered for use following a cost/efficacy analysis.

d. Insecticide Control
If biological treatments are unsuccessful, the insecticide used to control cutworm infestations exceeding threshold levels will be Dursban (Chlorpyrifos). Dursban is currently not approved for general use by the City of Seattle, but will be considered for treatment of cutworms based on a one-time exception request.

2. European Cranefly (*Tipula paludosa*)
   a. Insect Description and Infestation Symptoms
   The European Cranefly is a flying insect that resembles a large mosquito. Adults lay eggs on the turf in late summer, which hatch in late fall. The resulting larvae are approximately one inch long and are brownish gray in appearance. The larvae feed on the turf during the fall, overwinter, and then become active in the early spring. The larvae reside under the surface of the turf and feed on the turf root system, becoming especially active after soil temperatures exceed 50°F in the early spring. Evidence of infestation is the presence of irregular brownish patches on the turf surface and general turf thinning.

   b. Cultural Control
   Optimize turf vigor through standard cultural practices.

   c. Biological Control
   Steinernema carpocapsae (Turfco Vector) is a commercially available nematode shown to be effective at treating European Cranefly infestations. This agent will be considered for use following a cost efficacy analysis.

   d. Insecticide Control
   If documented biological control strategies are unsuccessful, the insecticide currently used to control European Cranefly infestations that exceed threshold levels will be Dursban (Chlorpyrifos). Dursban is currently not approved for general use by the City of Seattle, but will be considered for treatment of European Cranefly based on a one-time exception request.

3. Spruce Aphid (*Elatobium abietinum*)
   a. Insect Description and Infestation Symptoms
   The Spruce aphid is a small, dull green aphid that causes extreme needle drop from infested trees. The Spruce aphid typically appears in February and increases in number rapidly during March and April.

   b. Cultural Control
   Optimize tree health through standard cultural practices.

   c. Mechanical Control
   Remove affected tree(s) and replace with pest resistant species.

   d. Insecticide Control
   Generally, cultural methods provide satisfactory control of spruce aphids.

4. Wasps and Yellow jackets
   a. Insect Description and Infestation Symptoms
      Wasps and Yellow jackets are beelike insects with yellow and black or white and black bands on the abdomen of the insect. Nests can be located underground, or in shrubs and trees. These insects are most active during the day, and less active at night.

   b. Cultural Control
      Generally, no cultural methods provide satisfactory control of wasps and yellow jackets.

   c. Insecticide Control
      When detected in high traffic areas, nests that present a threat to golfers and/or maintenance staff will be treated with Zep Tox Wasp and Hornet (Tetramethrin + phenothrin) or mint oil products.

5. Western Tent Caterpillar (*Malacosoma* spp.)
   a. Insect Description and Infestation Symptoms
      Tent Caterpillars can infest and damage a variety of trees. Larvae are hairy, yellowish brown, with a row of blue and orange spots on their sides. Moths are light to dark brown in color. Nests are identifiable by the presence of large, silken structures (i.e., "tents") located in trees and shrubs. Caterpillars inhabit the nests during the night and go out during the day to feed. At pupation, caterpillars leave the nest to find appropriate places to form chrysalises.

   b. Cultural Control
      Optimize tree health through standard maintenance practices. Generally, cultural methods provide satisfactory control of tent caterpillar.

   c. Mechanical Control
      Light infestations can be controlled by nest removal. Nests will be removed by pruning during early morning hours and destroyed.

   d. Biological Control
      The biological agent *Bacillus thuringensis* (Bactimos, Dipel, M-One, M-Peril, MVP, Teknar, Thuricide, etc.) has been shown to be effective against tent caterpillar when they are actively feeding.

XII. Pesticides

A. Pesticide Definition

A pesticide is any substance that is used to control pests including insects (insecticide), weeds (herbicide), fungi (fungicide), nematodes (nematicide), and algae (algicide). The mechanism of action of most pesticides is to eliminate the pest by suppressing, weakening or eradicating the target pest.

B. Pesticide Use Policy

The City of Seattle implemented a *Pesticide Use Policy* in 1999 that regulates the use of specific pesticides and establishes guidelines for overall reduction of pesticide use. According to this policy, all pesticide products used on City of Seattle landscapes must first be screened for a number of health and environmental criteria, and based on these criteria, are assigned to pesticide product Tier Tables (Appendix C). The products are ranked as follows: Tier 1 (highest level of concern), Tier 2 (moderate concern), Tier 3 (lowest concern), and Tier 4 (insufficient information). Tier 1 pesticides have been identified as first priorities for phase-out when viable alternative products become available. Exceptions to use restrictions for Tier 1 products are considered on a one-time use only basis, or as a programmatic exception. Fungicide products are not currently subject to the exception process because viable (Tier 2 and Tier 3) alternatives do not currently exist. All pesticides must be screened and entered into the City of Seattle's Tier Tables prior to use. The City of Seattle *Pesticide Use Reduction Strategy* (Appendix D) establishes a goal of reducing overall pesticide use by 30% by the end of 2002. Additional information regarding the City of Seattle's *Pesticide Use Reduction Strategy* can be found on the City of Seattle's Office of Sustainability and Environment website, which is located at **www.cityofseattle.net/environment/pesticides.htm**. Guidance contained within the *Tri-County Integrated Pest and Vegetation Management Guidelines* (Appendix E) describing proper pesticide use should also be consulted and adhered to. The *Tri-County Integrated Pest and Vegetation Management Guidelines* can be viewed on the Internet at **http://www.metroke.gov/hazwaste/ipm/ipmpolicy.htm**.

C. Pesticide Use Determination

The primary strategy for pest management as defined in this Integrated Pest Management plan is to optimize turf vigor through maintenance practices to optimize turf resistance to, or tolerance of pests. In the event that maintenance practices do not maintain pest populations below damage thresholds, control strategies will be considered. Through the IPM process, pesticides will be selected by the Superintendent based on their indication for use, safety, efficacy, toxicological and environmental impacts. In addition, the Superintendent will monitor developments in pesticide research and development; and he/she will incorporate the use of newly developed, tested and improved pesticides approved by EPA and the City of Seattle where appropriate.

D. Current Practice

The locations of pesticide use and the typical frequencies of the application of these agents are shown in Table 5.

Table 5. Jefferson Park Golf Course:
Pesticide Applications Areas and Typical Application Frequencies

Area	% Total Area[a]	Pesticide Applications per Year	Pesticide Category
Driving Range	[illegible]	spot treatment	Herbicide
Greens	[illegible]	6 - 9	Fungicide
Green Surrounds	[illegible]	0	N/A
Tee Surface[b]	2.2	spot treatment as needed	Fungicide
Tee Surrounds	2.5	spot treatment as needed	Herbicide
Approaches[b]	[illegible]	spot treatment as needed	Herbicide
Fairway	[illegible]	spot treatment as needed	Herbicide

Rough	45.4	spot treatment as needed	Herbicide
Ornamental	0.6	spot treatment as needed	Herbicide

[a] golf course management area (~25.6 acres)
[b] occasional treatment with fungicide when disease thresholds exceeded

The pesticides that have potential for use at Jefferson Park Golf Course include 13 fungicides, six herbicides, and two insecticides (Table 6). To minimize the development of resistance, pesticides in different families with different mechanisms of action will be rotated as frequently as practical and necessary. In addition, if pest resistance to one or more of these pesticides does develop, or if unanticipated circumstances arise, the Superintendent may use alternative pesticides that are EPA approved and have received authorization for use by the City of Seattle.

Table 6. Pesticide Selection for Potential Application at Jefferson Park Golf Course[a]

Pesticide Trade Name	Pesticide Chemical Name	Pesticide Category
Banner	Propiconazole	Fungicide
Bayleton	Triadimefon	Fungicide
Chipco 26019, Scotts Fungicide X	Iprodione	Fungicide
Daconil	Chlorothalonil	Fungicide
Dithane, Fore	Manco/eb	Fungicide
Heritage	Azoxystrobin	Fungicide
Prostar	Flutolanil	Fungicide
Scotts FF	Thiophanate-Methyl	Fungicide
Scotts FFII, Blocker	PCNB	Fungicide
Scotts Fungicide VIII	Thiophanate-Methyl/Iprodione	Fungicide
Scotts Fungicide IX	Thiophanate-Methyl/Chloroneb	Fungicide
Subdue	Metalaxyl	Fungicide
Terraneb	Chloroneb	Fungicide
Casoron[b]	Dichlobenil	Herbicide
Crossbow	2,4-D + Triclopyr	Herbicide
Drive	Quinclorac	Herbicide
Garlon 4	Triclopyr (ester formulation)	Herbicide
Roundup	Glyphosate	Herbicide
Surflan	Oryzalin	Herbicide
Trimec	2,4-D + Dicamba + Mecoprop	Herbicide
Dursban[c]	Chlorpyrifos	Insecticide
Zep Tox Wasp and Hornet	Pyrethrum + Phenothrin	Insecticide

[a] Additional pesticides not listed above may be approved for use by the City of Seattle, and when necessary, can be used at the discretion of the Superintendent.
[b] Tier I exception dictates that this product may be used for post-emergent rush control in ornamental plant beds. Product will be applied according to Best Management Practices and Tier I exception.
[c] Dursban is currently not approved for general use by the City of Seattle, but will be considered for use by exception request.

E. Pesticide Storage

All pesticides will be maintained in a dedicated, dry, well-ventilated, approved storage area that has restricted access and meets the requirements of the State of Washington and the City of Seattle Fire Department. Hazardous Materials Permits from the City of Seattle Fire Department are necessary for pesticide storage.

F. Pesticide Mixing

The entire pesticide product label will be read and understood prior to the use of any pesticide. Prior to pesticide mixing, the Superintendent will determine that local weather conditions are suitable for pesticide application. All pesticides will be mixed according to manufacturer's labeling instructions by a licensed pesticide applicator. Personnel will wear personal protective equipment during the entire mixing process, as recommended in the Material Safety Data Sheet appropriate for the pesticide being mixed. All pesticides will be prepared in an approved pesticide mixing area.

G. Signage

All pesticide applications will be identified by the posting of official City of Seattle Pesticide Application Signs. Posted signage will be in compliance with the City of Seattle's *Pesticide Use Policy* and will remaining posted for a minimum of 24 hours following pesticide application.

H. Application

Application of restricted use pesticides or any pesticides applied with a power spray apparatus will be done by licensed pesticide applicators properly trained in the safe application of these products. Application of non-restricted use pesticides applied with manually operated equipment may be assigned to full time employees who are under the supervision of licensed pesticide applicators. Applicators will wear appropriate personal protective equipment appropriate for the pesticide application. All pesticide application equipment will be properly calibrated prior to the addition of the pesticide formulation to the equipment and application to the golf course.

The areas of the golf course requiring pesticide application will be specifically defined by the Superintendent. Whenever possible, applications will be selective and limited to localized, targeted areas to minimize the amount of pesticide being applied. No pesticide spray applications will occur if wind speed is above 5 miles per hour or if wind direction or activity will carry pesticides toward, or deposit them upon open water. Pesticides will not be applied if heavy rain is forecast following the potential application event.

I. Clean Up and Disposal

Pesticide containers, mixing tanks, and equipment will be rinsed in accordance with recommended procedures and rinse water will be disposed of in accordance with state and local ordinances.

J. Pesticide Use Documentation

The City of Seattle Office of Sustainability and Environment maintains a pesticide use database for tracking all pesticide applications on the City of Seattle lands. The database calculates pesticide use according to pounds of active ingredient used. Reports are generated annually to determine use reduction, specific product use, and site usage. All pesticide applications to City of Seattle public golf courses are required to be accurately entered into the database on a monthly basis. Pesticide application information recorded will include date of application, time of application, specific location of application, size of the area treated (typically by 1,000 ft²), product name, product EPA registration number, rate of application (typically as rate per 1,000 ft² or acre), weather conditions (wind speed and direction, temperature, rainfall, weather comments), total amount of product applied, and the applicators name and pesticide license number. In addition, current pesticide labels and MSDS sheets will be compiled and maintained in a location accessible to all employees, and are required to be present at the time a pesticide application is made. All pesticide documentation will be in accordance with federal, state, and city regulations.

K. Pesticide Inventory/Purchasing

All pesticide purchases must comply with the City of Seattle's *Pesticide Use Policy* and current City regulations. Annual pesticide inventories are required by the City of Seattle to document the individual products and their respective quantities in storage.

XIII. Facilities Description

A. Maintenance Building

Maintenance functions are performed in a maintenance building that has a total area of approximately 6,900 square feet. The building is physically segregated into two main areas. The first area is dedicated to office space and crew quarters, which consists of the Superintendent's office, the staff lunchroom, staff locker room, and the staff restroom. The second, larger area is dedicated to equipment storage, equipment maintenance, fertilizer storage, and pesticide storage.

1. Mechanical Shop
   This area is where all equipment maintenance and repair work is performed. All fluids and solvents required for maintenance and repair are maintained within this area and used fluids and solvents are disposed of according to federal, state, and local guidelines.

2. Equipment Storage
   This area contains all equipment used in golf course maintenance operations including mowers, tractors, and fertilizer and pesticide application equipment.

3. Fertilizer Storage
   All fertilizer is stored in a dedicated and approved storage area. The storage area is isolated and allows for the maintenance of fertilizer in a dry, well-ventilated environment that has restricted access.

4. Pesticide Storage
   All pesticides are stored in a separate, dedicated area approved by the City of Seattle Fire Department. A hazardous materials storage permit from the City of Seattle is required for the storage of pesticides.

B. Petroleum Fluid Storage and Disposal

1. Flammable Materials
   All flammable materials are stored in an area approved by the City of Seattle Fire Department.

2. Used Fluids
   Used fluids are stored in separate containers appropriate for the fluid type.

3. Used Fluid Containers
   Used fluid containers are labeled with the identity of the used fluid.

4. Fluid Disposal
   Used fluids are disposed of according to state and local regulations.

5. Permits
   A flammable materials storage permit is required by the City of Seattle for the storage of flammable materials.

C. Fuel Depot

The fuel depot consists of gravity feed system that is housed over a concrete spill retention system.

D. Equipment Washing

All equipment should be washed with water only (i.e., no detergent) over an approved wash rack that contains an oil/chemical separator that exits into a sanitary sewer. In the event that this facility is not available, every precaution must be taken to prevent equipment rinse water from exiting down a storm drain or from surfaces draining off site in any manner.

E. Pesticide Mixing Area

All pesticide mixing occurs at a dedicated mixing area.

XIII. References

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West Seattle Golf Club

Best Management Practices

The Best Management Practices outlined below are general policies and procedures that direct routine golf course management operations at West Seattle Golf Club. These policies and procedures are the result of combining standard golf course management practices common to Pacific Northwest and national golf courses, and those defined in the Seattle Parks and Recreation Best Management Practices that apply to Seattle municipal golf courses.

I. Turf Cultural Practice

A. Location

1. Develop location specific cultural practices (i.e., greens, tees, fairways and rough).

B. Hygiene

1. Remove clippings.
2. Optimize air circulation.
3. Minimize shade for turf areas. Whenever possible, retain shade over waterways to preserve habitat.
4. Remove leaves, fallen limbs, and other debris from turf areas. Whenever possible, do not disturb this material in waterways to preserve habitat.

C. Soil Moisture

1. Maintain proper soil moisture levels.
2. Avoid over-application of water to turf.

D. Mowing

1. Set mowing height appropriately for location.
2. Adjust mowing height to relieve turf stress when necessary.

E. Aeration

1. Adjust aeration frequency appropriate for turf location and conditions.

F. Topdressing

1. Use topdressing sand that meets USGA specifications for particle size distribution when available to maintain consistent rootzone content.
2. Apply topdressing following aerification when appropriate.
3. Apply "light" topdressing when appropriate.

G. Overseeding

1. Select seed type best suited for the growing environment.

2. When available, use disease resistance cultivars.

II. Turf Fertilization

A. Soil Nutrient Testing

1. Perform soil nutrient testing at regular intervals determined by the superintendent).
2. Maintain accurate records of soil sample locations, date of sampling, and soil conditions.

B. Nitrogen

1. Use slow release nitrogen when possible.
2. Regulate nitrogen application to optimize turf vigor and prevent disease development.

C. Phosphorus

1. Using soil test information, avoid over-application.

D. Potassium

1. Using soil test information to develop target levels, apply as required.

E. Micronutrients

1. Apply as required.

F. pH

1. Maintain soil pH appropriate for turfgrass type.
2. Adjust soil pH to optimize turf vigor.

G. Buffer Zones

1. Establish buffer zones near waterways where appropriate. Observe a minimum buffer zone width of 25 feet whenever possible, with buffer zones never being narrower than 10 feet.
2. Do not apply fertilizer to turf located in defined buffer zones.

H. Documentation

1. Record location, date, and type of fertilizer applied.
2. Record rate of application.
3. Record method of application.
4. Maintain current inventory of fertilizer on hand.

I. Storage

1. Maintain fertilizer inventory in a dedicated, enclosed area.
2. Keep fertilizer in a dry, well-ventilated environment.

III. Turf Irrigation

A. Water Quality

Determine that water quality of irrigation source is suitable for application to turf.

B. Conservation
Optimize irrigation program to conserve water.

C. Weather Data
When available, use weather station and evapotranspiration information to fine tune irrigation regimen.

IV. Tree Management

A. Tree Selection

1. Select trees with rate of growth appropriate for location.
2. Select trees with wood strength, rooting characteristics, and plant features (e.g., leaves, etc.) appropriate for location.
3. Select trees well suited for climate, soil conditions, and pest resistance.
4. Determine if native or non-native trees are appropriate and select quality planting stock.

B. Planting Locations

1. Consider characteristics of mature tree (height, light passage, etc.) when evaluating potential locations.
2. Choose locations that will not create problems with shading of turf or restriction of air movement.

C. Tree Planting

1. Create a planting hole with a minimum diameter of 12 inches wider than root spread or root ball, and no deeper than the root ball.
2. Place balled-and-burlapped trees in planting hole, plumb vertically, and remove all rope and 1/3 of burlap (or fold down).
3. Backfill soil in lifts of 4 to 6 inches, avoiding compaction with muddy backfill. Use native soil to backfill unless existing soil contains rubble or pure clay
4. Water thoroughly after backfilling to settle the soil, eliminate air pockets and re-wet the root system.
5. Do not wrap tree trunks, and do not fertilize tree(s) at time of planting
6. Create a berm 3 inches high to surround trees planted in sandy or loamy soils for the purpose of funneling water to the root ball.
7. Add 3 to 4 inches of shredded mulch or composted brush chips to surround planted trees immediately after backfilling, keeping mulch away from tree trunk.
8. Stake only in situations where normal planting procedures do not provide a stable plant. Remove stakes at the end of the first year.
9. Whenever possible, plant trees during the fall (October through December) or spring (March through May).

D. Cultural Care

1. Water newly planted trees weekly through the first three growing seasons. Trees should receive approximately 1 inch of water per week including rainfall.
2. Do not water established trees except during periods of extreme drought.
3. Maintain 3 to 4 inches of mulch annually in newly planted tree rings to suppress weeds and avoid damage from mowers and trimmers.
4. Monitor trees for insects and disease. If detected, use physical methods (e.g., pruning, nest removal, etc.,) to correct the problem. If pesticide treatment is required to control a pest(s), consult Seattle Parks and Recreation Best Management Practices for appropriate procedures.

E. Tree Removal

1. Identify trees that are defective and/or represent a hazard. Examples include old age, storm damage, poor structure, disease state, or tree death. Such trees are candidates for removal.
2. Identify trees that require removal for new construction, access, or other issues not related to tree viability. Such trees are candidates for removal.
3. When practical and of value, transplant viable trees smaller than ten to twelve inches in diameter that require removal (e.g., new construction).
4. Consult Seattle Urban Forestry and Seattle Parks Department to engage appropriate procedures (e.g., public notification) and to obtain authorization for tree removal.

V. Pest Management

A. Integrated Pest Management

1. Develop an Integrated Pest Management document
2. Use the Integrated Pest Management document as an operational reference for all golf course operations.
3. Educate staff on the contents and utility of the Integrated Pest Management document.
4. Revise the Integrated Pest Management document over time so that it remains a contemporary document reflecting the state of the art of golf course management.

B. Weeds

1. Define threshold levels.
2. Monitor turf regularly for presence of weeds.
3. Optimize turf vigor by proper application of fertilizer to prevent weed colonization and establishment.
4. When possible, use mechanical means (i.e., hand pulling) to remove.

5. Use selective herbicides only when thresholds have been exceeded, and when possible, limit applications to spot treatments.

C. Fungal Disease

1. Define threshold tolerance levels.
2. Understand disease symptoms and disease life cycle.
3. Monitor turf regularly for disease symptoms.
4. Monitor conditions (temperature, humidity, moisture etc.) that favor disease development.
5. Use fungicides with optimal efficacy and specificity.
6. When possible, use targeted, spot applications of fungicides.
7. Rotate chemical family of fungicides applied to prevent the development of fungal resistance.
8. Document problem areas, disease identification, and disease treatment.

D. Insects

1. Define threshold tolerance levels.
2. Understand relevant insect life cycles and symptoms of infestation.
3. Monitor turf regularly for symptoms of infestation.
4. If infestation is detected, correctly identify the insect.
5. Use target specific insecticides.

E. Rodents

1. Define threshold tolerance levels.
2. Use mechanical traps when possible.
3. Study the habits of the target rodent to enhance trap efficiency.

F. Aquatic

1. Define threshold tolerance levels
2. Keep ponds/lakes as deep as practical to minimize aquatic plant growth.
3. Where possible, use mechanical means to remove undesirable aquatic plants.
4. Use beneficial aquatic plants to out-compete undesirable plants and/or to remove nitrate from the water.
5. Use aerators to agitate water; this practice reduces the growth of bacteria and algae.

VI. Environmental

A. Regulations

1. Become familiar with federal, state, and local regulations that apply to golf course operations including those related to habitat, surface water, groundwater, and storm water runoff.
2. Implement policies and procedures to achieve compliance with relevant regulations.

B. Habitat

1. Develop golf course operations to optimize preservation and enhancement of wildlife habitat.
2. Where available, obtain advice from organizations such as the Audubon Cooperative Sanctuary, Fish and Wildlife, etc. to assist in habitat enhancement.

C. Monitoring

1. Monitor and document habitat improvements and related wildlife response (e.g., installation of bird boxes leading to increased bird population).
2. Where appropriate, monitor and document water quality of relevant surface waters to assess impact of golf course management
3. If monitoring information reveals a potential problem, implement and document corrective action.

D. Corrective Action

1. In the event that monitoring information identifies a potential problem, design and implement action to correct the situation.
2. Document any corrective action taken.

E. Spill Response

1. Maintain appropriate spill response equipment.
2. Train staff on proper use of spill response equipment.

VII. Pesticides

A. Selection

1. Confirm identity of pest requiring pesticide treatment.
2. Select pesticide based on efficacy, target specificity, and environmental compatibility.
3. Rotate chemical family of pesticide used for a specific pest to prevent the development of pest resistance.

B. Application

1. Read and understand pesticide labeling before use.
2. Use pesticides for labeled use only.
3. Mix pesticides for target pests at rates recommended by the manufacturer.
4. Mix pesticides in a dedicated area.
5. Wear appropriate personal protective equipment during pesticide mixing and application.
6. Properly calibrate sprayer or spreader before use.
7. Apply pesticides to target areas only. Do not apply pesticides in buffer zones.
8. Minimize pesticide drift by applying when winds are 5 mph or less.
9. Use curative applications only when threshold levels have been reached.

10. Use preventative applications only when conditions favoring outbreaks occur (e.g., summer stress favoring anthracnose, winter conditions favoring fusarium).
11. Use check plots to determine pesticide effectiveness (i.e. 2 x 2 foot square of plywood laid on turf to block application and serve as an untreated control area.)

C. Storage

1. Store pesticides in a restricted access, dedicated room or cabinet.
2. Ensure that the pesticide storage area meets OSHA requirements (i.e., dry, ventilated, temperature control, etc.)

D. Disposal

1. Triple rinse containers prior to disposal. Apply rinsate to turf.
2. Inspect rinsed container to confirm that all visible residues have been removed prior to disposal.
3. Contact local pesticide distributor for container recycling instructions.

E. Documentation

1. Follow state regulations for proper documentation procedures
2. Record target of pesticide application.
3. Record location, date, and type of pesticide applied.
4. Record weather conditions.
5. Record rate of application.
6. Record method of application.
7. Maintain current inventory of pesticides on hand.

VIII. Petroleum Products

A. Fuel Storage

1. Store fuel in certified, double walled, self-contained concrete or steel tanks.
2. Keep gas cans in a separate, dedicated storage area.
3. Label fuel storage containers clearly and accurately.

B. Disposal

1. Store used fluids in separate containers appropriate for specific fluid type.
2. Maintain used fluid containers in an easy access, safe area that is out of the weather.
3. Label used fluid containers clearly with fluid contents.
4. Contact City of Seattle ESD to arrange pick up of containers for disposal.

IX. Waste Management

A. Compost

Compost as much biomass as possible and reuse on golf course.

B. Wash Water

Pre-wash all mowing equipment in a designated area in rough or use a leaf blower or pressurized air to dry to remove material prior to rinsing. Rotate this location daily or weekly. Perform final rinse at wash pad. When possible, recycle rinse water.

C. Recycling

Implement recycling program (cardboard, plastic, pop cans, etc.).

X. Safety Program

A. Safety Meetings

1. Establish a regular meeting time (i.e., first Monday of the month).
2. Keep accurate records of meeting discussions.
3. Create safety committee consisting of maintenance crew members.

B. Safety Training

1. CPR and first aid.
2. Eye protection.
3. Noise exposure and protection.
4. Hard hat use and head protection.
5. Personal protection equipment.
6. Respirators
7. Gloves
8. Rubber boots
9. Rain suit
10. Chemical suit
11. Safety glasses

C. Equipment training

1. Tool and accessory training.
2. Lightning safety and protection.
3. Emergency procedures.
4. Bomb threat.
5. Signage.
6. Highlight all fire extinguisher locations
7. Display signage appropriate for location or situation
8. Request free safety training videos from OSHA.
9. Understand how to interpret a Material Safety Data Sheet (MSDS). Place MSDS documents in a file and store in a location accessible to all staff.

D. Safety Audits

1. Have fire marshal perform an audit of fire safety.
2. Have OSHA perform a "consultative" general safety audit.
3. Contact insurance company to determine if they will perform a safety audit.

West Seattle Golf Club

Integrated Pest Management Plan

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West Seattle Golf Club

Integrated Pest Management Plan

I. Introduction

The Environmental Stewardship Guidelines direct the management practices of West Seattle Golf Club focusing on environmental protection of the golf course and surrounding areas. The cornerstone of environmental stewardship at West Seattle Golf Club is the philosophy of Integrated Pest Management (IPM). Simply stated, IPM is a management system that utilizes systematic, disciplined, and documented cultural practices as a first line of defense for pest control. Cultural practices such as irrigation, aerification and fertilization are utilized to optimize plant health enabling natural plant resistance to combat pest infestations. Mechanical strategies, such as proper mowing, also contribute to turf health and will be implemented. Biological control options will be considered and utilized whenever feasible. On occasion, when cultural practices are not fully effective at controlling pests, the use of pesticides to manage pest damage will be necessary. The West Seattle Golf Club IPM Plan will provide a sound working framework for selection and implementation of the most environmentally sound solutions to golf course pest problems.

West Seattle Golf Club will consider all IPM strategies that will reduce overall pesticide applications in an effort to meet and sustain the City of Seattle's pesticide reduction goals. West Seattle Golf Club will continue to search for viable alternative products to replace the Tier 1 (highest level of concern) pesticide products currently in use as identified in the City of Seattle's Pesticide Tier Tables. This document is viewed to be a functional document that will evolve over time requiring periodic updating of information.

II. Integrated Pest Management Definition

Although there are numerous definitions of Integrated Pest Management, the West Seattle Golf Club recognizes the following definition, which is stated in the City of Seattle, Department of Parks and Recreation *Best Management Practices*:

"A decision-making process to determine if, where, when and how pest problems will be managed. An IPM program includes all potential pest control strategies but focuses on non-chemical controls whenever possible. The following four pest control methods may be employed in an IPM program:

- Cultural control: The use of sound horticultural practices to optimize plant health and to suppress insects, disease, and weed growth. Other cultural controls include site-appropriate design and the use of disease or drought-resistant plants.
- Mechanical control: The use of a variety of tools and equipment for the purpose of eliminating pests.

- Biological control: The use of biological control agents that act as predators or parasites of pest species. The use of other beneficial organisms that improve plant health by enhancing soil quality.

- Chemical Control: The application of various agricultural products such as herbicides, insecticides or fungicides or other chemical compounds to a target pest as a means of control."

Simply stated, the broad objective of West Seattle Golf Club Integrated Pest Management plan is to maximize the use of cultural methods to control pests through optimized, disciplined, and documented golf course management practice. To meet this objective, the West Seattle Golf Club Integrated Pest Management plan defines turfgrass, non-turfgrass, and aquatic management areas; pests of concern within these areas; methods to monitor pest populations; damage threshold levels that when exceeded may require action; and the proper procedures to be followed if action is necessary.

Integrated pest management includes optimizing turf health through cultural practices to enhance natural plant resistance to pest infestation, optimizing habitats for beneficial species, and minimizing plant damage resulting from routine golf course operations. However, in spite of the use of these practices, in certain instances the use of pesticides to control some pests and diseases may be necessary. An essential component of the Integrated Pest Management plan is the coordination of the ongoing use of cultural methods with the selective use of pesticides as a means of minimizing pesticide application.

III. IPM Objectives

- Minimize potential hazards to human health and the environment
- Optimize playing conditions of the golf course
- Control operating costs
- Utilize effective monitoring to enable selective control of pest populations
- Minimize pesticide use through targeted application while optimizing pesticide efficacy
- Sustain high turf grass quality
- Maintain health of landscape elements such as trees, shrubs, flower beds and natural areas

IV. IPM Structure

The structure of the Integrated Pest Management plan is based on the selective targeting of plant pathogens, weeds, and insects that threaten the agronomic health of the golf course. In addition, the Integrated Pest Management plan includes provisions to preserve the quality of aquatic areas of the golf course. The strategy of the Integrate Pest Management plan is as follows:

- Define areas requiring management and the relative maintenance intensity associated with each area
- Maintain vigorous turf health through maintenance practices to optimize pest tolerance
- Identify pests likely to be encountered
- Establish damage threshold levels for each pest which when exceeded, may lead to corrective action

- Scout and monitor for the presence of pests

- Implement sequential corrective action when threshold levels have been exceeded
  - Adjust cultural practices
  - Utilize biological and mechanical controls when appropriate
  - Determine if pesticide intervention is necessary or appropriate
  - Apply appropriate amounts of pesticides selectively, if necessary. Pesticides will be selected based on minimal toxicity and optimal efficacy
- Document all scouting and monitoring observations, treatments, and treatment results

V. Area Definition

West Seattle Golf Club is an 18 hole City of Seattle municipal golf course located on a total of 155 acres in Seattle, Washington. Property surrounding the golf course is primarily residential areas, and an athletic field is located on the northwestern boundary of the golf course. The golf course was established in 1940, and was built using native materials. All tee boxes of the golf course have been rebuilt over the time period ranging from 1976 to 1996, and the number 18 green was rebuilt in 1990 and is sand-based.

The managed areas of the golf course include turfgrass areas and non-turfgrass areas, which are described below.

A. Turfgrass Areas

All grass types used for each location (tees, greens, etc.) are well suited and adapted for the climate of the area. The turfgrass of greens consists primarily of annual bluegrass (*poa annua*). The turfgrass of the tees and fairways consists of a mixture of annual bluegrass, bentgrass, fescue, and perennial rye. The rough consists of a mixture of annual bluegrass and fescue. The turfgrass and ornamental areas (shrubs and plants) and their respective management requirements are defined in Table 1.

Table 1. West Seattle Golf Club Area Definition and Maintenance Requirements

Area	% Total Area[a]	Fertilizer Requirement	Irrigation Requirement	Mowing Frequency	Cultural Frequency
Greens	2.5	high	high	high	high
Green Surrounds	3.7	medium	high	medium	medium
Tee Surface	3.4	high	high	high	high
Tee Surrounds	3.6	medium	high	medium	low
Approaches	2.5	high	high	medium	medium
Fairway	43.4	medium	high	high	medium
Rough	39.7	low	medium	medium	medium
Ornamental[b]	1.2	low	medium	N/A	low

[a] golf course management area (turfgrass & ornamentals)
[b] for this table, ornamentals are defined as shrubs and plants

B. Non-Turfgrass Areas

Non-turfgrass areas consist of bunkers, ornamental plantings, trees, aquatic areas, natural areas, cart paths, service roads, walls, rockeries, and non-vegetated areas.

1. Bunkers

   Fairway and green-side bunkers are located throughout the golf course. Bunker management is confined to routine maintenance including raking and smoothing of sand contained within the bunkers.

2. Ornamental Plantings

   The majority of ornamental plants and shrubs are located surrounding the club house, with some plantings located on the golf course.

3. Trees

   Numerous native and non-native/ornamental trees with a wide variety of ages are located throughout the golf course.

4. Aquatic areas

   a. Creeks

      Longfellow Creek passes through the eastern section of the golf course for approximately 2,600 linear feet. Longfellow Creek enters the southern border of the golf course and exits the northern border of the golf course. Natural buffers extend the length of Longfellow Creek within the golf course and consist primarily of riparian forestlands averaging 125 feet wide on both sides of the creek.

      An unnamed creek delivers water from residential areas upslope from the golf course. The creek enters the golf course below number 9 fairway and continues downslope through the golf course where it merges with Longfellow Creek.

   b. Environmentally Sensitive Areas

      Longfellow Creek is designated as an environmentally sensitive area. Accordingly, naturalized vegetation buffer zones (see below) are maintained along riparian areas of the creek.

   c. Buffer Zones

      A buffer zone, as defined in the *Tri-County Integrated Pest and Vegetation Management Guidelines* (Appendix A) is "a corridor of land that is 25 feet in width on the sides of a stream or other body of water. Measurement of this buffer zone begins at the top of the stream bank. Anticipated seasonal or weather related changes affecting water level will be included in the decision making process when dealing with buffer zones." Additional information regarding general and specific buffer zone guidelines can be found at **http://www.metrokc.gov/hazwaste/ipm/ipmguide.htm**.

5. Natural Areas

   West Seattle Golf Club natural areas include riparian areas of the Longfellow Creek corridor, a small tributary to Longfellow Creek, and significant acreage of deciduous forest

and shrubland areas which include a 23 acre parcel south of the golf course located at 29th Avenue W. and S. Brandon. The natural areas total approximately 50 acres and include the following distinct habitat areas: Three acres of landscaped forest (planted conifer trees located between #5 and #6 fairways), four acres of native shrublands consisting primarily of blackberries, and three acres of wetlands. The largest habitat type consists of approximately 40 acres of deciduous forest, of which at least 50 percent is considered riparian forest. The trees within the forestlands are mature and range in size from 15 to 30 inches in diameter. Invasive plants present in these areas include ivy, Scot's Broom, field bind weed, and blackberry (which is the most widespread). A detailed description and a map of the West Seattle Golf Club habitat areas and invasive weeds are located in Appendix B (from *Habitats on Seattle Public Lands* - provided by the Seattle Urban Nature Project).

6. Cart Paths, Service Roads, Walls, Rockeries, and Non-vegetated Areas
Gravel cart paths and service roads are located throughout the golf course. In addition, a variety of walls, rockeries, and non-vegetated areas are located on the golf course. Occasional weed control is necessary to maintain these assets.

VI. Turfgrass Management Practices

Turfgrass area management is the most labor intensive element of the Integrated Pest Management program, requiring greater than 95% of resource allocation. As stated repeatedly throughout this document, the primary intent of the Integrated Pest Management program is to optimize turfgrass vigor utilizing sound cultural practices as a means of preventing and/or minimizing pest infestation. The primary cultural practices of turfgrass management at West Seattle Golf Club include mowing, fertilization/amendments, and irrigation. Secondary cultural practices include aeration, thatch management, topdressing, overseeding, and sod replacement.

A. Primary Cultural Practice

Primary cultural practice includes mowing, fertilization/amendments, and irrigation. The following describes routine primary cultural practice operational procedures. Additional detail that governs primary cultural practice is defined in the document entitled *Golf Course Maintenance Standards for Seattle Municipal Golf Courses* (Appendix C).

1. Mowing
Mowing will be performed on an as-needed basis and mowing frequency is area dependent. During the growing season, mowing of Greens occurs daily, mowing of tees and fairways occurs three times per week, and mowing of the rough occurs on an average of one to two times per week.

Lightweight mowing equipment is used as often as practical to minimize turf compaction and mowing heights are adjusted for individual areas. Mowing heights include 1/8 to 7/32 inches for greens, 9/16 inch for tees and fairways, and 1.5 to 2.0 inches for rough.

2. Fertilization/Amendments
Management of nutrients is essential for development of turf vigor. Management of turf fertility involves the understanding of soil composition, plant nutrient requirements, fertility management history, use of soil tissue test information, and applications of the

proper fertilizer formulations at the proper time. Additionally, the availability of beneficial soil microbes and biological amendments should be considered when managing soil/nutrient programs. The objective of the fertilizer program is to provide optimal nutrient availability to turf while simultaneously avoiding the application of excess nutrients to avoid weed infestation, disease development, and nutrient runoff. Every effort will be made to prevent off-site nutrient leaching through careful fertility management practices.

a. Soil/Tissue Nutrient Testing
Testing for nutrient composition provides valuable information that allows for the development of strategic fertilizer plan development and also provides insight into the effect of preceding cultural practices. Tissue nutrient testing provides information relative to nutrient uptake and plan-available nutrients. Soil/tissue testing should be performed on areas of the golf course selected by the Superintendent to generate information that will provide technical support during the development and application of the fertilizer program.

b. Turfgrass Nutrient Requirements
The major nutrients required for turfgrass health are nitrogen, phosphorus, potassium (NPK). Secondary, or "minor" nutrients include calcium, sulfur, iron, boron, copper, manganese, magnesium, and zinc. The availability of nutrients to turfgrass is influenced markedly by the pH of the soil. Consequently, maintenance of the appropriate pH is an important component of the fertilization program. Slow release fertilizers should be used as the primary source of nutrients, with adjustments for special needs and conditions. Greens fertilization programs may include light applications of soluble foliar-adsorbed nutrients applied on a frequent basis (commonly referred to as "spoon feeding").

(1) Major Nutrients

(a) Nitrogen
The management of nitrogen levels is critical owing to the high turf demand for this nutrient and the potential for excess nitrogen to enter into surface water and groundwater. As a result, the amount of nitrogen delivered to turfgrass should be the minimum amount necessary to promote turf vigor. In general, nitrogen rates and formulations will be determined based on soil tissue test results, season, site conditions, weather, and other information. In certain instances when turf and/or climate conditions dictate, rates of application will be adjusted (either higher or lower) at the discretion of the Superintendent.

Nitrogen formulations consist of water insoluble (slow release) and water soluble (quick release) types. Slow release nitrogen sources include methylene urea, sulfur-coated urea, IBDU, polymer coated fertilizers, and organic fertilizers processed and formulated as slow release products. Examples of quick release nitrogen sources include ammonium sulfate, ammonium nitrate, potassium nitrate, and urea. "Bridge" fertilizers combine the best qualities of synthetic and organic fertilizers providing both

quick and slow release of nutrients. Organic formulations should be considered for providing sustainable slow release nutrients, soil organic matter, and potentially higher soil biological activity. To maximize plant uptake and minimize nitrogen runoff (e.g., nitrate), slow release nitrogen sources and/or light applications of soluble nitrogen ("spoonfeeding") should be used whenever possible.

Determination of the appropriate nitrogen source will be at the discretion of the Superintendent and will be based on the season and relative growth rate of the turf at the time of application. Ammonium nitrate should be avoided as a source of nitrogen as it requires an Explosives Materials Permit from Seattle Fire Department for storage. Every effort will be made to eliminate potential off-site leach of nutrient through careful fertility management.

(b) Phosphorus
Turf requirements for phosphorus are relatively low and phosphorus does not leach from soil quickly. As a result, application rates tend to be corresponding low, which minimizes the possibility of storm water runoff carrying residual phosphorus off-site.

(c) Potassium
Turf requirements for potassium are intermediate to high in relation to nitrogen and phosphorus levels. Potassium content of fertilizer formulations should be based on results from the soil/tissue nutrient analysis. Although applied to maximize efficiency of uptake, potassium does not pose the extent of environmental risk that excess nitrogen and phosphorus levels represent. Proper levels of potassium are an important component of plant disease resistance and contribute to the ability of turf to withstand wear and traffic.

(2) Secondary (Minor) Nutrients
In general, turfgrass requirements for the secondary nutrients calcium, sulfur, iron, boron, copper, manganese, magnesium, and zinc are lower than for nitrogen, phosphorus and potassium. Secondary nutrients are essential for optimal turf performance and when possible, should be applied based on soil/tissue testing results and recommendations. These nutrients are available in a variety of formulations and application of these nutrients will be at the discretion of the Superintendent.

(3) Supplements and Amendments
A variety of turf supplements and biostimulants such as proteins, amino acids, plant hormones, carbohydrates, humic acids, and soil microorganisms have shown promise for the enhancement of turfgrass performance under high stress environments such as putting greens. As research and development of these products progresses, selected products may be used in fertility management at the discretion of the golf course Superintendent.

(4) pH

Maintenance of the proper soil pH is essential in optimizing the availability of nutrients, and also is important in minimizing overall turfgrass stress. When the soil pH requires adjustment to a more alkaline pH, lime will be added until the targeted pH is obtained. When soil requires adjustment to a more acidic pH, ammonium sulfate will be added until the targeted pH is obtained.

c. Fertilizer Treatment Areas
The rate and frequency of fertilizer application is area and situation dependent. A typical fertilizer application frequency is shown in Table 2. Fertilizer application is most frequent on the greens with less frequent applications being made to tees and fairways, and the least frequent application being made to the rough.

d. Fertilizer Storage
All fertilizers will be maintained in a dedicated moisture free, well-ventilated, approved storage area.

Table 2. West Seattle Golf Club:
Fertilizer Application Areas and Typical Yearly Applications

Area	% Total Area[a]	Applications per Year	Total Nitrogen per Year
Greens	2.5	12 - 15[b]	6 - 8 lbs[c], (3 - 8 lbs)[d]
Green Surrounds	3.7	2 - 3	2 - 3 lbs
Tee Surface	3.4	6 - 8	4 - 6 lbs
Tee Surrounds	3.6	6 - 8	4 - 6 lbs
Approaches	2.5	6 - 8	4 - 6 lbs
Fairway	43.4	2 - 3	2 - 3 lbs
Rough	39.7	1 - 2	1 - 2 lbs
Ornamental	1.2	as required	< 1 lb

[a] golf course management area
[b] light rates applied incrementally to minimize growth and potential leaching
[c] expressed as lbs nitrogen per 1,000 ft^2
[d] rates vary depending on formulations, foliar vs. soil applications, frequency, etc.

e. Fertilizer Documentation
All fertilizer applications will be documented on a fertilizer application form. Information recorded will include date of application, location of application, total area treated, formulation of fertilizer(s), rate of application expressed as Lbs. of N/1,000 ft^2, total quantity of product applied, and the of the applicator(s) name.

3. Irrigation

The distribution of adequate water onto turf via irrigation without over-watering is essential to turf health. In addition to providing optimal moisture levels for turf, irrigation practices are designed to conserve water whenever possible. During periods of hot weather, greens should be syringed (hand-watered) in mid-afternoon as required, and cycle and soak watering schedules should be utilized whenever possible. Finally, wetting agents should be used when necessary to improve water infiltration for localized dry spots and other hydrophobic areas of turf. Wetting agents will be applied in accordance with label rates and recommendations.

a. Water Source
West Seattle Golf Club irrigates with water obtained from the City of Seattle.

b. Irrigation System
The irrigation system is an automated system that is computer controlled. Areas of localized dryness are treated by hand watering or the use of sprinklers.

c. Irrigation Water Quality
Historically, no turfgrass problems have been correlated with problems in irrigation water quality. Accordingly, testing of irrigation water quality is not performed. In the event that turfgrass symptoms indicate potential contaminants in irrigation water, water samples will be acquired from all irrigation water sources and submitted for irrigation suitability testing by a qualified analytical laboratory.

d. Water Conservation
Specified irrigation programs prevent over-application of water as a means of optimizing turf vigor and conserving water. The areas requiring the most frequent irrigation are tees, fairways, and greens. Because it represents a substantial percentage of the overall turfgrass area, the rough is irrigated as sparingly as possible to conserve water. "Out-of-play" areas typically receive little to no irrigation, except as needed for survival of landscape assets.

The primary means of determining turfgrass irrigation requirements is the daily observations and monitoring by the Superintendent and staff. The computer controlled irrigation system is programmed to replace water as needed for optimum growth of all landscape assets, based upon golf course-specific information and daily weather conditions.

Occasionally, a drought condition affecting the City of Seattle's water supply can prompt activation of the Department of Parks and Recreation's *Water Shortage Contingency Plan*.

B. Secondary Cultural Practice

Secondary cultural practice includes aeration, topdressing, thatch removal, overseeding, and sod replacement to promote a healthy turf environment. Similar to primary cultural practice, the following describes routine secondary cultural practice that is governed by the detail contained within *Golf Course Maintenance Standards for Seattle Municipal Golf Courses* (Appendix C).

1. Aeration
Aeration is the practice of removing soil cores from turf and is performed to minimize turf compaction. This practice enhances the movement of air, water and nutrients in the soil and is a useful technique to manage thatch layers. Additionally, deep tine or verti-drain aerification can be performed one to two times per year and involves aerification at depths of up to 12 inches to improve drainage

Aeration frequency is greatest for greens and tees and to a lesser extent for fairways. Aeration is typically performed during periods of active turf growth in the early spring, early summer and fall. Additional aeration may occur at the discretion of the

Superintendent. In the case of greens, topdressing sand is applied to fill the cores resulting from the aeration treatment.

2. Thatch Management
   Thatch is a layer of organic debris and the roots, crowns, and stems of grass that exists between the soil and the turf canopy. In the absence of cultural management, this layer becomes thicker over time, resulting in sub-optimal turf growth. Management of thatch is particularly important on greens and consists primarily of aeration and topdressing practices. The thatch layer on greens should be maintained at a depth of 0.5 inches or less. Thatch management practices include hollow core aerification, solid core aerification, vertical mowing, and verticutting. The proper balance of soil microbes is also important for decomposition of turf thatch.

3. Topdressing
   The practice of topdressing consists of the application of a layer of sand to greens and is used to assist in thatch layer management and to provide a smooth and firm playing surface. Topdressing applications follow the aeration or verticutting of greens, and are also made in the absence of aeration ("light" topdressing). Following the application of sand, the sand is lightly brushed into the turf surface. Sand used for topdressing and aeration should be washed, screened material that has a particle size distribution that is compatible with that of the sand located in the rootzone of greens.

4. Overseeding
   Overseeding is the selective application of turfgrass seed to improve areas of turf depletion and to bolster turf density. Overseeding is performed in the late fall, early spring, or early summer; or on an as-needed basis as determined by the Superintendent.

5. Sod Replacement
   Occasionally, problems with diseased, damaged, or weedy turf cannot be remedied by cultural practices. Under these circumstances, affected areas of turf are removed, and fresh turf obtained from an on-site nursery is used to replace the removed section.

VII. Tree Management

Numerous native and non-native trees of varying ages are located on West Seattle Golf Club and require routine management. General tree planting, management, and removal practices at West Seattle Golf Club are described below. Further detail regarding tree management practices is contained within support documents entitled City of Seattle Department of Parks and Recreation *Best Management Practices*, and City of Seattle's *Tree Management, Maintenance, Pruning and/or Removal Policy* (hereafter referred to as "*Tree Policy*").

A. Tree Selection

Trees considered for planting will be selected based on ultimate size and type of growth appropriate for the planting location, compatibility with soil conditions and climate, and pest resistance properties. Tree selection factors are specifically defined in the *Tree Policy*.

B. Planting Locations

Tree planting locations will be carefully evaluated prior to planting to anticipate the affect of mature trees on surrounding turf and ornamental areas. Architectural features, engineering, aesthetics, and influence on playing characteristics of the golf course are important landscape functional considerations. Water requirements, shading, and influence on air circulation will be the primary determinants of planting locations.

C. Tree Planting

Trees will be planted in planting holes appropriate for the root ball/root mass and planting holes will be backfilled with native material, except in certain situations where the existing soil is contaminated or filled with rubble. The planting area will be mulched and receive irrigation as required through the first three growing seasons. Whenever possible, planting will occur during the fall. More specific tree planting information is included in the *Tree Policy*.

D. Tree Maintenance

Trees will routinely be monitored for overall health, influence on playing characteristics, the presence of insects and diseases, influence on surrounding turf and ornamentals, and hazard potential. In general, insect and diseases pests are tolerated. High-value specimen trees may require more consideration for IPM strategies. Mulch will be maintained around trees to suppress weed growth and conserve water for newly planted trees. Established trees do not require supplemental watering except in situations of extreme drought. Trees will be pruned to optimize health, allow passage of light, minimize hazard, and manage pests. The Seattle Parks and Recreation Department Urban Forester and IPM Coordinator will be consulted regarding trees that have disease and/or pest problems beyond the normal scope of golf course management practices. The *Tree Policy* outlines specific tree cultural care considerations and maintenance practices

E. Tree Removal

The Senior Urban Forester will be consulted regarding trees that are considered candidates for removal (e.g., disease, age, hazard) by the West Seattle Golf Club Superintendent. Upon confirmation that tree removal is necessary, the tree will be removed by West Seattle Golf Club staff, or when necessary, by a commercial tree service.

VIII. Composting and Organic Materials Management

A. Grass Clippings and Aerification Cores

Where appropriate, grass clippings and/or aerification cores should be spread on site as mulch. These materials should not be applied within buffer zones of creeks or other water bodies. Materials should be spread out in a thin layer to prevent damage to underlying plants.

B. Leaves

Vac/shredders and leaf blowers should be used to generate a shredded leaf mulch for application to plant beds, rough, and natural areas whenever possible. Excess leaves should be donated to the City of Seattle P-Patches or other City of Seattle operations when possible.

C. Woody Brush

When practical, brush chippers should be used to process tree limbs and other woody material to generate mulch for application to ornamental plant beds, tree wells, steep slopes and natural areas.

D. Logs, Stumps, and Large Woody Debris

Logs, stumps, and woody debris should be stockpiled in suitable storage locations and periodically processed with a leased wood grinder to generate wood fiber landscape mulch. This material functions as excellent mulch for ornamental plant beds, tree wells, and natural areas.

IX. Pest Population Definition

A summary of the currently identified potential pests at West Seattle Golf Club is shown in Table 3.

Table 3. Pest Definition and Distribution at West Seattle Golf Club

Category	Pest	Turfgrass	Ornamentals	Natural Areas
Fungal Disease	Anthracnose	3		
	Brown Patch	3		
	Downy Mildew	3		
	Dutch Elm Disease		3 (trees)	3 (trees)
	Fairy Ring	3		
	Fusarium Patch	3		
	Pythium	3		
	Red Thread	3		
	Summer Patch	3		
	Take-All Patch	3		
	Yellow Patch	3		
Algae	Black Algae	3		
Moss	Silvery Thread Moss	3		
Broadleaf Weeds	Chickweed	3	3	
	Clovers	3	3	
	Creeping Buttercup	3	3	
	Dandelion	3	3	
	English Lawn Daisy	3	3	
	Field Bindweed		3	
	Horsetail	3	3	
	Plantain	3	3	
	Poison Hemlock	3	3	
	Speedwell/Veronica	3	3	
Noxious Weeds[a] (examples)	Garlic Mustard		3	3
	Giant Hogweed		3	3
Grassy Weeds	*Poa annua*		3	
	Quackgrass	3	3	
Woody Brush	Blackberry		3	3
	English Ivy		3	3
	Scotch Broom		3	3
Insects	Cutworms	3		
	European Crane fly	3		
	Spruce Aphids		3 (trees)	
	Western Tent Caterpillar		3 (trees)	

	Wasps & Yellow jackets		3	

[a] State of Washington listed noxious weeds (Classes A, B, & C): mandated control

X. *Pest Threshold Levels*

The damage threshold levels for specific pest types are shown in Table 4. Damage threshold level is defined as the number of pests detected within a specified area that may lead to corrective action to reduce the density of the specific pest below the damage threshold level.

Table 4. Damage Threshold Limits for Specific Pest Categories

Pest	Tees	Fairways	Rough	Approaches[a]	Greens	Ornamentals	Natural Areas
Fungal Disease	10%[b,c,d]	N/A	N/A	10%[b,c,d]	0.2%[b,c,d]	Symptoms	N/A
Algae	0.2%[b]	N/A	N/A	N/A	0.2%	N/A	N/A
Moss	N/A	N/A	N/A	N/A	10%	N/A	N/A
Broadleaf Weeds	1-5/1000 ft²	5-10/1000 ft²	20/1000 ft²	1-5/1000 ft²	1/1000 ft²	20/1000 ft²	N/A
Noxious Weeds	N/A	N/A	N/A	N/A	N/A	1-5/1000 ft²	1-5/1000 ft²
Weedy Grasses	N/A	N/A	N/A	N/A	N/A	20/1000 ft²	N/A
Woody Brush	N/A	N/A	N/A	N/A	N/A	1-5/1000 ft²	1-5/1000 ft²
Insects							
Cutworms	2/ft²	N/A	N/A	2/ft²	10/1000 ft²	N/A	N/A
European Cranefly	25-40/ft²	25-40/ft²	N/A	25-40/ft²	15-25/ft²	N/A	N/A
Spruce Aphids	N/A	N/A	N/A	N/A	N/A	Detection	Detection
Tent Caterpillar	N/A	N/A	N/A	N/A	N/A	1 nest per tree	1 nest per tree
Wasps	Detection[e]	Detection[e]	Detection	Detection	Detection[e]	Detection[e]	Detection[e]

[a] approach areas are those located approximately 20 - 50 yards in front of greens
[b] % of area affected
[c] when conditions dictate, preventative measures will be considered
[d] spot treatments are considered when conditions dictate
[e] treatment based on detection in high traffic areas

XI. *Pest Monitoring and Pest Control*

All golf course maintenance staff will be trained in golf course IPM to monitor for evidence of pest infestation. The intensity and frequency of monitoring will be adjusted based on the likelihood or presence of pest infestation (i.e., seasonal) or in situational/site specific instances. All monitoring observations of potential pest infestation will be reported directly to the Superintendent on the same day of the observation. The IPM process and strategies will be implemented continuously and appropriate corrective action will be implemented as necessary.

The pest control strategy is sequential and consists of using cultural practices as the first line of defense. Pest control strategy will be developed on a case by case basis with all potential control options given consideration. The decision to implement chemical pest control measures beyond cultural, biological, or mechanical practices will be based on the review of relevant safety, scientific, economic, and environmental information. All products used for pest control must be those approved for use as defined in the City of Seattle *Pesticide Use Reduction Strategy*. See additional information in section *XII. Pesticides*.

A. Fungal Disease

Within the overall spectrum of pest management, fungal disease represents the most serious and consistent threat to turfgrass health at West Seattle Golf Club, and is of concern primarily on greens and tees. Greens and tees should be inspected regularly for symptoms of fungal disease. The primary means of identifying fungal disease will be diagnosis by the Superintendent. However, in some instances symptoms consistent with fungal disease may have alternative causes (nutrient deficiency, insects, etc.). When uncertainty regarding potential fungal disease is encountered, samples will be sent to a plant pathology lab for confirmation of the presence of fungal pathogens. More frequent monitoring of greens and tees will occur when conditions known to favor the development of these pathogens occur

An essential aspect of preventing the development fungal disease is the optimization of turf vigor through routine cultural practice. In addition, fungal disease control is dependent on the understanding the disease cycle and conditions that promote disease development, the correct recognition of disease symptoms, and the selective use of the appropriate fungicide agents when necessary. Specific cultural practices can be employed to minimize the potential for fungal disease, which are described below. In general, if these measures fail and symptoms of fungal infestation exceeds defined damage thresholds, fungicide applications may be necessary to control the disease. Numerous factors including season, weather, and turf health/vigor contribute to the determination whether fungicide treatment may or may not be necessary. Annual review of improved products and rotational application strategies should be implemented to reduce resistance of fungal pathogens to specific products. Fungicide products must be those approved for use as defined in the City of Seattle *Pesticide Use Reduction Strategy*.

A description of conditions favoring disease development, symptoms of disease, and specific control measures for each type of fungal disease that requires pest management follows:

1. Anthracnose (*Colletotrichum graminicola*)
   a. Disease Conditions and Symptoms
      Anthracnose appears in the summer when temperatures exceed >78°F and soil moisture conditions are high. Disease development is promoted by compaction, excess thatch, and low nitrogen fertility. Symptoms of Anthracnose include yellow to brown irregular shaped areas on turf with grass leaves having yellow lesions with black centers.

   b. Cultural Control
      Nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less. Light-weight mowing equipment will be used when practical to minimize compaction of turf and the thatch layer will be monitored and managed in an effort to restrict the thatch layer to 1/4 inch or less. Shade will be minimized to improve air circulation for enhanced drying of turf, and irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight.

   c. Fungicide Control
      In the event that conditions favoring Anthracnose growth develop, select turfgrass areas will be considered for preventative treatment with Daconil (Chlorothalonil) or

Heritage (Azoxystrobin). If actual Anthracnose infestation is diagnosed, affected areas will be treated with Banner (Propiconazole), Bayleton (Triadimefon), or Scotts FF (Thiophanate-Methyl).

2. Brown Patch (*Rhizoctonia solani*)
   a. Disease Conditions and Symptoms
   Brown Patch appears in the early summer through late summer under conditions of high temperature and humidity, especially when night temperatures exceed 60°F. The disease is particularly severe on turf with high nitrogen and low phosphorus conditions. Symptoms of Brown Patch include brown circular patches several inches to several feet in diameter, which sometimes are surrounded by a smokey-colored boundary.

   b. Cultural Control
   Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less. Moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to improve air circulation for enhanced drying of turf and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight, thatch will be maintained at 1/4 inch or less, and whenever possible, mowing heights will be raised.

   c. Fungicide Control
   In the event that Brown Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Chipco (Iprodione), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), Prostar (Flutolanil), Scotts FF (Thiophanate-Methyl), Scotts FFII (PCNB), Scotts Fungicide VIII (Thiophanate-Methyl + Iprodione), or Scotts IX (Thiophanate-Methyl + Chloroneb).

3. Downy Mildew (*Sclerophthora macrospora*)
   a. Disease Conditions and Symptoms
   Downy mildew is typically found in areas of poor drainage or that have been over-watered. Symptoms of Downy mildew include diffuse areas of yellow turf, and infected leaf blades may appear mottled before eventually becoming yellow.

   b. Cultural Control
   High nitrogen fertility will be avoided, and soil drainage will be optimized. Additionally, shade will be minimized allow for warmer temperatures and improve air circulation for enhanced drying of turf.

   c. Fungicide Control
   If Downy Mildew infestation is diagnosed, treatment options are Prostar (Flutolanil).

4. Dutch Elm Disease (*Ophiostoma ulmi*)
   a. Disease Conditions and Symptoms
   Dutch Elm disease is a fungal pathogen specific for elm trees, and is spread by several 2 species of bark beetles. Symptoms of Dutch Elm disease include wilting leaves and sparse foliage, followed by yellowing and premature defoliation, typically in mid to

late summer in the first year of infection. Second year infections may appear earlier during spring leaf-out. A diagnostic test is required to confirm presence of infection.

b. Cultural Control
The primary cultural control is to rapidly detect and remove diseased trees to prevent disease spread. All wood and bark will be burned immediately (i.e., not stored for firewood).

c. Fungicide Control
Chemical control of diseased trees is beyond the normal scope of golf course management capabilities. If chemical control is a consideration, the Seattle Department of Urban Forestry will be consulted to determine a course of action to treat diseased trees.

5. Fairy Ring
a. Disease Conditions and Symptoms
Fairy Ring is caused by a variety of fungal species, each having a characteristic presentation on turf. General symptoms of Fairy Ring include large circles or arches of dark green or brown, dead turf that often have small mushrooms present.

b. Cultural Control
The primary cultural method of preventing Fairy Ring development will be thatch removal, compaction relief via aeration, and proper irrigation. In addition, moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less, and moderate to high levels of potassium and phosphorus will be maintained. In addition, frequent aeration of ring areas followed by application of wetting agent to remedy hydrophobic patches may be used.

c. Fungicide Control
In the event that Fairy Ring infestation is diagnosed, the treatment option is Prostar (Flutolanil).

6. Fusarium Patch/Pink Snow Mold (*Microdochium nivale*)
a. Disease Conditions and Symptoms
Fusarium Patch appears in the autumn, winter, and spring and is very common in Western Washington during the winter. Conditions favoring disease development include cool temperatures (35° - 65°F) and lush turf growth in which turf contains high nitrogen and low potassium. Symptoms of Fusarium Patch include light reddish to brown patches ranging from one to eight inches in diameter.

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less during late summer and fall. Moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to improve air circulation to allow for warmer temperatures and enhanced drying of turf, and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight, and soil moisture will be monitored to avoid drought stress. Greens should be dragged in the early morning on days when mowing does not occur for the purpose of removing dew to promote faster turf drying.

c. Fungicide Control
In the event that Fusarium Patch infestation is diagnosed, treatment options are Banner (Propiconazole). Bayleton (Triadimefon), Chipco (Iprodione), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), Scotts FF (Thiophanate-Methyl), Scotts FFII (PCNB), Scotts Fungicide VIII (Thiophanate-Methyl + Iprodione), Scotts IX (Thiophanate-Methyl + Chloroneb), or Scotts X (Iprodione). Preventative treatments, particularly in the fall season on historically susceptible sites may be advantageous for maximum control with minimum product application.

7. Pythium (*Pythium* spp.)
a. Disease Conditions and Symptoms
Pythium infection of turf is caused by a variety of *Phythium* species and can occur in the form of Pythium blight and/or Pythium root rot. The onset of disease can be sudden and devastating to green surfaces. Conditions favoring Pythium development are high temperature and humidity when night-time temperatures exceed 65°F. Symptoms of Pythium infection include greasy brown patches of turf less than inch in diameter that increase to approximately two inches and turn straw-colored.

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less and optimum calcium levels will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and drainage will be optimized. Mowing of susceptible turf areas will be avoided when night temperatures are greater than 70°F.

c. Fungicide Control
In the event that Pythium infestation is diagnosed, treatmennt options are Fore (Mancozeb), Heritage (Azoxystrobin), Subdue (Metalaxyl), or Terraneb (Chloroneb).

8. Red Thread (*Laetisaria fuciformis*)
a. Disease Conditions and Symptoms
Red Thread usually occurs between late spring and early summer. Conditions favoring Red Thread development include cool temperatures (40 to 70°F), high humidity, and nitrogen deficiency. Typically, turf damage is not severe, as Red Thread does not infect plant roots. Symptoms of Red Thread include the appearance of reddish strands protruding above turf leaf blades.

b. Cultural Control
Timely and adequate nitrogen fertilization is the key to controlling this disease, particularly in vulnerable new turf areas. Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month and moderate to high levels of potassium and phosphorus will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and drainage will be optimized. Irrigation of tees and greens will be avoided in the late afternoon and evening prior to midnight. Because dry conditions favor the development of this disease, the use of wetting agents may be used to alleviate this condition.

c. Fungicide Control
In general cultural practice is sufficient to control this disease. However, in the event that Red Thread infestation is diagnosed and is beyond control through cultural practice, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Daconil (Chlorothalonil), Fore (Mancozeb), Heritage (Azoxystrobin), or Prostar (Flutolanil).

9. Summer Patch (*Magnaporthe poae*)
a. Disease Conditions and Symptoms
As its name indicates, Summer Patch usually occurs during the summer, when daytime temperatures are greater than 85°F. Conditions favoring Summer Patch development include high soil moisture, poor drainage, and low mowing heights. Symptoms of Summer Patch include circular patches of wilted to straw-colored turf, usually less than 10 inches in diameter. Turf leaf blades turn yellow or brown starting at the tips, and roots are light to dark brow

b. Cultural Control
Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month and "fast release" sources of nitrogen will be avoided. Soil drainage will be improved, soil compaction will be reduced, and turf surfaces will be syringed when temperatures exceed 85°F. Lightweight mowing equipment will be used and whenever possible, mowing heights will be raised.

c. Fungicide Control
In the event that Summer Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), or Heritage (Azoxystrobin).

10. Take-All Patch (*Gaeumannomyces graminis, Var. avenae*)
a. Disease Conditions and Symptoms
Take-All Patch occurs in the spring and early summer when temperatures are between 59 and 76°F. Conditions favoring Take-All Patch development include moist soil, a pH of greater than 5.5, low/unbalanced fertility, and greens with high sand content. Symptoms of Take-All Patch include wilted to bronze colored circular patches that can be as large as several feet in diameter. Turf leaf blades turn yellow, then bronze at the tip, progressing downward. Roots are brown and necrotic. Turf damage can be rapid and severe under warm, dry conditions.

b. Cultural Control
Fertilizer with acid-forming source of nitrogen such as ammonium sulfate is a fertilization strategy for disease control. Moderate levels of phosphorus and potassium will be maintained. Soil drainage will be improved, and heavy, frequent irrigation will be avoided.

c. Fungicide Control
If conditions dictate, susceptible areas will be considered for preventative treatment with Heritage (Azoxystrobin) at the discretion of the Superintendent. In the event that Take-All Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Bayleton (Triadimefon), Heritage (Azoxystrobin), or Prostar (Fluotlanil).

11. Yellow Patch (*Rhizoctonia cerealis*)
    a. Disease Conditions and Symptoms
    Yellow Patch usually occurs during early to midwinter when temperatures are less than 60°F. Conditions favoring Yellow Patch development include high moisture, excessive thatch, and high nitrogen fertility. Symptoms of Yellow Patch include patches or rings of yellow to straw-colored turf between 8 and 20 inches in diameter. Turf damage is usually not severe, but the loss of turf quality can be significant. Young turf is particularly susceptible to Yellow Patch.

    b. Cultural Control
    Moderate rates of nitrogen will be applied at the rate of 1/2 lb N/1000 ft^2/month or less and moderate to high levels of potassium will be maintained. Shade will be minimized to allow for warmer temperatures and improve air circulation for enhanced drying of turf, and thatch will be maintained at 1/4 inch or less.

    c. Fungicide Control
    In the event that Yellow Patch infestation is diagnosed, treatment options are Banner (Propiconazole), Heritage (Azoxystrobin), or Prostar (Flutolanil).

B. Algae

Algae growth ("black algae") is of concern primarily for turf located on greens and tees and is caused by *Symploca* spp. or *Oscillatoria* spp.. A description of conditions favoring algae growth, symptoms of the presence of algae, and specific control measures follows:

1. Growth Conditions and Symptoms
Conditions favoring algae growth include shaded areas with poor drainage, reduced air movement, and compacted soil. Symptoms of "black algae" include the appearance of dark brown-black growth over the soil surface and plant crowns that may look like oil spots.

2. Cultural Control
Preventative cultural and fertility practices are the primary means of controlling algae on turf. Techniques include improvement of soil drainage, maintenance of balanced turf fertility, the loosening of compacted soil, and providing more light to turf via pruning of trees and shrubs.

3. Chemical Control
Temporary chemical control can be realized by the application of wettable sulfur or Fore (Mancozeb).

C. Moss

Current greens maintenance practices create an environment than can be favorable for the infestation of various moss species, including Silvery Thread moss (*Bryum argenteum*), which is the species most commonly detected. Moss species in greens may require different control methods than species commonly found in other turf areas.

1. Growth Conditions and Symptoms

Conditions favoring moss growth include low mowing heights, frequent irrigation, and low nitrogen fertility.

2. Cultural Control
The first control measure is to raise mowing heights when possible, and to improve turf fertility. The second approach is to adjust irrigation to optimize drainage and prevent over-watering. The third approach is to prune or remove trees creating excessive shade on greens surfaces. The fourth approach is to utilize turf management practices to minimize problems such as disease, wear, localized dry spots, etc., that cause turf thinning.

3. Chemical Control
Products showing varying levels of moss control include ferrous sulfate, copper hydroxide (Junction, Kocide), and salts of fatty acids.

D. Weeds

The weeds that are potential pests and that require monitoring and control by golf course personnel are listed in table 2. The general categories include broadleaf weeds, grassy weeds, noxious weeds, and woody brush. In addition, a variety of landscapes require weed management including turfgrass, ornamental shrubs and plants, areas surrounding trees, natural areas; and cart paths, service roads, walls, rockeries, and non-vegetated areas. In certain instances, management areas may not be monitored for certain weed types (i.e., the grassy weed *poa annua* does not present a problem in turfgrass). All areas will be monitored weekly for the presence of weeds problematic for the respective areas.

A description of the individual areas and measures used to control weeds located in these areas follows:

1. Turfgrass
   a. Cultural Control
   Broadleaf weeds are the primary pest concern for turfgrass. The primary means of controlling broadleaf infestation will be to optimize turf health through standard cultural practices. Selection of well-adapted turfgrass cultivars in combination with proper cultural practice, fertilization, irrigation, insect and disease control produces a dense vigorous turf that optimizes resistance to colonization by broadleaf weeds. If maintenance practices are not completely effective, the first approach to broadleaf weed control at West Seattle Golf Club will be mechanical removal (i.e., hand pulling).

   b. Chemical Control
   Occasionally, in spite of IPM and good cultural practices, one or more of the broadleaf weeds listed in Table 2 may exceed damage threshold levels. On these occasions, spot treatments with an herbicide(s) specifically labeled for the weed requiring control will be considered for use. The herbicides that have been approved for use are listed in Table 6. Applications are most effective during late summer or early fall.

2. Ornamentals
   a. Cultural Control

Broadleaf weeds, grassy weeds, noxious weeds, and woody brush in ornamental areas (shrubs and plants) will be controlled primarily by mechanical means (hand pulling), and whenever possible, weeds should be removed prior to seed production. In addition, mulches such as bark dust or wood chips will be used to control weed populations. Properly planted beds with high densities of desirable plants is a key cultural strategy to effectively crowd out many weed species. Creeping infestation of weeds will be prevented by the installation of hard borders and/or frequent edging.

b. Chemical Control
On occasion, herbicides will be used on a spot treatment basis to control weeds in ornamental shrub and plant areas. Treatment options include Roundup (glyphosate) for non-selective post-emergent control and Surflan (Oryzalin) for pre-emergent control. If significant amounts of weed seed are present, a combination of the two products may be applied to provide for more effective long-term weed control. Adequate moisture is necessary to activate Surflan, and as a result applications are preferentially made during the spring and fall seasons.

3. Trees
Weed and grass control around the trunks of trees in turf areas is essential to protect trees from damage resulting from mowing, trimming equipment, and rodents.

a. Cultural Control
Weeds around the bases of trees will be controlled primarily by a combination of by mechanical means (hand pulling and string trimmers). Extreme caution should be used when using string trimmers to prevent damage to the bark of trees. Mulch material is recommended for use around newly planted trees.

b. Chemical Control
Periodic treatments may be necessary to control growth of weeds around the bases of trees. Treatment options include Roundup (glyphosate) for non-selective post-emergent control and Surflan (Oryzalin) for pre-emergent control. A combination of the two products may be applied under certain situations for longer term weed control.

4. Natural Areas
Noxious weeds are the primary management concern in natural areas. Control and eventual eradication of King County Class A noxious weeds is required by law. Control of King County Class B and Class C noxious weeds, with containment as the primary goal, is also required by law. Additional information regarding King County Noxious Weed Control can be found on the King County website at **http://dnr.metrokc.gov/weeds**.

a. Cultural/Mechanical Control of King County Listed Noxious Weeds
Weeds and roots will be removed by hand pulling, plant material will be placed in bags, and bags will be placed in dumpsters. Removed plant material for Class A noxious weeds will not be composted or placed in clean/green bunkers. Frequent mowing prior to seed production may be an effective strategy for certain weed species.

b. Chemical Control

Chemical treatment may be required to eradicate Class A weeds. Treatment options include Garlon 4 (Triclpyr) as a selective broadleaf herbicide or Roundup (Glyphosate) as a non-selective herbicide. Selective herbicides such as Garlon 4 are recommended for broadleaf weed control to preserve existing grasses, which provide competition for broadleaf weed species.

5. Cart Paths, Service Roads, Walls, Rockeries, and Non-vegetated Areas
   a. Cultural Control
      Very fine 3/8 minus crushed rock is recommended for use to surface cart paths and service roads. The combination of tightly compacted crushed rock path surfaces and vehicle traffic will reduce weed growth. Paved cart paths/service roads provide a long term solution to path maintenance and pest management problems.

   b. Chemical Control
      If cultural practices prove ineffective, the herbicides Roundup (glyphosate) or the pre-emergent Surflan (Oryzalin) are approved for use for weed control in these areas.

E Insects

Three management areas are potentially vulnerable to damage from insect infestation which include turfgrass areas (Cutworms, European Crane fly), trees (Spruce Aphids, Western Tent Caterpillar), and high traffic areas for golfers and/or maintenance staff (Wasps/Yellow jackets). Monitoring for insects will consist of routine visual inspection of susceptible areas and specific vegetation areas on a weekly basis. General turfgrass cultural practices leading to optimal turf vigor are the primary means of minimizing the potential for insect infestation. Similarly, cultural practices are the primary means of controlling insect infestation of trees. In general, cultural practices are ineffective at controlling Wasps and Yellow jackets. If cultural practices are ineffective at preventing damage thresholds for a specific pest from being exceeded, the selective use of biological agents and/or insecticides will be considered. Rotational strategies will be employed as necessary to reduce insect resistance to specific products.

A description of specific insect pests, symptoms of infestation, and corresponding control measures follows:

1. Cutworms (*Noctuidae* family)
   a. Insect Description and Infestation Symptoms
      The adult cutworm is a moth that lays eggs on grass leaves at night. The resultant larvae are thick-bodied caterpillars approximately 1.5 to 2 inches in length that may be greenish gray, brown, or black, and often have spots or stripes. The larvae reside in the thatch layer during the day and emerge to the surface to feed on the grass blades at night. Cutworm infestation results in small brown circular patches on the turf, and generally occurs during late summer and fall. Also, an indication of cutworm infestation is the presence of birds attempting to feed on cutworms by digging at the thatch layer during the day.

   b. Cultural Control
      Optimize turf vigor through standard cultural practices.

   c. Biological Control
      Several insect growth regulators and biological agents including azadirachtin (Turplex, Margosan-O) and *Bacillus thuringensis* (Dipel, M-One, M-Peril, MVP, Teknar, Thuricide, etc.) have been shown to be effective agents against cutworms. These agents will be considered for use following a cost efficacy analysis.

d. Insecticide Control
If biological treatments are unsuccessful, the insecticide used to control cutworm infestations exceeding threshold levels will be Dursban (Chlorpyrifos). Dursban is currently not approved for general use by the City of Seattle, but will be considered for treatment of cutworms based on a one-time exception request.

2. European Cranefly (*Tipula paludosa*)
a. Insect Description and Infestation Symptoms
The European Cranefly is a flying insect that resembles a large mosquito. Adults lay eggs on the turf in late summer, which hatch in late fall. The resulting larvae are approximately one inch long and are brownish gray in appearance. The larvae feed on the turf during the fall, overwinter, and then become active in the early spring. The larvae reside under the surface of the turf and feed on the turf root system, becoming especially active after soil temperatures exceed 50°F in the early spring. Evidence of infestation is the presence of irregular brownish patches on the turf surface and general turf thinning.

b. Cultural Control
Optimize turf vigor through standard cultural practices.

c. Biological Control
Steinernema carpocapse (Turfco Vector) is a commercially available nematode shown to be effective at treating European Cranefly infestation. This agent will be considered for use following a cost/efficacy analysis.

d. Insecticide Control
If documented biological control strategies are unsuccessful, the insecticide currently used to control European Cranefly infestations that exceed threshold levels will be Dursban (Chlorpyrifos). Dursban is currently not approved for general use by the City of Seattle, but will be considered for treatment of European Cranefly based on a one-time exception request.

3. Spruce Aphid (*Elatobium abietinum*)
a. Insect Description and Infestation Symptoms
The Spruce aphid is a small, dull green aphid that causes extreme needle drop from infested trees. The Spruce aphid typically appears in February and increases in number rapidly during March and April.

b. Cultural Control
Optimize tree health through standard cultural practices.

c. Mechanical Control
Remove affected tree(s) and replace with pest resistant species.

d. Insecticide Control
Generally, cultural methods provide satisfactory control of spruce aphids.

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4. Wasps and Yellow jackets
   a. Insect Description and Infestation Symptoms
      Wasps and Yellow jackets are beelike insects with yellow and black or white and black bands on the abdomen of the insect. Nests can be located underground, or in shrubs and trees. These insects are most active during the day, and less active at night.

   b. Cultural Control
      Generally, no cultural methods provide satisfactory control of wasps and yellow jackets.

   c. Insecticide Control
      When detected in high traffic areas, nests that present a threat to golfers and/or maintenance staff will be treated with Zep Tox Wasp and Hornet (Tetramethrin + phenothrin) or mint oil products.

5. Western Tent Caterpillar (*Malacosoma* spp.)
   a. Insect Description and Infestation Symptoms
      Tent Caterpillars can infest and damage a variety of trees. Larvae are hairy, yellowish brown, with a row of blue and orange spots on their sides. Moths are light to dark brown in color. Nests are identifiable by the presence of large, silken structures (i.e., "tents") located in trees and shrubs. Caterpillars inhabit the nests during the night and go out during the day to feed. At pupation, caterpillars leave the nest to find appropriate places to form chyrsalises.

   b. Cultural Control
      Optimize tree health through standard maintenance practices. Generally, cultural methods provide satisfactory control of tent caterpillar.

   c. Mechanical Control
      Light infestations can be controlled by nest removal. Nests will be removed by pruning during early morning hours and destroyed.

   d. Biological Control
      The biological agent *Bacillus thuringensis* (Bactimos, Dipel, M-One, M-Peril, MVP, Teknar, Thuricide, etc.) has been shown to be effective against tent caterpillar when they are actively feeding.

XII. Pesticides

A. Pesticide Definition

A pesticide is any substance that is used to control pests including insects (insecticide), weeds (herbicide), fungi (fungicide), nematodes (nematicide), and algae (algicide). The mechanism of action of most pesticides is to eliminate the pest by suppressing, weakening or eradicating the target pest.

B. Pesticide Use Policy

The City of Seattle implemented a *Pesticide Use Policy* in 1999 that regulates the use of specific pesticides and establishes guidelines for overall reduction of pesticide use. According to this policy, all pesticide products used on City of Seattle landscapes must first be screened for a number of health and environmental criteria, and based on these criteria, are assigned to pesticide product Tier Tables (Appendix D). The products are ranked as follows: Tier 1 (highest level of concern), Tier 2 (moderate concern), Tier 3 (lowest concern), and Tier 4 (insufficient information). Tier 1 pesticides have been identified as first priorities for phase-out when viable alternative products become available. Exceptions to use restrictions for Tier 1 products are considered on a one-time use only basis, or as a programmatic exception. Fungicide products are not currently subject to the exception process because viable (Tier 2 and Tier 3) alternatives do not currently exist. All pesticides must be screened and entered into the City of Seattle's Tier Tables prior to use. The City of Seattle *Pesticide Use Reduction Strategy* (Appendix E) establishes a goal of reducing overall pesticide use by 30% by the end of 2002. Additional information regarding the City of Seattle's *Pesticide Use Reduction Strategy* can be found on the City of Seattle's Office of Sustainability and Environment website, which is located at **www.cityofseattle.net/environment/pesticides.htm**. Guidance contained within the *Tri-County Integrated Pest and Vegetation Management Guidelines* (Appendix A) describing proper pesticide use should also be consulted and complied with. The *Tri-County Integrated Pest and Vegetation Management Guidelines* can be viewed on the Internet at **http://www.metrokc.gov/hazwaste/ipm/ipmpolicy.htm**.

C. Pesticide Use Determination

The primary strategy for pest management as defined in this Integrated Pest Management plan is to optimize turf vigor through maintenance practices to optimize turf resistance to, or tolerance of pests. In the event that maintenance practices do not maintain pest populations below damage thresholds, control strategies will be considered. Through the IPM process, pesticides will be selected by the Superintendent based on their indication for use, safety, efficacy, toxicological and environmental impacts. In addition, the Superintendent will monitor developments in pesticide research and development; and he/she will incorporate the use of newly developed, tested and improved pesticides approved by EPA and the City of Seattle where appropriate.

D. Current Practice

The locations of pesticide use and the typical frequencies of the application of these agents are shown in Table 5.

Table 5. West Seattle Golf Club:
Pesticide Applications Areas and Typical Application Frequencies

Area	% Total Area[a]	Pesticide Applications per Year	Pesticide Category
Greens	2.5	6	Fungicide
Green Surrounds	3.7	spot treatments as needed	Herbicide
Tee Surface[b]	3.4	3	Herbicide
Tee Surrounds	3.6	spot treatments as needed	Herbicide
Approaches	2.5	spot treatments as needed	Herbicide
Fairway	43.4	spot treatments as needed	Herbicide
Rough	39.7	spot treatments as needed	Herbicide

Ornamental	1.2	spot treatment as needed	Herbicide

[a] golf course management area
[b] occasional treatment with fungicides when damage thresholds exceeded

The pesticides that have potential for use at West Seattle Golf Club include 13 fungicides, six herbicides, and two insecticides (Table 6). To minimize the development of resistance, pesticides in different families with different mechanisms of action will be rotated as frequently as practical and necessary. In addition, if pest resistance to one or more of these pesticides does develop, or if unanticipated circumstances arise, the Superintendent may use alternative pesticides that are EPA approved and have received authorization for use by the City of Seattle.

Table 6. Pesticide Selection for Potential Application at West Seattle Golf Club[a]

Pesticide Trade Name	Pesticide Chemical Name	Pesticide Category
Banner	Propiconazole	Fungicide
Bayleton	Triadimefon	Fungicide
Chipco 26019, Scotts Fungicide X	Iprodione	Fungicide
Daconil	Chlorothalonil	Fungicide
Dithane, Fore	Mancozeb	Fungicide
Heritage	Azoxystrobin	Fungicide
Prostar	Flutolanil	Fungicide
Scotts FF	Thiophanate-Methyl	Fungicide
Scotts FFII, Blocker	PCNB	Fungicide
Scotts Fungicide VIII	Thiophanate-Methyl + Triadimefon	Fungicide
Scotts Fungicide IX	Thiophanate-Methyl + Chloroneb	Fungicide
Subdue	Metalaxyl	Fungicide
Terraneb	Chloroneb	Fungicide
Casoron	Dichlobenil	Herbicide
Crossbow	2,4-D + Triclopyr	Herbicide
Drive	Quinclorac	Herbicide
Garlon 4	Triclopyr (ester formulation)	Herbicide
Roundup	Glyphosate	Herbicide
Surflan	Oryzalin	Herbicide
Trimec	2,4-D + Dicamba + Mecoprop	Herbicide
Dursban[c]	Chlorpyrifos	Insecticide
Zep Tox Wasp and Hornet	Tetramethrin + Phenothrin	Insecticide

[a] Additional pesticides not listed in this table have been approved for use by the City of Seattle, and when necessary, can be used at the discretion of the Superintendent.

[b] Tier 1 exception dictates that this product can only be used for horsetail reduction in ornamental plant beds. Product will be applied according to Best Management Practices described in the exception.

[c] Dursban is currently not approved for general use by the City of Seattle. It may be considered for use by exception request.

E. Pesticide Storage

All pesticides will be maintained in a dedicated, dry, well-ventilated, approved storage area that has restricted access and meets the requirements of the State of Washington and the City of Seattle Fire Department. Hazardous Materials Permits from the City of Seattle Fire Department are necessary for pesticide storage.

F. Pesticide Mixing

The entire pesticide product label will be read and understood prior to the use of any pesticide. Prior to pesticide mixing, the Superintendent will determine that local weather conditions are suitable for pesticide application. All pesticides will be mixed according to manufacturer's labeling instructions by a licensed pesticide applicator. Personnel will wear personal

protective equipment during the entire mixing process, as recommended in the Material Safety Data Sheet appropriate for the pesticide being mixed. All pesticides will be prepared in an approved pesticide mixing area.

G. Signage

All pesticide applications will be identified by the posting of official City of Seattle Pesticide Application Signs. Posted signage will be in compliance with the City of Seattle's *Pesticide Use Policy* and will remaining posted for a minimum of 24 hours following pesticide application.

H. Application

Application of restricted use pesticides or any pesticides applied with a power spray apparatus will be done by licensed pesticide applicators properly trained in the safe application of these products. Application of non-restricted use pesticides applied with manually operated equipment may be assigned to full time employees who are under the supervision of licensed pesticide applicators. Applicators will wear appropriate personal protective equipment appropriate for the pesticide application. All pesticide application equipment will be properly calibrated prior to the addition of the pesticide formulation to the equipment and application to the golf course.

The areas of the golf course requiring pesticide application will be specifically defined by the Superintendent. Whenever possible, applications will be selective and limited to localized, targeted areas to minimize the amount of pesticide being applied. No pesticide spray applications will occur if wind speed is above 5 miles per hour or if wind direction or activity will carry pesticides toward, or deposit them upon open water. Pesticides will not be applied if heavy rain is forecast following the potential application event.

I. Clean Up and Disposal

Pesticide containers, mixing tanks, and equipment will be rinsed in accordance with recommended procedures and rinse water will be disposed of in accordance with state and local ordinances.

J. Pesticide Use Documentation

The City of Seattle Office of Sustainability and Environment maintains a pesticide use database for tracking all pesticide applications on the City of Seattle lands. The database calculates pesticide use according to pounds of active ingredient used. Reports are generated annually to determine use reduction, specific product use, and site usage. All pesticide applications to City of Seattle public golf courses are required to be accurately entered into the database on a monthly basis. Pesticide application information recorded will include date of application, time of application, specific location of application, size of the area treated (typically by 1,000 ft^2), product name, product EPA registration number, rate of application (typically as rate per 1,000 ft^2 or acre), weather conditions (wind speed and direction, temperature, rainfall, weather comments), total amount of product applied, and the applicators name and pesticide license number. In addition, current pesticide labels and MSDS sheets will be compiled and maintained in a location accessible to all employees, and are required to be present at the time a pesticide application is made. All pesticide documentation will be in accordance with federal, state, and city regulations.

K. Pesticide Inventory/Purchasing

All pesticide purchases must comply with the City of Seattle's *Pesticide Use Policy* and current City regulations. Annual pesticide inventories are required by the City of Seattle to document the individual products and their respective quantities in storage.

XIII. Facilities Description

A. Maintenance Building

Maintenance functions are performed in maintenance building that has a total area of approximately 6,900 square feet. The building is physically segregated into two main areas. The first area is dedicated to office space and crew quarters, which consists of the Superintendent's office, the staff lunchroom, staff locker room, and the staff restroom. The second, larger area is dedicated to equipment storage, equipment maintenance, fertilizer storage, and pesticide storage.

1. Mechanical Shop
   This area is where all equipment maintenance and repair work is performed. All fluids and solvents required for maintenance and repair are maintained within this area and used fluids and solvents are disposed of according to federal, state, and local guidelines.

2. Equipment Storage
   This area contains all equipment used in golf course maintenance operations including mowers, tractors, and fertilizer and pesticide application equipment.

3. Fertilizer Storage
   All fertilizer is stored in a dedicated and approved storage area. The storage area is isolated and allows for the maintenance of fertilizer in a dry, well-ventilated environment that has restricted access.

4. Pesticide Storage
   All pesticides are stored in a separate, dedicated area approved by the City of Seattle Fire Department. A hazardous materials storage permit from the City of Seattle is required for the storage of pesticides.

B. Petroleum Fluid Storage and Disposal

1. Flammable Materials
   All flammable materials are stored in an area approved by the City of Seattle Fire Department.

2. Used Fluids
   Used fluids are stored in separate containers appropriate for the fluid type.

3. Used Fluid Containers
   Used fluid containers are labeled with the identity of the used fluid.

4. Fluid Disposal

Used fluids are disposed of according to state and local regulations.

5. Permits
A flammable materials storage permit is required by the City of Seattle for the storage of flammable materials.

C. Fuel Depot
The fuel depot consists of gravity feed system that is located over a concrete spill retention system.

D. Equipment Washing
All equipment should be washed with water only (i.e., no detergent) over an approved wash rack that contains an oil/chemical separator that exits into a sanitary sewer. In the event that this facility is not available, every precaution must be taken to prevent equipment rinse water from exiting down a storm drain or from surfaces draining off site in any manner.

E. Pesticide Mixing Area
All pesticide mixing occurs at a dedicated mixing area.

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West Seattle Golf Club
Water Quality Monitoring Program

I. Introduction

The primary objective the West Seattle Golf Club Water Quality Monitoring Program is to establish accountability for management practice as it pertains to water quality. The two basic issues of concern regarding the impact of golf course management practice on water quality include eutrophication (nutrient loading) and toxicity. The chemicals used in golf course management practice that have potential to cause eutrophication and/or toxicity are nitrogen, phosphorus, and pesticides.

Consistent with its *Integrated Pest Management Policy*, West Seattle Golf Club recognizes the importance of sound environmental stewardship, and is committed to optimizing its golf course management practice to protect the environment within, and surrounding the golf course. The following document describes the West Seattle Golf Club Water Quality Monitoring Program, which is designed to monitor the quality of water obtained from specific locations on a semi-annual basis. Using EPA methods, water samples will be tested for the presence of the nutrient indicators phosphorus and nitrate, and for all pesticides applied to the golf course during the six months preceding the sample collection event.

II. Structure

Historically, the development of a formal golf course specific water quality monitoring program has been hampered by the lack of a suitable monitoring model (i.e., testing frequency, etc.). However, recently the Oregon Golf Course Superintendents Association has developed a set of *Environmental Stewardship Guidelines*, which includes a model for water quality monitoring as a means of addressing this concern. The water quality monitoring model in the *Guidelines* is based on a document entitled *Endangered and Threatened Species: Proposed Rule Governing Take of Seven Threatened Evolutionarily Significant Units (ESUs)' Proposed Rule* [(4d) rule] published by the National Marine Fisheries Service (NMFS). This document "represents the regulations NMFS believes necessary and advisable to conserve the seven listed threatened salmonid ESUs and defines programs that NMFS concludes will lead to the conservation of the listed endangered species." One of these programs is the Portland Parks and Recreation (PPR) *Pest Management Policy*, which includes a description of municipal golf course management practice.

Comment on the PPR *Pest Management Policy* by NMFS represents an independent, thorough, and highly qualified scientific review of the policy as it pertains to sensitive environmental and water quality issues. The favorable comment on the PPR *Pest Management Policy* by NMFS provides meaningful guidance that can be used in the formulation of golf course specific water quality monitoring programs. Accordingly, the structure of the West Seattle Golf Club Water Quality Monitoring Program is designed to be consistent with guidance for municipal golf courses

provided within the PPR *Pest Management Policy*, and is specific for the environment of West Seattle Golf Club.

The Waterways Pest Management Policy of the PPR *Pest Management Policy* states that for golf course waterways testing "Waters adjacent to treated areas within the golf course shall be tested on a regular basis for fertilizer and pesticide levels. Frequency of the testing will depend upon the scheduling of applications, but shall occur no less than twice per year."

Consistent with this guidance, semi-annual testing of water samples for the presence of nitrate, phosphorus, and pesticides is a central feature of the West Seattle Golf Club Water Quality Monitoring Program. In addition, the Water Quality Monitoring Program is configured to complement and support existing West Seattle Golf Club Best Management and Integrated Pest Management practices.

III. *Sample Locations and Sample Collection Methods*

For nutrient and pesticide testing, water samples will be collected from three separate locations for each sampling time point. A sample will be collected from two locations where surface water enters the golf course (Longfellow Creek and an unnamed tributary), and from a location where surface water exits golf course property (Longfellow Creek). Each sample location will be assigned a unique sample identifier, and the same sample identifiers will be used to label respective samples throughout the course of the monitoring program. Samples with the same identifier but collected at different time points will be distinguished from one another by date of sample collection. Sample identifiers and the corresponding sample locations are as follows:

WSLCE (West Seattle Longfellow Creek Entry): This sample will be collected from the southern border of the golf course where Longfellow Creek enters golf course property. A sample will be collected for nitrate and phosphorus testing in a clean, plastic bottle and will be sealed with a clean plastic lid. A sample for pesticide testing will be collected in clean, amber, one liter-glass bottles that will be sealed with clean, teflon-lined lids.

WSUTE (West Seattle Unnamed Tributary Entry): This sample will be collected from the interior of the golf course at a location where upslope drainage from off-site property daylights near the 9th fairway. The unnamed tributary continues downslope and enters Longfellow Creek between the 11th green and the 12th fairway. A sample will be collected for nitrate and phosphorus testing in a clean, plastic bottle and will be sealed with a clean plastic lid. A sample for pesticide testing will be collected in clean, amber, one liter-glass bottles that will be sealed with clean, teflon-lined lids.

WSLCE (West Seattle Longfellow Creek Entry): This sample will be collected from the northern border of the golf course where Longfellow Creek exits golf course property. A sample will be collected for nitrate and phosphorus testing in a clean, plastic bottle and will be sealed with a clean plastic lid. A sample for pesticide testing will be collected in clean, amber, one liter-glass bottles that will be sealed with clean, teflon-lined lids.

IV. *Sample Collection Frequency*

Samples will be collected semi-annually from each sampling location during the weeks of April 8th - April 15th and October 8th - October 15th.

V. *Sample Collection*

Samples will be collected between the hours of 7:00 a.m. and 11:00 a.m. by the West Seattle Golf Club Superintendent or by an individual designated by the Superintendent who has received proper training in sample collection. Water samples will be acquired for testing based on methodology defined in *Volunteer Stream Monitoring; A Methods Manual* (EPA 841-B-97-003) and the *DEQ Laboratory Field Sampling Reference Guide, Revision 4.0.*

VI. *Chain-of-Custody*

Chain-of-custody will be documented for all samples from the point of sample collection to the point of sample receipt by the testing laboratory.

VII. *Sample Maintenance and Transport*

After collection, samples will be stored at 4°C (~39°F) in the dark. Samples will be maintained at 4°C during transport to the testing laboratory and will be delivered to the testing laboratory no later than twenty-four hours following sample collection.

VIII. *Sample Testing*

Water samples will be tested for the presence of nitrate and phosphorus using EPA methods.

Water samples will be tested for the presence of all pesticides applied to West Seattle Golf Club during the six months preceding the sampling event. The sample will be tested for the presence of specific pesticides using appropriate EPA methods.

All laboratory test results will be linked by the laboratory sample identification number and the West Seattle Golf Club sample identifier assigned at the time of sample collection.

IX. *Interpretation of Results*

All testing results will be reviewed and compared to relevant federal and state water quality standards.

X. *Corrective Action*

A. Nutrients

In the event that either nitrate levels or phosphorus levels in water samples are determined to exceed water quality standards, the following corrective action will be taken.

1. Records will be reviewed to determine if a direct cause and effect relationship between fertilizer application events and nutrient levels can be established. If such a relationship is

identified. adjustments in fertilizer application rates and/or methods will be implemented to reduce the load of the compound(s) entering waterways.

2. The Integrated Pest Management plan will be reviewed to identify and implement alternative management practices that will mitigate the situation.

3. Following adjustments in practice, additional samples will be acquired for re-testing to assess the effectiveness of revised management practice.

B. Pesticides

The inherent assumption is that when applied properly and in accordance with the West Seattle Golf Club Integrated Pest Management plan, pesticides applied to the golf course should not threaten water quality. However, in the event that a pesticide(s) applied to the golf course in the six months preceding the sampling event is detected in the exit point water sample (***WSLCX***) and not in the corresponding entry point sample(s) (***WSLCE***, ***WSUTE***), the following corrective action will be taken.

1. Based on the best information available, the level of the pesticide(s) detected will be compared to allowable levels to determine if there is an immediate hazardous threat. In the event that a hazardous situation is identified, the appropriate agencies will be contacted.

2. Records will be reviewed to determine if a direct cause and effect relationship between pesticide application events and pesticide(s) detected in water samples can be established. If such a relationship is identified, adjustments in pesticide application rates and/or methods will be implemented to reduce and ultimately eliminate the load of the compound(s) entering waterways.

3. The Integrated Pest Management plan will be reviewed to identify and implement alternative management practices that will mitigate the situation.

4. Following adjustments in practice, additional samples will be acquired for re-testing to assess the effectiveness of revised management practice.

XI. Documentation

All activities associated with the West Seattle Golf Club Water Quality Monitoring Plan will be documented including sample collection, chain-of-custody, test results, interpretation of results, and summary reports. All original documents will be maintained on site at West Seattle Golf Club.

XII. Reporting

Water quality monitoring results will be summarized and documented following each round of testing (i.e., twice per year) and a summary of the Water Quality Monitoring Plan will be prepared annually.

XIII. References

1. *Endangered and Threatened Species; Proposed Rule Governing Take of Seven Threatened Evolutionarily Significant Units (ESUs); Proposed Rule.* Department of Commerce. National Oceanic and Atmospheric Administration. *Federal Register*. January 3, 2000.

2. *Endangered and Threatened Species; Salmon and Steelhead; Final Rules.* Department of Commerce. National Oceanic and Atmospheric Administration. *Federal Register*. July 10, 2000.

3. *Golf Course Management and Construction Environmental Issues*. 1992. J.C. Balogh and W.J. Walker (ed). Lewis Publishers Boca Raton, FL.

4. *Guidelines and Specifications for Preparing Quality Assurance Project Plans*. 1991. Washington State Department of Ecology publication 91-16. Manchester, WA.

5. *Technical Guidance for Assessing the Quality of Aquatic Environments*. 1994. Washington State Department of Ecology publication 91-78. Olympia, WA.

6. *Monitoring Guidelines to Evaluate Effect of Forestry Activities on Streams in the Pacific Northwest and Alaska*. 1991. Environmental Protection Agency publication EPA/910/9-91-001. Region 10. Seattle, WA.

7. *Pest Management Policy*. 2001. Portland Parks and Recreation. Portland, OR.

8. *Volunteer Stream Monitoring: A Methods Manual*. 1997. Environmental Protection Agency publication EPA 841-B97-003. Office of Water.

9. Methods for Chemical Analysis of Water and Wastes. 1983. Environmental Protection Agency publication EPA-800/4-79-029. Cincinnati, OH.

10. *DEQ Laboratory Field Sampling Reference Guide. Revision 4.0.* 1996. Oregon Department of Environmental Quality. Portland, OR.

11. *Results from the USGA Environmental Research Program*. 1995. USGA Green Section Record. January/February.

12. *GCSAA's Golf Course Water Quality Study*. 1997. *Golf Course Management*. November.

Exhibit D to Attachment 2 to MGSord: Capital Equipment Owned or Possessed by the City Relating to this Agreement

Seattle Golf - Schedule of Maintenance Equipment Leases

Lease #	Structure	pmt term	Term			Months	Renewal Term			Buyout	Course	Model	Serial #	Monthly Cost per Course						TOTAL
														Jack		Jeff		West		
9b	operating	skip	10/1/2001	to	10/1/2002	12	n/a			n/a	Jackson	JD 800 Aercore Greens Aerifier	M00800A010255	$	312					$ 312
9b	operating	skip	10/1/2001	to	10/1/2002	12	n/a			n/a	Jefferson	JD 800 Aercore Greens Aerifier	M00800A010593	$	-					$ -
9b	operating	skip	10/1/2001	to	10/1/2002	12	n/a			n/a	W. Seattle	JD 800 Aercore Greens Aerifier	M00800A010609			$	312			$ 312
9b	operating	skip	10/1/2001	to	10/1/2002	12	n/a			n/a	Jackson	JD Gator w/steel box & tilt kit	W00Turf003921			$	-			$ -
9b	operating	skip	10/1/2001	to	10/1/2002	12	n/a			n/a	Jefferson	JD Gator w/steel box	W00Turf003882					$	312	$ 312
9b	operating	skip	10/1/2001	to	10/1/2002	12	n/a			n/a	W. Seattle	JD Gator w/steel box	W00Turf003888					$	-	$ -
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 1620 Wide Area Mower from jeff to jack	TC1620X010174			$	960			$ 960
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 1620 Wide Area Mower from jeff to jack	TC1620X010144			$	960			$ 960
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 1620 Wide Area Mower	TC1620X010203					$	960	$ 960
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 1200A Bunker Rake	TC1200A120079	$	203					$ 203
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 1200A Bunker Rake	TC1200A120075					$	189	$ 189
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 2020 Pro Gator w/ cab	TC2020A020565			$	486			$ 486
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 2020 Pro Gator w/ cab	TC2020A020536					$	486	$ 486
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 2500 Triplex Greensmower	TC2500G010721	$	496					$ 496
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 2500 Triplex Greensmower	TC2500G010701	$	496					$ 496
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 2500 Triplex Greensmower	TC2500G010886			$	496			$ 496
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 2500 Triplex Greensmower	TC2500G010865			$	496			$ 496
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 2500 Triplex Greensmower	TC2500G010874					$	496	$ 496
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 2500 Triplex Greensmower	TC2500G010699					$	496	$ 496
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 3225B Fairway Mower	TC3225T010282	$	860					$ 860
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 3225B Fairway Mower	TC3225T010259			$	860			$ 860
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 3225B Fairway Mower	TC3225T010221			$	860			$ 860
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 3225B Fairway Mower	TC3225T010264					$	860	$ 860
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 3225B Fairway Mower	TC3225T010262					$	860	$ 860
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 3225B Fairway Mower	TC3225T010260	$	866					$ 866
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 3225B Fairway Mower	TC3225T010256	$	866					$ 866
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 3225B Fairway Mower	TC3225T010263			$	866			$ 866
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 2653A Utility Mower 3WD	TC2653D090093	$	481					$ 481
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 2653A Utility Mower 3WD	TC2653D081562			$	481			$ 481
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 2653A Utility Mower 3WD	TC2653D081557					$	481	$ 481
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 800 Aercore Aerator	TC800AC035098	$	305					$ 305
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 800 Aercore Aerator	TC800AC030405			$	305			$ 305
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 800 Aercore Aerator	TC800AC030406					$	305	$ 305
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 220A Greensmower w/#22 trailer	MOQ220A060631	$	146					$ 146
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 220A Greensmower w/#22 trailer	MOQ220A06C536					$	146	$ 146
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD F1445 Front Mount Mower	TC1445D010269			$	548			$ 548
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 11 blade cutting units for 2500	n/a #1	$	101					$ 101
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 11 blade cutting units for 2500	n/a #2			$	101			$ 101
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 11 blade cutting units for 2500	n/a #3					$	101	$ 101
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 11 blade cutting units for 2500	n/a #4	$	179					$ 179
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 11 blade cutting units for 2500	n/a #5			$	179			$ 179
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 11 blade cutting units for 2500	n/a #6					$	179	$ 179
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 8 blade cutting units for 3225B	n/a #7	$	245					$ 245
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 8 blade cutting units for 3225B	n/a #8			$	245			$ 245
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 8 blade cutting units for 3225B	n/a #9					$	245	$ 245
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	Goosen BL2000 Blower	826	$	89					$ 89
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	Goosen V V 20000 Versa-Vac w/deck	261/187	$	433					$ 433
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Bearcat Chipper	X01249			$	417			$ 417
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	Toro P.O Blower for Toro 325D	210000250	$	96					$ 96
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	shared	Blecevator 1400 Overseeder	10059	$	56	$	56	$	57	$ 169
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	Ryan 544944-12" Sod Cutter	508465	$	89					$ 89
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Ryan 544944-12" Sod Cutter	508466			$	89			$ 89
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	Ryan 544944-12" Sod Cutter	99506230					$	89	$ 89
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	Sweepster CTM Sprayer	106121	$	116					$ 116
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	Hydrotech HD15002E Steam Cleaner	200100596	$	92					$ 92
23	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Hydrotech HD15002E Steam Cleaner	200100665			$	92			$ 92
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 1600 Wide Area Mower - Jeff	TC1600X020160	$	-	$	994	$	-	$ 994
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 1600 Wide Area Mower - Jeff	TC1600X020153	$	-	$	994	$	-	$ 994

Exhibit D to Attachment 2 to MGSord: Capital Equipment Owned or Possessed by the City Relating to this Agreement

e Equipment Leases

Term	Months	Renewal Term	Buyout	Course	Model	Serial #	Monthly Cost per Course: Jack	Jeff	West	TOTAL
/2001 to 10/1/2002	12	n/a	n/a	Jackson	JD 800 Aercore Greens Aerifier	M00800A010255	$ 312			$ 312
/2001 to 10/1/2002	12	n/a	n/a	Jefferson	JD 800 Aercore Greens Aerifier	M00800A016593	$ -			$ -
/2001 to 10/1/2002	12	n/a	n/a	W. Seattle	JD 800 Aercore Greens Aerifier	M00800A010609		$ 312		$ 312
/2001 to 10/1/2002	12	n/a	n/a	Jackson	JD Gator w/steel box & lift kit	W00Turf003921		$ -		$ -
/2001 to 10/1/2002	12	n/a	n/a	Jefferson	JD Gator w/steel box	W00Turf003882			$ 312	$ 312
/2001 to 10/1/2002	12	n/a	n/a	W. Seattle	JD Gator w/steel box	W00Turf003888			$ -	$ -
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 1620 Wide Area Mower from jeff to jack	TC1620X010174		$ 960		$ 960
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 1620 Wide Area Mower from jeff to jack	TC1620X010144		$ 960		$ 960
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 1620 Wide Area Mower	TC1620X010203			$ 960	$ 960
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 1200A Bunker Rake	TC1200A120079	$ 203			$ 203
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 1200A Bunker Rake	TC1200A120075			$ 189	$ 189
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 2020 Pro Gator w/ cab	TC2020A020565		$ 486		$ 486
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 2020 Pro Gator w/ cab	TC2020A020536			$ 486	$ 486
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 2500 Triplex Greensmower	TC2500G010721	$ 496			$ 496
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 2500 Triplex Greensmower	TC2500G010701	$ 496			$ 496
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 2500 Triplex Greensmower	TC2500G010886		$ 496		$ 496
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 2500 Triplex Greensmower	TC2500G010865		$ 496		$ 496
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 2500 Triplex Greensmower	TC2500G010874			$ 496	$ 496
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 2500 Triplex Greensmower	TC2500G010699			$ 496	$ 496
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 3225B Fairway Mower	TC3225T010282	$ 860			$ 860
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 3225B Fairway Mower	TC3225T010259		$ 860		$ 860
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 3225B Fairway Mower	TC3225T010221		$ 860		$ 860
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 3225B Fairway Mower	TC3225T010264			$ 860	$ 860
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 3225B Fairway Mower	TC3225T010262			$ 860	$ 860
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 3225B Fairway Mower	TC3225T010260	$ 866			$ 866
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 3225B Fairway Mower	TC3225T010256	$ 866			$ 866
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 3225B Fairway Mower	TC3225T010263		$ 866		$ 866
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 2653A Utility Mower 3WD	TC2653D090093	$ 481			$ 481
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 2653A Utility Mower 3WD	TC2653D081562		$ 481		$ 481
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 2653A Utility Mower 3WD	TC2653D081557			$ 481	$ 481
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 800 Aercore Aerator	TC800AC035098	$ 305			$ 305
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 800 Aercore Aerator	TC800AC030405		$ 305		$ 305
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 800 Aercore Aerator	TC800AC030406			$ 305	$ 305
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 220A Greensmower w/#22 trailer	MOO220A060631	$ 146			$ 146
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 220A Greensmower w/#22 trailer	MOO220A060636			$ 146	$ 146
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD F1445 Front Mount Mower	TC1445D010269		$ 548		$ 548
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 11 blade cutting units for 2500	n/a #1	$ 101			$ 101
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 11 blade cutting units for 2500	n/a #2		$ 101		$ 101
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 11 blade cutting units for 2500	n/a #3			$ 101	$ 101
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 11 blade cutting units for 2500	n/a #4	$ 179			$ 179
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 11 blade cutting units for 2500	n/a #5		$ 179		$ 179
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 11 blade cutting units for 2500	n/a #6			$ 179	$ 179
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	JD 8 blade cutting units for 3225B	n/a #7	$ 245			$ 245
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 8 blade cutting units for 3225B	n/a #8		$ 245		$ 245
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	JD 8 blade cutting units for 3225B	n/a #9			$ 245	$ 245
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	Goosen BL2000 Blower	826	$ 89			$ 89
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	Goosen V V 20000 Versa-Vac w/deck	261/187	$ 433			$ 433
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	Bearcat Chipper	X01249		$ 417		$ 417
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	Toro PTO Blower for Toro 325D	210000250	$ 96			$ 96
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	shared	Blecevalor 1400 Overseeder	i0059	$ 56	$ 56	$ 57	$ 169
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	Ryan 544944-12" Sod Cutter	508465	$ 89			$ 89
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	Ryan 544944-12" Sod Cutter	508466		$ 89		$ 89
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	W. Seattle	Ryan 544944-12" Sod Cutter	99506230			$ 89	$ 89
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	Sweepster CTM Sprayer	106121	$ 116			$ 116
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jackson	Hydrotech HD15002E Steam Cleaner	200100596	$ 92			$ 92
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	Hydrotech HD15002E Steam Cleaner	200100665		$ 92		$ 92
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 1600 Wide Area Mower - Jeff	TC1600X020160	$ -	$ 994	$ -	$ 994
/2001 to 5/1/2004	36	5/1/2004 to 5/1/2005	n/a	Jefferson	JD 1600 Wide Area Mower - Jeff	TC1600X020153	$ -	$ 994	$ -	$ 994

NOTICE: IF THE DOCUMENT IN THIS FRAME IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

Exhibit D to Attachment 2 to MGSord: Capital Equipment Owned or Possessed by the City Relating to this Agreement

Seattle Golf - Schedule of Maintenance Equipment Leases

Lease #	Structure	pmt term	Term			Months	Renewal Term			Buyout	Course	Model	Serial #	Monthly Cost per Course			
														Jack	Jeff	West	TOTAL
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 2653A Utility Mower	TC2653D090089	$ 331	$ -	$ -	$ 331
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 2653A Utility Mower	TC2653D090097	$ -	$ -	$ 331	$ 331
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 60HD Broom w/ lift	TC60FMx010124	$ -	$ 100	$ -	$ 100
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Agrimetal BW 240JD Blower	21723	$ -	$ 69	$ -	$ 69
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Bush Hog TR-30 Sprayer	BHT00243	$ -	$ 924	$ -	$ 924
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	DMI SR103HS Speed Roller	SR001052	$ -	$ 213	$ -	$ 213
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	Lastec 721XR Articulating Mower	8760301	$ -	$ -	$ 458	$ 458
25	operating	6 on, 6 off	5/1/2001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Ty-Crop Twin Spinner for QP3000	7208	$ -	$ 49	$ -	$ 49
26	operating	6 on, 6 off	9/1/2001	to	9/1/2004	36	9/1/2004	to	6/1/2005	n/a	W. Seattle	Buffalo Turbine Blower	7377			$ 197	$ 197
30	operating	6 on, 6 off	11/1/2001	to	5/1/2004	30	5/1/2004	to	5/1/2005	n/a	Jefferson	Goosen Versa Vac w/ rake & finger deck	266 & 168	$ -	$ 499	$ -	$ 499
32	operating	6 on, 6 off	10/1/2002	to	10/1/2005	36	11/1/2005	to	11/1/2006	n/a	Jackson	Utility Mower	TC2653D100593	$ 484			$ 484
33	operating	6 on, 6 off	10/1/2002	to	10/1/2005	36	11/1/2005		11/1/2006	n/a	West	JD 1620 6x4 Gator	W006x4x059054	$ -		$ 185	$ 185
33	operating	6 on, 6 off	10/1/2002	to	10/1/2005	36	11/1/2005		11/1/2006	n/a	Jack	JD 1620 6x4 Gator	W006x4x059049	$ 185	$ -		$ 185

Exhibit D to Attachment 2 to MGSord: Capital Equipment Owned or Possessed by the City Relating to this Agreement

Equipment Leases

Term			Months	Renewal Term			Buyout	Course	Model	Serial #	Monthly Cost per Course								TOTAL
											Jack		Jeff		West				
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jackson	JD 2653A Utility Mower	TC2653D090089	$	331	$	-	$	-			$ 331
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	JD 2653A Utility Mower	TC2653D090097	$	-	$	-	$	331			$ 331
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	JD 60HD Broom w/ lift	TC60FMx010124	$	-	$	100	$	-			$ 100
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Agrimetal BW 240JD Blower	21723	$	-	$	69	$	-			$ 69
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Bush Hog TR-30 Sprayer	BHT00243	$	-	$	994	$	-			$ 994
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	DMI SR103HS Speed Roller	SR001052	$	-	$	213	$	-			$ 213
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	W. Seattle	Lastec 721XR Articulating Mower	8760301	$	-	$	-	$	458			$ 458
001	to	5/1/2004	36	5/1/2004	to	5/1/2005	n/a	Jefferson	Ty-Crop Twin Spinner for QP3000	7208	$	-	$	49	$	-			$ 49
001	to	9/1/2004	36	9/1/2004	to	6/1/2005	n/a	W. Seattle	Buffalo Turbine Blower	7377					$	197			$ 197
001	to	5/1/2004	30	5/1/2004	to	5/1/2005	n/a	Jefferson	Goosen Versa Vac w/ rake & finger deck	266 & 168	$	-	$	499	$	-			$ 499
2002	to	10/1/2005	36	11/1/2005	to	11/1/2006	n/a	Jackson	Utility Mower	TC2653D100593	$	484							$ 484
2002	to	10/1/2005	36	11/1/2005		11/1/2006	n/a	West	JD 1620 6x4 Gator	W006x4x059054	$	-			$	185			$ 185
2002	to	10/1/2005	36	11/1/2005		11/1/2006	n/a	Jack	JD 1620 6x4 Gator	W006x4x059049	$	185	$	-					$ 185

Exhibit D to Attachment 2 to MGSord Capital Equipment Owned or Possessed by the City Relating to this Agreement

Municipal Golf of Seattle
Schedule of Leased Maintenance Equipment
12/15/99

MGS #	Contract #	Applic. No.	Commence. Date	Term. Date	# of Pmts	Buy-Out Value	Serial #	Model #	Description	Course	Original Cost By Location Jackson	Jefferson	West Seattle	TOTAL
010-B	Bank of the West	010-B	10/1/1993	10/1/2002	48		81067	3100	Toro Greensmaster w/attach.	Jack	19,140.00			19,140.00
010-B	Bank of the West	010-B	10/1/1993	10/1/2002	48		81068	3100	Toro Greensmaster w/attach.	Jack	19,140.00			19,140.00
010-B	Bank of the West	010-B	10/1/1993	10/1/2002	48		81276	3100	Toro Greensmaster w/attach.	Jeff		19,140.00		19,140.00
010-B	Bank of the West	010-B	10/1/1993	10/1/2002	48		81254	3100	Toro Greensmaster w/attach.	Jeff		19,140.00		19,140.00
010-B	Bank of the West	010-B	10/1/1993	10/1/2002	48		81278	3100	Toro Greensmaster w/attach.	West			19,140.00	19,140.00
010-B	Bank of the West	010-B	10/1/1993	10/1/2002	48	n/a	81345	3100	Toro Greensmaster w/attach.	West			19,140.00	19,140.00
011	020-0049479-011	31631	11/1/1998	11/1/2002	48		6472175	QP270	Toro Ty-Crop Top Dresser & att.	Jack	8,900.00			8,900.00
011	020-0049479-011	31631	11/1/1998	11/1/2002	48		6472262	QP270	Toro Ty-Crop Top Dresser & att.	Jeff		8,900.00		8,900.00
011	020-0049479-011	31631	11/1/1998	11/1/2002	48	n/a	6472374	QP270	Toro Ty-Crop Top Dresser & att.	West			8,900.00	8,900.00
012	020-0049479-012	32140	12/1/1998	12/1/2003	60		LV52105123225	5210	JD Tractor w/dual scv, canopy	Jeff		30,299.00		30,299.00
012	020-0049479-012	32140	12/1/1998	12/1/2003	60		LV52105123232	5210	JD Tractor w/dual scv, canopy	West			30,299.00	30,299.00
012	020-0049479-012	32140	12/1/1998	12/1/2003	60		W00540C024030	540	JD Loader w/backhoe & bucket	Jeff		12,948.00		12,948.00
012	020-0049479-012	32140	12/1/1998	12/1/2003	60	$ 1.00	W00540C024031	540	JD Loader w/backhoe & bucket	West			13,013.00	13,013.00
013	020-0049479-013	32142	12/1/1998	12/1/2002	48	$ 1.00	359	BL2000	Goosen Leaf Blower	West			3,800.00	3,800.00
015	020-004-9479-015	36867	5/1/1999	5/1/2003	48		98007587	Truckster	Cushman Turf Truckster w/sprayer	Jack	32,616.00			32,616.00
015	020-004-9479-015	36867	5/1/1999	5/1/2003	48		98007585	Truckster	Cushman Truckster w/core harvst	West			22,384.00	22,384.00
015	020-004-9479-015	36867	5/1/1999	5/1/2003	48	$ 1.00	98009407	Truckster	Cushman Truckster w/spreader	West			21,904.00	21,904.00
016	020-0049479-016	38856	7/1/1999	7/1/2003	48		98009377	Truckster	Cushman Truckster w/spreader	Jack	20,450.00			20,450.00
016	020-0049479-016	38856	7/1/1999	7/1/2003	48		98009407	Truckster	Cushman Truckster w/core harvst	Jeff		20,822.00		20,822.00
016	020-0049479-016	38856	7/1/1999	7/1/2003	48		98009787	Truckster	Cushman Truckster w/sprayer	Jeff		26,734.00		26,734.00
016	020-0049479-016	38856	7/1/1999	7/1/2003	48	$ 1.00	77107	B2399	Kubota Tractor	West			16,650.00	16,650.00
017	020-0049479-017	38853	7/1/1999	7/1/2003	48		W00TURF006159	4X2	JD 4X2 TurfGator	Jeff		5,408.00		5,408.00
017	020-0049479-017	38853	7/1/1999	7/1/2003	48		W00TURF006161	4X2	JD 4X2 TurfGator	Jeff		5,408.00		5,408.00
017	020-0049479-017	38853	7/1/1999	7/1/2003	48	n/a	W00TURF006148	4X2	JD 4X2 TurfGator	Jeff		5,408.00		5,408.00
018	020-0049479-018	39362	7/1/1999	7/1/2002	36	$ 1.00	A99031081	1500	Cushman Top Dresser	West			3,816.00	3,816.00
019	020-0049479-019	40329	9/1/1999	9/1/2003	48		90417	325-D	Toro Groundsmaster 4X4	Jack	19,689.00			19,689.00
019	020-0049479-019	40329	9/1/1999	9/1/2003	48	$ 1.00	90420	325-D	Toro Groundsmaster 4X4	West			19,689.00	19,689.00
020	020-0049479-020	41066	10/1/1999	10/1/2004	60	$ 1.00	0499052008844441	MH400	TyCrop Material Delivery System	West			24,650.00	24,650.00
021	020-0049479-021	53954	10/1/2000	12/1/2005	62		LV52105222982	5210	JD Tractor	Jack	21,330.97			21,330.97
021	020-0049479-021	53954	10/1/2000	12/1/2005	62		LV52105222749	5210	JD Tractor	Jeff		21,330.97		21,330.97
022	020-0049479-22		10/1/2000	5/1/2004	44		M02000X01034		Aerator	Jack	20,800.00			20,800.00
							M02000X010033		Aerator	Jeff		20,800.00		20,800.00
							M02000X010017		Aerator	West			20,800.00	20,800.00
							M01200A110405		Bunker Rake	Jeff		7,585.00		7,585.00
							TC2653DG80729		Trim Mower	Jeff		18,995.00		18,995.00
							W005X4049427		Gas Gator	West			7,800.00	7,800.00
							W005X4051819		Gas Gator	Jack	7,600.00			7,600.00
							W00TURF0086655		Gas Gator	West			6,185.00	6,185.00
							M0800AC000340		Aerator	Jack	19,800.00			19,800.00
							M0800AC000352		Aerator	Jeff		19,800.00		19,800.00
							769		Blower	Jeff		3,080.00		3,080.00
							10694-0822		Spreader	Jack	3,195.00			3,195.00
							10413-253		Spreader	Jeff		3,195.00		3,195.00
							6878		Top Dresser	Jack	8,000.00			8,000.00
							6874		Top Dresser	Jeff		8,000.00		8,000.00
							6721		Top Dresser	Jack	23,370.00			23,370.00
							5785		Top Dresser	Jeff		23,370.00		23,370.00
							A00040680		Core Harvester	Jeff		2,807.00		2,807.00
							A00040622		Core Harvester	Jack	2,807.00			2,807.00
							X00142		Chipper	Jack	13,990.00			13,990.00
							98007339		Truckster	Jeff		12,069.00		12,069.00
024	020-00494 : 9-024		5/1/2001	5/1/2006			TC0125x020286	TC125	Turf Collection System	Jack				-
							TC0125x020287	TC125	Turf Collection System	Jeff				-
							TC0125x020386	TC125	Turf Collection System	West				-
							LV4700P275205	4700	Compact Utility Tractor	West				-
027	020-0049479-027		9/1/2001	9/1/2006			LV4700P275730	4700	Compact Utility Tractor	West			22,857.57	22,857.57
028	020-0049479-028		10/1/2001	10/1/2004			134032	RMRM	Sweepster	West			4,581.39	4,581.39
029	020-0049479-029		10/1/2001	10/1/2003			30106	1655	Toro Sweeper	Jeff		14,806.63		14,806.63
031	020-0049479-031		10/1/2002	11/1/2004			M00800A010255	800	John Deere 800 Aercore aerator	Jack	1,783.60			1,783.60
							M00800A010593	800	John Deere 800 Aercore aerator	Jeff		1,783.60		1,783.60
							M00800A010609	800	John Deere 800 Aercore aerator	West			1,783.60	1,783.60
							W00TURF003921	4x2 Turf	John Deere 4x2 Turf Gator	Jack	1,030.75			1,030.75
							W00TURF003882	4x2 Turf	John Deere 4x2 Turf Gator	Jeff	-	941.50		941.50
							W00TURF003888	4x2 Turf	John Deere 4x2 Turf Gator	West			941.50	941.50
							81067	3100	Toro Greens Mowers	Jack	3,398.20			3,398.20
							81068	3100	Toro Greens Mowers	Jeff		3,398.20		3,398.20
							81276	3100	Toro Greens Mowers	West			3,398.20	3,398.20
							81254	3100	Toro Greens Mowers	Jack	3,398.20			3,398.20
							81278	3100	Toro Greens Mowers	Jeff		3,398.20		3,398.20
							81345	3100	Toro Greens Mowers	West			3,398.20	3,398.20
034	020-0049479-034		12/1/2002	12/1/2007			LV5220S222438	5220	John Deere 5220 Utility Tractor	Jack	23,370.00			23,370.00
							W00541D018768	541	John Deere 541 Loader	Jack	4,075.00			4,075.00
							LV0049X020101	49	John Deere 49 Backhoe	West			8,850.00	8,850.00

PGC Interbay, LLC
Golf Cart Inventory
West Seattle

Cart #	Model Number	Serial Number	Condition	Location
1	M302	1560577		WS
2	M302	1560598		WS
3	M302	1560572		WS
4	M302	1560575		WS
6	M302	1560573		WS
7	M302	1560556		WS
8	M302	1560570		WS
9	M302	1560558		WS
10	M302	1560608		WS
11	M302	1560596		WS
12	M302	1560607		WS
13	M302	1560591		WS
14	M302	1560559		WS
15	M302	1560557		WS
16	M302	1560561		WS
17	M302	1560604		WS
18	M302	1560605		WS
19	M302	1560597		WS
20	M302	1560601		WS
21	M302	1560599		WS
22	M302	1560594		WS
23	M302	1560600		WS
24	M302	1560595		WS
25	M302	1560590		WS
26	M302	1560592		WS
27	M302	1560571		WS
28	M302	15605[illegible]		WS
29	M302	15[illegible]056[illegible]		WS
30	M302	1[illegible]60	Rolled - being repaired	WS in shop
31	M302	1560564		WS
32	M302	1560585		WS
33	M302	1560574		WS
34	M302	1560582		WS
35	M302	1560569		WS
36	M302	1560578		WS
37	M302	1560568		WS
38	M302	1560581		WS
40	M302	1560563		WS
41	M302	1560567		WS
43	M302	1560583		At Farwest
44	M302	1560579		WS
45	M302	1560606		WS
46	M302	1560602		WS
47	M302	1560576		WS
50	M302	1560587		WS
51	M302	1560584		WS
52	M302	1560555		WS
53	M302	1560586		WS
54	M302	1560588		WS
55	M302	1560554		WS
Bev Cart	Refresher	1572262		WS
Bev Cart	Workhorse 800 G	1565286		WS

50 Power Carts Total
1 Beverage Cart
1 Workhorse

PGC Interbay, LLC
Golf Cart Inventory
Jackson

Cart #	Model Number	Serial Number	Condition	Location
1	M302	1560692	GOOD	JACKSON
2	M302	1560707	GOOD	JACKSON
3	M302	1560286	GOOD	Farwest Shop
4	M302	1560706	GOOD	JACKSON
5A	M302	1560593	GOOD	JACKSON FR W.S.
5B	M302	1560703	GOOD	JACKSON
6	M302	1560695	GOOD	JACKSON
7	M302	1560690	GOOD	JACKSON
8	M302	1560696	GOOD	JACKSON
9	M302	1560691	GOOD	JACKSON
10	M302	1560689	GOOD	JACKSON
11	M302	1560677	GOOD	JACKSON
12	M302	1560679	GOOD	JACKSON
13	M302	1560699	GOOD	JACKSON
14	M302	1560680	GOOD	JACKSON
15	M302	1560700	GOOD	JACKSON
16	M302	1560701	GOOD	JACKSON
17	M302	1560681	GOOD	JACKSON
18	M302	1560675	GOOD	JACKSON
19	M302	1560674	GOOD	JACKSON
20	M302	1560676	GOOD	JACKSON
22	M302	1560693	GOOD	JACKSON
23	M302	1560697	GOOD	JACKSON
24	M302	1560673	GOOD	JACKSON
25	M302	1560685	GOOD	JACKSON
26	M302	1560708	GOOD	JACKSON
27	M302	1560684	GOOD	JACKSON
28	M302	1560698	GOOD	JACKSON
29	M302	1560694	Destroyed	Farwest Shop
30	M302	1560688	GOOD	JACKSON
31	M302	1560709	GOOD	JACKSON
32	M302	1560710	GOOD	JACKSON
33	M302	1560682	GOOD	JACKSON
34	M302	1560672	GOOD	JACKSON
35	M302	1560671	GOOD	JACKSON
36	M302	1560683	GOOD	JACKSON
37	M302	1560704	GOOD	JACKSON
38	M302	1560705	GOOD	JACKSON
39A	M302	1560702	GOOD	JACKSON
39B	M302	1560565	GOOD	JACKSON FR W.S.
40	M302	1560678	GOOD	JACKSON
42	M302	1560560	GOOD	JACKSON FR W.S.
48	M302	1560603	GOOD	JACKSON FR W.S.
49	M302	1560589	GOOD	JACKSON FR W.S.
21	M302	1560687	FAIR	Farwest Shop
SHUTTLE	A303	1565119	POOR	JACKSON
REFRESH	A303	1565364	POOR	JACKSON
WORKHOI	A303	1565288	GOOD	JACKSON
WORKHOI	A303	1565287	GOOD	JACKSON

44 POWER CARTS TOTAL - 39 original + 5 from West Seattle
1 REFRESHMENT CART TOTAL
2 WORKHORSES TOTAL (1 CAN BE USED AS A BACKUP BEVERAGE CART)
1 Completely destroyed - set on fire, ended in lake

PGC Interbay, LLC
Golf Cart Inventory
Jefferson

Cart #	Model Number	Serial Number	Condition	Location
1	M 302	1560662	Good - minor scrapes	Jeff Cart Facility
2	M 302	1560654	Good - minor scrapes	Jeff Cart Facility
3	M 302	1560655	G-Broke Bump/scrapes	Jeff Cart Facility
4	M 302	1560653	Good - minor scrapes	Jeff Cart Facility
5	M 302	1560656	Good	Jeff Cart Facility
6	M 302	1560663	Good - broke bumper	Jeff Cart Facility
7	M 302	1560660	Good - minor scrapes	Jeff Cart Facility
8	M 302	1560550	Good - minor scrapes	Jeff Cart Facility
9	M 302	1560546	Good - minor scrapes	Jeff Cart Facility
10	M 302	1560542	Good - minor scrapes	Jeff Cart Facility
11	M 302	1560668	G-Broke Bump/scrapes	Jeff Cart Facility
12	M 302	1560666	G-Broke Bump/scrapes	Jeff Cart Facility
13	M 302	1560669	F-Broke wdw/bpr/dash	Jeff Cart Facility
14	M 302	1560665	Good - minor scrapes	Jeff Cart Facility
15	M 302	1560659	G-Broke Bump/scrapes	Jeff Cart Facility
16	M 302	1560664	Good - broke bumper	Jeff Cart Facility
17	M 302	1560657	Good - minor scrapes	Jeff Cart Facility
18	M 302	1560552	F-Broke trim/no wdw	Jeff Cart Facility
19	M 302	1560528	G-Broke Bump/scrapes	Jeff Cart Facility
20	M 302	1560549	G-Broke Bump/scrapes	Jeff Cart Facility
21	M 302	1560537	F-Broke tbr(f&b)bgstp	Jeff Cart Facility
22	M 302	1560661	G -Broke trim/bumper	Jeff Cart Facility
23	M 302	1560553	G-Broke Bump/scrapes	Jeff Cart Facility
24	M 302	1560551	Good - minor scrapes	Jeff Cart Facility
25	M 302	1560670	Good - minor scrapes	Jeff Cart Facility
26	M 302	1560667	G-Broke Bump/scrapes	Jeff Cart Facility
27	M 302	1560529	G -Battery/won't start	Jeff Cart Facility
28	M 302	1560658	G-Broke Bump/scrapes	Jeff Cart Facility
29	M 302	1560543	Good - minor scrapes	Jeff Cart Facility
30	M 302	1560548	G-Broke Bump/scrapes	Jeff Cart Facility
31	M 302	1560530	G-Broke Bump/scrapes	Jeff Cart Facility
32	M 302	1560526	F-Battery/flat tire	Jeff Cart Facility
33	M 302	1560539	G-Broke Bump/scrapes	Jeff Cart Facility
34	M 302	1560540	F-Broke wdw/scrapes	Jeff Cart Facility
35	M 302	1560541	G - Steering loose	Jeff Cart Facility
36	M 302	1560538	Good - minor scrapes	Jeff Cart Facility
37	M 302	1560532	G-Broke Bump/scrapes	Jeff Cart Facility
38	M 302	1560535	Good - minor scrapes	Jeff Cart Facility
39	M 302	1560531	Good	Jeff Cart Facility
40	M 302	1560533	G-Broke Bump/scrapes	Jeff Cart Facility
41	M 302	1560534	Good - minor scrapes	Jeff Cart Facility
42	M 302	1560536	G-Broke Bump/tow hitch	Jeff Cart Facility
43	M 302	1560544	Good - minor scrapes	Jeff Cart Facility
44	M 302	1560545	G-Broke Bump/scrapes	Jeff Cart Facility
45	M 302	1560547	Good - minor scrapes	Jeff Cart Facility
Bev Cart	A303	1565285	Good	Jeff Maint Yard
Maint Cart	A303	1565334	Good	Jeff Maint Yard
Range Cart	A303	1565324	Good	Jeff Driving Range

45 Power carts total
1 Beverage Cart
2 Maint Cart - one is used at the Driving Range

Startup Cost List

PGC Takeover of Seattle Golf Courses

Item Description	estimate $
Department of Licensing-trade name registration	$ 30.00
SKCDPH-Jefferson Food license application	$ 561.00
SKCDPH-Jackson Food license application	$ 561.00
SKCDPH-West Seattle Food license application	$ 561.00
Jefferson Beer & Wine License Application Fee	$ 465.00
Jackson Beer & Wine License Application Fee	$ 465.00
West Seattle Beer & Wine & Liquor License App. Fee	$ 2,065.00
Electrical-West Seattle Office	$ 4,200.00
Construction-West Seattle Office	$ 3,000.00
Phone Repair & Upgrade	$ 2,000.00
PC for Sena to Run quickbooks Enterprise	$ 1,100.00
PC server for Interbay-Office Depot	$ 1,000.00
All in HP Printer for new West Seattle Office & misc supplies	$ 700.00
Phone Upgrade West Seattle	$ 4,300.00
Hardware/network repair and improvement	$ 5,300.00
POS system repair, improvement, training, & addition of Interbay & Internet Reservations	$ 15,780.00
Total	$ 42,088.00

USE AGREEMENT
Jefferson Park Golf Course

THIS USE AGREEMENT (the "Agreement") is executed effective the 1st day of November 2002, between MUNICIPAL GOLF OF SEATTLE, a Washington non-profit corporation ("MGS") and SEATTLE JUNIOR GOLF FOUNDATION, dba FIRST TEE OF SEATTLE, a Washington non-profit corporation ("FTS"). MGS and FTS are together referred to as the "Parties," and individually referred to as a "Party."

Recitals:

A. Jefferson Park Golf Course is comprised of: (1) an 18-hole public golf course, (2) a 9-hole "par 3" golf course, (3) public clubhouse facilities, and (4) various practice facilities, including practice putting greens and a driving range (together, the "Facilities"). The Facilities are owned by the City of Seattle (the "City").

B. MGS manages and operates the Facilities on behalf of the City pursuant to a [Master Operating Agreement] dated June 1995 (the "Operating Agreement").

C. FTS is a non-profit corporation organized to develop and implement programs in the Seattle area for the creation of access and exposure to golf and golf facilities for young people who have not previously had access or exposure to the game. FTS has entered into a Facilities Agreement, dated April 16, 2002 (the "Facilities Agreement") with World Golf Foundation, Inc., a Florida not-for-profit corporation ("WGF"), through its First Tee Foundation division ("FTF"). Pursuant to the Facilities Agreement, FTS has certain rights and obligations, as set forth in the Facilities Agreement.

D. The Parties desire to enter into this Agreement in order to, among other things, provide to FTS the necessary access to and use of the Facilities as required by the Facilities Agreement, all upon the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the above recitals and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. *Term.* The term of this Agreement shall be for a period of fifteen (15) years, commencing on the effective date of the Facilities Agreement, with renewal of the MGS Contract with the city every five years or unless earlier terminated as described in Section 10 below.

Exhibit 1 to Att 2

ACTING CITY CLERK

2. *Access and Use Rights.*

(a) FTF has developed a curriculum and certification process and related training programs for teaching junior golf and has established standards for access and affordability (the "First Tee Programs"), which are described in Exhibit B to the Facilities Agreement, a copy of which is attached hereto.

(b) In consideration of the various benefits that MGS and FTS will receive in connection with the operation of the Facilities, MGS agrees to provide to FTS, without cost or expense to FTS other than the reduced rates to be paid by the participants in the First Tee program set forth on Exhibit 1 hereto, access to and the right to use the Facilities in order to fulfill the requirements of Exhibit B of the Facilities Agreement. The times, rates and portions of the Facilities which shall be available to FTS for such purposes are described in further detail on Exhibit 1 hereto.

(c) During the term of this Agreement, the Parties will cooperate with and assist one another with respect to changes to the matters described in Exhibit 1 with the express purpose of seeking to continue to satisfy the requirements of Exhibit B of the Facilities Agreement, as the same may be amended and modified by FTF and FTS from time to time in their reasonable discretion.

3. *Duties of MGS.* During the term of this Agreement, MGS shall use its reasonable efforts to. (a) perform all of its obligations under, and comply with all of the terms, conditions and restrictions of, the Operating Agreement and this Agreement, (b) comply with all applicable laws, ordinances, rules, regulations, orders and other legal or governmental requirements applicable to it or its management, maintenance, or operation of the Facilities, (c) apply for and maintain all permits, consents, authorizations and certifications which may be or become necessary in connection with the operation of the Facilities, (c) advise FTS promptly in writing of any (i) material property damage to the Facilities, (ii) bodily injury sustained by any person who is involved directly or indirectly, with the First Tee programs at the Facilities, or (iii) summons, subpoena or other similar legal document naming or served upon MGS or

Exh F. to att 2

the City, any of which could result in potential liability or exposure to FTS, FTF or WGF, (d) hire, discharge, supervise and monitor the work of personnel employed, and all agents, contractors, subcontractors or volunteers performing service in or about the Facilities, (e) provide safety and security programs, and (f) implement any necessary environmental and conservation plans with respect to the Facilities.

4. *Duties of FTS.* During the term of this Agreement, FTS shall use its reasonable efforts to: (a) perform all of its obligations under, and comply with all of the terms, conditions and restrictions of, the Facilities Agreement and this Agreement, (b) work with MGS to plan and implement improvements and upgrades to the Facilities which the Parties mutually determine to be reasonably necessary or desirable in order to implement or enhance the implementation of the First Tee Program at the Facilities, and (c) hire, discharge, supervise and monitor the work of the personnel whom FTS hires to implement the First Tee Program at the Facility, specifically excluding, however, all employees and contractors of MGS.

5. *Steering Committee.*

(a) During the term of this Agreement, the Parties agree to work cooperatively with one another to develop and implement the detailed procedures and programs necessary or appropriate to achieve the goals, purposes and intentions of this Agreement through a steering committee (the "Steering Committee"). The Steering Committee will meet on a regular basis, not less frequently than quarterly, at such locations as the Committee may determine.

(b) The Steering Committee will be comprised of two (2) representatives of each of the Parties; the initial members of the Steering Committee are listed on Exhibit 1. Each Party has the sole and exclusive right to remove and replace their respective representatives on the Management Committee at any time.

6. *Construction and Improvement Projects.* The Steering Committee will address, in addition to those matters described in Section 5 above, those improvements and upgrades to the Facilities that either Party may ~~desire~~ to be made in connection with the implementation of the First Tee

Exh F. to att 2

Program at the Facilities. Neither Party shall have any obligation to the other pursuant to this Agreement to undertake any particular improvement or upgrade unless and until the specifics of such improvement or upgrade have been agreed upon between the Parties in writing.

7. *Entry and Inspection Rights.* MGS agrees to permit, upon reasonable notice to MGS, FTF and/or FTS, and their respective accountants, representatives, attorneys and agents to have reasonable access to, or to enter the Facilities at any reasonable time without material interference, to examine and inspect the Facilities and its maintenance and operations as the same relate only to the First Tee Program.

8. *Indemnification.* MGS shall defend, indemnify and hold harmless FTS, FTF, WGF, and their respective officers, directors, employees, representatives and agents from and against all claims, losses, suits actions, causes of action, disputes, damages, liabilities, obligations or penalties, including, without limitation, all costs, charges, expenses and reasonable attorneys' fees (however incurred), arising out of the following: (a) any damage to property, or injury to, or death of persons occasioned by or in connection with the tortious acts, malfeasance, intentional misconduct or negligence of MGS or its agents, representatives, employees, officers or directors, or (b) the breach by MGS (or its agents, representatives, employees officers or directors) of any of its or their material duties and obligations under this Agreement. The obligations of MGS hereunder shall survive the expiration or earlier termination of this Agreement. These indemnification obligations shall not apply to any claims, losses, damages, obligations penalties or liabilities which may result or arise solely from the tortious acts, malfeasance or negligence of FTS, FTF, WGF (or any of their agents, representatives, employees, officers or directors).

9. *Insurance.* MGS shall maintain, at its sole cost and expense, the following policies of insurance: (a) insurance against loss or damage by fire or other casualties, including, but not limited to, vandalism and malicious mischief, within the meaning of "extended coverage", covering the Facilities in an amount sufficient to prevent FTS, FTF or WGF from becoming a coinsurer under the terms of the applicable policy, but in any event not less than one hundred percent

Exh F. to Att 2

(100%) of the full insurable value of the Facilities, (b) general comprehensive "all-risk" or "public liability" insurance for bodily injury or death or property damages occurring upon, in or about the Facility, covering FTS, FTF and WGF with minimum limits of Five Million Dollars ($5,000,000) for annual aggregate, Two Million Dollars ($2,000,000) for bodily injury or death for any one occurrence or accident and Two Million Dollars ($2,000,000) for property damage for any one occurrence or accident, (c) workers' compensation insurance for the Facilities' employees in accordance with applicable law, and (d) such other attainable insurance in such amounts as FTF may reasonable specify, except that the cost of such other insurance shall be borne by FTF, unless approved by MGS, in which case the cost shall be an expense of the Facilities. Each policy of insurance shall be in a form and amount and from a carrier acceptable in the industry or otherwise acceptable to FTF and shall name FTS, FTF and WGF as additional insureds. MGS also shall use reasonable efforts contractually to require all of its contractors, subcontractors or others performing any construction work at the Facilities to secure and maintain sufficient insurance of the types and with the limits set forth above, as reasonably required by FTF, and to name FTS, FTF and WFG as additional insureds. MGS shall provide FTS and FTF with copies of all insurance endorsements, certificates and policies, and all renewals thereof, evidencing the coverage required pursuant to this Agreement , and all paid receipts for such insurance from the insurers thereof.

10. *Termination.* Upon the occurrence of a material breach of a material provision of this Agreement, either Party may terminate this Agreement after providing the defaulting party with written notice specifying the nature of the default and the failure of the defaulting party to cure such default within ninety (90) days after receipt of such notice. Upon the expiration or any termination of the Operating Agreement, MGS will use all reasonable efforts to cause the City to honor the terms and conditions of this Agreement for the remaining term hereof.

11. *Notice.* Any notices which are required or may be given under this Agreement shall be delivered in person, by registered mail, return receipt requested, or by any nationally recognized overnight courier to the addresses of the Parties set forth below. Either party may change its address by notice given in the manner described in this Section.

Exh J. to att 2

12. *Assignability.* Neither Party shall assign any of its rights or obligations under this Agreement without the prior written consent of the other Party hereto; provided, that FTS shall be entitled to assign this Agreement, without the consent of MGS, to any not-for-profit affiliate of FTF or WGF.

13. *Third Party Beneficiaries.* This Agreement shall inure solely to the Parties and their respective successors and assigns.

14. *Amendments.* This Agreement may not be modified or amended except by the written agreement of the Parties hereto. No waiver of any right hereunder shall constitute a waiver of any the same or any other or future right of such Party.

15. *Governing Law.* This Agreement shall be governed by and construed under the laws of the State of Washington, without regard to Washington law regarding conflicts of laws.

16. *Attorneys' Fees.* In addition to any other remedy or recovery, the prevailing party in any action to interpret or enforce any of the provisions of this Agreement shall be entitled to recover its reasonable attorneys' fees and costs.

17. *No Agency.* Nothing in this Agreement shall be construed to create any agency or partnership between the Parties, and neither party has the right to bind the other party to any liability or obligation of any kind, except as expressly provided in this Agreement.

18. *Entire Agreement.* This Agreement constitutes the complete and entire agreement of the Parties with regard to the subject matter hereof, and there are no prior or contemporaneous agreements, written or oral, between the Parties with respect thereto.

IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first above written.

Exh J. to Att 2

MUNICIPAL GOLF SEATTLE,
A Washington non-profit corporation

By _____
Its Chair, Board - MGS

Address: 80 Yesler Way Suite 320
Seattle, WA 98104

SEATTLE JUNIOR GOLF FOUNDATION
dba FIRST TEE OF SEATTLE,
a Washington non-profit corporation

By _____
Its STEVE HALL, PRESIDENT

Address: 2340 Broadmoor Dr E.
Seattle, WA 98112

Ord J. to Att 2

ACTING CITY CLERK

Exhibit 1

The First Tee of Seattle
Use of Jefferson Park Facilities

18 Hole Course

April 1 – September 30
Fridays, Saturday & Sundays: Afternoon Hours
Monday – Friday: Early Bird Hours & 11 am – 2pm

October 1 – March 31
Monday – Thursday : No Tee Time in October and March. Anytime November – February.
Fridays, Saturdays and Sundays: Anytime

Par 3 Course

April 1 – September 30
Fridays, Saturdays, and Sundays: Afternoon Hours
Monday- Friday: Prior to 9:30 am

October 1 – March 31
Monday – Thursday: 3:00 pm or later in October and March
Anytime November – February.
Fridays, Saturdays and Sunday : Anytime

Driving Range

April 1 – September 30
Saturdays: Open until 9:00 am and 7:pm – Close
Sundays: Open until 9:00 am and 5:00 pm to Close
Mondays – Fridays: Open until 10:00 am , 2:pm-3pm or 7:00 pm to close

October 1 – March 31
Monday – Thursday : Open to 11:00 am, 1:00pm – 3:00pm or after 6:pm
Fridays, Saturdays and Sundays: Anytime

Front Practice Greens

April 1 – September 30
Sundays are best. Other days and times can be worked out with advanced notice except: Monday, Tuesday and Wednesday Mornings form 9:00 am – 12:00 pm

October 1 – March 31
Anytime

Exh f. to att 2

Rates at Jefferson Park

Green fees for Par-3 course for each First Tee Participant: $7.00
Green fees for18-hole course for each First Tee Participant: $13.00

Driving Range Access for First Tee Participants - Range Fee for a Bucket of Balls: $2.50

Steering Committee at Jefferson Park

MGS Representatives

Mr. Peter Guzzo, Director of Golf, Jefferson Park
Mr. Ron Gibbs , Executive Director, MGS

FTS Representatives

Ms. Cathy Wagner, Executive Director, Seattle Junior Golf Foundation
Director of Golf for The First Tee of Seattle

Exh F to att 2

Exhibit "B"
The First Tee Minimum Access Policy

The Chapter shall provide extraordinary access to golf for young people who are registered participants in The First Tee Program at the Facilities. This will include one-site instruction and dedicated times for access to the golf course, driving range, and short game and practice areas.

For Registered Participants in The First Tee Program: no less than 12 hours per week of junior programming at Jefferson Park, which shall include free group instruction, both on the driving range and in a Classroom setting. Classes shall include beginning, intermediate and advanced group instruction over a 4-month period. The Chapter shall also provide for each registered The First Tee participant access to 4 rounds of golf per month at Jefferson Park at a discounted rate. Use of the driving range, short game and practice areas shall also be provided at rates affordable to the participants.

In addition to The First Tee Program Curriculum, The chapter shall use its best efforts to plan, develop and implement programs and initiatives: for pre teen youths, for the disabled, including physically and mentally challenged participants, for the deaf, for disadvantaged inner-city groups and youths, particularly minorities, with local youth non profit groups, with area elementary and or middle schools, high schools and community colleges, to attract young people from across the designated area, and as the parties mutually designate.

Exh F to att 2

City of Seattle

Gregory J. Nickels, Mayor

Office of the Mayor

November 3, 2003

Honorable Peter Steinbrueck, President
Seattle City Council
City Hall, Second Floor

Dear Council President Steinbrueck:

On January 7, 2003, the Department of Parks and Recreation (DPR) and Municipal Golf of Seattle (MGS) agreed that the public would best be served by terminating the Golf Operations Agreement between MGS and the City that was authorized by Ordinance 117663. The attached proposed ordinance authorizes the Superintendent of Parks and Recreation to extend the Department's interim management contract for Interbay Golf Center with Premier Golf Centers, LLC for an additional year (through December 31,2004), and enter into an interim management contract with the same organization for the operation of Jefferson Park, Jackson Park, and West Seattle Golf courses. Additionally, the ordinance modifies the DPR's 2003 Adopted Budget by increasing its appropriation authority to reflect the new management structure for the three municipal golf courses. Finally, the legislation adds supplemental budget authority to the Jefferson Park - Driving Range Improvements project in DPR's Capital Improvement Program. This legislation will allow DPR to make a seamless transition in operating the City's three municipal courses following termination.

The management agreement with Premier Golf, LLC is modeled after a similar agreement the City had with Premier to manage Interbay Golf in 2001. Once a working capital account is funded by the City, the agreement allows for a management fee of $18,000 per month, plus a revenue based incentive to Premier Golf to manage the Jefferson Park, Jackson Park, and West Seattle golf courses. It also states that Premier Golf will provide for the financial operation of the courses with reimbursement coming from the City for Premier's golf related expenditures. Premier makes daily deposits of cash from course revenues into the City's bank account upon which reimbursement payments are drawn twice weekly.

Thank you for your consideration of this legislation. Should you have questions, please contact Herbye White at 684-7181.

Sincerely,

GREG NICKELS
Mayor of Seattle

cc: Honorable Members of the Seattle City Council

600 Fourth Avenue, 7th Floor, Seattle, WA 98104-1854
Tel: (206) 684-4000, TDD: (206) 684-8811 Fax: (206) 684-5360, Email: mayors.office@ci.seattle.wa.us

Sarah Welch
10/31/03
Parks Golf Ordinance / Budget Legislation
Version #:6

Form revised August 25, 2003

FISCAL NOTE FOR CAPITAL PROJECTS ONLY

Department:	Contact Person/Phone:	DOF Analyst/Phone:
Parks and Recreation	Sarah Welch/684-7303	Marilynne Gardner/233-5109

Legislation Title:
AN ORDINANCE relating to the City's municipal golf courses; authorizing the Superintendent of Parks and Recreation to extend and to enter into one or more management contracts for the operation of the City's municipal golf courses; increasing the 2003 Adopted Budget of the Department of Parks and Recreation to reflect a new management structure for the City's three eighteen hole golf courses; transferring money; and ratifying the assumption of unpaid financial obligations and lease arrangements from the former golf operator; all by a three-fourths vote of the City Council.

Summary of the Legislation:
The proposed legislation authorizes the Superintendent of Parks and Recreation to extend the Department's interim management contract for Interbay Golf Center with Premier Golf Centers, LLC and enter into a new management contract with the same organization for the operation of the City's three regulation golf courses (Jackson Park, Jefferson Park, and West Seattle). It also amends the Department of Parks and Recreation's (DPR) 2003 Adopted Budget by increasing its appropriation authority to reflect the new management structure for the three golf courses. The proposed appropriation is supported entirely by anticipated revenues from golf fees. DPR is now collecting all golf fee revenues and paying for all operating costs, including its own costs for maintaining the courses as well as a management fee paid to Premier to operate the courses. The proposed legislation also adds supplemental budget authority to CIP project K731184 Jefferson Park – Driving Range Improvements.

Background:
On January 7, 2003, via a Memorandum of Understanding, the Department of Parks and Recreation and Municipal Golf of Seattle (MGS) agreed that the public would best be served by terminating the Golf Operations Agreement between MGS and the City, dated June 30, 1995. The Memorandum of Understanding provided guidelines for the interim operation of the golf courses during the time period when the Termination Plan was finalized and executed. The transition to a new management arrangement was completed on July 14, 2003. This legislation allows DPR to effect a seamless transition in operating the three municipal courses following termination.

Project Name:	Project Location:	Start Date:	End Date:
Jefferson Park – Driving Range Improvements	4101 Beacon Ave. South.	2Q2003	3Q2004

- *Please check any of the following that apply:*

____ **This legislation creates or funds or anticipates a new CIP Project** *(Please note whether the current CIP is being amended through this ordinance, or provide the Ordinance or Council Bill number of the separate legislation that has amended/is amending the CIP)*

____ **This legislation does not have any financial implications.** *(Stop here and delete the remainder of this document prior to saving and printing.)*

__X__ **This legislation has financial implications.** *(Please complete the boxes below and all relevant sections that follow.)*

Appropriations:

Fund Name and Number	Department	Budget Control Level*	2003 Appropriation	2004 Anticipated Appropriation
Park and Recreation Fund (10200)	Parks and Recreation	Park Cleaning, Landscaping, and Restoration K3220	$2,300,000	
Park and Recreation Fund (10200)	Parks and Recreation	Golf (KTD)		$3,482,000*
Cumulative Reserve Subfund – REET I (00163)	Parks and Recreation	CIP Program K72553: Jefferson Golf Crew Headquarters	$ 125,000	$0
TOTAL			**$2,425,000**	**$3,482,000**

** A new Golf Budget Control Level is established in the DPR 2004 Proposed Budget to provide better financial management for the City's golf operations.*

Notes: The appropriation in the amount of $125,000 will help pay for lighting improvements related to CIP Project K731184 Jefferson Park – Driving Range Improvements.

Anticipated Revenue/Reimbursement:

Fund Name and Number	Department	Revenue Source	2003 Revenue	2004 Revenue
Park and Recreation Fund (10200)	Parks and Recreation	Golf Fee Revenues	$2,300,000	$3,482,000
TOTAL			**$2,300,000**	**$3,482,000**

Notes:

Spending Plan and Future Appropriations for Capital Projects:

Spending Plan and Budget (in 000's)	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Total**
Spending Plan	-	$125	-	-	-	-	**$125**
Current Year Appropriation	-	-	-	-	-	-	-
Future Appropriations	-	$125	-	-	-	-	**$125**

Key Assumptions:

The funds appropriated with this legislation allow the Department to complete the Jefferson Park Driving Range Improvement Project in the 2004 -2009 CIP (K731184).

Funding source (Identify funding sources including revenue generated from the project and the expected level of funding from each source): (in 000's)

Funding Source	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Total**
Golf Fee Revenues initially deposited into the Park and Recreation Fund and transferred to the Cumulative Reserve Subfund	$125						**$125**
TOTAL	**$125**						**$125**

Note:

Bond Financing Required: Not applicable.

Type	**Amount**	**Assumed Interest Rate**	**Term**	**Timing**	**Expected Annual Debt Service/Payment**
TOTAL					

Uses and Sources for Operation and Maintenance Costs for the Project: Not applicable.

O&M	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Total**
Uses							
Start Up							
On-going							
Sources (itemize)							

Key Assumptions:

There are no additional O&M costs as a result of this legislation.

Periodic Major Maintenance costs for the project (Estimate capital cost of performing periodic maintenance over life of facility. Please identify major work items, frequency):

Major Maintenance Item	Frequency	Cost	Likely Funding Source
TOTAL			

Funding sources for replacement of project (Identify possible and/or recommended method of financing the project replacement costs):

Total Regular Positions Created Or Abrogated Through This Legislation, Including FTE Impact: **Note:** A position to support the Department's increased financial management responsibilities under the new management structure is included in the Department's 2004 Proposed Budget.

Position Title*	Part-Time/ Full Time	2003 Positions	2003 FTE	2004 Positions**	2004 FTE**
TOTAL	0	0	0	0	0

- **Fund Name and Number:** _____
- **Department:** _____

* *List each position separately*
*** 2004 positions and FTE are total 2004 position changes resulting from this legislation, not incremental changes from 2003.*

- **Do positions sunset in the future?:** Not applicable.

- **What is the financial cost of not implementing the legislation**:
This legislation is required to maintain continuous operations and revenue streams at the City's three municipal courses during a management transition precipitated by the dissolution of the non-profit agency previously contracted to operate the courses.

- **What are the possible alternatives to the legislation that could achieve the same or similar objectives** *(Include any potential alternatives to the proposed legislation, including using an existing facility to fulfill the uses envisioned by the proposed project, adding components to or subtracting components from the total proposed*

project, contracting with an outside organization to provide the services the proposed project would fill, or other alternatives): None

- **Is the legislation subject to public hearing requirements:** No.

- **Other Issues** (*including long-term implications of the legislation*):
The Department is planning to conduct a formal request for proposals process in mid-2004 for management of all the City's golf courses including the Interbay facility and the three municipal courses (Jackson Park, Jefferson Park, and West Seattle).

STATE OF WASHINGTON – KING COUNTY

--ss.

166326
City of Seattle,Clerk's Office

No. 43,48,4951&52 TITLE ONLY

Affidavit of Publication

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12th day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

CT:121329,31,33,36,37,42

was published on

12/16/2003

MELISSA M. DOWD
NOTARY PUBLIC
STATE OF WASHINGTON
COMMISSION EXPIRES NOV. 21, 2007

Affidavit of Publication

Subscribed and sworn to before me on

12/16/2003

Notary public for the State of Washington,
residing in Seattle

State of Washington, King County

City of Seattle

TITLE-ONLY PUBLICATION

The full text of the following ordinances, passed by the City Council on November 24, 2003, and published here by title only, will be mailed upon request, or can be accessed electronically at http://clerk.ci.seattle.wa.us. For further information, contact the Seattle City Clerk at 684-8344.

ORDINANCE NO. 121352

AN ORDINANCE appropriating money to pay certain audited claims and ordering the payment thereof.

ORDINANCE NO. 121351

AN ORDINANCE relating to the City's municipal golf courses; authorizing the Superintendent of Parks and Recreation to extend and to enter into one or more management contracts for the operation of the City's municipal golf courses; increasing the 2003 Adopted Budget of the Department of Parks and Recreation to reflect a new management structure for the City's three eighteen hole golf courses; transferring money; and ratifying the assumption of unpaid financial obligations and lease arrangements from the former golf operator; all by a three-fourths vote of the City Council.

ORDINANCE NO. 121329

AN ORDINANCE relating to financing certain capital activities of Seattle Transportation; authorizing the creation of a City fund; and authorizing the loan of funds from the City's Consolidated (Residual) Cash Pool, or its participating funds, to the new fund.

ORDINANCE NO. 121333

AN ORDINANCE adopting a budget, including a capital improvement program and position list, for the City of Seattle for fiscal year 2004.

ORDINANCE NO. 121336

AN ORDINANCE relating to, and providing for, the disposition of certain monies seized and forfeited, and the disposition of proceeds from the sale of goods and materials seized and forfeited, pursuant to the Uniform Controlled Substances Act; accepting such forfeitures and appropriating such monies to reimburse expenses incurred by the Police and Law Departments to expand Police and Law Department programs that enforce controlled substance and other drug enforcement laws; transferring to the State its required share of the value of such forfeitures; and increasing the 2004 Budgets of the Police and Law Departments; all by a three-fourths vote of the City Council.

ORDINANCE NO. 121337

AN ORDINANCE relating to and providing for the disposition of certain monies seized and forfeited, and for the proceeds of the sale of goods and materials seized and forfeited, pursuant to the Money Laundering Act, RCW 9A.83; accepting such forfeitures; appropriating such monies to reimburse expenses incurred by the Police Department to expand Police Department programs that enforce controlled substances-related laws in accordance with RCW 9A.83; transferring to the State its required share of the value of such forfeitures; and increasing the 2004 Budget of the Police Department; all by a three-fourths vote of the City Council.

ORDINANCE NO. 121343

AN ORDINANCE relating to City employment, establishing new titles and/or salaries for use in various departments; specifying the effective date for the implementation of the Finance and Accounting Titles Study.

ORDINANCE NO. 121342

AN ORDINANCE relating to the provision of services including shelter to people who are homeless; authorizing the transfer of funds from the H.H. Dearborn Trust to the General Subfund; and authorizing the execution of an agreement with the Downtown Emergency Service Center for emergency shelter and related services for people who are homeless.

ORDINANCE NO. 121348

AN ORDINANCE authorizing, in 2003, acceptance of funding from non- City sources; authorizing the Seattle Fire Department, Seattle Municipal Court, the Seattle Police Department, the Office for Civil Rights, the Department of Neighborhoods, the Department of Parks and Recreation, the Office of Arts and Cultural Affairs, and the Office of Housing to accept specified grants and private funding.

ORDINANCE NO. 121331

AN ORDINANCE, relating to City employment, to be known as the 2004 Pay Zone Ordinance, which adjusts the pay zone structures for the City's discretionary pay programs for the year 2004; and authorizes use of pay zones for out-of-class assignments in discretionary pay programs.

ORDINANCE NO. 121349

AN ORDINANCE amending the 2003 Budget and the 2003-2008 Capital Improvement Program; changing appropriations to various departments from various funds in the 2003 Budget; and making cash transfers between various City funds and subfunds; all by a three-fourths vote of the City Council.

Publication ordered by JUDITH PIPPIN, City Clerk.

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