



## **Job Demands Analysis** **TURF MAINTENANCE WORKER**

### **JOB FUNCTION & SCHEDULE**

<b>Job Title:</b>	<b>Turf Maintenance Worker</b>
<b>Essential Job Functions:</b>	Operate and perform minor servicing and maintenance of mid-size utility tractors with specified attachments involved in the maintenance of grass and artificial fields. The work performed is involved with the cultivation, rehabilitation, maintenance and repair of a variety of large grass areas and playing fields (both artificial turf and natural turf).
<b>Hours of work:</b>	7:00 a.m. until 4:30 p.m.
<b>Breaks:</b>	Two 10-minute breaks, one 39-minute break daily.
<b>Shifts:</b>	9-day fortnight (5 consecutive work shifts, week-one; 4 consecutive work shifts, week-two).

### **ENVIRONMENTAL CONDITIONS**

<b>Workstation Description:</b>	Utility tractor: air-conditioned and enclosed cab. Predominantly outdoor work environments.
<b>Lighting:</b>	Predominantly outdoor lighting.
<b>Weather:</b>	Regular exposure to the elements when working outside.
<b>Terrain:</b>	Level or uneven, paved or unpaved outdoor terrain.
<b>Biological Hazards:</b>	<u>Blood/body fluids and/or animal waste:</u> Possible exposure when hand-cleaning/inspecting artificial fields. <u>Hypodermic needles:</u> Possible exposure when hand-cleaning/inspecting artificial fields.
<b>Chemical Hazards:</b>	<u>Turf maintenance chemicals/additives:</u> Exposure to fertilizers, lime, "weed and feed", "turface", silica sand, crumb-rubber. <u>Tractor maintenance products:</u> Grease, fuel, oil.
<b>Physical Hazards:</b>	<u>Vibration:</u> Vibration exposure when driving on rough roads (e.g., to and from fields) and when sod-cutting. Variable exposure patterns. <u>Moving parts:</u> Risk of exposure to moving parts/mechanisms when

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*inspecting/operating the tractor, changing implements.  
Dust: Work is performed in dusty environments at times.*

<b>ESSENTIAL WORK TASKS</b>
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*Frequency: N/A: not done; Rare 0-5%; Occasional 6-33%; Frequent 34-66%, Constant 67-100%*

<i>Frequency</i>	<i>Description</i>
<b>1. Occasional</b>	<b>Perform Pre- and Post-Trip Inspections and Maintenance Tasks:</b> <i>Ensure the safe operation of the vehicle via performing pre- and post-trip inspections. These actions involve accessing the engine compartment, inspecting tires and other vehicle components, checking brakes, implement-operations etc. Occasionally perform maintenance operations such as changing tines on aerator implements, greasing tractor components and fueling.</i>
<b>2. Frequent</b>	<b>Operate Vehicle:</b> <i>Safely drive the automatic transmission vehicle to/from worksites and over fields (e.g., to spread chemicals, seeds and alter ground/turf characteristics). Incorporates regularly gazing backward to ensure/gauge optimal path-of-travel.</i>
<b>3. Occasional</b>	<b>Load Spreading Devices:</b> <i>Load spreading devices (such as broadcasters, hoppers, over-seeders) via repetitious lifting.</i>
<b>4. Occasional</b>	<b>Attach, Detach and Calibrate Implements:</b> <i>Ensure safe/optimal operation of vehicle via effectively attaching and detaching implements to/from the tractor. Typically performed about 2 to 3 times per shift. Implements are calibrated via hand-tool applications.</i>
<b>5. Occasional</b>	<b>“On-Foot” Field Repair Duties and General Clean-Up Duties:</b> <i>Perform shoveling and raking actions to achieve repair of fields (relatively brief exposures). Pick up refuse (tree-limbs, garbage etc.). Push/guide spreading and cutting devices (sod-cutter, spreader, broadcaster) over fields (some are “self-propelled”). Push/pull rolls of turf.</i>

<b>TOOLS &amp; EQUIPMENT USED</b>
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- **Tractors:**
  - *Mid-size utility tractors.*
  - *One front-end loader model (e.g., for snow removal duties).*
- **Implements:**
  - *Examples include: roller, aerator, broadcaster, over-seeder, roto-tiller, float, ty-crop, bunton, drag-mat). Occasionally will attach chains (e.g., to drag trees).*
- **Various hand tools:**
  - *wrenches, ratchets, sledge hammers, crowbars, screwdrivers, box-cutters*
  - *lutes, shovels, rakes, brooms*
- **Various power tools:**
  - *Chainsaws (rare)*
  - *Leaf blowers/vacuums (for artificial turf)*
- **2-Way Radio**

**Personal protective equipment:**

- *Hard hat*
- *Steel toed footwear*
- *Respirators*
- *Safety glasses*
- *Dust masks*
- *Safety cones*
- *Gloves*
- *Coveralls*

**PSYCHOSOCIAL & COGNITIVE REQUIREMENTS**

<b>Degree of Self-Supervision / Accountability:</b>	<i>Frequent self-supervision required (supervisor occasionally provides work direction).</i>
<b>Supervision of Others:</b>	<i>No supervisory responsibility.</i>
<b>Performance Pressure (machine or other):</b>	<i>Time pressure is moderate: there is some pressure to meet deadlines or work within time constraints. The volume of work is high at times. Duties and pace of work vary somewhat seasonally (e.g., decreased fertilizing/top-dressing responsibilities from August until February).</i>
<b>Attention to Detail:</b>	<i>Significant attention to detail or concentration required for many tasks.</i>
<b>Multi-Tasking:</b>	<i>Some responsibility for multiple tasks, but with very clear guidelines or cues about when to perform each task.</i>
<b>Level of Collaboration:</b>	<i>Required to work in co-operation with others for some tasks.</i>
<b>Working with Public (emotional or confrontational):</b>	<i>Infrequent exposure (approx. monthly) to emotionally stressful circumstances or emotionally distressed individuals with whom the worker must interact in order to complete job requirements.</i>
<b>Literacy:</b>	<i>Moderate reading and writing ability is required, e.g., to follow written instructions and maintain records.</i>
<b>Communication Skills:</b>	<i>Basic communication skills are required to comprehend and communicate information at a basic level within well defined parameters e.g. communicate status of job or job task with supervisor.</i>
<b>Memory Skills:</b>	<i>Basic memory ability is required to recall information that is applied to work tasks on a regular basis.</i>

**MOBILITY & POSTURAL DEMANDS**

*Frequency: N/A: not done; Rare 0-5%; Occasional 6-33%; Frequent 34-66%, Constant 67-100%*

<b>Demand</b>	<b>Frequency</b>	<b>Description</b>
<b>Reaching*</b>	<b>F</b>	<i>Frequent inner range forward reaching to operate vehicle controls. Occasional outer-range reaching (e.g., using</i>

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*hand-tools, calibrating implements). Maximum reaching height: to 71 inches/180 cm to grasp upper edge of Ty-Crop implement to facilitate pulling self up when viewing contents.*

<b>Handling/Gripping</b>	<b>F</b>	<i>Handle tools and equipment. Grip steering wheel and other tractor controls. Grip bags of material (seeds, fertilizer) to facilitate lifting/loading actions.</i>
<b>Fingering</b>	<b>O</b>	<i>Operate vehicle and 2-way radio controls.</i>
<b>Sitting</b>	<b>F-C</b>	<i>Drive tractor. Fixed seat. Variable durations. May be continuous between rest breaks.</i>
<b>Standing/Walking*</b>	<b>O-F</b>	<i>Dynamic standing and brief walking during pre- and post-trip inspections, field-inspections, when attaching or detaching or calibrating implements. Relatively rare prolonged durations of standing/walking (frequent) when leveling fields by hand (e.g., via using a lute).</i>
<b>Climbing</b>	<b>O</b>	<i>Step up into and down from tractor or onto wheel of Ty-Crop implement (to 28 inches/71 cm).</i>
<b>Stooping*</b>	<b>O</b>	<i>Mild to moderate stooping during pre- and post-trip inspections and when accessing under tractor to perform low-inspections (brakes, tires etc). Moderate stooping when attaching implements or greasing tractor parts, or during (typically brief) shoveling tasks and other field hand-repair duties. Typically brief exposures with regular posture changes.</i>
<b>Twisting</b>	<b>O-F</b>	<i>Prolonged exposures (twisting to the right on a fixed seat) to backward gazing to ensure/gauge optimal path-of-travel (when dragging implements or attaching tractor to implements). Typically brief exposures occur when shoveling: intermittent for less than 5 minutes.</i>
<b>Low Postures: crouching, kneeling, crawling</b>	<b>O</b>	<i>Crouch or kneel during pre- and post-trip inspections to access under tractor and perform low-inspections (brakes, tires etc.) and when attaching/detaching or calibrating implements. May crawl on back for close inspection of hoses.</i>
<b>Balancing</b>	<b>Rare</b>	<i>Step onto a tire (potential slippery surface) and pull self up onto narrow base of support (to gauge contents of the Ty-Crop implement).</i>
<b>Driving</b>	<b>F-C</b>	<i>Operate utility tractor on both paved (city streets) and unpaved (fields) surfaces.</i>
<b>Hand/Foot Control</b>	<b>F-C</b>	<i>Operate utility tractor: left and right foot pedals.</i>

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<b>Awkward Postures</b>	<b>O</b>	<i>Twisting actions (predominantly twisting to the right, which allows quicker access to a disengaging-mechanism and better sight-lines when backward gazing).</i>
<b>Talking</b>	<b>O</b>	<i>Communicate with supervisors, City of Richmond staff, other workers etc.</i>
<b>Hearing</b>	<b>C</b>	<i>To communicate, to safely operate vehicle.</i>
<b>Tasting</b>	<b>N/A</b>	<i>Not required.</i>
<b>Smelling</b>	<b>N/A</b>	<i>Not required.</i>
<b>Near Acuity</b>	<b>C</b>	<i>Vehicle operation.</i>
<b>Far Acuity</b>	<b>C</b>	<i>Vehicle operation.</i>
<b>Depth Perception</b>	<b>C</b>	<i>Vehicle operation.</i>
<b>Accommodation</b>	<b>C</b>	<i>Vehicle operation.</i>
<b>Color Vision</b>	<b>C</b>	<i>Vehicle operation.</i>

*\*NB: inner-range reaching: within a forearm's reach; outer-range reaching: the arm extends forward & away from the body; vertical reaching: reaching above shoulder level. Mild stooping = up to approximately 20 degrees of flexion at the waist; moderate stooping = between approximately 20 and 45 degrees of flexion at the waist; severe stooping = greater than approximately 45 degrees of flexion at the waist.*

<b>STRENGTH DEMANDS</b>
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<b>Demand</b>	<b>Frequency</b>	<b>Description</b>
<b>Lifting/Carrying</b>	<b>O</b>	<i>Concentrated exposures to repetitious lifting (two workers load 100 to 150 bags of seed or fertilizer into a spreading-device); performed within a 45 minute to 1 hour time period typically. Workers typically lift bags without assistance. Bags weigh 55 lbs/25 kg; lift to 44 inches/112 cm (lip of broadcaster) or 49 inches/124 cm (lip of overseeder). Carry tools equipment: less than 10 lbs/4.5 kg. Shovel small loads (less than 10 lbs/4.5 kg).</i>
<b>Pushing/Pulling</b>	<b>O</b>	<i>Push/pull upward on roller when attaching: 55 lbs/25 kg. Torque hand tools (calibrate implements): less than 20 lbs/9 kg force).</i>

**Overall Strength Category** (per the Dictionary of Occupational Titles):

**Heavy:** Exerting 50-100 lbs. of force occasionally, and/or 25-50 lbs. of force frequently, and/or 10-20 lbs. of force constantly to move objects.