

# CITY OF VICTORIA

## PHYSICAL DEMANDS ANALYSIS

Effective Date: Aug. 13, 2007

<b>Job Title:</b>	Parks Maintenance Worker	<b>Date of Job Site Visit:</b>	August 13, 2007
<b>Department:</b>	Parks Operations	<b>On-Site Contact Person(s):</b>	Mike Matthews (Manager)
<b>Location:</b>	Various City Parks, Trails, Playgrounds, Sports Fields	<b>Classification:</b>	Regular Duty

### **POSITION FUNCTION**

The Parks Maintenance Worker is responsible for the repair and regular maintenance of parks, trails, playgrounds, and sports fields within the City of Victoria. This involves a vast array of tasks including (but not limited to) the following:

- lawn / garden planting & care
- trail maintenance
- minor landscaping
- raking / backpack blowing of leaves
- litter pick-up
- snow removal (e.g. park sidewalks)
- installation of barriers / gates / fences
- repair / installation of park benches
- repair / installation of drinking fountains
- repair / installation of bicycle racks
- repair / installation of signage (e.g. park, trail, etc.)
- repair / installation of playground equipment
- repair / installation of sports field equipment (e.g. bleachers, goal posts, tennis nets / courts, etc.),

**CREWS** - Parks Maintenance Workers may work within one or more of the following work crews:

- Horticulture Crew
- Aboriculture Crew
- Turf Crew
- Nursery Crew
- Construction / Irrigation Crew
- Cemetery Crew

### **TOOLS & EQUIPMENT**

The Parks Maintenance Worker uses the following tools / equipment to perform his/her duties:

- Vehicles – ½ ton, ¾ ton, and 1 ton trucks (some with dump-box)
- Hand Tools – shovels, rakes, hand saws, hack saws, sledge hammers, claw hammers, rubber mallets, loppers, picks, pry bars, bolt cutters, axes, pitch forks, files, wrenches, pliers, screw drivers, socket sets, vice grips, pipe cutters, bolt cutters, wire cutters, utility knives, edgers, garden shears, wheelbarrows, clamps, spray paint, bungee straps, chains, ropes
- Power Tools – chain saws, push lawnmowers, riding lawnmowers, weed eaters, backpack blowers, drills, circular saw, electric jackhammer
- Clean-Up Tools – push brooms, corn brooms, hoses, sponges, buckets, scrapers
- Miscellaneous Hardware – nuts, bolts, nails, screws, washers, fencing ties, tape measures
- Chemicals – oil / gas mixtures, gasoline in jerry cans
- Ladders – stepladders and 6 / 8 / 10 / 12-foot extension ladders
- Safety Equipment – leather gloves, latex gloves, safety footwear, dust masks, safety glasses, ear plugs (as needed), reflective vests, reflective tape, flashlight, first aid kit, sharps container

PDA Parks Maintenance Worker

**USUAL METHODS** – (note: this is only a general overview as job demands vary widely)

1. Drive to work site location.
2. Traffic control as needed (Note: this is not provided by Parks Maintenance Worker, as it must be provided by members of the Public Works Dept, or by an individual within Parks Operations who has taken formal 'traffic control' training).
3. Unload necessary tools and equipment to perform job tasks.
4. Perform job tasks (examples provided previously in 'Position Function' section).
5. Clean up work site upon completion of job task(s).
6. Load tools and equipment back into work vehicle.
7. Drive to next location and repeat steps 2 - 6.

**ADMINISTRATIVE ISSUES**

The shift for these Parks Maintenance Workers extends from 07:00 am to 15:30 pm. Shifts are scheduled Monday to Friday, and the workers receive two 15-minute rest periods, and one 30-minute lunch break during each shift. This position may be classified as full-time permanent, seasonal, or auxiliary; with April to November representing the busiest months of the year for Parks Operations. Any repairs or mechanical maintenance that vehicles or power equipment require is completed within the Parks Operations mechanical shop.

**WORK ENVIRONMENT**

**Physical Effort:**

Lift and move moderate to heavy equipment and materials (occasional basis)

**Mental Effort:**

Within normal limits

**Visual / Auditory Effort:**

Within normal limits

**Work Environment:**

- \*Work outside (frequent to continuous)
- Work inside (rare, e.g. caretaking of public washrooms in parks / playgrounds)
- Exposure to equipment noise (occasional to frequent, e.g. lawn mowers, weed eaters, backpack blowers, etc.)
- Exposure to equipment vibration (occasional to frequent, e.g. lawn mowers, weed eaters, backpack blowers, etc.)
- Exposure to exhaust fumes, airborne particulates – dust / grass clippings (occasional to frequent)

\*Note: the environmental conditions can considerably alter the degree of challenge of this job. It is possible to be exposed to widely varying conditions, including:

- extremely hot conditions (i.e. with implications for dehydration, sunburn, and heat stroke)
- extremely wet conditions (i.e. with implications for less reliable footing, increased lifting loads due to water-logging effect on leaves / turf / litter bags, increased awkwardness of lifting due to slipperiness of garbage bags / turf / potted plants , and a need for higher grip forces due to increased loads and slipperiness)
- extremely cold conditions (i.e. with implications for less reliable footing as noted above due to snow / ice, increased awkwardness of lifting as noted above due to slipperiness of items, and a need for higher grip forces as noted above due to slipperiness of items)

## **KEY SKILLS AND ABILITIES**

- Understand and discuss job-related matters.
- Operate a variety of light industrial equipment and vehicles.
- Operate hand tools and light power tool equipment.
- Establish and maintain effective working relationships.
- Deal with the public in a courteous and tactful manner.
- Work safely on widely varying job sites (i.e. city parks, trails, playgrounds, sports fields, etc.).

## **INDEPENDENCE**

- Level of independence when completing work tasks can vary widely (i.e. depending on crew, and work tasks being completed), and may range from fully independent to fully supervised.
- Work is completed according to an assigned schedule set by supervisor.
- Work quality is reviewed by leadhand / supervisor on a regular basis.
- Problems (e.g., an inability to complete certain tasks, malfunctioning tools / power equipment, etc.) or complaints are referred to leadhand / supervisor.

## **QUALIFICATIONS**

### **Formal Education, Training and Occupational Certification:**

- Grade 10 education minimum, and
- Current and valid Class 5 B.C. Driver's Licence

### **Experience:**

- 1 year of related experience ... or ...
- an equivalent combination of education and experience.

## PARKS MAINTENANCE WORKER SUMMARY TABLE

JOB TASK	TASK DETAILS	
<b>Lifting</b> Floor to Waist	<b>Max</b> = 60 lbs (rare, when lifting wooden beams serving as parking barriers)  <b>Avg</b> = 10 - 30 lbs (occasional to frequent)	
	e.g. Lifting of various items, including (but not limited to) the following: <ul style="list-style-type: none"> <li>two workers lifting 4" X 10" X 16 ft. 120 lb wooden parking barrier (60 lbs/person),</li> <li>25 kg bag of fertilizer (55 lbs),</li> </ul>	<ul style="list-style-type: none"> <li>25 kg bag of lime (55 lbs),</li> <li>box of garbage bags (21 lbs),</li> <li>flats of flowers (5 - 10 lbs).</li> </ul>
<b>Lifting</b> Waist to Shoulder / Head	<b>Max</b> = 55 lbs (rare, four-person lift of steel park bench into pick-up truck bed)  <b>Avg</b> = 10 - 20 lbs (occasional)	
	e.g. Lifting of various items, including (but not limited to) the following: <ul style="list-style-type: none"> <li>four workers lifting a 220 lb steel park bench (55 lbs/person) onto pick-up truck bed, such that workers' gripping hands travel between waist and shoulder / head level,</li> <li>hanging flower basket (50 lbs wet, 25 lbs dry) lifted to shoulder / head level using 'pogo' stick,</li> </ul>	<ul style="list-style-type: none"> <li>four workers lifting a 190 lb wooden picnic table (48 lbs/person) into pick-up truck bed, such that workers' gripping hands travel between waist and shoulder / head level,</li> <li>box of garbage bags (21 lbs) lifted onto high storage shelf.</li> </ul>
<b>Lifting</b> Floor to Shoulder / Head	<b>Max</b> = 50 lbs (occasional, passing hanging flower basket to another worker up on a ladder who will guide the basket onto an elevated hook)  <b>Avg</b> = 10 - 20 lbs (occasional)	
	e.g. Lifting of various items, including (but not limited to) the following: <ul style="list-style-type: none"> <li>hanging flower basket (25 lbs dry, 50 lbs wet) lifted to shoulder / head level using 'pogo' stick,</li> <li>box of garbage bags (21 lbs) lifted onto high storage shelf.</li> </ul>	

<b>Carrying</b>  Two-Handed	<b>Max</b> = 60 lbs (rare, when carrying wooden beams serving as parking barriers)  <b>Avg</b> = 10 - 30 lbs (occasional to frequent)	
<b>Carrying</b>  One-Handed	e.g. Bilateral Carrying of various items, including (but not limited to) the following: <ul style="list-style-type: none"> <li>two workers carrying 120 lb 4" X 10" X 16 ft. wooden parking barrier (60 lbs/person) over a distance of 30 feet,</li> <li>four workers carrying 220 lb steel park bench (55 lbs/person) over a distance of 15 feet,</li> <li>25 kg bag of fertilizer (55 lbs) carried over a distance of 20 feet,</li> </ul>	<ul style="list-style-type: none"> <li>25 kg bag of lime (55 lbs) carried over a distance of 20 feet,</li> <li>four workers carrying 190 lb wooden picnic table (48 lbs/person) over a distance of 50 feet,</li> <li>box of garbage bags (21 lbs) carried a distance of 50 feet,</li> <li>flats of flowers (5 - 10 lbs) carried a distance of 50 feet.</li> </ul>
	e.g. Unilateral Carrying of various items, including (but not limited to) the following: <ul style="list-style-type: none"> <li>5-gallon bucket half-full of sand (30 lbs) carried a distance of 100+ feet,</li> <li>full bag of garbage (25 lbs) carried a distance of 100+ feet when emptying garbage cans within parks / playgrounds / sporting venues / along trails.</li> </ul>	
<b>Pushing</b>	<b>Max</b> = 25 lbs of <u>force</u> (rare, when pushing wooden picnic table onto pick-up truck bed for transport)  <b>Avg</b> = less than 10 lbs of sustained pushing <u>force</u> (frequent, when pushing self-propelled equipment such as lawn mowers, roto-tillers, turf-cutters, etc.)	
	e.g. Pushing associated with varied tasks, including (but not limited to) the following: <ul style="list-style-type: none"> <li>two workers pushing wooden picnic table onto pick-up truck bed (25 lbs of <u>force</u> per person),</li> <li>varied but moderate force required to push wheeled trolley-cart in transport of potted plants,</li> <li>varied but moderate force required with wheelbarrow usage,</li> </ul>	<ul style="list-style-type: none"> <li>varied but low force required for pushing of roto-tiller,</li> <li>varied but low force required for pushing of spreader,</li> <li>varied but low force required for pushing of lawn mower,</li> <li>varied but low force required for pushing of turf -cutter.</li> </ul>

<b>Pulling</b>	<b>Max</b> = 59 lbs of <u>force</u> (rare, when pulling / dragging large planter onto dolly)  <b>Avg</b> = 10 - 40 lbs of pulling <u>force</u> (rare)	
	e.g. Pulling associated with varied tasks, including (but not limited to) the following: <ul style="list-style-type: none"> <li>pulling / dragging large planter holding a 200+ lb banana tree over a 1 - 2 foot distance, in order to slide the planter onto a dolly for transport (59 lbs <u>force</u>),</li> </ul>	<ul style="list-style-type: none"> <li>tipping large 200+ lb banana tree planter onto its edge for rolling into position (44 lbs <u>force</u>),</li> <li>two workers pulling wooden picnic table off of pick-up truck bed (25 lbs of <u>force</u> per person).</li> </ul>
<b>Reaching</b> Above Shoulder	<b>Max Duration</b> = 5 seconds (rare)	
	e.g. Reaching: to above shoulder level when accessing a high storage shelf.	
<b>Reaching</b> Below Shoulder	<b>Frequency</b> = Frequent to Constant	
	e.g. Reaching: to low levels during the vast majority of job tasks.	
<b>Neck Motion</b> - Flexion (look down) - Extension (look up) - Rotation (side turn)	Flexion: Max Duration = 5 seconds to several minutes (i.e. widely varying)  Extension: Max Duration = 15 seconds  Rotation Max: Duration = 5 sec	
<b>Sitting</b>	<b>Max Portion of Shift</b> = 6 hours of shift (frequent to continuous, when working on Turf Crew if using riding lawn mower all day)  <b>Max Sustained Duration</b> = 2.5 hours sustained (i.e. steady use of riding lawn mower until break-periods)	
	e.g. Sitting while: <ul style="list-style-type: none"> <li>using riding equipment (e.g. riding lawn mower),</li> <li>driving between work sites within city.</li> </ul>	

<b>Standing / Walking</b>	<p><b>Max Portion of Shift</b> = 6 hours of shift (frequent to continuous, while performing a vast array of job demands that require workers to remain on their feet)</p> <p><b>Max Sustained Duration</b> = 2.5 hours sustained (i.e. remaining on one's feet until break periods)</p>	
<b>Climbing</b> Ladders	<p><b>Max</b> = 6 ladder rungs (rare, using ladder to change or repair signs along trails / parks when working on Construction Crew)</p> <p><i>Note: climbing of <u>stairs</u> is not a component of this job.</i></p>	
<b>Bending / Stooping</b>	<p><b>Max Portion of Shift</b> = 4 - 6 hours of shift (occasional, when working on Horticulture / Turf Crews)</p> <p><b>Max Sustained Duration</b> = 5 minutes sustained (i.e. period of bending, followed by brief period of straightening up, then a return to bending posture)</p> <p><b>Bending Depth</b> = 2 inches to 2 feet above ground-level</p> <p><i>Note: squatting / kneeling are acceptable postural substitutions for bending during certain Parks Maintenance Worker job-task scenarios.</i></p>	
	e.g. Bending during various tasks, including (but not limited to) the following: <ul style="list-style-type: none"> <li>• weeding,</li> <li>• hoeing,</li> </ul>	<ul style="list-style-type: none"> <li>• planting flower beds,</li> <li>• using long-handled cultivator.</li> </ul>
<b>Ground Level Postures</b> (i.e. Kneeling and/or Squatting)	<p><b>Max Portion of Shift</b> = 4 - 6 hours of shift (occasional, when working on Horticulture / Turf Crews)</p> <p><b>Max Sustained Duration</b> = 5 - 10 minutes sustained (i.e. period of kneeling / squatting, followed by brief period of standing up or walking, then a return to kneeling / squatting posture)</p> <p><i>Note: bending is an acceptable postural substitution for kneeling / squatting during certain Parks Maintenance Worker job-task scenarios.</i></p>	
	e.g. Kneeling / Squatting during various tasks, including (but not limited to) the following: <ul style="list-style-type: none"> <li>• weeding,</li> <li>• hoeing,</li> </ul>	<ul style="list-style-type: none"> <li>• planting flower beds,</li> <li>• using long-handled cultivator.</li> </ul>

<b>Sweeping / Mopping</b>	<b>Max Duration</b> = 3 minutes sustained (rare)	
	e.g. Sweeping / Mopping during the following tasks: <ul style="list-style-type: none"> <li>• using a push-broom to clean dirt off sidewalk upon completion of other Parks-related job tasks,</li> </ul>	<ul style="list-style-type: none"> <li>• Caretaker sweeping washrooms in parks using corn broom X 3 min.,</li> <li>• Caretaker wet-mopping washrooms in parks X 3 min.</li> </ul>
<b>Raking</b>	<b>Max Portion of Shift</b> = 4 hours of shift (occasional, when working on Horticulture / Turf Crews as part of process of flower beds / turf prep)	
	<b>Max Sustained Duration</b> = 15 minutes sustained (i.e. period of raking, followed by alternating with another job task, then a return to raking)	
	e.g. Raking during the following: <ul style="list-style-type: none"> <li>• raking flower beds when working on Horticulture Crew,</li> <li>• raking in preparation for laying new turf when on Turf Crew,</li> </ul>	<ul style="list-style-type: none"> <li>• raking of ball diamonds when on Turf Crew,</li> <li>• raking of wet leaves when working on Horticulture / Turf Crews.</li> </ul>
<b>Shovelling</b>	<b>Max Portion of Shift</b> = 3.5 hours of shift (occasional, shovelling of mulch when working on Horticulture Crew at various parks / trails throughout city)	
	<b>Max Sustained Duration</b> = 5 - 10 minutes sustained (i.e. period of shovelling mulch, followed by alternating with another job task or driving to another work site, then resume shovelling / mulching)	
	e.g. Shovelling during the following: <ul style="list-style-type: none"> <li>• Horticulture Crew - shovelling mulch,</li> <li>• Turf Crew – shovelling of topsoil (e.g. off back of truck bed),</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation Crew - shovelling when back-filling ditches / trenching,</li> <li>• Construction Crew - shovelling sand when setting up playground equipment (setting footings, etc.).</li> </ul>