

Job Demands Analysis – SPORTS FIELD INSPECTION (PARK BOARD)

Purpose

The purpose of the job of a Sports Field Inspector working for the City of Vancouver's Parks & Recreation Department is to inspect sports fields and parks for holes dug by dogs or around irrigation heads. Depending on the size of the holes and employee's restrictions, they will report the hole to the foreman, mark the holes with flags or fill the holes themselves with sand.

Essential Duties

The Sports Field Inspectors has 2 essential duties:

- Duty #1 Drive truck to the assigned area or route.
- Duty #2 Report, mark or fill holes in sports field / park.

Description of Non-essential Tasks

None

Summary of Demands

| | Sedentary | Light | Medium | Heavy | Very Heavy | Comments |
|------------------|-----------|-------|--------|-------|------------|--------------------------------|
| Physical | | ✓ | | | | Based on strength requirements |
| Cognitive | | | | ✓ | | Based on driving requirements |

Workers require physical **endurance** to:

- Continuously stand and walk (85 % of their shift)

Shift Structure

Sports Field Inspectors work 7:00 am to 3:30 pm during the Fall, Winter and Spring months and 6:30 am to 3:00 pm during the Summer months. They get a 30 minute meal break and two 10 minute rest breaks.

Frequency Rating Definitions *

The frequency rating definitions are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor.

| | Time per Day | Percentage of Shift |
|-------------------|------------------------|----------------------------|
| Never | 0 minutes | 0 % |
| Rare | 0 - 5 minutes | 0-1 % |
| Infrequent | 6 - 25 minutes | 2-5 % |
| Occasional | 26 minutes – 2.5 hours | 6-33 % |
| Frequent | 2.6 - 5.25 hours | 34-66 % |
| Constant | 5.26 - 8 hours | 67-100 % |

| STRENGTH | |
|--------------------------|-----------------------|
| Strength Category | Weight Handled |
| 1. Limited | Up to 5 kg. |
| 2. Light | 5 kg. to 10 kg. |
| 3. Medium | 10 kg. to 20 kg. |
| 4. Heavy | >20 kg |

Job Demands Analysis – Sports Field Inspection: Summary Table

| a. Physical Demands | | Frequency During Shift * | | | | | Weight | | Comments | |
|---------------------|----------------------------|--------------------------|------|------------|------------|----------|----------|------------|----------|---|
| | | Never | Rare | Infrequent | Occasional | Frequent | Constant | Usual (kg) | | Max (kg) |
| Strength | Lifting – Floor to Knuckle | | | | ✓ | | | 4.5 | 10 | D2 - Lifting bucket of sand off floor |
| | Lifting – Knuckle to Waist | | | | ✓ | | | 4.5 | 10 | D2 - 1-handed lifting of bucket - can minimize weight by making frequent trips to sand pile / truck |
| | Lifting – Over Shoulder | ✓ | | | | | | | | |
| | Carrying – with Handles | | | | ✓ | | | 4.5 | 10 | D2 - Bucket with handle |
| | Carrying – without Handles | ✓ | | | | | | | | |
| | Pushing – Upper Extremity | ✓ | | | | | | | | |
| | Pushing – Hips/Legs assist | ✓ | | | | | | | | |
| | Pulling – Upper Extremity | ✓ | | | | | | | | |
| | Pulling – Hip/Leg Assist | | | | ✓ | | | | | D2 - Pushing wheelbarrow with sand to fill hole |
| Mobility | Reach - Shoulder or Above | | | ✓ | | | | | | D1 - With right arm to put on seat belt |
| | Reach - Below Shoulder | | | | | | ✓ | | | D1 - To steering wheel while driving |
| | Handling | | | | ✓ | | | | | D2 - Bucket, scoop, shovel, wheelbarrow |
| | Fine finger movements | | | | ✓ | | | | | D1 - Manipulating controls |
| | Neck - Static Flexion | | | | ✓ | | | | | |
| | Neck – Static Neutral | | | | | ✓ | | | | |
| | Neck – Static Extension | ✓ | | | | | | | | |
| | Neck – Rotation | | | | ✓ | | | | | D1 - Visual requirements while driving D2 - Visual requirement to look for holes |
| | Throwing | ✓ | | | | | | | | |
| | Sitting | | | | ✓ | | | | | D1 - Static (~20 min) |
| | Standing | | | ✓ | | | | | | |
| | Walking | | | | | | ✓ | | | |
| | Running/Jumping | ✓ | | | | | | | | |
| | Climbing | | | | ✓ | | | | | D2- Grassy / muddy slopes, stairs |
| | Bending/Stooping | | | | ✓ | | | | | D2 - When filling the hole D2 - Loading bucket from sand pile at park |
| | Crouching | | | | ✓ | | | | | D2 - When filling the hole |
| | Kneeling | | | | ✓ | | | | | D2 - When filling the hole |
| | Crawling | ✓ | | | | | | | | |
| | Twisting | | ✓ | | | | | | | D1 - To check blind spots and reversing |
| | Balancing | | ✓ | | | | | | | D2 - Standing on slopes |
| | Travelling | | | | ✓ | | | | | |

Job Demands Analysis – Sports Field Inspection: Summary Table (continued)

| a. Physical Demands (continued) | | Frequency During Shift | | | | | | Comments |
|---------------------------------|-----------------------------|------------------------|---|---|---|---|---|---|
| | | N | R | I | O | F | C | |
| Sensory / Perception | Hear/Conversations | | | | ✓ | | | D2 - Cell phone communication D2 - Conversing with other crew members D2 - Answer questions from public |
| | Hear/Other Sounds | | | | | ✓ | | D2 - Traffic sounds |
| | Vision/Far | | | | | | ✓ | D2 - Looking for holes |
| | Vision/Near | | | | | | ✓ | |
| | Vision/Colour | | | | ✓ | | | |
| | Vision/Depth | | | | ✓ | | | |
| | Perception/Spatial | | | | | | ✓ | |
| | Perception/Form | | | ✓ | | | | |
| | Feeling | | | | ✓ | | | |
| | Speech | | | ✓ | | | | |
| Work Environment | Inside Work | | | | ✓ | | | D1 - Inside the cab D2 - Fill out time sheet |
| | Outside Work | | | | | | ✓ | |
| | Slippery | | | | | | ✓ | D1 - Winter months D2 - Only during inclement weather |
| | Congested worksite | | | | | ✓ | | D1 - Traffic D2 - People in area |
| | Chemical Irritants | ✓ | | | | | | |
| | Confined Space Entry | ✓ | | | | | | |
| | Vapour Fumes | | | | ✓ | | | D1 - Associated with traffic / vehicle use D2 - Fumes from vehicles, machinery |
| | Noise | | | | ✓ | | | D2 - Traffic, grass cutters, lawn mowers, people |
| | Proximity to moving objects | | | | ✓ | | | D2 - Traffic, grass cutters, lawn mowers |
| | Hazardous Machines | | ✓ | | | | | D2 - Grass, tree cutters, tractors, loaders |
| | Electrical hazard | ✓ | | | | | | |
| | Hazardous objects | ✓ | | | | | | |
| | Radiant/Thermal Energy | ✓ | | | | | | |
| | Hot/Cold | | | ✓ | | | | D2 - Constant during inclement weather |
| | Humid | | | ✓ | | | | D2 - Constant during inclement weather |
| | Dust | | | | ✓ | | | D1 - Outside cab - driving through dusty parks D2 - Grass cutters, lawn mowers, dry ground, cars |
| | Organic Substances | | | ✓ | | | | D2 - Grass clippings, fertilizer, lime |
| | Medical Waste | ✓ | | | | | | |
| | Blood Products | ✓ | | | | | | |
| | Lighting – Direct | | | | | | ✓ | D1, D2 - Natural light outdoors |
| Lighting – Indirect | ✓ | | | | | | | |
| Vibration – Whole Body | | ✓ | | | | | D1 - Inside cab - driving through parks | |
| Vibration – Hand/Arm | ✓ | | | | | | | |

Job Demands Analysis – Sports Field Inspection: Summary Table (continued)

| b. Cognitive and Psychosocial Demands | Frequency During Shift | | | Comments |
|---------------------------------------|------------------------|-------------------------|---------------------|--|
| | Never / Rare | Infrequent / Occasional | Frequent / Constant | |
| Degree of Supervision | | | ✓ | D1, D2 - GPS, superintendents, foreman |
| Time Pressure | | ✓ | | |
| Attention to Detail | | | ✓ | D2 - Need to be able to spot holes |
| Memory Requirements | | ✓ | | D2 - Location of holes; finding park |
| Interact with co-workers | | ✓ | | |
| Interact with public | | ✓ | | |
| Work Alone | | | ✓ | |
| Reading | | ✓ | | D1 - Street signs, maps |
| Writing | | ✓ | | D1, D2 - Timesheets, monthly tracking sheets, documenting which sports fields / parks the employees have been to |
| Irregular Hours | ✓ | | | |
| Operating Equipment | | ✓ | | |
| | | | | |

Physical Environment

The work takes place on an assigned route in sports fields and parks. The Sports Field Inspector is required to travel through an area looking for holes dug by dogs or around irrigation heads. The Sports Field Inspector is required to walk for most of their shift in all kinds of weather.

Staffing Levels

The Sports Field Inspectors sometimes works alone or in pairs.

Tools and Equipment Used

The Sports Field Inspector uses a variety of supplies and tools while working. The list includes a flags (for marking), bucket, scoop, shovel and wheelbarrow (for filling).

Other Equipment

Steel-toe boots, gloves, high visibility safety vests.

Data Collection

An ergonomics consultant from WorkWell Consulting (Ms. Farzana Ismail) conducted the JDA assessment on December 12th 2006. The supervisor was observed for 1 hour.

Contact for the on-site assessment

Mac Stairs, Supervisor, Park Maintenance for the Vancouver East District of Parks & Recreation was the management contact for the on-site assessment.

Description of Essential Duties

This section describes the work tasks that comprise the essential duties of the job. The Tables of the physical, cognitive and psychosocial demands of performing each duty are provided at the very end of the report.

Essential Duty 1: Drive truck to the assigned area or route

The task that makes up Essential Duty 1 (Drive truck to the assigned area or route) is driving (Task 1).

Driving (Duty 1, Task 1)

The Sports Field Inspectors keeps a journal of the areas they've been to. They sometimes follow a circular-route or respond to special requests. They drive to the sports field / park to be inspected in a truck (see Figure 1).



Figure 1: Interior of truck used by Sports Field Inspector.

Essential Duty 2: Report, mark or fill holes in sports field / park

Once at the sports field / park, the Sports Field Inspectors walk around looking for holes dug by dogs or around irrigation heads (see Figures 2 and 3). If the hole is big or if the

employee has physical restrictions, they will either: i) report the hole to the foreman; or
ii) mark the holes with flags so the user groups can fill them (see Figure 4). If the hole is small and the employee does not have a lot of restrictions, then they will fill the holes themselves with sand. They will either obtain the sand from sand stored at the back of the fields / parks or from the truck.

The tasks that make up Essential Duty 2 (Mark or fill holes in sports field / park) are:

- look for holes dug by dogs or around irrigation heads (Duty 2, Task 1),
- report hole to foreman (Duty 2, Task 2);
- mark the holes with flags so user groups can fill them (Duty 2, Task 3);
- fill holes with sand (Duty 2, Task 4),

Look for Holes Dug by Dogs or Around Irrigation Heads (Duty 2, Task 1)



Figure 2: Example of hole dug by dog.



Figure 3: Example of hole around irrigation head.

Mark the Holes with Flags so User Groups can fill them (Duty 2, Task 3)



Figure 4: Marking Flags

Table 1: Essential Duty 1 - Drive truck to the assigned area or route

| a. Physical Demands | | Frequency During Shift * | | | | | | Weight | | Comments |
|---------------------|----------------------------|--------------------------|------|------------|------------|----------|----------|------------|----------|------------------------------------|
| | | Never | Rare | Infrequent | Occasional | Frequent | Constant | Usual (kg) | Max (kg) | |
| Strength | Lifting – Floor to Knuckle | ✓ | | | | | | | | |
| | Lifting – Knuckle to Waist | ✓ | | | | | | | | |
| | Lifting – Over Shoulder | ✓ | | | | | | | | |
| | Carrying – with Handles | ✓ | | | | | | | | |
| | Carrying – without Handles | ✓ | | | | | | | | |
| | Pushing – Upper Extremity | ✓ | | | | | | | | |
| | Pushing – Hips/Legs assist | ✓ | | | | | | | | |
| | Pulling – Upper Extremity | ✓ | | | | | | | | |
| | Pulling – Hip/Leg Assist | ✓ | | | | | | | | |
| Mobility | Reach - Shoulder or Above | | | ✓ | | | | | | With right arm to put on seat belt |
| | Reach - Below Shoulder | | | | | | ✓ | | | To Steering Wheel while driving |
| | Handling | ✓ | | | | | | | | |
| | Fine finger movements | | | | ✓ | | | | | Manipulating controls |
| | Neck – Static Flexion | ✓ | | | | | | | | |
| | Neck – Static Neutral | | | | ✓ | | | | | |
| | Neck – Static Extension | ✓ | | | | | | | | |
| | Neck – Rotation | | | | ✓ | | | | | Visual requirements while driving |
| | Throwing | ✓ | | | | | | | | |
| | Sitting | | | | | | ✓ | | | Static (~20 min) |
| | Standing | ✓ | | | | | | | | |
| | Walking | ✓ | | | | | | | | |
| | Running/Jumping | ✓ | | | | | | | | |
| | Climbing | ✓ | | | | | | | | |
| | Bending/Stooping | ✓ | | | | | | | | |
| | Crouching | ✓ | | | | | | | | |
| | Kneeling | ✓ | | | | | | | | |
| | Crawling | ✓ | | | | | | | | |
| | Twisting | | ✓ | | | | | | | To check blind spots and reversing |
| | Balancing | ✓ | | | | | | | | |
| Travelling | | | | | | ✓ | | | | |

Table 1: Essential Duty 1 - Drive truck to the assigned area or route (continued)

| a. Physical Demands (continued) | | Frequency During Shift | | | | | | Comments |
|------------------------------------|--------------------|------------------------|---|---|---|---|------------------------------------|---|
| | | N | R | I | O | F | C | |
| Sensory / Perception | Hear/Conversations | ✓ | | | | | | |
| | Hear/Other Sounds | | | | | | ✓ | |
| | Vision/Far | | | | | | ✓ | |
| | Vision/Near | | | | | | ✓ | |
| | Vision/Colour | | | | | | ✓ | |
| | Vision/Depth | | | | | | ✓ | |
| | Perception/Spatial | | | | | | ✓ | |
| | Perception/Form | ✓ | | | | | | |
| | Feeling | | | | | | ✓ | |
| | Speech | ✓ | | | | | | |
| | Work Environment | Inside Work | | | | | | ✓ |
| Outside Work | | | | | | | ✓ | |
| Slippery | | | | | ✓ | | | Winter months |
| Congested worksite | | | | | ✓ | | | Traffic |
| Chemical Irritants | | ✓ | | | | | | |
| Confined Space Entry | | ✓ | | | | | | |
| Vapour Fumes | | | | | ✓ | | | Associated with traffic / vehicle use |
| Noise | | | | | | | ✓ | |
| Proximity to Moving Objects | | | | | | | ✓ | |
| Hazardous Machines | | ✓ | | | | | | |
| Electrical hazard | | ✓ | | | | | | |
| Sharp Tools | | ✓ | | | | | | |
| Radiant/Thermal Energy | | ✓ | | | | | | |
| Hot/Cold | | | | | ✓ | | | |
| Humid | | ✓ | | | | | | |
| Dust | | | ✓ | | | | | Outside cab - driving through dusty parks |
| Organic Substances | | ✓ | | | | | | |
| Medical Waste | | ✓ | | | | | | |
| Blood Products | | ✓ | | | | | | |
| Lighting – Direct | | | | | | | ✓ | Natural light outdoors |
| Lighting – Indirect | ✓ | | | | | | | |
| Vibration – Whole Body | | ✓ | | | | | Inside cab - driving through parks | |
| Vibration – Hand/Arm | ✓ | | | | | | | |

Table 1: Essential Duty 1 - Drive truck to the assigned area or route (continued)

| b. Cognitive and Psychosocial Demands | Frequency During Shift | | | Comments |
|---------------------------------------|------------------------|-------------------------|---------------------|-------------------------------|
| | Never / Rare | Infrequent / Occasional | Frequent / Constant | |
| Degree of Supervision | | | ✓ | GPS, superintendents, foreman |
| Time Pressure | ✓ | | | |
| Attention to Detail | ✓ | | | |
| Memory Requirements | | | ✓ | |
| Interact with co-workers | | ✓ | | |
| Interact with public | | ✓ | | |
| Work Alone | | ✓ | | |
| Reading | | ✓ | | Street signs, maps |
| Writing | | ✓ | | Timesheets |
| Irregular Hours | ✓ | | | |
| Operating Equipment | | | ✓ | |
| | | | | |

Table 2: Essential Duty 2 – Report, mark or fill holes in sports field / park

| a. Physical Demands | | Frequency During Shift * | | | | | Weight | | Comments | |
|--------------------------|----------------------------|--------------------------|------|------------|------------|----------|----------|------------|----------|---|
| | | Never | Rare | Infrequent | Occasional | Frequent | Constant | Usual (kg) | | Max (kg) |
| Strength | Lifting – Floor to Knuckle | | | | ✓ | | | 4.5 | 10 | Lifting bucket of sand off floor |
| | Lifting – Knuckle to Waist | | | | ✓ | | | 4.5 | 10 | 1-handed lifting of bucket - can minimize weight by making frequent trips to sand pile / truck Can opt to let foreman know to fill hole. |
| | Lifting – Over Shoulder | ✓ | | | | | | | | |
| | Carrying – with Handles | | | | ✓ | | | 4.5 | 10 | Bucket with handle |
| | Carrying – without Handles | ✓ | | | | | | | | |
| | Pushing – Upper Extremity | ✓ | | | | | | | | |
| | Pushing – Hips/Legs assist | | | | ✓ | | | | | Pushing wheelbarrow with sand to fill hole |
| | Pulling – Upper Extremity | ✓ | | | | | | | | |
| Pulling – Hip/Leg Assist | ✓ | | | | | | | | | |
| Mobility | Reach - Shoulder or Above | | ✓ | | | | | | | |
| | Reach - Below Shoulder | | | | | | ✓ | | | |
| | Handling | | | | ✓ | | | | | Bucket, scoop, shovel, wheelbarrow |
| | Fine finger movements | ✓ | | | | | | | | |
| | Neck - Static Flexion | | | | ✓ | | | | | |
| | Neck – Static Neutral | | | | | ✓ | | | | |
| | Neck – Static Extension | ✓ | | | | | | | | |
| | Neck – Rotation | | | | ✓ | | | | | Visual requirement to look for holes |
| | Throwing | ✓ | | | | | | | | |
| | Sitting | ✓ | | | | | | | | |
| | Standing | | | ✓ | | | | | | |
| | Walking | | | | | | ✓ | | | |
| | Running/Jumping | ✓ | | | | | | | | |
| | Climbing | | | | ✓ | | | | | Grassy / muddy slopes, stairs |
| | Bending/Stooping | | | | ✓ | | | | | When filling the hole Loading bucket from sand pile at park |
| | Crouching | | | | ✓ | | | | | When filling the hole |
| | Kneeling | | | | ✓ | | | | | When filling the hole |
| | Crawling | ✓ | | | | | | | | |
| | Twisting | | ✓ | | | | | | | |
| | Balancing | | ✓ | | | | | | | Standing on slopes |
| Travelling | ✓ | | | | | | | | | |

Table 2: Essential Duty 2 – Report, mark or fill holes in sports field / park

(continued)

| a. Physical Demands (continued) | | Frequency During Shift | | | | | | Comments |
|------------------------------------|-----------------------------|------------------------|---|---|---|---|---|--|
| | | N | R | I | O | F | C | |
| Sensory / Perception | Hear/Conversations | | | | ✓ | | | Cell phone communication Conversing with other crew members Answer questions from public |
| | Hear/Other Sounds | | | | ✓ | | | Traffic sounds |
| | Vision/Far | | | | | | ✓ | Looking for holes |
| | Vision/Near | | | | | | ✓ | |
| | Vision/Colour | | ✓ | | | | | |
| | Vision/Depth | | ✓ | | | | | |
| | Perception/Spatial | | | | | | ✓ | |
| | Perception/Form | | | ✓ | | | | |
| | Feeling | ✓ | | | | | | |
| | Speech | | | ✓ | | | | |
| Work Environment | Inside Work | | ✓ | | | | | Fill out time sheet |
| | Outside Work | | | | | | ✓ | |
| | Slippery | | | | | | ✓ | Only during inclement weather |
| | Congested worksite | | | | | ✓ | | People in area |
| | Chemical Irritants | ✓ | | | | | | |
| | Confined Space Entry | ✓ | | | | | | |
| | Vapour Fumes | | | | ✓ | | | Fumes from vehicles, machinery |
| | Noise | | | | ✓ | | | Traffic, grass cutters, lawn mowers, people |
| | Proximity to Moving Objects | | | | ✓ | | | Traffic, grass cutters, lawn mowers |
| | Hazardous Machines | | ✓ | | | | | Grass, tree cutters, tractors, loaders |
| | Electrical hazard | ✓ | | | | | | |
| | Hazardous objects | ✓ | | | | | | |
| | Radiant/Thermal Energy | ✓ | | | | | | |
| | Hot/Cold | | | ✓ | | | | Constant during inclement weather |
| | Humid | | | ✓ | | | | Constant during inclement weather |
| | Dust | | | | ✓ | | | Grass cutters, lawn mowers, dry ground, cars |
| | Organic Substances | | | ✓ | | | | Grass clippings, fertilizer, lime |
| | Medical Waste | ✓ | | | | | | |
| | Blood Products | ✓ | | | | | | |
| | Lighting – Direct | | | | | | ✓ | Natural light outdoors |
| Lighting – Indirect | ✓ | | | | | | | |
| Vibration – Whole Body | ✓ | | | | | | | |
| Vibration – Hand/Arm | ✓ | | | | | | | |

Table 2: Essential Duty 2 – Report, mark or fill holes in sports field / park

(continued)

| b. Cognitive and Psychosocial Demands | Frequency During Shift | | | Comments |
|---------------------------------------|------------------------|-------------------------|---------------------|---|
| | Never / Rare | Infrequent / Occasional | Frequent / Constant | |
| Degree of Supervision | | | ✓ | GPS, superintendents, foreman |
| Time Pressure | | ✓ | | |
| Attention to Detail | | | ✓ | Need to be able to spot holes |
| Memory Requirements | | ✓ | | Location of holes; finding park |
| Interact with co-workers | | ✓ | | |
| Interact with public | | ✓ | | |
| Work Alone | | | ✓ | |
| Reading | ✓ | | | |
| Writing | | ✓ | | Timesheets, monthly tracking sheets, documenting which sports fields / parks the employees have been to |
| Irregular Hours | ✓ | | | |
| Operating Equipment | ✓ | | | |
| | | | | |