

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	✓			