

Job Demands Analysis – NEEDLE RECOVERY (PARK BOARD)

Purpose

The purpose of the job of a Needle Recovery Employee working for the City of Vancouver's Parks & Recreation Department is to pick up needles in an assigned area or on an assigned route.

Essential Duties

The Needle Recovery Employee has two essential duties:

- Duty #1 Drive truck to the assigned area or route.
- Duty #2 Clean area of all needles.

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

Needle Recovery Employees 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 definitions for frequency ratings are contained at the end of the Summary Table (page 4).

Job Demands Analysis – Needle Recovery: 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				✓			1	2.2	D2 - Lifting sharps bin off floor
	Lifting – Knuckle to Waist				✓			1	2.2	D2 - Placing sharps bin on truck bed
	Lifting – Over Shoulder	✓								
	Carrying – with Handles	✓								
	Carrying – without Handles				✓			1	2.2	D2 - Sharps bin
	Pushing – Upper Extremity	✓								
	Pushing – Hips/Legs assist	✓								
	Pulling – Upper Extremity	✓								
	Pulling – Hip/Leg Assist	✓								
Mobility	Reach - Shoulder or Above			✓				D1 - With right arm to put on seat belt		
	Reach - Below Shoulder				✓			D1 - To steering wheel while driving D2 - Picking up needles; Placing sharps container on truck bed		
	Handling						✓	D2 - Sharps bin, tools (paper picker, pliers or forceps)		
	Fine finger movements				✓			D1 - Manipulating controls D2 - Tools (trigger on paper picker, forceps)		
	Neck - Static Flexion				✓					
	Neck – Static Neutral					✓				
	Neck – Static Extension	✓								
	Neck – Rotation				✓			D1 - Visual requirements while driving D2 - Visual requirement to look for needles		
	Throwing	✓								
	Sitting				✓			D1 - Static (-20 min)		
	Standing			✓						
	Walking						✓			
	Running/Jumping	✓								
	Climbing				✓			D2- Grassy / muddy slopes, stairs		
	Bending/Stooping				✓			D2 - When handling needles, putting needles in sharps bin		
	Crouching		✓					D2 - Under bleachers, below trees / shrubs		
	Kneeling		✓					D2 - Under bleachers, below trees / shrubs		
	Crawling	✓								
	Twisting		✓					D1 - To check blind spots and reversing		
	Balancing		✓					D2 - Standing on slopes		
Travelling				✓			D1 - Drive truck to the assigned area / route			

Job Demands Analysis – Needle Recovery: 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					✓		D1 - while driving D2 - Looking for needles
	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
	Proximity to moving objects				✓			D2 - Traffic, grass cutters, lawn mowers
	Hazardous Machines		✓					D2 - Grass and tree cutters, tractors, loaders
	Electrical hazard	✓						
	Hazardous objects					✓		D2 - Needles, knives
	Radiant/Thermal Energy	✓						
	Hot/Cold			✓				D2 - Constant during inclement weather
	Humid			✓				D2 - Constant during inclement weather
	Environmental Dust (seasonal)				✓			D1 - Driving through dusty parks D2 - Grass cutters, lawn mowers, dry ground, cars
	Organic Substances	✓						
	Medical Waste					✓		D2 - Encounter used needles
	Blood Products					✓		D2 - Encounter used needles
	Lighting – Direct						✓	D1, D2 - Natural light outdoors
Lighting – Indirect	✓							
Vibration – Whole Body		✓					D1 - Inside cab - driving through parks	
Vibration – Hand/Arm	✓							

Job Demands Analysis – Needle Recovery: 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 needles
Memory Requirements		✓		D2 - Park areas covered; finding park
Interact with co-workers		✓		
Interact with public		✓		
Work Alone			✓	
Reading		✓		D1 - Street signs, maps
Writing		✓		D1, D2 - Timesheets, monthly needle tracking sheets
Irregular Hours	✓			
Operating Equipment		✓		

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

Physical Environment

The work takes place on an assigned route in parks, beaches and boulevards. The Needle Recovery Employee is required to travel through an area picking up needles. The employee walks for most of their shift in all kinds of weather.

Staffing Levels

The Needle Recovery Employee usually works alone but sometimes may work in pairs.

Tools and Equipment Used

The Needle Recovery Employee uses a variety of supplies and tools while working. The list includes a satchel, an appropriate tool for picking up needles (paper picker, long-nosed pliers, short or long forceps) and sharps bin.

Other Equipment

CSA Approved boots (required), gloves (nitrile gloves recommended, gloves are mandatory), high visibility safety vests (supplied and recommended).

Data Collection

An ergonomics consultant from WorkWell Consulting (Ms. Farzana Ismail) used data obtained during the Paper Picker JDA assessment conducted on October 31st 2006 to prepare this report. The content of the report was reviewed by the City's Ergonomist.

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.

Tables 1 and 2 (located at the end of this report) provide the physical, cognitive and psychosocial demands for performing each duty.

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 Needle Recovery Employees drive to their assigned areas in a truck (see Figure 1). Typically they follow a continuous (circular) route; they deviate from this route when responding to special requests. They keep a journal of the parks, beaches and boulevards on their route where they have looked for needles.



Figure 1: Interior of truck used by Needle Recovery Employee.

Essential Duty 2: Clean area of all needles

The tasks that make up Essential Duty 2 (Clean area of all needles) are:

- look for needles (Duty 2, Task 1),
- pick up needles using tool (Duty 2, Task 2)
- dispose of sharp objects in sharps bin (Duty 2, Task 3).
- secure sharps bin on truck bed (Duty 2, Task 4).

Once at the assigned area (park, beach or boulevard), the Needle Recovery Employee walks around looking for needles (Task 1). The needles can be found on the grass (see Figure 2). However, they are often hidden from view, being found near the base of trees and in and among bushes and shrubs.

When a needle is found, it is picked up (Task 2) using an appropriate tool - long paper-picker tongs (see Figure 3) or long-nosed pliers or forceps (see Figure 4). The needles are disposed of (Task 3) in a “sharps” bin (Figure 5). For safety reasons, the sharps bin must be placed on the ground when opening the lid, when putting the sharp objects into it and when closing the lid (Figure 6). The sharps bin is secured in position (task 4) on the truck bed (Figure 7).

Look for Needles (Duty 2, Task 1)



Figure 2: Park areas are visually searched for needles.

Pick up needles using tool (Duty 2, Task 2)



Figure 3: Long paper-picker tongs can be used for picking up needles. The handle is long enough for the needle to be picked up and dropped into the “sharps” bin while standing upright.

Pick up needles using tool (Duty 2, Task 2) (continued)



Figure 4: Long-nosed pliers or short or long forceps can be used to pick up needles. The employee has to stop or bend over when using these tools to pick up needles.

Dispose sharp objects in sharps bin (Duty 2, Task 3)



Figure 5: Sharp objects (e.g. needles) are disposed of in a “sharps” bin.



Figure 6: Opening sharps bin placed on ground.

Secure Sharps Bin on Truck Bed (Duty 2, Task 4)



Figure 7: The container used to hold the needles is placed on the bed of the truck and then secured in position.

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

a. Physical Demands		Frequency During Task					Weight		Comments
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (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				✓				Drive truck to the assigned area / route	

Frequency Rating Definition for % of Task

The definitions for frequency ratings are contained at the end of the Table (page 13).

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

a. Physical Demands (continued)		Frequency During Task						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							✓	Vehicular noise while driving
Proximity to moving objects							✓	Vehicular traffic while driving
Hazardous Machines		✓						
Electrical hazard		✓						
Sharp Tools		✓						
Radiant/Thermal Energy		✓						
Hot/Cold					✓			
Humid		✓						
Environmental Dust			✓					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 Task			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			✓	

Frequency Rating Definitions for % of Task

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

	Percentage of Task
Never	0 %
Rare	0-1 %
Infrequent	2-5 %
Occasional	6-33 %
Frequent	34-66 %
Constant	67-100 %

STRENGTH	
Strength Category	Weight Handled
5. Limited	Up to 5 kg.
6. Light	5 kg. to 10 kg.
7. Medium	10 kg. to 20 kg.
8. Heavy	>20 kg

Table 2: Essential Duty 2 - Clean area of all needles

b. Physical Demands		Frequency During Task					Weight		Comments	
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)
Strength	Lifting – Floor to Knuckle				✓			1	2.2	Lifting sharps bin off floor
	Lifting – Knuckle to Waist				✓			1	2.2	Placing sharps bin on truck bed
	Lifting – Over Shoulder	✓								
	Carrying – with Handles	✓								
	Carrying – without Handles				✓			1	2.2	Sharps bin
	Pushing – Upper Extremity	✓								
	Pushing – Hips/Legs assist	✓								
	Pulling – Upper Extremity	✓								
	Pulling – Hip/Leg Assist	✓								
Mobility	Reach - Shoulder or Above	✓								
	Reach - Below Shoulder				✓					Picking up needles; Placing sharps container on truck bed
	Handling						✓			Sharps bin, using tools for needles (paper picker, pliers or forceps)
	Fine finger movements				✓					Trigger on paper picker
	Neck - Static Flexion				✓					
	Neck – Static Neutral					✓				
	Neck – Static Extension	✓								
	Neck – Rotation				✓					Visual requirement to look for needles
	Throwing	✓								
	Sitting	✓								
	Standing			✓						
	Walking						✓			
	Running/Jumping	✓								
	Climbing				✓					Grassy / muddy slopes, stairs
	Bending/Stooping				✓					When picking up needles and when putting needles in sharps bin
	Crouching		✓							Under bleachers, below trees / shrubs
	Kneeling		✓							Under bleachers, below trees / shrubs
	Crawling	✓								
	Twisting		✓							
	Balancing		✓							Standing on slopes
Travelling	✓									

Frequency Rating Definition for % of Task

The definitions for frequency ratings are contained at the end of the Table (page 16).

Table 2: Essential Duty 2 - Clean area of all needles (continued)

c. Physical Demands (continued)		Frequency During Task						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 needles
	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
	Proximity to moving objects				✓			Vehicular traffic when on boulevards
	Hazardous Machines		✓					Grass and tree cutters, tractors, loaders
	Electrical hazard	✓						
	Hazardous objects					✓		Knives and needles
	Radiant/Thermal Energy	✓						
	Hot/Cold			✓				Constant during inclement weather
	Humid			✓				Constant during inclement weather
	Environmental Dust (seasonal)				✓			Grass cutters, lawn mowers, dry ground, cars
	Organic Substances	✓						
	Medical Waste					✓		Encounter used needles
	Blood Products					✓		Encounter used needles
	Lighting – Direct						✓	Natural light outdoors
Lighting – Indirect	✓							
Vibration – Whole Body	✓							
Vibration – Hand/Arm	✓							

Table 2: Essential Duty 2 - Clean area of all needles (continued)

d. Cognitive and Psychosocial Demands	Frequency During Task			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision			✓	GPS, superintendents, foreman
Time Pressure		✓		
Attention to Detail			✓	Need to be able to spot needles
Memory Requirements		✓		Park areas covered; finding park
Interact with co-workers		✓		
Interact with public		✓		
Work Alone			✓	
Reading	✓			
Writing			✓	Timesheets, monthly needle tracking sheets
Irregular Hours	✓			
Operating Equipment	✓			

Frequency Rating Definitions for % of Task

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	Percentage of Task
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Rare	0-1 %
Infrequent	2-5 %
Occasional	6-33 %
Frequent	34-66 %
Constant	67-100 %

STRENGTH	
Strength Category	Weight Handled
9. Limited	Up to 5 kg.
10. Light	5 kg. to 10 kg.
11. Medium	10 kg. to 20 kg.
12. Heavy	>20 kg