

Job Demands Analysis – PAPER PICKER (PARK BOARD)

Purpose

The purpose of the job of a Paper Picker working for the City of Vancouver's Parks & Recreation Department is to pick up paper, broken glass and debris in an assigned area or on an assigned route.

Essential Duties

The Paper Picker has 2 essential duties:

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

Description of Non-essential Tasks

The Paper Picker may be required to perform other work tasks on an occasional basis.

Examples of the tasks that may be performed are: flagging.

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

Paper Pickers 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 - Paper Picker: 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				✓			2.5	5	D2 - Lifting garbage bag off floor
	Lifting – Knuckle to Waist						✓	2.5	40	D2 - 1-handed lifting of bucket D2 - Heavy items (e. g., carpets, furniture, hot water tanks) D2 - 2-person lifts (heavy items)
	Lifting – Over Shoulder			✓						D2 - Place garbage bag on truck bed
	Carrying – with Handles						✓			D2 - Bucket with handle
	Carrying – without Handles			✓						D2 - Garbage bag
	Pushing – Upper Extremity				✓					D2 - Pushing broom when sweeping
	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
	Handling						✓			D2 - Paper picker, bucket
	Fine finger movements				✓					D1 - Manipulating controls D2 - Trigger on paper picker
	Neck - Static Flexion				✓					
	Neck – Static Neutral					✓				
	Neck – Static Extension	✓								
	Neck – Rotation				✓					D1 - Visual requirements while driving D2 - Visual requirement to look for garbage
	Throwing			✓						D2 - Garbage bag onto back of truck
	Sitting				✓					D1 - Static (~20 min)
	Standing			✓						
	Walking						✓			
	Running/Jumping	✓								
	Climbing				✓					D2- Grassy / muddy slopes, stairs
	Bending/Stooping				✓					D2 - When handling heavy or bulky items D2 - When 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				✓						

Job Demands Analysis - Paper Picker: 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 when doing work on medians
	Vision/Far						✓	D2 - Looking for garbage
	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; clean inside office
	Outside Work						✓	
	Slippery						✓	D1 - Winter months D2 - Only during inclement weather
	Congested worksite					✓		D1 - Traffic D2 - People in area
	Chemical Irritants		✓					D2 - Potential for chemicals in garbage
	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		✓					D2 - Knives and needles may be in garbage
	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	✓						
	Medical Waste		✓					D2 - May encounter used needles or condoms
	Blood Products			✓				D2 - May encounter used needles, tampons
	Lighting – Direct						✓	D1, D2 - Natural light outdoors
Lighting – Indirect	✓							
Vibration – Whole Body		✓					D1 - Inside cab - driving through parks	
Vibration – Hand/Arm	✓							

Job Demands Analysis - Paper Picker: 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 garbage
Memory Requirements		✓		D2 - Where left garbage; finding park
Interact with co-workers		✓		
Interact with public		✓		
Work Alone			✓	
Reading		✓		D1 - Street signs, maps
Writing		✓		D1, D2 - Timesheets
Irregular Hours	✓			
Operating Equipment		✓		

Physical Environment

The work takes place on an assigned route in parks, beaches and boulevards. The Paper Picker is required to travel through an area picking up garbage. The Paper Picker is required to walk for most of their shift in all kinds of weather.

Staffing Levels

The Paper Picker sometimes works alone or in groups of up to 4 crew members.

Tools and Equipment Used

The Paper Picker uses a variety of supplies and tools while working. The list includes a paper picker, pitch fork, bucket, rake, broom, shovel or dust pan.

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 October 31st 2006. The employee was observed for 2 hours during the period that they were performing their assigned duties on Hastings Street.

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 Paper Pickers keeps a journal of the areas they've been to. They sometimes follow a circular-route or respond to special requests (e.g. clean before grass cutting). They drive to the park to be cleaned in a truck (see Figure 1).



Figure 1: Interior of truck used by Paper Picker.

Essential Duty 2: Clean park of all garbage

Once at the park, the Paper Pickers walk around looking for paper, broken glass and debris (Figure 2). They will pick up the garbage either using a paper picker (Figure 3) or

a pitch fork. For heavier or bulky items (Figure 4), the paper picker will either get assistance, call for a loader to lift it or inform the foreman. Every so often, the paper picker will compress the garbage in the bucket (Figure 5). Once the bucket is full, the paper picker will dump the garbage into a garbage bag (Figures 6 and 7). Once the garbage bag is full or if leaving the site, the garbage bag will be placed onto the truck bed (Figure 8). When handling sharp objects (e.g. needles), these objects are disposed of in a “sharps” bin (Figure 9). 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 10).

The tasks that make up Essential Duty 2 (Clean Park of all garbage) are:

- look for garbage (Duty 2, Task 1),
- pick up garbage (Duty 2, Task 2);
- compress garbage in bucket (Duty 2, Task 3);
- dump garbage from bucket into garbage bag (Duty 2, Task 4),
- place garbage bag on truck bed (Duty 2, Task 5) and
- dispose of sharp objects in sharps bin (Duty 2, Task 6).

Look for Garbage (Duty 2, Task 1)



Figure 2: Paper Picker looking for litter/ garbage in park.

Pick up Garbage (Duty 2, Task 2)



Figure 3: Use paper picker to pick up smaller items.



Figure 4: Bulky or heavy items are either lifted by 2 people or using a loader.

Compress garbage in bucket (Duty 2, Task 3)



Figure 5: Compressing garbage in bucket

Dump garbage from bucket into garbage bag (Duty 2, Task 4)



Figure 6: Two workers dumping garbage in garbage bag.



Figure 7: One worker dumping garbage in garbage bag.

Place Garbage Bag on Truck Bed (Duty 2, Task 5)



Figure 8: Worker lifts garbage bag above shoulder level when placing bag on truck bed

Dispose sharp objects in sharps bin (Duty 2, Task 6)



Figure 9: Sharp objects (e.g. needles) are disposed of in a “sharps” bin.



Figure 10: Opening sharps bin placed on ground.

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 - Clean park of all garbage

b. Physical Demands		Frequency During Shift *					Weight		Comments	
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)
Strength	Lifting – Floor to Knuckle				✓			2.5	5	Lifting garbage bag off floor
	Lifting – Knuckle to Waist						✓	2.5	40	1-handed lifting of bucket - can minimize weight by dumping frequently Heavy items include furniture, hot water tanks, carpets, homeless persons items, shopping carts, etc 2-person lifting for heavy items. Can opt to use loader or let foreman know to handle.
	Lifting – Over Shoulder			✓						Place garbage bag on truck bed
	Carrying – with Handles						✓			Bucket with handle
	Carrying – without Handles			✓						Garbage bag
	Pushing – Upper Extremity				✓					Pushing broom when sweeping
	Pushing – Hips/Legs assist	✓								
	Pulling – Upper Extremity	✓								
Pulling – Hip/Leg Assist	✓									
Mobility	Reach - Shoulder or Above			✓						
	Reach - Below Shoulder						✓			
	Handling						✓			Paper picker, bucket
	Fine finger movements				✓					Trigger on paper picker
	Neck - Static Flexion				✓					
	Neck – Static Neutral					✓				
	Neck – Static Extension	✓								
	Neck – Rotation				✓					Visual requirement to look for garbage
	Throwing			✓						Garbage bag onto back of truck
	Sitting	✓								
	Standing			✓						
	Walking						✓			
	Running/Jumping	✓								
	Climbing				✓					Grassy / muddy slopes, stairs
	Bending/Stooping				✓					When handling heavy or bulky items 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	✓									

Table 2: Essential Duty 2 - Clean park of all garbage (continued)

c. 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 when doing work on medians
	Vision/Far						✓	Looking for garbage
	Vision/Near						✓	
	Vision/Colour		✓					
	Vision/Depth		✓					
	Perception/Spatial						✓	
	Perception/Form			✓				
	Feeling	✓						
	Speech			✓				
Work Environment	Inside Work		✓					Fill out time sheet; clean inside office
	Outside Work						✓	
	Slippery						✓	Only during inclement weather
	Congested worksite					✓		People in area
	Chemical Irritants		✓					Potential for chemicals in garbage
	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 cutters, tractors, loaders, tree cutters
	Electrical hazard	✓						
	Hazardous objects		✓					Knives and needles may be in garbage
	Radiant/Thermal Energy	✓						
	Hot/Cold			✓				Constant during inclement weather
	Humid			✓				Constant during inclement weather
	Dust				✓			Grass cutters, lawn mowers, dry ground, cars
	Organic Substances	✓						
	Medical Waste		✓					May encounter used needles or condoms
	Blood Products			✓				May encounter used needles, tampons
	Lighting – Direct						✓	Natural light outdoors
Lighting – Indirect	✓							
Vibration – Whole Body	✓							
Vibration – Hand/Arm	✓							

Table 2: Essential Duty 2 - Clean park of all garbage (continued)

d. 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 garbage
Memory Requirements		✓		Where left garbage; finding park
Interact with co-workers		✓		
Interact with public		✓		
Work Alone			✓	
Reading	✓			
Writing		✓		Timesheets
Irregular Hours	✓			
Operating Equipment	✓			