



## JOB DEMANDS ANALYSIS

**Company:** City of Burnaby

**Location:** Works Yard

**Job Title:** Litter Pick - Up

**Classification:** Light Duty

### Purpose of Activities

The purpose of the Litter Pick-Up position is to keep the public waste receptacles clean and empty and illegal signs out of site.

### Tools and Equipment

The following tools and equipment are used to perform their duties:

- S-10 pick-up truck.
- Small auto driven dump device in the truck bed (run by remote).
- Radio.
- Extension post for pulling down signs.

### Usual Methods – Litter Collection

1. Drive vehicle from works yard to first location (stop and activate flashing light).\*\*
2. Get out of vehicle.\*\*
3. Walk over to bin.\*\*
4. Swing lid (0.64 metres high) to the side.\*\*
5. Grasp the edge of the insert (metal or plastic) or the handles if so equipped.\*\*
6. Pull the insert out of the container.\*\*
7. Carry insert to the truck.\*\*
8. Dump contents of insert into back of truck (1.20 metres high).
9. Carry insert back to container.\*\*
10. Place insert back in container.\*\*
11. Swing lid over.\*\*
12. Return to the vehicle and drive a very short distance to next stop.\*\*
13. Repeat steps 2 through 12 until back is full.
14. Drive to meet a garbage truck.\*\*
15. Back truck up to garbage truck and empty with remote.\*\*
16. Return to works yard after route is complete.\*\*

### Usual Methods – Sign Removal

1. Identify sign that is posted.



2. Get out of vehicle and approach sign location.
3. Remove sign by tearing it off its location.
4. For higher signs, an extension pole can be used to pull them down.

**The presence of \*\* indicates non-value added tasks. These are tasks that do not contribute to the stated purpose of the work.**

### Administrative Issues

The shifts are flexible since this is an accommodative work task. On a normal day, an individual will dump between two and five loads per day. They will empty about 140 cans if they are working on the north side and about 125 if they are working on the south side.

The pace is determined by the worker and the load can be quite variable.

### Activity Demand Variables

These variables are tasks that must be carried out by the employee and are implicitly or explicitly required as objectives of the job.

- Move lids of containers.
- Remove insert.
- Transferring the contents of the insert to the truck.
- Driving while seated in traffic.
- Work outside.
- Route determination.

### Worker Decision Variables

These variables are the sub-routines and cognitive/physical decisions made by the worker in carrying out the objectives of the job.

- Choose postures for carrying out duties (outside of remaining seated, limited standing).
- Choose when to visit certain locations.
- Some control over pacing.
- Timing of breaks.

### Accommodative Considerations

1. People with injuries to the spine in any region may have difficulty with the static and largely seated postures. They may also have difficulty with getting in and out of the vehicle several hundred times.
2. People with shoulder injuries such as rotator cuff tendinitis, bursitis and instability may have difficulty with the steady removal of the inserts from the containers.
3. People with any upper extremity problems may have difficulty with this position (especially grip related issues like carpal tunnel syndrome and epicondylitis).
4. The sitting required for this position would aggravate individuals with hemorrhoids or suffering from vascular insufficiency in the legs
5. There is no learning curve associated with this work.



## Summary of Stresses

### **Metabolic Stresses**

The aerobic energy system supplies the vast majority of energy required to complete the tasks in this position since the work can be characterized as being light activity with regular but moderate intensities of lifting. Some individuals with low aerobic fitness may be challenged by the regular in and out of the vehicle. There are possible exceptions in localized regions of the body, specifically the upper extremities and possibly muscles around the spine and in the region of the neck and shoulder. The tasks are sporadic in nature.

### **Structural Stresses**

**Spine** – the sedentary nature of this work can place significant passive loads on the spinal structures. Prolonged sitting increases disc compression forces alone. If great care is not taken to control posture, it is not unusual to have people adopt a flexed spine posture that requires no activity from the torso musculature, but increases asymmetrical disc compression, passive stretch on the posterior ligaments and disc fibres. This can contribute to disc integrity problems over time as well as contributing to deconditioning of the torso support musculature.

**Shoulders and Neck** – due to the awkward nature of removing the inserts there is a requirement for shoulder elevation and abduction which places considerable load on the rotator cuff structures.

**Arms and Hands** – grip is a key issue with this job since the inserts are hard to grasp from inside the container requiring a pinch style grip. This can increase the risk for developing Carpal Tunnel Syndrome and medial epicondylitis (tennis elbow) respectively.

### **INTERVENTIONS**

Recommendations that could be implemented to increase productivity and lessen the risk of injury are listed below:

1. Convert all of the inserts to plastic which are much lighter than the metal variety. This reduces the load that has to be moved because even when the insert is fairly empty, the metal ones are still heavy.
2. Attempt to fashion a handle on the insert that allows for a power grip position when handling the insert.
3. Provide regular education in effective use of the body and neutral joint positions for this type of work.



PJDC-Litter Pick-Up

Referral:		Organization:						Title: see 1st page header	
Dept.:		Division:						Contact:	
PHYSICAL DEMANDS		R E Q D	S I D E	FREQUENCY*				COMMENTS	
				Sel. 1	Low 2	Mod. 3	High 4		
P E R C E I V E N T I O N	Hearing - Conversations		B			X		Members of the public, occasional co-worker/supervisor	
	Hearing - Other Sounds		B				X	Motor, traffic, equipment	
	Vision - Far		B				X	Most activities	
	Vision - Near								
	Vision - Colour								
	Vision - Depth		B				X	Judging distance in driving and parking	
	Perception - Spatial		B				X	Working around objects, reaching into containers	
	Perception - Form								
	Feeling (Tactile)		B				X	Gauging grip pressure	
	Reading								
	Writing								
	Speech						X	Occasional to members of the public & co-workers	
	W O R K E N V I R O N M E N T	Inside Work						X	Driving in vehicle
Outside Work							X	Most of the day	
Hot Conditions >25 deg. C				X				Occasional in summer	
Cold Conditions <10 deg.C				X				Occasional in winter	
Humid						X		Wet weather is common especially in fall and winter	
Dust							X	Always present except during rain or snow	
Vapor Fumes							X	Exhaust of vehicles in traffic	
Hazardous Machines							X	Other vehicles, garbage trucks	
Proximity to Moving Object							X	People on sidewalks and cars on roadways	
Noise							X	Traffic noises	
Electrical Hazard									
Sharp Tools									
Radiant/Thermal Energy					X			Heat from windshield	
Slippery Conditions									
Vibration and Related					X		Jarring of vehicle in driving		
Chemical Irritants									
Organic Substances					X		Rotting food materials		
Medical Waste			X				Possible syringes		
Blood Products			X				Possible syringes		
Congested Worksite									
Lighting - Direct						X	Daylight		
Lighting - Indirect									
Lighting - Adjustable									
Lighting - Fluorescent									
Lighting - Incandescent									
Lighting - Shadows etc.						X	Depending on location		

\* Frequency Legend                      1 = Seldom; Not Daily    2 = Low Daily Activity; < 1hr  
 3 = Moderate Demand; Repetition 1 - 3 hrs daily                      4 = High Frequency Demand; Repetition > 3 hrs daily  
 The following shading denotes a                      HIGH RISK TASK:                      Modifications should be considered

**REQD** is marked with an X if the particular demand or category is relevant to the purpose of the job.  
**SIDE** refers to the side or limb required to execute a task. If it is marked **E**, it indicates either side, the most common choice is listed first. **D** refers to dominant and **B** to both sides.

For detailed descriptions of each of the different categories, please refer to the reference guide or inquire with Human Effort at 1-888-4EFFORT