

# Job Demands Analysis

**Worker's Occupation:** Building Services Worker (BSW)

**Prepared for:** City of Richmond

**Date of Assessment:** June 13 & July 15, 2016  
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## **OVERVIEW OF POSITION**

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This is a manual labour position, which involves the cleaning and upkeep of public use facilities in the City of Richmond.

## **WORK HOURS/WORK SCHEDULE**

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- Fulltime Hours: 8 hours/day from Monday to Friday or Tuesday to Saturday
- Fulltime Shifts: 10PM-6AM, 8AM-4PM, and 12PM-8PM
- Part-time Hours: 4 hours/day
- Part-time Shifts: 12-4pm or other as required
- Breaks: two 15-minute breaks and one 30-minute lunch break

## **PERSONAL PROTECTIVE EQUIPMENT**

- Steel Toed Boots
- Gloves (Task-specific)
- Safety Glasses (Task-specific)
- Hearing Protection (Task-specific)

## **TOOLS AND EQUIPMENT**

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A building services worker (BSW) may use the following tools and equipment to perform their duties:

### Up to 20 lbs:

- |  |                                       |
|--|---------------------------------------|
| • Mop                                  | • Spray bottles and pumps             |
| • Various brooms (push, upright, dust) | • Various sized squeegee              |
| • Various sized buckets                | • Step ladder (6 feet)                |
| • Duster                               | • Vacuum cleaner (backpack, canister) |
| • Various cleaning products            |                                       |

### 21-50 lbs:

- Various vacuum cleaners (backpack, canister, upright)
- Various sized ladders (12 feet and 24 feet)
- Court clean mop

### 51-100 lbs:

- Housekeeping supply carts
- Wet / dry vacuum

### 100+ lbs:

- Floor scrubber / swing machine / burnisher

## **WORK ORGANIZATION**

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Workers operate individually. On occasion, one or two building services workers (BSWs) may work together on special projects such as annual cleaning of the ceiling lights. A team of up to 13 BSWs will report to a supervisor.

## **REQUIRED EDUCATION & QUALIFICATIONS**

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- English
- Class 5 Driver's License
- Completion of Grade 12
- One-year of experience in janitorial work
- Building Services Worker Certificate
- General orientation courses as required by the City of Richmond eg) WHMIS

## **ESSENTIAL - PHYSICAL DEMANDS**

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The essential tasks of a Building Services Worker (BSW) typically includes the following:

1. Preparing the work site
2. Replenishing supplies in public use areas
3. Cleaning public use areas (gym, change rooms, sitting areas)
4. Floor care
  - a. Vacuuming
  - b. Sweeping
  - c. Mopping
5. Garbage and recycling removal
6. Ordering supplies
7. Special Projects
  - a. Washing windows
  - b. Dusting rafters
  - c. Dusting overhead lights
  - d. Scrubbing / Polishing Floors

The following tasks are physically repetitive:

2. Replenishing supplies in public use areas
3. Cleaning public use areas (gym, change rooms, sitting areas)
4. Floor care
  - a. Vacuuming
  - b. Sweeping
  - c. Mopping

One to three times a year, a regular BSW or an auxiliary team of BSWs will undertake Special Projects:

7. Special Projects
  - a. Washing windows
  - b. Dusting rafters
  - c. Dusting overhead lights
  - d. Scrubbing / Polishing Floors

Regular BSWs work in designated centres fulltime. Auxiliary BSWs circulate to all of the community centres in Richmond.

Regular and auxiliary BSW staff need to be familiar with all of these tasks. Depending on the need and the season, BSW staff can be involved in one task repetitively over several days or weeks. Staff can also be assigned to different tasks depending upon the need.

A detailed description of each essential task follows in this next section.

### 1 - Preparing the Worksite

Building services workers (BSW) prepare their supplies and their work environment for the day. This typically includes the following:

- Setting up safety cones and warning signs.
- Loading empty bags into the appropriate vacuum cleaner
- Loading supplies on to housekeeping supply carts.
- Moving/arranging furniture/equipment at various work sites:
  - Figure 1 - Thompson Community Centre
  - Table 1a - Minoru Senior's Centre
  - Table 1b - South Arm Community Centre - Lounge
  - Table 1c - South Arm Community Centre - Gym
  - Table 1d - City Centre
- Re-filling the floor scrubber / swing machine / burnister with a suitable cleaner (Figure 2)

Auxiliary BSWs performing seasonal work will consult with their supervisor for their work tasks/schedules for the day or week. If they need to travel, they may need to load their supplies and tools into their vehicles.



Figure 1



Figure 2

**Table 1a – Minoru Senior's Centre – Multi-Purpose Room**



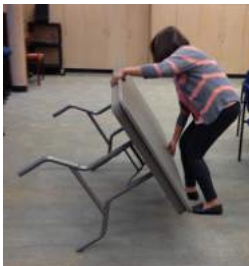


Task	Actions	Weight / Force (Lbs)	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching</li> <li>- Gripping / holding a table</li> <li>- Lifting between waist and chest height</li> <li>- Pulling towards chest</li> </ul>	<u>Weight</u> <ul style="list-style-type: none"> <li>- Chair weight = 11 lbs</li> <li>- Table weight = 44 lbs</li> </ul>	<p>Heavy and frequent depending upon the needs and demands of the work place.</p> <p>Worker needs to be able to sustain standing, full UE reaching, gripping, stooping and partial squatting for sustained periods of time.</p>
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching</li> <li>- Gripping / holding a table</li> <li>- Lifting between waist and chest height</li> <li>- Pulling towards chest</li> <li>- Fine finger manipulation of table legs / locks</li> <li>- Stooping at the hip</li> </ul>		
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching</li> <li>- Gripping / holding a table</li> <li>- Lifting between waist and chest height</li> <li>- Pulling towards chest</li> <li>- Stooping at the hip</li> <li>- Partial squatting at the knee to lift a table</li> </ul>	<u>Force</u> <ul style="list-style-type: none"> <li>- To lift a table = 30 lbs</li> </ul>	

Table 1b – South Arm Community Centre – Lounge			
Task	Actions	Weight / Force (Lbs)	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching</li> <li>- Gripping / holding chair</li> <li>- Stooping at the hip</li> <li>- Pushing/pulling towards and away from the chest</li> </ul>	<u>Weight</u> - Chair weight = 22 lbs  <u>Force</u> - Push / pull chair = 40 lbs	Heavy and occasional depending upon the needs and demands of the work place.  Worker needs to be able to sustain repeated standing, full UE reaching, gripping, and stooping for brief periods of time.
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching</li> <li>- Gripping / holding a table</li> <li>- Stooping at the hip</li> <li>- Pushing/pulling towards and away from the chest</li> </ul>	<u>Force</u> - Push / pull table = 50 lbs	

**Table 1c – South Arm Community Centre - Gym**







Task	Actions	Weight / Force (Lbs)	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Walking a distance of 100 feet between the storage room and the other end of the gym</li> <li>- Full upper extremity (UE) forward and overhead reaching</li> <li>- Gripping / holding net dolly and the volley ball net</li> <li>- Fine finger manipulation to set up/secure a net</li> <li>- Stooping at the hip</li> <li>- Squatting at the knee</li> <li>- Pushing/pulling towards and away from the chest</li> </ul>	<u>Force</u> <ul style="list-style-type: none"> <li>- Push a full dolly = 20 lbs</li> <li>- Pull a full dolly = 12.5 lbs</li> <li>- Pull net from dolly = 2.5 lbs</li> </ul>	<p>Light and occasional depending upon the needs and demands of the work place.</p> <p>Worker needs to be able to sustain repeated standing, walking, full UE reaching, gripping, stooping and squatting for brief periods of time.</p>
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Upper extremity (UE) forward reaching</li> <li>- Gripping / holding the bar</li> <li>- Carrying the bar over a distance up to 100 feet</li> <li>- Stooping at the hip</li> <li>- Squatting at the knee</li> <li>- Fine finger manipulation to set up/secure the bar</li> </ul>	<u>Weight</u> <ul style="list-style-type: none"> <li>- Net bar = 25 lbs</li> </ul>	
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Upper extremity (UE) overhead reaching for 30 seconds</li> <li>- Gripping / holding net bar</li> <li>- Carrying / lifting the net bar overhead</li> <li>- Positioning the hook of the net bar into the ring on the basketball hoop (see circle) and unlocking by pulling down</li> <li>- Pulling / pushing the net bar to position the basketball net (see arrows)</li> </ul>	<u>Force</u> <ul style="list-style-type: none"> <li>- Initial pull on the net bar to unlock the basketball net = 65 lbs</li> <li>- Pull / push the net bar to position the basketball net = 10 lbs (see arrows)</li> <li>- Pull on net bar to lock the basketball net = 50 lbs</li> </ul>	



Table 1d – City Centre – Multi-Purpose Room			
Task	Actions	Weight / Force (Lbs)	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Walking up to 40 feet to maneuver / arrange tables</li> <li>- Full upper extremity (UE) forward reaching</li> <li>- Gripping / holding a table</li> <li>- Fine finger manipulation of table legs / locks</li> <li>- Stooping at the hip</li> <li>- Squatting at the knees</li> </ul>	<u>Force</u> <ul style="list-style-type: none"> <li>- Pull / push table = 12.5 lbs</li> <li>- Set up table with a 2 handed push = 25 lbs</li> </ul>	<p>Medium load and occasional depending upon the needs and demands of the work place.</p> <p>Worker needs to be able to sustain repeated standing, walking, stooping, squatting and kneeling, full UE reaching overhead, forward and below waist, and gripping for brief sustained periods.</p>
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Walking up to 40 feet to maneuver / arrange mats</li> <li>- Full upper extremity (UE) overhead, forward and below waist reaching</li> <li>- Gripping / holding a mat</li> <li>- Lifting and carrying mats between shoulder and floor height</li> <li>- Fine finger manipulation of velcro strips on mats</li> <li>- Stooping at the hip</li> <li>- Squatting at the knees</li> <li>- Kneeling to secure mats</li> </ul>	<u>Weight</u> <ul style="list-style-type: none"> <li>- Heavy mats = 18 lbs</li> <li>- Light mats = 14 lbs</li> </ul> <u>Force</u> <ul style="list-style-type: none"> <li>- Pull / push a loaded cart of mats = 32.5 lbs</li> </ul>	
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Walking a distance of 40 – 100 feet with a full dolly of chairs</li> <li>- Pushing/pulling towards and away from the chest</li> <li>- Full upper extremity (UE) overhead, forward and below waist reaching</li> <li>- Gripping / holding chairs</li> <li>- Stooping at the hip</li> <li>- Squatting at the knee</li> </ul>	<u>Weight</u> <ul style="list-style-type: none"> <li>- Chair - 15.4 lbs</li> </ul> <u>Force</u> <ul style="list-style-type: none"> <li>- Initial push on a full dolly of chairs = 20 lbs</li> <li>- Initial pull on a full dolly of chairs = 25 lbs</li> </ul>	



## 2 – Replenishing supplies in public use areas

BSW staff need to routinely ensure that supplies are in place in public use areas such as the bathroom, change room, gym or atrium/entrance of a building. This needs to be completed throughout the day. Supplies may include: toilet paper, paper towels, garbage bags, soap or alcohol gel in hand dispensers, etc. Depending on the location of the dispenser, a BSW may be required to stoop, or squat to obtain supplies or to resupply the appropriate dispenser. BSW staff need to engage in unilateral or bilateral upper extremity reaching, grabbing, twisting and lifting.

## 3 – Cleaning public use areas (gym, change rooms, sitting areas)

BSW staff need to routinely clean and tidy public use areas such as the bathroom, change room, gym, atrium/entrance, hallways or general sitting areas of a building or facility. This needs to be completed in regular intervals throughout the day. Depending on the site, BSWs may be required to work indoors (Figure 3) or outdoors (Figure 4) or ascend/descend stairs (Figure 5). There are a variety of different tasks that a BSW is expected to perform in these areas; these tasks typically include: picking up/disposing of trash, dusting, re-arranging furniture and wiping mirrors/windows.

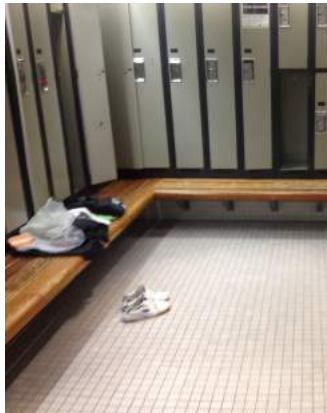


Figure 3





Figure 4



Figure 5

Bathrooms are cleaned up to 2 times per day; a thorough cleaning of the bathroom typically occurs on the last shift of the day. The following areas need to be cleaned in the bathroom: sinks, toilets, floors, and shower room walls and floors. Facilities with childcare / pre-school services require BSWs to work in environments that are modified for children. In these settings, BSWs are required to stoop and squat (Table 2). BSWs in childcare setting are responsible for sweeping / mopping the floor, cleaning the bathroom (toilet, sink, floor), replenishing supplies in the bathroom / common area sink, and dusting. BSWs are not required to wipe / clean tables or chairs or child use items (books, toys, supplies).

Table 2 – City Centre – Pre-School		
Task	Actions	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward and below waist reaching</li> <li>- Gripping / holding tools / appliances</li> <li>- Fine finger manipulation of tools / cleaners</li> <li>- Sustained stooping at the hip</li> <li>- Sustained squatting at the knees</li> </ul>	<p>Light load and occasional.</p> <p>Worker needs to be able to sustain repeated standing, walking, stooping, squatting and kneeling, full UE reaching overhead, forward and below waist, and gripping for brief sustained periods of time.</p>
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) overhead, forward and below waist reaching</li> <li>- Gripping / holding bags/clothing</li> <li>- Sustained stooping at the hip</li> <li>- Sustained squatting at the knees</li> <li>- Lifting between shoulder and floor height</li> </ul>	

If a facility has a gym or exercise facility, a BSW will focus on cleaning the floors, removing garbage, replenishing paper towels and if relevant mirrors.

Dusting is completed weekly. Window sills are dusted monthly. To complete the dusting of the sills, a BSW will need to use a ladder. Depending upon the height, a 6, 12 or 24-foot ladder could be used. These ladders can weigh up to 35 lbs.

#### 4 – Floor care (vacuuming, sweeping, mopping)

BSW staff need to routinely vacuum, sweep or mop public use areas such as the bathroom, change room, gym, atrium/entrance, hallways or general sitting areas of a building or facility. This is typically completed once per day however this may occur more frequently if the conditions demand it: raining, snowing.

BSWs need to use tools to complete this task. Depending on the type of flooring and the debris to be cleaned, a BSW may use one of several different types of tools (push, upright or dust broom).

If vacuuming is required, a BSW may use an empty canister style vacuum that weighs 13 lbs (Figure 6). An empty upright style vacuum weighing 22 lbs is another option (Figure 6). A BSW may also use a backpack style vacuum (Figure 7). If required, furniture may need to be moved and returned (Figure 1). A BSW needs to exert 4 lbs of force to push a vacuum head over a low profile carpet. A BSW needs to exert 2.5 lbs of force to pull a vacuum head over a low profile carpet. Vacuuming is a frequent task for a BSW. The load of the task depends on the type of vacuum in use. Per Table ST1 (Page 16), the load would range from light to medium.



Figure 6



Figure 7

A court clean mop is required if a wooden style gym floor is being cleaned (Figure 8). The court clean mop weighs 37.5 lbs and requires up to 10 lbs of force to pull. Upon completion, BSWs need to dispose of any dust, and debris.

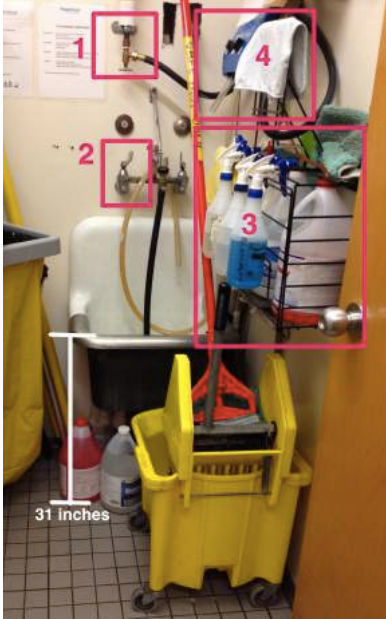


Figure 8




At some facilities, a BSW uses a dry mop measuring 48" in length. A BSW needs to exert 2.5 lbs of force to push/pull a dry mop.

Mopping a standard floor requires the BSW to prepare materials/supplies, apply detergent, and fill a bucket with water using a hose (Table 3).

Table 3 – Mop Preparations		
Task	Actions	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching between shoulder, chest and waist height (Items 1, 2, 3, 4)</li> <li>- Manipulating and/or gripping levers, handles, supplies and cleaning supplies (Items 1, 2, 3, 4)</li> <li>- Stooping at the hip to obtain supplies below waist height</li> <li>- Carrying and manipulating supplies within a confined space (Item 3)</li> </ul>	<p>Light duty and frequent.</p> <p>Worker needs to be able to sustain repeated standing, walking, full UE reaching between shoulder and waist height, gripping, and stooping for brief periods of time.</p>

Mopping a standard floor requires the BSW to lift/position a mop, wring a mop, and empty a bucket full of water (Table 4).

Table 4 – Mopping			
Task	Actions	Weight / Force (Lbs)	Frequency
	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Full upper extremity (UE) forward reaching between chest and waist height</li> <li>- Gripping / holding lever and mop handle</li> <li>- Stooping at the hip</li> <li>- Pushing / pulling towards and away from the chest</li> <li>- Lifting bucket of water</li> <li>- Top image requires the BSW to use their wrist. This stresses the wrist.</li> <li>- Bottom image allows the BSW to use their body weight and align both wrists in neutral while wringing a mop.</li> </ul>	<p><u>Weight</u></p> <ul style="list-style-type: none"> <li>- Full bucket of water = 40 lbs</li> </ul> <p><u>Force</u></p> <ul style="list-style-type: none"> <li>- Push / pull full bucket of water with a mop = 4 lbs</li> <li>- Lift a unwrung wet mop from the bucket = 4 lbs</li> <li>- Wring a mop (bottom image) = 81 lbs</li> <li>- Push / pull a wet mop over the floor = 2.5 lbs</li> <li>- Remove the wringer basket from the mop bucket = 5 lbs</li> </ul>	<p>Light duty and frequent.</p> <p>Worker needs to be able to sustain repeated standing, walking, full UE reaching between shoulder and waist height, gripping, and stooping for brief periods of time.</p>



### 5 – Garbage and recycling removal

BSW staff need to collect, empty and dispose of garbage and recycling at each shift, so depending on the location, the garbage in a facility can be disposed of 1-3 times per day. BSWs limit the weight of each garbage bag to 20 lbs. As a result, there could be multiple bags that are disposed of in each shift (Figure 9).

Depending on the location, BSWs can walk up to 100 metres with their bags of garbage to dispose of it in a dumpster (Figure 10). The dumpsters and recycling bins are commonly placed behind locked gates that need to be unlocked and locked upon use. A BSW needs to be able to reach a typical dumpster height of 5 feet high and lift a dumpster lid that weighs up to 40 lbs depending up on whether it's constructed of plastic or metal.



Figure 9



Figure 10

At some sites, a BSW may use a dolly/cart to transport garbage to a dumpster. At South Arm Community Centre, a BSW needs to be able to exert 30 lbs of force to push or pull a dolly/cart that is loaded with garbage. Full hip flexion and full upper extremity reaching and the ability to dynamically stand on one foot is required to complete this task successfully.

### 6 – Ordering supplies

A BSW is required to order supplies at least once per day. This is typically completed by a BSW in the AM shift. Supplies are stored in a BSWs storage room (Figure 11). A BSW communicates any supply needs directly the facility/building manger.



Figure 11

## 7 – Special Projects

One to three times a year, a regular BSW or an auxiliary team of BSWs will undertake Special Projects. Auxiliary BSWs performing seasonal work will consult with their supervisor for their work tasks/schedules. The most common special projects are described.



### a. Washing windows



BSWs clean interior and exterior windows up to 3 times per year (Figure 12). A BSW needs to use a hand held squeegee or a telescopic squeegee and a bucket of solution to complete this task (Table 5).

This task is completely completed by a facility designated BSW or an auxiliary BSW.

Figure 12

Table 5 – Washing Windows			
Task	Actions	Weight / Force (Lbs)	Frequency
 	<ul style="list-style-type: none"> <li>- Sustained standing</li> <li>- Sustained head extension</li> <li>- Occasional supination and pronation at the wrist and forearms to adjust the telescopic pole</li> <li>- Full upper extremity (UE) forward reaching overhead and below waist</li> <li>- Gripping / holding pole with both hands</li> <li>- Stooping at the hip to wet the brush</li> <li>- Fine finger manipulation of the brush over the squeegee and to wring the water from the brush</li> <li>- Pushing / pulling towards and away from the chest</li> <li>- Lifting bucket of water</li> </ul>	<p><u>Weight</u></p> <ul style="list-style-type: none"> <li>- Full bucket of water = 15 lbs</li> </ul> <p><u>Force</u></p> <ul style="list-style-type: none"> <li>- Push / pull a telescopic pole with a wet brush = 3 lbs</li> </ul>	<p>Light duty and frequent.</p> <p>Worker needs to be able to sustain repeated standing, walking, full UE reaching over head, to below waist height, bilateral gripping, fine finger manipulation and stooping for brief periods of time.</p>

b. Dusting rafters

BSWs dust the rafters and banisters of buildings once/year (Figure 13). To complete the dusting of the rafters and banisters, a BSW will need to use a ladder. Depending upon the height, a 6, 12 or 24-foot ladder could be used. These ladders can weigh up to 35 lbs

This task is completely completed by a facility designated BSW or an auxiliary BSW.



Figure 13

c. Dusting overhead lights

BSWs dust the ceiling lights 3 times per year (Figure 14). To complete the dusting of these lights, a BSW will need to use a ladder. Depending upon the height, a 6, 12 or 24-foot ladder could be used. These ladders can weigh up to 35 lbs

This task is completely completed by a facility designated BSW or an auxiliary BSW.

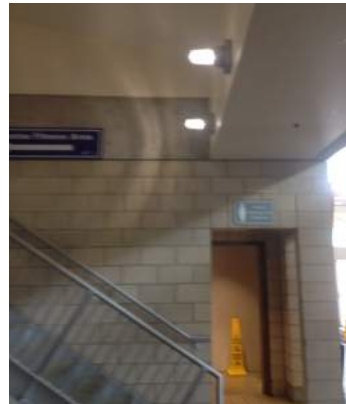


Figure 14



d. Scrubbing / Polishing Floors

Linoleum floors are scrubbed and polished with an electrical or mechanical scrubber or floor polisher two times a year. The BSW uses a solvent to strip the floor. Upon doing so, a new coat is applied. An auxiliary team of BSWs will typically complete this task. A single BSW can take up to 2 hours to polish a 2000 square foot room.

Occasionally a BSW may need to re-polish or scrub the floor with a floor polisher. This task is typically completed an auxiliary team of BSWs (Figure 15).

These tasks require the BSW to tolerate sustained walking, standing, twisting at the torso, and upper extremity reaching below the chest. A BSW needs to tolerate up to 10 lbs of force to push/pull and guide a floor scrubber. The BSW also needs to manipulate toggles and switches on the equipment (floor polisher, swing broom) to operate it. Occasionally, a BSW may be required to change a brush. If so, he/she needs to crouch down on all 4 and position a new brush head in to place (Figure 16).



Figure 15



Figure 16

## PHYSICAL DEMANDS OF WORK TASKS

The following guide/descriptors have been used to identify the frequency, and the load of the specific steps as outlined in the preceding pages (3-9) of this document.

<b>Table ST1 - Physical Demand Characteristics Of Work</b> (Dictionary of Occupational Titles - Volume II, Fourth Edition, Revised 1991)			
Physical Demand Level	OCCASIONAL	FREQUENT	CONSTANT
	0-33% of the workday	34-66% of the workday	67-100% of the workday
Sedentary	1 - 10 lbs.	Negligible	Negligible
Light	11 - 20 lbs.	1 - 10 lbs.	Negligible
Medium	21 - 50 lbs.	11 - 25 lbs.	1 - 10 lbs.
Heavy	51 - 100 lbs.	26 - 50 lbs.	11 - 20 lbs.
Very Heavy	Over 100 lbs.	Over 50 lbs.	Over 20 lbs.

Action	Weight / Force (Lb.)	Travel Distance	Frequency	Task Parameters (Essential/non-essential)
<b>Lifting</b>				
Floor to Waist	11-20 lbs	0-36 Inches	Frequent	Essential – lifting supplies and materials/tools (ladder, squeegee, cleaning products) and lifting garbage bags. Steps 1-7. Figs 3, 8-11, & 16.
	21-50 lbs	0-36 Inches	Frequent	Essential – lifting a vacuum up to 30 lbs, a court clean mop that weighs about 27.5 lbs and bags of garbage. Steps 1-7. Figs 8 & 9.
Waist to Shoulder	11-20 lbs	0-36 Inches	Frequent	Essential – lifting supplies and materials/tools (ladder, squeegee, cleaning products) and lifting garbage bags. Steps 1-7. Figs 1-12, & 15.
	21-50 lbs	0-36 Inches	Occasional	Essential – lifting a vacuum up to 30lbs, a court clean mop that weighs about 27.5 lbs, bags of garbage and a duster bin lid up to 40 lbs. Steps 1-7. Figs 9 & 10.

Action	Weight / Force (Lb.)	Travel Distance	Frequency	Task Parameters (Essential/non-essential)
<b>Lifting</b>				
Shoulder to Overhead	11-20 lbs	0-36 Inches	Occasional	Essential – lifting supplies and materials/tools (ladder, squeegee, cleaners, lights) and disposing of garbage bags. Steps 1, 3, 5 & 7. Figs 10-14.
	21-50 lbs	0-36 Inches	Occasional	Essential – returning supplies (ladder, vacuum, court clean mop) to the supply room or storage, disposing of garbage in a dumpster, and lifting a dumpster lid. Steps 1, 3, 5, & 7. Figs 10 & 11.

Action	Weight / Force (Lb.)	Travel Distance	Frequency	Task Parameters (Essential/non-essential)
<b>Carrying</b>				
Bilateral Carrying	11-20 lbs	0-36 Inches	Frequent	Essential – carrying supplies and materials/tools (ladder, squeegee, cleaners, lights) and garbage bags. Steps 1-5 & 7. Figs 1, 3, & 8.
	21-50 lbs	0-36 Inches	Occasional	Essential – carrying supplies (ladder, vacuum, court clean mop) to the supply room or storage, and taking garbage to the dumpster. Steps 1-5 & 7. Figs 6 & 8-11.
Unilateral Carrying – Right / Left	11-20 lbs	0-36 Inches	Frequent	Essential – carrying supplies and materials/tools (ladder, squeegee, cleaners, lights) and garbage bags. Steps 1-7. Figs 1, 2, 9, & 11.
	21-50 lbs	0-36 Inches	Occasional	Essential – carrying supplies (ladder, vacuum, court clean mop) to the supply room or storage, and taking garbage to the dumpster. Steps 1-7. Figs 1, 2, 9, & 11.

Action	Weight / Force (Lb.)	Travel Distance	Frequency	Task Parameters (Essential/non-essential)
<b>Push / Pull</b>				
Static / Dynamic Pushing & Pulling	11-20 lbs	0-36 Inches	Constant	Essential – pushing/pulling tools (mop, broom, squeegee, furniture, garbage/recycle bins), a court clean mop that requires 10 lbs of force to pull. This occurs daily. Push/pull of a floor polisher that requires up to 10 lbs of force. This occurs once a month. Steps 1-5, & 7. Figs 1, 6-8, 10-11, & 15.
	21-50 lbs	0-36 Inches	Occasional	Essential – operating a swing or floor polisher that requires 47.5 lbs for force of push/pull to operate. This task is typically done twice a year. A 2000 square foot room requires 2 hours to complete. Steps 1, 3-5 & 7. Figs 10, 11 & 15.

Action	Force Required	Frequency	Task Parameters (Essential/non-essential)
<b>Gripping</b>			
Right & Left Hand	11-20 lbs	Frequent	Essential – all hand tools (brooms, mops, duster, squeegee, buckets), using the floor polisher or swing broom. Steps 1-7. Figs 1, 6-11 & 15.

Action	Force Required	Frequency	Task Parameters (Essential/non-essential)
<b>Fine Finger Movement</b>			
Right & Left Hand	11-20 lbs	Frequent	Essential – operating the triggers/toggles on all electrically powered machines (vacuum, floor polisher, scrubber, swing broom). Opening/closing dispensers, the lids of cleaning products, and undoing the latches of the floor polisher's soap dispenser. Steps 1-7. Figs 2, 6-7, 9-10, & 16.

The table in the subsequent page highlights the frequency of the most common movement patterns performed by the City of Richmond's Building Services Worker (BSW).

The numeral in the "Task #" column refers to these tasks:

1. Preparing the work site
2. Replenishing supplies in public use areas
3. Cleaning public use areas (gym, change rooms, sitting areas)
4. Floor care
  - a. Vacuuming
  - b. Sweeping
  - c. Mopping
5. Garbage and recycling removal
6. Ordering supplies
7. Special Projects
  - a. Washing windows
  - b. Dusting rafters
  - c. Dusting overhead lights
  - d. Scrubbing / Polishing Floors

The "Frequency" column is described as follows:

N = Not required, R = Rarely (<2%), O = Occasional (3-33%), F = Frequent (34-66%), C = Constant (67-100%)

PHYSICAL DEMAND	TASK #	FREQUENCY					DESCRIBE ACTIVITY Note distances, durations and surfaces
		N	R	O	F	C	
<b>MOBILITY</b>							
Walking	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Walking ~ 90% of time
Standing	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	- Obtaining materials and disposing of garbage - Operating tools (broom, mop, vacuum)
Sitting	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing ~ 90% of time
Crawl	7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Speaking with the public, peers, colleagues
Driving (Forklift/Vehicle/Other)	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Changing supplies, dusting, cleaning structures
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Driving/Sitting/Crawling ~ 2% of time
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Driving as required for auxiliary BSW
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Crawl to change the brush head of a scrubber
<b>POSTURE – Back</b>							
Bending Forward	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forwards ~ 66% of time
Bending Backwards	3, 5-7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- All BSW tasks (mop/sweep, dust, disposal)
Twisting	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Twisting ~ 33% of time
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Obtaining supplies
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Preparing materials ie) applying diesel
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE – Reaching</b>							
Note forward and/or side reach distances							
Above Shoulder Level	1-3, 5-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Both
Chest to Shoulder Level	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Both
Below Chest Level	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Both
Behind Body	1-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Both
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE – Elbow/Forearm/Wrist</b>							
Elbow Flexion/Extension	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Both
Wrist Flexion/Extension	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Both
Wrist Rotation	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Both
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE – Neck</b>							
Forward Bending/Flexion	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forwards/Twisting/Turning ~ 66%
Backward Bending/Ext.	3, 6, 7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Monitoring the environment while working
Twisting/Turning/Tilting	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	- While cleaning (toilets, sink, floors, ceilings)
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Backwards ~ 25%
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Working overhead (dusting/cleaning windows)
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>POSTURE – Hip/Knee/Ankle/Foot</b>							
Crouching/Squatting	1-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Crouch/Squat/Kneeling ~ 33%
Kneeling	1-3, 7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Lifting and carrying supplies and materials
Climbing (Stairs/Other)	1-5, 7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Cleaning toilets, floors, and picking up garbage
Jumping	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Replacing pads from the floor polisher/scrubber
Foot Pedal/Action	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Climbing ~ 33%
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Ascending/descending stairs
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Climbing up/down ladders
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Foot pedal ~ 2%
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Operating City vehicles for Auxiliary BSWs
N = Not required, R = Rarely (<2%), O = Occasional (3-33%), F = Frequent (34-66%), C = Constant (67-100%)							

## **ESSENTIAL – NON-PHYSICAL DEMANDS**

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Building Services Workers (BSWs) are required to account for variables within their immediate surroundings. These variables (people, foot traffic, service demands, facility emergencies) can impact their work.

BSWs are also required to demonstrate their knowledge and ability to do the following:

- Knowledge of the occupational hazards ie) disposable of sharps, workplace chemicals
- Converse, instruct, follow and direct work as required through various mediums such as face-to-face direct contact.
- Interact daily with the public and with community centre staff

These demands require the following range of cognitive and sensory skills.

### Attention/concentration

- Sustained - attending to the environment, a task list, the janitorial tasks, and the machinery.
- Divided - conversing with the public, minding patrons, machinery and janitorial tasks.
- Alternating - conversing with the public, minding patrons and other janitorial tasks.

### Memory

- Procedural - knowledge of methods, materials, tools, equipment and use of same
- Immediate and delayed visual - written directions/diagrams and location of materials/tools
- Immediate and delayed auditory - discussions with the public and with centre staff
- Prospective - timelines, cleaning schedules, and community centre times

### Executive Functioning

- Initiation - beginning task/project
- Working memory - short term directions/changes, one off instructions
- Sequencing - identifying and/or following an order of activities/actions
- Problem solving - identifying and/or addressing unexpected issues
- Termination - completing a specific task

### Sensory

- Vision - observation of the immediate environment and task at hand
- Hearing - attending to sounds within the environment
- Touch - to hold and manipulate tools/equipment

The table in the subsequent page summarizes the key environmental conditions that may influence and impact a BSWs ability to do their job.



**ENVIRONMENTAL/PSYCHOSOCIAL FACTORS:**

ENVIRONMENTAL & OTHER CONDITIONS	YES	NO	TASK DESCRIPTION
Inside Work Location	X		
Outside Work Location	X		Sweeping/cleaning the atrium of a building and disposing of garbage and recyclables
Electronic	X		Emailing supply needs and communicating with his/her supervisor
Mechanical		X	
Fumes, Gases or Odours	X		Bathroom cleaners/solvents
Dust	X		Dust from the immediate environment
Toxic Conditions		X	
Explosives		X	
Wet/Humid	X		When working outside and inside the change room.
Noise	X		Foot traffic, the public, the immediate environment, and various tools
Vibration	X		Electric powered tools (scrubber, vacuum cleaner)
Exposure to Changes in Temperature		X	
Confined and/or Awkward Spaces	X		Obtaining / refurbishing supplies from the storage / supply areas
Talking	X		Interacting with co-workers, public, supervisor
Hearing	X		Interacting with co-workers, public, supervisor
Near Vision	X		Janitorial related tasks ie) dusting
Far Vision	X		Janitorial related tasks ie) floor care
Depth Perception	X		Janitorial related tasks ie) arranging furniture
Decision Making		X	
Reading	X		Reviewing emails/memos and ordering supplies.
Writing	X		Replying to emails, ordering supplies and tracking tasks/duties in a log book
Driving	X		Limited to auxiliary BSWs who work between community centres.
Operating Hand/Foot Controls	X		BSWs operating the floor scrubber's toggles, switches and controls. Auxiliary BSWs driving between different worksites.
Travel	X		Limited to auxiliary BSWs driving between different worksites.
Deadline Pressures	X		At the direction of the supervisor.
Work Alone	X		Specific tasks ie) all BSW tasks
Work in Group	X		Limited to special projects