

## Introduction

# Ergonomic Checklists for the Solid Waste Industry

Each year many injuries occur in the solid waste industry from either using improper lifting or reaching techniques or not preparing the body for physically demanding work. Usually this occurs from a lack of body awareness and not knowing how to keep the body in balance. By keeping the body in the neutral posture position, the forces required to perform physically demanding work can be reduced. By following good technique and preparing your body for such activities, employees can reduce the likelihood of an ergonomic injury.



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For more information about ergonomics and the solid waste industry, visit [www.envasns.org](http://www.envasns.org). For additional safety-related information, contact David Biderman at 202-364-3743 or [Davidb@envasns.org](mailto:Davidb@envasns.org).

# Stretching for Solid Waste Employees

## **Cervical Turn and Tilt**

### Proper Technique

1. This stretch can be performed while sitting or standing.
2. Simply turn your head from side to side and look down toward your shoulder.
3. Hold for 10-15 seconds.
4. Repeat 3 times.

### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.

## **Cat-Cow**

### Proper Technique

1. Stand with your feet hip-width apart. Place your hands on your thighs, look down at the floor and pull your stomach towards your back rounding your spine like a cat.
2. Hold for 5 seconds.
3. Slowly sag your back towards your stomach, pulling your shoulders back, putting a slight curve in the back and look forward.
4. Repeat both steps 15-20 times.

### Precautions

- DO NOT move quickly.
- DO NOT over extend your neck.
- It may feel awkward at first, but after a while it will be easy.

## **Side Stretch**

### Proper Technique

1. Stand with your feet hip width apart. Stretch both arms over your head and place your hands on your head. Slowly bend to one side. Hold for 5 seconds.
2. Return to the stretching position.
3. Repeat 5 times.
4. Switch sides.

### Precautions

- DO NOT twist your body.
- Use slow and controlled motions.

## **Shoulder Girdle Stretch**

### Proper Technique

1. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.

2. Repeat 5 times for each side.

#### Precautions

- DO NOT move quickly.

### **Shoulder Shrugs**

#### Proper Technique

1. Stand erect and raise shoulders up toward your ears. Hold for a moment and lower shoulders slowly with control to the neutral position.
2. Hand weights in each hand can be added for this exercise.

#### Precautions

- Proper technique is more important than repetitions.
- DO NOT roll your shoulders.
- Lift straight up and lower slowly.
- Exhale on the lift.

### **Arm Lift**

#### Proper Technique

1. While standing in a balanced position, raise your right arm and lower your left arm. With arm straight, gently push your arms backwards and then forwards.
2. Do 5 times then switch,
3. Repeat 5 times.

#### Precautions

- Keep your head and neck balanced.
- Use smooth and controlled movements.

### **Calf Stretch**

#### Proper Technique

1. Position yourself with your arms braced against a wall or solid surface of truck with one foot about 12 inches behind the other.
2. Slowly bend your front knee. Hold for 10 to 30 seconds.
3. Switch sides.
4. Repeat 5 times.

#### Precautions

- DO NOT lift your back heel off the floor.
- DO NOT arch your back.
- DO NOT bounce on your foot
- Use slow and controlled movements.

### **The Plank**

#### Proper Technique

1. Straighten one leg in front of you with your heel on the floor, toe up. Bend your opposite leg, place your hands on your support leg and lean forward from your hips.
2. Hold for 10 seconds.
3. Repeat with other leg.

#### Precautions

- Lift your toe for a harder stretch
- Keep your balance.

### **Quadricep Femoris**

#### Proper Technique

1. Stand on one foot and grasp the ankle of the foot in the air. Pull your heel to your buttocks and hold for 10-15 seconds. Stay facing forward do not lean to one side.
2. Release and repeat with opposite leg.
3. Perform this exercise 3 times on each leg.

#### Precautions

- Watch your balance.
- DO NOT twist your back to reach your leg.
- Keep your hand on a wall.
- Bend knee of supporting leg.

### **Leg Extensions**

#### Proper Technique

1. Sit on a chair and extend your leg.
2. Hold for a moment and return to neutral position.
3. Perform 2 sets on each leg.
4. Ankle weights can be used on this exercise.

#### Precautions

- DO NOT move quickly.

# Mechanics/Maintenance Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Standing on Concrete Surfaces**

Train employees on body mechanics of standing.

1. Have a relaxed posture.
2. Place feet shoulder width apart with weight distributed evenly on both feet.
3. Try to keep upper body upright, don't slouch.
4. Bend at the waist, not the shoulders.

Use shoe or boot cushioning inserts to prevent fatigue.

Use anti-fatigue mats for cushioning.

Stretch throughout your shift.

Consider using sit/stand stools and creepers.

### **Routine Lifting and Carrying**

Train employees regarding body mechanics of manually lifting, lowering, or carrying.

1. Assess the size and weight of object before lifting.
2. Do you need two people?
3. Get as close as possible to the load.
4. Face the load – toes should be pointing at the object.
5. Bend the knees to get into position to lift.
6. Grab object with both hands.
7. Ensure good hold.
8. Look straight ahead with head up.
9. With rear down begin the lift.
10. Keep the natural curve in your back as you lift.
11. Keep load in front of you.
12. Turn with your feet- not your body.
13. Do not twist.

Use hoist or lifting devices where feasible.

Use carts or dollies where possible.

If employees are wearing gloves, ensure good fit.

Stretch before you lift or lower containers.

### **Pushing and Pulling Containers**

Train employees regarding body mechanics of pushing and pulling.

1. Stretch before pushing/pulling container. Your body can stiffen up.
2. Push the cart if at all possible; pull as a last resort.
3. Size up the required force to push the container.
4. Push with legs and keep your head up.
5. Keep close to the container as you push – keep head up.

### **Use of Tools**

Hand held tool weights should not exceed 10 pounds.

Use power tools where possible.

Suspend power tools to reduce weight being held and supported by mechanic.

Maintain tools to lessen vibration.

Use power grips, not pinch grips.

Keep reaches within 18 inches of the body, so that the elbow is not fully extended when forces are applied.

Keep work object at a height where elbows are at a 90 degree or less.

Use tools with stabilizing handles.

Power tools should be wrapped with anti-vibration material.

When possible, purchase tools with stabilizing handles.

DO NOT use your hand as a tool.

### **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

### **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

#### **1. Cat-Cow**

##### Proper Technique

- A. Stand with your feet hip-width apart. Place your hands on your thighs, look down at the floor and pull your stomach towards your back rounding your spine like a cat.
- B. Hold for 5 seconds.
- C. Slowly sag your back towards your stomach, pulling your shoulders back, putting a slight curve in your back and look forward.
- D. Repeat both steps 15-20 times.

##### Precautions

- DO NOT move quickly.
- DO NOT over extend your neck.
- It may feel awkward at first, but after a while it will be easy.

## **2. Shoulder Girdle Stretch**

### Proper Technique

- A. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.
- B. Repeat 5 times for each side.

### Precautions

- DO NOT move quickly.

## **3. The Plank**

### Proper Technique

- A. Straighten one leg in front of you with your heel on the floor, toe up. Bend your opposite leg, place your hands on your support leg and lean forward from your hips.
- B. Hold for 10 seconds.
- C. Repeat with other leg.

### Precautions

- Lift your toe for a harder stretch
- Keep your balance.

# Automated Side Loader Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Posture	Contact Stress

### **Entering a Cab of Truck**

Train employees on body mechanics of cab access.

1. Body and feet should face truck.
2. As you step onto first step grab door with left hand.
3. Grab handle with right hand.
4. Maintain all three points of contact.
5. Turn body smoothly as you reach cab of vehicle and slide into seat - do not jerk or twist suddenly.

### **Sitting While Driving**

Train employees on body mechanics associated with driving and how to adjust seat to provide proper body support while driving.

1. Check seat's suspension and position - adjust for your weight and height. Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
2. Sit up properly - make sure your entire back makes contact with the seat.
3. Knees should be slightly bent and reach pedals easily.
4. Arms should be bent slightly – shoulders against back of seat.
5. Do not sit on wallet – remove from your pocket as it could compress nerves.
6. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Pushing and Pulling Containers**

Train employees regarding body mechanics of manually moving ASL containers.

6. Stretch before pushing/pulling container. Your body can stiffen up between stops while driving.
7. Push the cart if at all possible; pull as a last resort.
8. Size up the required force to push the container.
9. Push with legs and keep your head up.

10. Keep close to the container as you push – keep head up.

### **Using Driving/Operating Controls –**

1. Train employees to support their arms and hands by resting them on support surfaces.
2. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

### **Exiting Cab of Truck**

Train employees on body mechanics of cab egress.

1. Turn body smoothly as you exit cab of vehicle, slide out of seat – do not jerk or twist suddenly.
2. Body and feet should face truck.
3. As you step out, maintain three points of contact – use steps the entire way down.
4. Do not jump from the cab.

### **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

### **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

#### **1. Cervical Turn and Tilt**

##### Proper Technique

- A. This stretch can be performed while sitting or standing.
- B. Simply turn your head from side to side and look down toward your shoulder.
- C. Hold for 10-15 seconds.
- D. Repeat 3 times.

##### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.

#### **2. Shoulder Girdle Stretch**

##### Proper Technique

- A. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.
- B. Repeat 5 times for each side.

##### Precautions

- DO NOT move quickly.

### **3. Shoulder Shrugs**

#### Proper Technique

- A. Stand erect and raise shoulders up toward your ears. Hold for a moment and lower shoulders slowly with control to the neutral position.
- B. Perform two sets of 12 with a minute rest between sets.

#### Precautions

- Proper technique is more important than repetitions.
- DO NOT roll your shoulders.
- Lift straight up and lower slowly.
- Exhale on the lift.

# Manual Rear End Loader Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Truck**

Train employees on body mechanics of cab access.

6. Body and feet should face truck.
7. As you step onto first step grab door with left hand.
8. Grab handle with right hand.
9. Maintain all three points of contact.
10. Turn body smoothly as you reach cab of vehicle and slide into seat - do not jerk or twist suddenly.

### **Sitting While Driving**

Train employees on body mechanics associated with driving and how to adjust seat to provide proper body support while driving.

7. Check seat's suspension and position - adjust for your weight and height. Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
8. Sit up properly - make sure your entire back makes contact with the seat.
9. Knees should be slightly bent and reach pedals easily.
10. Arms should be bent slightly – shoulders against back of seat.
11. Do not sit on wallet – remove from your pocket as it could compress nerves.
12. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Lifting, Lowering, Carrying Containers**

Train employees regarding importance of body mechanics for manually picking up residential trash from street.

1. Stretch before lifting/lowering/carrying container. Your body can stiffen up while driving/riding.
2. Assess the size and weight of the container before lifting.

3. Do you need two people?
4. Get as close as possible to the load.
5. Face the load – toes should be pointing at the object.
6. Bend the knees to get into position to lift.
7. Grab object with both hands.
8. Ensure good hold.
9. Look straight ahead with head up.
10. With rear down begin the lift.
11. Keep the natural curve in your back as you lift.
12. Keep load in front of you.
13. Turn with your feet-not your body.
14. Do not twist.

If employees are wearing gloves, ensure they are a good fit.

Stretch before you lift or lower containers, your body can stiffen up while driving or riding.

#### **Using Driving/Operating Controls –**

3. Train employees to support their arms and hands by resting them on support surfaces.
4. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

#### **Exiting Cab of Truck**

Train employees on body mechanics of cab egress.

5. Turn body smoothly as you exit cab of vehicle, slide out of seat – do not jerk or twist suddenly.
6. Body and feet should face truck.
7. As you step out, maintain three points of contact – use steps the entire way down.
8. Do not jump from the cab.

#### **Exiting Rear Load Riding Step**

Train employees on the body mechanics of exiting the rear load riding step.

1. While riding, feet should be pointed toward vehicle.
2. After vehicle comes to a complete stop, back down from step without turning.
3. When you exit the step your feet and body should be facing the vehicle.

#### **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

## **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

### **1. Cat-Cow**

#### Proper Technique

- A. Stand with your feet hip-width apart. Place your hands on your thighs, look down at the floor and pull your stomach towards your back rounding your spine like a cat stretches.
- B. Hold for 5 seconds.
- C. Slowly sag your back towards the floor looking forward, rolling your shoulders back, putting a slight curve in your back.
- D. Repeat both steps 15-20 times.

#### Precautions

- DO NOT move quickly.
- DO NOT over extend your neck.
- It may feel awkward at first, but after awhile it will be easy.

### **2. Side Stretch**

#### Proper Technique

- A. Stand with your feet hip width apart. Stretch both arms over your head and place your hands on your head. Slowly bend to one side. Hold for 5 seconds.
- B. Return to the stretching position.
- C. Repeat 5 times.
- D. Switch sides.

#### Precautions

- DO NOT twist your body.
- Use slow and controlled motions.

### **3. Calf Stretch**

#### Proper Technique

- A. Position yourself with your arms braced against a wall or smooth surface of truck with one foot about 12 inches behind the other.
- B. Slowly bend your front knee. Hold for 10 to 30 seconds.
- C. Switch sides.
- D. Repeat 5 times.

#### Precautions

- DO NOT lift your back heel off the floor.
- DO NOT arch your back.
- DO NOT bounce on your foot
- Use slow and controlled movements.

# Residential Recycling Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Truck**

Train employees on body mechanics of cab access.

11. Body and feet should face truck.
12. As you step onto first step grab door with left hand.
13. Grab handle with right hand.
14. Maintain all three points of contact.
15. Turn body smoothly as you reach cab of vehicle and slide into seat - do not jerk or twist suddenly.

### **Sitting While Driving**

Train employees on body mechanics associated with driving and how to adjust seat to provide proper body support while driving.

13. Check seat's suspension and position - adjust for your weight and height.  
Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
14. Sit up properly - make sure your entire back makes contact with the seat.
15. Knees should be slightly bent and reach pedals easily.
16. Arms should be bent slightly – shoulders against back of seat.
17. Do not sit on wallet – remove from your pocket as it could compress nerves.
18. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Standing While Driving**

1. Provide anti-fatigue matting to area where driver stands that does not interfere with driving controls or present a tripping hazard.
2. Provide shoe/boot inserts for cushioning.

### **Exiting Right Hand Drive (RHD) Vehicle**

1. Train employees regarding body mechanics of exiting RHD side.
2. Provide padding to those parts of existing vehicles that employees contact (hit) when they enter or exit vehicle.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.

2. Let your supervisor know if you need additional mirrors or cameras.

### **Lifting, Lowering, Carrying Containers**

Train employees regarding body mechanics of manually picking up residential recyclables from street.

1. Stretch before lifting/lowering or carrying container your body can stiffen up while driving/riding.
2. Size up the load.
3. Get as close as possible to the load.
4. Face the container – toes should be pointing at the object.
5. Bend the knees to get into position to lift.
6. Grab handles use both hands.
7. Ensure good hold.
8. Look straight ahead with head up.
9. With rear down begin the lift.
10. Keep the natural curve in your back as you lift.
11. Keep load in front of you.
12. Turn with your feet- not your body.
13. Do not twist.

If employees are wearing gloves ensure they are a good fit.

### **Using Driving/Operating Controls –**

5. Train employees to support their arms and hands by resting them on support surfaces.
6. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.
7. Educate employees regarding the importance of supporting the arms, shoulders and hands while operating controls.

### **Exiting Cab of Truck**

Train employee on body mechanics of cab egress.

9. Turn body smoothly as you exit cab of vehicle, slide out of seat – do not jerk or twist suddenly.
10. Body and feet should face truck.
11. As you step out, maintain three points of contact – use steps the entire way down.
12. Do not jump from the cab.

### **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

### **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

### **1. Arm Lift**

#### Proper Technique

- A. While standing in a balanced position, raise your right arm and lower your left arm. While keeping arm straight, gently push your arms backwards and then forwards.
- B. Do 5 times then switch,
- C. Repeat 5 times.

#### Precautions

- Keep your head and neck balanced.
- Use smooth and controlled movements.

### **2. Calf Stretch**

#### Proper Technique

- A. Position yourself with your arms braced against a wall or smooth surface of vehicle with one foot about 12 inches behind the other.
- B. Slowly bend your front knee. Hold for 10 to 30 seconds.
- C. Switch sides.
- D. Repeat 5 times.

#### Precautions

- DO NOT lift your back heel off the floor.
- DO NOT arch your back.
- DO NOT bounce on your foot
- Use slow and controlled movements.

### **3. The Plank**

#### Proper Technique

- A. Straighten one leg in front of you with your heel on the floor, toe up. Bend your opposite leg, place your hands on your support leg and lean forward from your hips.
- B. Hold for 10 seconds.
- C. Repeat with other leg.

#### Precautions

- Lift your toe for a harder stretch
- Keep your balance.

# Roll Off Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Truck**

Train employees on body mechanics of cab access.

16. Body and feet should face truck.
17. As you step onto first step grab door with left hand.
18. Grab handle with right hand.
19. Maintain all three points of contact.
20. Turn body smoothly as you reach cab of vehicle and slide into seat - do not jerk or twist suddenly.

### **Sitting While Driving**

Train employees on body mechanics associated with driving and how to adjust seat to provide proper body support while driving.

19. Check seat's suspension and position - adjust for your weight and height.  
Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
20. Sit up properly - make sure your entire back makes contact with the seat.
21. Knees should be slightly bent and reach pedals easily.
22. Arms should be bent slightly – shoulders against back of seat.
23. Do not sit on wallet – remove from your pocket as it could compress nerves.
24. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Manually Tarping Containers**

Train employees regarding body mechanics when tarping loads.

1. Maintain three points of contact.
2. Avoid over-reaching.

### **Using Driving/Operating Controls**

8. Train employees to support their arms and hands by resting them on support surfaces.
9. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

### **Container Loading**

Train employees regarding body mechanics when connecting container to truck.

### **Exiting Cab of Truck**

Train employees on body mechanics of cab egress.

13. Turn body smoothly as you exit cab of vehicle, slide out of seat – do not jerk or twist suddenly.
14. Body and feet should face truck.
15. As you step out, maintain three points of contact – use steps the entire way down.
16. Do not jump from the cab.

### **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

### **Stretches**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

#### **1. Side Stretch**

##### Proper Technique

- A. Stand with your feet hip width apart. Stretch both arms over your head and place your hands on your head. Slowly bend to one side. Hold for 5 seconds.
- B. Return to the stretching position.
- C. Repeat 5 times.
- D. Switch sides.

##### Precautions

- DO NOT twist your body.
- Use slow and controlled motions.
- Hold hand held weights down, not over your head.

#### **2. Arm Lift**

##### Proper Technique

- A. While standing in a balanced position, raise your right arm and lower your left arm. While keeping arm straight, gently push your arms backwards and then forwards.
- B. Do 5 times then switch.

C. Repeat 5 times.

Precautions

- Keep your head and neck balanced.
- Use smooth and controlled movements.

**3. Calf Stretch**

Proper Technique

- A. Position yourself with your arms braced against a wall or smooth surface of truck with one foot about 12 inches behind the other.
- B. Slowly bend your front knee. Hold for 10 to 30 seconds.
- C. Switch sides.
- D. Repeat 5 times.

Precautions

- DO NOT lift your back heel off the floor.
- DO NOT arch your back.
- DO NOT bounce on your foot
- Use slow and controlled movements.

# Transfer Station Equipment Operator Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Equipment**

Train employees on body mechanics of equipment access.

21. Body and feet should face equipment.
22. As you step onto first step-grab support with left hand.
23. Grab other support with right hand.
24. Maintain all three points of contact as you climb up.
25. Turn body smoothly as you reach cab of equipment and slide into seat - do not jerk or twist suddenly.

### **Sitting While Operating Equipment**

Train employees on body mechanics associated with operating equipment and how to adjust seat to provide proper body support while operating equipment.

25. Check seat's suspension and position - adjust for your weight and height.  
Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
26. Sit up properly - make sure your entire back makes contact with the seat.
27. Knees should be slightly bent and reach pedals easily.
28. Arms should be bent slightly – shoulders against back of seat.
29. Do not sit on wallet – remove from your pocket as it could compress nerves.
30. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Using Driving/Operating Controls**

10. Train employees to support their arms and hands by resting them on support surfaces.
11. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

## **Exiting Cab of Equipment**

Train employees on body mechanics of cab egress.

17. Turn body smoothly as you exit cab of equipment, slide out of seat – do not jerk or twist suddenly.
18. Body and feet should face equipment.
19. As you step out, maintain three points of contact – use steps and supports the entire way down.
20. Do not jump from the cab.

## **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

## **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

### **1. Shoulder Girdle Stretch**

#### Proper Technique

- A. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.
- B. Repeat 5 times for each side.

#### Precautions

- DO NOT move quickly.

### **2. Shoulder Shrugs**

#### Proper Technique

- A. Stand erect and raise shoulders up toward your ears. Hold for a moment and lower shoulders slowly with control to the neutral position.
- B. Hand weights in each hand can be added for this exercise at home.

#### Precautions

- Proper technique is more important than repetitions.
- DO NOT roll your shoulders.
- Lift straight up and lower slowly.

### **3. Cervical Turn and Tilt**

#### Proper Technique

- A. This stretch can be performed while sitting or standing.
- B. Simply turn your head from side to side and look down toward your shoulder.
- C. Hold for 10-15 seconds.
- D. Repeat 3 times.

### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.

# Front End Loader Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Truck**

Train employees on body mechanics of cab access.

26. Body and feet should face truck.
27. As you step onto first step grab door with left hand.
28. Grab handle with right hand.
29. Maintain all three points of contact.
30. Turn body smoothly as you reach cab of vehicle and slide into seat - do not jerk or twist suddenly.

### **Sitting While Driving**

Train employees on body mechanics associated with driving and how to adjust seat to provide proper body support while driving.

31. Check seat's suspension and position - adjust for your weight and height.  
Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
32. Sit up properly - make sure your entire back makes contact with the seat.
33. Knees should be slightly bent and reach pedals easily.
34. Arms should be bent slightly – shoulders against back of seat.
35. Do not sit on wallet – remove from your pocket as it could compress nerves.
36. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Pushing and Pulling Containers**

Train employees regarding body mechanics of manually moving FEL containers.

11. Stretch before pushing/pulling container. Your body can stiffen up between stops while driving.
12. Push the cart if at all possible; pull as a last resort.
13. Size up the required force to push the container.
14. Push with legs and keep your head up.
15. Keep close to the container as you push – keep head up.

## **Using Driving/Operating Controls –**

12. Train employees to support their arms and hands by resting them on support surfaces.
13. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

## **Exiting Cab of Truck**

Train employees on body mechanics of cab egress.

21. Turn body smoothly as you exit cab of vehicle, slide out of seat – do not jerk or twist suddenly.
22. Body and feet should face truck.
23. As you step out, maintain three points of contact – use steps the entire way down.
24. Do not jump from the cab.

## **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

## **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

### **1. Shoulder Girdle Stretch**

#### Proper Technique

- A. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.
- B. Repeat 5 times for each side.

#### Precautions

- DO NOT move quickly.

### **2. Shoulder Shrugs**

#### Proper Technique

- A. Stand erect and raise shoulders up toward your ears. Hold for a moment and lower shoulders slowly with control to the neutral position.
- B. Hand weights in each hand can be added for this exercise.

#### Precautions

- Proper technique is more important than repetitions.
- DO NOT roll your shoulders.
- Lift straight up and lower slowly.

### **3. Cervical Turn and Tilt**

#### Proper Technique

- A. This stretch can be performed while sitting or standing.
- B. Simply turn your head from side to side and look down toward your shoulder.
- C. Hold for 10-15 seconds.
- D. Repeat 3 times.

#### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.

# MRF Mobile Equipment Operator Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Equipment**

Train employees on body mechanics of equipment.

31. Body and feet should face equipment.
32. As you step onto first step-grab support with left hand.
33. Grab other support with right hand.
34. Maintain all three points of contact as you climb up.
35. Turn body smoothly as you reach cab of equipment and slide into seat - do not jerk or twist suddenly.

### **Sitting While Operating Equipment**

Train employees on body mechanics associated with operating equipment and how to adjust seat to provide proper body support while operating equipment.

37. Check seat's suspension and position - adjust for your weight and height.  
Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
38. Sit up properly - make sure your entire back makes contact with the seat.
39. Knees should be slightly bent and reach pedals easily.
40. Arms should be bent slightly – shoulders against back of seat.
41. Do not sit on wallet – remove from your pocket as it could compress nerves.
42. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Using Driving/Operating Controls**

14. Train employees to support their arms and hands by resting them on support surfaces.
15. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

## **Exiting Cab of Equipment**

Train employee on body mechanics of cab egress.

25. Turn body smoothly as you exit cab of equipment, slide out of seat – do not jerk or twist suddenly.
26. Body and feet should face equipment.
27. As you step out, maintain three points of contact – use steps and supports the entire way down.
28. Do not jump from the cab.

## **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

## **Stretching**

These stretches will help with daily operations.

### **1. Shoulder Girdle Stretch**

#### Proper Technique

- A. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.
- B. Repeat 5 times for each side.

#### Precautions

- DO NOT move quickly.

### **2. Shoulder Shrugs**

#### Proper Technique

- A. Stand erect and raise shoulders up toward your ears. Hold for a moment and lower shoulders slowly with control to the neutral position.
- B. Hand weights in each hand can be added for this exercise.

#### Precautions

- Proper technique is more important than repetitions.
- DO NOT roll your shoulders.
- Lift straight up and lower slowly.

### **3. Cervical Turn and Tilt**

#### Proper Technique

- A. This stretch can be performed while sitting or standing.
- B. Simply turn your head from side to side and look down toward your shoulder.
- C. Hold for 10-15 seconds.
- D. Repeat 3 times.

### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.

# MRF Sorters Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Sorting Line**

Train employees on body mechanics of standing.

5. Have a relaxed posture.
6. Place feet shoulder width apart with weight distributed evenly on both feet.
7. Try to keep upper body upright, don't slouch.
8. Bend at the waist, not the shoulders.

Use shoe or boot cushion inserts to prevent fatigue.

Use anti-fatigue mats for cushioning.

Stretch throughout your shift.

### **Reaching**

Reach smoothly-don't jerk.

When lifting items, lift smoothly and pull with minimal force.

Move feet-don't just twist body.

Alternate hands.

Use both hands for large objects.

### **Floor Sorting**

Train employees on body mechanics of floor sorting.

1. When pulling or lifting items, keep the S-curve in the back by bending your knees and keeping your head as upright as possible.
2. Bend at the knees.
3. DO NOT round the back.

Use a tool to spread recyclables out.

### **Pushing and Pulling Containers**

Train employees regarding body mechanics of manually pushing and pulling containers.

16. Stretch before pushing/pulling container. Your body can stiffen up.
17. Push the cart if at all possible; pull as a last resort.
18. Size up the required force to push the container.
19. Push with legs and keep your head up.
20. Keep close to the container as you push – keep head up.

## **Lifting, Lowering, Carrying Containers**

Empty residue containers when they are half full, reducing the weight of the object handled.

Use wheeled carts where possible.

Train employees regarding body mechanics of manually lifting, lowering and carrying containers.

14. Stretch before lifting/lowering or carrying container. Your body can stiffen up.
15. Assess the size and weight of the object before lifting.
16. Do you need two people?
17. Get as close as possible to the load.
18. Face the load – toes should be pointing at the object.
19. Bend the knees to get into position to lift.
20. Grab object with both hands.
21. Ensure good hold.
22. Look straight ahead with head up.
23. With rear down begin the lift.
24. Keep the natural curve in your back as you lift.
25. Keep load in front of you.
26. Turn with your feet- not your body.
27. Do not twist.

If employees are wearing gloves, ensure good fit.

## **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

## **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

### **1. Cat-Cow**

#### Proper Technique

- A. Stand with your feet hip-width apart. Place your hands on your thighs, look down at the floor and pull your stomach towards your back rounding your spine like a cat.
- B. Hold for 5 seconds.
- C. Slowly sag your back towards your stomach, pulling your shoulders back, putting a slight curve into the back and look forward.
- D. Repeat both steps 15-20 times.

#### Precautions

- DO NOT move quickly.

- DO NOT over extend your neck.
- It may feel awkward at first, but after a while it will be easy.

## **2. Cervical Turn and Tilt**

### Proper Technique

- A. This stretch can be performed while sitting or standing.
- B. Simply turn your head from side to side and look down toward your shoulder.
- C. Hold for 10-15 seconds.
- D. Repeat 3 times.

### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.

## **3. Arm Lift**

### Proper Technique

- A. While standing in a balanced position, raise your right arm and lower your left arm. While keeping arm straight, gently push your arms backwards and then forwards.
- B. Do 5 times then switch.
- C. Repeat 5 times.

### Precautions

- Keep your head and neck balanced.
- Use smooth and controlled movements.

# Landfill Equipment Operator Ergonomic Checklist

## Ergonomic Risk Factors

Awkward Posture	Forceful Exertions
Static Loading	Extended Reaches
Deviated Wrist/Hand/Arm Postures	Contact Stress

### **Entering a Cab of Equipment**

Train employees on body mechanics of equipment access.

36. Body and feet should face equipment.
37. As you step onto first step-grab support with left hand.
38. Grab other support with right hand.
39. Maintain all three points of contact as you climb up.
40. Turn body smoothly as you reach cab of equipment and slide into seat - do not jerk or twist suddenly.

### **Sitting While Operating Equipment**

Train employees on body mechanics associated with driving and how to adjust seat to provide proper body support while operating equipment.

43. Check seat's suspension and position - adjust for your weight and height.  
Your body should feel supported by the seat. Adjust seat forward or backward, up or down to fit your body.
44. Sit up properly - make sure your entire back makes contact with the seat.
45. Knees should be slightly bent and reach pedals easily.
46. Arms should be bent slightly – shoulders against back of seat.
47. Do not sit on wallet – remove from your pocket as it could compress nerves.
48. Remember, don't slouch. Keep proper posture throughout the day.

Review/assess current seating in vehicles to determine if repair or replacement may be needed. Let your supervisor know if your seat needs to be repaired.

### **Visibility**

Mirrors/Cameras (Front, Sides, Rear)

1. Adjust mirrors and cameras to minimize turning your head to either side or peering forward.
2. Let your supervisor know if you need additional mirrors or cameras.

### **Using Driving/Operating Controls**

16. Train employees to support their arms and hands by resting them on support surfaces.
17. Train employees on how to avoid contact stress, such as compression points or sharp edges, by providing padding/cushions to surfaces creating contact stress points.

## **Exiting Cab of Equipment**

Train employees on body mechanics of cab egress.

29. Turn body smoothly as you exit cab of equipment, slide out of seat – do not jerk or twist suddenly.
30. Body and feet should face equipment.
31. As you step out, maintain three points of contact – use steps and supports the entire way down.
32. Do not jump from the cab.

## **Healthy Habits**

Get plenty of rest, drink plenty of fluids-64 ounces per day, maintain a healthy diet, maintain good posture, and remember to stretch throughout the day.

## **Stretching**

These stretches may help reduce ergonomic hazards associated with solid waste collection operations.

### **1. Shoulder Girdle Stretch**

#### Proper Technique

- A. Place palm of one hand on the elbow of your other arm and pull it gently across your body. Hold for 5 seconds. Release.
- B. Repeat 5 times for each side.

#### Precautions

- DO NOT move quickly.

### **2. Shoulder Shrugs**

#### Proper Technique

- A. Stand erect and raise shoulders up toward your ears. Hold for a moment and lower shoulders slowly with control to the neutral position.
- B. Hand weights in each hand can be added for this exercise.

#### Precautions

- Proper technique is more important than repetitions.
- DO NOT roll your shoulders.
- Lift straight up and lower slowly.

### **3. Cervical Turn and Tilt**

#### Proper Technique

- A. This stretch can be performed while sitting or standing.
- B. Simply turn your head from side to side and look down toward your shoulder.
- C. Hold for 10-15 seconds.
- D. Repeat 3 times.

### Precautions

- DO NOT be aggressive. This stretch is to be done with passive and gentle movements.
- Breathe normally.