

JOB TASK ANALYSIS - PHYSICAL DEMANDS



JOB TITLE:

HEAVY EQUIPMENT OPERATOR 2

Company Name: RAMSEY COUNTY - PUBLIC WORKS DEPARTMENT

Date: October 31, 2011

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JOB OVERVIEW FROM Dictionary of Occupational Titles Combined with Ramsey County Job Essential Functions

Asphalt-Paving Machine Operator	853.663-010
Road-oiling-Truck Operator	853.663-018
Highway Maintenance Worker	899.684-014
Maintenance Worker, Utility	899.684-046

Maintenance workers perform the manual tasks associated with roadway upkeep. They repair or construct roadways by operation of equipment such as graders, bituminous pavers, or backhoes, to ensure proper drainage and curvature of roadbeds. They operate heavy motorized equipment for roadway construction, reconstruction and snow removal. They operate heavy equipment such as rollers, tractors with mower attachments, snow removal equipment (dump trucks, snow plows, front-end loaders, large snow blower equipment). They mix salt and sand and load into trucks. They assist work crews when not operating heavy equipment. Typical miscellaneous tasks when working with a work crew include use of power tools or assisting in manual labor at the jobsite.

Drives truck [TRUCK DRIVER, HEAVY (any industry)] and other heavy motorized equipment at work site or on roads. May drive snow-removal equipment, consisting of truck or tractor equipped with adjustable snowplow and blower unit, and be designated Snow-Plow Operator, Truck (government ser.); Snow-Plow Tractor Operator (government ser.). Maintains county roads/highways and municipal and rural roads, and rights-of-way in safe condition, performing combination of following duties: Dumps, spreads, and tamps asphalt, using a tamper to patch broken or eroded pavement.

Physical Demand Level : Medium • CRT BODY INDEX MINIMUM SCORE = 171

* **Comments:** The United States Department of Labor defines the **medium** work as a exerting up to **36 to 50 pounds of force occasionally** (occasionally: activity or conditions that exist up to one-third of the time) and/or **22-30 pounds of force frequently** (frequently: activity or conditions that exist between one-third and two-thirds of the time), and/or greater than negligible up to **11-15 pounds of force constantly** (constantly: activity or condition exists more than two-thirds of the time) to move objects.

Work Hours: 6:30 am- 3:30pm

Breaks: 1-30 minute & 2-15 minute

Overtime: Occasionally in summer months (averages 1-5 hours per 2 week pay period). Could be frequently in winter during snowfalls; averages 3-5 hours of overtime per day on a "callout during a snow event" and up to a 12 hour day.

Personal Protective Equipment: Required: Steel toe boots/shoes, safety vest. As needed per job: safety glasses, hearing protection. Leather / cavalier/chemical resistant or nitro gloves. Hard hat, dusk mask (optional), fall harness (for work on Shaker Plant).

Special Training Requirements: commercial drivers' license, OSHA certified for trench safety.

Equipment: Shaker plant, skid loader (with attachments), bob cat, back hoes, tandem single axel truck (1 ton), 18 wheeler truck, front-end loader, graders, bulldozer, snow plow, off road dump truck, excavator, road recycler, tractor trailer, paver, asphalt roller, soil compactor.

Tools: Chain/concrete/chop saws, asphalt routers, cutting torch, trenching, lawn mowers (push and walk behind), tampers (hand/power), weed whip, generators etc.

JOB TASK ANALYSIS - PHYSICAL DEMANDS



2016 JOB TITLE:

Heavy Equipment Operator 2

Department: Public Works

Date: 10/31/2011

Prepared by: Susan Unger OTR/L, CEAS Phone: (651)968-5260

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Job Task Analysis – Physical Demand Checklist

Key

Never (0%)	Rarely (1 – 10%)	Occasionally (11 – 33%)	Frequently (34 – 66%)	Continuously (67 – 100%)
Not at all (0%)	0-24 min./day 0-5 reps/ in 8 hour day	25 min. to 2.5 hours/day 6-100 reps in 8 hour day	2.51 to 5 hours/day 101-300 reps in 8 hour day	5.01 hours and over 301 to 500 + reps in 8 hr. day

Site: Ramsey County Public Works						Location: Arden Hills
Employees Observed or Interviewed: Ryan Smith, Gary Mahnke, and Steve Williams						
Posture, Movement:	Never (0%)	Rarely (1 – 10%)	Occasionally (11 – 33%)	Frequently (34 – 66%)	Continuously (67 – 100%)	Comments
Sitting				X-	-X	Driving trucks (tandem single axel, 18 wheeler, pickup), heavy equipment operation (i.e.: bobcat, asphalt roller, skid loader, bulldozer, motor grader, front-end loader, paver, excavator, etc.
Standing			X			On even and uneven ground/surfaces to dig trenches. On asphalt paver (cat walk) while machine is moving.
Walking			X			On even ground/surfaces and uneven ground/ concrete surfaces (inside and outside). Around shop and yard buildings. To and from truck or machine equipment. For grade marking, to load/unload equipment or materials,
Bending / Stooping			X-	-X		Shoveling/digging, loading/unloading, to chain or grease or maintain equipment. While seated to operate/drive heavy equipment.
Twisting/ Lateral side bending of trunk			X-	-X		Same as above and below + washing station, to check/see mirrors, blind spots, when backing equipment up, to see wings on graders/plows.
Low Level Position (kneel/squat/1/2 kneel)			X			Greasing and chaining or ratcheting tie downs, greasing fittings of loaders or to maintaining equipment. To do finish cement work or culvert work.
Crawling		X				Same as above
Crouching		X				To get in and out of heavy equipment, to do washing station work.
Climb (stairs/ladder)			X			To get in and out of trucks/ heavy equipment. There are ladders on the sides of trucks/equipment as well as 2-4 steps to get inside to drive equipment/truck. Bulldozer 32” step. Front-end loader 22” step.

Job Task Analysis – Physical Demand Checklist (Continued)

Key

Never (0%)	Rarely (1 – 10%)	Occasionally (11 - 33%)	Frequently (34 – 66%)	Continuously (67 – 100%)
Not at all (0%)	0-24 min./day 0-5 reps/ in 8 hour day	25 min. to 2.5 hours/day 6-100 reps in 8 hour day	2.51 to 5 hours/day 101-300 reps in 8 hour day	5.01 hours and over 301 to 500 + reps in 8 hr. day

Posture, Movement:	Never (0%)	Rarely (1 – 10%)	Occasionally (11 - 33%)	Frequently (34 – 66%)	Continuously (67 – 100%)	Comments
Balancing		X				On even and uneven surfaces/ground, on trailers. On moving equipment such as asphalt paver machine. To grease assemble or disassemble hoppers, shields, bolts on top of machines. To perform safety harnesses work on Shaker Plant machine.
Reach – forward					X	To operate controls, perform maintenance work. Tool use (chain /concrete/ chop saw) asphalt router, to drive/steer/operate machines/trucks, snowplows or graders. Washing truck/heavy equipment.
Reach – overhead		X				To climb vertical ladders, open doors, to mark lines, operation of truck, etc.
Reach – low level			X			Moving chains, tie downs, ratchets, smaller tool use, hand tools, shovels, and slings.
Reach – behind/across		X				Lever operation (bobcat) to steer asphalt roller. Driving and operating; backing up.
Push / Pull *			X-	-X		Hydraulic lever operation, stick shift, tail gate, moving ramps on trailers, driving, steering, clutch operation, opening closing doors, pry bar use, raking/shoveling sand/dirt/rock/

* Static Force Weights:

Lifting: & Carrying	Never	Rarely	Occasionally	Frequently	Continuously	Comments
Up to 10 pounds				X		Materials, rakes, smaller hand tools, steaks, hammers, rods.
11 – 24 pounds			X-	-X		Sludge hammer, hoses, hydraulic hose, chains, binders, shoveling, conveyor hook ups.
25 – 34 pounds			X			Chains (vary in weight). Ratchets.
35 – 50 pounds		X				Same as above + water and other liquids in 5 gal. bucket, boxes of rubber. Laser box = 35 lbs. Tool boxes.
51 – 74 pounds		X				Chain sling, 60 lbs, Build catch basin, materials, tool boxes, chains (up to 60 lbs.)
75 – 99 pounds		X				Tool box up to 80 lbs. parts.
Over 100 pounds		X				Construction materials such as chunks of concrete, asphalt, fallen trees, etc.

Physical Demand Checklist – Head & Neck - Upper & Lower Extremities

Repetitive use of Arms/hands/fingers	Never	Rarely	Occasionally	Frequently	Continuously	Comments
Bend/Twist/Rotate arm/wrist/ forearm				X		Driving, steering and operating trucks or heavy equipment. Loading/unloading, shoveling, tamping, handling hoses, tools, shifting levers or operation controls (joystick type).
<u>Elbow Flex/Ext</u> Right:				X		Same as above
Left:				X		Same as above
<u>Simple grasping:</u> Right				X	X	Truck/snowplow controls are right hand operated. Radio & CB operation.
Left:				X		
<u>Firm grasping:</u> Right:				X		Levers (hydraulic) on equipment, to climb in and out of, and to steer heavier machines (loaders, graders). With heavier hand tool use, shoveling, loading equipment (tie downs), mowers, skid loaders, small equipment use and jack hammering.
Left:				X		Same as above
<u>Fine hand work:</u> Right:		X				Writing in daily log, hand radio use (both of these with the dominant hand).
Left:		X				See above
<u>Pinch (see below)</u>						
<u>Lateral</u> Right:		X-	-X			Writing and radio and key use
Left:		X				Same as above
<u>3- point</u> Right:		X				Same as above
Left:		X				Same as above
<u>2-point</u> Right:		X				Same as above
Left:		X				Same as above
Other/Comments: Frequent vibration exposure through driving and operating truck/heavy equipment						
Repetitive use of the <i>feet</i> (ex., using foot controls)						
Right	Yes		Frequently –foot controls for driving trucks/plows, equipment operation-bobcat.			
Left	Yes		Frequent – clutch operation in heavy equipment			
Both	Yes		Frequent- clutch operation			
Posture of the <i>head and neck</i>:						
Static position	Yes		Drive and operate equipment/trucks/plows, etc.			
Frequent Flexing	Yes		To steer & operate, for lever and controls			
Occasional/Rare extending	Yes		Controls			
Frequent rotating (right/left)	Yes		Driving and equipment operation (checking mirrors and peripheral road conditions) Needed especially for plowing/asphalt/skid steering. Looking for obstructions and workers in work zones.			
Frequent side bending (right/left)	Yes		Same as above			

Job Task Analysis - Environmental Exposure Checklist

The environmental exposure information was reviewed or completed by the human resources department of this company.

Environmental Exposures		Comments:
Working around moving machinery	Yes	Trucks, construction areas/ road traffic
Working at heights	Yes	Rare-vertical ladder on Oil Distributor truck, shaker plant conveyor are examples.
Congested area	Yes	Work can be outside, Inside some trucks, heavy equipment.
Working outside	Yes	0-10% (they mostly drive trucks or vehicles).
Inadequate lighting (task)	Yes	Snowplowing, (nighttime and poor driving visibility conditions). Also grader, snow blower machine and truck operation.
Glare	Yes	Sunny weather, driving
Exposure to heat and humidity	Yes	See working outside
Exposure to cold	Yes	See working outside
Using powered equipment	Yes	But very rare.
Vibration	Yes	From driving and steering trucks and heavy equipment (esp. paver and bulldozer).
Slippery surfaces	Yes	Ground/weather/rain, snow and ice
Chemical exposure: (specify)		Gasoline, diesel, oils, biodiesel additive, cleaning chemicals (orange citrus cleaner), degreasers, paints, and asphalt fumes.
Inhalation	Yes	
Ingestion	Yes	
Skin contact	Yes	
Noise- interfering w/ communication	Yes	Plowing, trenching, blowing, bobcat operation, etc.
Radiation (ionizing/non-ionizing)	No	
Hazardous waste/agents	Yes	Roadside clean up – exposures vary greatly
Airborne infectious agents	No	
Blood and/or bodily fluids	Yes	Rare – ex: assisting co-worker with bleed while providing first aid
Risk - physical violence/aggression	Yes	Rare - traffic situations- road rage from motorist (esp. with snowplowing)

Sensory Demands (Check all that apply)

☒ Hearing ☒ Speech ☒ Near vision ☒ Far vision ☐ Color vision ☒ Spatial perception
☒ Tactile ☒ Smell ☐ Taste

*** Must be able to smell burning wires in mechanical overheat situation.**

Additional Comments:

The physical and environmental demands of this job position were reviewed by these individuals for accuracy. It is recommended that at least two employees who perform the job and a supervisor (per facility) review this document. This document was reviewed by:

Name & Title	Date
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____