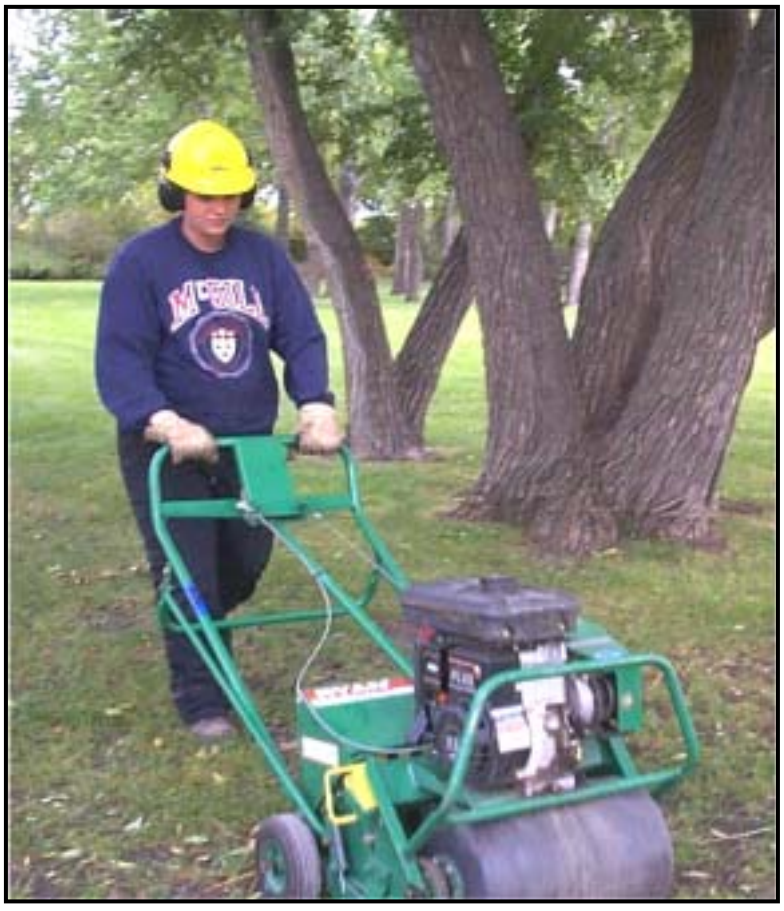
Parks and Open Space Management

Saskatchewan Parks and Recreation Association Inc.

Aerating Handbook



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Introduction and Disclaimer of Liability for Use of the Document

This Parks and Open Space Management Handbook, provides a description of procedures associated with maintenance activities performed within park settings.

The concept of maintenance standards requires the application of best practices within the local operation system. To assist with the establishment of such standards, this resource provides guidelines to aid staff in addressing their daily management operations. There are, however, situations where the standards outlined may require revision by those staff implementing the procedure, to best meet their needs. Specific site conditions, operating budgets, available human resources, and capacity to offer training associated with the practices outlined in this document may warrant alterations to the procedures.

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Acknowledgments

This resource was produced and developed by AHz Learning Technologies Inc. in consultation with the City of Regina. These organizations have generously provided Saskatchewan Parks and Recreation Association the rights to modify and distribute this material to its members.

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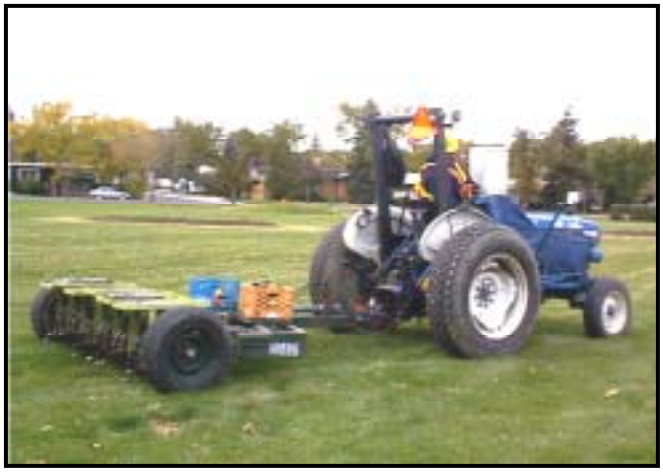
Aerating Introduction



You've been working for the community now for a couple of seasons and you've recently been asked if you'd be interested in learning how to aerate. You enjoy learning new things so you jump at the chance.

You've seen other workers using our aerating machines at the different parks and athletic fields but were never told why we aerate. Today it's your turn to discover the techniques involved with aerating.

It's a bright and sunny spring day and you're ready to learn all there is to know about aerating. You're really not sure what aerating is all about. You do know that it has something to do with poking holes in the soil but other than that, you're not sure how or why. You remember as a teenager looking over your fence into your neighbour's yard and seeing your neighbour on his hands and knees poking holes into his lawn with his power drill. You asked him what he was doing and he said, "Aerating my lawn, what do you think I'm doing?" You share this experience with your trainer who breaks out into a hearty laugh, picturing your neighbour and his power drill. Continuing to chuckle, your trainer says, "While your old neighbour was indeed aerating his lawn, I'm here to show you the right way to aerate. I'm also going to let you know why aerating is so important in keeping the turf areas of our parks and athletic fields green and healthy."

Why do we Aerate?

You learn that when the soil surrounding the roots of grass becomes compacted, it is difficult for water, oxygen, fertilizers and other nutrients to feed the roots of the grass. This, in turn, stresses the grass plants, making them less able to compete with weeds and slow to recover from injury. Soil that consists of a lot of clay will become packed down easier, and will require aerating more often, as will areas that get a lot of foot traffic such as athletic fields and popular parks. You're told that we typically aerate our parks once or twice a year (in the Spring or Fall) depending on the traffic the turf is subjected to (soccer fields get a lot of foot traffic and are aerated at least twice a year).

What is Aerating?

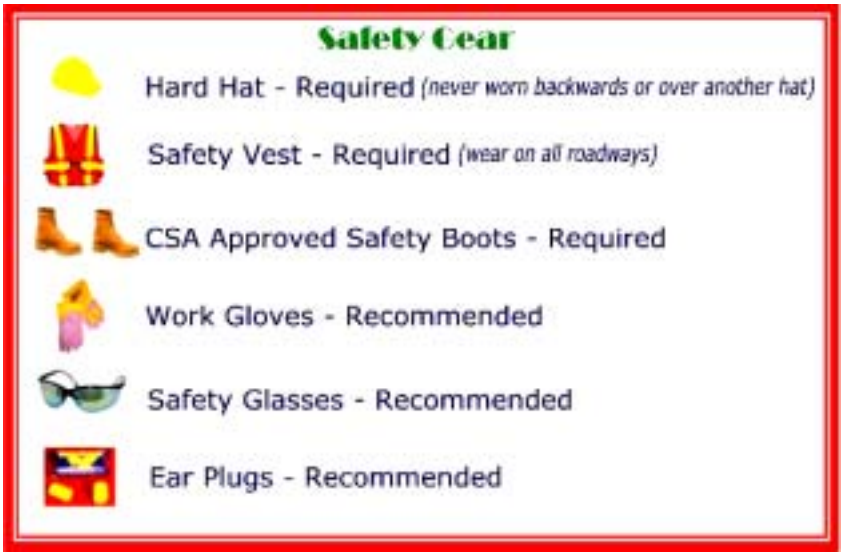
Now that you know why we aerate you find out that aerating is indeed the process of punching holes into turf using a coring machine (not a power drill). These machines have hollow tubes that are driven into the turf, punching holes (usually 3-4 inches deep) into the ground. The soil that is captured in these hollow tubes are called plugs or cores. The plugs are removed from the ground and scattered onto the surface of the turf. Cylinder shaped holes are left in the ground.

What are the Best Aerating Conditions?

Choose a day when temperatures are mild and the soil is fairly moist. However, you don't want the soil to be too wet as this will cause further compacting of the soil. If the soil sticks to your shoes or if the first core samples stick to the tubes/tines of the aerator, you should wait until the soil dries out some before continuing. Also, if the weather has been dry and it's a hot day, then you don't aerate. This may allow any existing moisture to escape the soil more rapidly. In these cases you could be doing more harm than good.

Safety Equipment Overview

You're very aware of how important it is to use the recommended safety gear.



Once you've located, and put on all of your safety gear you go throughout the park locating and marking any sprinkler irrigation heads. You certainly don't want to damage one of these by driving over it with an aerator.

The Aerating Machines We Use

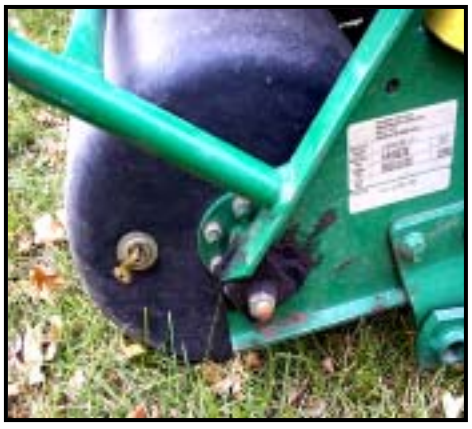
You learn that currently there are two different types of aerators used by the community and they are:

The Self-Propelled Walk-Behind Aerator

This is the first aerating machine you're shown how to use. It's used for aerating small areas where the larger aerator won't fit (such as between trees). This machine is also used a great deal when aerating golf course greens.

Here are the steps you follow when operating this type of aerator:

1. If the aerator was transported from another site, find another community employee to help you lift it off the back of the truck it was transported on.



2. Once you've placed the aerator safely on the ground, add water to the drum that's located at the front of the machine. This adds weight to the machine helping the tubes (or tines) to break through the soil easier and deeper.

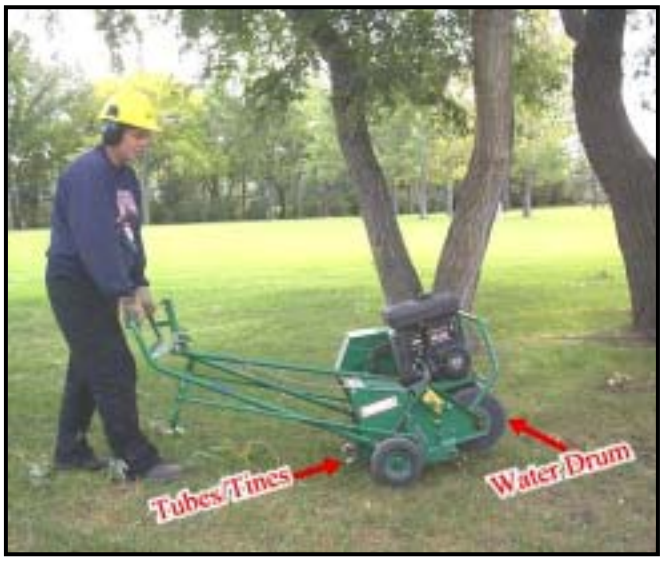
3. Start the engine by flicking the fuel switch to on and then pull the starter cord.

The Self-Propelled Walk-Behind Aerator Continued...

4. Once the engine is running, pull on the lift lever, lifting the transport wheels.

5. Then raise the water drum 2-3 inches by pushing the handle down.

6. You then pull back on the clutch-throttle lever and begin walking behind the aerator, guiding it in the direction you want to go.



7. Before you make a turn, tip the aerator up onto the water drum, lifting the tubes/tines out of the ground.

8. To stop aerating you release the clutch-throttle lever and turn off the engine.

9. Once you're done using the aerator at this site you empty the water drum.

Transporting the Walk-Behind Aerator:

Just as you did when you unloaded the machine from the back of the truck, get a co-worker to help you lift the aerator into the back of the truck. Remember to bend your knees as you lift. Once the aerator is positioned in the truck, use four tie-down straps to secure the aerator to the truck ensuring it can't move around during transport.

The Tractor-Pulled Aerator

This aerator is used in our large parks and athletic fields and is pulled behind a tractor. The tractor is not only used to pull the aerator over community parks and athletic fields but also to transport the aerator between locations.

When pulling the aerator on streets, always be conscious that the aerator is wider than the tractor. Keep this in mind when turning corners or moving past another vehicle.

Before you connect the aerator to the tractor to begin your first aerating job, you're given a close tour of the aerator itself.

Just like the walk-behind aerator, the tractor-pulled aerator has hollow tubes/tines that dig into the ground and then pull out cores (or plugs) of soil.

When the tubes/tines become clogged with soil, tap a piece of rebar into the tubes using a hammer. The soil will then be removed from the tube.

The Tractor-Pulled Aerator Continued...

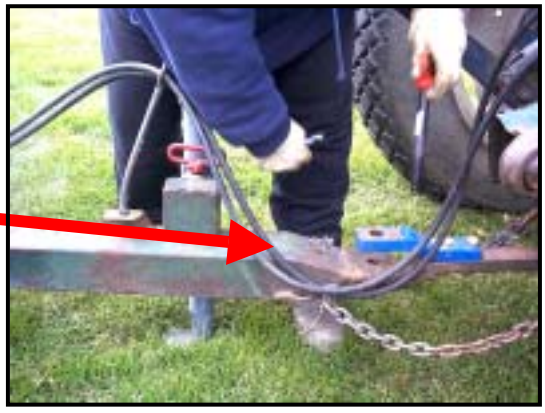
On the top of the tractor-pulled aerator there are a number of weights that are used to help the aerators tubes/tines go through the soil to just the right depth. The water drum does the same job on the walk-behind aerator.

Once you've gotten to know the different parts of the aerator, you'll learn how to connect the aerator to the tractor.

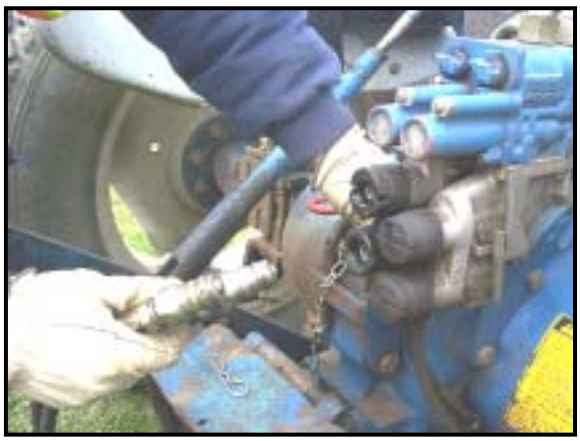
Follow the following steps to connect the aerator to the tractor:

1. Ensure that the aerator is stable by lowering and securing the aerator's jack.

2. Next, insert the steel pin into the hole of the tractor and aerator hitches.



The Tractor-Pulled Aerator Continued...



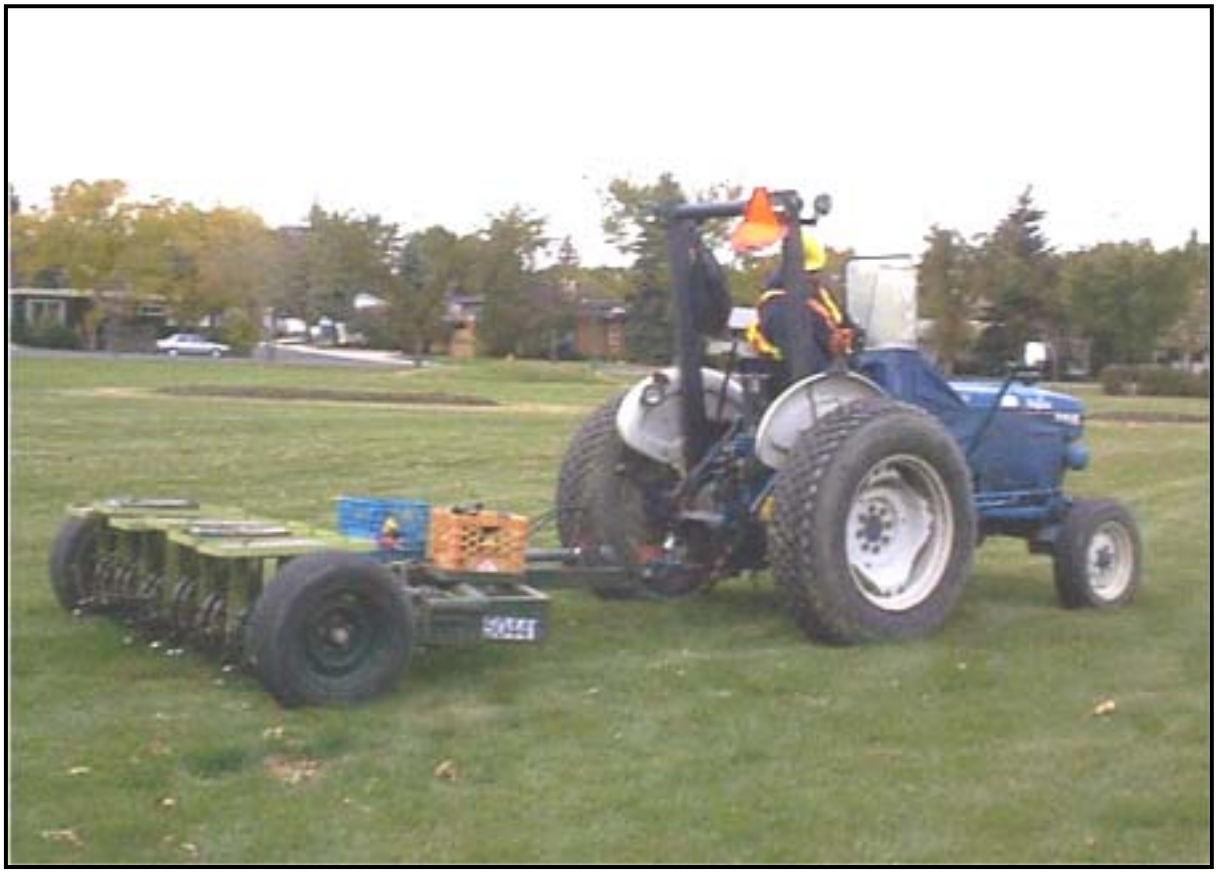
3. The next step is to connect the aerator hydraulics to the tractor.

4. Then connect the safety chain. This chain is used as a safety measure just in case the tractor and aerator become disconnected for some reason. This chain will keep the two pieces of equipment together long enough for you to stop and reconnect them.

5. Once you've connected the aerator to the tractor you climb onto the tractor, fasten your seat belt and turn the tractor on.

6. Keeping your speed at a slow pace will prevent the cores from the aerator from shooting into the air. Pull the aerator up and down the length or width of the park until you've covered the entire area. Remember to lift the aerator out of the ground when making your turns.

At the End of the Day

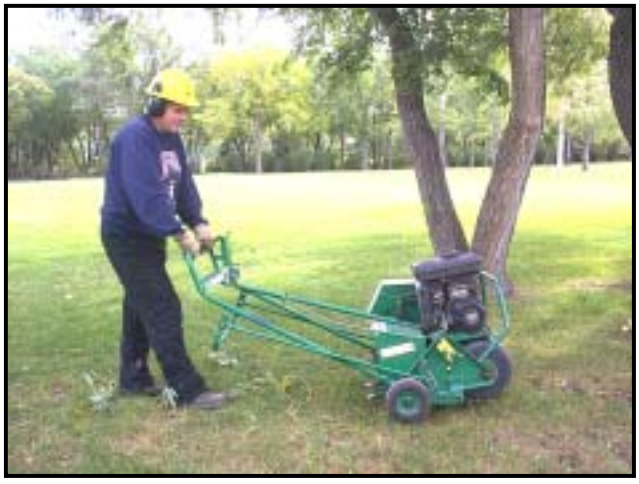


Once you've completed the entire park or field you climb down from the tractor and look over your handiwork. You can see soil cores sprinkled over the entire area of the park or field you've just aerated and you know that it's a good thing. The roots of the grass will now be receiving their much needed water and nutrients!

Aerating Equipment Use and Transport - Operation Checklist

Self-Propelled Walk-Behind Aerator

- ❑ Find another employee to help you lift it off the back of the truck. If the tines are clogged, use a hammer to tap a piece of rebar into them to dislodge the build-up.
- ❑ Next, add water to the drum located on the front of the machine.
- ❑ Start the engine by flicking the fuel switch on and then pull the starter cord. Pull on the lift lever to lift the transport wheels and then push the handle down, raising the water drum 2-3 inches.
- ❑ Next, pull back on the clutch-throttle lever and begin walking behind the aerator, guiding it in the direction you want to go.
- ❑ Before you make a turn, tip the aerator up onto the water drum, lifting the tines out of the ground.
- ❑ To stop the aerator, release the clutch-throttle lever and turn off the engine. Once you are done, empty the water drum.
- ❑ To re-load the aerator for transporting, have a co-worker help you load it into the back of the truck and use tie-down straps to secure it so it can't move around during transport.



Tractor Pulled Aerator

- The tractor pulled aerator is pulled and transported from site to site by the tractor. So remember, when pulling the aerator on streets and when turning corners or moving past other vehicles or obstacles, to be conscious that the aerator is wider than the tractor.
- Clean the tines when required by using a hammer to tap a piece a rebar into the tines to dislodge build-up.
- Connect the aerator to the tractor by first ensuring the aerator is stable by lowering and securing the jack.
- Next insert the steel pin into the hole that lines up the tractor and aerator hitches and then connect the aerator hydraulics to the tractor. Finally connect the safety chain.
- Remember to always fasten your seatbelt when operating the tractor.