



**CRANBERRY**  
• TOWNSHIP •



## **ATHLETIC FIELD MAINTENANCE MANUAL**



# Table of Contents

## Section 1:

### Baseball and Softball Field Maintenance

- A. Determining Field Playability
- B. Water Removal Techniques For Skinned Infields
- C. Addition of Field Drying Agents
- D. Infield Grooming Techniques
- E. Skinned Infield Leveling
- F. Clay Repairs
- G. Grass Edge Maintenance
- H. Field Lining Techniques

## Section 2:

### Grass Field Maintenance (Soccer, Football, Lacrosse)

- A. Determining Field Playability
- B. Water Removal Techniques for Grass Fields
- C. Addition of Field Drying Agents
- D. Portable Goals
- E. Field Lining Techniques

# Section 1

## Baseball and Softball Field Maintenance

### A. Determining Field Playability

The decision to play on fields that are too wet is the number one cause of damage to ball fields and the top reason for player injury. And often, techniques used to make a wet field “playable” cause additional damage. Making the tough call to postpone a game due to wet conditions is the best decision for player safety and to preserve season-long playability of the ball fields.



**If there's  
standing water  
on 5% of the  
infield, it's TOO  
WET for play!**



**If your shoe  
leaves an  
impression like  
these, it's TOO  
WET for play!**



## B. Water Removal Techniques for Skinned Infields

The most important mistake to avoid is the removal or movement of infield mix. A level field will drain better and have fewer puddles. Low spots or depressions catch and hold water EVERY TIME!



### Use a pump to remove puddles.

1. Dig a hole and place the field mix out of your way.
2. Let the water drain into the low spot you've created.
3. Use the pump to move the water into a bucket.
4. Empty the bucket outside of the playing field into a drain.
5. Replace the field mix into the hole and level with a rake.

## DO NOT Use These Methods on Wet Fields!

- **DO NOT** use brooms to disperse puddles.
- **DO NOT** sweep a puddle into the grass.
- **DO NOT** remove muddy infield mix from the field.

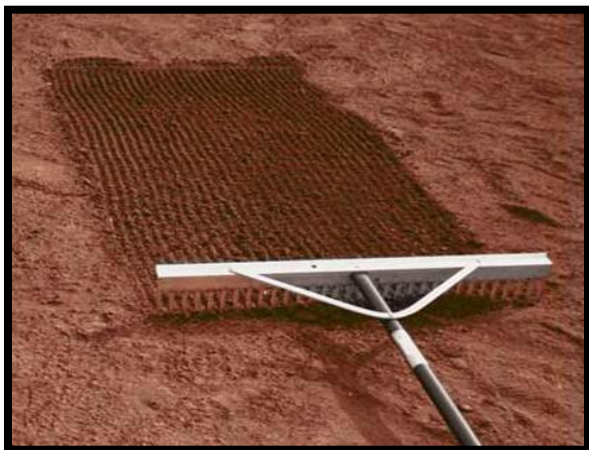
All of these unfortunate techniques move infield material and leave a depression or low spot that will hold water every time it rains.



**For small or shallow puddles, use a water absorbent pillow.**

1. Allow the absorbent material to soak up the water.
2. Have a bucket nearby to wring out the pillow or sponge.
3. Empty the bucket of water off the field of play into a drain.

**After the standing water has been removed, use a rake or nail drag to loosen the infield mix so it will dry more quickly. Allow time to air dry.**



## C. Addition of Field Drying Agents

Calcined and vitrified clay marketed under the brand names Turface, Pro's Choice, Diamond Pro, Rapid Dry, and Profile are the most common products used to assist with wet infield conditions. These products should be used judiciously for two reasons: they are an expense to the program and they change the properties of the infield mix when used abundantly.



**Never use more than 3 bags of drying agent to make a field playable!**

### Steps for Applying a Drying Agent

1. First remove as much water as possible using the pump or pillow method.
2. Use a spreader, shovel, or hand to evenly apply a thin layer of the drying agent.
3. The material may be lightly incorporated using a rake or left on top of the infield mix.

## D. Infield Grooming Techniques

1. Remove the bases and plug the base anchor sleeve before beginning any operations.
2. **Vary the dragging pattern every time the field is groomed.**
3. Scarify the field with a nail drag or needle tines.
4. Finish groom the field with a drag mat or broom. Go slowly!
5. When finished dragging, stop 5 to 6 feet before the edge of the skin and lift the drag. Shake any excess field mix off before exiting the field.
6. Exit the field in a different location each time to prevent build-up of infield mix in one location.
7. Hand rake out the pile left from the field drag.
8. Hand rake: base paths end-to-end, home plate, and the back radius of the infield.



- **DO NOT** pull the nail drag or mat into the grass for any reason.
- **DO NOT** take a nail drag or mat within 24" of the grass edge. Only hand rake edges to prevent lips from forming.
- **DO NOT** take a nail drag over home plate.
- **DO NOT** drive the nail drag or mat down base paths or around home plate on baseball diamonds with a grass infield.

## E. Skinned Infield Leveling

Baseball and Softball fields are designed with a specific slope to drain water from their surface. Underground drain pipes are virtually useless and rarely installed on ball fields. Keeping the infield slope correct will prevent puddling and therefore field closures. Players sliding, mechanical field groomers, and other factors contribute to un-level skinned infields. **A diligent approach to correcting high or low spots is the most important task of a field manager.**

**For small areas, use  
a leveling rake.**

1. Pull the material from a high spot and deposit it in a low area.
2. If the infield mix is dry, wet the leveled area and compact it with a tamper or the grooming machine tires. Otherwise, it will not stay in place.



**For medium sized areas, use the leveling attachment of the grooming tool.**

1. Remove the bases and plug the base anchor sleeve.
2. Loosen the field material with a nail drag or needle tines.
3. Make sure the leveler is NOT in the float position.
4. Make wide sweeping turns in several directions over the area that needs to be leveled.
5. If the infield mix is dry, water the area and compact it with the tires of the grooming machine. Otherwise, it will not stay in place.



**For large areas or storm wash-outs, a box blade attachment works best. This should be coordinated with the Parks Department or outside contractor.**

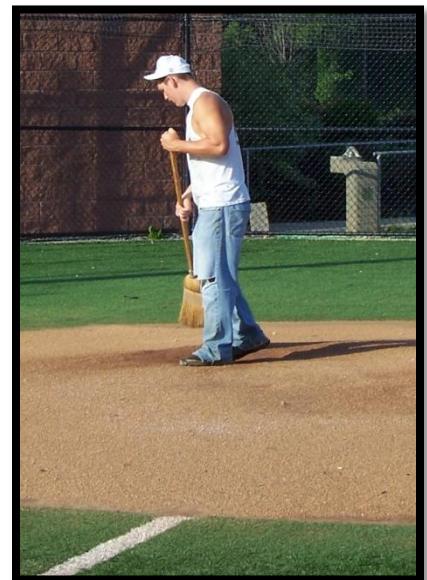
## F. Clay Repairs

Clay surfaces provide very solid, firm footing and better wear characteristics than regular infield mix for high wear areas like the pitching mound and batter's box. Making a clay repair is similar to making a repair with regular infield mix. The biggest difference with clay is that it must NOT be contaminated with any regular infield mix. **Pitching mounds and batter's boxes should be repaired every time they are used.**



### Techniques for Clay Repairs

1. Dig out and discard all loose material including infield mix, clay chunks, and field conditioners in and around the area to be repaired.
2. Sweep the area free of all minor bits of loose debris and place to the side.
3. Wet the existing clay with a flower watering can, hand held sprayer, or hose nozzle with a fine spray pattern.
4. Add new clay and compact in 2" layers. Working with clay can be tricky so follow these pointers:





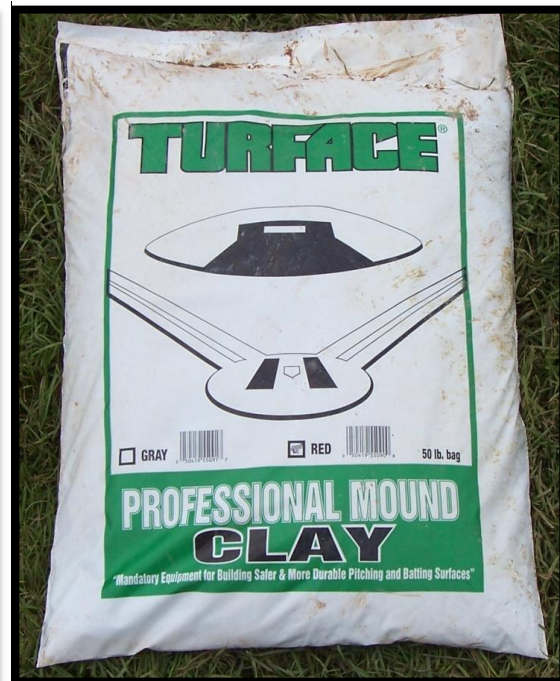
a. The new clay must have enough moisture content to stick to the underlying clay base that has been moistened. Otherwise, the new clay will pop out of place and create a hazard.

b. If the clay is too sticky, wrap the tamper plate in a garbage bag to alleviate the problem.

c. Shredded, bagged clay is very easy to work with and store. It is excellent for small daily repairs.

d. Unfired clay bricks are great for large scale renovations and can be purchased by the pallet. Long term storage is not practical for bricks.

5. Add approximately ½" of new field conditioner over the repaired clay area.



## G. Grass Edge Maintenance

Regular maintenance where the skinned infield meets the grass edge will prevent the formation of a lip. After wet playing conditions, the most common player injury occurs from bad ball bounces. Lips are a major contributor to this type of player injury. Lips at the grass edge are also the primary barrier to water exiting the skinned part of the field. Water trapped on the skin will force cancellations and field closures.

### Techniques for Maintaining the Grass-to-Skin Edge



- A manual or motorized edger can be used as frequently as preferred to keep edges looking crisp.
- Monthly edging is recommended.
- Neatly rake all grass clippings out of the infield mix when edging is complete.

- Sod should be purchased and installed if edges are significantly deteriorated.
- Sod installation should only be under taken in the early spring or fall. Sod will usually require hand watering for the first year.
- The Parks Department or an outside contractor should be contacted if sod installation is desired.

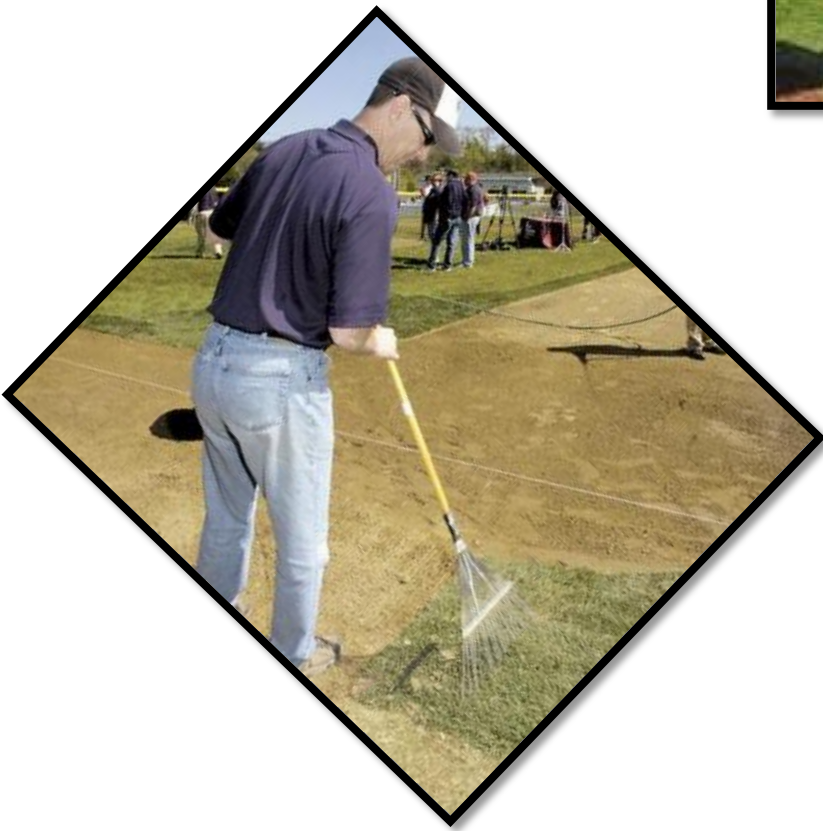


## Weekly Maintenance to Prevent Lips

- Use a backpack blower or power broom to push displaced material back into the skinned infield. This method works best when the infield mix is dry.



- Use a hose with a jet nozzle to wash the infield mix back to the skinned infield. Note that this method should only be performed when ample time is available for the skin to dry.



- Use a spring-tine leaf rake or broom and move the material back into the skinned infield. Use a leveling rake to distribute the material when edge maintenance is complete.



## H. Field Lining Techniques

- Only use “Athletic Field Marker” for foul lines and batter’s boxes on skinned infields. DO NOT substitute lime or other white materials because they may be less expensive.
- Only use marking paint that is specifically manufactured for turf.
- Always use a string as a guide line.



- Only use athletic field marker on skinned infields for important events. Overuse without removal will contaminate the infield mix and cause undesirable results.



- Remember, the entire infield foul line should be UNDER first and third base.



## Section 2

### Grass Field Maintenance

#### (Soccer, Football, Lacrosse)

##### A. Determining Field Playability

The decision to play on fields that are too wet is the number one cause of damage to grass fields and the top reason for player injury. And often, techniques used to make a wet field “playable” cause additional damage. Making the tough call to postpone a game due to wet conditions is the best decision for player safety and to preserve season-long playability of the ball fields.



**If there's  
standing water  
on 1% of the  
field, it's TOO  
WET for play!**



**If your shoe  
leaves an  
impression like  
these, it's TOO  
WET for play!**



## B. Water Removal Techniques for Grass Fields

The most important mistake to avoid is the removal or movement of soil from the field. Fields are designed with a specific slope to drain water from their surface and low spots or depressions catch and hold water EVERY TIME!



### Use a pump to remove big puddles.

1. Carefully remove the top layer of sod and set it aside.
2. Dig a shallow hole and let the water drain into the low spot you've created.
3. Use the pump to move the water into a bucket.
4. Empty the bucket outside of the playing field.
5. Replace all of the soil and compact with your shoe. Replace the sod.

### DO NOT Use These Methods on Wet Fields!

- **DO NOT** use brooms to disperse puddles.
- **DO NOT** remove muddy soil or turf from the field.

All of these unfortunate techniques leave a depression or low spot that will hold water every time it rains. Leveling a low spot is the best method to prevent puddling. The Parks Department is responsible for field leveling.



**For shallow puddles, use a roller squeegee.**

- Only use roller squeegees made for turf.
- Apply downward pressure on the handle as you walk.
- Push standing water toward the outside of the field, never toward the middle.

## **A Water Hog is a giant sponge!**

- The absorptive outer layer soaks up water like a sponge.
- The equipment is designed to “squeeze out” the outer sponge and hold the water in the internal cylinder.
- The cylinder is opened and emptied away from the playing surface.



## C. Field Drying Agents

Calcined and vitrified clay marketed under the brand names Turface, Pro's Choice, Diamond Pro, Rapid Dry, and Profile are the most common products used to assist with wet field conditions. **Calcined clay products are the only type Cranberry Township approves for grass fields.** These products should be used judiciously for two reasons: they are an expense to the program and they change the properties of the grass rootzone when used abundantly.



**Never use more  
than 3 bags of  
calcined clay to  
make a field  
playable!**

### Steps for Applying a Drying Agent

1. First remove as much water as possible using the pump, squeegee, or Water Hog method.
2. Use a spreader, shovel, or hand to evenly apply a thin layer of the calcined clay drying agent. Thin means less than ½" deep!
3. Use a spring-tine rake to spread and level the material. Do not use a rigid garden rake because it will pull out clumps of grass.

## D. Portable Goals

Soccer and Lacrosse fields would be incomplete without the portable goals that provide the target for scoring! The primary concern with moveable goals is their ability to tip over and cause an injury. Hardware or weight bags can be used to secure the bottom crossbars to prevent tip-overs but must be done safely and correctly. Cranberry Township's Partner Associations provide guidelines for moveable goal safety to their participating members.



**Stakes, bag weights,  
and plate weights  
are 3 approved  
methods to prevent  
tip-overs!**



**Move the goals for all non-game events! This significantly reduces wear at the goal mouth.**



## E. Field Lining Techniques



- Always use a string as a guideline.



- Only use marking paint that is specifically manufactured for turf.



- **DO NOT** rinse paint into any drain! It violates local, state, and federal law. Move to an isolated lawn or wooded area and spray out the rinsate.