

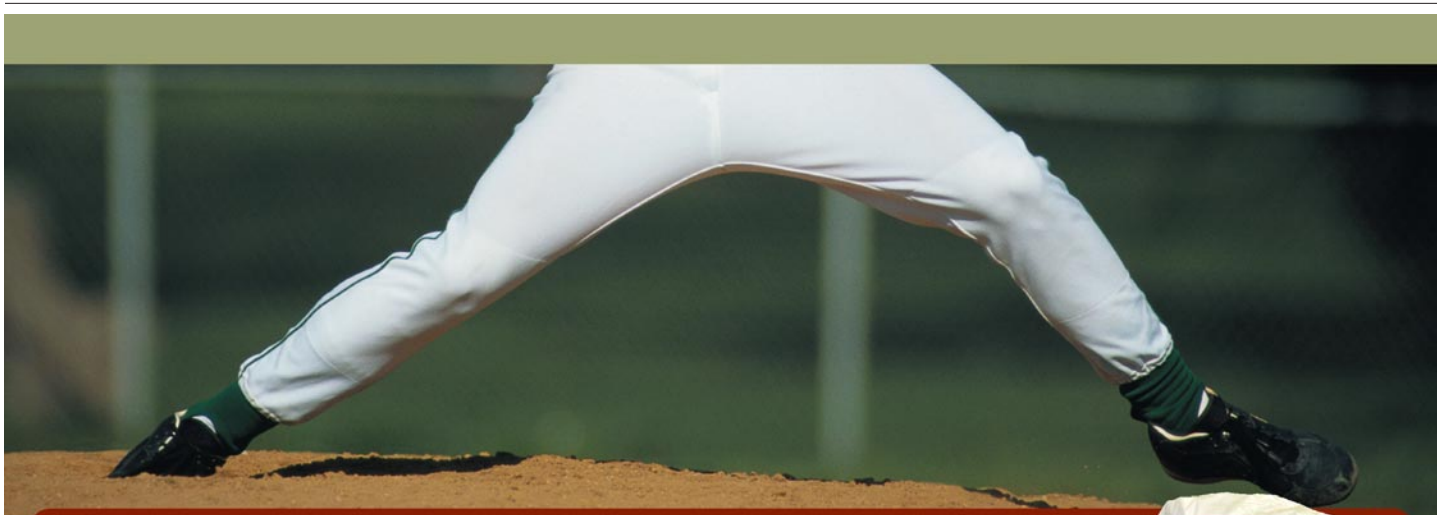
Cultivation Goal	Hollow tine 4-inch	Solid tine 4-inch	Water Injection	Shatter tine 4-inch	Shatter blade	Deeptine	Drill & Fill	Slicing /Topdressing	Small slicing/spiking	Vertical mower
Cultivation between playing seasons (no activities scheduled on the field)										
Change soil type in top 4 inches by removing soil and back filling with amendment	x						x	x		
Create large and deep holes or channels that can be back filled with a soil amendment							x	x		
Remove surface soil layer that was attached to sod during sand-based field construction	x							x		
Promote deep rooting, 8 inches or more			x		x	x	x	x		
Maximum removal of water puddles					x	x	x	x		
Aggressive fracturing of hard ground (surface to 6 inches deep)				x	x	x				
Cultivation during playing season										
Increase initial water infiltration rate with minimal disturbance to surface	x	x	x	x	x	x			x	
Plant seed with minimal disturbance to grass and soil stability		x		x						
Encourage lateral growth of sod forming grasses									x	x
Fracture hard skin infield, drag surface, and begin play				x						
Fracture hard grass fields				x	x	x				
Fast operation over field					x					

➤ CULTIVATION GOALS

There are many cultivation methods available for sports turf management. The best method of cultivation can be selected when specific cultivation goals have been determined.

medium and fine category are acceptable for topdressing sport fields. Avoid using sands high in the fine and very fine range since they do not contribute to increasing macropore space. ■

Dr. Dave Minner is an extension turfgrass specialist and professor at Iowa State University.



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David Wood, head groundskeeper at The Richard Stockton College of New Jersey

The Soil Profile:

Stockton College of New Jersey

WHAT HAPPENS TO A PREMIER SOCCER FIELD that is predominantly annual bluegrass in the middle of a hot messy summer in southern New Jersey when they turn off the water for two weeks? A rhetorical question? Unfortunately no, this is what happened to David Wood, head groundskeeper at The Richard Stockton College of New Jersey when the school decided to resurface the track that circles the field.

"We were a month and a half away from when the team comes back to start practice for a September 1 opening day game when they started a two week resurfacing of the track that circles our field and I was informed that we could not run our irrigation system at all while the track cures for fear of getting water on the new surface," Wood said about the school located in Pomona, 15 minutes outside of Atlantic City. Summers in the mid-Atlantic states are not great as anyone managing turf knows, humidity is very high and the temperatures typically can reach into the high 90's.

The soccer field is a mix of many grasses according to Wood, the field is mostly poa but there is a little bit of everything there, some bluegrass, ryegrass, fescue and even some bentgrass.

"I guess we were lucky that they didn't do this last summer which was the worst summer I can remember but not long after they turned off my water we hit temperatures in the low 100's," Wood said.

Dave Roesch has been the Supervisor of Landscape Maintenance at the college for more than 20 years and described the original construction of this soccer field as less than ideal. "The field was built in the mid 1980's and was designed to have a herring bone drainage system through the whole site but the design was changed during construction and the decision was made to make this site a recharge storm water basin and because of this the construction company didn't have room for a proper drainage system." A series of corrugated pipes were laid in a bed of gravel and covered with a landscape fabric 14 inches below a mix of native soil, which is predominately a sandy loam, and a collection of subsoils.

"The field has always caused us drainage problems especially before we broke through the landscape fabric that held water just below the playing surface, and the soil mix was not what anyone would want on their stadium field," Wood said.

Stockton College of New Jersey was established in the late 1960's and is the home of the Stockton Ospreys men's soccer team, the 2001 NCAA Division III national champions. The stadium field is currently used almost exclusively for the men's soccer games. Stockton College does not have a football team so men's soccer takes on a highlighted spot in the sports program at the college. David Wood manages this field along with four practice soccer fields, almost 20 acres of intramural fields, one baseball field, one softball field and a new synthetic sports turf field as well as turf and landscape responsibilities across the 1,600 acre campus.

On July 7 the resurfacing work began on the track that completely encompasses the main soccer field. A rubber based polymer composite was used and a total of five coats were needed to finish the project. "The coating only takes a few minutes to dry but they can only apply the material in perfect conditions so the process ended up taking a couple of weeks to finish. The material used on the track can easily drift so if



Soil Report					
Sample Location		SB	BB	Field	"F"
Sample ID				1	Field
Lab Number		9	10	11	12
Sample Depth in inches		6	6	6	6
Total Exchange Capacity (M. E.)		6.58	6.19	9.11	8.53
pH of Soil Sample		6.00	6.10	6.70	6.00
Organic Matter, Percent		2.94	2.45	2.02	2.54
ANIONS	SULFUR:	p.p.m.	15	16	21
	Mehlich III Phosphorous:	as (P ₂ O ₅) lbs / acre	812	466	1064
EXCHANGEABLE CATIONS	CALCIUM:	Desired Value	1790	1684	2478
		lbs / acre	1624	1533	2814
		Deficit	-166	-151	-167
	MAGNESIUM:	Desired Value	200	200	262
		lbs / acre	207	215	197
		Deficit		-65	258
	POTASSIUM:	Desired Value	205	200	284
		lbs / acre	177	163	218
		Deficit	-28	-37	-66
	SODIUM:	lbs / acre	40	45	62
					54
BASE SATURATION %	Calcium (60 to 70%)		61.69	61.88	77.22
	Magnesium (10 to 20%)		13.10	14.46	9.01
	Potassium (2 to 5%)		3.45	3.37	3.07
	Sodium (.5 to 3%)		1.33	1.58	1.49
	Other Bases (Variable)		5.40	5.20	4.70
	Exchangable Hydrogen (10 to 15%)		15.00	13.50	4.50
TRACE ELEMENTS	Boron (p.p.m.)		0.42	0.37	0.7
	Iron (p.p.m.)		326	393	318
	Manganese (p.p.m.)		5	4	6
	Copper (p.p.m.)		1.22	1.13	1
	Zinc (p.p.m.)		6.87	4.87	4.42
	Aluminum (p.p.m.)		660	671	387
OTHER					

the wind is moving in the wrong directions we could have wound up with buildings painted red!” Wood said. One of the most damaging parts of the process was a tarp that they had to lay down around the entire parameter of the track over the turf, and without David’s knowledge, this tarp was held down with 6-inch spikes one of which went through an irrigation line.

The soccer field is a mix of many grasses according to Wood, the field is mostly *poa* but there is a little bit of everything there, some bluegrass, ryegrass, fescue and even some bentgrass. “Last year was a tough year for this field, the weather was horrible and

the *poa* started a slow decline in June and didn’t recover until October,” Wood said. It was at that point that he decided to make some changes in his agronomic approach to try to provide the field more sustainability and try to create a situation where the field could survive the tough New Jersey summers. David is a graduate of the turf management program at nearby Rutgers University and has many years of experience managing golf courses.

“I spent a lot of time managing *poa* on a golf course but it’s not the same when you put a soccer team on that grass for a few hours of heavy play,” said Wood.

One of the concerns David expressed about the soils he was managing was the level of sodium. Test data showed that this field was consistently running at levels between 40 and 60 pounds per acre of sodium on the soil colloid but the water soluble paste extract was indicating an ever worse scenario. Along with the sodium concerns potassium levels were showing constant deficiencies which will only complicate the sodium problems creating added stress on an already stressed field. One recent water soluble paste extract showed a sodium percentage of 35 and a significantly lower potassium percentage which is often an indication for the potential of sodium induced wilt and more plant stress.

He started in October of last year with a recovery program of over seeding ryegrass with a starter fertilizer and frequent applications of gypsum to help knock off the excess sodium. In November he aerified with hollow tines in a 2-inch spacing and applied a combination zeolite, compost, rock mineral product at 25 pounds per 1000 square feet in the aerification holes and a composted 5-4-5 organic fertilizer to help recovery. He repeated this process again this past April.

“I wanted to get some recovery in this field and knew the organics would help but I also changed my topdressing program from a straight sand to a 70/20/10 mix incorporating a little peat moss and soil,” said Wood. In the spring he incorporated a new fertility spray program using a 5-ounce mix of each of three products, a soil conditioner/bio-stimulant, a liquid calcium product and a carbon based NPK product. “What really sold me on this new approach was how well the soccer field recovered after 2 weeks with virtually no water. The *poa* is now strong and well rooted, last year at this

Saturated Paste Report

Sample Location			SB	BB	Field	"F"
Sample ID					1	Field
Lab Number			39787	39788	39789	39790
Water Used			DI	DI	DI	DI
pH			6	6.1	6.7	6
Soluble Salts ppm			56	119	160	97
Chloride (Cl) ppm			22	27	30	19
Bicarbonate (HCO ₃) ppm			66	98	129	42
ANIONS	SULFUR	ppm	17.51	15.47	17.56	14.81
	PHOSPHORUS	ppm	2.02	0.63	3.83	4.57
SOLUBLE CATIONS	CALCIUM	ppm	9.05	7.45	23.17	7.94
		meq/l	0.45	0.37	1.16	0.40
	MAGNESIUM	ppm	2.67	2.17	4.94	2.42
		meq/l	0.22	0.18	0.41	0.20
	POTASSIUM:	ppm	10.85	8.36	17.2	8.22
		meq/l	0.28	0.22	0.45	0.21
	SODIUM	ppm	20.47	20.09	25.19	19.76
		meq/l	0.89	0.87	1.10	0.86
PERCENT	Calcium		24.50	22.65	37.23	23.76
	Magnesium		12.04	10.99	13.22	12.09
	Potassium		15.26	13.22	14.36	12.76
	Sodium		48.20	53.14	35.19	51.39
TRACE ELEMENTS	Boron (p.p.m.)		0.09	0.1	0.08	0.09
	Iron (p.p.m.)		1.95	1.46	1.64	0.71
	Manganese (p.p.m.)		0.05	< 0.02	0.06	0.04
	Copper (p.p.m.)		0.03	0.03	0.03	0.03
	Zinc (p.p.m.)		0.07	0.05	0.02	0.04
	Aluminum (p.p.m.)		3.71	3.16	2.37	1.91
OTHER						

“I wanted to get some recovery in this field and knew the organics would help but I also changed my topdressing program from a straight sand to a 70/20/10 mix incorporating a little peat moss and soil,” said Wood.



time you could pull it up with your hand so you could imagine what the soccer team did to it, but now it is holding up to everything!" said Wood.

I asked David what the first thing he did after he was able to get back on the soccer

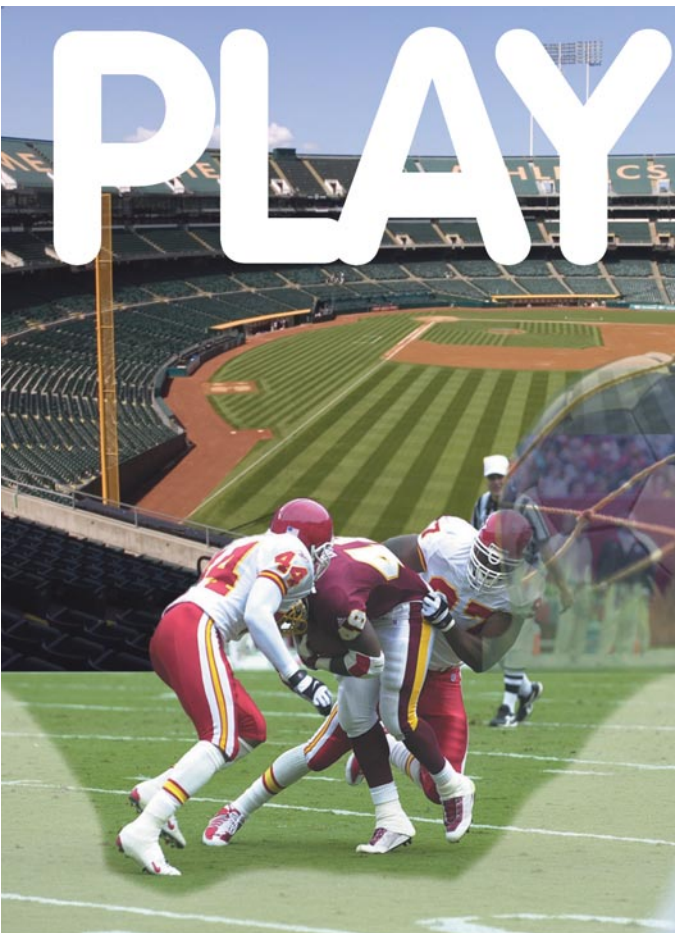
field after the track resurfacing project and with a laugh he quickly replied, "I watered it heavily!" He also went back with some zeolite and organic fertilizers to help recovery. He plans on continuing a regular gypsum program to fight the sodium that is coming in from the 10,000 gallons of water that he enjoys irrigating nightly. He has noticed a slight magnesium deficiency in recent soil tests and plans on making a couple of sul-po-mag applications this fall but will also continue the use of potassium sulfate to fight potassium deficiencies and stay ahead of the sodium to potassium balance.

I wouldn't wish 2 weeks of no irrigation on any turf manager let alone to have it happen in the middle of July and I have to say my expectations upon visiting David's field were pretty low, but I was overly impressed with the recovery that has occurred in such a short period of time. He still has some work to do and the weather has not helped much but the field is definitely playable, the few weak areas and field edges will be managed and over seeded. By open-

ing day September 1 the players and spectators will not know there was ever a point of concern and David and his team will look back at this experience with a chuckle and a sigh of relief. ■

Joel Simmons is the president of Earth-Works Natural Organic Products and Soil First consulting and teaches the Soil First Academy. He holds a master's degree from Penn State University and is a former Penn State extension agent and instructor of soils at Rutgers University, joel@soilfirst.com.

The Soil Profile is a quarterly interview series that will be accompanied by soil test audits of a selected field from all corners of the sports turf world. Our goal is to evaluate the soil and water tests from a selected sports field and build a fertility program based on the soil profile. We would like to encourage all sports field managers who would like to be interviewed for this piece to contact the magazine. Along with Logan Labs he will provide free soil test work and consulting to the selected site.



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Prepping for the powder: how to prepare for any snow event

Editor's note: This article was prepared by Alyssa Kram of IRONCLAD Marketing, West Fargo, ND on behalf of Arctic Snow & Ice Control Inc., Frankfort, IL.

>> SNOW EVENTS don't operate on a 9 to 5 schedule. Implement a chain-of-command plan to ensure all events are handled as quickly as possible, even in the middle of the night. Photo courtesy of Randy Strait.

RECORD-SETTING SNOW-FALL coupled with strong winds socked cities across the United States last winter. For some areas it's the norm, but for many the snow has been an unwelcomed surprise. And in most parts of the country, people equipped to rid their region of that snow remain in high demand. For safety and sanity, it's critical to get snow and ice off of traveled areas quickly and thoroughly—of course, that's easier said than done. A haphazard approach or partially completed job will create more problems than it solves in the long run, making it imperative for you to be thoroughly prepared.

After 36 years in the snow-removal business, Randy Strait could easily be considered an expert

on getting rid of the white stuff. He owns Arctic Snow & Ice Control Inc. and has tackled everything from his own driveway to parking lots at some of the nation's largest businesses. And he stresses the key to quality work and reduced liability is to be prepared for each and every snow removal job.

No matter the size of the job, Strait says "it's better to be safe than sorry when it comes to preparing for snow removal." Although there are many issues that need to be addressed beforehand, such as the size of the lot and the state of the equipment, taking a little time to do so will ensure any event is handled quickly and effectively. This is especially true, Strait says, since, "the climate is changing and the times are changing, and you never know what Mother Nature may bring."

"Snow and ice removal is a compromise for my passion to manage sports turf."

-Mark Frever, CSFM, director of grounds, Albion College, Albion, MI.

By learning to expect the unexpected, snow contractors will be poised to handle any winter weather scenario. And knowing how and for what to prepare when a snow event hits is critical to success. Strait recommends you answer a few questions beforehand to gauge your preparedness.

PROPERTY POINTS

Although all parking lots may seem the same to the average person, snow removal contractors know each is vastly different. In order to clear each unique property well, snow contractors must consider several factors before ever arriving onsite. The first aspect is the property's size.

Imagine a building contractor preparing for a new home construction job. When drawing up blueprints, he or she must know the dimensions of the empty lot. This will help determine the size of house that can fit on the property, how large of a crew is needed, the quantity of supplies that will be required, and how long it will take to complete the project. In the same way, a snow removal contractor won't be prepared to plow without first

knowing the size of the property being cleared.

The property size will dictate the type of equipment necessary, and the number of machines and personnel required to expediently handle the situation. However, when attempting to estimate equipment needs, Strait stresses the importance of using machines and plows currently owned.

"You should always estimate based on the plows and equipment you currently have," he explains. This touches on Strait's next point: knowing the property's size can help prevent overstocking, and reduce the likelihood of time and money wasted on excess machines and staff. It will also avoid bringing equipment that may be too large for the job.

"Everyone always wants to push more snow, faster. Efficiency drives the majority of our decisions," Strait says. But he stresses that the largest plow may not always be the best for the job. For example, a snow contractor with a large 19-foot loader-mounted snow pusher may want to opt instead for his 10-foot skid-steer snow pusher to properly handle a

Four tips to keep your spreaders running

WHEN WINTER STARTS UP, the last thing you want is for your spreader to stop working. Fortunately, a routine maintenance program is simple. Some units may require more care than others, but, in general, there are four simple, yet important, rules to follow.

1 WASH DAILY

Washing the spreader is the most frequent maintenance requirement, since corrosion is the number one enemy of snow and ice professionals. In fact, a spreader should be washed after every use in order to prevent corrosion from eventually forming. This task is most crucial when dealing with steel hoppers, which are highly prone to rust, but it's also good practice with polyethylene hoppers. It's a good idea to wash out old salt and sand, as well as foreign materials.

2 USE PLENTY OF GREASE

Next on the list is to regularly grease all moving parts, such as bearings, chains, conveyors, rollers and augers. Of course, this requirement varies based on the type of spreader being maintained. For any electric-powered spreaders or those with electrical connections for components, such as lights, all terminals should be coated with dielectric grease. This helps prevent corrosion and ensures easy reconnection. For best results, apply dielectric grease to the terminals anytime they are disconnected.

3 TIGHTEN THE BELT

With any spreader that uses belts, chains or conveyors, the tension should be properly adjusted throughout the winter to reduce slippage and performance problems. The owner's manual will provide specific information, but some points are universal. First of all, be careful not to over tighten the drive belt or chain, as this could lead to damage. Furthermore, before adjusting conveyor belt tension, make sure that deicing material or sand is not trapped or frozen between the conveyor belt and the surface below.

If the spreader doesn't have a conveyor belt, it likely uses an auger to deliver material to the spinner.

4 CHECK THE ENGINE AND HYDRAULICS

Maintenance for electric-powered spreaders ends here. But for gas-powered units, one must also follow the maintenance schedule outlined in the engine owner's manual to check or replace the oil, air filter, spark plugs and more.

If the spreader is powered by a hydraulic system, change the hydraulic fluid periodically. Replace any hoses or fittings that are damaged or leaking, and be sure to cap all hydraulic connectors to prevent system contamination. —James Truan, vice president of sales & marketing, SnowEx. ■



>> EVEN THE SMALLEST PRACTICES will have a big impact when it's time to handle a snow event quickly. Rich Johnston, a snow contractor from Westville, IN, stands with his fleet, faced out and ready to go at all times. Photo courtesy of Johnston Landscape and Maintenance.

mid-size parking lot. A 10-foot snow pusher will be ideal for clearing narrower aisles, handicapped parking spaces, and will even work in the case of plowing during the day, when traffic is present.

Finally, an accurate estimate of how long the job will take can be determined. Many contractors that use containment plows use a formula based on acres and pushing capacity of these types of plows. For example, one 10-foot containment plow with a pushing capacity of 13-yards will take roughly 30 minutes to plow anywhere from two to three acres; of course, this will be dependent on several outside variables that will change from event to event. A snow event with a 4-inch accumulation of heavy, wet snow will take longer to clear than an event dropping two inches of light, fluffy snow. A contractor using, for example, a 16-foot model with a 28-yard capacity can estimate the same job in the same weather conditions to take about half the time.

But running an efficient snow removal operation involves more than just sending out the crew and instructing everyone to start plowing. Having a plan in place for how to clear the lot is crucial for maximized efficiency, especially in the case of larger properties. For example, it may be wise to divide the area into sections and assign each operator his or her own area. This gives each individual a specific portion on which to focus efforts, leading to more efficient plowing and eliminating the possibility of doubling-up on a single area.

Parking lots pose additional challenges you must be aware to ensure quick and thorough plowing. Parking lots often include obstacles such as light poles, medians, etc. Noting and planning for these small details will make a big difference, in providing top-notch service and preventing accidents.

You also need to factor in appropriate equipment and personnel for curbs and sidewalks, which require additional time and resources.

This level of adequate preparation is key, as every minute in snowfall response time can be crucial. But rather than take the time to plan for fast, complete snow removal, many contractors rely heavily on salt as a primary tool. Salt has advantages, but also comes with its fair share of disadvantages, all of which you must be aware.

THE RIGHT PLOW

There's no doubt salt can be beneficial in some situations, but recent shortages have affected many of us. In addition to shortages and of course, the high cost of salt, the narrow window of its effectiveness is another factor to consider.

"Salt is most effective when the temperature reaches 20 degrees Fahrenheit and above, and the sun is out to activate it," Strait says. Experience shows that these types of ideal days are few and far between. The best bet is to remove the snow and ice as completely as possible to reduce or fully eliminate the need for salt, and prevent

» **KNOW THE DETAILS** of each property in advance to ensure the proper equipment is used. Though it may seem like the obvious choice to always use the largest snow pusher, a smaller one will be best for small entranceways and tight corners. Photo courtesy of Randy Strait.



slip-and-fall hazards as well. In order for you to successfully achieve clean, clear results, a good snowplow is an essential part of the snow removal team.

A snowplow is more than just a piece of equipment, it's the real workhorse of a snow removal operation. The better the plow, the better the snow removal job will be, leading to less chance of excess ice build-up. For example, containment-style plows, also known as box plows, have come a long way over the years, and many different styles and models exist, each with their own technology and features. Looking for a plow that incorporates features designed for fast, efficient removal of snow and ice will be key in effective operation and preventing liability issues.

Many snowplows incorporate steel cutting edges, which are very effective at scraping even hard-packed snow and ice down to the pavement. Some manufacturers offer sectional moldboard designs, which contour to variances in the pavement grade, allowing the plow to get into dips and depressions in the pavement. This allows for cleaner results, and more snow and ice to be removed with each pass. Recently, special drop-and-go hitch designs have been introduced to further enhance the amount of snow and ice removed with each pass. These hitches let the plow move freely from the equipment and automatically adjust the plow to any change in pavement.

Beyond boosting the effectiveness of a snowplowing operation, the equipment can affect your ability to respond to and handle each snow event quickly and efficiently. To ensure the equipment doesn't slow down the crew, it's imperative to keep inventory well maintained and serviced.

KEEP EQUIPMENT IN CHECK

In nearly every area of the country, a snow event will show up unannounced at some point. It's not uncommon for the weather to go from 60 degrees Fahrenheit one day to blustery, blizzard-like conditions the next. It is crucial to keep all machines adequately maintained so they're ready to tackle any job and last throughout several hours of tough plowing.

The first step in any proper routine maintenance plan is the most basic—keep the snowplow clean. Taking just a few moments at the end of each shift to quickly clean the plow will provide a two-fold benefit. First, a good cleaning will remove any excess ice or salt that could damage the plow or cause corrosion. Second, it will allow the operator to spot any obvious issues, such as damaged or severely worn parts. Replace these immediately to avoid a decrease in performance or a full-scale breakdown in the middle of a plowing job.

Good maintenance is an ongoing process, and should receive adequate attention, both during the season as well as the off-season. Investing a small amount of time into basic plow upkeep will pay dividends, as the plow will be ready and waiting to go as soon as the flakes begin to fly.

It's beneficial for a snow removal fleet to include more equipment and machines than needed at any given time. In the event a plow becomes damaged during use, having an extra one on hand to



» **USING A PLOW** that incorporates features designed for fast, efficient removal of snow and ice will reduce the need to use salt, which is less effective in cloudy, colder conditions. Photo courtesy of Randy Strait.

replace the damaged one immediately will eliminate costly downtime. Rather than leaving a machine idle while its plow is being fixed, it can be fitted with a backup unit and be right back out on the jobsite.

READY WHEN YOU ARE

All snow events must be handled with urgency, as every minute counts. When it comes to the argument of whether to wait for the snowfall to stop before plowing, or get out there an attack the white stuff while it's still coming down, Strait's philosophy is simple: "Don't hesitate for a minute. As soon as the snow begins to fall, we're out there immediately."

When faced with an impending winter storm or blizzard, Strait urges how crucial it is for the operator to respond quickly so the snow doesn't get too far ahead. The longer it takes a crew to respond, the more time snow has to accumulate and ice to build up and the more likely it will be to cause a detrimental slip-and-fall accident.

The first impediment to a quick response time is obvious: bad weather. A snow event will make travel conditions to the jobsite less-than-ideal, so the closer personnel and equipment can be to the jobsite, the faster they can respond.

Finally, even the simplest policy can save time. Consider backing equipment on the lot, facing the exit, so it's ready to go in an emergency. This will shave off crucial minutes in the event of an urgent snow situation, leaving less time for snow accumulation and less chance of a slip-and-fall accident.

Although responding to a snow event immediately seems like the obvious way to handle a storm, it's easier said than done. Knowing how to prepare, and for what to prepare will ensure every snow event is handled quickly and efficiently. ■



Winterizing your irrigation system

AS FALL APPROACHES and temperatures drop, the water in your irrigation systems can expand as it freezes. Now is the time to start thinking about preparing your irrigation systems for winter. Since automatic irrigation systems are usually buried only about 12 inches below the surface of the soil, water left in an irrigation system in freezing climates over the winter, even a mild winter, will certainly freeze, causing damage to pipes, fittings, valves, and sprinklers. Damage caused by a frozen irrigation system can be expensive and time consuming to repair next spring. Preventing winter damage by properly winterizing the irrigation system is an important consideration now.

Using compressed air to force water out of the irrigation system is the most common method of winterization. However, irrigation systems equipped with automatic or manual drain valves may not require compressed air to winterize if the piping has been installed with slope leading toward the drain valve. If you are not sure that the system was designed to drain itself completely, then use compressed air. Using compressed air on an irrigation system equipped with automatic or manual drain valves will not harm the components of the irrigation system when properly executed and will ensure the irrigation system is properly winterized.

SELECTING AN AIR COMPRESSOR

A properly sized air compressor is critical in effectively and efficiently blowing air into the irrigation system, forcing water out through the sprinklers. Air compressors are available in various sizes. The most common portable air compressor, which represents roughly 80% of the portable air compressors going into rental fleets today, is the 185 portable air compressor.

A note of caution: The expanding air coming from the air compressor into the irrigation system will get hot and may melt the plastic pipe.

This machine is rated at 185 cfm at 100 psi at full load. You can find one through a contractor's equipment rental shop that is more than adequate to get the job done for most residential and commercial irrigation systems. Smaller 5 horsepower electric air compressors, although capable of delivering 100 psi, are not capable of delivering enough volume of air to adequately winterize an irrigation system. For winterizing sprinkler systems, it is the volume of air that is more important than high pressure. In fact too high of pressure will cause damage. The preferred operating pressure will be set at 40-50 psi. This is enough air pressure to evacuate the water through the sprinklers within each zone.

WINTERIZING AN IRRIGATION SYSTEM WITH COMPRESSED AIR

A note of caution: The expanding air coming from the air compressor into the irrigation system will get hot and may melt the plastic pipe. Carefully check the temperature of the air-hose connection at the blow-out point, and make sure to slow down or stop momentarily if it feels too hot. Cycling through each zone two or three times for short intervals will prevent too much heat buildup. Another option is to use long stretches of compressor hose laid on the ground to absorb much of the heat before it enters the sprinkler system. Those who have experience winterizing large systems will use a combination of both or try and find an air compressor that will blow cold air. They are not as common, but they do exist.

DRAIN SYSTEM WINTERIZATION

Although using compressed air is the most common method for winterizing an automatic irrigation system, there are two systems that do not require the technique. The first type is a system equipped with automatic drains that open when the system pressure falls below 10 psi. For these systems, it is usually only necessary to turn off the water.

An irrigation system equipped with manual drain valves requires locating and