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A Relative Comparison of Options for Building/Renovating a Football/Soccer Field*

http://turfgrass.hort.iastate.edu/extension/cost.pdf

Dave Minner
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Estimates based on an 80,000 sq. ft. field.

Field type/renovation practice	Estimated cost	Cost per 1000 sq.ft.	Advantages	Disadvantages
1. Sand-base perched water table, irrigation, drainage, sod.	$600,000 to $800,000	7500 to 10000	Rapid removal of water. Resistance to compaction. Reduced crown (0 to 0.8% slope) or flat field for soccer. Water percolation 9-15 in/hr.	Requires more fertilizer and more attention to irrigation. Potential stability problem in establishment year.
2. Shallow sand pad, 6-in rootzone without gravel blanket. Includes irrigation, drainage, and sod.	$200,000 to $400,000	2500 to 5000	Same as field type #1.	Same as field type #1.
3. Till sand into field. Change sand content from 30% to 80% in top 6-8 inches (5.71"new sand + 2.28" existing field soil).	Sand 26.4 tons/1000 sq. ft. @ $20/ton Spread & till sand and level 11¢ per sq.ft.	638	Moderate cost with some improvement to field. Less compaction, easier penetration of aerifier and cleats, better initial water infiltration, water percolation near 1 in/hr.	This is not a rapid draining sand-based system. Compaction and muddy conditions are still possible. The final mixture must contain at least 75% sand on a weight basis before an improvement is realized.
4. Grading – grade whole field or reshape crown on center of field.		300	Reduces surface puddles on fld. Whole fld or center only.	Improves surface runoff not internal drainage. Field can still be muddy.
5. Strip sod	$1.35/yd	150	No additional grading needed if surface grade is sufficient.	May have additional dumping charges.
6. Sod KB	$1.45/yd	161	Field can be ready for play in 60 to 90 days. Big roll sod has fewer seams and fast installation.	Some sod is grown on soils containing too much clay.
7. Install sod	$1.70/yd	189		
8. Trenched drains 15-ft centers, corrugated pipe, gravel.	5000ft @ 4-in 800 ft @ 6-in 4" tile $4/ft 5" tile $5/ft 6" tile $6/ft	310	Reduces standing water on field by increasing surface drainage.	Does not provide rapid internal drainage between drain lines.

*These tables were developed to provide a relative comparison for a broad range of field renovation practices. These are not bid prices and they may change substantially depending on location, local materials, and contractor qualification.

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Field type/renovation practice	Estimated cost	Cost $ per 1000 sq.ft.	Advantages	Disadvantages
9. Sand Bypass system 1.75-in sand slit, 8 in deep on 20-in center. Subdrain 3-in sand trench, 2-in pipe, 1 ft deep, spacing 6-20ft centers. Topdressing 0.25 to 1.0 inches.	$100,000	1,200	Installed on new or existing field. Removes surface water much faster than native soil system but not as fast as sand pad system. Effectively removes standing water from field and results in quicker surface drying time.	Topdressing depth of 0.5 to 1.0 inch is critical to keep athletes away from soil and to keep sand slits from "mudding over". Thatch must be maintained and sand slits must remain in contact with surface to remove ponded water.
10. Automatic irrigation system	$18-20,000/fld	250	Significantly increases growth capacity.	Higher level of maintenance often requires more inputs, i.e. pest control, mowing, fert.
11. Traveling irrigator with booster pump.	Adequate Large $7000	88	Portable, waters one field per day.	Waters only one field per day.
	Too small rain train $2000	25	Portable, takes 2-3 days to water one field.	Inadequate for most large sport fields.
12. Vertidrain 3/4" solid	2¢/sqft	15	Cultivation method that increases deep rooting and deep voids that that immediately increases initial water infiltration.	Does not evacuate water from field like a tile drainage system
13. Conventional core aerification	1.5¢/sqft	15	Cultivation method that allows for removal of existing soil.	None
14. Core collection	1.0¢/sqft	10	Seldom offered by turf maintenance companies.	Requires strong vacuum/sweeper.
15. Sand Topdressing 1¢/sqft machine 2.24¢/sqft/.25" sand ($20/ton) delivered	1/4 inch per year	33	Light topdressing rate – expect 6 years before noticeable improvement	Your target should be to achieve 75% sand in the top 3-4 inches of profile before noticing improvement. Continue topdressing even after reaching this goal.
	1/2 inch per year	55	Normal topdressing rate – expect improvement after 3 years when combined with vertidrain.	
16. Drill Seed 3 lb KB or 7 lb PR/M two directions, apply starter fertilizer	3.5¢/sqft	35	Good establishment in drill rows. Minimal disturbance to field.	Drill rows can cause uneven surface if not planted with multiple passes using a turf type drill.

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EXAMPLES OF FIELD RENOVATION PROJECTS*

http://turfgrass.hort.iastate.edu/extension/cost.pdf

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Estimates based on 80,000 sq.ft. whole field or 20,000 sq.ft. center of field.

FldA	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
3	Till in sand, change soil from 30 to 80% sand by wt.	638	80,000	51040
6	Sod whole fld	161	80,000	12880
7	Install sod whole fld	189	80,000	15120
			Total	$79,040

FldB	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
4	Recrown center of fld	300	20,000	6000
12	Core whole fld	15	80,000	1200
15	Topdress center of fld, 1/2 inch sand	55	20,000	2800
16	Drill seed whole fld	35	80,000	1360
			Total	$11,100

FldC	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
13	Core whole fld	15	80,000	1200
14	Collect cores whole fld	10	80,000	800
15	Topdress whole fld, 1/2 inch sand	55	80,000	4400
			Total	$6,400

FldD	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
12	Vertidrain whole fld	15	80,000	1200
15	Topdress whole fld, 1/2 inch sand	55	80,000	4400
			Total	$5600

FldE	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
5	Strip sod from of center fld	135	20,000	2700
6	Sod center of fld	161	20,000	3220
7	Install sod center of fld	189	20,000	3780
		Total	Center fld	$9700
		Total	If Whole fld	$38,800

FldF	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
4	Recrown center of fld	300	20,000	6000

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8	Sand trench 3 lines of 4-in. tile between hash marks, 1240 ln.ft.	248	20000	4960
15	Topdress center of fld, 1/2 inch sand	55	20000	1100
13	Core whole fld	15	80,000	1200
16	Drill seed whole fld	35	80,000	2800
			Total	$16,060

FldG	Renovation	$/linear ft.	Linear ft	Estimated Cost
8	Sand trench drains 1 line of fld	$4/ft	360 ft	1440
8	Sand trench drains 3 lines of fld	$4/ft	1080 ft	4320
8	Sand trench drains 5 lines of fld	$4/ft	1800 ft	7200
8	Sand trench drains11 lines of fld	$4/ft	3960 ft	15840

FldH	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
4	Recrown whole fld	300	80,000	24000
8	Sand trench drains 5 lines center of fld + one at each sideline.	$4/ft	1800	7200
10	Irrigaiton system			20000
			Total 4,8,9	51200
	4,9,8			51200
6	Sod whole fld	161	80,000	12880
7	Install sod whole fld	189	80,000	15120
			Total 4,8,9+6,7	$79200
	4,8,9			51200
16	Drill seed whole fld	35	80,000	2800
			Total 4,8,9+15	$54,000

Fld I	Renovation	$/1000 sq.ft.	Total Area sq.ft.	Estimated Cost
13	Core whole fld 3 x	30	80,000	2400
14	Collect cores fld 3x	30	80,000	2400
15	Sand topdress 3 x, 1/4 inch each time	99	80,000	7920
12	Vertidrain whole fld solid tine 2x	30	80,000	2400
16	Drill seed whole fld 3x	51	20,000	1020
			Total	$16140