

## Construction Cost Estimate of Distance Impacts

To better understand the impacts of increasing distance on new and existing golf courses, we estimated the costs associated with building golf course features that are directly connected to distance increases. The features identified were additional back tees, additional bunkers, expanded fairway area and longer practice ranges. We estimated the typical size and scope of these design adjustments and utilized the Golf Course Builders Association of America (GCBA) Cost Guide Tool and other recent pricing sources to calculate estimated costs. The GCBA Cost Guide uses 2010 construction pricing data and New Jersey was chosen as the location for our example course.

There are several important things to note about how this information is presented:

- Along with unit costs for the components of each feature, we included the total cost of a completed feature to make the impacts easy to understand. For example, we calculated the cost of one additional back tee and one additional bunker based on a set of assumptions that are noted for each item.
- We identified which impacts would apply to new golf course construction projects and renovations of existing golf courses. Some distance impacts would affect both types of project, but we also identified key areas where that would not be the case. For example, a new bunker would not be added to adjust for increased distance in a new construction project because the modern tee shot distance would be factored into the initial design. At the same time, our mapping research showed that existing courses would not typically expand fairway area to account for additional distance, but longer courses are typically built with more fairway area in their initial construction.

These cost estimates are based on typical modern construction specifications and are intended to represent an average project. It is certainly possible for these features to be more or less expensive based on adjusted specifications or the unique circumstances of a given site.

Table 1: Construction Cost Estimates

	New	Reno.	Units	Quantity	Unit Cost	Total Cost
<b>Tee Construction</b>						
Remove Topsoil (Tee & Surrounds)	✓	✓	Cubic Yards	37	\$1.84	\$68.08
Shaping (Tee & Surrounds)	✓	✓	Square Feet	3,000	\$0.40	\$1,200.00
Perforated Drainage (Tee)	✓	✓	Linear Feet	90	\$6.95	\$625.50
Solid Drainage (Tee)	✓	✓	Linear Feet	75	\$5.50	\$412.50
Irrigation (Tee & Surrounds)	✓	✓	Cost per Head	4	\$950	\$3,800.00
Purchase 4" Rootzone Material (Tee)	✓	✓	Ton	16	\$20.00	\$320.00
Install 4" Rootzone Material (Tee)	✓	✓	Square Feet	1,000	\$1.25	\$1,250.00
Replace Topsoil (Surrounds)	✓	✓	Cubic Yards	22	\$1.95	\$42.90
Laser Level Tee Top (Tee)	✓	✓	Square Feet	1,000	\$0.13	\$130.00
Fine Shaping and Seedbed Prep (Surrounds)	✓	✓	Square Feet	1,000	\$0.07	\$70.00
Fertilizer Application	✓	✓	Acre	0.1	\$450	\$45.00
Seeding (Tee)	✓	✓	Square Feet	1,000	\$0.12	\$120.00
Seeding (Surrounds)	✓	✓	Square Feet	1,000	\$0.10	\$100.00
Concrete Cart Path (8' wide)	✓	✗	Square Feet	1,440	\$2.55	\$3,672.00
<b>Total Cost</b>						<b>\$11,855.98</b>
Notes: 1,000 sq ft tee 2,000 sq ft shaped surrounds Start of tee 25 yards behind previous tee						
<b>Bunker Construction</b>						
Remove Topsoil (Bunker & Surrounds)	✗	✓	Cubic Yards	55	\$1.84	\$101.20
Shaping (Bunker)	✗	✓	Square Feet	1,000	\$0.83	\$830.00
Shaping (Surrounds)	✗	✓	Square Feet	4,000	\$0.40	\$1,600.00
Perforated Drainage (Bunker)	✗	✓	Linear Feet	90	\$6.95	\$625.50
Solid Drainage (Surrounds)	✗	✓	Linear Feet	75	\$5.50	\$412.50
Irrigation (Surrounds)	✗	✓	Cost per Head	3	\$950	\$2,850.00
Bunker Liner Installation (Bunker)	✗	✓	Square Feet	1,000	\$1.25	\$1,250.00
Purchase 4" Compacted Sand (Bunker)	✗	✓	Ton	16	\$30	\$480.00
Install 4" Compacted Sand (Bunker)	✗	✓	Ton	16	\$14	\$224.00
Replace Topsoil (Surrounds)	✗	✓	Cubic Yards	44	\$1.95	\$85.80
Fine Shaping and Seedbed Prep (Surrounds)	✗	✓	Square Feet	3,000	\$0.07	\$210.00
Fertilizer Application (Surrounds)	✗	✓	Acre	0.1	\$450	\$45.00
Seeding (Surrounds)	✗	✓	Square Feet	4,000	\$0.10	\$400.00
<b>Total Cost</b>						<b>\$9,114.00</b>
Notes: 1,000 sq ft bunker 4,000 sq ft shaped surrounds						
<b>Fairway Expansion</b>						
Remove Topsoil	✓	✗	Cubic Yards	1056	\$1.84	\$1,943.04
Shaping	✓	✗	Square Feet	95079	\$0.40	\$38,031.60
Irrigation	✓	✗	Cost per Head	10	\$950.00	\$9,500.00
Replace Topsoil	✓	✗	Cubic Yards	1056	\$1.95	\$2,059.20
Fine Shaping and Seedbed Prep	✓	✗	Square Feet	95079	\$0.07	\$6,655.53
Fertilizer Application	✓	✗	Acre	2.2	\$450	\$990.00
Seeding	✓	✗	Acre	2.2	\$1,250	\$2,750.00
<b>Total Cost</b>						<b>\$61,929.37</b>
Notes: Assuming 2.2 acres of additional fairway for each 250 yards of additional distance (based off mapping analysis).						
<b>Practice Range Expansion</b>						
Remove Topsoil	✓	✓	Cubic Yards	242	\$1.84	\$445.28
Shaping	✓	✓	Square Feet	21780	\$0.40	\$8,712.00
Irrigation	✓	✓	Cost per Head	3	\$950.00	\$2,850.00
Replace Topsoil	✓	✓	Cubic Yards	242	\$1.95	\$471.90
Fine Shaping and Seedbed Prep	✓	✓	Square Feet	21780	\$0.07	\$1,524.60
Fertilizer Application	✓	✓	Acre	0.5	\$450	\$225.00
Seeding	✓	✓	Acre	0.5	\$1,250	\$625.00
<b>Total Cost</b>						<b>\$14,853.78</b>
Notes: Assuming an additional 25 yards of range length adds 0.5 acres of additional range area (290' wide).						