

*Town of Fairfield
Golf Commission*



**H. Smith Richardson Golf Course
10 Year Master Improvement and Financial Plan
2010 - 2019**



Revised May 25, 2010



**H. Smith Richardson Golf Course
10 Year Master Improvement & Financial Plan
2010 - 2019**

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Introduction

The following is a 10 year master improvement and financial plan for the H. Smith Richardson Golf Course in Fairfield, CT. The intent of this plan is to lay out the steps necessary to preserve golf course revenues, continue a track record of revenues exceeding operating expenses, and return the golf course to a benchmark standard of play. The plan is meant to be fiscally responsible and prudent in its prioritization. The expenses to be incurred with this plan are not intended to be part of the annual budget planning process but are meant to be incremental to the regular operations and maintenance of the H. Smith Richardson golf course.

This plan calls for a \$1.0MM reinvestment in the golf course infrastructure. The plan spreads the necessary projects over the ten year period, prioritizing improvements and targeting an expenditure level of roughly \$100K each year. This plan also includes a \$3.3MM renovation of the clubhouse in FY 2012-2013 and a \$150K restroom facility for the back nine in FY 2019-2020.

H. Smith Richardson is currently in good condition. The Superintendent and his staff have done a good job maintaining the course and the Superintendent has managed his staff, prioritizing regular maintenance and special projects to keep the course in above average condition. The Superintendent has also shown that the course can, on occasion, be brought up to better condition levels to meet higher standards for special events and outside tournaments. These better condition levels are not maintained on a regular basis due to limited resources and a very high level of traffic or number of rounds.

As a result of the consistent high level of traffic over many years, and priorities made with regard to regular maintenance due to limited resources, certain areas of the course are in need of renovation and restoration. If these renovations are not made, H. Smith Richardson is in jeopardy of seeing a significant decrease in traffic and a significant decrease in revenues.

Historically, the golf course has generated more revenues than operational expenditures -- effectively, self-funding its operations and providing a contribution to the town's general fund. Without making the much needed improvements, it is not expected that H. Smith Richardson will be able to generate enough revenues to cover its regular operating expenses starting in FY 2013 - 2014 and beyond. However, with the improvements, this plan projects an increase in the number of rounds and a corresponding increase in revenues. It is expected that the additional revenues generated would allow the golf course revenues to exceed its operating expenses and ultimately the additional revenues expected from implementing this plan will more than offset the total reinvestment of \$4.45MM in just over ten years.

H. Smith Richardson has the potential to be one of the top five municipal golf courses in Connecticut. It has good architecture. With a strategic and coordinated plan, the golf course can be returned to its potential with fiscal responsibility. The town of Fairfield can offer its residents a top-tier golf experience and can warrant premium rates from non-residents.



Current State of the Course

Greens:

Given the high level of traffic and number of rounds played per year, the greens at H. Smith Richardson are above average. None of the greens are in need of a major renovation, however, two of the greens would benefit from an expansion and/or re-grading. Only two of the eighteen greens are sand-based so a regular program of aeration and top-dressing should be followed. It is important that the Superintendent have the necessary materials and resources to maintain the greens throughout each year. The greens should be the highest priority for the Superintendent as EVERY golfer experiences the greens during every round. Poorly maintained greens are the quickest way for a course to start to see a drop in rounds and subsequent revenue.

During 2009, the Superintendent has been using a critical piece of equipment for green maintenance that is well beyond its useful life and in desperate need of replacement. As part of the 2010 budget, the Superintendent has requested a replacement green roller which must be approved in order to maintain the greens in 2010 and beyond.

Drainage:

In recent years, H. Smith Richardson has undertaken several drainage projects on hole #'s 4, 5, 6, 7, & 11. To date, the town of Fairfield has spent roughly \$230,000 on these drainage projects and they have significantly improved the condition and playability of the course. However, several areas of the course continue to need drainage work – specifically, hole #'s 1, 8, 10, 15, & 18. The estimated cost for the remaining drainage projects is \$180,000.

The importance of completing these drainage projects in 2010 is paramount – not only to improve the condition and playability of these holes, but to stem the tide of lost revenue both in lost greens fees and lost golf cart rental fees. Because of the poor drainage on these holes, the Superintendent and/or Golf Professional have been limiting golf cart usage to cart paths only. If carts are restricted to remain on the cart paths, in many instances, golfers will forego renting a cart or will forego playing altogether. It is estimated that greens fees and golf cart rentals were down \$67,500 in 2009 ⁽¹⁾ due to the incomplete drainage projects. Once the drainage projects are completed, the Superintendent and/or the Golf Pro will be able to permit golf carts to leave the cart paths sooner following inclement weather and lost greens fees and/or golf cart fees will be recovered.

Bunkers:

The golf course bunkers are in very poor condition and are in need of renovation. The majority of the bunkers do not drain properly, hold stormwater for days following rain, are lacking sufficient sand, and are misshapen from years of wear and tear along with improper maintenance.

(1) Assumption: 50 incremental days of cart path only restrictions, with 30 lost cart rentals per day and another 15 rounds lost per day. $(50 \times 30 \times 30 = 45,000) + (50 \times 15 \times 30 = 22,500) = \$67,500$.
FGC - HSR 10 Year Plan 2010-2019 v052510.pdf



In many cases, the improper maintenance has been the result of limited resources and materials available to the Superintendent.

There are currently approximately 44 bunkers on the golf course. Several bunkers have been rebuilt in recent years. Several more are in satisfactory condition and don't require renovation. It is estimated that roughly 20 bunkers are in immediate need of renovation. This plan calls for sand bunkers to be refurbished both by in-house staff and by hiring outside contractors. The Superintendent has determined how many of these bunkers can be refurbished in-house and how many others may require an outside contractor. It is estimated that each bunker will cost roughly \$8,000 if the work is done by an outside contractor. For those bunkers addressed in house, the estimate is 40 man-hours plus materials at a cost of roughly \$5,000. This plan calls for several bunkers to be renovated each year over the course of seven years. It is not the intention or expectation to renovate all of the bunkers at one time.

Cart Paths:

H. Smith Richardson has roughly 5.5 miles of cart paths covering the golf course. Over time, sections of the cart paths have been replaced on an as-needed basis. It is expected that certain sections of cart path will continue to require replacement each year but this is planned for annually and is not part of this plan.

Tee Boxes:

Every golf course's second priority (behind the condition of the greens) should be the condition of the tee boxes. Several tee boxes have been rebuilt in recent years but several others need to be refurbished and/or enlarged. The USGA suggests that tee boxes should be at least 100 square feet for every 1,000 rounds and twice that for tees where irons are used. At H. Smith Richardson, with 40,000 to 45,000 rounds per year, several of our tee boxes are too small.

Ponds:

There are only three ponds on the H. Smith Richardson golf course. Each is relatively small, but each has filled with sediment and vegetation growth. The vegetation should be cleared and sediment dredged in accordance with all environmental regulations.

Maintenance Equipment and Bio-Rack Filtration System:

A good portion of the maintenance equipment that is used to maintain the golf course by the Superintendent and his staff is approaching the end of, or is already beyond, its useful life. As part of the annual operating budget process, the superintendent requests to replace equipment on an as-needed basis. It is not part of this plan to replace equipment on a formulaic basis but to rely on the Superintendent to prudently identify equipment in need of replacement each year. Any requests for replacement equipment should be viewed as a necessity to maintain the golf course to a threshold condition of quality. Therefore, any denials for replacement equipment could jeopardize future golf course conditions and potential revenues.



H. Smith Richardson also has a need for a Bio-Rack filtration and drainage system. A Bio-Rack system is used to filter and clean waste water run-off during the equipment clean-up process. Currently, the golf course does not have any filtration or drainage system. Chemicals and concentrated organic materials are simply hosed off in a cleared area adjacent to the 11th tee. The runoff enters the ground and area water table. H. Smith Richardson has requested the funding for a Bio-Rack system for several years and each request has been denied. To be responsible and good stewards of our environment, this plan includes another request to fund a Bio-Rack system.

Clubhouse / Cart Barn / Restroom Facility:

The H. Smith Richardson clubhouse is original to the golf course and has had no meaningful renovations since being built in 1972. Its rundown condition, limited functionality and dated appearance diminish the golfing experience. A renovated clubhouse would make the facility more appealing to a greater portion of Fairfield’s residents to utilize and could generate additional revenue for the town.

Several renovation alternatives had been considered in 2009 but all alternatives were put on hold given the current economic challenges. This plan contemplates a \$3.3MM clubhouse renovation in FY 2012 - 2013.

This plan does not reflect the potential increase in revenues for the town of Fairfield from the operating concessionaire, nor does it reflect the increased utilization of the facilities by Fairfield’s residents. It is expected that any renovation to the clubhouse and grounds will be reviewed in detail as the project approaches and it may be determined that a smaller or larger clubhouse renovation is warranted. It is not the intention of this plan to limit any options considered for a clubhouse renovation in the future.

Included in FY 2019 - 2020 is \$150K to build a permanent restroom facility for the back nine of the golf course. Currently, there is no restroom facility on the back nine. While the front nine surrounds the clubhouse, the back nine is removed from the main facility. To offer some services, the course has one port-o-let on the back nine but the sanitary conditions are often less than ideal. The estimated cost for the restroom includes a septic system as sewer is not available.

Parking Lot / Driveway:

Any changes to the parking lot or driveway would be contemplated in conjunction with the clubhouse renovation in FY 2012-2013. Traffic flow would be redesigned and additional parking would be added to accommodate the new clubhouse and expected increase in facility demand.

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H. Smith Richardson Golf Course

10 Year Master Improvement & Financial Plan

Summary of Improvements by Project	
Greens	\$ 150,000
Drainage	180,000
Bunkers	250,000
Tee Boxes	170,000
Ponds	150,000
Equipment & Bio-Rack	<u>100,000</u>
Improvement Expenditures	1,000,000
Clubhouse Expenditures	3,450,000
Total	<u>\$ 4,450,000</u>

Summary of Improvements by Fiscal Year			
	<u>Improvements</u>	<u>Clubhouse</u>	<u>Total</u>
FY 2010 - '11	\$ 180,000		\$ 180,000
FY 2011 - '12	98,000		98,000
FY 2012 - '13	105,000	3,300,000	3,405,000
FY 2013 - '14	101,000		101,000
FY 2014 - '15	100,000		100,000
FY 2015 - '16	101,000		101,000
FY 2016 - '17	100,000		100,000
FY 2017 - '18	90,000		90,000
FY 2018 - '19	50,000		50,000
FY 2019 - '20	<u>75,000</u>	<u>150,000</u>	<u>225,000</u>
Total	<u>\$ 1,000,000</u>	<u>\$ 3,450,000</u>	<u>\$ 4,450,000</u>

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Improvements by Project

	FY 2010 - '11	FY 2011 - '12	FY 2012 - '13	FY 2013 - '14	FY 2014 - '15	FY 2015 - '16	FY 2016 - '17	FY 2017 - '18	FY 2018 - '19	FY 2019 - '20	Total
Greens											
Hole # 16 Expand						75,000					75,000
Hole # 13 Regrade										75,000	75,000
Subtotal	-	-	-	-	-	75,000	-	-	-	75,000	150,000

Drainage

Hole #'s 1, 8, 10, 15 & 18	180,000										180,000
Subtotal	180,000	-	-	-	-	-	-	-	-	-	180,000

Bunkers

	In-Hse	Contract	FY 2010 - '11	FY 2011 - '12	FY 2012 - '13	FY 2013 - '14	FY 2014 - '15	FY 2015 - '16	FY 2016 - '17	FY 2017 - '18	FY 2018 - '19	FY 2019 - '20	Total
Hole # 1	2	0					10,000						10,000
Hole # 2	2	0					10,000						10,000
Hole # 3	0	3		24,000									24,000
Hole # 5	1	0					5,000						5,000
Hole # 6	3	0					15,000						15,000
Hole # 7	1	0								5,000			5,000
Hole # 9	1	3			29,000								29,000
Hole # 10	2	0								10,000			10,000
Hole # 11	0	3		24,000									24,000
Hole # 12	2	0				10,000							10,000
Hole # 13	0	5				40,000							40,000
Hole # 14	2	0						10,000					10,000
Hole # 15	1	2			21,000								21,000
Hole # 16	0	2						16,000					16,000
Hole # 17	0	2				16,000							16,000
Hole # 18	1	0				5,000							5,000
Subtotal	18	20	-	48,000	50,000	71,000	40,000	26,000	-	15,000	-	-	250,000

Tee Boxes

Hole # 3 Expand									25,000				25,000
Hole # 8 Expand			30,000										30,000
Hole # 9 Tier			25,000										25,000
Hole # 10 Move						30,000							30,000
Hole # 12 Expand/Tier					30,000								30,000
Hole # 13 Expand/Tier						30,000							30,000
Subtotal			-	-	55,000	30,000	60,000	-	-	25,000	-	-	170,000

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Improvements by Project

	FY 2010 - '11	FY 2011 - '12	FY 2012 - '13	FY 2013 - '14	FY 2014 - '15	FY 2015 - '16	FY 2016 - '17	FY 2017 - '18	FY 2018 - '19	FY 2019 - '20	Total
Ponds											
Hole # 3								50,000			50,000
Hole # 8									50,000		50,000
Hole #'s 10 & 18		50,000									50,000
Subtotal	-	50,000	-	-	-	-	-	50,000	50,000	-	150,000
Equipment & Bio-Rack											
Bio-Rack Filtration System							100,000				100,000
Subtotal	-	-	-	-	-	-	100,000	-	-	-	100,000
Clubhouse / Cart Barn											
Clubhouse			2,250,000								2,250,000
Cart Barn			350,000								350,000
Parking and Site			700,000								700,000
Restroom Facility - Back Nine									150,000		150,000
Subtotal	-	-	3,300,000	-	-	-	-	-	-	150,000	3,450,000
Improvement Expenditures	180,000	98,000	105,000	101,000	100,000	101,000	100,000	90,000	50,000	75,000	1,000,000
Clubhouse Expenditures	-	-	3,300,000	-	-	-	-	-	-	150,000	3,450,000
Total	<u>180,000</u>	<u>98,000</u>	<u>3,405,000</u>	<u>101,000</u>	<u>100,000</u>	<u>101,000</u>	<u>100,000</u>	<u>90,000</u>	<u>50,000</u>	<u>225,000</u>	<u>4,450,000</u>

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H. Smith Richardson Golf Course 10 Year Master Improvement & Financial Plan

Financial History

	Actual <u>FY 2006 - '07</u>	Actual <u>FY 2007 - '08</u>	Actual <u>FY 2008 - '09</u>	<i>Estimate</i> <u>FY 2009 - '10</u>
Operations				
Number of Rounds				
Resident	29,372	28,515	30,282	
Non-Resident	16,329	14,161	14,649	
Total	<u>45,701</u>	<u>42,676</u>	<u>44,931</u>	41,000
 Resident ID's				
Adults	2,817	2,755	3,203	
Seniors	658	694	777	
Juniors	651	691	789	
Total	<u>4,126</u>	<u>4,140</u>	<u>4,769</u>	4,750
 Season Passes				
Adult - Resident	96	101	97	
Senior - Resident	52	43	43	
Adult - Non-Resident	19	17	20	
Senior - Non-Resident	11	13	12	
Total	<u>178</u>	<u>174</u>	<u>172</u>	175
 Revenues				
Greens Fees	933,959	956,199	1,035,009	1,090,508
Season Passes	60,280	57,927	59,225	58,000
Resident ID's	101,882	102,627	117,725	103,500
Locker Rentals	3,600	3,200	2,250	3,500
Cart Fees	237,710	237,578	257,681	290,000
Driving Range	139,731	144,270	122,475	130,000
Total	<u>1,477,162</u>	<u>1,501,801</u>	<u>1,594,365</u>	<u>1,675,508</u>
 Operating Expenses				
Budget	1,381,389	1,455,028	1,498,888	1,453,712
Actual/ <i>Estimate</i>	<u>1,283,290</u>	<u>1,440,858</u>	<u>1,490,000</u>	<u>1,450,000</u>
Expense Surplus/(Deficit)	98,099	14,170	8,888	3,712
Net Direct				
Contribution / (Consumption)	<u>193,872</u>	<u>60,943</u>	<u>104,365</u>	<u>225,508</u>

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H. Smith Richardson Golf Course

10 Year Master Improvement & Financial Plan

Base Case Projections **with** Improvements

Number of Rounds	<u>FY 2010 - '11</u>	<u>FY 2011 - '12</u>	<u>FY 2012 - '13</u>	<u>FY 2013 - '14</u>	<u>FY 2014 - '15</u>	<u>FY 2015 - '16</u>	<u>FY 2016 - '17</u>	<u>FY 2017 - '18</u>	<u>FY 2018 - '19</u>	<u>FY 2019 - '20</u>
Resident	28,900	29,145	29,370	29,575	30,225	30,080	30,080	30,080	30,080	30,080
Non-Resident	13,600	14,355	15,130	15,925	16,275	16,920	16,920	16,920	16,920	16,920
Total	42,500	43,500	44,500	45,500	46,500	47,000	47,000	47,000	47,000	47,000
Revenues										
Greens Fees	1,070,660	1,103,726	1,137,153	1,247,155	1,274,565	1,296,824	1,296,824	1,296,824	1,296,824	1,296,824
Season Passes	157,000	157,000	157,000	216,250	216,250	216,250	216,250	216,250	216,250	216,250
Resident ID's	61,825	61,825	61,825	67,750	67,750	67,750	67,750	67,750	67,750	67,750
Locker Rentals	2,500	2,500	2,500	-	-	-	-	-	-	-
Cart Fees	275,000	290,000	292,500	300,000	302,500	305,000	307,500	310,000	312,500	315,000
Driving Range	130,000	140,000	142,500	145,000	147,500	150,000	152,500	155,000	157,500	160,000
Total	1,696,985	1,755,051	1,793,478	1,976,155	2,008,565	2,035,824	2,040,824	2,045,824	2,050,824	2,055,824
Operating Expenses										
Budget	<u>1,450,000</u>	<u>1,493,500</u>	<u>1,538,305</u>	<u>1,584,454</u>	<u>1,631,988</u>	<u>1,680,947</u>	<u>1,731,376</u>	<u>1,783,317</u>	<u>1,836,817</u>	<u>1,891,921</u>
Total	1,450,000	1,493,500	1,538,305	1,584,454	1,631,988	1,680,947	1,731,376	1,783,317	1,836,817	1,891,921
Net Direct										
Contribution / (Consumption)	<u>246,985</u>	<u>261,551</u>	<u>255,173</u>	<u>391,701</u>	<u>376,577</u>	<u>354,877</u>	<u>309,448</u>	<u>262,507</u>	<u>214,007</u>	<u>163,903</u>
Cumulative Surplus	246,985	508,536	763,709	1,155,409	1,531,987	1,886,863	2,196,311	2,458,818	2,672,826	2,836,728
Cumulative Revenue	1,696,985	3,452,036	5,245,514	7,221,669	9,230,234	11,266,058	13,306,882	15,352,706	17,403,530	19,459,354

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Downside Case Projections **without** Improvements

Number of Rounds

	FY 2010 - '11	FY 2011 - '12	FY 2012 - '13	FY 2013 - '14	FY 2014 - '15	FY 2015 - '16	FY 2016 - '17	FY 2017 - '18	FY 2018 - '19	FY 2019 - '20
Resident	27,540	27,370	27,600	27,428	27,650	27,475	27,690	27,513	27,720	27,540
Non-Resident	12,960	12,880	12,400	12,323	11,850	11,775	11,310	11,238	10,780	10,710
Total	40,500	40,250	40,000	39,750	39,500	39,250	39,000	38,750	38,500	38,250

Revenues

Greens Fees	1,020,276	1,013,978	1,000,440	994,187	980,785	974,578	961,311	955,149	942,018	935,901
Season Passes	157,000	157,000	157,000	157,000	157,000	157,000	157,000	157,000	157,000	157,000
Resident ID's	61,825	61,825	61,825	61,825	61,825	61,825	61,825	61,825	61,825	61,825
Locker Rentals	2,500	2,250	2,000	1,750	1,500	1,250	1,000	750	500	250
Cart Fees	250,000	235,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000
Driving Range	120,000	115,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000
Total	1,611,601	1,585,053	1,561,265	1,554,762	1,541,110	1,534,653	1,521,136	1,514,724	1,501,343	1,494,976

Operating Expenses

Budget	1,450,000	1,493,500	1,538,305	1,584,454	1,631,988	1,680,947	1,731,376	1,783,317	1,836,817	1,891,921
Total	1,450,000	1,493,500	1,538,305	1,584,454	1,631,988	1,680,947	1,731,376	1,783,317	1,836,817	1,891,921

Net Direct

Contribution / (Consumption)	161,601	91,553	22,960	(29,692)	(90,878)	(146,295)	(210,240)	(268,593)	(335,474)	(396,945)
Cumulative Surplus / (Deficit)	161,601	253,154	276,114	246,422	155,544	9,249	(200,990)	(469,584)	(805,057)	(1,202,003)

Cumulative Revenue	1,611,601	3,196,654	4,757,919	6,312,681	7,853,791	9,388,444	10,909,580	12,424,304	13,925,647	15,420,623
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H. Smith Richardson Golf Course

10 Year Master Improvement & Financial Plan

Variance between Cases

Number of Rounds

	FY 2010 - '11	FY 2011 - '12	FY 2012 - '13	FY 2013 - '14	FY 2014 - '15	FY 2015 - '16	FY 2016 - '17	FY 2017 - '18	FY 2018 - '19	FY 2019 - '20
Resident	1,360	1,775	1,770	2,148	2,575	2,605	2,390	2,568	2,360	2,540
Non-Resident	640	1,475	2,730	3,603	4,425	5,145	5,610	5,683	6,140	6,210
Total	2,000	3,250	4,500	5,750	7,000	7,750	8,000	8,250	8,500	8,750

Revenues

Greens Fees	50,384	89,748	136,713	252,968	293,780	322,247	335,513	341,675	354,806	360,923
Season Passes	-	-	-	59,250	59,250	59,250	59,250	59,250	59,250	59,250
Resident ID's	-	-	-	5,925	5,925	5,925	5,925	5,925	5,925	5,925
Locker Rentals	-	250	500	(1,750)	(1,500)	(1,250)	(1,000)	(750)	(500)	(250)
Cart Fees	25,000	55,000	62,500	70,000	72,500	75,000	77,500	80,000	82,500	85,000
Driving Range	10,000	25,000	32,500	35,000	37,500	40,000	42,500	45,000	47,500	50,000
Total	85,384	169,998	232,213	421,393	467,455	501,172	519,688	531,100	549,481	560,848

Operating Expenses

Budget	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Net Direct										
Contribution / (Consumption)	85,384	169,998	232,213	421,393	467,455	501,172	519,688	531,100	549,481	560,848
Cumulative Surplus	85,384	255,382	487,595	908,987	1,376,442	1,877,614	2,397,302	2,928,402	3,477,883	4,038,731
Cumulative Revenue	85,384	255,382	487,595	908,987	1,376,442	1,877,614	2,397,302	2,928,402	3,477,883	4,038,731



Conclusion

H. Smith Richardson is a top-tier municipal golf course and has the potential to be one of the top five municipal golf courses in the state of Connecticut. The course has been recording over 40,000 rounds per year for many years – well beyond the expected level of play when first built. The result of the high number of rounds and limited resources has been a slow degradation of both the course and facilities. While rounds are still above 40,000, they have been on the decline. H. Smith Richardson faces a pivotal juncture. Decisions made with respect to funding or cost controls could jeopardize the future revenues generated by the golf course.

Specifically, if reinvestments are not made into the golf course and facilities, revenues are projected to decrease significantly. Further, revenues are projected to no longer cover direct operating expenses. By 2013 – 2014 and beyond, the golf course may no longer deliver a surplus to the town of Fairfield but instead will likely run at a deficit.

This plan calls for a \$1.0MM reinvestment in the golf course over a ten year period. The plan spreads the necessary projects over the ten year period, targeting an expenditure level of roughly \$100K per year. This plan also includes a \$3.3MM renovation of the clubhouse in FY 2012-2013 and \$150K for a permanent restroom facility on the back nine in FY 2019 - 2020.

It is important to note that with this \$4.45M reinvestment, revenues are projected to rise by roughly \$4.6MM over the alternative revenues that would result with no reinvestment. Effectively, it is expected that the incremental expenditures called for in this plan will pay for themselves in just over ten years.

Town of Fairfield Golf Commission



H. Smith Richardson Golf Course

Appendix:

Base Case Assumptions

		2010 - 2011				2011 - 2012				2012 - 2013				2013 - 2014				2014 - 2015			
		Resident	Non-Res	Total	%																
HSR Number of Rounds																					
Resident/Non-Resident Mix		68%	32%			67%	33%			66%	34%			65%	35%			65%	35%		
Weekend	18-Hole A/S/J	7,225	3,400	10,625	25%	7,286	3,589	10,875	25%	7,343	3,783	11,125	25%	7,394	3,981	11,375	25%	7,556	4,069	11,625	25%
Weekday	18-Hole Adult	6,358	2,992	9,350	22%	6,412	3,158	9,570	22%	6,461	3,329	9,790	22%	6,507	3,504	10,010	22%	6,650	3,581	10,230	22%
Weekday	18-Hole Senior	3,179	1,496	4,675	11%	3,206	1,579	4,785	11%	3,231	1,664	4,895	11%	3,253	1,752	5,005	11%	3,325	1,790	5,115	11%
Weekday	18-Hole Junior	1,734	816	2,550	6%	1,749	861	2,610	6%	1,762	908	2,670	6%	1,775	956	2,730	6%	1,814	977	2,790	6%
Weekend	9-Hole A/S/J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weekday	9-Hole Adult	5,202	2,448	7,650	18%	5,246	2,584	7,830	18%	5,287	2,723	8,010	18%	5,324	2,867	8,190	18%	5,441	2,930	8,370	18%
Weekday	9-Hole Senior	2,890	1,360	4,250	10%	2,915	1,436	4,350	10%	2,937	1,513	4,450	10%	2,958	1,593	4,550	10%	3,023	1,628	4,650	10%
Weekday	9-Hole Junior	1,445	680	2,125	5%	1,457	718	2,175	5%	1,469	757	2,225	5%	1,479	796	2,275	5%	1,511	814	2,325	5%
Weekday	9-Hole Senior	867	408	1,275	3%	874	431	1,305	3%	881	454	1,335	3%	887	478	1,365	3%	907	488	1,395	3%
Total		28,900	13,600	42,500	100%	29,145	14,355	43,500	100%	29,370	15,130	44,500	100%	29,575	15,925	45,500	100%	30,225	16,275	46,500	100%
HSR Number of ID's & Season Passes																					
ID's	Adult	3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200	
ID's	Senior	750		750		750		750		750		750		750		750		750		750	
ID's	Junior	750		750		750		750		750		750		750		750		750		750	
Total		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700	
Season Pass	Adult	100	20	120		100	20	120		100	20	120		100	20	120		100	20	120	
Season Pass	Senior	45	10	55		45	10	55		45	10	55		45	10	55		45	10	55	
HSR Rates																					
Weekend	18-Hole A/S/J	28.00	54.00			28.00	54.00			28.00	54.00			30.00	56.00			30.00	56.00		
Weekday	18-Hole Adult	22.00	42.00			22.00	42.00			22.00	42.00			24.00	45.00			24.00	45.00		
Weekday	18-Hole Senior	16.00	32.00			16.00	32.00			16.00	32.00			18.00	34.00			18.00	34.00		
Weekday	18-Hole Junior	12.00	24.00			12.00	24.00			12.00	24.00			14.00	24.00			14.00	24.00		
Weekend	9-Hole A/S/J	15.00	28.00			15.00	28.00			15.00	28.00			16.00	30.00			16.00	30.00		
Weekday	9-Hole Adult	14.00	28.00			14.00	28.00			14.00	28.00			15.00	28.00			15.00	28.00		
Weekday	9-Hole Senior	13.00	26.00			13.00	26.00			13.00	26.00			14.00	26.00			14.00	26.00		
Weekday	9-Hole Junior	11.00	22.00			11.00	22.00			11.00	22.00			12.00	22.00			12.00	22.00		
Resident ID's	Adult	35.00	-			35.00	-			35.00	-			50.00	-			50.00	-		
Resident ID's	Senior	35.00	-			35.00	-			35.00	-			50.00	-			50.00	-		
Resident ID's	Junior	25.00	-			25.00	-			25.00	-			25.00	-			25.00	-		
Season Pass	Adult	360.00	700.00			360.00	700.00			360.00	700.00			400.00	750.00			400.00	750.00		
Season Pass	Senior	185.00	350.00			185.00	350.00			185.00	350.00			200.00	375.00			200.00	375.00		
HSR Revenue																					
Weekend	18-Hole A/S/J	202,300	183,600	385,900		204,015	193,793	397,808		205,590	204,255	409,845		221,813	222,950	444,763		226,688	227,850	454,538	
Weekday	18-Hole Adult	139,876	125,664	265,540		141,062	132,640	273,702		142,151	139,801	281,952		156,156	157,658	313,814		159,588	161,123	320,711	
Weekday	18-Hole Senior	50,864	47,872	98,736		51,295	50,530	101,825		51,691	53,258	104,949		58,559	59,560	118,118		59,846	60,869	120,714	
Weekday	18-Hole Junior	20,808	19,584	40,392		20,984	20,671	41,656		21,146	21,787	42,934		24,843	22,932	47,775		25,389	23,436	48,825	
Weekend	9-Hole A/S/J	78,030	68,544	146,574		78,692	72,349	151,041		79,299	76,255	155,554		85,176	85,995	171,171		87,048	87,885	174,933	
Weekday	9-Hole Adult	40,460	38,080	78,540		40,803	40,194	80,997		41,118	42,364	83,482		44,363	44,590	88,953		45,338	45,570	90,908	
Weekday	9-Hole Senior	18,785	17,680	36,465		18,944	18,662	37,606		19,091	19,669	38,760		20,703	20,703	41,405		21,158	21,158	42,315	
Weekday	9-Hole Junior	9,537	8,976	18,513		9,618	9,474	19,092		9,692	9,986	19,678		10,647	10,511	21,158		10,881	10,742	21,623	
Revenue from Greens Fees:		560,660	510,000	1,070,660		565,413	538,313	1,103,726		569,778	567,375	1,137,153		622,258	624,897	1,247,155		635,934	638,631	1,274,565	
Other Revenue																					
Resident ID's	A/S/J	157,000	-	157,000		157,000	-	157,000		157,000	-	157,000		216,250	-	216,250		216,250	-	216,250	
Season Pass	A/S	44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825		49,000	18,750	67,750		49,000	18,750	67,750	
Locker Rentals		-	-	2,500		-	-	2,500		-	-	2,500		-	-	-		-	-	-	
Cart Fees		-	-	275,000		-	-	290,000		-	-	292,500		-	-	300,000		-	-	302,500	
Driving Range		-	-	130,000		-	-	140,000		-	-	142,500		-	-	145,000		-	-	147,500	
Other Revenue		201,325	17,500	626,325		201,325	17,500	651,325		201,325	17,500	656,325		265,250	18,750	729,000		265,250	18,750	734,000	
Total Revenue		761,985	527,500	1,696,985		766,738	555,813	1,755,051		771,103	584,875	1,793,478		887,508	643,647	1,976,155		901,184	657,381	2,008,565	

Town of Fairfield Golf Commission



H. Smith Richardson C

Appendix:

Base Case Assumptions

		2015 - 2016				2016 - 2017				2017 - 2018				2018 - 2019				2019 - 2020			
		Resident	Non-Res	Total	%																
HSR Number of Rounds																					
Resident/Non-Resident Mix		64%	36%			64%	36%			64%	36%			64%	36%			64%	36%		
Weekend	18-Hole A/S/J	7,520	4,230	11,750	25%	7,520	4,230	11,750	25%	7,520	4,230	11,750	25%	7,520	4,230	11,750	25%	7,520	4,230	11,750	25%
Weekday	18-Hole Adult	6,618	3,722	10,340	22%	6,618	3,722	10,340	22%	6,618	3,722	10,340	22%	6,618	3,722	10,340	22%	6,618	3,722	10,340	22%
Weekday	18-Hole Senior	3,309	1,861	5,170	11%	3,309	1,861	5,170	11%	3,309	1,861	5,170	11%	3,309	1,861	5,170	11%	3,309	1,861	5,170	11%
Weekday	18-Hole Junior	1,805	1,015	2,820	6%	1,805	1,015	2,820	6%	1,805	1,015	2,820	6%	1,805	1,015	2,820	6%	1,805	1,015	2,820	6%
Weekend	9-Hole A/S/J	5,414	3,046	8,460	18%	5,414	3,046	8,460	18%	5,414	3,046	8,460	18%	5,414	3,046	8,460	18%	5,414	3,046	8,460	18%
Weekday	9-Hole Adult	3,008	1,692	4,700	10%	3,008	1,692	4,700	10%	3,008	1,692	4,700	10%	3,008	1,692	4,700	10%	3,008	1,692	4,700	10%
Weekday	9-Hole Senior	1,504	846	2,350	5%	1,504	846	2,350	5%	1,504	846	2,350	5%	1,504	846	2,350	5%	1,504	846	2,350	5%
Weekday	9-Hole Junior	902	508	1,410	3%	902	508	1,410	3%	902	508	1,410	3%	902	508	1,410	3%	902	508	1,410	3%
Total		30,080	16,920	47,000	100%	30,080	16,920	47,000	100%	30,080	16,920	47,000	100%	30,080	16,920	47,000	100%	30,080	16,920	47,000	100%
HSR Number of ID's & Season Passes																					
ID's	Adult	3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200	
ID's	Senior	750		750		750		750		750		750		750		750		750		750	
ID's	Junior	750		750		750		750		750		750		750		750		750		750	
Total		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700	
Season Pass	Adult	100	20	120		100	20	120		100	20	120		100	20	120		100	20	120	
Season Pass	Senior	45	10	55		45	10	55		45	10	55		45	10	55		45	10	55	
HSR Rates																					
Weekend	18-Hole A/S/J	30.00	56.00			30.00	56.00			30.00	56.00			30.00	56.00			30.00	56.00		
Weekday	18-Hole Adult	24.00	45.00			24.00	45.00			24.00	45.00			24.00	45.00			24.00	45.00		
Weekday	18-Hole Senior	18.00	34.00			18.00	34.00			18.00	34.00			18.00	34.00			18.00	34.00		
Weekday	18-Hole Junior	14.00	24.00			14.00	24.00			14.00	24.00			14.00	24.00			14.00	24.00		
Weekend	9-Hole A/S/J	16.00	30.00			16.00	30.00			16.00	30.00			16.00	30.00			16.00	30.00		
Weekday	9-Hole Adult	15.00	28.00			15.00	28.00			15.00	28.00			15.00	28.00			15.00	28.00		
Weekday	9-Hole Senior	14.00	26.00			14.00	26.00			14.00	26.00			14.00	26.00			14.00	26.00		
Weekday	9-Hole Junior	12.00	22.00			12.00	22.00			12.00	22.00			12.00	22.00			12.00	22.00		
Resident ID's	Adult	50.00	-			50.00	-			50.00	-			50.00	-			50.00	-		
Resident ID's	Senior	50.00	-			50.00	-			50.00	-			50.00	-			50.00	-		
Resident ID's	Junior	25.00	-			25.00	-			25.00	-			25.00	-			25.00	-		
Season Pass	Adult	400.00	750.00			400.00	750.00			400.00	750.00			400.00	750.00			400.00	750.00		
Season Pass	Senior	200.00	375.00			200.00	375.00			200.00	375.00			200.00	375.00			200.00	375.00		
HSR Revenue																					
Weekend	18-Hole A/S/J	225,600	236,880	462,480		225,600	236,880	462,480		225,600	236,880	462,480		225,600	236,880	462,480		225,600	236,880	462,480	
Weekday	18-Hole Adult	158,822	167,508	326,330		158,822	167,508	326,330		158,822	167,508	326,330		158,822	167,508	326,330		158,822	167,508	326,330	
Weekday	18-Hole Senior	59,558	63,281	122,839		59,558	63,281	122,839		59,558	63,281	122,839		59,558	63,281	122,839		59,558	63,281	122,839	
Weekday	18-Hole Junior	25,267	24,365	49,632		25,267	24,365	49,632		25,267	24,365	49,632		25,267	24,365	49,632		25,267	24,365	49,632	
Weekend	9-Hole A/S/J	86,630	91,368	177,998		86,630	91,368	177,998		86,630	91,368	177,998		86,630	91,368	177,998		86,630	91,368	177,998	
Weekday	9-Hole Adult	45,120	47,376	92,496		45,120	47,376	92,496		45,120	47,376	92,496		45,120	47,376	92,496		45,120	47,376	92,496	
Weekday	9-Hole Senior	21,056	21,996	43,052		21,056	21,996	43,052		21,056	21,996	43,052		21,056	21,996	43,052		21,056	21,996	43,052	
Weekday	9-Hole Junior	10,829	11,167	21,996		10,829	11,167	21,996		10,829	11,167	21,996		10,829	11,167	21,996		10,829	11,167	21,996	
Revenue from Greens Fees:		632,883	663,941	1,296,824		632,883	663,941	1,296,824		632,883	663,941	1,296,824		632,883	663,941	1,296,824		632,883	663,941	1,296,824	
Other Revenue																					
Resident ID's	A/S/J	216,250	-	216,250		216,250	-	216,250		216,250	-	216,250		216,250	-	216,250		216,250	-	216,250	
Season Pass	A/S	49,000	18,750	67,750		49,000	18,750	67,750		49,000	18,750	67,750		49,000	18,750	67,750		49,000	18,750	67,750	
Locker Rentals		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-	
Cart Fees		-	-	305,000		-	-	307,500		-	-	310,000		-	-	312,500		-	-	315,000	
Driving Range		-	-	150,000		-	-	152,500		-	-	155,000		-	-	157,500		-	-	160,000	
Other Revenue		265,250	18,750	739,000		265,250	18,750	744,000		265,250	18,750	749,000		265,250	18,750	754,000		265,250	18,750	759,000	
Total Revenue		898,133	682,691	2,035,824		898,133	682,691	2,040,824		898,133	682,691	2,045,824		898,133	682,691	2,050,824		898,133	682,691	2,055,824	

Town of Fairfield Golf Commission



H. Smith Richardson Golf Course

Appendix:

Downside Case Assumptions

		2010 - 2011				2011 - 2012				2012 - 2013				2013 - 2014				2014 - 2015			
		Resident	Non-Res	Total	%																
HSR Number of Rounds																					
Resident/Non-Resident Mix		68%	32%			68%	32%			69%	31%			69%	31%			70%	30%		
Weekend	18-Hole A/S/J	6,885	3,240	10,125	25%	6,843	3,220	10,063	25%	6,900	3,100	10,000	25%	6,857	3,081	9,938	25%	6,913	2,963	9,875	25%
Weekday	18-Hole Adult	6,059	2,851	8,910	22%	6,021	2,834	8,855	22%	6,072	2,728	8,800	22%	6,034	2,711	8,745	22%	6,083	2,607	8,690	22%
Weekday	18-Hole Senior	3,029	1,426	4,455	11%	3,011	1,417	4,428	11%	3,036	1,364	4,400	11%	3,017	1,355	4,373	11%	3,042	1,304	4,345	11%
Weekday	18-Hole Junior	1,652	778	2,430	6%	1,642	773	2,415	6%	1,656	744	2,400	6%	1,646	739	2,385	6%	1,659	711	2,370	6%
Weekend	9-Hole A/S/J	4,957	2,333	7,290	18%	4,927	2,318	7,245	18%	4,968	2,232	7,200	18%	4,937	2,218	7,155	18%	4,977	2,133	7,110	18%
Weekday	9-Hole Adult	2,754	1,296	4,050	10%	2,737	1,288	4,025	10%	2,760	1,240	4,000	10%	2,743	1,232	3,975	10%	2,765	1,185	3,950	10%
Weekday	9-Hole Senior	1,377	648	2,025	5%	1,369	644	2,013	5%	1,380	620	2,000	5%	1,371	616	1,988	5%	1,383	593	1,975	5%
Weekday	9-Hole Junior	826	389	1,215	3%	821	386	1,208	3%	828	372	1,200	3%	823	370	1,193	3%	830	356	1,185	3%
Total		27,540	12,960	40,500	100%	27,370	12,880	40,250	100%	27,600	12,400	40,000	100%	27,428	12,323	39,750	100%	27,650	11,850	39,500	100%
HSR Number of ID's & Season Passes																					
ID's	Adult	3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200	
ID's	Senior	750		750		750		750		750		750		750		750		750		750	
ID's	Junior	750		750		750		750		750		750		750		750		750		750	
Total		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700	
Season Pass	Adult	100	20	120		100	20	120		100	20	120		100	20	120		100	20	120	
Season Pass	Senior	45	10	55		45	10	55		45	10	55		45	10	55		45	10	55	
HSR Rates																					
Weekend	18-Hole A/S/J	28.00	54.00			28.00	54.00			28.00	54.00			28.00	54.00			28.00	54.00		
Weekday	18-Hole Adult	22.00	42.00			22.00	42.00			22.00	42.00			22.00	42.00			22.00	42.00		
Weekday	18-Hole Senior	16.00	32.00			16.00	32.00			16.00	32.00			16.00	32.00			16.00	32.00		
Weekday	18-Hole Junior	12.00	24.00			12.00	24.00			12.00	24.00			12.00	24.00			12.00	24.00		
Weekend	9-Hole A/S/J	15.00	28.00			15.00	28.00			15.00	28.00			15.00	28.00			15.00	28.00		
Weekday	9-Hole Adult	14.00	28.00			14.00	28.00			14.00	28.00			14.00	28.00			14.00	28.00		
Weekday	9-Hole Senior	13.00	26.00			13.00	26.00			13.00	26.00			13.00	26.00			13.00	26.00		
Weekday	9-Hole Junior	11.00	22.00			11.00	22.00			11.00	22.00			11.00	22.00			11.00	22.00		
Resident ID's	Adult	35.00	-			35.00	-			35.00	-			35.00	-			35.00	-		
Resident ID's	Senior	35.00	-			35.00	-			35.00	-			35.00	-			35.00	-		
Resident ID's	Junior	25.00	-			25.00	-			25.00	-			25.00	-			25.00	-		
Season Pass	Adult	360.00	700.00			360.00	700.00			360.00	700.00			360.00	700.00			360.00	700.00		
Season Pass	Senior	185.00	350.00			185.00	350.00			185.00	350.00			185.00	350.00			185.00	350.00		
HSR Revenue																					
Weekend	18-Hole A/S/J	192,780	174,960	367,740		191,590	173,880	365,470		193,200	167,400	360,600		191,993	166,354	358,346		193,550	159,975	353,525	
Weekday	18-Hole Adult	133,294	119,750	253,044		132,471	119,011	251,482		133,584	114,576	248,160		132,749	113,860	246,609		133,826	109,494	243,320	
Weekday	18-Hole Senior	48,470	45,619	94,090		48,171	45,338	93,509		48,576	43,648	92,224		48,272	43,375	91,648		48,664	41,712	90,376	
Weekday	18-Hole Junior	19,829	18,662	38,491		19,706	18,547	38,254		19,748	17,856	37,604		19,748	17,744	37,492		19,908	17,064	36,972	
Weekend	9-Hole A/S/J	74,358	65,318	139,676		73,899	64,915	138,814		74,520	62,496	137,016		74,054	62,105	136,160		74,655	59,724	134,379	
Weekday	9-Hole Adult	38,556	36,288	74,844		38,318	36,064	74,382		38,640	34,720	73,360		38,399	34,503	72,902		38,710	33,180	71,890	
Weekday	9-Hole Senior	17,901	16,848	34,749		17,791	16,744	34,535		17,940	16,120	34,060		17,828	16,019	33,847		17,973	15,405	33,378	
Weekday	9-Hole Junior	9,088	8,554	17,642		9,032	8,501	17,533		9,108	8,184	17,292		9,051	8,133	17,184		9,125	7,821	16,946	
Revenue from Greens Fee:		534,276	486,000	1,020,276		530,978	483,000	1,013,978		535,440	465,000	1,000,440		532,094	462,094	994,187		536,410	444,375	980,785	
Other Revenue																					
Resident ID's	A/S/J	157,000	-	157,000		157,000	-	157,000		157,000	-	157,000		157,000	-	157,000		157,000	-	157,000	
Season Pass	A/S	44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825	
Locker Rentals		-	-	2,500		-	-	2,500		-	-	2,000		-	-	1,750		-	-	1,500	
Cart Fees		-	-	250,000		-	-	250,000		-	-	230,000		-	-	230,000		-	-	230,000	
Driving Range		-	-	120,000		-	-	115,000		-	-	110,000		-	-	110,000		-	-	110,000	
Other Revenue		201,325	17,500	591,325		201,325	17,500	571,075		201,325	17,500	560,825		201,325	17,500	560,575		201,325	17,500	560,325	
Total Revenue		735,601	503,500	1,611,601		732,303	500,500	1,585,053		736,765	482,500	1,561,265		733,419	479,594	1,554,762		737,735	461,875	1,541,110	

Town of Fairfield Golf Commission



H. Smith Richardson C

Appendix:

Downside Case Assumptions

		2015 - 2016				2016 - 2017				2017 - 2018				2018 - 2019				2019 - 2020			
		Resident	Non-Res	Total	%																
HSR Number of Rounds																					
Resident/Non-Resident Mix		70%	30%			71%	29%			71%	29%			72%	28%			72%	28%		
Weekend	18-Hole A/S/J	6,869	2,944	9,813	25%	6,923	2,828	9,750	25%	6,878	2,809	9,688	25%	6,930	2,695	9,625	25%	6,885	2,678	9,563	25%
Weekday	18-Hole Adult	6,045	2,591	8,635	22%	6,092	2,488	8,580	22%	6,053	2,472	8,525	22%	6,098	2,372	8,470	22%	6,059	2,356	8,415	22%
Weekday	18-Hole Senior	3,022	1,295	4,318	11%	3,046	1,244	4,290	11%	3,026	1,236	4,263	11%	3,049	1,186	4,235	11%	3,029	1,178	4,208	11%
Weekday	18-Hole Junior	1,649	707	2,355	6%	1,661	679	2,340	6%	1,651	674	2,325	6%	1,663	647	2,310	6%	1,652	643	2,295	6%
Weekend	9-Hole A/S/J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weekday	9-Hole Adult	4,946	2,120	7,065	18%	4,984	2,036	7,020	18%	4,952	2,023	6,975	18%	4,990	1,940	6,930	18%	4,957	1,928	6,885	18%
Weekday	9-Hole Senior	2,748	1,178	3,925	10%	2,769	1,131	3,900	10%	2,751	1,124	3,875	10%	2,772	1,078	3,850	10%	2,754	1,071	3,825	10%
Weekday	9-Hole Junior	1,374	589	1,963	5%	1,385	566	1,950	5%	1,376	562	1,938	5%	1,386	539	1,925	5%	1,377	536	1,913	5%
Weekday	9-Hole Junior	824	353	1,178	3%	831	339	1,170	3%	825	337	1,163	3%	832	323	1,155	3%	826	321	1,148	3%
Total		27,475	11,775	39,250	100%	27,690	11,310	39,000	100%	27,513	11,238	38,750	100%	27,720	10,780	38,500	100%	27,540	10,710	38,250	100%
HSR Number of ID's & Season Passes																					
ID's	Adult	3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200	
ID's	Senior	750		750		750		750		750		750		750		750		750		750	
ID's	Junior	750		750		750		750		750		750		750		750		750		750	
Total		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700		4,700	
Season Pass	Adult	100	20	120		100	20	120		100	20	120		100	20	120		100	20	120	
Season Pass	Senior	45	10	55		45	10	55		45	10	55		45	10	55		45	10	55	
HSR Rates																					
Weekend	18-Hole A/S/J	28.00	54.00			28.00	54.00			28.00	54.00			28.00	54.00			28.00	54.00		
Weekday	18-Hole Adult	22.00	42.00			22.00	42.00			22.00	42.00			22.00	42.00			22.00	42.00		
Weekday	18-Hole Senior	16.00	32.00			16.00	32.00			16.00	32.00			16.00	32.00			16.00	32.00		
Weekday	18-Hole Junior	12.00	24.00			12.00	24.00			12.00	24.00			12.00	24.00			12.00	24.00		
Weekend	9-Hole A/S/J	15.00	28.00			15.00	28.00			15.00	28.00			15.00	28.00			15.00	28.00		
Weekday	9-Hole Adult	14.00	28.00			14.00	28.00			14.00	28.00			14.00	28.00			14.00	28.00		
Weekday	9-Hole Senior	13.00	26.00			13.00	26.00			13.00	26.00			13.00	26.00			13.00	26.00		
Weekday	9-Hole Junior	11.00	22.00			11.00	22.00			11.00	22.00			11.00	22.00			11.00	22.00		
Resident ID's	Adult	35.00	-			35.00	-			35.00	-			35.00	-			35.00	-		
Resident ID's	Senior	35.00	-			35.00	-			35.00	-			35.00	-			35.00	-		
Resident ID's	Junior	25.00	-			25.00	-			25.00	-			25.00	-			25.00	-		
Season Pass	Adult	360.00	700.00			360.00	700.00			360.00	700.00			360.00	700.00			360.00	700.00		
Season Pass	Senior	185.00	350.00			185.00	350.00			185.00	350.00			185.00	350.00			185.00	350.00		
HSR Revenue																					
Weekend	18-Hole A/S/J	192,325	158,963	351,288		193,830	152,685	346,515		192,588	151,706	344,294		194,040	145,530	339,570		192,780	144,585	337,365	
Weekday	18-Hole Adult	132,979	108,801	241,780		134,020	104,504	238,524		133,161	103,835	236,995		134,165	99,607	233,772		133,294	98,960	232,254	
Weekday	18-Hole Senior	48,356	41,448	89,804		48,734	39,811	88,546		48,422	39,556	87,978		48,787	37,946	86,733		48,470	37,699	86,170	
Weekday	18-Hole Junior	19,782	16,956	36,738		19,937	16,286	36,223		19,809	16,182	35,991		19,958	15,523	35,482		19,829	15,422	35,251	
Weekend	9-Hole A/S/J	74,183	59,346	133,529		74,763	57,002	131,765		74,284	56,637	130,921		74,844	54,331	129,175		74,358	53,978	128,336	
Weekday	9-Hole Adult	38,465	32,970	71,435		38,766	31,668	70,434		38,518	31,465	69,983		38,808	30,184	68,992		38,556	29,988	68,544	
Weekday	9-Hole Senior	17,859	15,308	33,166		17,999	14,703	32,702		17,883	14,609	32,492		18,018	14,014	32,032		17,901	13,923	31,824	
Weekday	9-Hole Junior	9,067	7,772	16,838		9,138	7,465	16,602		9,079	7,417	16,496		9,148	7,115	16,262		9,088	7,069	16,157	
Revenue from Greens Fees:		533,015	441,563	974,578		537,186	424,125	961,311		533,743	421,406	955,149		537,768	404,250	942,018		534,276	401,625	935,901	
Other Revenue																					
Resident ID's	A/S/J	157,000	-	157,000		157,000	-	157,000		157,000	-	157,000		157,000	-	157,000		157,000	-	157,000	
Season Pass	A/S	44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825		44,325	17,500	61,825	
Locker Rentals		-	-	1,250		-	-	1,000		-	-	750		-	-	500		-	-	250	
Cart Fees		-	-	230,000		-	-	230,000		-	-	230,000		-	-	230,000		-	-	230,000	
Driving Range		-	-	110,000		-	-	110,000		-	-	110,000		-	-	110,000		-	-	110,000	
Other Revenue		201,325	17,500	560,075		201,325	17,500	559,825		201,325	17,500	559,575		201,325	17,500	559,325		201,325	17,500	559,075	
Total Revenue		734,340	459,063	1,534,653		738,511	441,625	1,521,136		735,068	438,906	1,514,724		739,093	421,750	1,501,343		735,601	419,125	1,494,976	



**Appendix:
Explanation of Assumptions – Base Case**

<p>Number of Rounds:</p>	<p>The total number of rounds in 2010-2011 was assumed to be 42,500.</p> <p>Rounds are assumed to increase by 1,000 rounds per year for four years, by 500 in the fifth year, and level off at 47,000 rounds per year for the remainder of the plan.</p> <p>The distribution of rounds between resident and non-resident were spread in the first year consistently with the 2009 season at 68% resident and 32% non-resident.</p> <p>Resident rounds were held fairly static with a very slight increase in rounds over the first five years of the plan – roughly 250 rounds per year for the first five years of the plan.</p> <p>Non-resident rounds were more dynamic in the plan, reflecting the non-residents choice to play more golf at HSR as the condition of the course improves. The distribution of rounds for non-residents was increased by 1% each year up to 36% in 2015 and level thereafter.</p> <p>The distribution of rounds between weekend, weekday, 18-hole, 9-hole, adults, seniors & juniors were spread throughout the 10-year plan consistently with the 2009 distribution.</p>
<p>ID's and Season Passes:</p>	<p>The ID's and season passes were assumed to be roughly that of the 2009 season and held flat throughout the 10-year plan.</p>
<p>Rates & Fees:</p>	<p>The rates and fees for the first three years of the plan were held flat from the 2009 season.</p> <p>In 2013, rates were increased roughly \$2 on 18-hole rounds and \$1 on 9-hole rounds. ID's for adults and seniors increased from \$35 to \$50. Season passes increased commensurately.</p> <p>The rates and fees for the remainder of the plan were left unchanged from the 2013 season.</p>
<p>Other Revenue:</p>	<p>Locker rental fees were held flat at \$2,500 for three years then eliminated once the clubhouse is replaced.</p> <p>Cart fees start at \$275K then increase to \$290K after the drainage issues on hole numbers 10 and 18 are remedied. Cart revenues increase \$2,500 per year thereafter.</p> <p>Driving Range fees start at \$130K, increased to \$140K in the second year and increased by \$2,500 per year thereafter.</p>
<p>Operating Expenses:</p>	<p>Operating Expenses are assumed to be the same in both cases. They start at \$1,450,000, effectively flat from the 2009 – 2010 estimate, and increase by 3% annually.</p>



**Appendix:
Explanation of Assumptions – Downside Case**

<p>Number of Rounds:</p>	<p>The total number of rounds in 2010-2011 was assumed to be 40,500.</p> <p>Rounds are assumed to decrease by 250 rounds per year throughout the 10-year plan dropping to 38,250 in the final year of the plan.</p> <p>The distribution of rounds between resident and non-resident were spread in the first year consistently with the 2009 season at 68% resident and 32% non-resident.</p> <p>Resident rounds were held fairly static with a very slight variation in rounds over the plan. The plan begins and ends with 27,540 resident rounds per year.</p> <p>Non-resident rounds drive the change in rounds each year, dropping roughly 250 rounds per year. This reflects the non-residents choice to play less golf at HSR as the condition of the course continues to deteriorate. The distribution of rounds for non-residents decreased by 1% every other year down from 32% at the start of the plan to 28% at the end of the plan.</p> <p>The distribution of rounds between weekend, weekday, 18-hole, 9-hole, adults, seniors & juniors were spread throughout the 10-year plan consistently with the 2009 distribution.</p>
<p>ID's and Season Passes:</p>	<p>The ID's and season passes were assumed to be roughly that of the 2009 season and held flat throughout the 10-year plan.</p>
<p>Rates & Fees:</p>	<p>The rates and fees from the 2009 season were left unchanged throughout the plan -- reflecting the inability to justify rate increases due to the condition of the course.</p>
<p>Other Revenue:</p>	<p>Locker rental fees start at \$2,500 in the first year and decline by \$250 per year each year throughout the plan. This reflects the continued decline in the condition of the clubhouse and locker room.</p> <p>Cart fees start at \$250K decrease to \$235K in the first year, then decrease to \$230K in the second year and remain at \$230K for the remainder of the plan.</p> <p>Driving Range fees start at \$120K, decrease by \$5K in the next two years and remain flat at \$110K for the remainder of the plan.</p>
<p>Operating Expenses:</p>	<p>Operating Expenses are assumed to be the same in both cases. They start at \$1,450,000, effectively flat from the 2009 – 2010 estimate, and increase by 3% annually.</p>

Town of Fairfield Golf Commission



Addendum to HSR 10 Year Plan

Examples of Current Condition of Bunkers

- The following pictures were taken two days after a rain storm in October 2009.
- There are 16 examples of bunkers that are no longer functioning properly.
- In a properly functioning bunker, there is sufficient sand, the sand is not contaminated with the underlying soil, and rain water will drain through the sand to a drainage system.
- Almost all of the bunkers at HSR have inadequate and contaminated sand, failed drainage systems, and are in need of renovation.
- Many man-hours are being wasted by our maintenance staff which is forced to try and manually drain bunkers after each rainstorm.

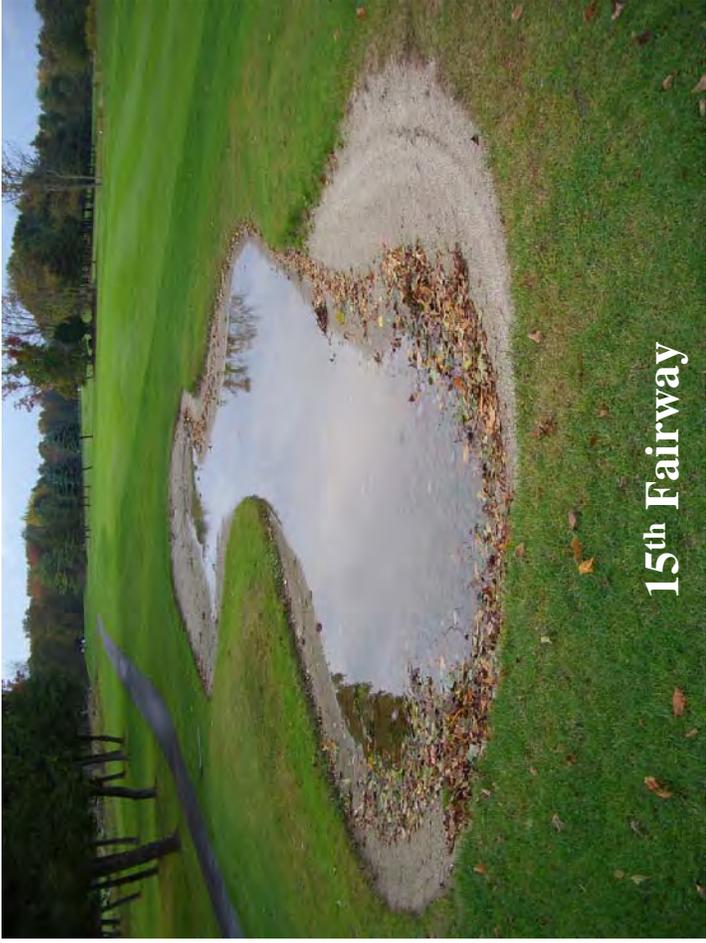
An improperly functioning bunker will cost more in maintenance over time than a properly functioning bunker.



11th Greenside



13th Fairway



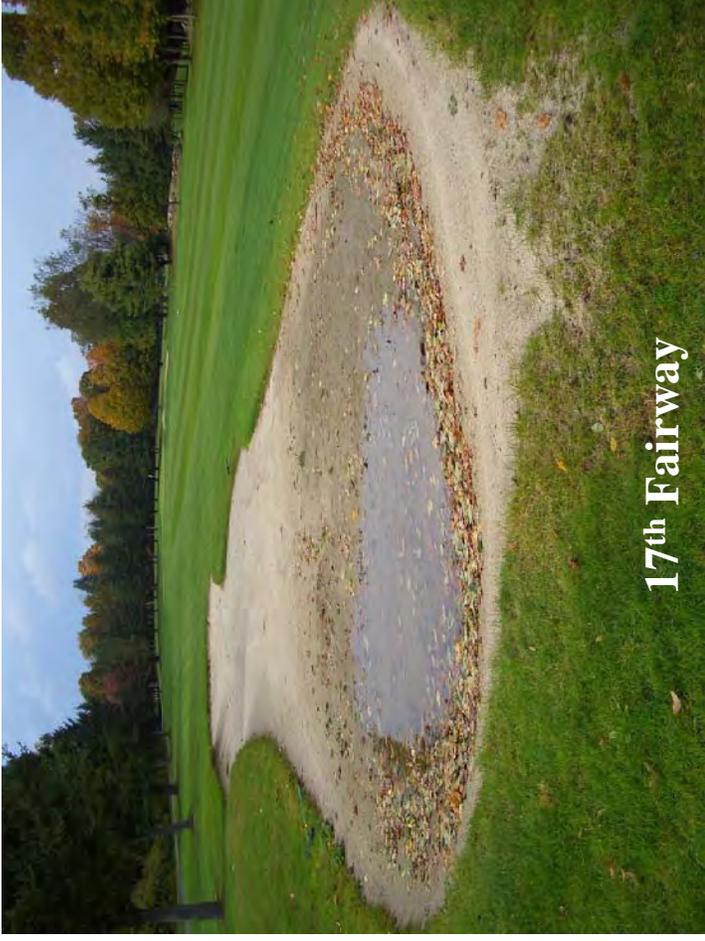
15th Fairway



15th Greenside



15th Fairway



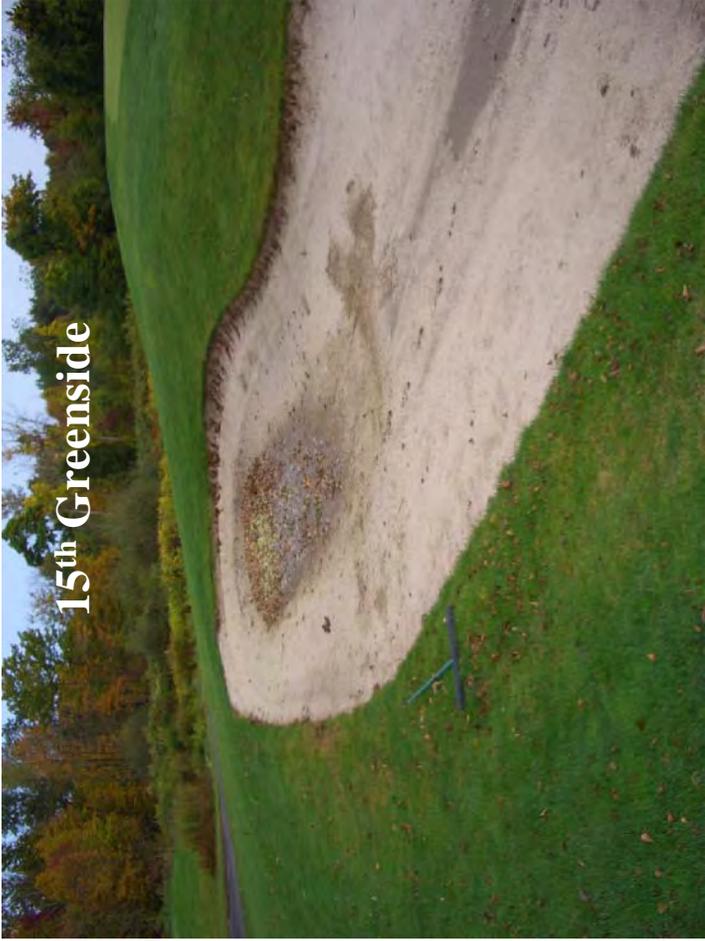
17th Fairway



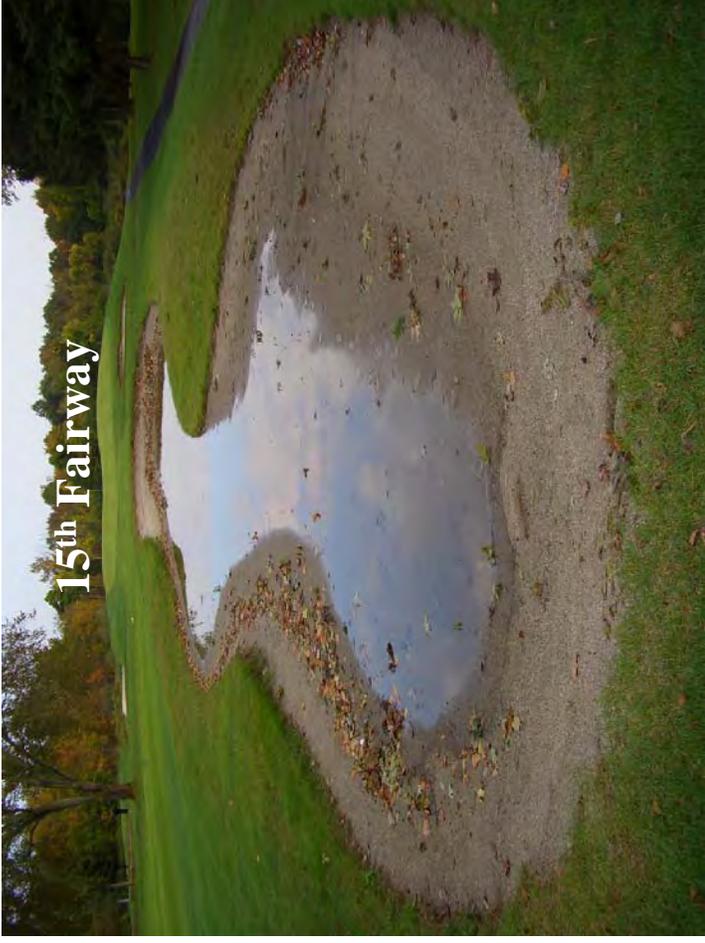
13th Fairway



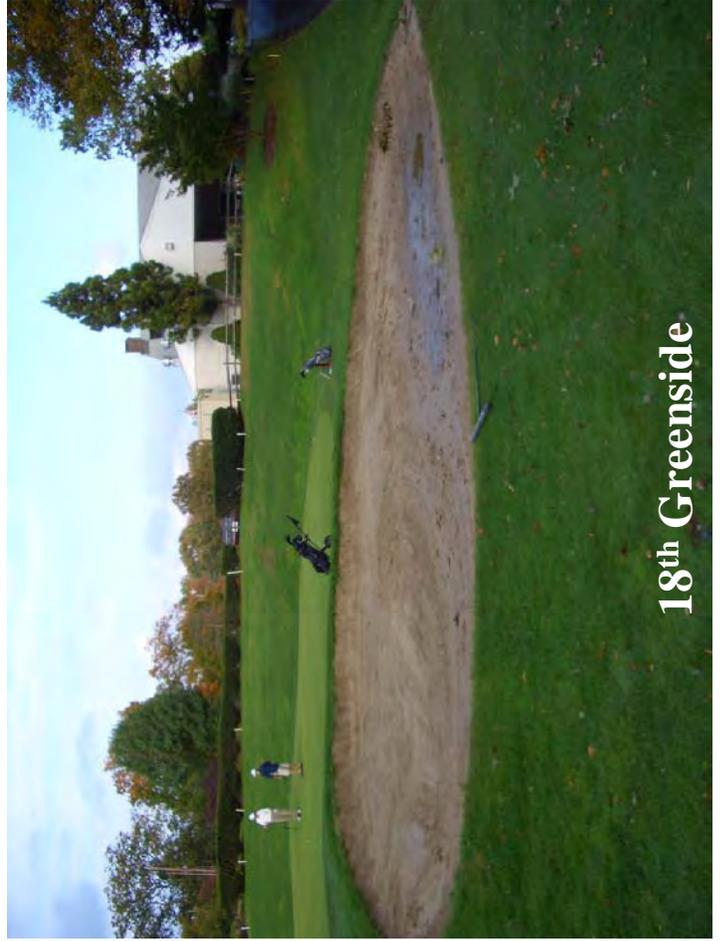
13th Fairway



15th Greenside



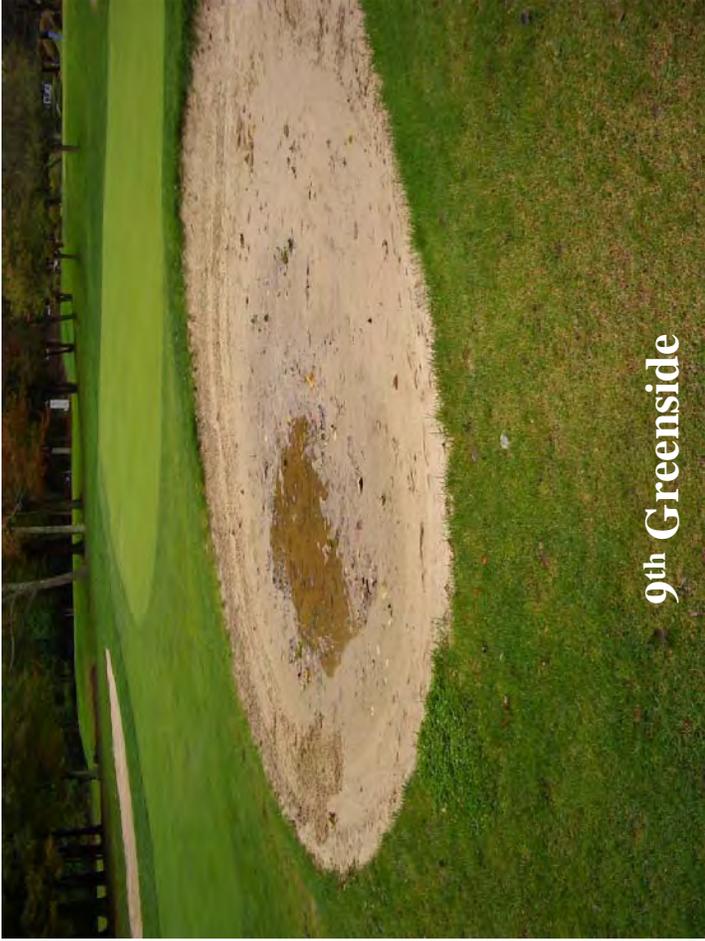
15th Fairway



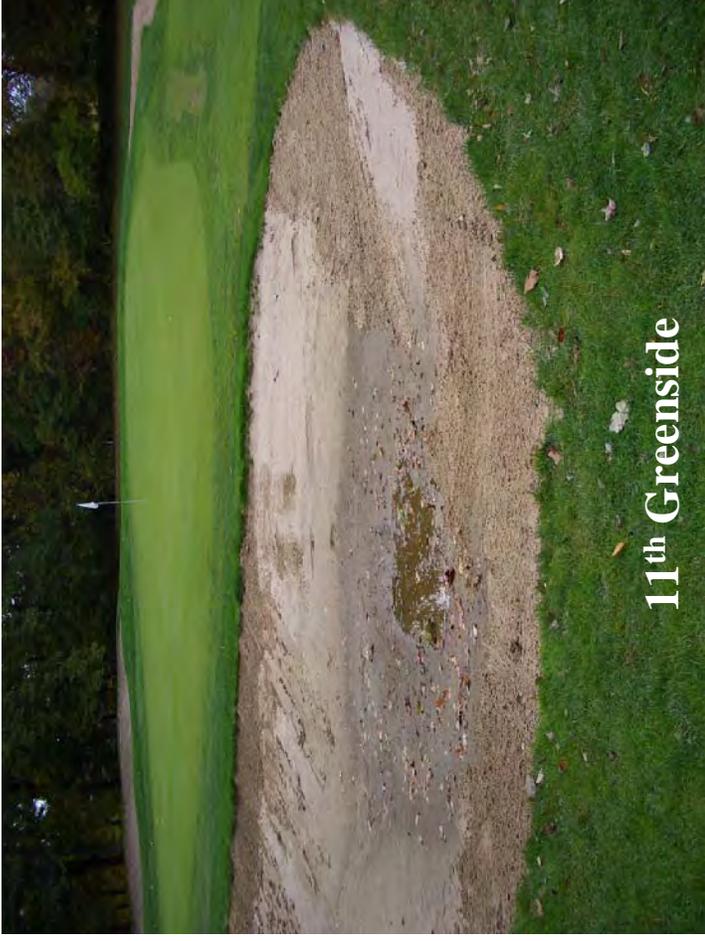
18th Greenside



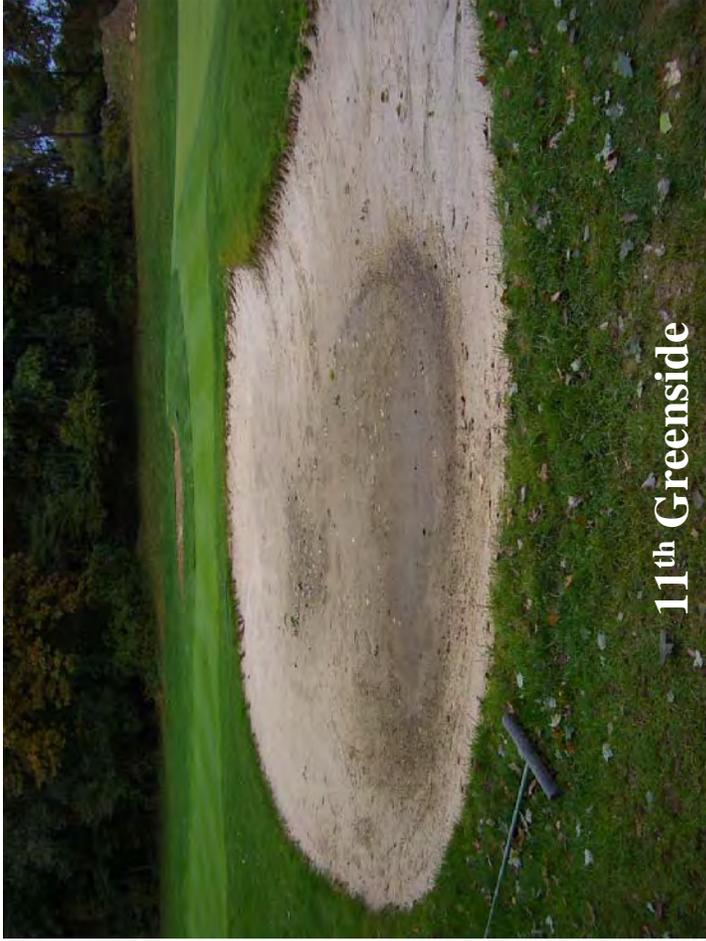
6th Fairway



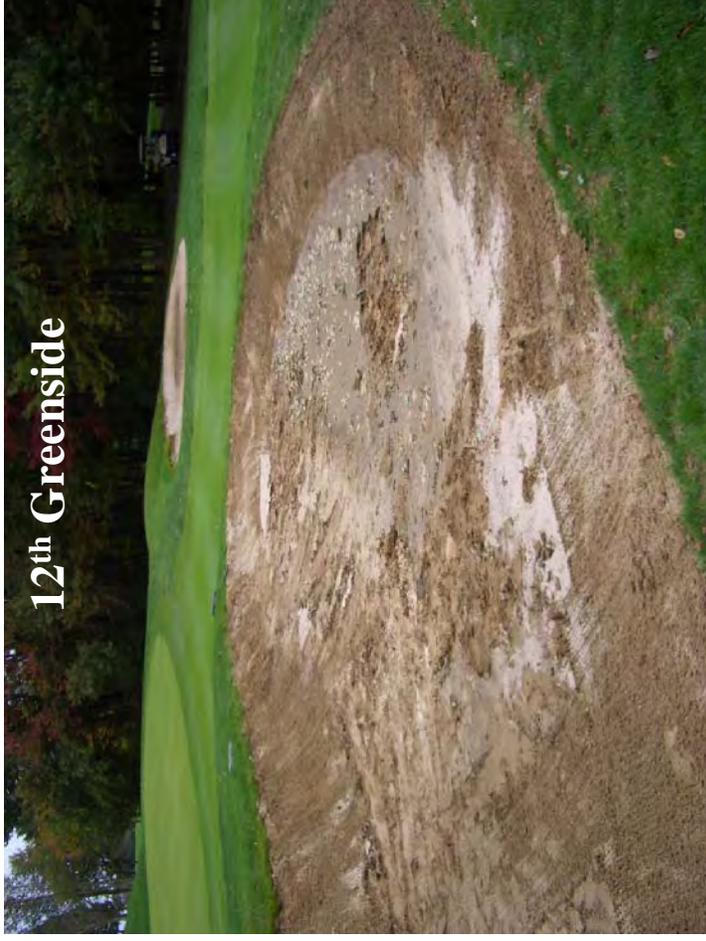
9th Greenside



11th Greenside



11th Greenside



12th Greenside

Town of Fairfield Golf Commission



Addendum to HSR 10 Year Plan

The Cost of Bunker Renovation and Maintenance

- The following is an article from the United States Golf Association from July of 2008, which focuses on the cost of bunker renovation and maintenance.
- The USGA article is relevant to HSR in several aspects:
 - Currently, almost all of HSR's bunkers are improperly functioning and are in need of renovation.
 - The article expresses, succinctly and in layman's terms, the alternatives available in a bunker restoration project, the potential costs, the impact of those alternatives on maintenance, and why a bunker renovation project may be necessary.
- HSR does not, and will not, have the maintenance budget or staff to implement the maintenance programs followed by other courses – but this is a contributing factor as to why our bunkers are in need of renovation.

Fortunately, HSR was designed with fairly shallow bunkers which are less costly to renovate and maintain, and should last longer than more complex bunker designs.

The Money Pit

Do golfers really understand how much bunkers cost?

BY JAMES F. MOORE

USGA folks and Rules aficionados are fond of correcting golfers who refer to sand bunkers as “traps.” However, given the rapidly rising cost of building and maintaining bunkers, the word *trap* might better describe the overall impact on golfers’ pocketbooks. For a variety of reasons discussed in this article, bunkers may well have passed greens in terms of their ultimate cost to the consumer.

This article addresses construction, maintenance, and golfer expectations, and how each affects the overall cost of bunkers on a high-quality course. Right or wrong, these courses often define golfers’ expectations of what they would like to have at their course. Unfortunately, few golfers realize how costly it would be to have what they see on television.

The figures quoted in this article are derived from extensive telephone interviews with golf course superintendents, golf course builders, sand suppliers, bunker liner distributors, and trucking companies. It should be kept in mind that the figures represent broad ranges and that all of the costs associated with the construction of bunkers are highly subject to change — largely due to the uncertainty of fuel costs.

DESIGN

Bunker design has perhaps the greatest impact on the long-term cost of maintaining bunkers. Steep, flashed sand bunker faces may be striking to the eye, but they are also extremely prone to erosion during even moderate rain events. A great deal of hand labor is frequently necessary to shovel the sand back onto the faces. Newly shoveled sand is loose and soft and thus prone to “fried-egg” lies until it has had time to compact. Heavy rain events often move not only the sand but the underlying soil as well. This soil contaminates the sand with silt and clay, quickly reducing the sand’s ability to drain. Eventually, the sand becomes so contaminated that it must be completely replaced. Although bunker liners have helped reduce erosion and contamination, they are expensive to install and maintain. This is discussed in greater detail below. Grass faces



While grass faces eliminate the problem of erosion, they still require extensive maintenance — often by hand.



Drainage is critical in every bunker construction project and typically costs approximately \$5.00 to \$6.00 per linear foot.

are far less prone to erosion problems, but often they are difficult to mow and even more difficult to irrigate and fertilize. They are also far less dramatic in appearance and therefore utilized to a lesser extent by most architects.

In addition to determining the style of bunker faces, architects determine the shape of the perimeters. Bunkers with intricately shaped, serpentine lines require a great deal of extra hand labor for edging and are therefore more costly to maintain.

Perhaps the greatest single design factor affecting the cost of construction and the maintenance of bunkers is simply how many there are on the course. Most courses have from two to three bunkers per hole, but there are courses with more than 200 and courses that have no bunkers at all. Based on survey data from the Golf Course Builders Association of America (GCBAA — Golf Course Builders Association of America 2008 Construction Guide Tool compact disc), the average total square footage is about 100,000 square feet, with the average size of a single bunker being about 1,500 square feet.

CONSTRUCTION

Although there are many ways to build bunkers, all utilize a similar sequence of steps.

Construction of the Core, Subgrade Preparation, and Edging

This step involves the digging of the hole and the shaping of the bunker floor and edges. Large, simply shaped bunkers can often be built with small dozers and skid loaders. Small, intricately shaped bunkers require extensive hand shaping, which drives up the cost. A broad estimate of the cost of this step ranges from \$.75 to \$1.50 per square foot.

Install Drainage System

Subsurface tile drainage is utilized in most bunker construction and typically is installed by digging 8-inch-wide ditches 8 to 10 inches deep. Perforated 4-inch drainage pipe is placed in the ditches and covered with gravel. Approximately 150 linear feet of drainage tile is used in a 1,500-square-foot bunker, with an installation cost of about \$5.00 to \$6.00 per linear foot (including materials).

Liners

Liners are a relatively new concept for bunkers and are available in a very wide range of materials and designs (far too many to discuss in this article). All liners are installed between the soil floor of the bunker (subgrade) and the sand. Liners are claimed to reduce the erosion of sand from the bunker faces and, as a result, reduce the contamination of the sand with soil, thus prolonging its ability to drain. Liners fall into two broad categories — those that are rolled out over the bunker floor, much like carpet, and those that are sprayed or spread over the floor to form a sealant. The cost of liners varies widely depending on their thickness and composition, while the cost of installation varies a great deal depending on the amount of hand work necessary. Roll-out liners range from \$0.25 to \$0.75 per square foot, with installation adding \$1.00 to \$2.00 per square foot. The sealant-type liners are usually installed by the liner representative and typically range from \$1.00 to \$1.50 per square foot (including materials).

A hidden cost of all liners is the labor necessary to avoid damaging them during bunker maintenance. Sufficient sand must be continuously maintained over the liners to prevent contact by golfers and maintenance equipment. For this reason, many golf course superintendents find it necessary to hand-rake bunkers with liners. This can be extremely expensive, as discussed below under “Maintenance.”

Bunker Sand

At one time, selecting a sand for use in bunkers was a fairly simple task. Typically, a mason or brick sand would be purchased from a local sand and gravel plant. The sand was then hauled the relatively short distance to the course, resulting in extremely reasonable trucking charges. Fuel surcharges were a rarity.

Things have changed. Ironically, one of the most contentious aspects of course maintenance today is the playing quality of a hazard — the bunker. In an effort to find the “perfect” sand for their bunkers, golfers seem to be willing to pay any price. In addition, it is not uncommon for courses to select a sand that must be hauled hundreds and even thousands of miles, resulting in freight and fuel charges that can far exceed the cost of the sand itself.

The cost of sand is usually made up of three factors: 1) the cost of the sand, 2) the cost of the freight, and 3) the addition of a fuel surcharge. In many states you also have to pay tax on the product or the freight (including the fuel surcharge), and in some cases both. For example, Pennsylvania taxes both at a rate of 6%.

Bunker sands today fall into two broad categories. Native sands are sand products that are mined and then screened to achieve the proper particle size distribution. As a general rule, screened native sands range from \$15.00 to \$25.00 per ton FOB (the cost at the plant in this case). Manufactured or crushed sands make up the second category. These are sands that are mined and then passed through a crushing device. They are sometimes screened after crushing. The crushing process typically doubles the cost of the sand, with manufactured sand ranging from \$30 to \$50 per ton FOB.

The sand must then be hauled to the project. In most cases, trucks carrying 23- to 25-ton loads will be used to haul the product. The cost of hauling is affected by many factors, including tolls, traffic (time), and distance. In most cases, the 23-ton load costs from \$1.75 to \$3.50 per mile. Assuming \$2.00 per mile, trucking the sand 100 miles would result in a freight charge of \$200.

Unfortunately, that will not be the final cost of the sand. Given the rapid rise of the cost of fuel, trucking companies must now add a fuel surcharge on top of the freight charge. As everyone knows, the cost of fuel varies regionally, and thus surcharges do as well. Surcharges can range from 10% to 30%. Assuming 20%, our \$200 freight charge has increased to \$240 per 23-ton load per 100 miles.

Yet another caveat regarding fuel expense is the fact that the cost per gallon of fuel can rise quickly. When contractors are trying to bid on a project, they must estimate what fuel charges will be at the time they purchase the sand. How-

ever, since sand is often not installed in bunkers until the very end of a construction project, a year might elapse between the time the bid is submitted and the time the sand is actually purchased. Does anyone want to try to guess what diesel fuel will cost a year from now? For this reason, the fuel surcharge is very likely to change from the time you first check on the cost of the trucking until the time the product is actually hauled.

Sand Installation

The cost of placing four inches of sand into a bunker cavity ranges from \$10.00 to \$14.00 per ton. Based on a telephone survey of five of the most commonly used sand suppliers across the country, new golf course construction typically utilizes from 2,500 to 3,000 tons of bunker sand, while renovations often require less — in the range of 1,500 to 2,500 tons.



Combined Cost of Construction, Sand, and Freight

Adding up these individual charges illustrates just how expensive it is to add bunkers to a golf course construction project. As an example, let's assume we are building a new course that will have three to four bunkers per hole, with each bunker approximately 1,500 square feet in area, for a total of 100,000 square feet of bunkers. We will use a liner and we will purchase a manufactured sand from a plant 300 miles away. Our project will require 3,000 tons of sand.

Intricate designs are eye-catching and dramatic. However, the extensive hand labor necessary to build and maintain them makes them extremely expensive.

Construction at \$1.00 per square foot	\$100,000
Install 1,000 linear feet of drainage at \$5.50 per foot	5,500
Purchase and install liner at \$1.50 per square foot	150,000
Purchase 3,000 tons of sand at \$35.00 per ton	105,000
Ship sand to project at \$2.00 per mile (Each truckload will cost \$200. 3,000 tons will require 131 truckloads or \$26,200)	26,200
Fuel surcharge of 20%	5,240
Install sand in bunkers at \$12.00 per ton	36,000
Total bunker cost	\$427,940

Based on the assumptions in the table, our bunkers will cost \$4.28 per square foot or about \$6,400 per bunker.

MAINTENANCE

As frightening as the cost to add bunkers to a course might be, an even greater expense is their perpetual maintenance. As the Green Section agronomists travel the country and visit courses of all budget levels, the most common complaints from golfers involve bunkers. Depth of sand, “fried-egg” lies, lack of consistency, and even varying moisture levels are all sources of dissatisfaction. Many golfers believe they are entitled to a certain quality of lie in a bunker and that anything less is a sign of poor maintenance or bad sand, and usually both. Unlike the other hazards on the course, bunkers now have to be “fair.”

As noted earlier, architects frequently use bunkers for aesthetic reasons as well as to add challenge to the course. The bright white sand in a bunker provides a beautiful contrast to the acres of green, intensively manicured turf surrounding it. During televised golf events, aerial cameras zoom in on perfectly edged bunkers with perfectly groomed sand that come closer to resembling oriental gardens than hazards. So how do superintendents produce such “works of art”? They do so by using a lot of hand labor to complete a variety of tasks. In preparation for this article, I surveyed ten superintendents across the country at courses that are known for top-quality bunkers. What follows is a summary of their practices.

Raking

Raking is usually broken down into two types — a full raking and a touch-up procedure. Full

raking is a total grooming of the entire sand area, while touch-up simply corrects any irregularities in the sand left by careless golfers. Most of the courses hand-rake the bunkers in lieu of powered equipment. This is done to create a firmer surface and to avoid contacting the liners.

Edging/Trimming

Keeping those sharp, well-defined edges requires a lot of hand trimming. During the times of the year when grass is actively growing, the courses contacted trim weekly using line trimmers. Edging using a sidewalk edger or similar equipment is typically a monthly task in the parts of the country that use cool-season grasses, while those with bermudagrass conduct this task twice per month. After a bunker is edged, additional labor is necessary to clean up the debris.

Mowing

Courses with grass faces have to mow regularly to keep a manicured look. Floating mowers are the most common tool due to the steep slopes associated with most bunker designs. Mowing is a weekly task and one that is almost always followed by blowing clippings out of the bunker.

Leaf and Clipping Removal (Blowing)

A surprisingly high labor requirement in bunkers is the need to constantly remove leaves, grass clippings, and other debris. Most of the courses contacted for this article viewed this task as a daily necessity, involving at least two laborers with backpack blowers.

Packing Sand Faces

Few things anger golfers more than a ball plugged into a steep sand face. As mentioned earlier, the sand on these faces is often loose as a result of having to be periodically moved back onto the face from the lower part of the bunker. To reduce plugging as much as possible, the maintenance crew has to pack the faces with hand tampers. Obviously, the more often the sand is washed off the faces by rain or runoff, the more often the packing process must be done. This operation is conducted once or twice per month.

Checking Sand Depth

Keeping the sand at the proper depth on the bunker faces also helps reduce fried-egg lies. For courses with liners, it is an absolute necessity



to keep enough sand over the liner to prevent players from contacting it during a shot. The goal is to maintain a depth of 1 to 2 inches on the bunker faces. To achieve this goal, the depth must be checked weekly and reestablished with hand shoveling as necessary.

Replacing Lost Sand

Sand is gradually lost from bunkers as a result of being blasted out by players, blown out by wind, and removed by the maintenance staff. Following heavy rains it is commonplace for the sand in the lowest portion of a bunker to be covered with a thin layer of silt and clay, as well as organic debris that has blown or floated into the bunker. This layer should be removed to prevent plugging of the sand pores, which in turn will reduce the sand's ability to drain. One or 2 inches of new sand should be added annually, as opposed to adding greater amounts over a longer period. By adding smaller amounts more frequently, the problem of a deep layer of new soft sand is eliminated.

Pumping

As bunkers age, their ability to drain rapidly decreases. Heavy rains can result in older bunkers looking more like water hazards. To restore the bunkers for play as quickly as possible, crews are sent out with pumps and shovels. After the water is pumped out, the silt and clay layer is removed

and the bunker is allowed to dry out enough to hand rake.

Maintenance Summary

Given the very high labor requirements necessary to keep bunkers in top condition seven days per week, all of the courses contacted have established specialized bunker crews, often led by a bunker foreman. These teams perform all the tasks described above and are reinforced with additional crew members following heavy floods or when large volumes of new sand must be added.

Bunker crew sizes and schedules varied widely, depending on the number and design of bunkers. Keeping in mind that all ten courses are considered high-end facilities in their region, the least demanding schedule devoted 4 to 6 workers, spending 6 hours per day on the bunkers, 6 to 7 days per week, or a total of approximately 200 labor hours weekly. Another course sent out 13 employees each day for 5 hours per day, 4 to 5 times per week, for a weekly total of about 275 hours. The highest labor commitment in this survey utilized an average of 8 workers, 8 hours per day, 7 days per week, for a weekly total of about 450 hours.

With hourly wages for these workers in the \$8.50- to \$9.50-per-hour range, it is obvious that bunker maintenance has become extremely expensive. In fact, all of the superintendents contacted expressed the opinion that the cost of

Liners are effective in reducing contamination of sand with underlying soil. However, they are expensive to install and difficult to maintain.

maintaining bunkers at their courses was now approaching, and in some cases exceeding, the cost of maintaining greens.

CONCLUSION

Given the data described in this article, the reader should be convinced that bunkers are extremely expensive features to add to any golf course. They are expensive to build and even more expensive to maintain — at least at the level many golfers today are demanding. Although the wealthiest courses have the funding available to maintain bunkers at championship quality on a daily basis, the rest of the golfing world needs to be more realistic about how to best use their more limited resources. The following list of suggestions is offered with this in mind.

- Make every effort to educate players at your course concerning the cost of maintaining bunkers at a high level. This article should help.
- Eliminate bunkers on your course that seldom come into play and/or are rarely seen. At the very least, convert them to grass hollows, but do so in a professional manner. Simply removing the sand and filling the cavity with soil is not the answer. Hire a professional golf course contractor to do the work, including the reshaping of the surrounding area to create a more natural appearance.
- Convert those high, flashed sand faces to grass. Although grass faces still require a great deal of effort, they reduce erosion problems, thus prolonging the life of the sand.
- Include funding in the capital improvement budget to rebuild the bunkers every 5 to 7 years. Typically, this involves removing the old sand, installing new drains, and installing new sand. This interval can easily be stretched to 7 to 10

years if players are willing to tolerate less than ideal conditions for a few days following heavy rains.

- Bunkers do not have to be raked on a daily basis — that is, if golfers make a better effort to rake out their footprints. Unfortunately, this aspect of golf etiquette seems to have slipped even more than the fixing of pitch marks. Courses with small budgets might even solicit the aid of their players by asking them to volunteer to touch up certain bunkers — much like the roadside litter programs popular in many states.
- Be sure to check local sands when purchasing new sand for bunkers. Have the local sands tested by an accredited laboratory before assuming that the only good sand for your bunkers is three states away.
- Of course, the biggest saving of all will come from convincing your golfers that the bunkers are hazards and that players simply cannot and should not be guaranteed a perfect lie every time. If you figure out how to do this, please contact the Green Section agronomists immediately so we can share your “cure” with the rest of the country.

ENDNOTE: The author would like to thank all those who participated in the telephone interviews. Special thanks is extended to the Golf Course Builders Association of America for their assistance. GCBA has developed an excellent tool to help estimate the cost of construction of bunkers as well as all other areas of a golf course. This CD-based tool can be obtained by visiting www.gcbaa.org.

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The cost of bunker maintenance can be reduced by converting flashed sand faces to grass. The conversion process itself is labor intensive and expensive.

