

STAT 313 Super Homework

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Background

Tony Butler Golf Course is a municipal golf course in Harlingen, Texas, where I grew up. It consists of 27 holes, the main 18 holes and the "Pigeon Side", a short but well-liked 9-hole track.

I started my journey in the game of golf at Tony Butler Golf Course at the age of 13. I sustained multiple injuries from other sports growing up, and, in the second semester of my 7th grade year, I decided to join the golf class. We got to use the course's facilities for an hour a day in the morning there, and so I learned how to play there. Not only that, but the course offered junior memberships for only \$20 a month, which included unlimited access to the course and the practice facilities. This deal was incredible and very inclusive, letting any kid who was interested in golf have the opportunity to get to play. I've spent hundreds upon hundreds of hours at Tony Butler, and it holds so much meaning in my life and in the life of others. It is undoubtedly an important part of the city and its history, and I truly want to see it thrive and be uplifted.

Problem

Tony Butler Golf Course is planning to undergo renovation in the near future, with the current estimated start date set for September 11th, 2023. Just recently, on April 22nd, 2023, a new contract was signed, setting the project's total cost to \$5.5 million. This project is absolutely huge for the city. There is a lot of unhappiness in the general community that money is being spent on the course and not on other things in the city. So, there is a lot of pressure for the renovation of the course to be successful. City commissioner Ford Kinsley said: "This is big money to me..... big freaking money," he said. "All people are going to see is we gave (money) to the golf course. We still have potholes. We still have lights that don't work. We still have potential flooding. Man, if you get this (funding), you've got to make this freaking work. This baby's got to shine." ¹ The golf course has been on the downturn for the past 10+ years, losing money every year and losing hundreds of thousands of dollars overall, all while struggling to maintain quality. There are two problems we would like to approach: What are the best decisions that can be made to maximize the effectiveness of the renovation, and what are the best decisions that can be made after the renovation to maximize the long-term output of the course? The decisions that have be made for the renovation have more to do with the allocation of money and effort towards different aspects of the course, while the decisions that have to be made after the renovation have more to do with altering how the course operates long-term.

Objectives

There are many objectives that should be considered in this renovation to attempt to maximize the overall utility of the project. Later in this paper, calculations will be performed to determine the best alternatives based on different subsets of alternatives to fulfill objectives. Now, let's layout all of our objectives and see what we have to work with. Then, we can rank and weight each of the objectives.

1. Maximize Profits

The city is sinking \$5.5 million into this project, so the monetary outcome of it is fairly important to say the least. Maximizing profit is certainly incredibly difficult for golf courses, but the fact that there is already a set amount of money being put into it makes it a bit simpler because amount spent won't have to be thought about. This objective is particularly important because the course has been losing money for years now, and if it does not start seeing an upturn in the near future we will likely see the shutdown of the course.

2. Maximize Quality of Course

Maximization of the quality of the golf course is an incredibly important objective that needs to be tackled in order to consider the renovation to be successful. The main problem with the golf course at this point and time is its overall quality. Many of the greens have rough patches throughout or are overall not in ideal shape. The fairways and rough grasses are certainly not as lush as the course would like them to be. The course tends to dry out and get hard easily due to the common windy and dry climate. The bunkers, both fairway bunkers and greenside bunkers, need an overhaul. Overall, it should be said that a huge increase in course quality is an absolute necessity for the renovation.

3. Maintain Reasonable Fees

Part of the appeal for a municipal golf course like Tony Butler is its affordability, especially compared to other golf courses. Nobody wants to feel like they are overpaying for what they are getting, especially at a golf course like this. It's important to keep a consistent, regular customer base and it's also important to be inviting to potential new customers. Price and demand have at least some sort of a mathematical relationship, and raising the price more and more will cause the demand to be less and less.

4. Maintain Relevance of "Pigeon Side"

The "Pigeon Side", the secondary 9 holes, is an extremely important part of the history of Tony Butler, and is widely beloved. The course was originally just the secondary 9 holes, opened in 1929. The Pigeon Side is shorter and less challenging the normal full course, but it is for that reason it is so valuable. It

is especially attractive for older or less skilled golfers, and becomes incredibly busy during the winter when Winter Texans are in town. Several years ago, there were actually plans to shut down the Pigeon Side. Around half of it was actually closed off for a while because the city was considering plans to sell land since it was right on a frontage road, I-69. To sell this land, they would have to revisit an old resolution and have a vote on it.² Having the Pigeon Side brings in more customers and allows for more customers on the course at a time.

5. Maximize the Size of the "Regular" Customer Base

A lot of the rounds played on a golf course are by "regular" golfers, those who play every day, several times a week, or every week. They are the core of the golf course, and what attracts them to a golf course may be different than what attracts more casual golfers or those who don't have a "home" course. A regular golfer will be more concerned about the course's replayability, its food and beverage offerings, its practice areas, and a relatively constant quality. Adding one regular golfer gives a golf course a huge long-term boost in revenue, and, with the apparent downfall of one of Tony Butler's competitors, Treasure Hills Golf Club (which will be mentioned a bit more later), this objective is even more important and more obtainable. "Word of mouth" is also incredibly powerful when it comes to golf courses, at least in the Rio Grande Valley, and having more people advocating for a golf course will help bring even more people in.

Objective Ranking

It is now time to rank all of the objectives compared to each other.

O_1 : Maximize Quality of Course

O_2 : Maximize Profits

O_3 : Maximize the Size of the "Regular" Customer Base

O_4 : Maintain Reasonable Fees

O_5 : Maintain Relevancy of the "Pigeon Side"

There is no debating that Tony Butler has to come out of the renovation a much higher quality golf course. It is certainly the most important objective. Profits are also incredibly important, as the city may feel forced to give up on the golf course if it keeps losing as much money every year as it is now. This objective cannot be met without a high quality golf course however, hence its placement as the second-most important objective. The "regular" customer base is also incredibly important, as just one regular customer does a lot of work for the golf course by word of mouth and revenue. Maintaining reasonable fees is also a necessity, but it cannot come before any of the previous objectives. The relevancy of the "Pigeon Side" is up in the air. It holds great importance and is greatly loved, but it would have to be the first thing on the course to be axed if things started to go downhill.

Alternatives

One thing to note about potential alternatives is that there is already some sort of idea of what Tony Butler wants to do. It's already known that the Pigeon Side will remain open during the renovation, so there will be an obvious challenge in meeting the objective of maintaining the relevance of the Pigeon Side.

1. Reconstruct the Irrigation System

The irrigation system needs a complete overhaul. "After months of work, officials revamped the proposed irrigation system, the project's cornerstone, to replace a 40-year-old network of leaking PVC piping. "The irrigation system is shot. We have leaks everywhere. We have leaks almost everyday," Hart told commissioners. "The irrigation system is PVC pipe. We're by the arroyo, and we have an incredible amounts of land movement. The ground moves and it bends that pipe up and just destroys it." On the drawing board, Blume trimmed the number of irrigating sprinkler heads from 1,250 to 830, Hart said, adding each unit costs about \$2,500. The new irrigation system calls for about 14 miles of underground, high-density polyethylene piping ranging in dimensions from two to 16 inches, including 10 miles of 2-inch pipe, officials said. Covered by a 20-year warranty, the new piping is "like a really, really thick garden hose," Hart said. Meanwhile, a computerized central control system will operate the irrigation system."¹ The overhaul of the irrigation system should be considered a necessary alternative to meeting the objectives of maximizing the quality of the course and maximizing the long-term quality of the course.

2. Renovate the Clubhouse - Emphasis on Food and Drink Services

Golf courses don't just operate on the success of the course itself. Playing a round of golf is typically a 4-hour endeavor, which means that customers may have the want for food and drinks during their round, before their round, or after their round. Expanding the food and drink services the clubhouse has and creating more room for customers to hang out will be certainly beneficial to the golf course. Currently, the clubhouse sells a few drinks, a few alcoholic drinks, a few snacks, and occasionally make some hot dogs and burgers. The "snack bar" area should be expanded to have a wider variety of all snacks and drinks, with an emphasis on alcoholic drinks because of how well they typically sell at golf courses. Also, cooking capabilities should be expanded a little bit to offer a few more options and offer these options on a regular basis. The demand is certainly there, especially when the course has plenty of regulars who stay there for hours or almost all day. The prices of all of the food and beverage offerings should also be raised just slightly to go along with the major step up in quality Tony Butler should be getting. This alternative gets even more interesting when we consider the current state of the clubhouse. The layout is basically separated into three parts: the pro shop/snack bar/seating area, the middle area, which is empty, and then a room that the golf course rents out for people to have events. The current state of the clubhouse is wide open for a renovation that will greatly increase its output. A third of it remains unused,

so it should be transformed into seating areas and can be used to expand the snack bar. Then, the clubhouse will have a pro shop desk, and then most of the rest of the two-thirds of that area can be used for seating and the snack bar. Also, the event room the course rents out can be renovated to just be nicer to attract more customers. Unfortunately, the area of Tony Butler's clubhouse cannot be expanded without significant changes to other aspects of the course, but the area it holds already should be just fine. This alternative will directly help tackle two of the objectives, maximizing profits and maximizing the sense of community. It may also indirectly help the course maintain reasonable fees because the increase in output may allow course officials to feel comfortable about not raising golf prices too much.

3. Renovate and Rework Putting and Chipping Practice Areas

Tony Butler Golf Course has a putting green and a chipping green practice area. They are both free to practice on, as it is at most golf courses. The quality of both of these areas has consistently gone down in the last several years, and, because of the state of the rest of the course, it has been difficult to justify putting any effort into these two practice areas. However, high quality practice areas are another way that the course will be able to get more customers and especially retain more long-term customers. Plenty of golfers don't really utilize the putting and chipping green practice areas, but they are incredibly important to many golfers (including me). High quality practice areas will attract golfers who are more interested in improving their game, and can potentially hold a weight that will determine whether a golfer will make Tony Butler their regular course or somewhere else.

4. Increase the Size of Greens

It seems that a big part of this project will be reworking the greens and expanding them: "Much of the project is aimed at transforming the golf courses' greens, expanding them from about 3,000 to 6,000 square feet while installing a sand base, Hart said, adding the old course's greens are clay-based."¹ This should be an incredibly controversial move to make by the golf course. The green is the most polished area in golf, and requires the most effort and care. It is also arguably the most important aspect of a golf hole in determining quality. Smooth, fast greens make for an enjoyable customer experience, while bumpy, sandy, slow greens make the customer want to go elsewhere. When asking a golfer about a golf course, the first and most important point of discussion is always the greens. Doubling the size of the greens provides a bigger target to hit to, making the experience of the course more enjoyable for the golfer. Also, increasing the size of greens to this extent will provide a new terrain for the golfer to learn, explore, and enjoy.

5. Shut Down the "Pigeon Side"

This alternative, while unlikely to happen in the time span of the renovation, is something that should be considered long-term for the course if Harlingen's

voters decide to make the land saleable. The \$5 million + the city can get for the land has to cause this alternative to be seriously considered in the future if it does become an option. While it will be incredibly sad to see the original nine holes gone, it could end up being a necessary evil for the course to be able to survive.

6. Redesign Some of the Course's Holes

A redesign of some parts of the course could be potentially beneficial in making the course more interesting and exciting to the customer, especially the "regular" who has played the course an uncountable amount of times. Adding new obstacles, taking away obstacles, restructuring holes to be shorter or longer, etc., can all reshape how the course is played and can benefit the course. This alternative is intriguing in the sense that the level of redesign could range from very small to very large. It's likely that the best course of action for this alternative involves just making small changes, but these small changes can certainly have a big impact on the course as a whole.

Consequences

In this section, discussion will involve how well (or not well) each of the alternatives meets each of the objectives. Let's first look at a consequences table, where we give each alternative a score from 0 - 100 on how well it meets each objective. Some alternatives will be indirectly affecting the objectives, like how a new irrigation system will indirectly affect profit. Indirect effects will be taken into consideration and explained after the table.

Alternatives

Objectives	Irrigation	Clubhouse	Practice Areas	Greens	Pigeon Side	Redesign
Profits	90	95	70	75	80	80
Quality	100	75	40	90	80	60
Fees	50	95	45	40	90	50
Pigeon Side	40	85	45	40	0	40
Customer Base	95	95	95	90	10	95

It was very difficult to come up with grades for each of the alternatives because there is so much to consider. Now, it's time to justify each of the grades. One alternative will be considered at a time, and each grade for each objective for the alternative will be justified. 0 is worst while 100 is best and 50 is neutral.

1. Reconstruct the Irrigation System

The irrigation system will certainly help Tony Butler with profits because it is the foundation of the renovation and therefore the foundation of Tony Butler becoming a quality golf course. It will be expensive, which is why it can't be rated 100, but it is necessary.

The irrigation system will obviously help the golf course in quality.

Grading the new irrigation system for maintaining reasonable fees is interesting. On one hand, it will bring more customers to the course which will drive more revenue. On the other, heavier hand however, it will be expensive and will cause an increase in quality to the golf course, which will cause Tony Butler to increase prices.

The irrigation system isn't being implemented for the Pigeon Side. It won't necessarily negatively impact it, but it's just more money that isn't being used for it.

The irrigation system will increase the quality of the golf course and will especially help Tony Butler have a more consistent quality. These effects will certainly help bring in a larger regular customer base.

2. Renovate the Clubhouse

Renovating the clubhouse will not cost a great amount, and is bound to bring much more revenue than it previously did.

Money spent on renovating the clubhouse is money that could be spent on improving the golf course, but it will also bring in more money long-term that will help Tony Butler.

If Tony Butler starts to make more and more money from the clubhouse, it will feel less pressured to increase the fees of playing the golf course.

Increased revenue from the clubhouse will help profits which will, in the long-run, take pressure off of potentially ignoring the Pigeon Side and will hopefully encourage more care towards it.

3. Renovate and Rework the Chipping and Putting Practice Areas

Money spent on renovating the chipping and putting practice areas will be money that could be spent elsewhere, especially considering the use of these practice areas is free. However, the increase in customer satisfaction due to high-quality practice areas will turn a long-term net profit.

The practice area is not part of the golf course, so it won't be improving the course, and the money used is money that could be used on the course. However, long-term benefits that come from new practice areas may negate some of that.

Renovated practice areas won't do much to the fees the golf course charges, but it may make them slightly higher because Tony Butler staff may feel that they improve the overall experience.

The relevancy of the Pigeon Side is being ignored once again. New practice areas don't do much for it.

High quality practice areas are a regular customer's dream!

4. Increase the Size of Greens

Increasing the size of the greens will cost money in the renovation and will cost more to maintain long-term, but the new irrigation system will greatly help with maintenance. Also, the money that will be made because of how game-changing the new greens will be will likely yield a net positive.

Bigger greens that are supposed to be high-quality will make the golf course much higher quality and much more enjoyable.

The increase in quality of the course because of the greens will result in Tony Butler increasing fees, but hopefully only by small amounts.

The greens are not being doubled in size on the Pigeon Side, so, once again, there is more money being spent that is not helping it.

Regular golfers will greatly enjoy all of this new terrain and all of this high-quality new terrain. The replayability of the course will increase significantly because of the doubled size of the greens.

5. Shut Down the "Pigeon Side"

The Pigeon Side being shut down will theoretically help long-term with money for sure. But, the impact that has on customers and especially Winter Texans is very much up in the air.

Shutting down the Pigeon Side will help Tony Butler focus more on the main eighteen holes, but, once again, there will be other conflicting effects (more to come in the Tradeoffs section).

Shutting down the Pigeon Side will eliminate its costs and help the course feel more comfortable maintaining reasonable fees for the main eighteen holes. Once again, though, there might be other conflicting effects.

Shutting down the pigeon side will surprisingly not help maintain the relevancy of the Pigeon Side.

The majority of customers will be very sad about the Pigeon Side being shut down.

6. Redesign Some of the Course's Holes

Redesigning, depending on the extent to which it is done, won't cost too much, and it will likely help attract and retain golfers.

Redesigning some of the holes can theoretically make the golf course better (course layout is relevant in determining the quality of a course)

Course redesign will cost some money but may also bring in more customers, so it itself is unlikely to have an effect on maintaining reasonable fees.

The redesign will have nothing to do with the Pigeon Side, but as has been the case previously, it is just another thing that is using money not directed at the Pigeon Side.

The regular customer base will certainly love a change in course design, especially those that have played Tony Butler hundreds of times.

Trade-Offs

From the analysis of the consequences last section, it's easy to accept the alternatives of a new irrigation system, a renovated clubhouse, and an increase in the size of greens. So, let's reduce our consequences table to simplify things and dive into it.

Alternatives

Objectives	Practice Areas	Pigeon Side	Redesign
Profits	70	80	80
Quality	40	80	60
Fees	45	90	50
Pigeon Side	45	0	40
Customer Base	95	10	95

1. Renovate the Practice Areas

This alternative is relatively neutral to the majority of the objectives. Taking it does hurt our most important objective, maximizing the quality of the golf course. However, it is beneficial to our next two most important objectives, maximizing profits and maximizing the size of the regular customer base. Overall, the negative impact this alternative may have on several on the objectives is pretty low.

2. Shut Down the "Pigeon Side"

This alternative will theoretically do great for some of our most important objectives, but the trade-off between benefiting profits, quality, and maintaining reasonable fees and absolutely throttling the relevancy of the Pigeon Side and making customers unhappy is scary. It's hard to choose this alternative and feel good about it. Compared to the other alternative, it's reasonable to shut this alternative down. It should only be considered in the future if the course starts to go downhill and needs money.

3. Redesign Some of the Course's Holes

This alternative doesn't really have any trade-offs between any of the objectives. Because of this, it should be an easy alternative to choose. However, there definitely exists some uncertainty that the course redesign may not really change the quality of the layout of the course, and there also exists some uncertainty that the redesign may negatively impact the layout of the course. Redesigning the course can also be considered a continuously scaled alternative: 0 may be doing nothing to the course, while 1.0 may be changing the entire course. Somewhere in between that will need to be decided upon to optimize the overall renovation.

Uncertainty

Four out of the six alternatives have been determined to be suitable to maximize the overall effectiveness of the renovation. Two alternatives remain undecided upon: Redesigning some of the course's holes and shutting down the Pigeon Side. The former is likely to happen, but it needs to be determined the extent to which it should happen. The latter alternative is totally up in the air and might end up having more to do with subjective thinking rather than objective-based decision making. Let's start by looking at the optimal approach to redesigning the golf course.

It's important to note that, after the new irrigation and system and greens, the course will not have much more money to work with because of supply chain issues that have caused prices to increase. Instead of getting the \$6.3 million that Tony Butler wanted, they got \$5.5 million.

Unfortunately, there is not enough information available on the costs of things in the project. To simplify things, we will estimate the cost of new greens and a new irrigation system to be \$5.1 million, the cost of the clubhouse renovations to be \$50k, and the cost of renovating the practice areas to be \$100k. This leaves \$350k remaining, some of which should be used for improving bunkers, fairways, and rough areas. Expected monetary value will be used, and four different options for the extent of course renovation will be used based on the money left remaining: 0, 0.1, 0.2, and 0.3. 0 will be considered as no renovation at all, while 0.3 will be considered as renovating nine holes without changing the fundamental course layout. Each of the options will be given a yearly sales potential for a bad, decent, or good outcome, where the outcome is the quality of the course redesign. The base yearly outcome for spending all the money on more general course renovations is \$30k, while the base yearly outcome for spending all the money on redesigning is -\$75k.

The units are in thousands of dollars.

	Bad	Decent	Good
0	30	30	30
0.1	-10	20	40
0.2	-30	15	50
0.3	-60	0	75

$$\begin{aligned}P(\textit{Good}) &= 0.6 \\P(\textit{Decent}) &= 0.35 \\P(\textit{Bad}) &= 0.05\end{aligned}$$

The chance that a redesign is poor is low due to the stakes of the project. There is so much pressure on this project that it's unlikely they truly mess something like this up.

Let's look at expected monetary values now for each of the outcomes:

$$\begin{aligned}
E[0] &= 30 \\
E[0.1] &= (0.05)(-10) + (0.35)(20) + (0.60)(40) = 30.5 \\
E[0.2] &= (0.05)(-30) + (0.35)(15) + (0.60)(50) = 33.75 \\
E[0.3] &= (0.05)(-60) + (0.35)(0) + (0.60)(60) = 33
\end{aligned}$$

Choosing the 0.2 option seems like it would be the optimal choice. In this scenario, five or six of the holes are renovated to a pretty decent extent. About half of the remaining \$350k is spent on general course renovations, and the other half is spent on course redesign.

Post-Renovation Decisions

The changes that Tony Butler makes in how it operates post-renovation will be essential in determining its long-term success. The golf course has to build off of the renovation, it cannot just become complacent and feel that everything is suddenly better because of the renovation. In this section, discussion will be aimed at defining objectives and alternatives, and these will all be aimed at achieving long-term success for the golf course. The alternatives will be more intuitive and straightforward, so any complexity in decision-making will be nullified.

Objectives

1. Maximize Long-Term Quality of Course

Maximizing long-term quality of the course is incredibly important because this project needs to yield long-term success. This renovation is a sort of last ditch effort to resurrect the golf course. If the quality of the course dies down, especially if it dies down in a short amount of time, it could very likely result in the golf course's closure or the city taking away funds. This could very well be the last major renovation Tony Butler gets, so the course has to be able to take this renovation and make something happen with it long-term.

2. Maintain Reasonable Fees

Like previously mentioned in the renovation version of this objective, price and demand have at least some sort of a mathematical relationship, and raising the price more and more will cause the demand to be less and less.

3. Maximize Profits

Profit maximization is an objective that can be and should be attacked both in the renovation and post-renovation. Like previously mentioned, this objective is incredibly important to the golf course, especially in the eyes of those outside of the community. Tony Butler has to be able to get out of the financial hole its been in for the past several years if it wants to be able to survive.

4. Maximize Sense of Community

Tony Butler is a beloved municipal golf course known for its relatively cheap green fees and welcoming atmosphere. The city would love if the renovation lead to a greater sense of community, but the renovation itself may not have too much to do with this objective, hence our placement of it into the "post-renovation decisions" section. Instead, it will be useful to think about the alternatives to this objective by considering actions the golf course should take after the renovation to improve the sense of community. The renovation will set the foundation for this objective, but this objective will be met post-renovation.

Alternatives

For post-renovation decisions, all of the following listed alternatives must be followed for Tony Butler Golf Course to find overall long-term success.

1. Hire More Staff

The current upkeep of Tony Butler Golf Course is not enough to be sustainable for the high quality golf course that Tony Butler is projected to become. There has to be more effort and a more consistent effort by the superintendent and their staff to ensure that the state of the golf course does not go downhill. Besides just a more organized effort, the course should hire more staff so they can truly thoroughly upkeep a high quality golf course. Like previously mentioned, the course can no longer afford to go into a downward spiral, so this alternative will certainly assist with that.

2. Slowly Raise Prices, Stay Below Competitors

Tony Butler Golf Course has two main competitors in Harlingen, Harlingen Country Club and Treasure Hills Golf Club. Both of these courses charge more to play there, and both are higher quality than Tony Butler at the moment. However, Treasure Hills is slowly falling apart as its greens have been burnt and the course lacks the ability to put another big deposit in. This will certainly help the customer base of Tony Butler. Tony Butler runs at \$36 for eighteen holes and a cart, Treasure Hills runs at around \$42, but price increases on the weekends, and Harlingen Country Club runs at \$55 for accompanied guests on weekdays, \$75 for unaccompanied guests on weekdays, and \$75 for all guests on weekends. As a country club, Harlingen Country Club attracts few occasional golfers since playing there on a membership is a much better deal. That brings up the next point, which is memberships at Tony Butler Golf Course: their price is proportionally way too cheap compared to the green fee and other courses, and so membership prices should be increased proportionally more than single round rates. At \$1950 for unlimited golf and cart usage, this price sits at less than half the price Harlingen Country Club does for the same deal. Once Tony Butler becomes a higher quality course, it will have to raise its green fees and membership prices to help both maximize profits and maximize long-term quality of the course. If executed correctly, the course will get many new regulars, and may also be able to get some customers from Harlingen Country Club who aren't as into the country club culture. This alternative will help target the objectives of maximizing profits, maximizing long-term course quality, and maintaining reasonable fees.

3. Host More Events

It would be fantastic if Tony Butler started hosting more fun tournaments for different people to play in. As of now, they only really have the Sundowners tournament, where every week a bunch of groups of guys play for money. It's the same people every week, however, and it's really more of a thing for gambling

people. It can also certainly attract the wrong types of people because of the idea of handicaps and handicap dishonesty in golf. Tony Butler used to host a parent-child duo tournament, which they should bring back. They could also host more fundraiser tournaments, fun group tournaments with prizes, and annual championships that bring out the real competition to determine the "best" golfer. This alternative would certainly meet the objective of maximizing the sense of community because it would bring more people together. It may also get new golfers who have never really played at Tony Butler interested in the course and may cause them to come back and play more often or even become regulars, thus contributing towards the objective of maximizing profits.

Conclusion

For the renovation itself, the following decisions should be made:

- 1. Reconstruct the Irrigation System**
- 2. Double the Size of the Greens**
- 3. Renovate the Clubhouse**
- 4. Renovate the Putting and Chipping Practice Areas**
- 5. Redesign 5 or 6 of the Course's Holes**

For post-renovation, the following decisions should be made:

- 1. Hire More Staff**
- 2. Slowly Raise Prices While Staying Behind Competitors**
- 3. Host More Events**

References

1. del Valle, Fernando. “Harlingen’s Tony Butler Project Costs Jumping to \$5.5 Million.” Yahoo! News, Yahoo!, 22 Apr. 2023, <https://news.yahoo.com/harlingens-tony-butler-project-costs-204700579.html>.
2. del Valle, Fernando. “Winter Texans Return to Tony Butler’s Short Course.” Yahoo! News, Yahoo!, 1 Apr. 2022, <https://news.yahoo.com/winter-texans-return-tony-butlers-034700064.html>.
3. <https://tonybutlergc.com>
4. <https://harlingencec.com/Home>