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Proposed redesign of the Great Falls Municipal Golf Course

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A PROPOSED REDESIGN OF THE GREAT FALLS MUNICIPAL GOLF COURSE

By

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INTRODUCTION

The Great Falls Municipal Golf Course is currently an eighteen hole course located on the northeast side of the city. This 6,584-yard layout offers the municipal golfer an adequate round of golf at a very modest price ($3.00 green fee). While adequate, the layout is certainly less than optimum. An examination of financial records of past seasons shows a substantial profit, yet improvements have been minor. This paper undertakes an evaluation of the existing facilities and develops a plan for renovation, in phases, to result in an attractive and very desirable course for the City of Great Falls.

A city such as Great Falls, intent on being progressive, must constantly re-evaluate the posture of a Municipal Golf Course. Residents of Great Falls, following the trend of the rest of the United States, are seeking increased recreation time. Nationally, golf has been growing in participants yearly.[1] This trend is evidenced in Great Falls. In 1970, 28,709 rounds of golf were played at the Municipal Course. In 1974, a year of increasing economic problems,

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[1]Robert Trent Jones, "A Public Course Doesn't Have To Be Dull," Golf Magazine, Vol. 17, No. 5, (May, 1975), p. 54.

the golf movement continued in establishing new records in total players and number of memberships sold. This trend is analyzed in greater detail in Chapter III.

The City of Great Falls has expressed an interest in attracting new industry to the area. An industrial park is proposed, located adjacent to the golf course. A new airport facility will be completed in the summer of 1975. A "Lewis and Clark Heritage State Park" has been proposed for the Giant Springs area, again adjacent to the current Municipal Golf Course. A recreational facility such as a golf course is an attracting feature for the community. With proper direction, the current Great Falls Municipal Golf Course can become more than "adequate" in supplying the needs of the city for the present and the future.

The population of Great Falls is estimated at 63,185.[2] Currently, the golfer is offered the Municipal Course, a nine hole semi-private course in Black Eagle, and the Meadowlark Country Club Course. Billings, in contrast, has four eighteen hole courses. In Great Falls, the Meadowlark Country Club has approximately 990 members. Membership was recently raised to $500 from $150. This increase, plus a minimum of $45 a month in dues, is designed to hold total membership relatively steady. The facilities offered for this $1,040 first year outlay and $540 minimum yearly dues thereafter

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[2]Figures obtained from the Department of Intergovernmental Relations, Research and Information Systems Division, State of Montana.

are quite substantial and consist of a swimming pool, tennis courts, fine restaurant, bar, and one of the better golf courses in Montana. Current green fees are $7.50 and no non-member local resident can play more than four times per year as a guest. This restriction plus high green fees are designed to protect the membership and the course from heavy play. The expense involved makes a country club membership nearly prohibitive for the average city golfer.

The only other golfing alternative is the nine hole Anaconda Course. This course is semi-private and only open to the public Monday through Thursday. The course is relatively short and does not have grass greens. Existing greens are sand and limit player enjoyment.

With limited alternatives, municipal golfers increase in numbers every year. However, municipal course improvements have been minimal. In 1973 and 1974, the Great Falls Municipal Golf Course netted $25,483.57 after investing $7,133.26 in improvements.[3] A majority of the improvement money ($5,839.28) went for an auxiliary pump installed in 1973. The remaining $1,294.21 went for new trees and work on the rough. The municipal course is clearly able to generate a net cash flow to pay for future improvements (see Chapter III).

The present course is a par 72 layout that affords the golfer a variety of challenges including five dogleg

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[3]Statistics concerning the Municipal Golf Course were obtained through review of the annual reports of the Recreation Department, Great Falls, Montana.

right holes and two dogleg left holes. The design offers four par 5 holes and four par 3 holes. The northwest end of the course has numerous maturing trees while the lower southeast portion has several young newly planted trees (see Diagram 1).

The current watering system is a manual underground system. Water is supplied by the Missouri River and pumped to the course by way of a 12-inch line by two turbine pumps, 100 H.P. and 200 H.P., respectively. The system is a basic single row layout with auxiliary lines in the rough on three holes. A single row system utilizes a single water line down the center of each fairway with large valves periodically implanted to allow large sprinkler heads to be manually inserted. This single row system has four-inch lines down each fairway. Approximately 70 pounds of pressure is maintained throughout the entire system. The additional lines have been added to help maintain the new rough on fairways number 2, 12, 3, and 13.

With the exception of the rough adjacent to the fairways mentioned above, there is no rough (in terms of grass). Once off the fairway, one encounters hardpan with very intermittent patches of grass. The rough is never watered and hitting a golf ball out of it makes putting action or spin on the ball nearly impossible. The rough on holes number 2, 12, 3, and 13 is suitable and represents the type of rough that the entire course needs.

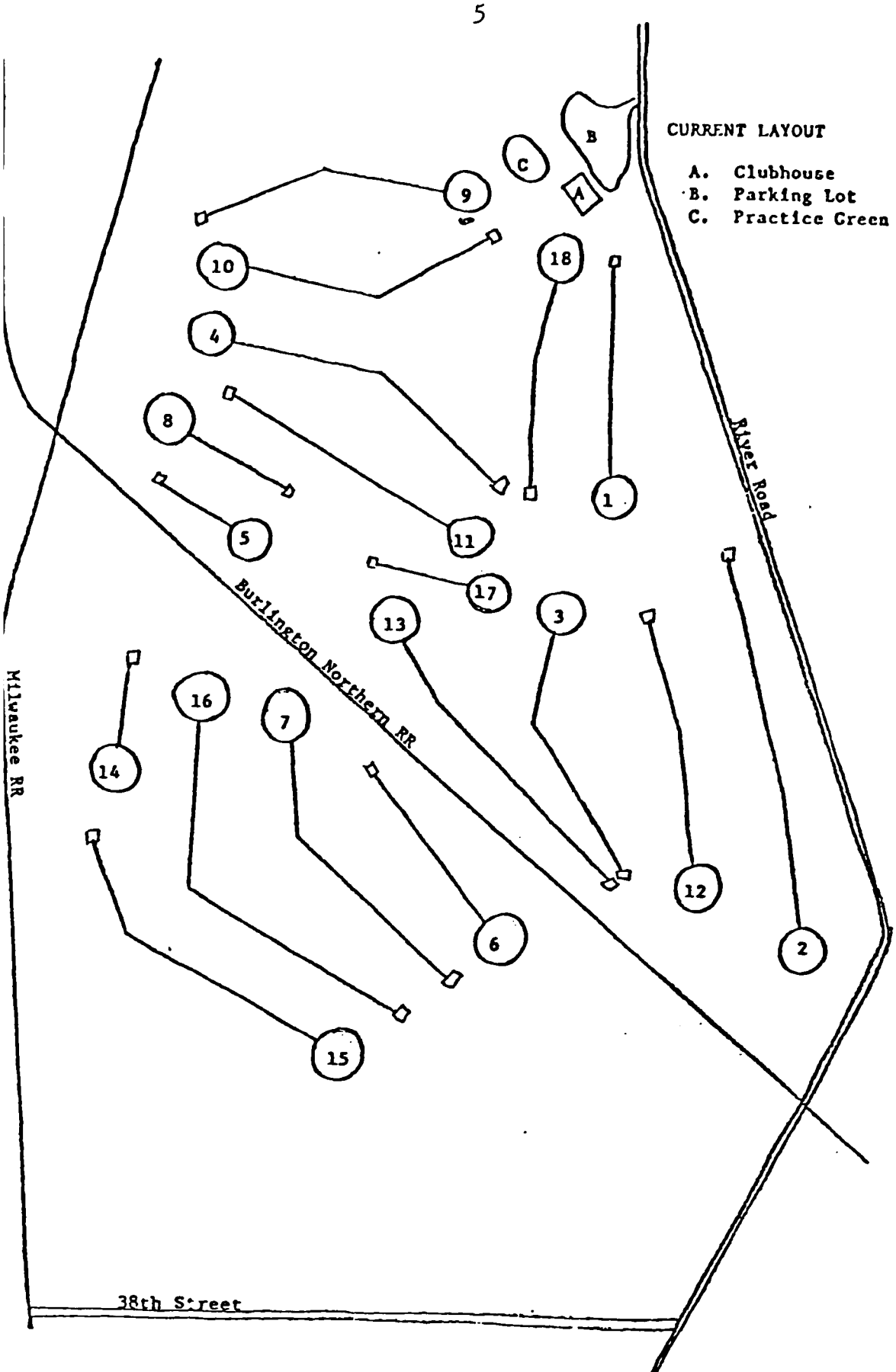

Fig. 1.--Current Layout of Great Falls Municipal Golf Course

The course has no water hazards and only one small sand trap around number 9 green. A Burlington Northern Railroad spur line runs diagonally through the course. The railroad track is treated as out-of-bounds when it comes into play. A Milwaukee Railroad track runs parallel to the course and a large iron railroad bridge crosses the Milwaukee track extending into the course.

The clubhouse is relatively small, enclosing both a snack bar and a pro shop. An open porch and tables provide adequate eating space. The snack bar is leased out for $1,000 per season. A small cart garage at the clubhouse and a maintenance garage in the middle of the course are the only other major structures.

The course employs a pro, a greenskeeper, and five maintenance personnel. The maintenance personnel rotate the watering jobs although one man is in charge of the watering system. During the hotter months, watering goes on 24 hours a day. This produces wet spots on the greens making them inconsistent in play. The sprinklers in the fairways also cause disruption of play when a golf ball lands in or near the line of the spray.

Basically the course is designed fairly well and with the improvement outlined in Chapter II, the course could bring the municipal golfer a challenging, esthetically beautiful and enjoyable round of golf.

CHAPTER II

PROPOSED REDESIGN

In order to develop a more efficient and enjoyable municipal golf course, a master redesign and renovation plan is required.

Utilizing the existing land and present course to the maximum extent possible leads to the proposed redesign plan of this chapter (see Diagram 2). The large land area adjacent to the eastern end of the course makes an ideal location for the proposed relocation of the clubhouse and new driving range. The existing holes are renumbered in a more logical pattern and only two holes require complete rebuilding. Additions include: fifteen sand traps, two water hazards, the enlargement of several tees and one green, an automatic watering system, and a playable rough on every hole. An obvious deletion is the Burlington Northern Railroad track which had previously run diagonally through the course. Implementation of this plan should be done in order of highest priority and completed as quickly as possible.

The watering system in a semi-arid climate like Great Falls is the heart of a golf course. During the golfing season, the Meadowlark Country Club in Great Falls spreads one million gallons of water over its course between

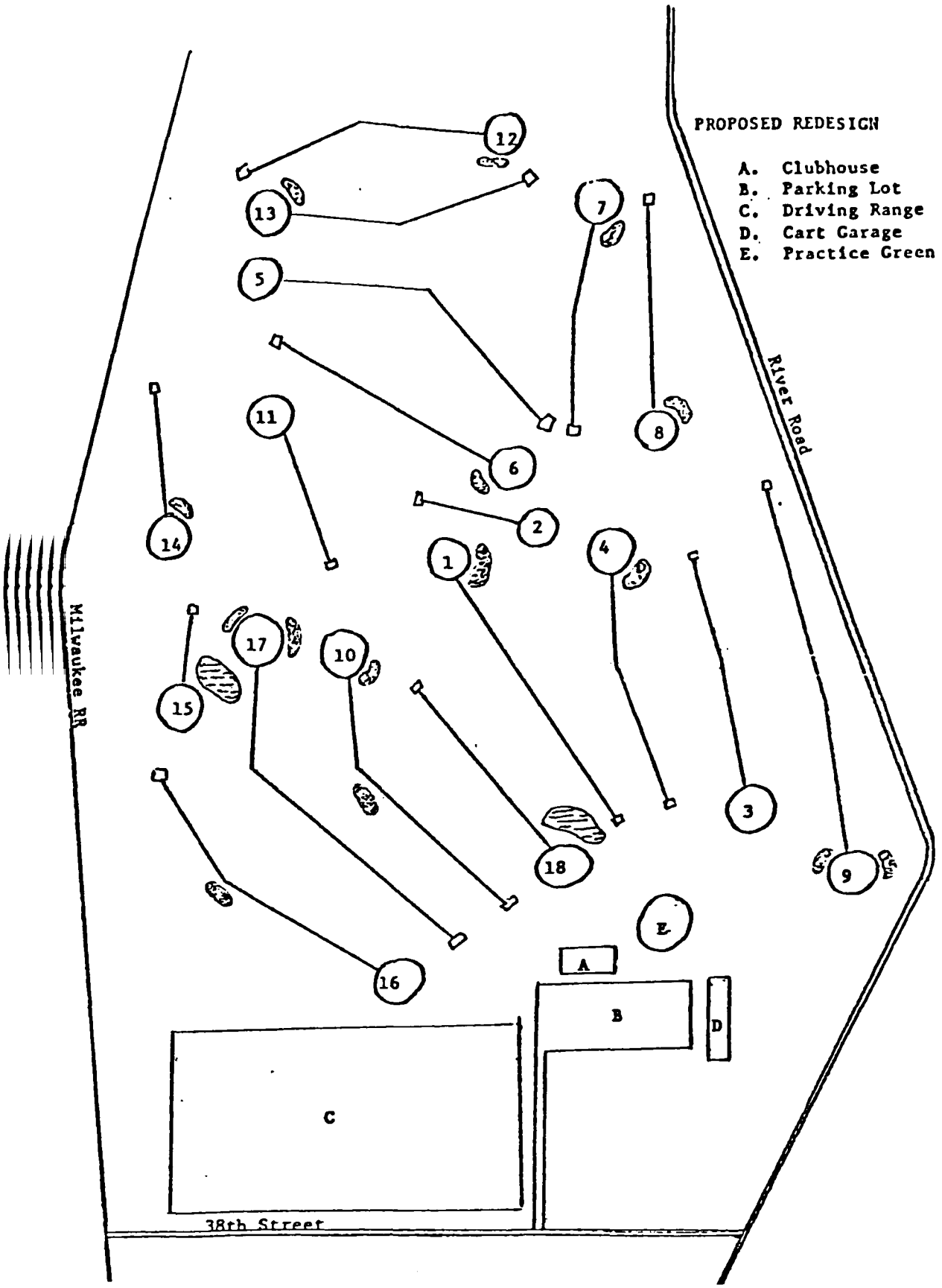

Fig. 2.--Proposed Redesign of Great Falls Municipal Golf Course

9:00 p.m. and 6:00 a.m. This is done by an automatic watering system. Each part of the course, including the rough, receives three ten minute sprinkling periods or a total of thirty minutes of watering each night. This ability to put large amounts of water down in a short period of time eliminates the need to water during the day or while the course is in use.

The present manual watering system at the municipal course requires a 24-hour period to put down the same amount of water. However, the entire course is not covered. The manual system requires insertion of sprinkler heads into the desired valves. This requires a man to constantly travel the course changing sprinkler heads from valve to valve. Therefore certain spots may be watered for nearly an hour while others are completely missed for days. The requirement of watering during the day also is a hindrance to the golfer for it causes inconsistent play created by a collection of water in low spots on the greens or fairways. The rough has to be almost completely ignored because of the water necessities of the fairways, greens, and tees.

This major deficiency makes the installation of an automatic watering system a necessity and the top priority for the renovation plan. The system would allow the fairways, tees, and greens to receive a more uniform flow of water, adequate for lush grass. The major benefactor of an automatic system, however, is the parched rough. Water would allow for seeding of the barren spots and growth of existing native grass.

One season of continuous watering from an automatic watering system would transform this course dramatically. The benefit to the course from this change alone warrants any rate increases examined in Chapter III.

The most economical and efficient means of installing an automatic system would be converting the present single row underground system to a triple row system. A conversion of this nature could utilize the present underground pipe by using it as a feeder pipe. Each row has a single pipe down the middle and by installing crossing lines perpendicular to the feeder line at preset intervals, connecting them by a saddle tap, the conversion is relatively simple. Sprinkler heads are placed at the middle of the fairway and at both extremities of the cross lines allowing overlapping coverage of the fairway as well as extensive coverage of the rough. The design and blueprint of such a conversion as well as the supervision of such a project is provided free by companies who sell the automatic sprinkler equipment, pipe, clocks, valves, etc. There are several companies who specialize in this type of work. Toro and Rainbird are two of the better known. Utilizing the present pumping system, the twelve inch line supplies adequate water and the two pumps provide adequate pressure to maintain an automatic system.

While other additions or changes in the redesign plan might be more visible to the golfer, none is more essential or important than the conversion to an automatic watering system. Estimates of time of installation vary but with good

weather and a large crew working, this phase could be completed between September and December. This time frame allows adequate time in the Spring for any unfinished installation requirements. This project should be phase one and started in the first year of the redesign plan because success of other projects hinge on a greener and lusher layout.

The second phase in the redesign plan deals with the removal of the railroad spur currently running diagonally through the course. This line is owned by Burlington Northern Railroad and serves the Great Falls Meat Packing Plant and a fertilizer plant northeast of the course. This line will also serve the proposed Great Falls Industrial Park area. Another line, running parallel to the course, is owned by the Milwaukee Railroad. This line also serves the Great Falls Meat Packing Plant and other industrial developments in the area.

Elimination of this track is essential for both esthetic beauty and space for redesign. Two alternatives for the relocation of the Burlington Northern line should be examined (see Diagram 3).

The first alternative would be to terminate the Burlington Northern line at the grain elevators west of the course and build a spur line to the Burlington Northern track running along the Missouri River on the north side of River Road. This would eliminate any need for the current line crossing the golf course. This alternative is the better of the two, but due to adverse topography, the

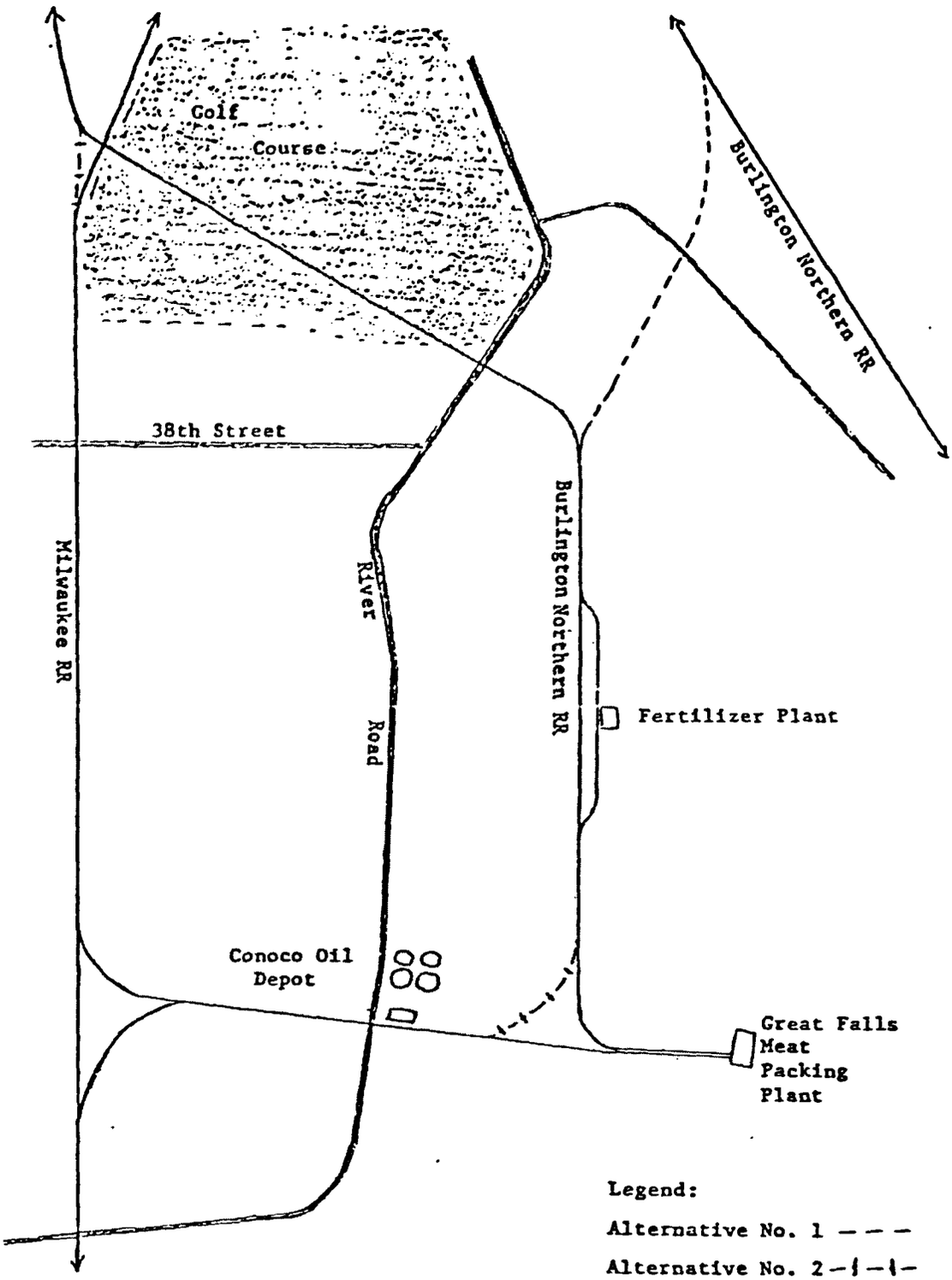

Fig. 3.--Alternative Solution for Relocation of Burlington Line

connection is impossible. Federal law dictates that the maximum grade allowed for a railroad track is two percent. The difference in the elevation of the two tracks in question is approximately 100 feet. This makes any connecting switch in the specified vicinity unfeasible. Burlington Northern also has future plans to move the Missouri River track across the river up around the Tenth Street bridge area.[1]

A second alternative would utilize a combination of the two existing tracks. A switch would be put in where the bridge over the Milwaukee track now exists. Another switch would be put in behind the Conoco Oil Depot one mile east of the course, joining the current Burlington Northern spur with the Milwaukee track feeding the Great Falls Meat Packing Plant. This would eliminate any need for a Burlington Northern line crossing the golf course.

This alternative, while solving one problem, creates several others. Burlington Northern would have to use the Milwaukee track requiring lease and legal agreements. An interview with an executive of Burlington Northern revealed that the city would have to initiate any negotiations concerning this problem and also that several problems would have to be overcome before agreements could even be considered.[2] The Milwaukee track would have to be improved and

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[1]Interview with Mr. H. H. Hunter, Vice President of Public Relations, Burlington Northern Railroad, Great Falls, Montana, 1 March 1975.

[2]Hunter, interview.

compensation for the bridge and track would have to be established.

Even though legal problems do exist, the willingness of Burlington Northern to negotiate such an action leads one to believe that these problems could be solved. It is also the author's opinion that Burlington Northern might trade Milwaukee this track for some other line in Great Falls. This could be one avenue of negotiation undertaken by the city.

Once the line is terminated or rerouted, the removal and restoration of the track area would be relatively easy. A bulldozer could easily cover the existing railroad bed and new grass cover could be developed in one season. The removal of this track would allow the latitude necessary to make the design more efficient and beautiful.

Phase two should be started as soon as possible in the form of negotiations between the city and the two railroad companies involved. Completion of this phase can take place as soon as negotiations yield a settlement for the rerouting of the Burlington Northern line.

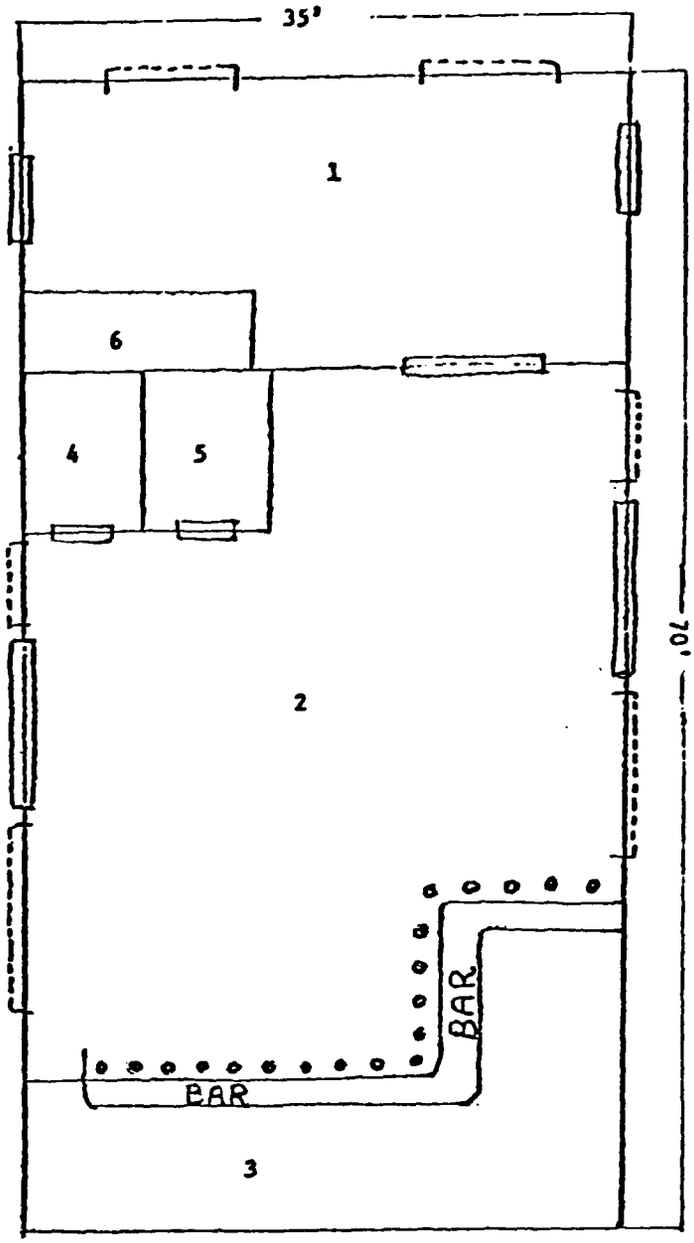
The next phase in the renovation plan may be divided into two parts. The relocation of the clubhouse and the installation of a driving range.

The present clubhouse facilities are inadequate for the number of golfers that play the course each year. While the present location offers enough room for a larger clubhouse there is not enough room for the driving range. The driving

range is an essential part of the course for it offers the golfer a place to practice and improve his game. The driving range is utilized by players who only want to warm up before a round and by players who want to work on their game in spare time in an effort to improve their play. This makes the location of the driving range near the clubhouse an important factor. In addition, the course Pro can monitor the operation of the facility and use it for lessons.

The vacant tract of land on the northeastern end of the course is ideal for relocation of the clubhouse and location of a much needed driving range. The clubhouse should be placed on the small rise just off the end of the present number 12 green. This spot affords an excellent view of the course as well as room for a parking lot, practice green and cart garage. Once the clubhouse is relocated, the holes can be renumbered, so that the ninth and eighteenth greens will be the closest to the clubhouse. The first and tenth tees will also be very accessible from this location. In addition, the golfer can be required to pass the clubhouse from the ninth green to the tenth tee enabling him to stop for refreshment at the clubhouse (see Diagram 2).

The clubhouse should be approximately 2,450 square feet. It can be of wood frame construction with shingle siding. The pro-shop should occupy approximately one-fourth of the space while the snack bar, rest room facilities, and storage area occupy the remainder, (see Diagram 4).



CLUBHOUSE

1. Pro Shop
2. Dining Area
3. Kitchen
4. Men's Rest Room
5. Ladies Rest Room
6. Pro Shop Counter

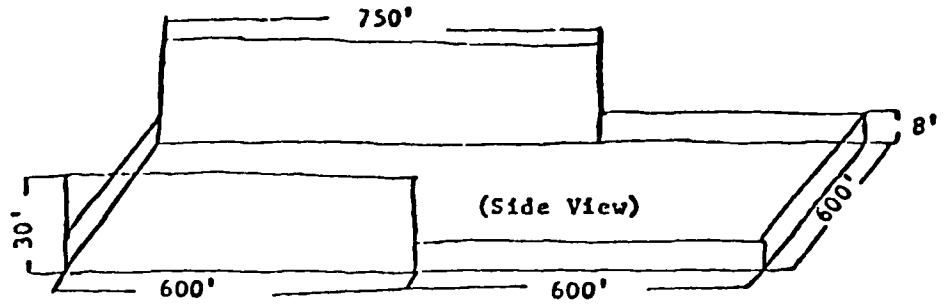
Fig. 4.--Proposed Clubhouse for Redesign of Great Falls Municipal Golf Course

The parking lot should be paved with a capacity of 100 cars, with entry and exit on 38th Street. This would eliminate some of the traffic problems encountered at the present location where the entry is directly to River Road.

The second part of this phase of the plan would be the installation of the driving range. This would require installation of an underground watering system to maintain vegetation. This system may be manual and could be fed by the present watering system by tapping one of the feeder lines from a nearby fairway. After installation of the watering system, the area should be seeded and an elongated double tier tee should be constructed. The purpose of this large tee area is to enable the operator to select teeing areas for the users of the range. This rotation of location around the tee area would allow the tee to grow back and maintain a good turf for practice driving.

The range would be 400 yards long by 200 yards wide and enclosed by a fence. The fence along the sides of the range would be thirty feet high for about 200 yards on the right and 250 yards on the left to prevent errant shots from entering the golf course or 38th Street. The remainder of the 400 yard range would be enclosed by an eight foot high chain link fence, (see Diagram 5).

The golfers would be hitting into the prevailing southwest wind and never into the morning or evening sun. The range should be put in at the same time as the conversion of the watering system to allow access as soon as possible.



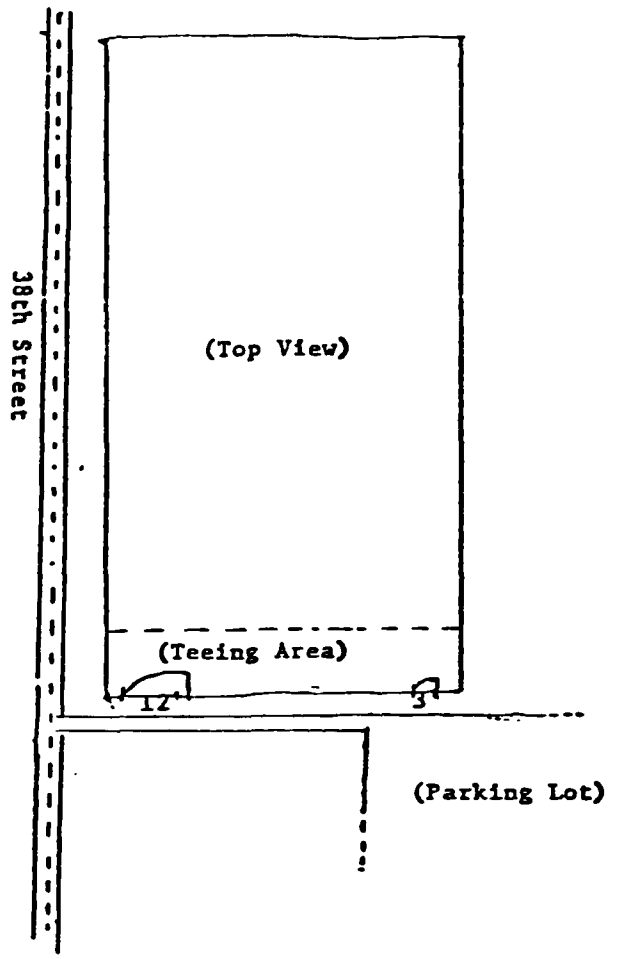


Fig. 5.--Proposed Driving Range of the Redesign of the Great Falls Municipal Golf Course

The clubhouse could be utilized as soon as bids are received and construction completed. The existing clubhouse facility would suffice until relocation is complete. This phase should be completed within two years of initiation of the project.

The final phase of the redesign plan consists of the hole by hole improvements and reconstruction of two holes. The addition of water hazards and sand traps are necessary to bring the design of the course up to a quality standard for the municipal golfer. The concept of good golf course design follows the premise of awarding good shots while penalizing poor or misplaced ones. That premise is kept in mind in developing of the following layout and in building new holes. Sand traps and water hazards are part of the challenge of golf and also add to the beauty of any course. A course without these hazards removes part of the challenge from the game.

The current lack of sand and water on the present course has been excused for reason of slow play. However, most golfers measure their skill of the game by the score card, not the watch.

In a recent article in Golf Magazine, the highly regarded golf course designer, Robert Trent Jones, took issue with public course design. He stressed that featureless, assembly layouts can be made challenging and fun without being difficult--and without slowing play. It is this concept of a strategic golf course that is used in the

following renovation plan. This concept offers each golfer an opportunity to play his game or to accept a challenge to extend himself.[3]

The improvements are detailed in the following hole by hole listing:

#1 - The current tee area shares number 4 tee. In the redesign the tee would be moved approximately twenty-five yards to the south being relocated over the old railroad track. This tee relocation would also cause the fairway to be shifted slightly. However, once the railroad is covered, more than adequate room exists. This realignment would also help separate number 1 and number 4 fairways, keeping golfers out of each others way, to a greater extent. A large kidney (40' x 20') shaped trap on the right rear side of the green would be installed to inhibit golfers playing up number 4 fairway.

#2,3 - The only changes would be enlarging the tee boxes an additional ten yards.

#4 - The present green is too small for long irons or wood shots and it also slants away from the fairway, hiding the pin from the golfer. The green should be enlarged approximately 2,000

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[3]Robert Trent Jones, "A Public Course Doesn't Have To Be Dull," Golf Magazine, Vol. 17, No. 5, (May, 1975), p. 54.

square feet, forming a double tier green. This would provide a more suitable landing area for long irons or woods and would also allow for better pin visibility. A medium trap (30' x 15') should be placed on the right side of the green to inhibit golfers playing up number 3 fairway.

#5 - No change.

#6 - This short par 4 offers a relatively short second shot. Therefore a small trap (20' x 10') should be placed on the lower right side of the green forcing the golfer to carry the green if his drive is off to the right.

#7 - A medium-sized trap should be placed on the front right side of the green to insure that the golfer's approach shot carries the green or if it is to the left, the existing trees would present a formidable challenge.

#8 - A medium-sized trap should be placed on the front left side of the green.

#9 - This hole is a good par 5; however, the green is unguarded and the approach shot can be errant. Two traps, one on each side of the green, would make a much more challenging approach.

These improvements would make the front nine very challenging and interesting. The par would be 37, and the player would have to negotiate seven sand traps. The back nine offers a totally different picture as shown by the following:

#10 - This par 5 hole is almost identical to number 17; therefore, several changes should be made. A large fairway trap should be placed 200 yards from the middle of the tee, on the left side of the fairway. Another trap should be placed on the right side of the green to inhibit play up number 18.

#11 - This hole would be totally reconstructed. The tee would be off to the right of the tenth green. The tee box would be approximately thirty yards long. The green would be of medium size (5,500 square feet) located between the trees on the now number 8 tee and the large tree near the green. This hole would play 150 to 180 yards in length, par 3.

#12 - The only change in this hole from the present, would be to enlarge the present trap on the right side of the green.

#13 - A small trap should be placed on the right side of the green.

#14 - This hole would also be reconstructed. The tee box would be located where the present number 8 green is located and would be approximately 30 yards in length. The green would be located behind the 17th green and behind the 15th tee. This green would be relatively small, (4,000 square feet). The hole would play 140 to 170

yards in length uphill. A small trap would be on the left front of the green. The railroad bridge would be removed, and the fairway graded extensively to construct this hole.

#15 - A water hazard would be constructed twenty-five yards from the green. The hazard would be rectangular in shape and run from the edge of the 17th fairway to about five yards into the 15th fairway. The hazards' construction would consist of digging down about four feet in the natural depression where the hazard would be located--spreading a poly-plastic over the entire base of the pond to ensure no seepage and then covering it with flat rocks or gravel. The pond would be fed continusously by the watering system. A small pump would draw off water when it reached the preset water level desired. This would keep a circulation of fresh water into the pond to prevent stagnation. The pump would drain the excess water into drainage pipe located near the green. The pond would be approximately 60' x 35'.

#16 - A fairway trap 200 yards from the middle of the tee, on the right side would be the only change. This trap would be in an area which is now rough.

#17 - The water hazard on number 15 would also come into play on this hole because it runs to the

edge of number 17 fairway. Two large traps would guard both sides of the green. The water and sand place a premium on both the second shot and the approach shot. This differs from number 10 where the emphasis is placed on the drive.

#18 - Another water hazard would be constructed in the low area in front of the green and down the left side of the green. This pond would be slightly larger but constructed the same way as the water hazard on number 15. The approach would require carrying the water or playing to the right and missing the green. This pond would also run along side of the first tee. This would offer a beautiful finishing hole as well as a very challenging one. The view from the clubhouse would also look down over the pond.

This nine would offer a different type of playing condition. The two water hazards would come into play on three holes. This nine would also have two fairway traps, something not seen on the front nine. The par is only 35 but the hazards and sand would make it the more difficult side.

These changes would make the municipal course a completely different course and one that any city would be proud of. The movement of the clubhouse would also allow room to expand in the future if necessary. The plan could be completed in two years, with the final phase completed

after the railroad was removed. This plan would change the municipal golf course so dramatically that it may seem economically impractical. However, the plan is quite practical as will be shown in Chapter III. The plan is economically feasible and can be supported by revenues derived during the regular golf season.

CHAPTER III

INVESTMENT AND FINANCING REQUIREMENTS

Required Investment

The total cost of the proposed redesign plan as outlined in Chapter II is approximately $249,100. The complete list of costs is shown in Table 1 below. Each of these figures is discussed in full in this chapter.

The watering system completely installed with labor and materials would cost approximately $85,000. The city is required to use union labor in a project of this nature and the labor costs are relatively high. With a large crew working during the time frame suggested in Chapter II, labor costs should run from between $20,000 and $25,000. Materials include: pipe, saddle taps, sprinkler heads, clocks, timer panels, and miscellaneous tools, and are estimated to cost between $55,000 and $60,000. These figures were obtained in an interview with Mr. George Ellinghouse, Turf Aid Distributing, Billings, Montana. They are current figures and can be compared with an estimate for the same project five years ago of $45,000 to show the dramatic effect of inflation in this industry.

Total course improvements listed next in Table 1

would cost approximately $50,000. An estimated $20,000 would be required to rebuild holes 11 and 14 with $6,600 for number 11 green and $4,800 for number 14 green. The remaining $8,600 would be required for grading, fertilizing, and seeding the new holes. Approximately $2,400 would be required to enlarge number 4 green to 2,000 square feet and shape it into a double tier green. A total of $5,000 would be required to cover and seed the land presently occupied by the railroad tracks. As much as $5,000 may be required to rebuild and enlarge tee boxes where necessary. A total of $10,000 would be needed to build a new practice green of 8,250 square feet. Finally, $7,600 would be required to seed and fertilize the presently parched rough. These estimates were obtained in interviews with Mr. Vern Burks, Greenskeeper and Maintenance supervisor of the Meadowlark Country Club; Mr. Robert Speck, Superintendent of City Park and Boulevard Department, and Mr. Tom Sullivan, Great Falls Recreation Director.

The sand traps in the redesign would cost $9,000. Each of the 15 traps to be installed would cost an average of $600. The water hazards would cost a total of $10,000. The small pond on hole number 15 would cost approximately $4,200 while the slightly larger pond on number 18 would cost $5,800. These figures were obtained through an interview with Mr. Vern Burks.

TABLE 1

STATEMENT OF COSTS OF REDESIGN PLAN

Watering System:		
Materials	$60,000	
Labor	25,000	
	Sub Total	$85,000
Course Improvements:		
Rebuilding 11 and 14	$20,000	
Enlarge #4 green	2,400	
Cover and seed railroad	5,000	
Build and enlarge tees	5,000	
Practice green	10,000	
Seed and fertilize rough	7,600	
	Sub Total	$50,000
Sand Traps:		
15 traps @ $600 each	Sub Total	$ 9,000
Water Hazards:		
Pond on #15	$ 4,200	
Pond on #18	5,800	
	Sub Total	$10,000
Driving Range:		
Watering system	$ 5,000	
Seed and fertilizer	1,000	
Grading	1,000	
Shelter	500	
Golf balls	1,500	
Ball retriever	1,000	
	Sub Total	$10,000
Driving Range Fence:		
Material and labor	Sub Total	$24,500

TABLE 1--Continued

Cart Garage:	Sub Total	$ 5,000
Clubhouse:		
2450 sq. ft. @ $16.20 per sq. ft.		
	Sub Total	$40,000
Parking Lot:		
2600 sq. yds. @ $6.00 per sq. yd.		
	Sub Total	$15,600
	Total	$249,100
	Minus Building Fund	(31,707)
	Net Funds Required	$217,393

SOURCE: Interviews with Mr. George Ellinghouse, Turf and Distributing, Billings, Montana, April 10, 1975; Vern Burks, Meadowlark Country Club, Maintenance Supervisor, Great Falls, Montana, March 1, 1975; Robert Speck, Superintendent of City Parks and Boulevard Department, Great Falls, Montana, January 9, 1975; Tom Sullivan, City Recreation Director, Great Falls, Montana, January 9, 1975; Clarence Hewitt, First Federal Savings and Loan Association, 601 First Avenue North,, Great Falls, Montana, April 17, 1975; Fred Van Dyken, Office Manager, Johnson Madison Lumber Company, 815 Ninth Street North, Great Falls, Montana, April 17, 1975; Mike Mettam, Club Manager, Meadowlark Country Club, Great Falls, Montana, March 1, 1975; and Brent Willis, Engineer, Northern Materials, 2100 Ninth Avenue North, Great Falls, Montana, April 17, 1975.

The installation of the Driving Range would cost approximately $10,000. The watering system connected to the main course system would cost $5,000. Seed and fertilizer for both the range and teeing area would run $1,000. Grading the range and shaping a large teeing area would also cost

$1,000. A small wooden shelter for the operator and storage of the range balls has been estimated to cost $500. Five thousand range balls at 30 cents each would be required for a total of $1,500. Finally, a gang retriever for the golf balls, costing approximately $1,000 would be required. These figures were obtained through interviews with the aforementioned Mr. Vern Burks and Mr. Mike Mettam, the Club Manager of the Meadowlark Country Club.

The fence that would enclose the Driving Range would cost approximately $24,500. This reflects cost estimates for an 8-foot high, eleven guage chain link fence on part of the range and 30-foot high panels with one inch chicken wire on the remainder. Thirty-six-foot poles every 16 feet would be required for these 30-foot high panels. These cost estimates were obtained in an interview with Mr. Fred Van Dyken, office manager of Johnson Madison Lumber Company, Great Falls, Montana.

The cost of the clubhouse would be approximately $40,000, based on an interview with Mr. Clarence Hewitt, appraiser for First Federal Savings and Loan Association, Great Falls, Montana. A figure of $14.15 per square foot was used for the type of building required: wood frame in construction, shingle siding, poured floor, adequate lavatory facilities, sufficient kitchen facilities, forced air heating and other features needed in a typical clubhouse facility. In a cold climate such as Great Falls, 36 cents must be added to this figure for heating requirements. The figure of $14.51

was multiplied by a floor area multiplier of 1.034 which in turn was multiplied by a current cost multiplier of 1.08. The resulting cost figure of $16.20 was then multiplied by the square footage of the building to obtain the cost estimate of $39,698.83.[1] The rounded off figure of $40,000 was used to allow for any minor changes deemed necessary. A cart garage which doesn't necessarily need to be enclosed would cost an additional estimated $5,000.

The parking lot would serve both the clubhouse and the driving range. The land is virgin at this time and the approximate cost figures for this type of terrain were used. The proposed lot would have a capacity of 100 cars. An area of 106 feet by 220 feet is required and should be covered with asphalt. The multiplier used for this project was $6.00 per square yard. Total project cost was estimated to be $15,600.[2] These figures were obtained in an interview with Mr. Brent Willis, of Northern Materials, 2100 Ninth Street North, Great Falls, Montana.

Total redesign costs are $249,100. At present, $31,707 is in a golf course building fund. If this amount would be allocated to the project, the amount of additional funds required for completion of the project would be $217,393.

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[1] 2450 sq. ft. @ $16.20 = $39,698.83.

[2] 2600 sq. yds. @ $6.00 per sq. yd. = $5,600.

Financing

The sum of $217,393 must be financed and paid for out of net operating revenues of the course. At this time, the Great Falls Municipal Golf Course generates revenues from five areas: membership fees, green fees, 40 percent of the gross revenues of the cart concession, the concession from the lease of the snack bar facility, and building fund assessments. An examination of the records of the last two years shows that the municipal course has generated the revenues summarized in Table 2.

TABLE 2

TOTAL REVENUES - GREAT FALLS
MUNICIPAL GOLF COURSE
(1973 - 1974)

Source of Revenue	1973	1974
Memberships	$28,705	$28,415
Green Fees	20,813	30,318
Cart Concession	1,778	2,411
Lease Concession	1,000	1,000
Building Fund[a]	10,065	11,641
Total	$62,361	$73,785

SOURCE: All statistics concerning the Great Falls Municipal Golf Course were taken from annual reports of Great Falls Recreation Department.

[a]The building fund is computed by the following: ten dollars assessed each full-time membership sold, five dollars assessed each half season membership sold, and fifty cents assessed each daily green fee ticket sold.

The expenditures for the years 1973 and 1974 were $54,109 and $56,554 respectively, leaving net operating revenues of $8,252 and $17,232 for these two years.

A break-even analysis can be done for the coming year if several assumptions are made: (1) 450 memberships will be sold, (2) $58,000 in expenditures will be incurred, and (3) $2,500 will be derived in revenues from carts. The figure of 450 has been selected as a conservative estimate after review of past membership records shown in Table 3. This figure will also be used in any further projected evaluations. The figure of $58,000 in operating expenses is used to anticipate inflation in expenditures in the coming period. The dramatic increase in cart revenue over the years as indicated in Table 3, has led to the selection of $2,500 for the coming year.

A break-even analysis of the coming year's operation is calculated in detail in Appendix I. This analysis reveals the requirement to sell 7,367 green fees to break even. Examination of the green fee sales of past years, shown in Table 3, reveals that green fee sales have been nearly twice the break-even point in each year.

The net operating revenue shown in past years, while substantial is not enough to pay for the proposed redesign plan. One alternative to increase revenue is to increase the number of players. Last year 45,802 rounds were played

out of a possible 105,120.[3] While an increase in players is probable there is a point of diminishing returns. Due to weather restrictions, the optimum capacity is probably closer to 60,000 per year.

TABLE 3

SELECTED OPERATING STATISTICS - GREAT FALLS MUNICIPAL GOLF COURSE (1970 - 1974)

Year	Memberships Sold	Green Fees Sold	40 Percent Of Cart Concession
1970	286	15,617	$ 753.60
1971	342	19,335	962.00
1972[a]	N/A	N/A	N/A
1973	395	12,188	1,778.00
1974	469	14,013	2,411.60

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of the annual reports of the Recreation Department, Great Falls, Montana.

[a]N/A represents "Not Available." The 1972 statistics were not available for review.

Since an increase in players cannot be assured the other alternative of increasing dues to raise revenues will be examined.

Increasing revenues without driving away the average municipal golfer is very difficult. However, with the

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[3]Assume 480 golfers per day, 217 days per season, maximum play.

dramatic change proposed in the course, the additional cost will be justified. To share the burden evenly, $20 will be added to each membership fee across the board and one dollar will be added to daily green fees. The new costs of memberships and green fees compared to current amounts are shown in Table 4.

TABLE 4

A COMPARISON OF CURRENT AND PROPOSED FEES FOR MEMBERSHIPS AND GREEN FEES

	Membership		Green Fee[a]	
Type	Current	Proposed	Current	Proposed
Single	70	90	$3.00	$4.00
Mr. & Mrs.	90	110		
Family	100	120		
Senior Mr. & Mrs.	60	80		
Senior Citizen	40	60		
Junior	35	55		

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of the annual reports of the Recreation Department, Great Falls, Montana.

[a]Twilight and Student will remain $2.00.

The question of the increase in dues resulting in a decline in the number of players patronizing the course was answered by Mr. George Ellinghouse of Turf Aid Distributing, Billings, Montana. He stated that without exception in the numerous projects of this magnitude he has been associated

with, the number of players has not declined but increased in each case of increased dues. Two recent examples are Havre, Montana and Casper, Wyoming.

The installation of the driving range constitutes another means of increasing revenues that has not been used previously. The driving range would be open from April 1st to October 31st. The season may be divided into three parts to accomodate the varying levels of play. April 1st to May 15th and September 16th to October 31st may be considered out of season. May 16th to September 15th may be considered in season. In season, the range may average approximately 100 customers per day. Out of season the average per day may be 25 customers. At an average cost of 75 cents per bucket of balls, revenue from the driving range would be estimated at $10,856.25 per season (see Appendix II).

Assuming 450 memberships and a player load similar to last year, projected membership revenues would be $41,400. (See Appendix II.) Using a figure of 14.000 green fees, green fee revenues would be $49,000 (see Appendix II). With cart and concession revenue of $3,500, total projected revenues would be $103,881 as shown in Table 5.

The completion of the proposed redesign would incur additional expenses in several areas. The largest additional expenditure would be for the salaries of the driving range attendant ($5,330 annually). A wage rate of $2.50 was used to figure this cost and it was assumed that the range would operate 13 hours a day in season (from 8:00 a.m. to 9:00 p.m.)

TABLE 5

PRO FORMA INCOME STATEMENT FOR REDESIGNED COURSE

REVENUES:	
Memberships	$ 41,400
Green Fees	49,000
Driving Range	10,856
Carts	2,500
Concession	1,000
Total Projected Revenues	$104,756
EXPENSES:	
Operating Expenses (1974)	$ 56,554
Driving Range Attendant	5,330
Additional Maintenance Salary	3,000
Increase Fertilizer Budget	3,000
Inflation Adjustment	2,500
Total Projected Expenditures	$ 70,384
Net Operating Revenue	$34,372

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of the annual reports of the Recreation Department, Great Falls, Montana.

and six hours a day out of season (from 12:00 p.m. to 6:00 p.m.). Detailed calculations are shown in Appendix III.

Another large outlay of cash would be in additional personnel required to maintain the more demanding proposed layout. The care of sand traps, water hazards and rough would require one or two additional employees at an estimated cost of $3,000 per year. However, the installation of an automatic watering system would free maintenance personnel assigned to the manual system to help with additional maintenance requirements.

The budget for fertilizer and fungicides, etc., should be increased $3,000 annually to maintain the course at an acceptable quality. Additional water in all areas of the course would allow for more fertilizer without the danger of burning out the grass.

Inflation increased the expenditures 4.5 percent from 1973 to 1974 and a similar figure was used to add $2,500 to the overall expenditures budget. The total projected expenditures are summarized in Table 5.

An examination of Table 5 revealed that, given the previously outlined assumptions, the project would yield a projected net operating revenue of $34,372.

The question of the project being feasible lies in the ability for the project to pay for itself. With the cash flow as shown above, the project could pay for itself and is therefore feasible. A project of this nature and magnitude could be funded by tax free municiple bonds. In Great Falls, D. A. Davidson and Company handles municiple bond projects for the city. An interview with Mr. Gene Hufford, Vice President of Municiple Bonds of D. A. Davidson and Company, revealed that the project could be funded by bonds if the following criteria were met: (1) The cash flow was more than 1.5 times the annual required payment and (2) the city would assume the first mortgage on the course.

Mr. Hufford computed the annual payment to be $22,141.96 on a $217,393 bond issue. The net operating revenue of $34,372 is more than adequate to cover this annual

payment. The city has its own perogative on the second criteria. The annual payment schedule for amortizing the total debt is summarized in Table 6.

TABLE 6

BOND AMORTIZATION SCHEDULE
$217,393 - Loan 8% Simple Interest 20 Years
Yearly Payment = $22,141.96

End of Year	Interest	Principal	Balance
			$217,393.00
1	$17,391.44	$ 4,750.52	212,642.48
2	17,011.40	5,130.56	207,511.92
3	16,600.95	5,541.01	201,970.92
4	16,157.67	5,984.29	195,986.64
5	15,678.93	6,463.03	189,523.62
6	15,161.89	6,980.07	182,543.55
7	14,603.48	7,538.48	175,005.08
8	14,000.41	8,141.55	166,863.53
9	13,349.08	8,792.88	158,070.66
10	12,645.65	9,496.31	148,574.36
11	11,885.95	10,256.01	138,318.35
12	11,065.47	11,076.49	127,241.86
13	10,179.35	11,962.61	115,279.25
14	9,222.34	12,919.62	102,359.63
15	8,188.77	13,953.19	88,406.44
16	7,072.52	15,069.45	73,337.00
17	5,866.96	16,275.00	57,062.00
18	4,564.96	17,577.00	39,485.00
19	3,158.80	18,983.16	20,501.84
20	1,640.15	20,501.84	- 0 -

SOURCE: Charles D. Hodgman, M.S. Standard Mathematical Tables, 12th Edition, Chemical Rubber Publishing Co., Cleveland, Ohio, 1961, p. 475.

The requirement for 1.5 times annual payment is to insure adequate funds in the event of poor years. Break-even analysis shows that $36,769 in green fees is required to meet the annual bond retirement payment (see Appendix IV for detailed calculations). The green fee sales since 1970 reveal that at the proposed new rate of $4.00 daily and $2.00 for students and after 6:00 p.m. play, all years would have produced more than enough green fees to surpass the break-even point (see Table 7).

TABLE 7

REVENUES GENERATED BY PAST YEARS' SALES

Year	Green Fees Sold	Twilight & Student Revenue ($2.00)	Daily Revenue ($4.00)	TOTAL
1970	15,617[a]	$7,808.00	$46,851.00	$54,659.00
1971	19,335[a]	$9,666.00	$58,005.00	$67,671.00
1972	not available	not available	not available	
1973	12,188	$6,094.00	$36,564.00	$42,658.00
1974	14,013	$5,862.00	$42,039.00	$47,901.00

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of the annual reports of the Recreation Department, Great Falls, Montana.

[a]During these periods a nine hole rate distorts actual revenue figures.

The fact that the project could pay for itself is interesting, yet the project becomes even more attractive when revenue sharing is considered. Nearly $300 million in federal funds are available to localities for aid in financing recreation programs of all sorts, including public golf courses.[4] The funds are administered by the Interior Department's Bureau of Outdoor Recreation (B.O.R.). In eleven years since the program was started more than 54 million dollars has been spent on golf courses. More significant is the fact that a state and/or locality, to qualify for this money, has to put up only a share of the funds. The B.O.R. will provide a maximum of 50 percent of a project's cost.

The application process works in the following manner. Local planners devise a firm plan for a golf course or a recreation area that includes a golf course. The plan must clearly prove that it would benefit the residents of the area. The final details must be discussed and passed by state recreation officials. It is their job to take the plan to the Federal level and seek the funds. The regional office of the Bureau of Outdoor Recreation for Montana is in Denver, Colorado. If Denver approves, Washington generally accepts the proposal and funds the project up to the maximum of 50 percent.

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[4]Bill Smith, "Washington's $300 Million for New Publinx Courses," Golf Magazine, Vol. 17, No. 3, (April, 1975), p. 39.

The city could use this plan alone or tie it in with other needed recreation facilities to make a recreation project that is certainly eligible for federal funds. Obviously, any additional funds makes the redesign proposal even more attractive and feasible.

CHAPTER IV

ALTERNATIVES AND CONCLUSIONS

There is no question as to the effect the proposed redesign plan would have on the current course. The only question is, will the city initiate the actions required in completing the project? A project of this nature is quite bold and challenging. The city in its negotiations might find it impractical or impossible to persuade Burlington Northern to remove the imposing track or trade with the Milwaukee Railroad, the rights to the industrial park. In such an instant, the project, although somewhat dimmed, could be carried out. The only changes would be in not moving the first tee and not reconstructing holes 11 and 14. The play would continue around the track as has been the case in past years (see Diagram 6). Naturally this is not the most beautiful or practical plan yet it still offers the municipal golfer the other outstanding features of the original redesign plan. This plan can be carried out at approximately $35,000 less than the original plan.

It is the belief of the author, however, that with the proper attitudes and negotiations, as stated previously, the project can be completed as proposed.

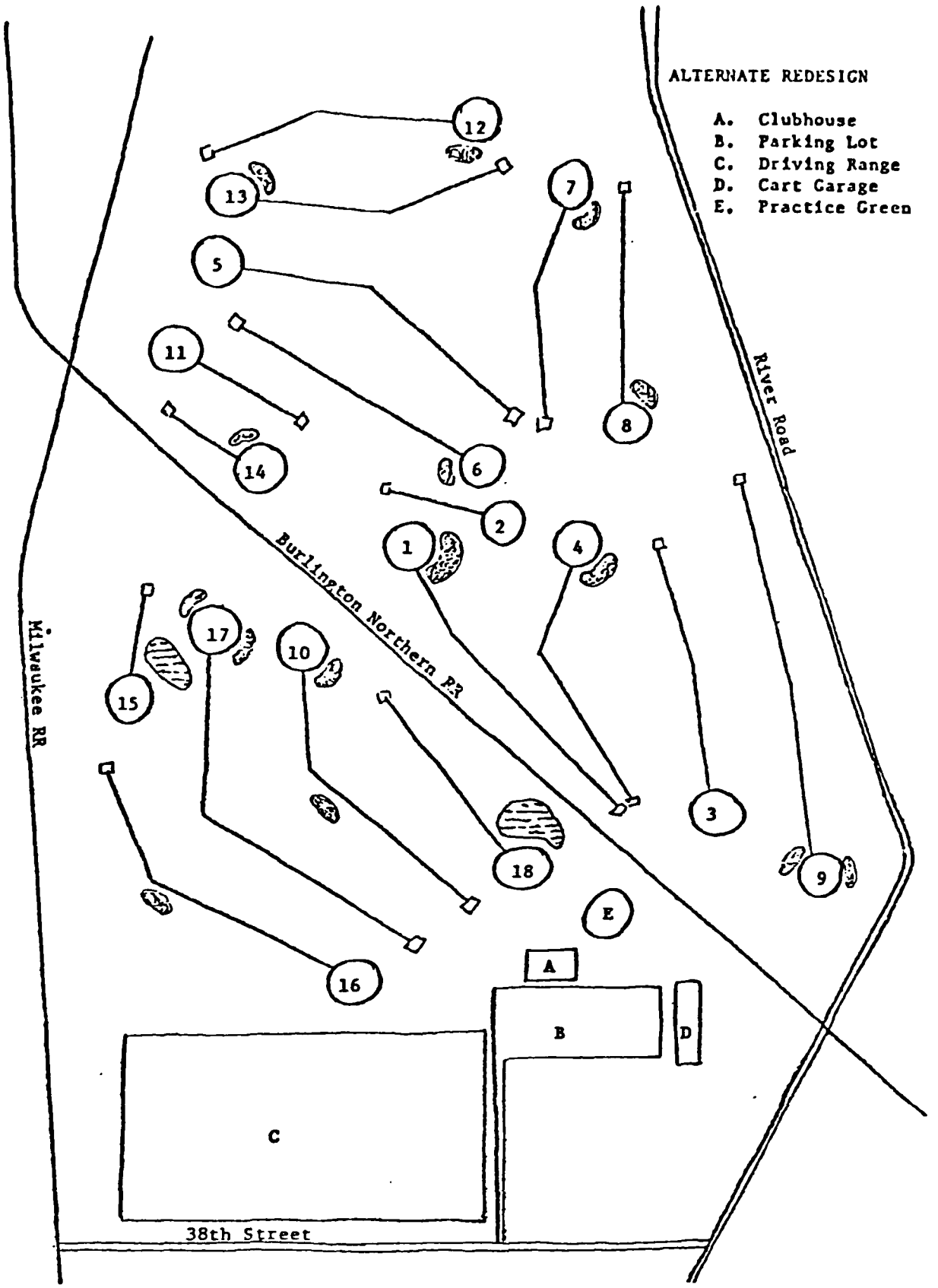

Fig. 6.--Alternate Redesign of the Great Falls Municipal Course

A careful analysis of the proposed plan shows that all types of golfers would find this course both challenging and enjoyable. The municipal golfer in Great Falls should and could have an interesting course for his money. The plan while raising the dues a minimum, offers the golfer a course nearly equal to the Meadowlark Country Club, yet at a fraction of the cost.

The City of Great Falls prides itself in the facts of its stable economy and progressive ideas. While these facts bear some truth, an overriding fact is that the city is slow to accept change. The Great Falls Municipal Golf Course has shown a profit in all of the last five years while only a marginal amount has been channeled back into the course.[1] A golf course can only maintain a marginal level of quality when required to be nearly self-sufficient. To obtain any degree of quality above this level, the funds it generates must be channeled back into the course. The point has been reached where marginal improvements will no longer suffice and the pay-as-you-go plan employed by the golf course in past years has plunged the course into a position of deficient improvements. To remedy this position debt financing will be required.

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[1]Statistics concerning the municipal golf course were obtained through review of the annual reports of the Recreation Department, Great Falls, Montana.

The proposed redesign plan is economically feasible as shown in Chapter III. It offers Great Falls an esthetically beautiful course, one that can be considered as an asset to the community. The plan is relatively simple and can be completed in two years. The potential is obvious and the city should consider the project as a challenge.

APPENDIX I

BREAK-EVEN ANALYSIS OF THE COMING YEAR UNDER CURRENT RATES AND LOADS

Assume 450 memberships*
consisting of:

180	Single	@ $ 70	$12,600
80	Mr./Mrs.	@ $ 90	$ 7,200
80	Family	@ $100	$ 8,000
20	Senior Mr./Mrs.	@ $ 60	$ 1,200
50	Senior Citizen	@ $ 40	$ 2,000
40	Junior	@ $ 35	$ 1,400
450			$32,400

*Represent the same proportional figures as past years.

Expenditures: $58,000 = 1974 expenditures plus inflation adjustment.

Revenue:

Membership	$32,400
Carts	$ 2,500
Concession	$ 1,000
Green Fees	$22,100
Total Revenue Required to Break-Even	$58,000

$$BEP = \frac{22,100}{3.00} = 7,367 \text{ Green Fees}$$

22,100 divided by $3.00 per green fee gives the number of green fees that have to be sold to break-even.

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of annual reports of the Recreation Department, Great Falls, Montana

APPENDIX II

DETAILED REVENUE CALCULATION FOR PROPOSED COURSE

I. Driving Range:

The driving range will sell two different size buckets of golf balls. A large for $1.00 and a small for 50 cents. The weighted average revenue of 75 cents is used in calculation assuming an equal preference among patrons.

Projected Revenue for season:

In Season	122 days x 100 x 75¢ =	$ 9,150.00
Out of Season	91 days x 25 x 75¢ =	$ 1,706.25
Total project revenue of the Driving Range for one year		$10,856.25

II. Membership:

450 members* consisting of:

180 Single	@ $ 90	$16,200
80 Mr./Mrs.	@ $110	$ 8,800
80 Family	@ $120	$ 9,600
20 Senior Mr./Mrs.	@ $ 80	$ 1,600
50 Senior Citizen	@ $ 60	$ 3,000
40 Junior	@ $ 55	$ 2,200
Total project revenue from memberships		$41,400

*Represent same proportional figures as past years.

Appendix II (Continued)

III. Green Fees:

In 1974, 14,012 green fees were sold. This figure was used to calculate the potential sales. The proportional breakdown is the same as 1974.

1400 green fees:

10,500	@ $4.00	$42,000
3,500	@ $2.00	$ 7,000
Total Green Fees		$49,000

IV. Carts:

The figure of $2,500 revenue as the golf course's 40 percent of the total revenue was used in anticipation of continued sales increase. (See Table 3.)

Cart Revenue: $2,500

V. Concession:

The lease concession will remain the same as in previous years.

Lease Concession: $1,000

VI. Summarization:

Driving Range	$ 10,856
Membership	41,400
Green Fees	49,000
Cart Concession	2,500
Lease Concession	1,000
	$104,756 = Total projected Revenues

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of annual reports of the Recreation Department, Great Falls, Montana.

APPENDIX III

DETAILED CALCULATIONS OF EXPENSES FOR PROPOSED COURSE

I. Driving Range Attendant:

Out of Season - April 1 to May 15 and September 16 to October 31 = 91 days

In Season - May 16 to September 15 = 122 days

Out of Season Times - 12 noon to 6:00 p.m. = 6 hours

In Season Times - 8:00 a.m. to 9:00 p.m. = 13 hours

$2.50 Wage Rate

Salary Expense:

Out of Season - 6 hours x $2.50 x 91 days =	$1,365
In Season - 13 hours x $2.50 x 122 days =	$3,965
Total wages for one season of Driving Range operation	$5,330

II. Maintenance Salary: $3,000 Annually

III. Fertilizer Budget: $3,000 Annually

IV. Inflation Adjustment:

4.4% x $56,500 = $2,500

Appendix III (Continued)

V. Summary of Expenditures:

$56,554	Expenditures for 1974
5,330	Driving Range Attendant
3,000	Additional Maintenance Salary
3,000	Increased Fertilizer Budget
2,500	Inflation Adjustment
$70,384	Total Projected Expenditures

SOURCE: Statistics concerning the Municipal Golf Course were obtained through review of annual reports of the Recreation Department, Great Falls, Montana.

APPENDIX IV

BREAK-EVEN ANALYSIS CALCULATIONS FOR PROPOSED REDESIGN PLAN

I. Revenues:

Carts	- $ 2,500
Lease	- $ 1,000
Driving Range	- $10,856
Membership	- $41,400
Total less green fees	$55,756

II. Expenses:

Annual operating expenses	- $70,384
Annual bond retirement	- $22,141
Total cash expense	$92,525

III. Additional Cash Required to Break-Even:

Total Cash Expense	$92,525
Less Revenues	(55,756)
Green Fees Required	$36,769

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