



Strategic Master Plan

July 17, 2014



PREPARED FOR:
CITY OF COMMERCE CITY
PARKS, RECREATION AND GOLF DEPARTMENT



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EXECUTIVE SUMMARY

On July 22, 2013, Commerce City Parks, Recreation and Golf Department staff went before City Council to bring awareness to the deteriorating state of one of the City's prominent recreation facilities and to design a strategy to rejuvenate excitement for current and future users of the facility. In response, the City decided that a collaborative plan was necessary to accomplish this objective for Buffalo Run Golf Course. The following mission and vision statements are reflective of the planning process.

Buffalo Run Golf Course Mission

- Buffalo Run is dedicated to providing exceptional golf, recreation, dining and social experiences for Commerce City residents, non-residents and guests.

Buffalo Run Golf Course Vision

- Enhance the "Buffalo Run Experience" by continuously improving amenities and service to achieve a high level of customer satisfaction.
- Provide golf, recreation and dining experiences comparable to the best in the area, ensuring that all of the facilities are inviting, functional and well maintained.
- Ensure the long-term success of Buffalo Run through dedication to financial soundness and fiscal responsibility.

Purpose of This Plan:

The purpose of this Strategic Plan is to provide Commerce City with direction in addressing current and future opportunities and capital improvement opportunities at Buffalo Run Golf Course.

This Plan is the result of an extensive planning effort that included public and staff input, facility inventories, site visits, budget analysis, collection of trends, demographic and benchmark data, and cost analysis.

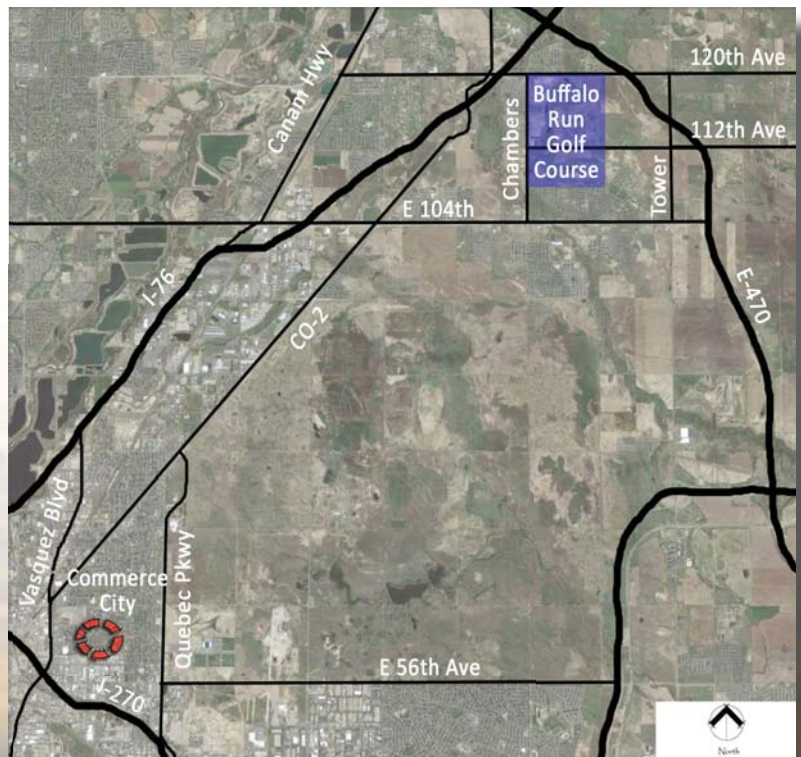
Following is a summary of key findings as well as recommended goals and objectives.

History:

Located just north of the heart of Commerce City, Buffalo Run Golf Course has been a Commerce City attraction since it opened August 9, 1996. Buffalo Run provides an array of services beyond its 18 hole, 7,411 yard course, driving range and practice facilities, including tournaments and events, men's/women's clubs, lessons and a full restaurant featuring a bar and patio dining.

Over the last 18 years, the course has been subjected to the same economic peaks and valleys as most other golf courses nationwide, seeing a strong surge of golf interest throughout the late 90's and early 2000's, to a severe decline in players due to primarily to the recession after 2008.

Since original construction, the condition of the golf course has been slowly deteriorating due to resource limitations. As part of the planning process, a level of service standard was established based upon comparable golf courses in the region. Originally designed as a mid-high level golf course, the course itself has fallen to a mid-low level course as depicted in the following photographs.



Existing Conditions

Course Conditions:

Upon inspecting the course, the following issues were identified:

- Due to the original design of the bunkers, the bunkers have lost their edges, allowing sand and loose soil to escape onto the course
- Due primarily to drainage issues, some areas around and on the tee-boxes, fairways and greens have degraded
- The course's irrigation system is approaching the end of its lifespan, creating additional maintenance costs and requiring frequent repairs
- Due to erosion, many of the lakes show shoreline degradation, exposing liners that are deteriorating; the lakes are also filling with sediment from run-off

These conditions are common to all golf courses. However, due to initial design leading to harsh soil and drainage conditions, Buffalo Run Golf Course experiences accelerated levels of degradation. These problems are only precursors to the more eminent issue of residential development around the course, which will add additional drainage challenges.

Equipment and Maintenance Facilities:

Buffalo Run houses 54 pieces of maintenance equipment including mowers, utility carts, aerators, tractors and other various pieces of maintenance equipment necessary to maintain the course. Some issues identified with the equipment and maintenance facilities include:

- Aging equipment, some of which has been around since the course's inception in 1996
- Lack of storage space for the larger equipment, reducing the life span of equipment left out in the elements
- Lack of storage space for irrigation parts, tools, course supplies and chemicals
- A single maintenance bay to repair equipment, creating efficiency and logistical problems
- Limited space and lack of heating in the cart barn

Clubhouse Facilities:

Challenges include:

- Parking facilities that lack lighting, landscaping and space, leading to parking along 112th Avenue (scheduled to be widened)
- Minimal space to receive, process and store inventory which causes it to spill onto the clubhouse floor
- A single office that is shared by the entire clubhouse staff, and regularly utilized for inventory storage, personal belongings and meals
- Absence of an employee break/storage area
- Lack of restroom facilities for both staff and customers

Restaurant:

Although the operations of the Bison Grill are different from the operations of the course, many of the issues identified are very similar including:

- Lack of storage space; many of the Grill's dry wares and other items are stored in sheds behind the clubhouse
- Lack of refrigerator and freezer space causing difficulties in maintaining proper inventory levels
- Undersized kitchen for the volume of customers during peak season
- Location and size of the bar for the volume of customers during peak season

Goals for the Future

Buffalo Run plays a vital role in helping enhance the positive image of Commerce City and promoting it as a place where people want to live and work. The goals established are directly related to the image of the facility and as an extension, also relate to the image of Commerce City. In addition, improvements that enhance Buffalo Run have a positive impact on the long-term financial stability of the operation because they improve the quality of the product in a highly competitive market.

THK Associates, Inc. helped facilitate priorities and ideas from the consultant team, Commerce City Parks, Recreation and Golf staff to develop the goals for the course:

Goal 1: Raise the course condition rating from a mid-low level course to a mid-high level course using the most cost effective and sustainable solutions and to maintain that condition through continued pro-active maintenance.

Goal 2: Improve the functionality of the clubhouse, cart barn, and maintenance buildings for customers and staff alike.

Goal 3: Improve infrastructure on site to address current challenges and accommodate growth.

Planning Process:

The planning process was led by THK Associates Inc. and included City and course staff. Multiple meetings of the project team, site visits, staff interviews and market research were used to create the goals and strategies of the Plan. Key members present throughout the process were:

Julia Emko	Josh Metsker
Michelle Halstead	Randall Navarro (THK)
Paul Hebinck	Will Panella
Garrett Hoffman	Kirk Reiber
Carolyn Keith	Tracy Schmer
Robert Menzer	Kevin Shanks (THK)

Recommendations

The project team developed a list of prioritized strategies to meet the stated goals.

1. Recover and improve soil and turf conditions
2. Create additional parking for customers
3. Update/Replace Irrigation System
4. Replace aging equipment
5. Analyze current drainage studies around golf course to identify drainage solutions
6. Renovate Bunkers
7. Clean and repair lakes
8. Evaluate and update facilities infrastructure to allow for increased development and usage
9. Increase storage capacity, operational capabilities and usability of maintenance facilities
10. Identify possible problems, solutions and opportunities to assist with the construction and widening of 112th Avenue
11. Add lighting to clubhouse and maintenance parking lots
12. Remodel front entrance and lobby of clubhouse to create additional space for restroom and restaurant expansion
13. Remodel kitchen to add additional space for storage and kitchen expansion
14. Install additional restroom facilities around the course
15. Build and repair cart paths as needed throughout the golf course
16. Add landscaping around the course, course entrances and clubhouse
17. Improve security around clubhouse and maintenance facilities

PLANNING PROCESS

The planning process began with an initial meeting of the project team that included THK and Commerce City staff from the Parks, Recreation, and Golf Department.

Upon establishing the vision and purpose of the Plan, the project team began compiling data associated with the current state of the golf course, including budgets, course condition reports, customer service surveys, etc. After conducting a site visit, THK researched other regional golf courses that were identified with varying levels of amenities and services, allowing the project team to accurately measure the current service level of Buffalo Run compared to other courses. Other information such as drainage reports and market studies were also collected and analyzed. THK then facilitated meetings and interviews with City and course staff to determine areas of opportunity to improve the course and its services.

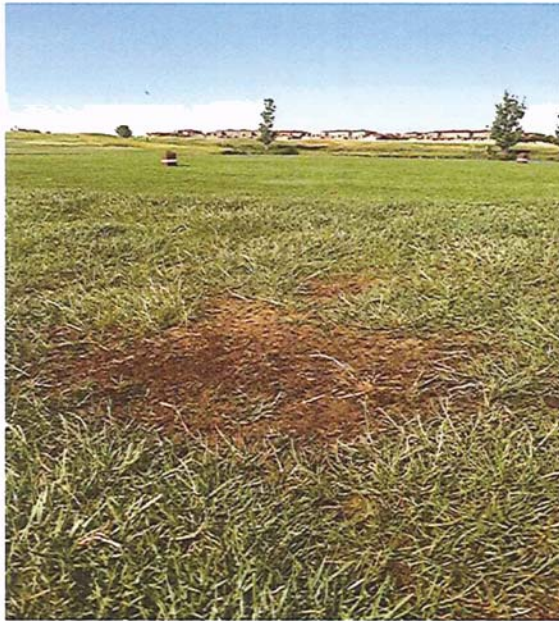
Using the data collected and input from City staff, the project team assembled a list of strategies to address the goals of the Plan. THK completed a rough cost analysis for each strategy, and the project team prioritized the strategies based on the current and future predictions of the course conditions and operations.

CURRENT CONDITIONS

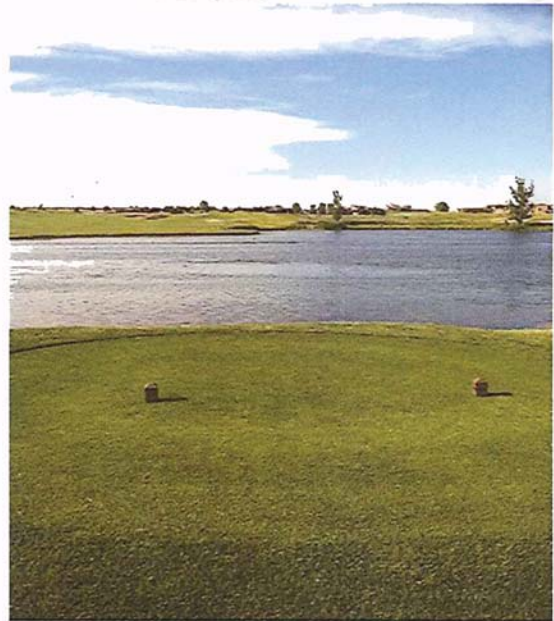
Course Condition:

When compared to other golf courses around Colorado, the current course conditions at Buffalo Run can be described as mid-low level. The difference between a mid-level and a high-high level course condition is illustrated below.

Mid-Low Level Tee Box



Mid-High Level Tee Box



Mid-Low Level Fairway



Mid-High Level Fairway



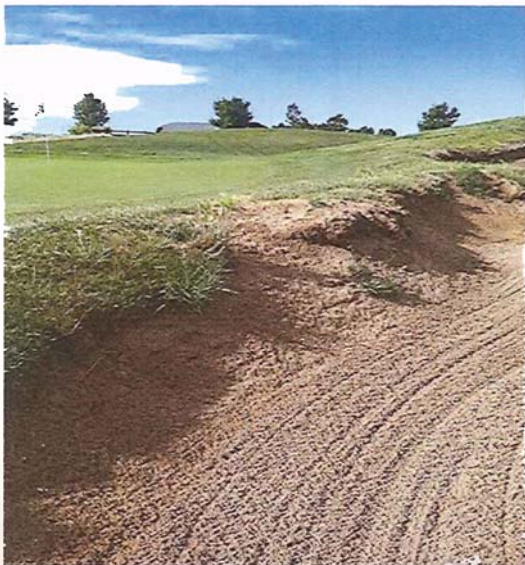
Mid-Low Level Green Approach



Mid-High Level Green Approach



Mid-Low Level Bunkers



Mid-High Level Bunkers



In December 2013, an inspection of the course and its condition was conducted by the golf course superintendent. The subsequent report details each hole, as well as the driving range and practice areas (Appendix A-1). Overall notes which apply throughout are referred to with **key words** in () wherever statement is applicable.

A. **Bunkers:** Fairway bunkers were designed and shaped in a manner that makes it difficult to maintain at an optimal level. Depth is too severe, faces/slope too deep and lips/fingers on edge are too fragile. The fingers are too angled, abrupt and/or narrow to maintain without extensive manual work and hand watering.

B. **Soil/Water:** Poor soil quality and poor water quality throughout the course. Soil compaction, poor drainage, high pH levels and high sodium levels all combine to make growing conditions very difficult.

C. Cart path edges: Turf grass areas near high cart traffic entry/exit areas to/from concrete cart paths have extreme compaction and poor drainage that leads to significant bare spots. In addition, there are some low areas and potholes.

D. Fencing: Property line (perimeter) fencing is incomplete, allowing ingress/egress and trespassing to/from private property.

E. Irrigation Control: Inefficient irrigation system control causes over- and under-watering (e.g. double-wired heads).

F. Tee Boxes: Some tee box areas are undersized, causing excessive wear due to inability to alter tee placement.

G. Mound Crowns: Crowns of mounds exposed to severe weather, high winds, heavy cart traffic and water run off creates severe challenges to growing/maintaining turf grass on the crowns.

H. Visibility: Design of holes creates blind spots so player(s) teeing off cannot see the group ahead. Potential safety issues arise for players as well as maintenance workers (Holes #6 and #18).

Problem areas identified by each hole:

Hole 1:

- Turf conditions poor in the fairway and rough from the 150yd marker to the green (Soil/Water)
- Three bunkers – walkways too narrow between (Bunkers)
- Location/design of bunker in front of the green, drainage issue, too deep severely affects drainage, cart traffic (Bunkers)
- Location of fairway too close to driving range; design element
- Turf weak around lake due to soil compaction (Soil/Water)
- Lake shore line degrading, sloughing off, needs rock added and liner edge exposed and degrading
- Bunker to left of the green (Bunkers)
- (Cart path edges) with potholes and drainage issues along the path due to low spots/standing water
- Unintended cart traffic east side of green created excessive compaction and bare spots; “temporary” breeze path not holding up
- (Fencing) west side of hole
- (Irrigation Control) example double-wired heads water green and surrounding area same time

Hole 2:

- Weak native between #2 and #8 fairway encourages cart traffic and creates safety issue
- (Tee boxes) black and white
- Turf in the fairways and some of the rough from the path to the green (Soil/Water)
- (Bunkers) too severe, brittle edges and fill in finger in landing area
- Water retention/collection area on right side too shallow, inefficient drainage from fairways #8 and #7 run into it. No place for water to go when pumping out when full and floods fairway, if not pumped creates mosquito issue
- Lake shore line degrading, sloughing off; needs rock added; liner edge exposed and degrading; has deep sediment; dark appearance and odor at times; difficult to maintain screens, aerators, pumping system
- Lack of restroom facility in area contributes to inappropriate behavior from golfers; consider installation between #2 green and #8 tees
- Design too short for par 5 causes playability issues/pace of play

- (Cart path edges) multiple locations
- (Fencing) west side of hole

Hole 3:

- The rough is a little weak
- (Bunkers) fairway and green side
- (Fencing) none now along the hole

Hole 4:

- (Tee boxes) black, white and red
- (Fencing) incomplete around lake, invites trespassing
- Back half of green is weak – cart and foot traffic E side of green causes challenge for turf grass
- (Bunkers) around green
- Water feature - excess plant life creates odor, rock edges visually pleasing but overgrown with grass; removal of grass creates better water flow
- 3 bridge structures – 1 walking and 2 cart bridges – aging bridges have structural deterioration, not sturdy enough for equipment, safety issue
- Poor drainage along housing from sump pumps onto course in 1 area creates maintenance challenge such as mowers getting stuck

Hole 5:

- (Tee boxes) black
- (Fencing) left side property line
- (Bunkers) deep, steep & brittle - turf around the fairway bunkers weak and bare spots
- Playability issue - placement of fairway bunker encourages golfers to aim right to right side of fairway, causes increased likelihood errant golf balls exit property and cause adjacent property damage
- (Soil/Water) compaction issue by bunkers
- (Cart path edges)

Hole 6:

- Does not handle the heat well due to direction, slope (Soil/Water)
- Steepness of hill and weak native grass adjacent to fairway and right side of fairway
- (Bunkers) by green
- (Cart path edges)
- Drainage behind green – all of fairway drains to back; poor drainage causes standing water
- (Fencing) left side
- Safety issue – lack of visibility for group ahead

Hole 7:

- (Bunkers)
- (Tee Boxes) white
- (Tee Boxes) slope down; uneven Tee box areas cause playability issues – black, gold, blue

- Well house has registered meter, must currently take meters off to prevent freezing (\$800 value each), uninstall and reinstall is time consuming

Hole 8:

- The fairway is weak and has a lot of bare spots
- Same wetland drainage issue as #2
- (Cart path edges) multiple entry/exit area issues
- Cut through traffic between Tee boxes causes extreme bare spots; no path present
- Green side grass bunker design too steep; creates safety hazard issue for golfers and maintenance – have tipped mowers
- The green has a bad spot front center – by design ridge through middle of green; high spot difficult to maintain to desired standards
- (Bunkers)
- Extreme drainage issue rear ladies Tee; turf damage and bare spots
- Severe hill behind green creates maintenance and playability issues; poor drainage, low spots; standing water

Hole 9:

- (Bunkers)
- The fairway is weak and has a lot of bare areas
- The rough has some large pot holes; weak around tee box (Soil/Water) and traffic
- (Tee Boxes) Black and Gold too small
- Pond ext. of #1; rock edges; liner exposed
- Driving range too close
- Mini wetland by #9 tee box – poor drainage creates standing water, maintenance and playability issues and at back of green too – cattails!!

Hole 10:

- Fairway and rough a little weak (Soil/water) – fairway low lying area poor drainage and mild standing water
- (Bunkers) need improvement
- Cart path entry/exit points
- Possible location for another restroom (between #10 and #15)
- (Fencing)
- Extreme foot traffic on N edge of green (similar to #4) creates challenge maintaining green turf to desired standards

Hole 11:

- Fairway and Rough Condition (Soil/Water)
- Severe standing water north side of fairway near green (possible high water table)
- (Fencing)
- (Bunkers)
- Cart path entry/exit

- Severe drainage and compaction near 150 yd. marker, potential re-design of large area seeming from adjacent property (Shea detention pond)

Hole 12:

- (Fencing)
- (Bunkers)
- Rough is weak and Fairways struggle in the heat (Soil/water) – direction and slope similar to #6
- Cart path entry\exit
- Standing water near Tee Box – low lying and poor drainage; maintenance and playability issues on ongoing basis
- (Mound crowns)
- Excessively steep slope front edge on approach to green – maintenance and playability issue
- High traffic on edge of green similar to #4 and #10

Hole 13:

- (Bunkers)
- (Fencing)
- (Soil/Water)

Hole 14:

- (Bunkers)
- (Fencing)
- (Soil/Water) Fairway already reduced due to difficulty growing turf
- Rough areas in the rough (Soil)
- Severe slope on approach and north side similar to #12
- (Cart path edges) Extreme bare spots at entry/exit
- Temporary path so side of #14 green, similar to #1

Hole 15:

- (Fencing)
- Still some weak areas in the fairway and rough (Soil/Water)
- Native area around retention pond – weak and weedy
- (Mound crowns) severe exposure issue
- (Cart path edges) at entry/exit
- Retention pond is too small and too shallow to be effective long term
- Poor drainage near tee box, standing water creates maintenance and playability issues
- Shea contractor issue of damage to irrigation and drainage already discussed

Hole 16:

- Heat stress
- Fairways weak (Soil/Water)
- (Cart Path Edges) entry/exit
- (Bunkers)

Hole 17:

- (Bunkers)
- (Fencing)
- Lack of adequate irrigation
- Severe undersize of tee box areas – unusable tee areas
- Severe hill slope at approach to front of green same issue as #6 and #12
- Lake shore line degrading, sloughing off; needs rock edge added; liner edge exposed and degrading; has deep silt; difficult to maintain screens, aerators, pumping system
- Green Back left weak – bunker to back of green slope severe, too tight, no room for traffic volume, (Soil/Water) this area of turf difficult to maintain
- (Irrigation Control)
- Water feature decomposing organic material and stagnant air conditions contribute to severe odor problem for golfer and neighboring properties

Hole 18:

- (Bunkers)
- (Crown mounds)
- Design around green and between green and lake too narrow and difficult to maintain
- Safety issue – lack of visibility for group ahead
- Water feature - excess plant life creates odor, rock edges visually pleasing but overgrown with grass; removal of grass creates better water flow
- Errant golf balls in parking lot and clubhouse patio due to proximity to clubhouse area and tournament pavilion
- Two ponds on the hole - Lake shore line degrading, sloughing off; needs rock added; liner edge exposed and degrading
- Location of hole in relation to clubhouse and restaurant area creates safety issue (children playing); too close; and crossover issues between restaurant customers and golfers

Soil Conditions:

Soil conditions are tested on an annual basis. The following report provided by Soil Horizons, Inc. details mineral and saturation levels and recommended corrective actions (Appendix A-2).

GREENS

- Calcium has increased, but is still deficient. Recommendations are to apply 4 supplemental applications of gypsum at 10 lbs. /M each. Apply at 4 to 6 week intervals. Best to apply after verticutting and topdressing this summer and again after aeration. Be sure and deep water after the application. If puddling occurs, decrease the irrigation time and repeat the cycle.
- The availability of calcium in solution (saturated) is lower than the sodium. Sodium is the dominant cation in

solution. The addition of the gypsum will flood the rootzone with calcium and will help to offset the excess sodium. Deep watering is necessary to solubilize the gypsum and allow the gypsum to displace the sodium. Deep watering is necessary to flush the sodium sulfate. Water deep enough to visually see water exiting the drainage outlet.

- Ideally the calcium % should be 50% to 55% and the sodium <12%. But based on the excessive amount of sodium in the irrigation water, sodium will continue to be a challenge unless there is blending of a good water source.
- Magnesium is low, but with the excessive amount of sodium, it's better to have lower levels. High magnesium and sodium "cements" the soil and impedes water movement. So let's wait to apply any magnesium.
- Potassium levels are all low. Apply 3 supplemental applications of potassium sulfate (0-0-50) at 2 lbs. /M of product. Apply at 3 to 4 weeks. Water in after the application. Also include potassium with the maintenance fertilizer.
- Apply soluble nitrogen at 0.1 lbs. N/M every 10 to 14 days or as needed. Avoid applications during summer stress. Apply as a "clipping/growth" regulator.
- After aeration apply natural organic nitrogen at 0.5 lbs. N/M. This will provide a protein source for the microbes.
- Include a carbon source with the foliar program, such as, humic acid, a seaweed extract or blackstrap molasses.
- Foliar apply iron sulfate (21%) at 3 to 6 oz. /M of product and apply every 2 to 3 weeks during the season. Water in after the application.
- In reviewing the saturated soil analyzes, there is an excess of soluble salts, bicarbonates and sulfur. All of the cations are in excess. This is probably due to the high soluble salts in the water. It appears the greens are holding these salts. There isn't any flushing going on and capillary pore space dominates the rootzone. The greens aren't breathing.
- It is highly recommended to deep water to remove the unwanted salts. See water existing in the drainage outlet.
- Also include deep tine aeration at least 1X/season in conjunction with hollow tine aeration. Remove the cores and topdress with compatible sand.
- During the season lightly verticut and topdress every 10 to 14 days. During stress conditions, decrease the quantity, but still topdress.
- Needle tine aerate every 3 to 4 weeks in the summer to "vent" the greens. This will alleviate carbon dioxide buildup, improve water infiltration, increase soil oxygen levels and stimulate microbial activity.
- Would suggest continued use of the ozone and use of acid containing water treatments, such as, pHairway, AcidipHy, Aquaphix or = to help dissipate the bicarbonates.

TEES

- Calcium has increased and sodium has decreased, but there are still concerns, as calcium is still low and sodium is still excessive. As previously mentioned, this will be ongoing until water quality is improved.
- Alternate applications of hi calcium lime and gypsum at 10 lbs. /M of product each. Apply at 3 to 4 week intervals. Deep water after the application. Try and apply in conjunction with deep aeration and/or slicing.
- Magnesium levels are all adequate there are no recommendations.
- Potassium has increased, but levels are still low. Apply 3 supplemental applications of potassium sulfate (0-0-50) at 2 lbs. /M of product and apply every 4 to 6 weeks during the season. Water in after the application. Also include with the maintenance fertilizer, applying a 1:1 or 1:2, N:K.
- The addition of the potassium will also help in offsetting the excessive sodium.
- Apply nitrogen as a "clipping/growth" regulator.
- Iron levels are low. Include iron sulfate (2% to 4%) with the maintenance fertilizer.
- Deep aeration is vital to allow water movement lower into the soil profile to remove the unwanted sodium sulfate. This should be done 2X/season as well as hollow tine aeration. Remove the cores and topdress with 100% sand.

FAIRWAYS & APPROACHES

- Calcium levels are still low and sodium is excessive. There has been a slight improvement in potassium levels, but levels are still low.
- Apply an application of gypsum at ½ ton/A to all fairways. Apply before or after aeration and deep water. Apply a 2nd application to all of the areas except #9, at the same rate.

- The reason for the gypsum is it is 5X more soluble than hi calcium lime. This will help in displacing the sodium.
- Apply 3 applications of potassium sulfate (0-0-50) at 100 lbs. /A each. Apply at 4 to 6 week intervals and also include with the maintenance fertilizer. Water in after the applications.
- Apply nitrogen as needed. Avoid high salt index nitrogen sources.
- All of the soluble salt levels were in excess of 1.5 mmhos/cm. Deep aeration and deep slicing are recommended. It was good to hear that these practices have been ongoing this year.
- This will improve water infiltration and percolation and increase soil oxygen levels. The soil must be allowed to breath.

While every course is required to budget for fertilizer and other associated soil amendment programs, Buffalo Run is forced to spend a premium amount to maintain and improve the course's soil integrity. According to a 2012 Maintenance Budget Survey from the Golf Course Superintendents Association of America (GCSAA), courses located in the Upper West-Mountain Region spend an average of \$54,000/yr. on fertilizers and other associated chemicals (See Appendix A-3 for Upper West-Mountain Region chart, Appendix B-2 for complete report). In 2013, Buffalo Run Golf Course spent \$82,000 on fertilizer and soil amendment, not including the additional man hours needed to perform soil amendments.

Irrigation:

The course's irrigation system has multiple issues. The system has been in place from the inception and is starting to experience both mechanical and technical problems. Besides being dated, the course's irrigation system does not have a sufficient number of satellites and sprinkler heads to properly water the course, creating areas of over-saturation and dry spots. The table below illustrates the number of satellites and heads needed to correct this issue on hole-by-hole basis (See Appendix A-4 for complete irrigation system diagram).

Satellite Number	Hole Number	# of Stations	Number of Heads	Double Stations	Satellites Needed	Additional Heads	Total Required/ Station	Still Double	One Satellite
101	1	48	74	27	2	5	79	0	15
102	2 & 8	48	63	16	2	5	68	0	4
103	2	48	71	22	2	5	76	0	12
104	3	48	62	17	1	5	67	3	6
105	4 & 5	48	49	7	1	5	54	0	0
106	5 & 6	48	62	16	1	5	67	3	3
107	6	48	75	32	2	5	80	0	16
108	7 & 8	48	55	11	1	5	60	0	0
109	9	48	67	24	1	0	67	3	3
110	9 & Practice	48	56	7	1	6	62	0	0
111	Range	48	45	0	1	0	45	0	0
		528	679	179	15	46	725	9	59
201	10	48	63	15	1	5	68	3	3
202	11	48	45	1	1	0	45	0	0
203	11	48	50	2	1	5	55	0	0
204	12	48	72	24	2	5	77	0	13
205	13	48	31	2	1	5	36	0	0
206	14	48	27	3	1	5	32	0	0
207	15	48	65	19	1	5	70	6	6
208	16	48	45	2	1	5	50	0	0
209	16 & 17 & 18	48	53	7	1	10	63	0	0
210	18	48	77	28	2	5	82	0	18
211	Club House	48	0	0	1	0	0	0	0
	Total	528	528	282	13	50	578	9	40

Similar to the soil amendment programs, Buffalo Run spends an increasingly premium amount on irrigation repairs and maintenance.

Drainage:

As mentioned before, Buffalo Run Golf Course already suffers from serious drainage problems. Currently, only 20% of the perimeter of Buffalo Run Golf Course has residential development.

With the impending development around the remaining 80% of the course's perimeter, these issues will only become more threatening to course operations.

Multiple holes have patches of standing water after minor rainfall. Some water drain off areas are too shallow and are already at or above capacity for current saturation levels.

The picture below illustrates a repair the course had to make only 4 years after the developers of a local housing complex installed a storm sewer line through the course.

Undeveloped Property Adjacent to Buffalo Run



Appendix A-2 illustrate some of the issues each hole faces with soil/turf conditions, bunkers, wetlands, irrigation and playability. Some issues are unique to each hole, since each hole has a different design. However, as covered in the hole-by-hole analysis, some problems are course wide (bunkers, fencing, etc.)and are not represented on each illustration.

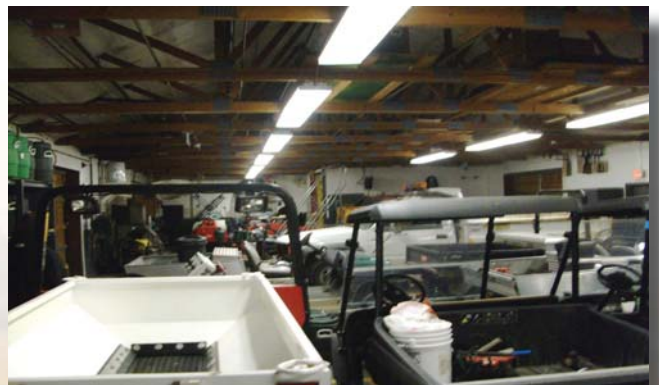
Maintenance Facilities:

The maintenance facilities at Buffalo Run Golf Course are insufficient to properly store and maintain the course's fleet of maintenance vehicles and equipment. There are two maintenance/storage facilities: one that houses the course's golf carts and another that houses large equipment. The facility that houses the carts is unheated, leading to an accelerated drain on cart batteries during the cold season. The facility that houses large equipment is not big enough to store everything which leads to equipment being left outdoors. Most equipment left outside deteriorates quicker than equipment stored inside, leading to higher maintenance and repair costs.



Equipment:

Buffalo Run has a large fleet of maintenance equipment used to maintain the 200 acre golf course facility. Some of the equipment in use was purchased in the late 90s, but even equipment that has been purchased in the last 10 years are at, or have already exceeded their life expectancies. As the equipment ages, not only do maintenance costs rise, but the possibility of failing equipment damaging the course rises as well. The chart on page 34 details the course's equipment, age, life expectancy, scheduled replacement and cost. Although Buffalo Run has a schedule for replacing aging equipment, the schedule does not emphasize the need for newer equipment sooner.



EQUIPMENT NAME	Original Purchase DATE	Exp. Life (yr)	Planned Replacement	Current Plan (year) to be Replaced	2014 Replacement Cost
LIGHT DUTY CART	3/1/2002	5	2007	2014	\$6,500
LIGHT DUTY CART	3/1/2002	5	2007	2015	\$6,500
LIGHT DUTY CART	3/1/2002	5	2007	2015	\$6,500
LIGHT DUTY CART	3/1/2002	5	2007	2015	\$6,500
LIGHT DUTY CART	3/1/2002	5	2007	2015	\$6,500
LIGHT DUTY CART	3/1/2002	5	2007	2014	\$6,500
HEAVY DUTY CART	10/19/1995	8	2003	2014	\$24,000
HEAVY DUTY CART	3/3/2003	8	2011	2014	\$24,000
HEAVY DUTY CART	3/3/2003	8	2011	2014	\$26,000
HEAVY DUTY CART	3/1/2010	8	2018	2019	\$26,000
MEDIUM DUTY CART	2007	8	2015	2017	\$8,500
MEDIUM DUTY CART	2007	8	2015	2016	\$8,500
TRIPLEX (Mower)	4/13/2001	7	2008	2014	\$24,000
TRIPLEX	4/13/2001	7	2008	2014	\$24,000
TRIPLEX	4/27/2001	7	2008	2014	\$24,000
TRIPLEX	2004	7	2011	2015	\$24,000
TRIPLEX	2003	7	2011	2014	\$24,000
FAIRWAY MOWER	2/24/2003	8	2011	2014	\$48,000
FAIRWAY MOWER	2/24/2003	8	2011	2014	\$48,000
GROUND MASTER Utility Tractor	4/3/1997	15	2012	2014	\$32,000
SAND PRO	3/6/2008	10	2018	2019	\$18,000
RANGER	2004	10	2014	2016	\$24,000
SKID LOADER	2005	10	2015	2016	\$35,000
TRACTOR 5400	11/14/1995	15	2010	2015	\$32,000
AERATOR (Walk)	1996	10	2006	2015	\$28,000
AERATOR (Walk)	1996	10	2006	2015	\$28,000
LIGHT DUTY TRAILER	2008	8	2016		\$800
LIGHT DUTY TRAILER	2008	8	2016		\$800
LIGHT DUTY TRAILER	2008	8	2016		\$800
HEAVY DUTY TRAILER	2008	10	2018	2019	\$3,500
SPRAY RIG	4/4/2008	10	2018	2019	\$32,000
LARGE SWEEPER (attachment)	2006	10	2016	2017	\$22,000
SEEDER	6/13/1996	20	2016	2017	\$6,000
Ford	6/2002 Parks/2011	10	2012	2015	\$24,000
MOWER ATTACHMENT	1/1/2011	6	2017	2018	\$15,000
SOD CUTTER (WALK)	2005	5	2010	2015	\$4,000
21" MOWER (WALK)	2007	5	2012		\$800
21" MOWER (WALK)	2007	5	2012		\$800
21" MOWER (WALK)	2007	5	2012		\$800
WALKING GREENS	6/13/1996	20	2016	2017	\$4,500
WALKING GREENS	6/13/1996	20	2016	2017	\$4,500
SNOW BLOWER (WALK)	2004	6	2010		\$800
SNOW BLOWER (WALK)	2006	6	2012		\$800
SNOW BLOWER (WALK)	2006	6	2012		\$800
FAIRWAY AERATOR (Attachment)	1998	10	2008	2015	\$26,000
DEEP TINE AERATOR (attachment)	1/3/2008	8	2016	2017	\$32,000
SPRAY TANK 50 GALLON	2007	3	2010		\$200
SLIT AERATOR (attachment)	2/14/2003	15	2018	2019	\$13,000
TRAILER	5/22/1998	15	2013		\$300
TRAILER	5/22/1998	15	2013		\$300
Toro (Spray rig)	11/9/2008	10	2018	2019	\$32,000
EZ-GO MPT 1200	2009	7	2016	2017	\$7,500
EZ-GO MPT 1200	2009	7	2016	2017	\$7,500
Toro Workman 3100	3/1/2010	8	2018	2019	\$26,500
SWISHER WEED MOWER	2009	5	2014		\$800
EZ-GO	2009	7	2016	2017	\$7,500
FAIRWAY MOWER	1/1/2010	3	n/a		n/a
Ford	02 Parks/2013	5	2018	2019	\$30,000
GREENS MOWER	2011	6	2017	2018	\$24,000
GREENS MOWER	2011	6	2017	2018	\$24,000
Fairway Mower	2011	8	2019	2020	\$48,000
TRACTOR 4520	1/1/2010	10	2020	2021	\$28,000
Ford	2012	8	2020	2021	\$20,000
LIGHT DUTY UTILITY VEHICLE	4/26/2011	7	2018	2019	\$8,500
LIGHT DUTY UTILITY VEHICLE	4/26/2011	7	2018	2019	\$8,500
Side Winder	2013	6	2019	2020	\$32,000
Side Winder	2013	6	2019	2020	\$32,000
Fairway Mower	2013	3	2016	2017	\$48,000
GMC	6/1998 Parks/2011	10	2012	2015	\$32,000

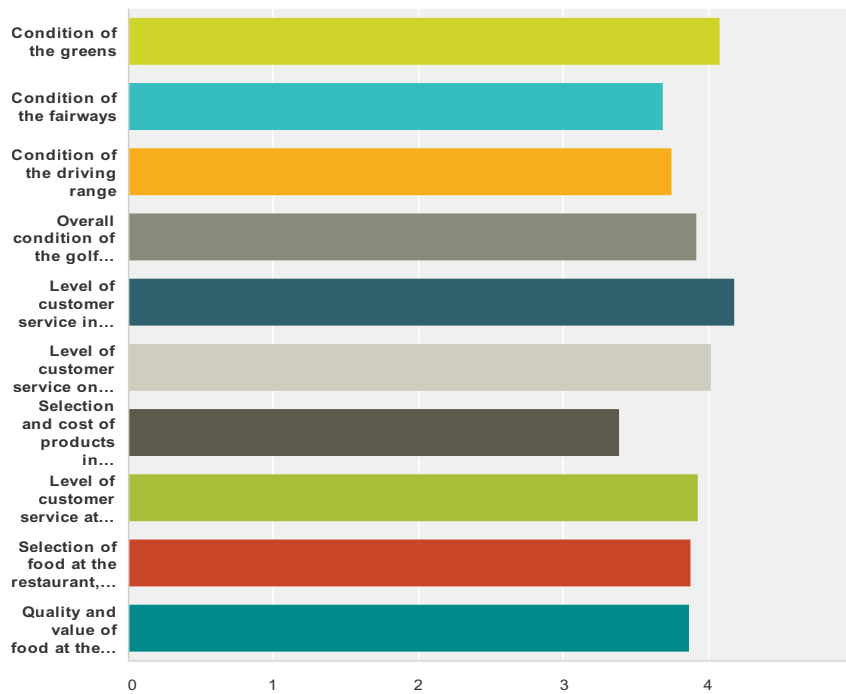
Customer Survey:

In August of 2013, Buffalo Run emailed a survey to a contact list of 10,000 current and former players of the course (Appendix A-7 for Questions 1-4, Appendix B-8 for full survey). There were 11 questions that were asked. The first four questions consisted of a scaled response (1-5) and the final seven questions were free response. The survey allowed the staff at Buffalo Run to evaluate how their users viewed the course, where the users were from and what changes the users would make to the course.

Much of this information was taken into consideration when evaluating priorities for improving the golf course, as well as identifying what opportunities existed for creating new and repeat business. The following chart is a brief snapshot from the customer service survey.

Q1 Rank the following:

Answered: 474 Skipped: 1



	Poor	Fair	Average	Good	Excellent	Total	Average Rating
Condition of the greens	0.21% 1	3.59% 17	11.81% 56	58.02% 275	26.37% 125	474	4.07
Condition of the fairways	2.96% 14	9.30% 44	18.82% 89	54.33% 257	14.59% 69	473	3.68
Condition of the driving range	0.86% 4	6.21% 29	25.05% 117	54.18% 253	13.70% 64	467	3.74
Overall condition of the golf course	1.70% 8	3.83% 18	12.77% 60	65.32% 307	16.38% 77	470	3.91
Level of customer service in the golf shop	1.69% 8	2.53% 12	11.81% 56	44.73% 212	39.24% 186	474	4.17
Level of customer service on the course (starters and rangers)	0.85% 4	4.03% 19	19.53% 92	43.95% 207	31.63% 149	471	4.01
Selection and cost of products in the golf shop	1.30% 6	10.43% 48	43.91% 202	37.61% 173	6.74% 31	460	3.38
Level of customer service at the restaurant, Bison Grill	1.52% 7	4.76% 22	20.56% 95	46.97% 217	26.19% 121	462	3.92
Selection of food at the restaurant, Bison Grill	0.66% 3	3.51% 16	24.78% 113	50.66% 231	20.39% 93	456	3.87
Quality and value of food at the restaurant, Bison Grill	0.66% 3	4.40% 20	23.30% 106	51.87% 236	19.78% 90	455	3.86

Clubhouse/Bison Grill:

The clubhouse has two main areas: the retail shop and the Bison Grill/patio. Both areas of the clubhouse lack sufficient space to operate efficiently. The retail area has a very small room (closet) where excess merchandise can be stocked and does not have an area where incoming merchandise can be processed. The result is that merchandise is placed in the only clubhouse office, further impeding the abilities of the golf manager to perform other operational functions. The office is also used to store employee's personal items and, upon occasion, is used for employees to take their meal breaks. The other glaring problem in the clubhouse is a lack of restroom facilities. The men's restroom contains a single stall to be shared by all incoming golfers and restaurant patrons. On multiple occasions throughout the year customers are waiting to use the single stall.



The Bison Grill suffers from some of the same space issues. When originally designed, the kitchen in the Bison Grill was built to serve approximately 60 people. However, with the addition of the patio seating area, the kitchen now serves upwards of 120 people at any given time. Additionally, the kitchen lacks sufficient storage space for both its dry and refrigerated/frozen goods. To compensate, the course has built storage sheds outside to store catering materials and other dry goods. However, this fix does not address refrigerated/frozen items. The lack of kitchen storage creates difficulties in ordering the correct inventory for running the restaurant at efficient food and beverage costs. The size of the kitchen and its storage also hinders the golf course's ability to host special events and banquets.



A clubhouse expansion study was completed in 2009. At the time, this study concluded that expanding the clubhouse to include a larger kitchen and banquet hall would not create enough business to support the addition.

The clubhouse and surrounding facilities also lack a proper security surveillance system. Currently the course utilizes a single "dummy" camera, outside of its storage facility.

Landscaping:

The course has minimal landscaping in and around the course and clubhouse. The parking lot islands have pedestrian trails where heavy foot traffic has passed through. The views into the course off 120th Ave, 112th Ave and Chambers lack significant shrubbery and signage. Lastly, many areas around the course and between holes are desolate of any landscaping other than natural grasses.



SUMMARY OF KEY FINDINGS

Buffalo Run Golf Course has been maintained to the best of the abilities of the course management/staff and the City of Commerce City. Unfortunately, without further assistance, the course will continue to operate at a mid-low level ranking when compared to other courses. While the prices at Buffalo Run are fair and consistent with other golf course, the condition of the course will make it increasingly difficult to promote return or new players.

Based on THK's evaluation of Buffalo Run's current conditions and the input of the project team, the following is a summary of the key issues and areas of opportunity that will need to be resolved in order to reach the goals listed in the Plan and to raise Buffalo Run Golf Course to a mid-high level, competitive course.

Irrigation:

The typical life span of a golf course's irrigation system is approximately 20 years. Buffalo Run's irrigation system is near that mark and is already experiencing leakage, intermittent faults and various other maintenance issues that are common with aging systems. Add that to the need for additional control satellites and sprinkler heads to evenly water the course, it is clear that the irrigation system needs to be renovated.

The benefit of taking a proactive approach to an irrigation system renovation is the course's ability to dictate the renovation cycle. Many courses wait until superintendents are digging up corroded pipes with multiple leaks and holes. By that time, the entire irrigation system is experiencing the same issues, forcing the course to close multiple holes at a time, or the entire course until renovations can be completed.

Additional benefits of a renovated irrigation system include new system technologies that will allow the superintendent the ability to water the course more evenly and efficiently, saving the course additional maintenance costs and man hours. It will also assist with the courses soil amendment programs.

Soil and Turf Conditions:

Much of the turf conditioning problems for Buffalo Run were created upon the course's original design. The soil used to build many of the hills and mounds of the course was taken directly from the land that Buffalo Run rests on today. The process stripped away healthy top soil and left primarily clay, making turf growth a constant challenge. Although an efficient use of soil, the soil contains high amounts of clay and does not promote drainage ideal for the turf above. Throughout the years, the course has used aeration, chemical treatments and other soil amendments to help address these issues. However, many areas on the course require a complete redressing of top soil and re-turfing in order to reach a mid-high level course condition. Similar to the irrigation system, it is wise to address these issues on a hole by hole basis, and if possible complete the work in conjunction with an irrigation renovation.

Equipment:

Aging equipment is a huge concern for the course. Much of the equipment has exceeded its lifespan and needs to be replaced. Although the course has set up a replacement plan for equipment, budget shortfalls have created a backlog of equipment that needs to be replaced. The only way to correct this problem is to purchase new equipment to replace pieces that are already past due and to increase the maintenance budget to allow the course to stay on track for the future replacement schedule.

Drainage:

The drainage issues around Buffalo Run Golf Course effect every part of the course's condition and the future goals set forth in this Plan. Besides losing business when the course is flooded, the impact to the afore mentioned soil and turf conditions, as well as the irrigation cycle are causes for concern. Given the current state of drainage issues on the course and the impending development of the remainder of the course's perimeter, an independent study of current and future drainage issues and recommended solutions is required.

Facilities Infrastructure:

As Buffalo Run Golf Course grows, so does its infrastructure needs. Any expansion or development of new buildings or lighting, or purchases of newer modern appliances or machinery may require power output or outlets that the facility lacks. In order to ascertain the current infrastructure's abilities and to plan for future needs, a utility infrastructure engineer should be commissioned to perform a study and analysis for the course.

Maintenance Storage:

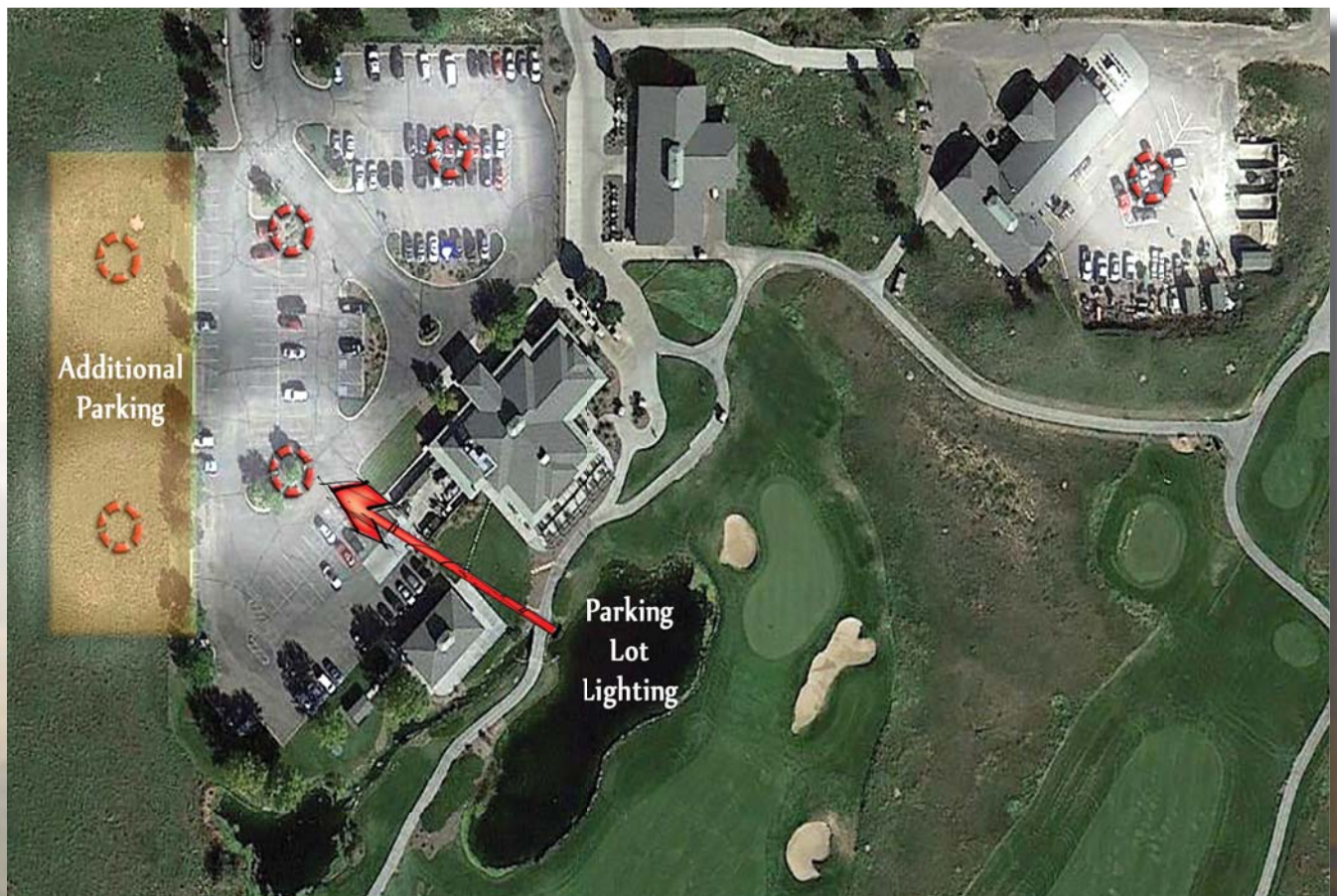
The lack of storage for large equipment is a problem because it promotes a higher rate of maintenance issues and degrades the life expectancies of expensive equipment. In addition, crammed storage areas promote safety issues and logistical problems requiring multiple pieces of equipment to be moved to gain access to specific pieces of equipment. To mitigate these problems, a third maintenance storage bay should be constructed to house additional equipment and materials.

Bunkers:

Bunkers are another course maintenance issue that has become increasingly problematic given the large amounts of sand and the design of the course. The steep slopes of the bunkers make it difficult to maintain the sand and allow sediment to spill over onto the course. This in turn encourages turf to grow beyond the edges of the bunker, creating bunkers that look more like sand pits rather than course obstacles. Bunkers need to be renovated with old sand removed, edging redone and new sand brought in. Additionally, many bunkers should be designated for hand-raking only, given the steep slopes of the bunkers and the damage machine raking can do to the edges.

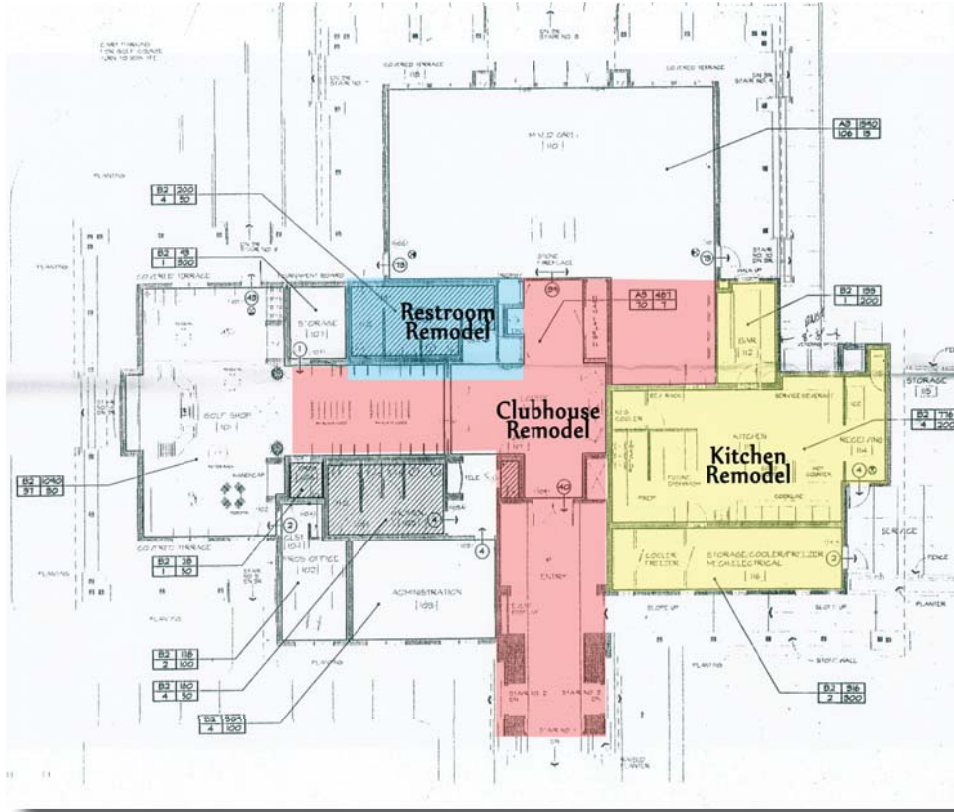
Parking:

Buffalo Run's parking lot is undersized to host many of its golf tournaments over the summer leading to parking along 112th Avenue. Additionally, as development increases around the course and as business increases, additional parking will be necessary. Besides parking, a lack of lighting in the parking lot creates safety issues and diminishes the outward appearance of the Bison Grill's operating hours. An expanded parking lot with lighting would improve both parking and visibility. The illustration below details a possible solution.



Clubhouse and Bison Grill:

To create more space in the clubhouse for the Bison Grill and additional restroom facilities, a renovation of the clubhouse may be required. It is recommended that an architectural design firm be consulted on the potential benefits or changing some interior finishes in the clubhouse. See the diagram below for examples of some areas of opportunity.



112th Avenue Construction:

The widening of 112th Avenue creates several issues for Buffalo Run Golf Course. The primary concern is the proximity of the practice greens and the already difficult access areas to the maintenance parking lot. However, construction itself is a concern since Buffalo Run's sole cart path that connects the front and back nine holes runs beneath 112th Avenue, and creates playability issues for course users. To address the concerns of the golf course before construction begins, it is essential that a variety of City staff be included in the planning process of 112th Avenue.

Cart Paths and Landscaping:

While not an immediate concern, the cart paths and landscaping around the course need replacement and additions. Differences between a mid-low level and a mid-high level course can sometimes be determined by the landscaping in and around the course. Additional landscaping will create a more welcoming arrival sequence for course users and enhance the player experience while on the course. Additionally, the cart paths around the course have begun to show areas of deterioration that need to be repaired. Other areas of unintended cart use need to be paved for cart use, which will also alleviate some degradation to course conditions.

Security System:

Buffalo Run requires a surveillance system in order to maintain a safe working environment for golf course staff, a secure course for players and to monitor expensive equipment and course facilities. As development around the course continues, the necessity for a security system will increase as well.

In the following Recommendations & Costs section, specific strategies with costs are identified to make the needed facilities improvements recommended in this section.

RECOMMENDATIONS & COSTS

Based on the information collected and analyzed in the Current Conditions section, and with input from the project team, the following strategies have been identified and prioritized to meet the established goals.

The recommendations proposed in this section are listed by priority. Timeframes for these recommendations were not listed due to several variable factors (budget, weather, infrastructure, etc.). Many of these recommendations can be completed in steps. Strategies highlighted in green are either interim solutions or strategies that have options.

All costs reflect current 2014 dollars.

Strategy 1: Recover and improve soil and turf conditions to raise the level of the course from Mid-Low to Mid-High		
1.1	Replace top soil, reurfing, soil amendment programs	\$100,000/yr x 10 years = \$1,000,000

Strategy 2: Create additional parking for customers		
2.1	Purchase additional land on west side of clubhouse lot.	\$20/ft ² x 21,600ft ² = \$432,000
2.2	Add an additional 42-50 parking spots on the west side of current clubhouse lot.	\$198,970 (Includes clearing, grading, paving, striping and landscaping)

Strategy 3: Update/Replace Irrigation system		
3.1	Add additional heads to allow for even hydration around greens	\$37,900
3.2	Replace all control satellites	\$208,000
3.3	Replace entire irrigation system	
	Hole 1	\$98,880
	Hole 2	\$127,680
	Hole 3	\$97,440
	Hole 4	\$52,800
	Hole 5	\$108,720
	Hole 6	\$145,680
	Hole 7	\$50,400
	Hole 8	\$110,640
	Hole 9	\$108,720
	Hole 10	\$91,680
	Hole 11	\$139,440
	Hole 12	\$108,720
	Hole 13	\$62,400
	Hole 14	\$82,080
	Hole 15	\$106,800
	Hole 16	\$108,000
	Hole 17	\$49,680
	Hole 18	\$128,880
		\$1,778,640 Total

Strategy 4: Replace aging equipment		
4.1	Replace aging equipment	
	2015	\$225,800
	2016 - 2018	\$278,500
	2019 - 2021	\$358,000
		\$862,300 Total

Strategy 5: Analyze current drainage studies around golf course to evaluate needs		
5.1	Hire an independent engineer to evaluate current drainage flows and recommend possible solutions	\$10,000
5.2	In cooperation with City engineers and planners, be involved in development reviews adjacent to the the course	No Additional Cost

Strategy 6: Renovate Bunkers		
6.1	Remove old sand, edge bunkers, and replace with new sand (6") using golf course staff	Completed 2014
	Hole 1	\$4,067
	Hole 2	\$3,046
	Hole 3	\$2,622
	Hole 4	\$1,491
	Hole 5	\$3,813
	Hole 6	\$693
	Hole 7	\$2,393
	Hole 8	\$4,277
	Hole 9	\$3,374
	Hole 10	\$3,929
	Hole 11	\$2,748
	Hole 12	\$793
	Hole 13	\$2,781
	Hole 14	\$3,401
	Hole 15	\$1,745
	Hole 16	\$1,573
	Hole 17	\$1,431
	Hole 18	\$4,015
		\$48,192 Total

Strategy 7: Clean and repair lakes		
7.1	Dredge lakes of sediment and bio-matter	\$400,000
7.2	Repair lake liners and stabilize shorelines	\$60,000

Strategy 8: Evaluate and update facilities infrastructure, including electrical and othe infrastructure elements, to allow for increased development and usage		
8.1	Hire a utility infrastructure evaluations engineer	\$10,000

Strategy 9: Increase storage capacity, operational capabilities and useability of maintenance facilities		
9.1	Build additional storage bay for maintenance facilities (Minimal Infrastructure)	\$30/ft² x 4,800ft² = \$144,000
	Or	
9.1	Build additional storage bay (Including heating, increased lighting/electrical)	\$45/ft² x 4,800ft² = \$216,000

Strategy 10: Identify possible problems, solutions and opportunities to assist with the construction and widening of 112th Avenue		
10.1	Ease of access to maintenance and clubhouse parking lots	No Additional Cost
10.2	Proximity of fuel cells to 112th	
10.3	Proximity of practice green to 112th	
10.4	Impact to golf operations during construction (access, cart tunnel, noise, etc.)	

Strategy 11: Add lighting to clubhouse and maintenance parking lots		
11.1	Install 5 light posts in main parking lot and 1 light post in maintenance parking lot.	\$3,000/pole x 6 = \$18,000 (Cost does not include site connection)
11.2	Maintenance and electricity costs	\$2,025/month

Strategy 12: Remodel front entrance and lobby of clubhouse to create additional space for restroom and restaurant expansion		
12.1	Remodel entrance and lobby area of clubhouse to allow for more restaurant and bar area	\$135/ft ² remodeling 1,000/ft ² = \$135,000
12.2	Remodel men's restroom to allow for additional stalls	\$200/ft ² remodeling 300/ft ² = \$60,000

Strategy 13: Remodel kitchen to add additional space for storage and kitchen expansion		
13.1	Remodel entrance and lobby area of clubhouse to allow for more restaurant and bar area	\$130/ft ² x 1,600/ft ² = \$208,000

Strategy 14: Install additional restroom facilities around the course		
14.1	Install 2 additional restroom facilities, one on the front nine, one on the back nine	\$50,000 each x 2 (2 room) = \$100,000

Strategy 15: Build and repair cart paths		
15.1	Build additional cart paths	\$6.00/ft ² x 5,000ft ² = \$30,000
15.2	Repair cart paths	\$6.00/ft ² x 5,000ft ² = \$30,000

Strategy 16: Add landscaping around the course, course entrances, and clubhouse		
16.1	Add landscaping around golf course (average 300ft ² /hole)	\$4.50/ft ² x 800ft ² = \$2,400/hole \$2,400 x 18 holes = \$63,000
16.2	Add landscaping in front of clubhouse and parking areas	\$4.50/ft ² x 4,500ft ² = \$19,000
16.2	Add landscaping framing Chambers, 112th and 120th	\$4.50/ft ² x 8,100ft ² = \$36,000

Strategy 17: Improve security around clubhouse and maintenance facilities		
17.1	Install 6 indoor and 6 outdoor cameras throughout the clubhouse, maintenance facilities, and parking lot	\$600/indoor cam, \$800/outdoor cam \$1,500dvr = \$9,900

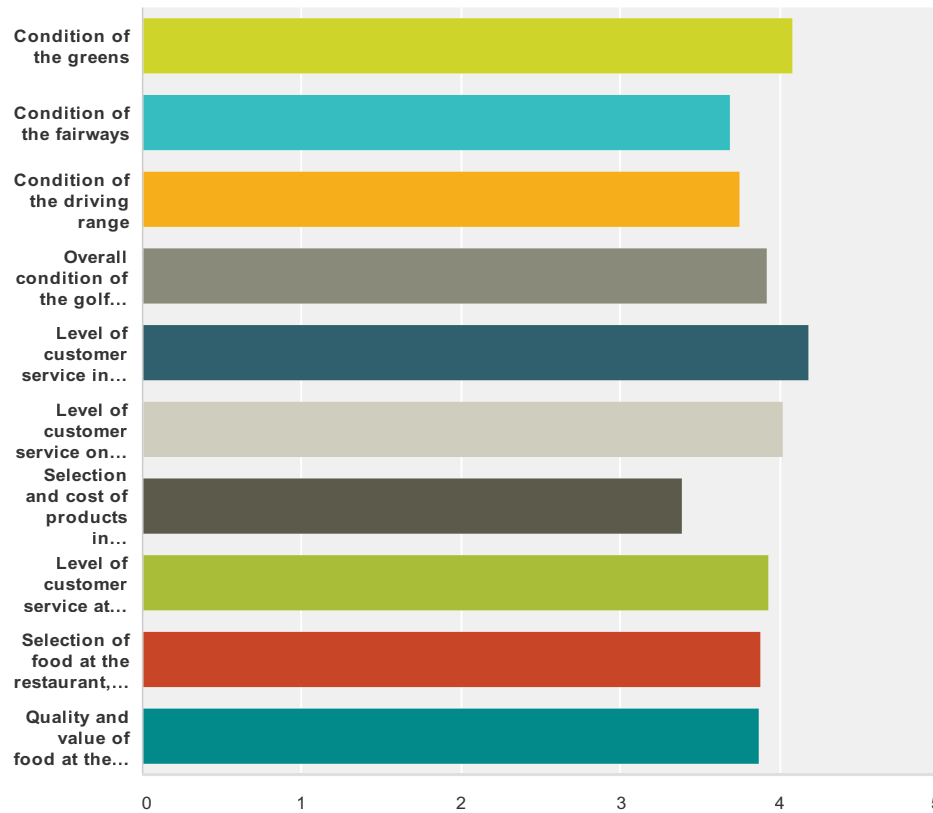
APPENDIX A

A-1: Customer Survey (Questions 1-4)

Buffalo Run Customer Survey

Q1 Rank the following:

Answered: 474 Skipped: 1

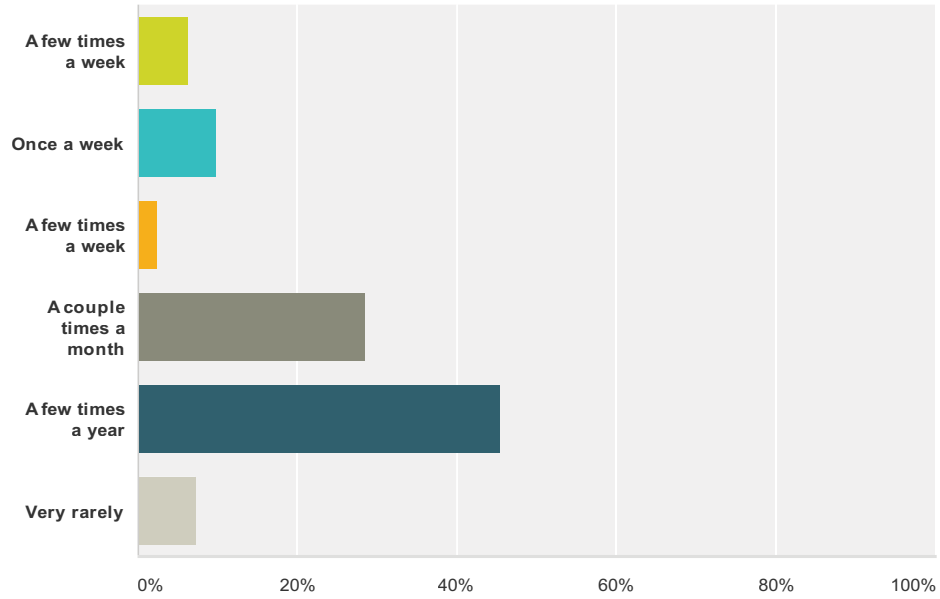


	Poor	Fair	Average	Good	Excellent	Total	Average Rating
Condition of the greens	0.21% 1	3.59% 17	11.81% 56	58.02% 275	26.37% 125	474	4.07
Condition of the fairways	2.96% 14	9.30% 44	18.82% 89	54.33% 257	14.59% 69	473	3.68
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Overall condition of the golf course	1.70% 8	3.83% 18	12.77% 60	65.32% 307	16.38% 77	470	3.91
Level of customer service in the golf shop	1.69% 8	2.53% 12	11.81% 56	44.73% 212	39.24% 186	474	4.17
Level of customer service on the course (starters and rangers)	0.85% 4	4.03% 19	19.53% 92	43.95% 207	31.63% 149	471	4.01
Selection and cost of products in the golf shop	1.30% 6	10.43% 48	43.91% 202	37.61% 173	6.74% 31	460	3.38
Level of customer service at the restaurant, Bison Grill	1.52% 7	4.76% 22	20.56% 95	46.97% 217	26.19% 121	462	3.92
Selection of food at the restaurant, Bison Grill	0.66% 3	3.51% 16	24.78% 113	50.66% 231	20.39% 93	456	3.87
Quality and value of food at the restaurant, Bison Grill	0.66% 3	4.40% 20	23.30% 106	51.87% 236	19.78% 90	455	3.86

Buffalo Run Customer Survey

Q2 How often do you visit Buffalo Run?

Answered: 474 Skipped: 1



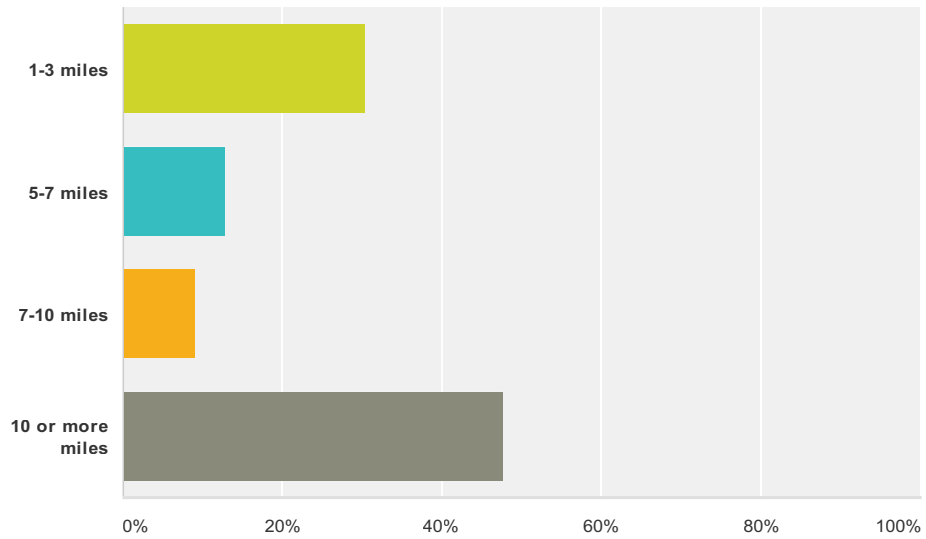
Answer Choices	Responses
A few times a week	6.33% 30
Once a week	9.92% 47
A few times a week	2.53% 12
A couple times a month	28.48% 135
A few times a year	45.36% 215
Very rarely	7.38% 35
Total	474



Buffalo Run Customer Survey

Q3 How far do you travel to get to Buffalo Run?

Answered: 474 Skipped: 1

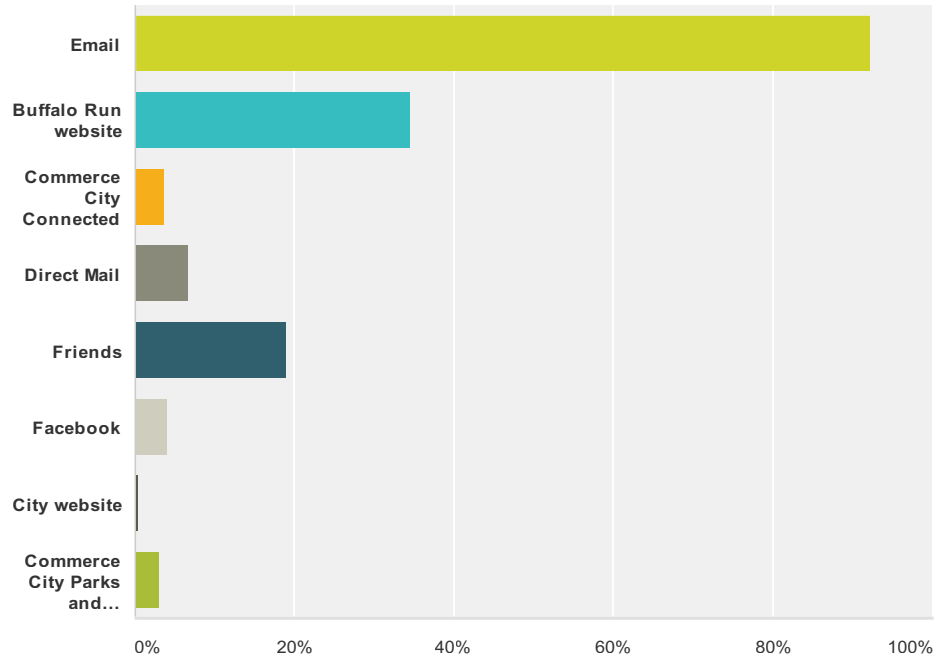


Answer Choices	Responses	
1-3 miles	30.38%	144
5-7 miles	12.87%	61
7-10 miles	9.07%	43
10 or more miles	47.68%	226
Total		474

Buffalo Run Customer Survey

Q4 How do you receive information about Buffalo Run? Check all that apply.

Answered: 474 Skipped: 1



Answer Choices	Responses
Email	91.98% 436
Buffalo Run website	34.60% 164
Commerce City Connected	3.80% 18
Direct Mail	6.75% 32
Friends	18.99% 90
Facebook	4.01% 19
City website	0.42% 2
Commerce City Parks and Recreation Guide	3.16% 15
Total Respondents: 474	

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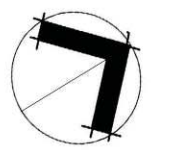
A-2: Hole Graphics



Prepared by:



Course Condition By Hole: 2014
Hole 1



North



532' Par 5, Design Too Short Causing Pace Of Play Complications

Weak Turf Around Lake Due To Soil Compaction, Shoreline Degreding, Lake Liner Exposed

Turf Degredation Due To Poor Drainage Encouraging Cart Traffic

Drainageway Through Fairway

Weak Native Between #2 and #8, Water Retention Area

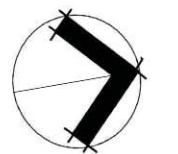
Proposed Additional Restroom Location



Prepared by:



Course Condition By Hole: 2014
Hole 2



North



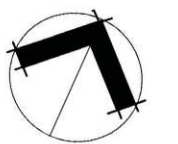
Weak Areas of Rough
Around The Green

Steep Slopes Around Bunkers
Are Difficult To Maintain
and Create Safety Issues

Prepared by:



Course Condition By Hole: 2014
Hole 3

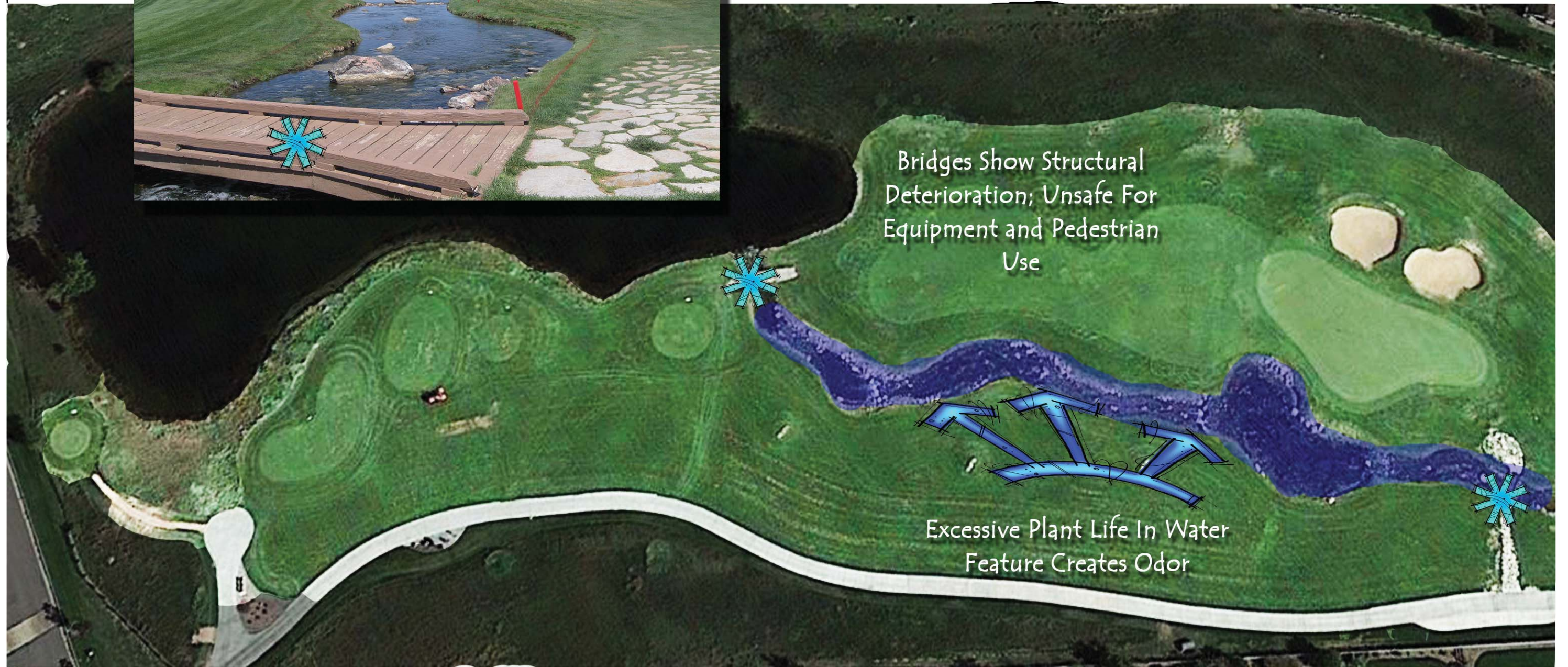


North



Bridges Show Structural Deterioration; Unsafe For Equipment and Pedestrian Use

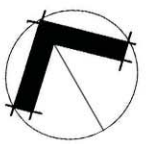
Excessive Plant Life In Water Feature Creates Odor



Prepared by:



Course Condition By Hole: 2014
Hole 4



North
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Bunkers, deep, steep and brittle.
Turf around the bunkers weak
and degraded.

Placement of bunkers encourages golfers to
aim toward the right side of fairway,
increasing the amount of balls leaving the
course and damaging private property

Prepared by:



Course Condition By Hole: 2014
Hole 5





Cart path edges are extremely compacted

Steep slope and weak native grass

Prepared by:



Course Condition By Hole: 2014
Hole 6





Fingers on bunkers too narrow to maintain.



Tee boxes slope down and are uneven, causing playability issues

Prepared by:



Course Condition By Hole: 2014
Hole 7





Bunker design too steep. Safety hazard for maintenance and golfers using carts.



Water retention area too shallow. Floods both Hole #8 and Hole #2. Creates mosquito issues.

Fairway is weak and has a lot of bare spots

Prepared by:



Course Condition By Hole: 2014
Hole 8





Weak fairway and multiple pot holes in the rough.



Weak Turf Around Lake Due To Soil Compaction, Shoreline Degreding, Lake Liner Exposed

Fairway Too Close To Driving Range

Prepared by:



Course Condition By Hole: 2014
Hole 9





Low lying area in fairways and poor drainage cause standing water



Proposed Additional Restroom Location

Heavy foot traffic deteriorating green

Prepared by:



Course Condition By Hole: 2014
Hole 10 Graphic





Standing water in bunkers and on greens

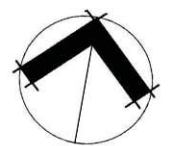


Severe drainage and soil compaction due to runoff from retention pond

Prepared by:



Course Condition By Hole: 2014
Hole 11 Graphic



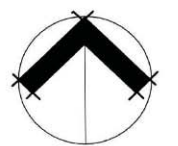
North



Prepared by:



Course Condition By Hole: 2014
Hole 12 Graphic



North
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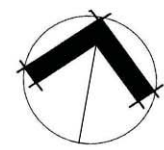


Bunkers have steep slopes and narrow fingers

Prepared by:



Course Condition By Hole: 2014
Hole 13 Graphic



North



Fairway reduced due to difficulty in growing turf

Severe bare spots along cart path and cart entry/exit areas

Prepared by:



Course Condition By Hole: 2014
Hole 14 Graphic

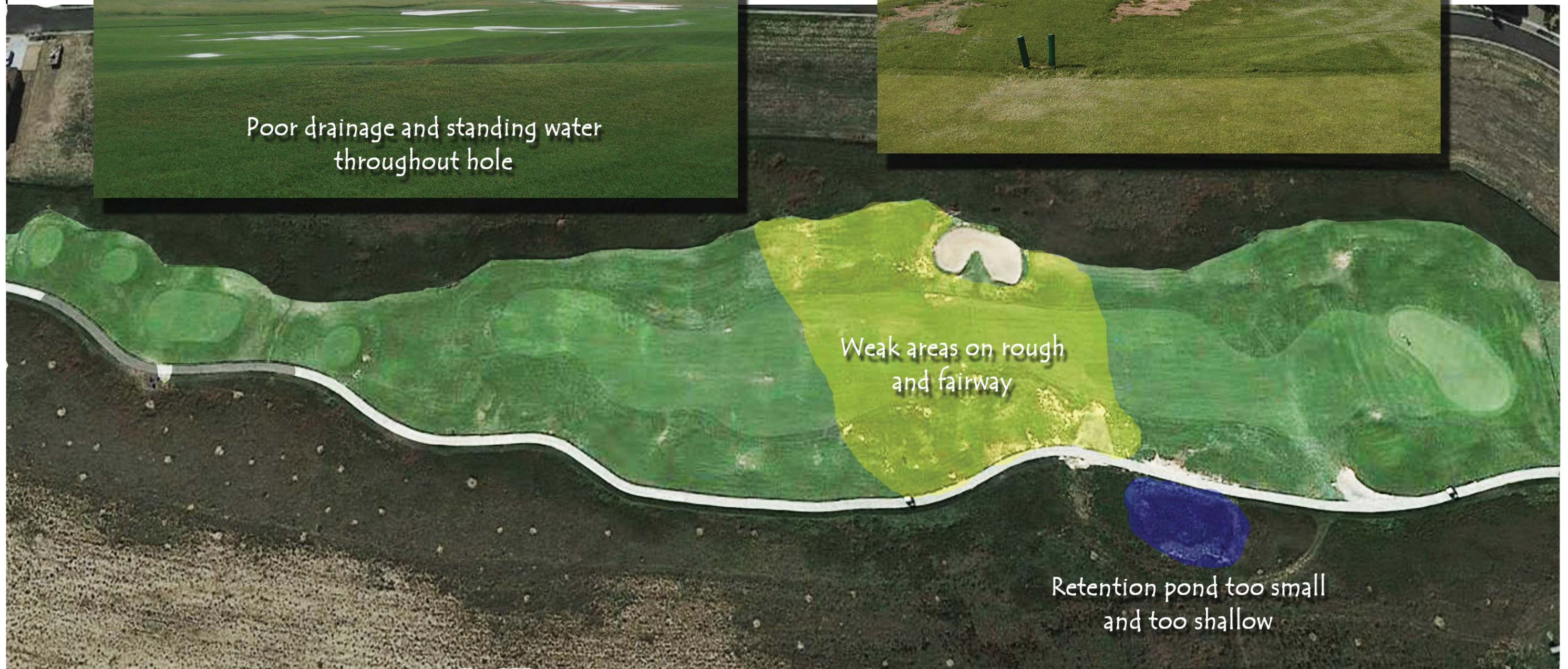




Poor drainage and standing water throughout hole



Weak areas on rough and fairway



Retention pond too small and too shallow

Prepared by:



Course Condition By Hole: 2014
Hole 15 Graphic





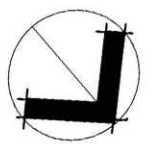
Heat stress due to
irrigation design



Prepared by:



Course Condition By Hole: 2014
Hole 16 Graphic



North
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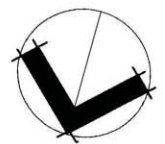
Shoreline degradation;
lake liner exposed;
sediment deposits

Severe slope
around green

Undersized tee boxes

Course Condition By Hole: 2014
Hole 17 Graphic

Prepared by:



North



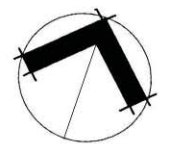
Safety issue: balls played into clubhouse and parking lot

Odor from excessive plant life in ponds; area between pond and green too narrow to maintain

Prepared by:



Course Condition By Hole: 2014
Hole 18 Graphic



North
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