

Concept Design

Walden Park Disc Golf Course

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Concept Design: Walden Park DGC

In response to a request from the Operations Department in the City of Chilliwack three members of the British Columbia Disc Sport Society visited Walden Park to explore installation of a disc golf course on the property.

We approached the site using the design principals found in Appendix 1. While the plan included in this proposal could easily be installed, we have approached this project as conceptual at this point. If installation were approved we would need to develop specific tee pad and pin placement locations to ensure quality of play and safety within this multi-use park.

Site Description

Walden Park is 7.2 acres of open and level parkland with a diversity of trees scattered throughout the property (see Figure 1). The park is bounded on three sides (North, West, and South) by drainage creeks from surrounding agricultural land and is divided by a slow flowing waterway. On the eastern border the park is bounded by a parking lot shared with an elementary school and athletic fields. Two walking path loops divide the park into eastern and western sections. The eastern section is well mown and fairly dry, even after substantial winter rain. The western section is much wetter and the grass rougher. This section is bounded on the west by a deep drainage creek that is bridged in two places (the bridges appear to be community built to provide access to the park and school). The southern boundary of the park is tall grass protecting a small drainage creek and bounded by a barbed wire fence. The northern section is also bounded by tall grass. There are benches and picnic tables located throughout the park.

The park appears to be well used by students crossing the bridges to get to school. During the site visit (10:00AM on a Thursday) a few individuals were using the walking paths and a couple of dogs were being walked. The short looping paths seem unlikely to draw foot traffic from users outside of the local community. The benches and picnic tables are well located in attractive areas and seem likely to draw park users during the summer months.

Disc Golf Course

The available parkland is appropriate for a short entry-level nine-hole disc golf course (see Figure 1 page 3 and Table 1, page 4), which aligns well with the goals of a community-focused multi-use park. Since this would be Chilliwack's first disc golf course, an entry-level



course is appropriate for player development and recreational play. The course would primarily serve the local community and provide low impact activity for community members and students in the nearby school.

Figure 1: Site map and concept plan with potential hole placements



As designed, the hole lengths would be appropriate for novice and intermediate players and the available tree and water hazards would provide a moderate level of challenge. There is space available for alternative pin placements on each hole to allow for diversity of play and more challenging layouts, particularly near the water hazards.

Many courses include multiple tee pads to allow for more competitive play and skills development. One of the challenges in lengthening the course in this manner relates to the increased likelihood that errant throws will cross into other fairways and disrupt play.

Similarly, lengthened holes may bring water hazards, walking paths, benches, and picnic tables into play. While in most cases we would recommend installation of multiple tee



pads to support skills development and use by more advanced players, for this relatively constrained multi-use space we are recommending only one tee pad per hole.

Table 1: Hole description (concept plan)

Hole 1: 236 feet	Hole 6: 265 feet
Hole 2: 230 feet	Hole 7: 236 feet
Hole 3: 278 feet	Hole 8: 255 feet
Hole 4: 230 feet	Hole 9: 246 feet
Hole 5: 236 feet	Total: 2212 feet
Course area: 7.2 acres. Total length, 2212 feet. Estimated par: 27	

It is possible that after a more complete review and creation of a full course design plan that placements could be found for additional tee pads, so we have included additional line items in the cost estimate (see Table 2, page 5).

Opportunities and concerns

The park as currently constituted provides an appropriate space for an entry-level disc golf course. The available space (7.2 acres), facilities (parking lot and washrooms), and hazards (waterways and flora), mean that installation costs will be minimized with few additional infrastructure costs.

The multi-use nature of the park, its small size, and its use as a transit route for the elementary school raise some concerns. The presence of picnic tables and benches mean that fairways will need to be designed to keep discs away from bystanders. In general, locating tee pads near benches should address this concern. Picnic tables suggest that park users may stray into nearby fairways so care will need to be used in placing throwing lanes well away from these areas (primarily relevant for fairways 7 and 8). The ability to relocate the benches and picnic tables would substantially improve design options.

The bridges spanning the drainage creek on the western side of the park also present some general safety concerns. Whether or not the disc golf course is installed, it may be worth formalizing the bridges and adding pathways direct foot traffic.

The agricultural land on the north and south of the park offers space that could substantially expand design options for the course if that land was available for development; however, this conceptual plan focuses on the park as currently constituted.



Design and Installation Costs

Table 2 includes a full cost estimate for installation of a nine-hole course (including an additional practice basket). Actual cost may vary due to changes in the Canadian dollar or unexpected labour costs, so a contingency fund of 15% has been added to the totals. Installation of permanent bridges and expanded travel paths on the west side of the park, while desirable, has not been included in this estimate. Costs associated with relocating benches or picnic tables are also not included.

Table 2: Cost estimate

Item	Material cost	Installations Cost (est. \$25/hour)	Total
Tee pads x9	\$450	\$50	\$4500
Optional alternate tee pads x9	\$450	\$50	\$4500
DGA baskets and pin placements x10	\$450-\$550 based on model	\$25	\$4750-\$5750
Optional alternate pin placements x18	\$40 per pin	\$25 / hole	\$945
Tee signs and design x 9	\$60-\$100 / hole	\$25 / hole	\$765-\$1125
Warning signs x 4	\$40	\$25 / sign	\$260
Rule sign and complete course map	\$100	n/a (included in kiosk cost)	\$100
Information kiosk	\$400	\$100	\$500
Design fees	n/a	\$800	Waived*
Subtotal:		Basic: \$10,875	Full: \$17,680
Contingency (est 15%)		\$1631	\$2652
Estimated budget:		Basic: \$12,506	Full: \$20,332

* Fees for simple course design waived.

Design fees for the conceptual plan, formal course design, and materials consultation, are waived. If greater oversight and coordination of installation, including labour, is necessary an additional estimate will be provided.

Ongoing costs

Maintenance costs for the course should be similar to current park maintenance costs. In some areas of the course, additional mowing may be needed to ensure the course is playable year-round (fairways 4, 5, and 6). In general, equipment maintenance costs are



nominal, although signage can be vulnerable to vandalism. As the course becomes established, additional mulching may be necessary around baskets for erosion control and the introduction of new trees could provide added challenge for players.





Appendix 1: 11 Principles for Good Course Design

1. Courses should be designed with the safety of players and spectators in mind
2. Courses should fit the land available
3. Courses should be planned to serve the needs of the local community
4. Courses should be designed for flexibility and growth as local talent grows
5. Courses should be designed to support sustainability, to protect as much as possible the environment in which they are installed
6. Courses should be adequately resourced (tee pads, signage, trash cans, washrooms, parking areas, vending)
7. Maintenance should be intentionally planned (tree trimming, storm clean up, grass mowing, erosion control, vandalism)
8. Courses should be attractive
9. Courses should be designed to challenge all aspects of a players game (length, approach, putting, accuracy)
10. Courses should reward good play and punish bad play
11. Course equipment should meet professional standards for quality

The life of a course can easily stretch into decades. The oldest course in Canada is Winskill Park in Tsawwassen. Installed in 1976, today's players are throwing on the same baskets and tee pads installed 40 years ago. With careful planning and quality equipment, the life of a disc golf course can easily exceed 50 years, providing a substantial return on investment for municipalities and parks.

Courses should be designed with the safety of players and spectators in mind

The discs used in disc golf are not your traditional Frisbees. The drivers, while of similar weight, are smaller and denser, and can travel much faster and further (as far as 500 feet). As a result, great care should be taken to design a course that minimizes the likelihood that other players, or bystanders, will be hit.

Other park facilities (playgrounds, picnic tables, or paths) should not intrude on or around fairways. Fairways should not cross or extend into dangerous terrain within the park. Tee pads should not be placed close to putting areas or other tee boxes, and efforts



should be made to inform casual park users about the course, its location, and proper etiquette.

Courses should fit the land available

Every designer wants to build the perfect course—one that is fun for all, yet tests the skills of even the best players. In many instances, designers are faced with competing goals due to diverse player levels, differing needs within the local community, and the variety of player interests (from meeting with friends to formal competition). The perfect course takes all of these interests into consideration, but most importantly, it fits these interests into the land available. Where possible course design falls within the existing flora and fauna; it does not sacrifice safety for convenience or hole count, and it considers the entire playing experience available, rather than emphasizing a signature hole or particular style of play.

Courses should be planned to serve the needs of the local community

Each course should be designed to meet the needs of the community in which it resides, with respect to land, play, and purpose. When a locality installs a new course it does so to serve the local player base, which will develop over time. As such, courses should be designed to be flexible and allow player growth. Courses frequently draw players to the community, and can serve as a substantial economic development tool if that is one of the goals of the community. A good designer takes the time to understand the needs of the client and community.

Courses should be designed for flexibility and growth as local talent grows

As with any sport, player development and growth takes time. The longer the course is in the ground, the more community members will explore the sport. As use increases, many community members will focus on more competitive play. A strong course is one that is able to challenge players across many skill levels, and help them progress from recreational to competitive play. Today's discs go much further and faster than the discs of even five years ago. As technology improves, a well-designed course will grow with the changing sport.



Courses should be designed to support sustainability, and to protect as much as possible the environment in which they are installed

A well-designed disc golf course fits the land available for play and is designed to be long lasting. To do this, courses should take into consideration sensitive environmental areas, like wetlands and watersheds, minimize potential impacts on flora and fauna, and control for erosion. Well-constructed tee pads, fairways, and putting areas help blend the course with the land, rather than bending the land to the course.



Courses should be adequately resourced (tee pads, signage, trashcans, washrooms, parking areas, vending)

A high quality course considers all aspects of play. It includes signage to help players learn the rules and navigate the course, as well as educate casual park users about the game and ensure their safety. Trashcans and washrooms keep the course neat and clean. A designated parking area also keeps park users and neighbours safe, while increasing access. Where possible, municipalities can also generate revenue through food, beverage, and equipment sales, while improving the player experience.

Maintenance should be intentionally planned (tree trimming, storm clean up, grass mowing, erosion control, vandalism)

Because the course fits within existing property, it can be tempting to minimize maintenance costs. While disc golf courses require much less attention than sports fields, regular mowing of open fairways (monthly) is needed, as well as trash removal, storm clean up, and erosion control (for example, adding mulch around baskets and tee pads).

Courses should be attractive

One of the attractions of disc golf is the walk in the park aspect of the sport. Courses can be designed to include garden areas, waterways, and wooded paths. Many courses add works of art (sculptures, mosaic tee pads, benches) to the course to enhance the player experience.

Courses should be designed to challenge all aspects of a players game (length, approach, putting, accuracy)

The disc golf player community is a diverse community. It includes people of all ages, fitness levels, and skill levels. It includes left- and right-handed players, whose discs fly differently. A well-designed course takes into consideration this diversity of ability and includes holes designed to meet the needs of all players likely to pass through the course. This means including short and long holes, with multiple approaches to the pin. Where present, waterways and elevation changes are used to enhance play, but are included in the design with accessibility and safety in mind.

Courses should reward good play and punish bad play

A good course challenges the player while respecting their throws. A well-designed hole presents players with a clear set of throwing options that will bring a well thrown disc to the desired landing area. Players missing the line should find themselves with a more difficult path to the pin.

Course equipment should meet professional standards for quality

The PDGA has approved a large number of targets for play, and offers recommendations regarding tee pad size and construction. While inexpensive options can be used to facilitate installation of a course, short cuts in equipment will result in increased expenditures down the line. Natural tee pads and tone-type or locally sourced targets should only be used as part of a phased installation plan.

