Minutes

Caledonia Nordic Ski Club (CNSC) SPECIAL Board Information Meeting

Paved Trails Project

Sunday, January 14, 2024

1:00 pm, In-person CNSC Tech Building

Attendance:

Executive	● President – Lanita Horning	● Vice President – Tim Roots
	● Treasurer - Shane Sienaert	● Past President – Lance MacDonald
	● Secretary – Gretchen Prystawik	
Directors	● Directors	
	Andrew Watkinson	Monica Mattfeld – Regrets
	Jim Burbee	Simon Lamarche
	Paul Schuetz	Michael Duck – Regrets
	Peder Nesset	
Staff & Guests	● CNSC General Manager - John Bowes	
	● Competitions Chair - Kevin Pettersen	
	● Dave McDougall – volunteer on project	
	● Kevin Charleston – volunteer on project	

MET but no motions put forward: *"The quorum necessary for the transaction of business by the Board of Directors shall be six of the elected positions, of whom two must be members of the Executive Committee." CNSC By-Laws s.4 (f)*

Discussion Items:

1. *Call to Order*
    a. Called to order at *1:10*

2. *Territorial Acknowledgement*

3. *Welcome, thank you, recognition that we have all read the information package prepared by Kevin P*

4. *Summary, overview, and introduction – Kevin P*

5. *Dave McDougall – Summary of geotechnical assessments completed to date and memo prepared for CNSC*
    a. *Standard engineering layout considering soil conditions*
    b. *Geological summary (soil units along route by station; three main soil types = sandy gravel, silty sand, bedrock. No glacial till observed.)*
    c. *Bedrock depth unknown but blasting is not anticipated. Both areas of new trail at top of Nightrider are thought to be on rock, depth to rock is not known at this time Silt content will increase susceptibility to frost heave*
        i. *Lower areas should be elevated to improve resistance to frost heave*
        ii. *Some more attention to areas of silty sand (poorer drainage)*
        iii. *Silty soil at bottom of Night Rider, start of Canada Cup will require the trail to be raised, anticipated about 1 meter sub base required in this area.*
    d. *Based on soil types, developed three standard pavement structures*
        i. *Subbase gravel (if necessary), crushed based, asphalt*
            1. *Gravel sub-base with gradation specification (in addition to regular base elsewhere) where silty soils exist*
        ii. *Basic construction recommendations*
        iii. *Forms specifications for construction to inform Request for Proposals (RFP)*
        iv. *Gradation specifications*
    e. *Memo and recommendations informed by City of PG trail standards as a framework*
    f. *Expect no/minimal traffic loading on pavement structure so degrading from environmental factors only (weather, tree routes). Expect very infrequent emergency vehicle traffic, if any. Alternate access now available via Up the Creek.*
    g. *Protection against root development under pavement is not part of geotechnical scope but geotech recommendations will inform works in specific areas (e.g., bottom of Canada Cup where roots may be an issue, raise the grade by 1 m)*

6. *Kevin C – Summary of paved trail design*

a. *Design work based on Dave's geotechnical assessments*
b. *Work will include fairly detailed estimates of materials required so RFP can generate most accurate proposals possible*
c. *Kevin and team of volunteers flew proposed course with high quality drone to create ortho-mosaic, high resolution photos, and Lidar data file, which are loaded into RoadEng software. This replaces conventional, costly, and time consuming survey methods to produce highly accurate surface information while informing development and the RFP.*
d. *Kevin re-walked/skied the proposed route with a sub-meter GPS. This accurately positions the route in space to ensure precision of plans and construction is*
e. *Used FIS roller ski design guidance on the following to develop draft plans*
    i. *Course recommendations around horizontal, vertical alignment and junctions*
    ii. *Trail width and banking corners*
    iii. *Construction methods (want light footprint)*
    iv. *Water drainage management*
    v. *Merge lanes*
f. *Design standards and characteristics of the proposed course:*
    i. *Typical road has crowning. Ski trails should not have crowning, instead, banking 2%, alternates left to right and right to left to accommodate best drainage*
    ii. *Max grade on the course is about 16%, impacts design*
    iii. *50 mm asphalt thickness, 100 mm crushed based*
    iv. *Swale for "ditching" or shedding water away from trail and redirect away from trail, where necessary*
    v. *Turn radius will be considered for grooming operability and skier safety. Tightest curve is 15 m radius, which is minimum for grooming, fits best to minimize cut and fill and minimize impact to trails*
    vi. *"K factor" or transition on vertical alignment will be considered to provide more transition up hills (and down hills)*
    vii. *One existing culvert is incorporated into design. Design will further consider water re-direction and other culverts or irrigation pipe size (6 to 8 inch) may be required (Identified in RFP)*
    viii. *Paved trail widths are between 4 – 6 meters*
        1. *4 m on designed sections (or if new construction)*
        2. *6 m on uphill climbs or in already disturbed area*
        3. *8 m width at start/finish areas, merge areas, etc.*
    ix. *Expect to remove about 30 immature cottonwood on edges of trail, especially at lower part of Canada Cup climb, but may need to remove others if judged to be significant.*

g. *Remaining work*
    i. *Mapping existing clearing widths*
    ii. *Finalizing design standards including work on biathlon range and penalty loop*
        1. *Plan for biathlon is to pave the shooting ramp and entire penalty loop area, not shown on trail plan provided. Range schematic has been completed but wasn't in the presentation.*
    iii. *Mapping utilities and putting onto design (for reference points, to highlight areas of concern, and to protect infrastructure during development)*
    iv. *Designing paranordic route*
    v. *Developing and publishing RFP*
    vi. *Construction, policies, signage, etc. with Trails Committee (see below)*

NOTE: Subsequent to the meeting, further communication stated that paving the range firing line will be dependent on modifications to the firing line being completed on time.

7. *Analysis & questions*
    a. *Deliverables required in grant*
        i. *Destination Development Fund provided money (Province of BC)*
        ii. *Attractive to local, national, and international races – must be able to host competition upon project completion*
        iii. *No constraints in grant to prevent appropriate design to meet local conditions*
        iv. *Maximum grant was $1M (applied for and granted)*
        v. *Trail will be homologated so we can host national and international events (need certain difficulty – climbs and down hills)*
    b. *Project phases including next steps (unfunded at present)*
        i. *First phase of paved trails focused on competitions*
        ii. *Subsequent phases will be aimed at recreation, paranordic, and all other users*
        iii. *Additional phases planned*
        iv. *Worked with Pittman Asphalt for quote on crush base and asphalt top to structure the grant (cost/m2) plus contingency amounts*
        v. *Quotes included in grant applications similar to other projects completed at CNSC (sometimes prices vary, sometimes other materials available)*
        vi. *Planned 2 loops, if can't do both with $1M, will just do one loop – grant just requires a "competition ready" trail*
    c. *Cost estimate of entire project as well maintenance*
        i. *Option to narrow the trails to save money under following considerations*
            1. *First priority is safety so would not compromise on width if unsafe*
            2. *Could redesign scope of work to stay in budget and then do subsequent work under future funding*
        ii. *RPF does not lock into a design, can adjust if necessary*
    d. *Trail considerations (drainage, roots, other traffic, construction issues, technical challenges, etc.)*
        i. *~95% of proposed paved trail on existing Otway ski trails*
        ii. *Planned to have paved trails within width of existing trail. This, with banking, will help winter skiing and grooming*
        iii. *Can get asphalt made with oil that is less susceptible to temperature fluctuations to reduce thermal contraction and cracking to increase the lifespan. This can be adjusted in RFP*
    e. *Maintenance & lifespan*
        i. *Will need to keep track of trees, roots, potential damage*
        ii. *Low lying areas expected to be built up to ensure lifespan and minimize maintenance*

iii. *Maintained as part of regular trail maintenance plan*
iv. *Lifespan – hard to predict. Typical lifespan is 20 years for asphalt, provided not much frost heaving or root damage*

f. *Accessibility*
   i. *Use at your own risk*
   ii. *Planned signage – lots of work for Trails Committee*
   iii. *So many trails around facility that it may be redundant to add extra width for other users beside paved trail*

g. *Communication plan*
   i. *Summarize grants and next steps*
   ii. *Hoping for input from Communications Director – Monica*

h. *Timing and milestones*
   i. *RPF developed and published (requirement of grant that competitive process, and allows for more innovative ideas to be incorporated)*
   ii. *Address areas of new construction and those areas with cottonwood tress (winter 2024 when paranordics completed, plan to remove these trees)*
   iii. *Project completion by March 31, 2025 therefore summer/fall 2024 construction*
   iv. *Engage Trails Committee on junctions, signage, management recommendations*
   v. *Applying for next grants*

8. *Meeting adjourned*
   a. *Meeting adjourned at approximately 3:20 pm.*