TOWN OF BRECKENRIDGE
OPEN SPACE ADVISORY COMMISSION
Monday, March 17, 2014
2nd floor, Stephen C. West Ice Arena
189 Boreas Pass Road
Please note temporary meeting location

4:30 Site visit to pump track relocation sites (meet on the **south** side of Town Hall in boots)

5:30 Call to Order, Roll Call

5:35 Discussion/approval of Minutes – February 17, 2014 ***7***

5:40 Discussion/approval of Agenda

5:45 Public Comment (Non-Agenda Items)

5:50 Staff Summary

- North Main Street Park Plan ***16***
- Breckenridge Nordic Center Facility Use Request
- USFS Referral: Breckenridge Ski Resort Master Development Plan Addendum ***17***
- Recpath Mile Markers

5:55 Open Space

- 2013 State of the Habitat report- Cucumber Gulch ***21***
- 2014 Cucumber Gulch Preserve Research Plan ***30, 32, 37***
- Wellington Trail Project ***39***
- Pump Track Relocation ***40***
- Trails Open House
- BOSAC Retreat

7:30 Executive Session

8:00 Adjourn

For further information, please contact the Open Space and Trails Program at 970-547-3155 (Scott) or 970-453-3371 (Chris).

Memorandum

To: Breckenridge Open Space Advisory Commission
From: Open Space Staff
Re: March 17, 2014 Meeting

Staff Summary

North Main Street Park Plan

At its March 11th meeting, Town Council reviewed the draft site plan for the North Main Street Park. Council directed staff to proceed with the construction documents and implementation of the attached site plan. Once a final design is developed, construction will occur this spring/summer.

Breckenridge Nordic Center Facility Use Request

At its February 25th meeting, Town Council discussed BOSAC's recommendations regarding the Breckenridge Nordic Center facility use request. Council approved the additional use of the facility by the Daytons and approved the majority of BOSAC's recommended conditions. However, Council did not include BOSAC's suggestion to post a docent for the duration of every event. The Nordic Center approval requires an annual renewal, which offers Town Council a chance to determine whether additional conditions are necessary in the future.

USFS Referral: Breckenridge Ski Resort Master Development Plan Addendum

Attached, please find the referral letter submitted by Town Council to the U.S. Forest Service (USFS) regarding Breckenridge Ski Resort's project proposal under its 2013 Master Development Plan Addendum. The content of the scoping letter was generated via the February BOSAC meeting discussion, a USFS site visit, a public open house, and Council direction from March 11th. Based on the comments submitted by the Town and others, the USFS will fulfill its research requirements, release a draft EIS document in the coming year, and solicit public comment once more. Staff will keep BOSAC informed of the next steps for this proposal.

Recpath Mile Markers

Recently, Summit Biking, Inc. (a non-profit organization whose mission is to enhance recreational bicycling opportunities in Summit County) contacted both the Town and Summit County seeking projects to potentially fund to improve the recpath system. The Town and County staffs worked to develop a proposal to add recpath mile markers for the entire recpath system including the Blue River section within Breckenridge's jurisdiction. Generally, Carsonite mile markers and several map kiosks would be installed along the recpath system to improve visitor wayfinding and distance calculations. Staff wanted to make BOSAC aware of the concept. More details will be made available as the project develops.

Open Space

2013 State of the Habitat Report- Cucumber Gulch

Following BOSAC's February review of the 2013 Cucumber Gulch monitoring program, staff requested EcoMetrics provide a FACwet status update for the overall Preserve. Attached, please find the report provided by EcoMetrics. It evaluates the wetland health of Cucumber Gulch and compares it to the 2011 baseline. In general, recent management and restoration efforts undertaken in Cucumber Gulch have achieved overall wetland habitat protection goals and the increasing presence of beavers in upper Cucumber bodes well for long-term wetland health. However, factors remain over which the Town has limited control (e.g. buffer capacity, habitat connectivity).

Staff requests BOSAC review the attached "State of the Habitat" report and answer the following questions:

1. ***Does BOSAC have any questions regarding the 2013 "State of the Habitat" report?***
2. ***Does BOSAC seek any edits or changes to this report or the format for future versions?***

2014 Cucumber Gulch Preserve Research Plan

In 2014, the Town open space program will continue its ongoing Cucumber Gulch Preserve monitoring program, with particular focus on evaluating the upper Cucumber Gulch restoration efforts as mandated by the Army Corps of Engineers. Annually, staff evaluates all Cucumber research elements and works with consultants to develop the yearly research plan. The 2014 research program is presented here for BOSAC's review, discussion, and approval.

As a consultant, EcoMetrics' measures and documents water flow, water quality, sediment disposition, and other wetland-related issues. Attached, EcoMetrics' 2014 research proposal mimics the 2013 budget with cost reductions to reflect 2013 actual expenses.

Emerald Planet and Dr. Christy Carello evaluate and document wildlife indicator species and wildlife habitat variables within the Preserve. Dr. Carello's attached 2014 research proposal is similar to the 2013 plan, but adds a comprehensive vegetation survey and the more rigorous docent program as requested by BOSAC in September 2013. The attached budget doubles the docent coverage, to be focused during the Cucumber Gulch trail closure timeframe (until July 7, 2014, the first Monday after July 4th). The comprehensive vegetation survey was once an annual evaluation that recently shifted to a three-year cycle. Dr. Carello recommends the vegetation survey in 2014 to establish a new vegetative baseline following completion of the wetland restoration work.

Based on previous BOSAC and consultant direction, staff has redoubled efforts to eradicate noxious weeds within Cucumber Gulch without the use of herbicides. In 2014, staff will hire contract labor to continue ongoing weed removal efforts targeting known

locations (e.g. upper Cucumber, gondola corridor, Josie's cabin) and existing, notorious non-native species (e.g. yellow toadflax, Canada thistle, false chamomile). However, a growing reed canary grass infestation in Cucumber Gulch prompted staff to solicit a new proposal from Claffey Ecological Consulting to eradicate reed canary grass without using herbicides. The attached proposal, involves a persistent removal and reseeding effort over six years and a research effort to map, document, and verify removal methodology for the invasive species. The design, mapping, and project management costs decline over the six year timeframe, but involve significant labor costs for manual weed removal. Total project costs are outlined in the attached proposal. BOSAC should be aware that the $5,000 research costs listed below accompany a $7,500 labor expense covered elsewhere in the budget.

Based on the attached proposals, the total Cucumber-related 2014 research program costs are as follows:

EcoMetrics	$44,060
Emerald Planet/Carello	$37,151
Claffey Ecological/reed canary grass	$5,000
2014 Cucumber proposal budget	$86,211

Together, the cost of the three Cucumber-related research proposals exceeds the current $80,000 Cucumber monitoring budget outlined in the 2014 open space budget by $6,211. This cost increase is prompted by the vegetation survey, doubled docent coverage, and the reed canary grass eradication project. Staff seeks BOSAC's review of these proposals and a recommendation regarding this year's projects and budget. Any excess monitoring costs would have to be made up from cost savings in a different part of the open space budget.

Please review the attached Cucumber Gulch Preserve and trail use monitoring proposals and answer the following questions:

1. ***Does BOSAC have any questions regarding the content of the Cucumber Gulch–related monitoring proposals?***
2. ***Does BOSAC support the monitoring proposals for 2014, including the reed canary grass eradication project?***
3. ***Does BOSAC seek any edits or additions to the Cucumber proposals?***
4. ***Does BOSAC recommend a 2014 Cucumber monitoring program as outlined or with revisions?***

Wellington Trail Project

As briefly discussed in February, staff requested a license agreement from Xcel/Public Service Company of Colorado (PSCo) to cross a portion of the substation property on Wellington Road and construct a new singletrack trail from the junction of Wellington Road/Campion Trail to the beginning of the Wellington Trail, near the Town stables. Staff commissioned a survey to locate the proposed trail across the PSCo parcel. The remainder of the trail would be on Town open space property. If approved by PSCo, the requested license agreement would allow staff to pursue construction of a trail to bypass a

portion of Wellington Road, provide an interpretive opportunity for the Reliance Dredge site, and better connect Town neighborhoods to the larger Golden Horseshoe/French Gulch trail network.

Staff requests BOSAC review the attached draft map and answer the following questions:

1. ***Does BOSAC have any clarifying questions regarding the proposed new trail project?***
2. ***Does BOSAC support staff's continued work on this trail project?***

Pump Track Relocation

Staff has been asked to evaluate the possibility of relocating the pump track facility adjacent to the Stephen C. West Ice Arena parking area to allow for a potential parking lot expansion. Attached is the memo submitted by staff. As outlined in the memo, a replacement pump track would require approximately ½ acre of flat land, ideally with some access to water to assist with construction and maintenance.

Since that time, Tony Overlock suggested hiring a contractor to complete the relocation work. With a contractor, the upfront cost would be higher, but would also allow the Town trail crew to focus on other maintenance needs while the pump track gets reconstructed.

Staff requests BOSAC review the attached memo and answer the following initial questions related to the pump track:

1. ***Does BOSAC support devoting money to reconstruct the Town pump track to a new location?***
2. ***If support for the relocation exists, does BOSAC have a preferred pump track relocation site?***
3. ***Would BOSAC prefer a staff-driven or contractor-based approach to the reconstruction?***

Trails Open House

This year, staff plans to host a trails open house in conjunction with the May or June BOSAC meeting. The goal of the open house would be to share with the general public the trail projects that the Town, County and USFS have planned for the next few years, and answer any public questions or comments regarding trail priorities and goals. We would like to invite County and USFS representatives to provide a broad vision for the trail work to be performed this summer and in the coming years. The timing of the open house just before the summer trail season will also provide an opportunity to educate the public on avoiding muddy trails.

Staff requests BOSAC answer the following questions:

1. ***Does BOSAC support the concept of a trails open house in conjunction with its May or June meeting?***
2. ***Does BOSAC have any recommendations for hosting or organizing the open house?***

BOSAC Retreat

Last year's BOSAC retreat to Aspen proved informative for both staff and open space commissioners. This year, staff seeks BOSAC's direction to determine what specific issues should be highlighted during a potential retreat. Also, based on the site visit objectives, what potential locations would be most useful to visit? The focus on trail/trailhead management continues to be a pertinent issue for BOSAC and staff, but staff seeks additional input from BOSAC regarding overall retreat goals.

Specifically:

1. ***Does BOSAC support staff organizing a BOSAC retreat in April or May?***
2. ***If so, what issues does BOSAC want to highlight as the focus for a potential retreat?***
3. ***Based on that input, what other programs would serve as good locations for a BOSAC retreat?***

Roll Call
Jeff Cospolich called the February 17, 2014 BOSAC meeting to order at 5:35 pm. Other BOSAC members present included Chris Tennal, Ben Brewer, Jeff Carlson, Jeffery Bergeron and Craig Campbell. Staff members present were Peter Grosshuesch, Scott Reid, Mark Truckey, Shane Greenberg and Chris Kulick. Erin Gigliello, Jeff Zimmerman from the Breckenridge Ski Resort, Shelly Grail from the U.S. Forest Service, Dr. Christy Carello of Emerald Planet, and Mark Beardsley of Ecometrics were also present.

Approval of Minutes
The minutes were approved as presented.

Public Comments
There were no public comments.

Staff Summary
North Main Street Park Preliminary Plan
At its February 25th meeting, Town Council is scheduled to review preliminary designs for the North Main Street Park. The park will be located south of the Local Market and is intended to serve as a gathering space, a visual draw from Main Street to the Carter Museum, and relief from development on Main Street. If BOSAC members are interested in hearing further discussion of the draft plans, please plan to attend the February 25th Council work session.

Mr. Campbell – Asked questions about material abbreviations on the plan. (Mr. Greenberg – Clarified the abbreviations.) I love the look, but question the functionality of an amphitheatre due to size and proximity to Main Street. (Mr. Greenberg – The amphitheatre idea was raised through Engage Breck, but its size was minimized for the reasons you stated.) Are we missing an opportunity for historical interpretation? (Mr. Greenberg – We are going to integrate historical elements through the placement of public art.)

Mr. Tennal – It seemed like there was quite a bit support for a quiet, natural place of reflection and this proposal seems like a children's playground. (Mr. Greenberg – We tried to meet the demands of both those that desired a playground and a natural park.)

Mr. Carlson – I like the idea of the amphitheatre and hosting amphitheatre functions, similar to the Frisco Historic Park.

Mr. Grosshuesch – The overall desire is to have a place on Main Street to take a break and relax while shopping, dining, etc.

Mr. Brewer – There are a lot nice elements in the park design. I will have further comments during the Council worksession.

2014 VOC Project Date
Good news! The Upper Turk's Trail project has been selected as a "30th Anniversary Commemorative Project" by Volunteers for Outdoor Colorado (VOC) in 2014. The project will complete a long-envisioned connection between the existing Turk's Trail and Sallie Barber Road

alignments, and will be used to highlight VOC's 30th anniversary of statewide volunteer efforts. Please plan on attending at least one day of the volunteer weekend: July 26-27, 2014. More information is available on the VOC website.

Wellington Trail Project
Staff has requested a license agreement from Xcel/Public Service Company of Colorado (PSCo) to cross a portion of the substation property on Wellington Road and construct a new singletrack trail from the junction of Wellington Road/Campion Trail to the beginning of the Wellington Trail, near the stables on the Stilson Lot. If approved by PSCo, the license agreement would allow staff to pursue construction of a trail to bypass a portion of Wellington Road, provide an interpretive opportunity for the Reliance Dredge site, and connect Town neighborhoods to the larger French Gulch trail network. Staff will update BOSAC regarding progress on this potential project.

Mr. Cospolich – Will this trail eventually connect up to the French Gulch trails. (Mr. Reid – As directed by BOSAC, we plan to eventually (2015?) construct the Wellington Bridge following the development of phase II of the Wellington Neighborhood.) This doesn't connect very well to the Weisshorn neighborhood. (Mr. Reid – It does not, but it is an important connection to the Corkscrew and Vista Point Trails, and it gets bikers off of Wellington Rd).

Trails Open House
This year, staff will host a trails open house in conjunction with the May or June BOSAC meeting. The goal of the open house will be to share with the general public the trail projects that the Town and County have planned for the next few years, talk about trail volunteer opportunities, and to field any public questions or comments regarding trail priorities and goals. Staff will provide additional information to BOSAC as the meeting approaches. The timing of the open house just before the summer trail season will also provide an opportunity to educate the public on avoiding using trails before they have dried out.

Open Space
USFS Referral: Breckenridge Ski Resort Master Development Plan Addendum
Staff presented a referral from the U.S. Forest Service (USFS) pertaining to the Breckenridge Ski Resort (BSR) Master Development Plan Addendum. The USFS is seeking Town comments on the BSR proposal to increase on-mountain summer and winter amenities.

Based in part on the 2011 passage of the *Ski Area Recreational Opportunity Enhancement Act (SAROEA),* BSR has proposed multiple new facilities on National Forest lands within the current ski area boundary. The intent of the SAROEA was to encourage additional year-round ski area facilities and provide more diverse recreational offerings on the National Forest. Accordingly, BSR has designed and proposed a wide-ranging addendum to their existing Master Development Plan to include: multiple zip lines and canopy tours, new and revised hiking/mountain biking trails, ropes courses, climbing walls, expanded Vista House and Peak 7 Hut, realigned upper Four O'clock Road, new observation deck, summer operation of the Independence, 6-Chair and Imperial Express, expanded off-highway vehicle tours, and associated revegetation efforts.

In general, BSR's proposal is consistent with the intent of the SAROEA. It is logical to focus summer visitation on the ski area, where the lifts and other infrastructure exist to accommodate high

visitation levels. Directing more on-mountain summer use could also help reduce recreational pressure on Town-owned open space parcels such as Cucumber Gulch Preserve. However, the USFS seeks scoping comments from the Town, Summit County and other entities to evaluate BSR's expansive proposal. The primary intent of the scoping process is to identify all issues that should be addressed in the environmental review that will be conducted on the proposal. The Town will have another opportunity to comment on the proposal when an Environmental Impact Statement (EIS) is drafted for the proposal. Scoping comments will be discussed by Town Council at its March 11th work session and are due to the USFS by March 12th. Also, a public open house regarding the proposal is scheduled for March 5th between 4:30-6:30 at the Mountain Thunder Lodge (50 Mountain Thunder Drive).

To help frame the BOSAC discussion, staff offers the following points for consideration, drawn largely from previous Town Council/BOSAC comments regarding proposed ski area facility expansions:

- Surface drainage from Peak 8 into the existing Boreas Creek inlets and Upper Cucumber Gulch continues to be a high priority and keen concern for the Town. BSR is responsible for enhancing drainage and ski slope revegetation efforts in an effort to reduce sediment loads in Cucumber Gulch via the 60" culvert. The additional infrastructure included in this proposal underscores the need to install and effectively maintain sediment traps to reduce sediment transport. The revegetation element of the proposal is intriguing, but short on details.

- Recently, a draft base area master plan for the portions of the ski area **not** on National Forest was submitted for Town staff consideration. The Town seeks a defined base area plan to better define all of BSR's seasonal activities, including the summer fun park improvements and the winter activities such as lift maze configurations, entertainment stage location, and skier circulation. The addition of more on-mountain infrastructure proposed by BSR underscores the need for an integrated base area plan that provides clear direction for the future management of crowd control, special event management, and infrastructure needs.

- Extending the Peaks Trail through the ski area to bypass Cucumber Gulch and the pedestrian-only Peak 8 base area would provide a better trail connection to Town from this popular trail. As part of the Town Council approval to operate the Breckconnect gondola during summer months, BSR agreed to pursue the NEPA analysis and construction of this route. The Peaks Trail extension warrants evaluation via this NEPA process, even though portions of the proposed trail would occur outside of the ski area permit boundary.

- Visual impacts of the various proposed zip lines and observation towers should be thoroughly evaluated to determine whether the associated infrastructure will affect the Breckenridge's backdrop. Protecting scenic vistas and discouraging ridgeline development is an important Town planning and open space goal.

- Part of the intent of the SAROEA is to focus recreational facilities on already-impacted areas with existing infrastructure. More locally, BSR committed to limiting on-mountain facilities north of the Peak 7 terrain as part of the recent Peak 6 expansion. The proposed Ore Bucket canopy tour could violate both of these goals, given the new roads, cables, and towers

necessary to complete the proposed canopy tour. Additional impacts to forest cover and wildlife habitat could be limited if the proposed recreational facilities were focused on the interior portion of the ski area rather than the periphery.

- The proposed goal to realign upper Four O'clock Road to make it more sustainable is laudable, but highly constrained topographically. In general, the Town supports on-mountain drainage improvements on all current and future trails, roads, and ski runs that 1) promote water infiltration and vegetative regeneration, and 2) limit soil transport and 'flashy' surface flows.

- The proposal to increase on-mountain off-highway vehicle tours could negatively impact the area wildlife habitat and the 'forest experience' sought by many summer visitors.

- As a gold-level Bicycle Friendly Community, the Town of Breckenridge generally supports improvements to the existing mountain biking and hiking trail network on the Breckenridge Ski Area. Expansion of the trail system, with a goal of providing lift-served access to intermediate flow trails would significantly improve the Breckenridge's overall bike-related offerings.

Mr. Bergeron – Has there been a wildlife study? (Ms. Grail – There will be a forthcoming wildlife study as part of the EIS. The scoping period also helps us produce alternatives to the proposal.)

Mr. Campbell – What is the difference between a zip line and a canopy tour? (Mr. Zimmerman - A zip line is a straight line course down the fall line. A canopy tour generally follows topography through several sections, and takes two to three hours to complete.)

Mr. Carlson – Will the proposed towers mimic the existing zip line towers? (Mr. Zimmerman – The look of the towers is somewhat dictated by the required clearance. The towers need to have enough clearance to not obstruct ski terrain.) The current zip line towers are too high and to me look like an un-finished construction site. I would prefer not to see additional towers that look similar.

Mr. Bergeron – Ore Bucket and Sawmill are areas that are pretty much undisturbed in the summer. I think the summer development should be more focused in areas that already have development, and should avoid the Ore Bucket and Sawmill areas.

Mr. Zimmerman – The existing zip line towers on the mountain were designed to mimic historic mining infrastructure, but maybe they didn't hit the mark, as far as Mr. Carlson is concerned. Also, the Ore Bucket canopy tour will provide visitor access to a forest that is beautiful and would be inaccessible to most people without the canopy tour. The canopy tour will provide people with a safe, secure way to see a beautiful forest with spectacular views. Once it is constructed, the visitors won't even be touching the ground.

Mr. Campbell – How is the ski area going to prevent dirt bikers and OHVs from using the off road trails? (Ms. Grail – It is a Forest Service closure and is gated). My biggest concerns are the visual impacts and wildlife impacts from this proposal. (Ms. Grail – Visual simulations will be part of the draft EIS).

Mr. Zimmerman – Nothing to be implemented in the summer can impact skiing uses. Overall, we are targeting families and trying to expose them to the outdoors with the proposed new summer attractions.

Mr. Bergeron – How many towers and associated disturbance will be necessary for the Ore Bucket canopy tour? (Mr. Zimmerman – 9 towers are proposed). How will they be installed? (Helicopter and access by skid steer route improved to be a mountain bike trail corridor. Towers will be supported by guy wires and will be fenced to protect skiers.)

Mr. Campbell – What happens if we have another MPB or similar infestation and the infrastructure becomes a lot more visible? (Ms. Grail- There is a spruce bark beetle in southern Colorado, which could certainly head north.)

Mr. Tennal – What is the fee structure for the attractions, is it ala carte or full day unlimited pass? (Mr. Zimmerman – It is both, we have 48 different pass options. We would love to simplify and only have an all day pass.) I commend you for including hiking; will there be any conflicts between hikers and motorized uses? (Mr. Zimmerman – Those uses will be separated.)

Ms. Grail – As part of this proposal, we are urging the ski area to rehab and improve many of the existing mountain bike trails that are in rough shape and not just expand with new trails.

Mr. Brewer – Where is the power to enforce the hydrology plan? (Ms. Grail – we constantly monitor the resort's hydrology.) Do you release a report card? (Ms. Grail – Not currently, but we meet with the ski area staff multiple times per year to outline improvements and performance expectations.)

Mr. Cospolich – I support the staff memo and reiterate my concerns over sediment management. I would also urge the ski area to build some intermediate-level flow trails as part of this plan.

Mr. Bergeron – Where are we on developing the Peaks Connect Trail? (Mr. Reid – The ski area is including the Peaks Connection trail concept in this NEPA analysis, but it is outside of the ski area's permit boundary.) (Ms. Grail – We will need to spend some time this summer looking at the feasibility of an alignment. We can include it in this project's NEPA.)

Mr. Brewer – We need to solve the Peak's Connect Trail problem. If it is not solved, it is a real deal breaker for me. You also need to drastically reduce the sediment loading into the Gulch. I worry the canopy tours are a "kill it to show it off" scenario. This proposal seems to be a disaster for wildlife because of the summer season. (Mr. Carlson - I agree with Mr. Brewer.)

BOSAC – All agreed with staff's bullet points.

Breckenridge Nordic Center Facility Use Request
At its February 11th meeting, Town Council considered a request from Gene and Therese Dayton of the Breckenridge Nordic Center. The proposal seeks approval to host weddings and other events in the new Nordic Center building. In their review of the proposal, Town Council requested BOSAC

review and comment on the potential for impacts to Cucumber Gulch Preserve by guests of the proposed Nordic Center events.

Specifically, Council was concerned about use of the trails during the seasonal closure, noise impacts to area neighbors and wildlife, and parking overflow on to local Town streets. Council suggested approving a temporary, one-year permit of Nordic Center events with conditions put in place to protect Cucumber Gulch Preserve. The Council also suggested placing fencing between the lodge and Gulch, along with educational signage, to dissuade event attendees from walking into the Gulch. Council requested BOSAC input, including conditions to be placed on the Nordic Center operations to protect Cucumber Gulch Preserve.

In summary, the Cucumber Gulch Preserve Management Plan provides the following policy direction regarding special events and uses in Cucumber Gulch Preserve:

- An 8-person group size limit exists within the Preserve boundaries.
- Despite the previous popularity of special events utilizing the Preserve, Town Council directed staff to discontinue special events in the Preserve outside of the Nordic ski season. The prohibition of special events is based the intensity and concentrated special event activity levels compared with typical recreational use and the limited habitat impacts during winter months.
- Summer trails use in Cucumber is limited until after July 1st annually, and more typically, until the first Monday following July 4th. This date was established to keep visitors out the Preserve during the incubation period and the beginning of the chick-rearing stage for many of the migratory birds that utilize Cucumber Gulch Preserve as habitat. The first Monday following July 4th date was set to specifically avoid the high volume of trail use that characterizes the Independence Day weekend and recent research that shows displacement of some wildlife species by high volumes of trail use.

With the 2012 passage of the Cucumber Gulch Preserve Management Plan, Town Council reaffirmed the policies above and also retained the discretion to overrule them.

Regarding the attached request from the Daytons, staff includes the following additional discussion points:

- If special events are approved in the Nordic facility, a clear policy regarding special event access to Cucumber Gulch is needed.
- Outdoor party tent rentals for food preparation, serving, or guest seating could significantly increase guest service capacity and, correspondingly, noise impacts to area wildlife.
- Outdoor lighting, music, or amplifiers could also affect wildlife habitat in the adjacent Preserve.
- The potential exists for guests and partygoers to leave the Nordic facility and wander into the Preserve, either on-trail or off-trail. Restricting this public access will be at least as challenging as implementing seasonal trail closures in the Preserve.

Mr. Bergeron – We need to institute an impact fee for each individual use to hire a docent to monitor the event. We should require an on-site docent or security guard for every event to ensure that no event guests go into Cucumber. Additionally, we should not allow exterior tents and limit the event to the seating capacity of the building.

Mr. Brewer – We should have a probationary period for the special event permission and consider additional fencing to discourage incursions into the Gulch.

BOSAC reached consensus regarding the following conditions of approval regarding this request:

1. No access to Cucumber Gulch Preserve should be allowed as part of the Nordic Center-based events. This limitation should be included as part of the Nordic Center/Town contract and any contract or agreement between the Nordic Center and the event hosts. A fine structure should be included for event hosts and the Nordic Center to ensure compliance with this rule. This is a year-round restriction.
2. An on-site docent/security guard should be present during all events to ensure that access is precluded to Cucumber Gulch. This guard should be on-site for the duration of the event.
3. No exterior tents should be allowed. All events should remain within or on the existing Nordic Center facility.
4. The contract or agreement between the Nordic Center and Town should include a probationary period of one year, and renewals thereafter to ensure all conditions are followed.

Forest Health Report
Staff provided a memo outlining the Town open space and joint Town/Summit County forest health efforts in the Upper Blue basin since 2008. The goal of the memo is to provide an overall report on the efforts undertaken to address forest-related issues on open space lands and adjacent properties.

Mr. Bergeron – Is the Forest Service conducting a for-profit logging operation in Indiana Creek? (Mr. Grosshuesch – We saw a cutting unit on a map but don't know the exact specifics.)

Mr. Campbell – What happens with the materials after they are hauled out. (Mr. Reid – Material utilization is very important and materials are used for various wood products, including saw logs, pellet plant, biofuels, and firewood.)

Mr. Tennal – What types of impacts will these cuts have on our trails? (Mr. Reid – Most of the impacts will occur on double tracks such as Prospect Gulch road and the Draw but portions of Slalom and the Upper Preston Way may be temporarily affected. We have tried to use the trails as cut boundaries to reduce trail impacts.)

Mr. Campbell – Will they clean up the trails after cuts? (Mr. Reid – Most likely we will have to do some maintenance after the logging.)

BOSAC supported the current action plan to complete the 75-acre Golden Horseshoe cut and Iowa Hill cleanup in 2014, and then focus on hazard tree removal until the USFS completes the cuts they have already contracted.

2013 Cucumber Gulch Preserve Research
Staff provided three documents related to the 2013 research in Cucumber Gulch Preserve. The documents included the following:

1. EcoMetrics' water quality report on the Upper Cucumber Gulch Preserve wetland restoration efforts. This report provides a broad overview of the projects and their successes, and fulfills the reporting requirements for the Army Corps of Engineers' permit. In summary, the restoration efforts have so far been highly successful in attaining the water quality and habitat value improvements sought.
2. Claffey Environmental Consulting, Inc's status report on the 2014 Boreas Creek channel restoration effort. This report summarizes the channel restoration project goals and successes, and fulfills the Army Corps of Engineers' permit reporting requirements. In general, the channel restoration project achieved the stated goals and will be monitored during spring runoff to evaluate its long-term stability and success.
3. Dr. Christy Carello's annual Cucumber monitoring report, which summarizes the results of the various wildlife-related research elements commissioned by BOSAC and Town Council. Generally, on-the-ground management and research efforts in Cucumber Gulch Preserve continue to achieve stated objectives, and can be improved to better protect sensitive wildlife habitat and species. Specific recommendations for improvement include:
    a. Bolster seasonal closures to improve visitor compliance and prevent access to the Preserve during sensitive wildlife periods.
    b. Expand the docent program to increase a management presence, particularly during the spring seasonal closure.
    c. Further restrict access to the Peak 7 underpass to prevent human encroachment in this sensitive wildlife corridor.
    d. Continue and expand noxious weed eradication efforts in the Preserve.
    e. Encourage the planting of native vegetation in surrounding development.
    f. Minimize disruptive human activities during sensitive wildlife periods.

Mr. Bergeron – The wetland remediation seemed like a phenomenal success, or am I reading it wrong? (Mr. Reid - We are cautiously optimistic.) However, we have had a big winter. Will the system be able to handle the melt off flows? (Mr. Beardsley – The big rain events are typically more impactful than snow melt.)

Mr. Beardsley – We have had a substantial turnaround in the Gulch over the last two years, so I am optimistic.

Mr. Tennal – Is there anything we are missing? (Mr. Beardsley – We will need to continue to monitor channel treatments.)

Mr. Brewer – I really liked the before and after photos, they were very illustrative.

Mr. Cospolich – Is there any desire to bring in more beavers? (Mr. Reid – Not at this time. Beaver relocation is regulated by Colorado Parks and Wildlife and they are not supportive of the introduction of any more beavers at this point.)

Ms. Carello – We still have a lot of people on closed trails and see a higher amount of users mid-week versus the weekends. The docents were effective when they were in place but still the number of violators doubled from the previous year.

Mr. Cospolich – Seems like docents are fairly budget conscious and effective.

Mr. Tennal – We need to get the awareness of what has happened in the Gulch out to the media and tout our success a bit more.

Mr. Bergeron – Money that has been spent in Cucumber Gulch has been well spent.

Mr. Brewer – We need a really good summary of all this info. In its present form, it is a bit overwhelming.

Executive Session
Mr. Bergeron – Motioned to move into executive session at 8:06 pm to discuss property acquisition negotiations.

Mr. Tennal seconded the motion.

Mr. Bergeron – Made a motion to come out of Executive Session at 8:14 pm. Mr. Brewer seconded the motion.

Next Meeting
The next regularly scheduled meeting is on Monday, March 17, 2014, at the Stephen C. West Ice Arena (189 Boreas Pass Road).

Mr. Bergeron made a motion to adjourn the meeting, which was seconded by Mr. Carlson.

The meeting was adjourned at 8:15 p.m.

_____
Jeff Cospolich, Chair

Concept Plan
NORTH MAIN STREET PARK

Town of Breckenridge March 11, 2014

0 8 16 24 32

scale: 1/8" = 1'-0"

north

TOWN OF BRECKENRIDGE

urban play studio

All Around Recrea

TOWN OF
BRECKENRIDGE

March 12, 2014

Scott Fitzwilliams, Forest Supervisor
c/o Roger Poirier, Project Leader
U.S. Forest Service
120 Midland Avenue, Suite 140
Glenwood Springs, CO 81601

Dear Mr. Fitzwilliams:

Thank you for the opportunity to comment on the scoping notice for the Breckenridge Ski Resort (BSR) project proposal under the 2013 Master Development Plan (MDP) Addendum, dated February 4, 2014. The Town of Breckenridge appreciates the opportunity to comment on BSR's proposal. We understand that this is the initial scoping comment period, and that there will be additional opportunities to comment on a draft EIS document to be prepared by the U.S. Forest Service (USFS). We also appreciate BSR and USFS staff members attending recent Breckenridge Town Council and BOSAC meetings to better articulate the proposal in detail.

In general, the Town of Breckenridge supports BSR's goals to expand year-round recreational offerings on the ski area pursuant to the Ski Area Recreational Opportunity Enhancement Act of 2011. The use and expansion of existing on-mountain infrastructure to provide safe, secure nature-based recreational activities for visitors is consistent with the Town's recreational amenity and visitor experience goals. If completed, the proposal would be a significant year-round economic driver for the Breckenridge community.

The Town and BSR have successfully collaborated on many previous projects, including the permanent protection and ongoing management of Cucumber Gulch Preserve. We appreciate BSR's collaborative approach to this and other issues. It is in this partnership spirit that the Breckenridge Town Council offers the following issues to be more thoroughly vetted via the planning process and draft EIS document. We believe that by outlining the following topics to be further analyzed during the scoping period, the Town, BSR, and the USFS will be able to successfully meet our shared expectations for the proposal.

Issues warranting USFS analysis are identified as follows:

- Surface drainage from Peak 8 into the existing Boreas Creek inlets and Upper Cucumber Gulch continues to be a shared priority for both the Town and BSR. In fact, the Town and BSR recently split expenses in a wetland restoration effort in Upper Cucumber Gulch which has successfully returned a beaver population to the area. Protection of this precious wetland resource continues to be a mutual goal for the Town and ski area. BSR has previously acknowledged and acted on its responsibility for enhancing drainage and ski slope revegetation efforts to reduce sediment loads in Cucumber Gulch Preserve via the 60" culvert. The additional

infrastructure included in this proposal emphasizes the need to install and appropriately maintain the on-mountain sediment traps to reduce sediment transport into the protected wetlands of Cucumber Gulch. We ask that the USFS review this issue in the draft EIS document to ensure wetland protection efforts are consistent across jurisdictions.

- The revegetation element of the proposal is also a high priority for both the Town and BSR. Improving native vegetation on the ski area (e.g. ski runs) promotes groundwater infiltration, minimizes runoff volumes and peak flows, reduces sediment transport, and supports joint BSR/Town downstream wetland protection efforts. We support BSR and the USFS articulating and executing native revegetation efforts across the ski area. To be truly effective, any on-mountain revegetation efforts will need to successfully promote native grass and plant growth while not relying heavily on chemical fertilizers and herbicides, both of which affect wetland health and are prohibited in Cucumber Gulch Preserve. Applying fertilizers and herbicides on areas that drain into the 60" culvert could affect water chemistry, vegetative growth, amphibian viability, and overall wetland protection efforts in Cucumber Gulch. We ask that the USFS and BSR cooperatively develop a coherent, benchmarked on-mountain plan to maximize native ground cover revegetation while minimizing the use of fertilizers and herbicides.

- Recently, BSR submitted to Town staff a draft base area master plan for the portions of the ski area **not** on National Forest lands. The addition of more on-mountain infrastructure proposed by BSR emphasizes the need for an integrated base area plan that provides clear direction for the future management of crowd control, special event management, and infrastructure needs. We appreciate the USFS and BSR working cooperatively with the Town to ensure that the Town-focused base area plan supports the infrastructure plans located on the National Forest, and vice versa. These two planning efforts should support inter-jurisdictional, cooperative land management.

- As has been previously discussed with both BSR and USFS staffs, extending the Peaks Trail through the ski area to bypass Cucumber Gulch and the pedestrian-only Peak 8 base area would improve trail connectivity between Town and this popular trail. As part of the Town Council approval to operate the Breckconnect gondola during summer months, BSR agreed to pursue the NEPA analysis and construction of this route. The projects proposed under the MDP Addendum offer an opportunity to complete this vision, and we appreciate BSR including the concept in the proposal. We request that BSR and the USFS thoroughly evaluate the proposed Peaks Trail extension via this NEPA process, even though portions of the proposed trail would occur outside of the ski area permit boundary.

- Wildlife impacts resulting from the proposed additional infrastructure warrants thorough evaluation during this NEPA analysis. Currently, summers provide a respite for wildlife because on-mountain activities are limited geographically and seasonally. New facilities and programming on the ski area, as outlined in this proposal, will inevitably encroach on wildlife habitat and could affect wildlife viability. Specific wildlife-focused concerns include the following:

- The proposed Ore Bucket-based canopy tour and mountain bike trail increase human disturbance and activity in a habitat area that currently receives limited summer recreational use.
- The proposed Sawmill zip line and canopy tour could also fragment wildlife habitat that currently has few human visitors during summer months.
- Above timberline activities should be limited to the extent possible to protect alpine wildlife habitat.
- Minimizing tree cover loss should be a high priority in this proposal to protect wildlife habitat.
- To be consistent with Cucumber Gulch Preserve management, seasonal and temporal trail closures should considered to reduce wildlife impacts during sensitive wildlife periods.
- Overall, directing summer recreational activities on the already-impacted interior portions of the ski area, rather than the periphery, warrants USFS evaluation.

- The visual impacts of the various proposed zip lines, ropes courses, canopy tours, and observation towers should be analyzed to determine whether the associated infrastructure will affect Breckenridge's visual backdrop. In the past, BSR has demonstrated a willingness to place lift towers and other infrastructure to protect scenic vistas and discourage ridgeline development. We ask the USFS to work with BSR to analyze the visual impacts of the proposed recreational infrastructure. Our shared goal is to ensure that any new facilities are minimally visually intrusive from Town and the surrounding areas.

- The proposed goal to realign upper Four O'clock Road to make the route more sustainable is commendable, but highly constrained topographically. In general, the Town supports on-mountain travel system improvements that enhance recreational and administrative use, improve hydrologic function, improve vegetative regeneration, and limit sediment transport. We recommend that the USFS thoroughly evaluate this realignment proposal with these goals in mind.

- The proposal to increase on-mountain off-highway vehicle tours could negatively impact the area wildlife habitat and the 'forest experience' sought by summer visitors. We request the USFS evaluate this portion of the BSR proposal with the goals of minimizing impacts to the recreational experience of other, non-motorized visitors, ensuring the routes used for the off-highway vehicle tours can sustainably support the proposed use, and minimizing the above-timberline tours in an effort to preserve functional alpine wildlife habitat.

- The Town of Breckenridge generally supports improvements to the existing mountain biking and hiking trail network on the Breckenridge Ski Area. Expansion of the summer trail system, with a goal of providing lift-served access to intermediate flow trails, would significantly improve the Breckenridge's broader bike-related offerings. Additional details are needed regarding the design and construction of the proposed "15 miles of new and rerouted mountain bike trails". Admittedly, increased human recreational access across the ski area will inevitably result in wildlife impacts. However, as mentioned above, we ask the USFS and BSR to creatively design the proposed infrastructure to locate it in the core of the existing facilities and

away from currently undeveloped (or lightly developed) peripheral areas. Also, we believe two specific public concerns regarding this proposal warrant further review: 1) Ensuring that necessary improvements and upgrades to the *existing* trail network are planned and implemented, and 2) Establishing and designating access routes for uphill, non lift-served users.

Thank you for the opportunity to comment on this proposal. If you have any questions or concerns regarding this letter, please contact Scott Reid at 970-547-3155 or ScottR@townofbreckenridge.com.

Sincerely,

John Warner, Mayor

Cucumber Gulch Preserve: State of the Habitat 2013

Monitoring Functional Assessment of Wetland Habitat: A Summary

Mark Beardsley, EcoMetrics, LLC
Brad Johnson, Johnson Environmental Consulting, LLC
February 28, 2014

Introduction

In 2011 we completed a comprehensive assessment of the functional condition of wetland habitats in Cucumber Gulch Preserve (CGP) using the Functional Assessment of Colorado (FACWet) method. Since that original assessment, major restoration work has occurred in Upper Cucumber Gulch, while resort development has been continuing above the preserve as a whole. We have been monitoring conditions in Cucumber Gulch Preserve (CGP) since 2011 using both quantitative and qualitative methods aimed at documenting treatment results and trends in wetland health. This report is a short summary of current conditions based on results through 2013. FACWet provides a convenient framework for organizing results and observations in a meaningful way to describe changes to ecological functioning, and this report is essentially a synopsis of evidence for how FACWet variables have changed for the wetlands in CGP during 2012-13.

Detailed quantitative monitoring was made in Upper CG to provide an appraisal of restoration success in accordance with US Army Corps of Engineers (Corps) permit requirements, while a more ambient qualitative approach was taken over the rest of CGP including the Lower CG and Peak 7 Side Slopes. Monitoring activities in 2012-13 included the following:

<u>Upper CG</u>

- Water table monitoring using groundwater wells with data-loggers
- Soil chemistry monitoring using redox probes
- Channel surveys along Boreas Creek
- Water discharge monitoring at the Boreas Creek inlet culvert using velocity and depth sensors with data-logger
- Spreader Pond surveys to document bed changes and volume of accumulated sediment
- Approximately 10 photopoints along Boreas Creek channel before and after channel treatment

<u>All of CGP</u>

- Approximately 10 field trips to make observations
- 35 photo-points repeated each season before and during growing season
- Review of water quality monitoring data provided by Breckenridge Ski Area
- Investigation of aquatic vegetation and algae bloom in 2012

A separate monitoring report was submitted to the Town of Breckenridge ("Town") in January 2014 which describes these monitoring results in greater detail (Corps report). Digital copies of all photo-point photographs will be provided to the Town.

Stressor analysis summary

The catalog of ecological stressors we compiled in our 2011 report was revisited here in light of any changes that were observed. Suspected changes to the level of stressor impacts on the list are described in Table 1. No new stressors were added to the list. For most stressors on the list, we found no evidence to suggest a change in the level of functional impairment. Stressors that did appear to change are described below.

Exterior stressors

Several additional lots were developed within the CGP buffer area between Shock Hill and the Peak 8 base area suggesting a slight increase in impact from the residential development stressor (#1). Demolition of the Bergenhoff building and construction of a new lodge at that site no doubt introduces additional stresses such as construction related noise, dust and runoff, increased road runoff, noise and possibly minor hydrologic alterations (#5). Additional engineered drainage to accompany the base area developments is either under construction or planned which will necessarily increase the severity of the drainage modification stressor (#4). Improvements made to the drainage system on the ski area itself may lessen the impact of this stressor, but we did not actually observe any significant improvements first hand. For each of these three stressors, the change in impact level is fairly small relative to the magnitude of these stressors since the level of impact was already so high. However, the changes do contribute additional cumulative effects. The ecological impacts of the elevated stressors were not readily evident, thus we conclude that either the increase in stress is too minor to cause observable ecological impairment, or the impacts of land use changes outside of the Preserve have not yet manifested in the wetlands.

Edge stressors

No significant change was observed for most of the edge stressors on the list. The exceptions have to do with increased human activity at the Stables Lot (#14) (which was used as a construction staging area) and increased human presence at the Ski Hill Road bridge (#13) (documented in the 2013 report by Christy Carello and Elizabeth Kelso [CC/EK]) which is significant because this is a critical wildlife movement corridor that connects CGP to adjacent habitats. Neither of these stress increases are particularly worrisome, but they do again add to the cumulative effects acting particularly on connectivity and buffer condition of the wetland habitats.

Interior stressors

The most significant changes to human stressors on CGP are the positive effects of restoration efforts that have so far proven successful at reducing the impacts of beaver loss (#23), sedimentation (#24), and incision of Boreas Creek (#25) at Upper CG. Improvements in these categories are described in detail in our Corps report, and the net result so far appears to be a very significant change for the better.

Elsewhere in CGP, the effects of stressors related to the gondola clearing (#26) and the existing trails (#28) may be slightly increased based on reports in CC/EK of increased weed occurrence in the former and increased human use on the latter. By comparison, these are relatively small additions of stress. For the weed and invasive species stressor, the effects of recent changes are mixed. In Upper CG, we

saw a dramatic reduction in weed cover following rehydration of dried ponds and wetland areas. At the same time, phalarus (reed canarygrass) patches in Upper CG grew thicker and expanded in 2012 and 2013, and additional infestations are described in the CC/EK report.

Reports of elevated salts, metals, and nutrients indicated some minor level of stress from water quality in 2011. Upon further investigation, most of these issues were determined to be the result of natural variation or minor impairment. Specifically, we reviewed the latest water quality lab sample results, surveyed the affected areas with hand-held meters, and investigated the extent and causes of elodea and algae blooms in 2012 (results are described in our Corps report). Based on these results, the effect of this stressor is still regarded as minimal.

FACWet score adjustment: Reassessment of wetland functional condition

FACWet variable scores are summarized in Table 2.

Buffer and Landscape Context

Slight downward adjustments to both the Habitat Connectivity variables (V1 and V2) and Buffer Capacity variable (V3) are justified due to the inferred increase of several influential stressors from 2011 to 2013. These include additional residential and commercial development within the buffer area and habitat connectivity envelope at the Peak 8 base area and in neighboring residential subdivisions. While these changes are relatively small, the cumulative effect of developing these areas to full capacity has an increasing impact on the ability of these areas to function as buffer to the wetlands of CGP, and it increases the isolation of these habitats by further hindering migration and dispersal of organisms to and from CGP. These changes are reflected in a decrease in score from C to C- for Habitat Connectivity and a similar decrease for Buffer Capacity. Buffer Capacity was scored as a range from B to F in 2011, and that range is still appropriate in 2013, but there has been some net loss of buffer capacity within that range.

Hydrology

All of the hydrology variables, Water Source (V4), Water Distribution (V5), and Outflow (V6) were significantly improved at Upper CG, and these improvements carried over to modest increases to hydrology for Lower CG as well. In Upper CG, quantitative flow and water table data is solid evidence to document the improvement to Source and Distribution of water in this area and is the basis for adjusting the score from D to B for Source and D- to B for Distribution. Likewise, the grade for water Outflow from Upper CG was adjusted from D to B due to the reduction of flow concentration within Upper CG and to restored hydraulic head and reactivated distributary channels at the restored Reset Pond. Evidence to justify this shift is qualitative observation, but the improvement is obvious.

The improvements to the hydrology in Upper CG and restoration of the Reset Pond carry over to Lower CG as well. In 2011, the main stressor acting on Water Source to Lower CG was an altered pattern of surface water delivery from Upper CG, which is roughly equivalent to the Water *Outflow* variable for Upper CG. Thus, the Water Source of Lower CG has benefited from improved Upper CG Water Outflow characteristics. Groundwater sources appear to be unchanged. The net effect on the Water Source

variable for Lower CG is an upgrade from B- to B. Similarly, water source is improved from C+ to B- to reflect that same shift. In the case of Lower CG, evidence for the adjustments to hydrology variable scores is qualitative and based on first principles. No quantitative data for these hydrologic improvements was collected and because data of that type are expensive to collect, we do not recommend doing so unless observational monitoring reveals negative changes that need to be validated.

Habitat

Our monitoring results indicate no change to any of the habitat variables other than in Upper CG where variable scores improved significantly. The Geomorphology variable (V7) was raised from D to B based on the significant work that was completed to re-establish defunct ponds, treatments to reduce incision on the Boreas Creek channel, removal of accumulated allochthanous sediments, and restoration of sediment deposits. The treatments, which included dredging of the ponds and restoring breached beaver dams in addition to the channel and grading work, were further improved when beavers reoccupied the area in 2013. Reoccupation of Upper CG by beaver was the underlying goal of restoration efforts, thus restoration is seen as being highly effective and successful to this point. Physical surveys and qualitative observations of these positive geomorphic changes justifies our upward adjustment of this variable score.

The Chemical Environment variable (V8) is extensively monitored through water quality sampling. Those data show that analyte concentrations have remained relatively stable and provide no basis for adjusting this variable score for most of CGP. Our investigation of an elodea and algae bloom in 2012 which could have indicated increased nutrient pollution also resulted in the lack of evidence for any major water quality change. Water quality has always been good throughout CGP, and this excellent level is being maintained. Soil chemistry, on the other hand, was identified as being highly altered in Upper CG in 2011 due to unnatural drying and a non-reduced redox environment. This resulted in an overall score of D for Chemical Environment (which accounts for both water and soil chemistry) at Upper CG in 2011. The D grade has been elevated to B based on 2013 quantitative data from soil redox probes, which is further supported by direct observation of improved water distribution that rewetted the unnaturally dry areas.

The Vegetation Structure and Complexity variable (V9) remains unchanged except at Upper CG where it is upgraded from C to B-. The justification for this improvement is the marked decrease in weed cover and bare ground that occurred when the pond areas were restored. This evidence is qualitative, though, as quantitative vegetation or detailed weed surveys were not repeated this season. A disturbing observation is the recent outbreak of reed canary-grass into the Upper CG area. Should this invasive weed continue to spread, structure and complexity of the vegetative community could suffer.

Conclusions

The functional condition of wetland habitats in CGP was significantly improved by the restoration efforts in Upper CG that took place in 2012 and 2013. These efforts addressed the three major issues that we identified in our 2011 assessment report which were: 1) hydrologic alterations; 2) increased

sedimentation; and 3) the loss of beavers. The results of restoration treatments are promising. If the improvements persist, then excellent habitat functioning will persist. Continued high performance must not be taken as a given, however. Cucumber Gulch is no longer a passively functioning natural aquatic system. If habitat improvements are to endure, they will require continued vigilance and mandatory ongoing maintenance. Given that the primary impacts to sediment and flow regime are the result of stressors that originate outside of the Preserve where their mitigation is out of the Town's control, the strategy for restoration had to be to mitigate the effects of these stressors on site. Impacts to the Upper CG water source are being mitigated by facilitating the lateral spread of water across the head of the wetland after it enters the gulch through the Boreas Creek culvert. Similarly, elevated sediment loads still enter CGP, but a large amount of that load is captured in the specially constructed sediment settling cell at the inlet end of the Spreader Pond. As this pond fills, it will be necessary to physically remove those sediments by dredging the pond.

Beavers re-colonized Upper CG in 2013 which is especially encouraging. Ongoing maintenance of habitat by these "ecological engineers" is critical to the long-term functioning of CGP wetlands. Beaver populations should therefore be monitored carefully, and the Town should be prepared to take action to actively maintain the population, for example through catch-and-release of new individuals, dam maintenance or food stockpiling if the need arises.

Internal improvements aside, development up-gradient of CGP, along its edge and throughout the watershed (*ie.*, the Peak 8 Ski Area) is incrementally and gradually decreasing habitat connectivity and buffer capacity. The CGP habitats are becoming more and more effectively isolated at all points of the perimeter except at the lower (northern) end. Likewise, as external stressors such as increased sediment loads, altered hydrology, and pollution increase with increasing development, these impacts will become more and more difficult to mitigate within the site.

The Cucumber Gulch Preserve is rare example of wetland habitat that is in very good functional condition despite being nearly surrounded by development. This habitat continues to function at a high level only because the Town and its partners have committed to protect it. In addition to protection, though, maintaining this level of health will require an unfaltering, long-term commitment to the management the preserve, its buffer, and connection with other habitats.

Table 1: Table of stressors identified during the 2011 CGP wetland assessment. The last column describes changes to the stressor observed in 2012-13. Rows highlighted in pink indicate stressors whose impact was observed to increase. Green indicates stressors whose impact apparently decreased. Blue indicates stressors with conflicting observations or impacts that increased in some areas while decreasing in others.

Stressor	Description	Changes in stressors or impacts
Exterior Stressors		
1. Residential development (Shock Hill to Peak 8 Base)	Residential area (roads, infrastructure, houses, landscaping)	Several more lots were developed and homes constructed in this area in 2012-2013
2. Peak 8 snowmaking	Water for snowmaking imported from outside the drainage	No major changes observed. Did not investigate water volume records.
3. Peak 8 watershed forest clearing	Approx. 40% of forested area of Peak 8 watershed has been cleared.	Minimal increase in forest clearing.
4. Peak 8 ski area/base area drainage	Engineered drainage (roadside ditches, water bars, storm drains, culverts, pipelines, detention ponds)	Additional drainage infrastructure added at Peak 8 base area to accommodate new lodge. Possible drainage improvements on ski area.
5. Peak 8 Base area development	Commercial development	Demolition of Bergenhoff and construction underway on new lodge building at Peak 8 Base
6. Bridge Creek watershed development	Forest clearing, cul-de-sac road, Old CR3 road alignment, created wetlands, service roads	No significant changes observed.
7. Bridge Creek channelization	Bridge Creek is artificially straightened and channelized	No significant changes observed.
8. Peak 7 snowmaking	water for snowmaking imported from outside the drainage	No major changes observed. Did not investigate water volume records.
9. Peak 7 watershed forest clearing	Approx. 30% of forested area within the portion of the Peak 7 watershed that feeds Cucumber Gulch has been cleared.	Clearing related to Peak 6 expansion is within Cucumber Cr. and Barton Cr. drainages. Little to no additional clearing in CG contributing watershed.
10. Peak 7 ski area/base area drainage system	Engineered drainage (roadside ditches, water bars, storm drains, culverts, pipelines)	No significant changes observed.
11. Peak 7 Base area development	Commercial development	No significant changes observed.
12. Cloud seeding	Cloud seeding generators in use to attempt to increase winter snowfall	No significant changes observed.
Edge Stressors		
13. Ski Hill Road (P8 base to P7 base) and retaining wall	Major paved road constructed primarily of fill, openings limited to few culverts and one bridge span, hillside below is steep or retaining wall	No major changes observed. Increased human use of bridge area by humans documented.
14. Stables lot	Paved road parking area with steep retaining wall, storm drain	Staging area for lodge construction in 2013
15. Adjacent septic systems	Residential septic adjacent to Preserve	No significant changes observed.

Stressor	Description	Changes in stressors or impacts
16. Peak 8 Base drainage/detention pond	Dammed impoundment collects flow from base area surface runoff	Drainage from new lodge area diverted into detention pond.
17. Admin drainage/detention pond	Riprap channel and small detention pond collects runoff from parking areas	No significant changes observed.
18. Glenwild drainage/detention pond	Riprap channel and two small detention ponds collect runoff from road	No significant changes observed.
19. Peak 7 Base drainage distribution system	System of interconnected detention ponds and infiltration trenches	No significant changes observed.
20. County Road 3 (P7 Base to north boundary of Preserve)	Dirt/gravel improved road	No significant changes observed.
21. Historic gullies/deposition	Remnant gullies and deposition fans of large material	No significant changes observed.
22. Historic mine shafts and tailings	Remnant mine tailings	No significant changes observed.
Interior Stressors		
23. Beaver loss	Documented decline in beaver population within the preserve	Increased beaver activity observed, particularly in Upper CG and Reset Pond. Also documented in CC/EK.
24. Sedimentation	Excess sediment deposition	Sediment deposits removed from ponds in Upper CG and Reset Pond
25. Channel incision	Formation of incised channels from excess scour, active head cuts	Documented improvements through restoration treatments, but incision still present on segments
26. Gondola (cleared line and lift)	Forest cleared lift line and operational gondola	CC/EK report increased weed occurrences here
27. Nordic center trails	Maintained nordic center ski trails	No significant changes observed.
28. Foot/bike trails	Maintained and unmaintained foot and bike trails	CC/EK reports increased human use during closures
29. Weeds	Documented weed infestations (multiple species)	Additional infestations documented in CC/EK report. Decreased weed cover in Upper CG observed, but increased cover of reed canary-grass.
30. Elevated salt/ion, nutrient, concentrations	Reported increased salt/ion and nutrient concentrations	No significant changes observed.

Table 2: Adjustment of CGP FACWet Variable scores based on changes to stressors from 2011 to 2013. Variables shaded in pink are those for which a negative change is indicated. Green shading highlights variables for which a positive change is indicated.

FACWet Variable (By Area)			2011 Rating		2013 Rating		Explanation of Change
Buffer/Landscape Context	V1-2: Habitat Connectivity		***C***	***functioning***	***C-***	***functioning***	Increased stressor impacts related to further development and increased human actrivity particularly at important connectivity portals (i.e. Ski Hill Rd. bridge). Changes may be enough to justify slight downward score adjustment.
	V3: Buffer Capacity		***B-F***	***highly functioning to non-functioning***	***B-F***	***highly functioning to non-functioning***	Increased development at base area and residential areas tended to be in areas that are already very poorly buffered. Overall slight net decrease in buffering capacity.
Hydrology	V4: Water Source	Upper Cucumber	***D***	***functioning impaired***	***B***	***highly functioning***	Magnitude, timing, and energy of incoming flows is highly altered. Increased energy threatens fundamental conditions of the wetland.
		Lower Cucumber	***C+***	***functioning***	***B***	***highly functioning***	Alterations to surface flow coming in from Upper CG are mitigated in Upper CG and restored Reset Pond.
		Peak 7 Sideslopes	***B+***	***highly functioning***	***B+***	***highly functioning***	
	V5: Water Distribution	Upper Cucumber	***D-***	***functioning impaired***	***B***	***highly functioning***	Physical and hydrological changes limit water distribution to the point that wetlands are shrinking and function is fundamentally changed.
		Lower Cucumber	***C+***	***functioning***	***B-***	***functioning***	Improvements Water Source include timing and duration of flows entering Lower CG. These effects carry over to improved distribution.
		Peak 7 Sideslopes	***B+***	***highly functioning***	***B+***	***highly functioning***	
	V6: Water Outflow	Upper Cucumber	***D***	***functioning impaired***	***B***	***highly functioning***	Outflow hydrodynamic disruptions mitigated within Upper CG and at Reset Pond.
		Lower Cucumber	***B-***	***highly functioning***	***B-***	***highly functioning***	Improvements to timing and duration of flows entering Lower CG
		Peak 7 Sideslopes	***A***	***reference standard***	***A***	***reference standard***	
Abiotic and Biotic Habitat	V7: Geo-morphology	Upper Cucumber	***D***	***functioning impaired***	***B***	***highly functioning***	Restoration work included re-establishment of ponds, treatments to reduce incision, and graded and revegetated sediment plumes.
		Lower Cucumber	***B+***	***highly functioning***	***B+***	***highly functioning***	
		Peak 7 Sideslopes	***B+***	***highly functioning***	***B+***	***highly functioning***	
	V8: Chemical Environment	Upper Cucumber	***D***	***functioning impaired***	***B***	***highly functioning***	Soil saturation and redox properties improved with restored hydrology.
		Lower Cucumber	***B+***	***highly functioning***	***B+***	***highly functioning***	
		Peak 7 Sideslopes	***B***	***highly functioning***	***B***	***highly functioning***	
	V9: Vegetation Structure and Complexity	Upper Cucumber	***C***	***functioning***	***B-***	***highly functioning***	Decreased weed cover, but increase in reed canary-grass. Improved vegetation health following restored of hydrology.
		Lower Cucumber	***B+***	***highly functioning***	***B+***	***highly functioning***	
		Peak 7 Sideslopes	***B-***	***functioning***	***B-***	***functioning***	Increased weed cover at gondola cut probably not enough to justify downgrading score.

CGP 2014 Proposed Monitoring Budget

Total Budget for 2014 ..... $ 44,060

Upper CG Monitoring ..... $ 18,060

Groundwater hydrograph sites (8) ..... $ 7,200

Includes well and datalogger rental, install, maintenance, data download and screening, and compilation of a hydrograph for each of 8 sites.

Soils redox sites (8) ..... $ 2,160

Redox probe rental, install, maintenance, compilation of a soil redox plot for each of 8 sites.

Vegetation plots (8) ..... $ 2,400

Sample vegetation and wetland indicator status at each of 8 sites.

Channel surveys ..... $ 3,300

Physical cross-section, longitudinal profile, and materials surveys.

Site visits (10) ..... $ 3,000

Site visits made approx twice per month through season to make observations and to download data.

Boreas Creek stream flow ..... $ 4,000

Boreas Creek discharge hydrograph ..... $ 4,000

Includes sensor and datalogger rental, install, maintenance, data download and screening, and compilation of a hydrograph for discharge at the Boreas Creek Culvert

Incoming sediment retention (spreader pond) ..... $ 4,000

Spreader pond volume surveys (spring and fall) ..... $ 3,000

Establish approx. 8 survey transects across spreader pond, set and GPS end pins, survey transects with tape and laser level relative to benchmark elevation.

Sediment data analysis ..... $ 1,000

Analysis of data to provide an estimate of annual incoming sediment based on accumulation in the spreader pond.

Water Quality ..... **$ 3,000**

Archive and analyze TetraTech data for 2014 ..... $ 2,000

A table of water quality monitoring data are provided to the Town by TetraTech following each calendar year (separate reports for Peak 8 and Peak 7). We enter this data into databases we keep for the Town, review the data from the 2014 season and analyze them for red flags and to reassess the water quality FACWet variable.

Additional water quality sampling ..... $ 1,000

Budget set aside to perform simple targeted water quality scans if necessary.

Other general monitoring ..... **$ 5,000**

Site visits with photopoints (spring, summer, and fall) ..... $ 3,000

Repeat photos from established photopoints, create panoramas, name and organize photo files.

Beaver activity surveys and documentation ..... $ 2,000

Systematic surveys through CGP to document beaver activity including scat, peeled sticks, dam and channel building, lodge maintenance, bank dens, etc. to supplement existing studies that estimate beaver population numbers in CGP.

Reports ..... **$ 9,000**

Corps project performance appraisal report (for all phases 1-3) ..... $ 7,000

Data analysis and preparation of annual monitoring report in standard Corps format for submission as part of NW-27 permits.

Town annual summary report ..... $ 2,000

Summary report for the Town in "State of the Habitat" format

Meetings, coordination, and other consulting needs ..... **$ 1,000**

Budget to cover time for meetings, coordination, and other incidental consulting needs.

PROPOSAL
Time and Materials

TO: Scott Reid, Town of Breckenridge

PROJECT: Mapping, Design and Implementation of a **Reed Canarygrass Eradication Program** for the Cucumber Gulch Preserve (CGP) without using herbicides

DATE: 1-3-14

Background

Claffey Ecological Consulting, Inc (CEC) recently completed wetland restoration projects on behalf of the Town in the Cucumber Gulch Preserve (CGP) in 2012 and 2013. In the past decade, the beaver pond/wetland complex in the CGP has been degrading due to failure of beaver dams, and in 2011 major storm events exacerbated this degradation to the point that EcoMetrix documented portions of the Upper Gulch no longer sustained wetland hydrology. In 2012, CEC and associates repaired degraded and incised beaver dams, removed sediment from beaver ponds and helped to restore wetlands in the Upper Gulch. In 2013, beaver have returned to the system naturally and through transplants by the Town and wetland water supply and wetland system appears stable. In 2013, we completed some restoration work on the incised stream channel in the Upper Gulch, and may return in 2014 to complete additional work.

During field work for design in the summer of 2012 we noticed the reed canarygrass (*Phalaris arundinacea*) had invaded the Upper Gulch and some of the ponds in the Lower Gulch. This probably occurred over number of years. This invasive grass moved in when the beaver dams failed and the grass was able to occupy habitats on old dams, and in the drained pond bottoms. This species thrives when excess nutrients, particularly phosphorus, are present in the system and when disturbances occur to native plant communities. Genetic studies indicate that species found in wetlands may be native to North America; but invasiveness may have been increased by introgression with a Eurasian cultivar. Reed canarygrass is not on the state list of noxious weeds, but in my opinion it can degrade a wetland habitat faster than most species on the list.

I have personally watched reed canary grass take over and dominate wetland system on the western slope in the last 20 years. Eradication of reed canary grass in the Midwest and Northwest is a major endeavor. The plant is highly rhizotamus (spreads by roots), and can occupy a variety of moisture regimes in wetlands, eventually creating a monoculture in the herbaceous stratum through its growth habits. I have noticed that in willow wetlands, the willow species remain as mature individuals but little regeneration of willow occurs, and the reed canary grass occupies the herbaceous stratum.

We do not know if reed canary grass would invade and take over the entire CGP as many of the wetlands contain dense mats of native sedges. However, it could spread into the open water of the beaver ponds, and has already started that process in the Upper Gulch where we completed the beaver dam restoration project in 2012. It was determined the reason beaver dams failed was the amount of sediment trapped from the ski hill, and the lack of pond depth preventing beavers from overwintering. The beavers abandoned the ponds and they collapsed. The reed canary

grass will grow in 18 inches to 2 feet of water, and the ponds will naturally fill with sediment. The shallow margins of the ponds may eventually disappear as reed canary grass expands, and may no longer remain suitable habitat for beaver. We will need to research this more, but it does not appear reed canary grass is a forage item for beaver during the summer.

Reed canary grass is fairly easy to kill with appropriate herbicides; however, the Town cannot use herbicides in the CGP thus requiring physical control methods. Although difficult, physical control may be possible, and if complete eradication is not possible, enough suppression can be accomplished to keep the population under control.

Proposal

This proposal is split into two sections to allow the client options. The first section is for design and mapping by CEC. The second section is the labor to implement the project. CEC makes a proposal to perform this labor with fixed costs for each of the first three years, and an estimate in the final two years. Control will be a long term project if herbicides cannot be used. Even with herbicides, two to three years would be required. Using physical control methods, at least 5 years will be required, with possible maintenance control thereafter. For implementation, the Town could decide to use its' own staff for the labor. There is no special skill required for this work, and basic tools would be used.

A. Mapping and Design

CEC would implement this phase of the project. The most work is in the first and third years of the project but some field work occurs for the duration. This proposal assumes work would start in 2014, with the first implementation in the summer of 2014, and the last implementation 5 years later in 2018, with final mapping and report in 2019.

Once the proposal is approved, CEC would research physical control methods in detail, and provide a report to the town on the methods that have proven the most successful. This report may be updated with emails prior to the field season. As soon as possible in the spring/summer, CEC would map reed canary grass (RCG) stands throughout the Cucumber Gulch Preserve lands owned and managed by the Town. A Trimble GPS unit with sub-meter accuracy would be used for the mapping, and all data entered into an ARC-GIS database. Maps would be developed and provided to the Town as hard copy and electronically. If additional populations are observed on adjacent private or public lands, they will be noted and hopefully addressed under the option described below.

Once the mapping is complete, CEC will develop the specific plan to address each stand of RCG. The methods used will vary by location. Cutting above ground biomass 5 times each year is one method to use; however, this cannot be used in stands that are inundated as in the restored ponds in the Upper Gulch.

CEC would then direct and monitor the labor for the implementation phase. In subsequent years, CEC involvement would include monitoring each year, project management as needed, and

remapping in years 3 and 6. We will monitor the sites and modify techniques as needed. If it appears one technique is more successful, the plan may be revised.

Cost Estimate

Year 1 - $5000 – design, mapping and project management
Year 2 - $2000 – monitoring, project management, interim report
Year 3 - $2500 – monitoring, project management, remapping and interim report
Year 4 - $1000 – monitoring, project management, interim report
Year 5 - $1000 – monitoring, project management, interim report
Year 6 - $2000 – remapping and final report

Years 1 and 6 are firm Not–To-Exceed cost estimates. We cannot provide the same level of surety for years 2 through 5 on cost estimates as we are not sure how much project management will be required. We will know more on expected costs by the end of year 2.

Total cost estimate is $13,500. If complete control is achieved earlier then 5 years, the costs would be reduced. This includes all travel and expenses.

B. Implementation

CEC would retain laborers to implement the RCG eradication over a period of 5 years starting in 2014. In general e expect to have two laborers working together on the eradication program, with at least 5 site visits each season for most control methods. It is expected that each visit requires one full day in years 2 through 5, with the first year requiring 2 days for the first 2 visits for a total of 14 man days.

The costs estimates are only estimates at this time. Cost of two laborers plus equipment and seed will be $900 per day to include all travel and expenses. We cannot provide a Not To Exceed costs estimate without first mapping the RCG stands. The Upper Gulch has a significant population and the upper part of the Lower Gulch has a few smaller stands confined to the dams of drained ponds. We have not surveyed the entire Preserve and cannot estimate labor required at this time.

One of the tools will be to accelerate cover of native vegetation in the treated areas. The native seed used will cost $600 for year 1, and $400 for year 2 ($1000 total). We also may plan on installing some live sedge plugs at a cost of $400 per year for years one and two ($800 total).

A rough estimate for implementation costs would be:

Year 1 - $7500
Year 2 - $6000
Year 3 - $5000
Year 4 - $3000
Year 5 - $3000

Total labor- $24,500.

Total vegetation - $1800.00

Total Cost estimate for 5 Year Project

$39,800

The labor cost is only an estimate. If populations are much larger than expected in the Lower Gulch, the labor costs would increase. We will be able to adjust the cost estimate for labor once the mapping is complete in 2014.

The Town could decide to eliminate the labor costs and provide that labor from staff, reducing overall costs by $24,500 or more depending on the size of the RCG stands. If volunteers are available, a day or two with multiple volunteers could reduce the labor costs.

As noted above, we may find RCG populations on adjacent private lands or National forest System lands. Eradicating RCG populations in the CGP may be the goal, but all efforts will be in vain if a population exists on the border. After mapping and an overlay of property boundaries reveals where all populations are located, the town could contact private landowners, and either arrange for permission to access or require control on that property.

This proposal can be modified to meet the Town's needs. We could modify the mapping to include all weeds or non natives, and possible modify the implementation to include those other species.

This is a time and materials proposal based on the rates listed below. The work may be performed for more or less than the estimate listed depending on a number of factors. All estimates include travel, and expenses.

_____ _____

Michael Claffey **Date**
Claffey Ecological Consulting, Inc.

_____ _____

For the client **Date**

CEC and Subcontractor Rates:

Michael Claffey
Office, Reports and Meetings - $130/hr
Field Work - $100/hr
Staff Ecologist - $80/hr
GIS Technician - $80/hr
Labor – 2 people - $900/day

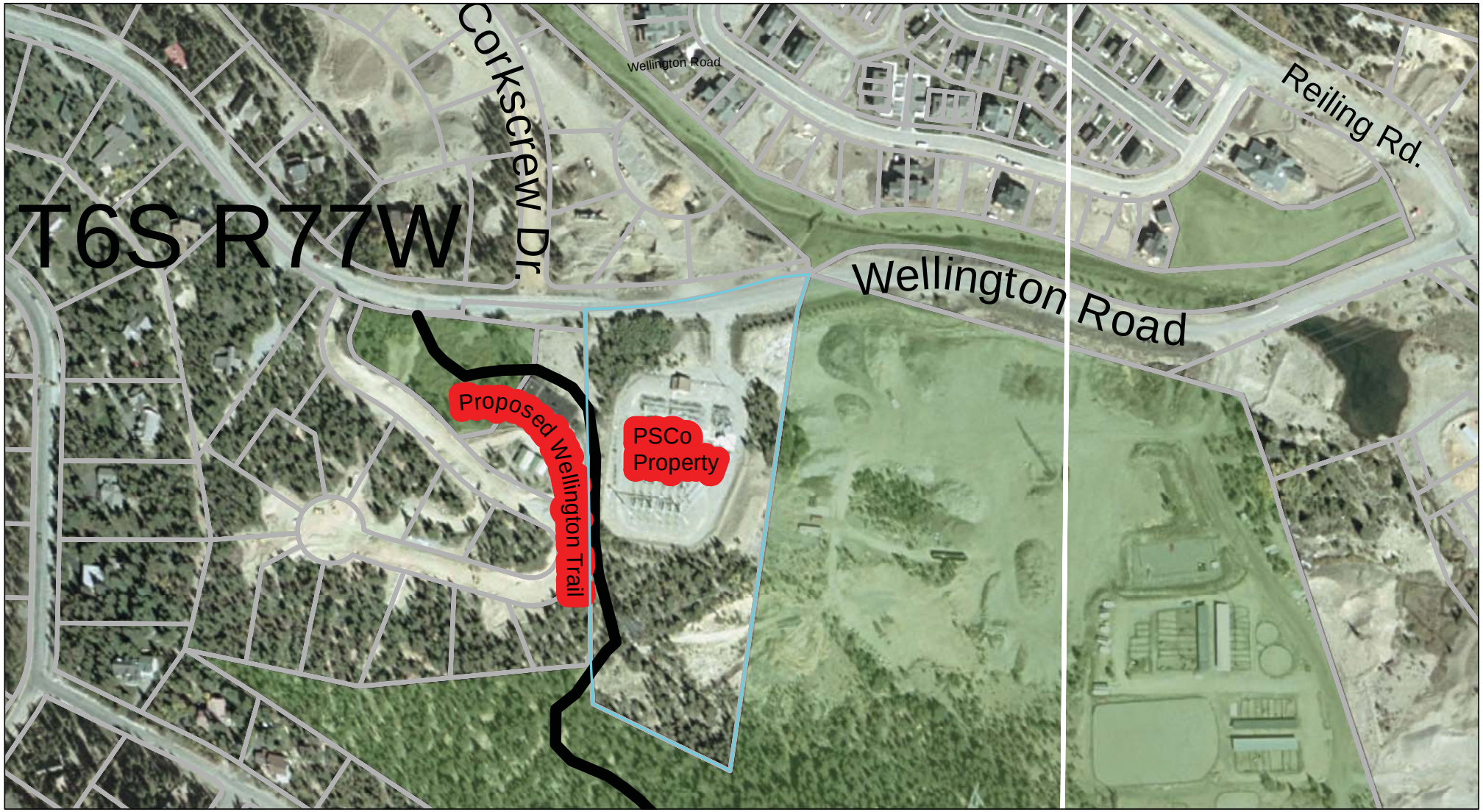
Expenses

Mileage – 0.55/mile or GSA rate at the time work completed
Per diem (meals for overnight trips) - $45/day
Lodging at cost
All other expenses at cost

GPS Rental - $100/day

	Christy Carello PhD ($80/hr)	Catherine Kleier, PhD ($65/hr)	skilled assistant ($30/hr	Assistant ($12/hr)	Docent ($12/hr)	Total
Avian Population Monitoring						
Monthly May-August	35		35			3850
Data Analysis - songbirds	12					960
Avian Total						**4810**
Amphibia						
June-August	4		12	12		824
Data Analysis	2					160
Amphibia Total						**984**
Beaver Lodge Survey						
Field Observations	6		6			660
Analysis	3					240
Beaver Lodge Total						**900**
Beaver population monitoring						
June-August	6		18	36		1452
Data Analysis	4					320
Beaver population monitoring						**1772**
Weed Survey						
Iventory (June and August)	6					480
Research and recommendation	2					160
Data Analysis	2					160
Weed Total						**800**
Photo documentation						
Field work (May, August, December)	8					640
Photo Organization	4					320
Photos documentation total						**960**
Wildlife Motion sensor cameras (5 cameras)						
camera installation and testing	10		10			1100
Field maintenance	40					3200
Photo Organization/labeling	10			100		2000
Motion sensor camera total						**6300**
Trail Motion Sensor camera (June-July)						
camera installation and testing	3					240
Field maintenance	5					400
Photo Organization/labeling	2			35		580
Total trail camera						**1220**
Docent Program						
Training	8					640
Trail monitoring					60	720
Data Analysis	3				4	288
Total Docent						**1648**

Comprehensive Vegetation Survey					
Prep and establishment of new plot	8	8			1160
Field Wrok	30	30	40	40	6030
Data Analysis	8	8			1160
Total Vegetation survey					**8350**
Report Preparation					
Report Preparation	40			30	**3560**
Town Meetings	6				**480**
Total Direct Costs					**31,784.00**
Indirect Costs (administrative costs Emerald Planet)					**4,767.60**
Batteries/desiccant					**600.00**
Total Monitoring Costs					**37151.60**



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Not necessarily accurate by surveying standards and
does not comply with the National Mapping Accuracy Standards

DRAFT WELLINGTON TRAIL EXTENSION

0 65 130 260 390 520 Feet

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Legend

- Wellington_Trail_Extension
- Property Lines
- Public Open Space

MEMORANDUM

TO: Mark Truckey
FROM: Open Space Staff
DATE: February 19, 2014
SUBJECT: Potential Pump Track Relocation Sites

We have evaluated potential relocation sites for the Town Pump Track and have created the following memo to summarize that evaluation.

The current pump track began with the donation of good soil by a previous special event. The initial design was installed by volunteers in 2009. Town trail crew redesigned the pump track several times until 2013, when a final version was completed, with minimal future maintenance anticipated. The open space program devoted approximately $1,500 annually in time and materials until 2013, and then $6,000 was spent to finalize the design. The Town Trail Crew now has the expertise and experience to design and build a new pump track as needed.

Costs for relocating the pump track would include machine time and trucking to move the existing dirt to a new location, and the staff time to design and install the new facility. Estimated total costs for new facility would be $8,000, including staff and machine time.

General pump track site requirements:

- Approximately ½ acre of flat space
- Ability to access site with heavy equipment
- Adequate, adjacent user parking
- Access to water to assist with track compaction
- Accessible to local neighborhoods
- Immediate access to beginner-level mountain bike trails

Based on these criteria, we have identified the following three potential locations for the pump track relocation.

1. Stilson Placer (beyond the stables, or elsewhere on the site)
2. Little Red Park (grassy field area)
3. B&B Trailhead (west of parking area)

All three of the above options have pros and cons, but they still seem feasible based on the requirements outlined above. Block 11 and McCain are other, less desirable options.

Please let me know what other information you need.