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blue= CHE written responses; red = CHE oral responses; green = FWS notes/responses/clarifications

#### IV. MITIGATION HIERARCHY

##### *Avoidance, Minimization and Mitigation of Oil and Gas Impacts to Wildlife in Colorado*

*This is not a comprehensive description of wildlife protections under COGCC rules, nor is it a complete description of how the COGCC's 1200-series rules function. The following summary describes how the mitigation hierarchy is followed in the 1200-series rules, and explains how the Colorado Habitat Exchange (CHE) will function within these rules. This is essential to ensure that the CHE functions to address residual impacts, after avoidance and minimization actions have occurred.*

*A robust record of GrSG conservation and effectiveness of regulatory mechanisms in Colorado has been developed and communicated to FWS. These conversations continue in a forum more broadly than that of seeking FWS approval of the CHE. This additional information is available here: <http://cpw.state.co.us/learn/Pages/GreaterSagegrouseConservationPlan.aspx>*

COGCC rules require that when a new oil and gas location is proposed in Sensitive Wildlife Habitat (SWH) or a Restricted Surface Occupancy Area (RSO) CPW shall consult with the operator, the surface owner and the COGCC prior to approval of a Form 2A to identify possible conditions of approval (COGCC Rule 306.c). (NB: A Form 2A describes and permits proposed surface development and includes information to address impacts.)

The purpose of consultation is to allow the COGCC to determine whether conditions of approval are necessary to minimize adverse impacts from the proposed oil and gas operations. The 1200-series rules define minimizing adverse impacts as:

“wherever reasonably practicable, to (i) avoid adverse impacts from oil and gas operations on wildlife resources, (ii) minimize the extent and severity of those impacts that cannot be avoided, (iii) mitigate the effects of unavoidable remaining impacts, and (iv) take into consideration cost-effectiveness and technical feasibility with regard to actions taken and decisions made to minimize adverse impacts to wildlife resources. . . .”

##### ***Avoidance***

Operators must avoid new development in RSOs, which include areas within 0.6 mile of any greater sage grouse lek, to the extent technically and economically feasible. If avoidance is infeasible, then the operator may develop in these areas after consultation with CPW (see below). Avoidance is not required if, (i) authorized following consultation with CPW, (ii) authorized by a Comprehensive Drilling Plan, (iii) upon demonstration that habitat is in fact not present, (iv) when specifically exempted by CPW, or (v) in the event of situations posing a risk to public health, safety or welfare.

##### ***Minimization***

When an oil and gas facility is proposed in “sensitive wildlife habitat” or is to take place in a “restricted surface occupancy area” because avoidance is infeasible, then a consultation occurs with CPW. During consultation, CPW will identify measures that could minimize adverse impacts to sensitive wildlife habitat. CPW has developed Best management Practices that result in minimization of impacts to wildlife. Additionally, COGCC’s 1200-series rules include several general operating requirements intended to minimize impacts of a proposed new oil and gas location in SWAs and RSOs. (These requirements can be viewed, along with the full 1200 series rules, here: [https://cogcc.state.co.us/RR\\_Docs\\_new/rules/1200Series.pdf](https://cogcc.state.co.us/RR_Docs_new/rules/1200Series.pdf))

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##### ***Mitigation***

Consultation with CPW often results in the identification of residual impacts from the project. CPW recommends mitigation for residual impacts that cannot be avoided or minimized. An operator may be able to negotiate with CPW to receive acknowledgement of mitigation for certain avoidance and minimization measures, based on site-specific factors. By including avoidance and minimization measures in mitigation negotiations, operators are incentivized to use avoidance and minimization measures to the extent possible.

##### ***Conditions of Approval***

Following consultation, CPW may make written recommendations to COGCC on conditions of approval necessary to minimize impacts to wildlife. The COGCC determines any conditions of approval for the permit. The 1200-series rules state that, in making this decision, the COGCC will consider several factors, including:

- a list of potential best management practices for the geologic basin, developed by CPW,
- the anticipated effects of the proposed action on wildlife,
- the extent to which acceptable alternative sites exist for the proposed operation,
- the extent to which the operator proposes to use technology or practices that are protective of the environment, and any lease terms or surface use agreements predating these rule amendments.

In no case, however, will the Director attach permit-specific conditions for wildlife habitat protection without the consent of the surface owner.

BMP standards have been developed, but are not geologic basin or sage-grouse specific, and are likely to be refined. CPW can share these in-development standards with FWS.

##### ***Exemption from Consultation***

Consultation under the amended rules is not required if the proposed oil and gas site is covered by an approved Comprehensive Drilling Plan (CDP), CPW has previously approved a wildlife mitigation plan (WMP) for the area, or if the operator voluntarily agrees to limit surface disturbance in sensitive area. CDPs and WMPs include operations plans, maps of development areas, avoidance, minimization and mitigation measures, and a wildlife habitat mitigation plan. By developing a CDP or WMP, which requires early consultation with CPW about operations over a larger geographic scale, operators receive expedited consultation [MW1] from CPW and do not need to consult on every Form 2A within the geographic boundary of the CDP or WMP.

##### ***Role of the Colorado Habitat Exchange in State Oil and Gas Permitting***

Through the state's regulatory process, the CHE will be made available to oil and gas operators who have a mitigation obligation to fulfill as part of a condition of approval for the Form 2A, or as part of a CDP or WMP. They will only have a mitigation obligation to fulfill if their Form 2A is approved by the COGCC through the permit review process. As stated above, the permit review process requires avoidance of impacts within RSOs, and minimization of impacts in RSOs and SWH that cannot be avoided. The CHE provides a more consistent approach to quantify residual impacts that what is available now.

Additionally, operators may participate in the CHE to fulfill requirements through Federal and local permitting processes. And operators may voluntarily participate in the CHE without a formal mitigation obligation to fulfill.

##### ***Tracking Effectiveness***

CPW and COGCC are currently working to improve how they track the effectiveness of the 1200 series rules. The agencies are currently developing a robust tracking mechanism, that will serve to consolidate data collection by across agencies. The new system will be public-facing, and will allow users to track

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recommended actions from required consultation with CPW, the implementation of those actions, and enforcement actions against operators. The system is expected to be up and running in 2015.

Department of Natural Resources will cover both the COGCC and CPW as a signatory of the agreement.

### A. Avoiding Impacts

1. What triggers review and entry into the mitigation hierarchy process?
  - a. Currently, development activities for oil and gas enter into the mitigation hierarchy through the process to develop a COGCC Form 2A (oil and gas location assessment permit) or Wildlife Mitigation Plan process (or CDP).  
A Form 2A describes and permits proposed surface development and includes information to address impacts.  
From 2A or a Wildlife Mitigation Plan (for a larger scale effort) would trigger the initiation of the mitigation hierarchy
  - b. The CHE enters into the mitigation hierarchy process after avoidance and minimization of an impact have occurred, and residual impacts are deemed to require mitigation under the 1200 series rules.  
Could the CHE enter into the process sooner – e.g. using the HQT to determine level of impacts and perhaps if further avoidance or minimization is possible?  
HQT isn't a siting tool, but the HQT could informally allow comparison of alternatives.  
The savvy operators will use the HQT as a minimization tool to inform their siting.
2. Are there any avoidance or exclusion areas (e.g. NSO, lek buffers, etc.) on private lands?
  - a. The COGCC 1200 series rules include Restricted Surface Occupancy (RSO) areas (using a 0.6 km buffer), and proposed activity within those trigger consultation with CPW. The 1200 series rules assume avoidance within RSO unless CPW consultation provides an exception.
  - b. The CHE does not identify avoidance or exclusion areas, however the CHE has an exclusion on credits being sold for direct impacts in lek buffers. Additionally, the HQT measures habitat functionality and would require more credits necessary to offset an impact in habitat more suitable for GrSG.  
Market disincentivizes impacts in the most suitable habitat.  
What are the scenarios where there will be permitted actions within a lek buffer?  
When the resources cannot be extracted from outside of the buffer with current technology (which is unlikely to happen often).  
If there are unavoidable impacts within lek buffers, this makes it sound like those impacts would not be able to be offset.  
Hearing that nuance is helpful, if there is a way to clarify
3. What measures are used to determine if habitat is avoided? How are direct and indirect impact measures included?
  - a. Under 1200 series rules, COGCC must determine whether conditions of approval for the Form 2A are necessary to avoid, minimize, or mitigation impacts (the mitigation hierarchy). If habitat is avoided, and that eliminates all impacts of the project, operators wouldn't have a need to participate in the habitat exchange. If residual impacts remain after avoidance and minimization, then COGCC conditions of approval will require compensatory mitigation. The CHE will be available to fulfill those obligations.
  - b. The CHE includes direct and indirect impacts through measurements of the HQT.  
Is there a mechanism for measuring or determining how close the project is to the 0.6 mile buffer around leks if the project is outside of the buffer? The more avoidance that can be achieved the more confidence we will have in the system.

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The CHE is not currently set up to track avoidance and minimization...

The administrator (or COGCC) could track and report what impacts were allowed and their proximity to leks

This may happen through the 1200 series tracking system...at least for minimization

The avoided impacts should not matter if the system works at providing net benefit

4. Are there any density disturbance caps, and at what scale and in which sage-grouse habitat types does it apply? Do the caps include direct and indirect impacts? What are the data source and methods used to measure avoidance? How will data from the Exchange feed in to monitoring of a cap?
  - a. There are no density disturbance caps built into CHE or into the COGCC rules.

Is CHE looking for some level of assurance given the operation of the system?

Disturbance caps serve as a back-stop for avoidance, the CHE could play a role through the HQT (measuring the level of disturbance).

HQT performs better than a disturbance cap, inclusion of the LDI and LQI in the HQT makes it so that developers are not penalized for locating impacts in proximity to other anthropogenic disturbance.

#### B. Minimizing Impacts

1. What criteria or regulatory mechanisms are used to require and/or enforce minimization? Specifically, what compliance measures are in place to ensure impacts are minimized (e.g. permit denial)?
  - a. Mandatory consultation with CPW on any Form 2A occurs in Sensitive Wildlife Habitat (SWH) or Restricted Surface Occupancy (RSO) areas. See 1200 series rules description – if compensatory mitigation is deemed necessary through consultation with CPW, that will become a condition of approval in the Form 2A – which acts as the enforcement mechanism.

There are specific general operating requirements in the rules, then CPW can recommend avoidance and minimization, COGCC can make the recommended avoidance and minimization a requirement of receiving the permit.

So the CHE is accepting the COGCC avoidance and minimization standards?

Yes

Different industries might have different standards for avoidance and minimization. Will the CHE be able to adopt standards other than the COGCC standards?

COGCC and the Office of Surface Mining (OSM) are both under the Department of Natural Resources. OSM can require avoidance and minimization similar to the process used by COGCC.

May need to look across industries. FWS needs to understand the avoidance and minimization process as it applies to the CHE.

Can add language to the CHEM that the avoidance and minimization standards will be set by the respective regulating agency.
2. How are minimization measures monitored? Are there triggers for adaptive management?
  - a. Through the 1200 series rules, minimization measures become COAs and are enforced by COGCC inspectors as a condition of your permit.

#### C. Rectifying Impacts

*For this entire section, we are unclear what the questions pertain to and ask for further clarification in order to prepare a response.*

Weren't clear what was meant by rectify.

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Rectify is meant to encompass restoration standards, not just reclamation. This applies where the impacts are temporary. What is the CHE's role in assuring rectification standards are met?

CHE will revisit this section before the 4/15/15 call

1. Is there an identified timeframe within which rectification must occur?
  - a. The CHE is designed to offset unavoidable, residual impacts.
  - b. Rectifying impacts, to the extent required, will be covered by the voluntary or regulatory framework governing the initial impact.
  - c. Q's 2-5 below do not apply to the current CHE framework
2. What baseline will be used to determine whether rectification has occurred?
3. How are rectification measures monitored?
4. If rectification measures are not adequate who enforces compliance?
5. Who verifies that rectification is complete and adequate?
6. Debit Projects – Will the exchange administrator be responsible for determining if remediation has occurred? How will this work with the regulatory agencies? Will the Exchange even have right to access property? It seems this process would have to be connected to the original permit. P.37-38, 45.
  - a. The EA, or its assigned designee (i.e. 3<sup>rd</sup> party verifier) will have access to the property to determine if a debit project has been remediated to baseline as part of the process to determine a term debit has expired

**Comment [SG1]:** According to the CHE Manual, p. 37-38, the CHE will have a role in rectification. We would like a bit more information on how this will work.

**Comment [SG2]:** CHE Manual, Pg. 37: "Term debit projects must have a known conclusion date whereby the site has been remediated to the debit project's baseline condition"

**Comment [SG3]:** p. 37 "Third-party verification is required to demonstrate that the site has been remediated back to baseline conditions (see Verification Section 2.5.2)"

**Comment [SG4]:** p.37 "If verification demonstrates that a term debit project has not yet been fully remediated, the Exchange Administrator will require additional credits sufficient to cover the residual impact be purchased for an additional term."

#### D. Compensating (Offsetting) for Unavoidable, Residual Impacts

##### a) Impact (Debit) Assessment

1. Will habitat measures take into account rarity, vulnerability, or conservation priority?
  - a. The more pristine, unaltered the landscape, the more mitigation will be required.  
**Built in to HQT**  
See later specific questions
2. How will the impact assessment method address direct impacts, indirect impacts, and cumulative effects?
  - a. The HQT methods doc/user's guide explains this.  
**All built fundamentally into the HQT**  
LDI used to identify how disturbed existing anthro effects on grsg, right? Yes  
How often is that updated? Two ways. 1 – dataset managed by natural heritage program. 2- HQT part of verification process is to make sure there is site level visual inspection of anthro that isn't showing up on LDI. LDI is multiple GIS layers of disturbance layers. User can put new structures in (and remove for credits), so GIS user can add and subtract. Anyone part of Exchange process can do this but there is 3<sup>rd</sup> party verification.
3. Who can measure impacts? Will these calculations be verified?
  - a. Impacts are measured by a computer model (within the HQT). Impacted environments will be measured by certified consultants and a computer model using publicly available data. Third party verification is required for both credits development and debit calculations.  
**The computer model measures impacts, but actual site needs to be measured by certified consultants and the computer model.**
4. Research on tall structures indicates direct and indirect effects to grouse. P.24 states that only direct footprint is considered. Is there another way the indirect impacts are captured?

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- a. Anthropogenic disturbance type matters, and only indirect impacts of each anthropogenic disturbance type are captured, **except for tall structures which only account for direct impacts**. Assumptions used for impacts from each disturbance type are conservative. There was previous discussion with members of science team on tall structures in particular. Said literature didn't seem strong enough to support anything other can capturing indirect impacts for tall structures and wind. This would be a good place for FWS SLT to weigh in.  
SLT base assessment on USGS buffer report. Have CHE Science Team seen?  
Yes. But not sure how much accounted for in HQT. We will flag this. Will be useful for science team to cross-walk with USGS report and give explanations for difference?  
Yes.

#### b) Offset (Credit) Assessment

1. What is the science basis for using 20% as the regional average site-scale?
  - a. We believe this is in reference to the 20% baseline default for credit projects. The decision around 20% baseline was a policy decision determined to incentivize landowners who have done early conservation for GrSG, but not overly compensate them. (see exchange manual section?)  
CHE still needs to provide the science explanation to MRT/SLT (this standard for use in the credit baseline was determined by the CHE science team).  
The science team will need to explain this to the SLT.
  - b. Consider: This is a misinterpretation of what the 20% was meant to be. From a scientific standpoint, I'll bet it could be argued that grouse will be more responsive to mitigation in habitat that has been maintained in good condition, supporting our stance that we want to reward good stewards. If grouse populations have been decreasing because some rancher has been killing all his sage brush, they probably aren't going to come back as fast as he can get sage re-established. It's better to incentivize the guys who've maintained their habitat.
2. The credit calculation per map units takes the highest difference or uplift for one of the three seasonal habitat types. Does this method constrain ability to focus efforts on a seasonal habitat type that may be limiting or of concern, regardless of how much uplift it could get? **Manual p.27**
  - a. As part of the Exchange's annual reporting, credits and debits by seasonal habitat can be aggregated to determine if any are limiting or of concern.  
This is a working group conversation that science team (ST) is being asked to provide a recommendation. Want to know if our current method most valid approach.  
How will know if credits are more for limiting habitat types, e.g.? If debits are all on brood rearing and credits all wintering, could be issue.  
Exchange is not designed to provide landscape analysis of habitat types. Recognize impacts being offset need to balance the limited habitat type that are being impacted. Adaptive mgmt. process could help with this to bring science to exchange to drive credit development to habitat that is more limiting in future if needed. Involve CPW.  
BLM, CPW, maybe USFS may need to be involved. Are they on ST now?  
No.  
For example, looking at table 2.6 (p.27), the largest functional acres difference for 2 of the 3 map units is not breeding habitat. What if that area we want to focus on breeding habitat? In general, can you aim for crediting one type of seasonal habitat in a given area, even though it may not give the highest functional acres difference? Is there some mechanism to focus conservation efforts other than the HQT value of the habitat?

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HQT designed to know about function but not give value to specific habitat type. But through reverse auction can focus on types of habitat without changing value of credit calculation. There is flexibility here. Could put a finger on the scale in selecting credit projects to offset debits, but the value of the debits would not change.

- b. The HQT provides a replicable, science-based seasonal habitat quantification tool and provides a best-available analysis of seasonal habitat availability.
3. Will a credit developer be guaranteed a minimum number of credits on a given site? If credits for a site are only available for release post-restoration of the whole site, it will be challenging for long term agreements to do restoration without income along the way (also the HQT may change along the way). Concern this is a disincentive for long-term agreements. Perhaps for long term agreements there is either a minimum credit guarantee or credits can be released as performance standards are met thought that would mean the site would need approval, financial assurances, etc. in place before full restoration. P.58
  - a. No, a credit developer is NOT guaranteed a minimum number of credits. Credits are determined based on demonstrated habitat quality / improvement.  
The concern has been discussed by the group. To address the need, 2.5.1 allows for up to 1/3 of credits to be released upon performance of conservation actions, with the remaining 2/3 requiring meeting performance standards.
  - b. The concern about income / incentives for early action exists primarily for Restoration projects.
  - c. To address the need for “early” income from a Restoration project, the Credit Release schedule (section 2.5.1) provides for up to 1/3 of expected total project credits to be released upon implementation of conservation actions. The remaining 2/3 of credits will be released upon verification of habitat function.
4. If pre- and post-project boundaries have to be the same on a site, does the credit developer have to complete another separate agreement for expanding the site? Is there a way to phase in projects on one site under one agreement/financial instrument/easement/etc.? P. 58
  - a. Creating a new project by expanding a site would likely require a new agreement.
  - b. The only scenario that seems plausible for not requiring a whole new agreement would be a contract amendment for the new area under the same terms (duration, etc) as the old agreement. Ex. 100 acres with 50 acres habitat maintenance project that is in exchange then decide later to do other 50 acres under same terms, then amend existing contract.  
But what if 5 years into a 10 year agreement? Then you have 5 yr and 10 year credits.  
Wouldn't work because minimum agreement is 10 years, but if 5 years into a 30 year contract and add acres, then the same contract would have two durations of credits within it (e.g. 25 year credits and 30 year credits). Most of time will need new agreement/contract.
  - c. At the end of the day, the new site / expanded site would have to meet the same credit requirements as the old site.
5. Determining Credit Amount – is it feasible for a Buyer to run a draft calculation on their own and purchase or hold credits until a more formal assessment is complete? P.67
  - a. We envision a system where a potential credit buyer or developer could run the HQT on their own to estimate credits.
  - b. We do not currently envision a process to temporarily hold credits within the exchange.
  - c. Is this where we mention the discussion from the March WG meeting about seasonal data collection? How we are considering how to allow credit buyers to get an estimation of needed credits for a debit at the time of impact, but if verification is not possible (because of seasonality constraints) that verification and “true-up” will occur within a reasonable timeframe.



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There has been the thought that the administrator could enter into a purchase contract to prepare credits, once the debits have been identified, the admin could activate those credits for transfer/release  
Important that credits and debits happen concurrently, this system is an attempt to make that easy within the CHE.

6. Is the base contribution of 4% of total site credits required in whole during first credit transfer or proportional to that particular credit transfer? It looks like for split estate, it is 7% for each transfer, correct? P.46-47
  - a. The reserve account contribution is required at time of credit transfer on the total number of credits transferred.
  - b. The 7% figure for split estate is an additional contribution above the 4% base contribution. Split estates would contribute a total of 11% of transferred credits into the Reserve Account.  
So proportional to the credit transfer only. Which means the site only has reserve protection for the credits that have been transferred. Right?  
Yes.
7. If a site has credits released over time (is that even possible?), and credit calculations are refined over time, how can it not affect the previously released credits?
  - a. The credit developer / landowner would operate under the HQT and Manual as they existed at the time of contract execution, unless the landowner / credit developer agreed to abide by the new HQT or Manual. (See section 4.05(C) of the Agreement for controlling language.)  
Potential for versioning issues (see comment at right), have to work out system to calculate net benefit if credits from different times have different worth (due to updates and new science).  
This is especially important for permanent debits/credits. Is it possible to update the calculation/valuation methods during the life of projects? The credits might not change value, but the number of acres needed to generate credits might change.  
Can be seen as a contract issue, there can (will?) be clauses in contracts providing for (voluntary?) adoption of new HQT methods during the life of the contract/projects.  
If credits sit unsold in the CHE, then the HQT changes, would those credits be valued under the original HQT or the new HQT if they are purchased to offset debits under the new HQT?  
Intriguing question.  
Need a system to make it possible to deal with versioning of credits (and debits) with new versions of the HQT.  
Interested to talk to EI, and see how they have dealt with this other places.
8. How will duration of impacts (e.g. temporary versus permanent) factor into offset calculations?
  - a. Debits and Credits must exist contemporaneously. The CHE requires credits to exist for at least the length of the debit project.
9. Who can measure offsets? Will these calculations be verified and by whom?
  - a. Credits are measured by a third-party verifier (certified consultants) and a computer model. Credits are verified every 5 years this way.
10. How labor intensive is site-level data collection? Who can do this – landowners or only qualified agents? P.33

**Comment [SG5]:** It is unclear if a site must have all credits verified and released before any credit is transferred and if all must be verified before administrative documents must be complete. If a site with 10-year agreement/credits is used for mitigation, can additional credit come from that site (due to new science, management techniques, etc.)?

**Comment [SG6]:** Ok – let's say they abide by the new HQT. You would be able to parse out previously released credits on the ground from the new credits, which may have been calculated differently? In other words, versioning control to ensure net benefit of program?



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- a. As set out in the HQT, site-level data collection is currently labor intensive. The CHE WG and Science Team are considering how to refine the process to maintain integrity of the HQT and create efficiency of collection. This is being specifically considered in the CHE field test.  
Site-level data collection will be time-consuming, due to the number of map units and the work. CHE field test and working with others to try and make the work-load easier.

#### c) Impact to Offset (Debit or Credit) Relationship

1. How will the outcomes of the debit and credit metrics combine into a credit quantity to ensure that impacts are offset such that there is a net gain to sage-grouse (e.g. via ratios, multipliers)?
  - a. CHE measures net benefit by tracking credits and debits to ensure the total number of credits within the program equal or exceed debits. Credits and Debits are measured as “functional acres” using the HQT to determine both quantity and quality of habitat.
  - b. Net benefit results when credits are equal to or greater than debits. This occurs in 3 ways within the CHE:
    - i. The HQT is used to measure both credits and debits, ensuring consistency between impact and offset
    - ii. The HQT measure both direct and indirect effects, ensuring debit and credit measurements capture all impacts and don’t unduly award credits for benefits in low quality landscapes
    - iii. The HQT was constructed using conservative assumptions, meaning the HQT fully measures impacts
  - c. The use of a Reserve Account ensures an amount of credits are held in reserve, creating more credits in the program than debits.
  - d. Finally, Conservation Certificates held by the program should be included in the calculation of net benefit as these are verified functional acres that are not associated with impacts. (As discussed before, as long as CCs are not double counted as their own conservation program)  
CCs would have initial verification, but not ongoing verification over time.  
There may be recommendations from the FWS in the future on this topic. Hopefully recommendations will be somewhat prescriptive (providing a target or suggestion).
2. How will the timing of mitigation implementation (e.g. in advance of, concurrent with, or subsequent to impacts) factor into offset calculations (e.g. with ratios, caps on actions that result in time lags in critical areas, etc.)?
  - a. “The Exchange requires the duration of a credit project to be equal to or greater than the duration of the debit project it is offsetting.” [section 2.4.3, p 38 Manual]
  - b. “Credit release and verification ensure that credit projects achieve their stated performance standards and generate benefit for the species before they may be sold to offset debits.” [section 2.5, pg 41 Manual]
  - c. Recent working group discussions of this issue lead to the following understanding which has not been memorialized in the Manual:
    - i. All mitigation credits must exist in advance of or concurrent (within one measurement season) of impact.

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- ii. It is recognized that credit determination may require measurement during a different season. I.e. a purchase of estimated credits could occur in the winter; the credit estimate would be “trued up” over the following summer.  
What about in the case of dynamic offsets? Would a developer need to line out what Financial assurances will need to be in place to make sure that they are able to purchase future dynamic credits. The administrator would have the power to pull on the financial assurances if credits were not secured to offset debits.
- 3. Under what circumstances would demonstration of functional mitigation in advance of impacts be required?
  - a. Any credits created from Conservation or Enhancement projects require verified functional acres. As such, these credit projects will result in on-the-ground functional acres prior to impact
  - b. As discussed above, Restoration projects can release 1/3 of expected project credits prior to functional uplift. This is to create an incentive for restoration activities.  
It is up to the regulatory system to match debits with impacts, the CHE can assure that the functional mitigation is delivered prior to debits.
- 4. What criteria will be used to determine when in-kind or out-of-kind mitigation for habitat types (e.g. brood rearing, wintering, and nesting) is more appropriate?
  - a. Since most projects will have a mix of habitat types, the CHE does not intend to match credits by habitat type.
  - b. Instead, the CHE will programmatically monitor the impact to various habitat types and compare the uplift across habitat types resulting for CHE habitat projects.
- 5. What process is in place to adaptively manage the metrics?
  - a. See Manual section 3 A1.2-3
- 6. What process is in place to approve new metrics?
  - a. Please clarify the question. The metrics being used in the CHE are functional acres and no new metrics are anticipated. Any changes to the CHE will be made using the process outlined for governance and decision-making by the oversight committee, and the role of the advisory science committee.  
How does the Barrick agreement deal with making sure the methods use the best-available science?  
The requirements for best-available science are tied to the regulatory certainty provided by FWS, but Lee will refresh himself on the process for incorporating new science in the methods.
- 7. Will there be a mechanism to allow for trades to occur outside of service areas?
  - a. Trades across Service Areas is not currently allowed in the Manual or Agreement. This is an issue being discussed by the Working Group and is outlined as an adaptive management issue for year 1 consideration.
- 8. What mechanisms are in place to provide for or use credits available in other programs or states?
  - a. There currently is no mechanism or discussion to allow for credits to be purchased or sold across states or programs.
  - b. But could have banks, etc. use the exchange if met standards
  - c. Might be service area question; leaving door open for cross jurisdiction

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9. Can dynamic term offsets be aggregated, i.e. can a 30 year debit be satisfied by purchase of 3, 10-year credits at one time? This is not explained in the manual. This section language seems to suggest that is can. Will the liability of the buyer transfer to the Administrator if dynamic offsets are used?
  - a. No, dynamic term offsets must be sequential and when aligned across time cover the full duration of the impact they are offsetting.
  - b. This explanation is attempted in section 2.4.1, pg 38 of the Manual. Similarly defined in the Definitions (sec 1.01) section under Dynamic Term Offsets.  
*All credits assume admin takes on liability but contract with credit developer if credit not valid, can use another credit; but if term credit and developer did not rectify after term, will need more credits – how this works regulatorily is a question still being discussed*
10. Mitigation Ratio – why specific input from FWS on final ratio – is this not actually the role of CPW/BLM pre-listing? P. 46
  - a. Yes, pre-listing it is up to CPW and BLM as regulatory agencies. post-listing, the FWS might have an opinion. The Working Group feels that the requirements of the CHE will result in programmatic net benefit and thus a mitigation ratio above 1.0 is not required.

**d) Criteria for Compensatory Mitigation (Offset) Projects**

1. What criteria are used for locating and prioritizing sites for compensatory mitigation?
  - a. The HQT is designed to measure potential uplift from offset projects.
  - b. The CHE assumes project developers will select the best sites to maximize functional uplift and thus credit creation.
  - c. The EA can direct any Conservation Certification projects to identified priority areas if the offset projects are not meeting landscape goals.
  - d. Similarly, adaptive management measures could be used to create ratios or other incentives for prioritizing project location. *Wouldn't change value of credit but could help admin direct where credits go (not part of system now but could be).  
Adaptive mgmt. assumes there is a conservation goal/plan.  
Exchange is not conservation plan but mechanism to address impacts.*
2. Is there a preference for compensatory mitigation on a particular land ownership type (e.g. public, private) and why?
  - a. No preference
  - b. We assume private lands will be the first locations for offset projects due to the uncertain rules around offsets on public lands.  
*So the hqt doesn't differentiate but the program will choose durability requirements, which might differ by land ownership type*
3. What pre-conditions must a site meet before being able to provide mitigation credits?
  - a. Site eligibility requirements are identified at section 2.2.5 (pg 30) of the Manual.  
*Ecologically, need 60% function; development risk, etc.*
4. What constitutes on-site versus off-site mitigation, and when, if ever, is on-site mitigation preferred?
  - a. On-site vs off-site mitigation are not defined in the Manual and this distinction is not address in the CHE.
  - b. However, given the behavioral avoidance impacts *within the HQT* of anthropogenic structures, it is unlikely on-site mitigation would ever be preferred to off-site mitigation.
  - c. The preference would be expressed through the HQT functional acre score.

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- d. The CHE WG is currently considering how on-site activities such as reclamation of a road after drilling would be counted.  
**Regulatory program will have minimization measures that will address some on-site issues**
- 5. What is the process when impacts are proposed near or on compensatory mitigation sites?
  - a. The question outlines two different issues.
    - i. Impacts on mitigation / offset sites:
      - 1. Impacts on mitigation sites can be intentional or unintentional. Both scenarios are outlined in section 2.5.6 of the Manual.
      - 2. These impacts can occur due to 1) Force Majeure, 2) Competing on-site land use (i.e. split estate mineral development; or 3) Intentional Reversals. Each are handled differently according to the manual.
    - ii. Impacts near mitigation / offset sites:
      - 1. The CHE has no authority over property adjacent to an offset project. As such, we recognize unintentional reversals could occur as the result of nearby development.
      - 2. Section 2.5.6 contains a section on “Competing Land Use on Adjacent Sites” that outlines how the CHE handles reversals resulting from nearby development.  
**Does the HQT address this – would scores be higher for impact projects near comp sites?**  
**Not specific to it being a compensatory mitigation site, but it would be a higher quality site theoretically so would affect the HQT in that way.**
- 6. Is credit provided for avoided loss? Under what circumstances?
  - a. No. If impacts from a development project are completely avoided then the developer will not need to utilize the exchange.  
**We do have preservation credits technically. If you have above 60%, can get credit for easement minus the 20% regional average.**
- 7. What constitutes additionality (e.g., above and beyond legal requirements, above business as usual, etc.)? Does this differ by land ownership and if so, why? If not, why?
  - a. Several types of Additionality are described in section 2.3 of the Manual (pg 33-36)
  - b. The use of baseline (sec 2.3.1) is one way to ensure additionality and is considered irrespective of land ownership type.
  - c. Sec 2.3.2 describes how additionality from projects on public lands could be met
  - d. Sec 2.3.3 describes how offset projects from activities “inside of an existing federal contract” and “outside of a previous federal contract” can achieve additionality
  - e. A special section on CCA/CCAA’s is included at section 2.3.5
- 8. What are the mechanisms for ensuring durability of protection on various land ownership types? How are split estates handled?
  - a. Sec 2.4.2 of the Manual outlines the site protection requirements at the heart of the durability requirements of the CHE  
**Permanent = conservation easement**
  - b. In addition, financial assurances are required to ensure ongoing project management and to cover some of the costs associated with any reversal.
  - c. Split estates projects require an additional contribution to the Reserve Account to address the increased risk of mineral development on these sites.

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9. What conservation types (e.g., preservation, enhancement action, etc.?) and actions (e.g. juniper removal, fence marking) can generate credits?
  - a. The CHE does not assign credits based on actions.
  - b. The CHE is a performance based system where credits are created from quantified benefit (measured in functional acres) accruing to the GrSG.
  - c. Any actions that result in a change in the HQT can be used to create credits. These include (but not limited to) removal of anthropogenic structures, conifer removal, enhancement of forbs, grasses, sage brush, etc.  
Conservation (preservation) credits = landowner above 60% and going to lock in value  
Enhancement = between 20-60%; lock in what they have and do more to get over 60%  
Restoration = below 20%; get pre-project baseline and get benefit of all uplift
10. Who verifies credits (e.g., permitting agencies, third parties, etc.)?
  - a. All credits must be verified by a 3<sup>rd</sup> party verifier as outlined in Section 2.5.2.  
Administrator has ultimate control over who is verifier
11. Who approves the final mitigation agreement for a site and certifies release of credits?
  - a. The Exchange Administrator is responsible for credit release after review of all documentation, verification reports, etc.
12. How do you ensure that the credits represent the right conservation in the right locations?
  - a. This is influenced by the science behind the HQT.  
Related to our conversation about the role of other agencies and plans.  
Wraps back to role of state, BLM others on team and in Agreement.
13. What role, if any, can public funds or restricted conservation dollars play in mitigation (e.g., Farm Bill dollars)? Can other resources be stacked on sage-grouse mitigation sites (e.g. carbon, wetlands)? How will ongoing stewardship be ensured (e.g., proof of endowment or maintenance funds, when funds should be set aside, designation of a steward, qualifications of a steward)?
  - a. The additionality section on Public Funds outlines how land inside and outside of a federal contract could be used to create credits (see section 2.3.3 for information)
  - b. Sec 2.3.4 identifies credit stacking as an issue for future consideration with an expectation that landowners could stack various resource credits on the same project site. The implementation of credit stacking is not resolved in the manual.
  - c. Ongoing stewardship will be ensured through financial assurances designed to fund all future management/stewardship activities for the life of the credit project.  
We're nervous about lack of specifics here. Also details in Ex-Agreement but not Manual.
14. What performance standards and monitoring techniques/durations will be applied at mitigation sites? Will there be standardized defaults, or will everything be site-specific?
15. What content needs to be in the monitoring reports and how often and to who are they submitted?
16. What constitutes success? Does it include presence of the species?

**Comment [SG7]:** Will cover next call after Ted can contribute since science question